

KENWOOD

CONSTANT-VOLTAGE
CURRENT POWER SUPPLY

PD8-20(D)

PD8-30(D)

PD18-20(D)

PD18-30(D)

PD35-20(D)

SERVICE MANUAL REVISED EDITION

KENWOOD CORPORATION



(EX. PD18-20)

WARNING

The following instructions are for use by qualified personnel only. To avoid electric shock, do not perform any servicing other than contained in the operating instructions unless you are qualified to do so.

SAFETY

Before connecting the instrument to a power source, carefully read the following information, then verify that the proper power cord is used and the proper line fuse is installed for power source. If the power cord is not applied for specified voltage, there is always a certain amount of danger from electric shock.

Line voltage

This instrument operates using ac-power input voltages that 100/120/200/220/240 V at frequencies from 50 Hz to 60 Hz.

Power cord

The ground wire of the 3-wire ac power plug places the chassis and housing of this instrument at earth ground. Do not attempt to defeat the ground wire connection or float this instrument; to do so may pose a great safety hazard.

The appropriate power cord is supplied by an option that is specified when the instrument is ordered.

Warning

If groundings, especially points \downarrow (V_G) and \downarrow (I_G), are short-circuited during servicing, it could lead to pattern damage due to large amount of current flow on the PCB. Take appropriate care.

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SPECIFICATIONS

Model PD		8-20 (D)	8-30 (D)	18-20 (D)	18-30 (D)	35-20 (D)
Output						
Output voltage 10-positions		0 to 8 V	0 to 8 V	0 to 18 V	0 to 18 V	0 to 36 V
Resolution (theoretical)		1.4 mV	1.4 mV	3.1 mV	3.1 mV	6.2 mV
Output current 1-position		0 to 20 A	0 to 30 A	0 to 20 A	0 to 30 A	0 to 20 A
Resolution (theoretical)		30 mA	45 mA	30 mA	45 mA	30 mA
Voltage regulation (CV)						
With input changes of $\pm 10\%$ Note 1)		0.005% + 1 mV				
With load changes of 0 to 100% Note 1)		0.005% + 1 mV	0.005% + 2 mV			
Ripples/noises (10 Hz to 1 MHz) rms Note 2)		0.5 mV rms				
Transient response, (standard value)		100 μ s, typical				
Temperature characteristic, (standard value)		100 ppm/ $^{\circ}$ C, typical				
Remote control resistance/voltage		approx. 0 to 10 k Ω /0 to 10 V				
Current regulation (CC)						
With input changes of $\pm 10\%$		2 mA	3 mA	5 mA	5 mA	5 mA
With load changes of 0 to 100%		5 mA	5 mA	5 mA	5 mA	5 mA
Ripples/noises (10 Hz to 1 MHz) rms Note 2)		5 mA rms	10 mA rms	10 mA rms	10 mA rms	10 mA rms
Remote control resistance/voltage		approx. 0 to 10 k Ω /0 to 10 V				
Protection						
Operation		turns off power switch				
Temperature detection		100 $^{\circ}$ C				
Overvoltage protection level (standard value)		15 to 110% of rated output voltage				
Meter and indications						
Voltmeter (class 2.5) F.S		8 V	8 V	18 V	18 V	36 V
Ammeter (class 2.5) F.S		20 A	30 A	20 A	30 A	20 A
D type	Voltage at digital display (Auto range)	3-1/2 digits 19.99 V, 199.9 V (FS) two ranges $\pm (0.1\% \text{ rdg} + 1 \text{ digit}) 23^{\circ}\text{C} \pm 5^{\circ}\text{C}$; Less than 80% RH				
	Current at digital display (Fix. range)	3 digits 99.9 A (FS), $\pm (0.5\% \text{ rdg} + 1 \text{ digit}) 23^{\circ}\text{C} \pm 5^{\circ}\text{C}$, Less than 80% RH				
Indication of constant voltage operation		CV green LED lights				
Indication of constant current operation		CC red LED lights				
Indication of output		OUTPUT red LED lights when turned on				
Function						
Output switch		Turns on and off output (preset voltage indicated with meter during off time)				
Voltage/current check switch		Preset voltage and current indicated with meters during on time				
Overvoltage preset (OVP)		Indicates the over voltage protection level on the voltmeter during on time				
Remote sensing		Via the rear panel sensor terminal				
Series control		Master/slave control (series control is not possible with 10 V maximum output models)				
Parallel control		Master/slave control				
Operating conditions						
Temperature		0 $^{\circ}$ C to 40 $^{\circ}$ C				
Humidity		Less than 80%				
Cooling		Fan				
Output polarity		Positive or negative side ground				
Withstand voltage to ground		± 250 VDC				

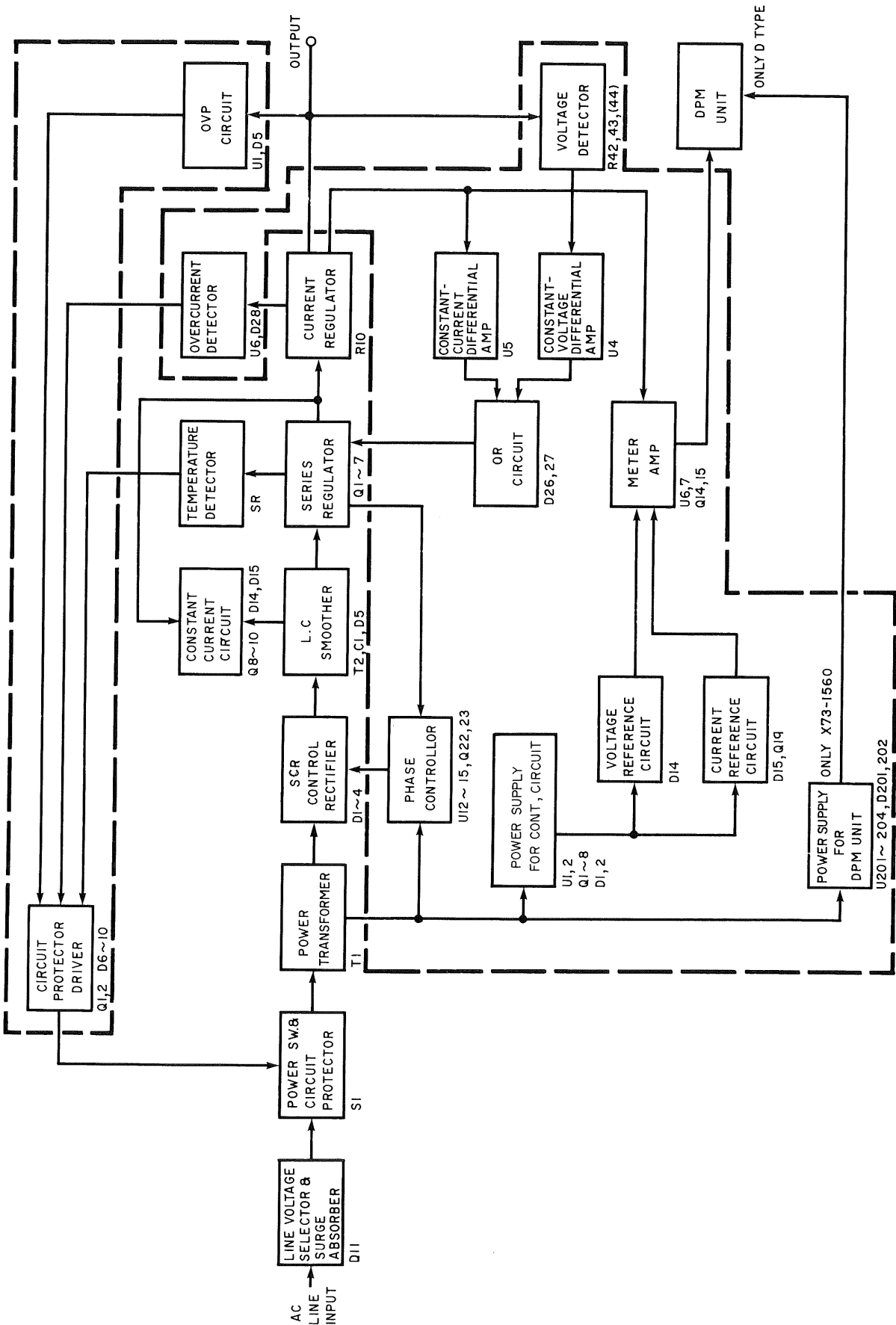
SPECIFICATIONS

Model PD		8-20 (D)	8-30 (D)	18-20 (D)	18-30 (D)	35-20 (D)
Insulation resistance						
Chassis-input line		30 MΩ or more at 500 VDC				
Chassis-output line		20 MΩ or more at 500 VDC				
Power supply						
Input voltage		100/120/200/220/240 VAC ± 10%, 1φ selectable internally				
Power consumption (at AC 100)		Approx. 420 W	Approx. 590 W	Approx. 620 W	Approx. 930 W	Approx. 1 kW
		Approx. 670 VA	Approx. 960 VA	Approx. 1 kVA	Approx. 1.4 kVA	Approx. 1.5 kVA
Dimensions and weight						
Enclosure dimensions		(W)	208	208	208	208
		(H)	147	147	147	147
		(D)	348	457	420	457
Maximum dimensions		(W)	208	208	208	208
		(H)	168	168	168	168
		(D) (including power input connector)	411	520 (523)	483 (486)	520 (523)
Weight		Approx. 15 kg	Approx. 20 kg	Approx. 19 kg	Approx. 24 kg	Approx. 23 kg
Accessories						
Instruction manual		1	1	1	1	1
Input power cord		100 V, 120 V area	2 or 3-core AC cable (2 m)	2 or 3-core AC cable (2.5 m)	2 or 3-core AC cable (2.5 m)	
		200 V, 220 V, 240 V area	3-core AC cable (2 m)			3-core AC cable (2.5 m)
Connector retainer		100 V, 120 V area	NONE	1	1	1
		200 V, 220 V, 240 V area	NONE	NONE	NONE	1
Fuse		100 V, 120 V area	10 A × 2	15 A × 2	15 A × 2	20 A × 2
		200 V, 220 V, 240 V area	4 A × 2	6 A × 2	8 A × 2	10 A × 2

Note: 1. Measured via the sensing terminal.
 2. Measured with plus or minus grounded.

■ Circuit and ratings are subject to change without notice due to developments in technology.

BLOCK DIAGRAM



CIRCUIT DESCRIPTION

DESCRIPTION OF BLOCK DIAGRAM

- 1. Voltage selector and surge absorber.**
Selects rated input voltage and limits external noise.
- 2. Power switch (circuit protector)**
This function as a power switch, and breaks the power supply in event of an accident in the power source.
- 3. Power transformer**
Provides auxiliary windings to operates the main and accessory circuits in the transformer.
- 4. SCR control rectification circuit**
A rectification circuit to control the DC level synchronized with AC, with the gate pulse from the phase control circuit.
- 5. L, C smoothing circuit**
Averages the rectified output from the choke coil and capacitor. The choke coil limits transient current for a high power factor and low ripple.
- 6. Phase control circuit**
Generates a trigger pulse AC synchronized with the SCR control rectification circuit to maintain the V_{CE} of the series transistors at a constant voltage.
- 7. Series control circuit**
Used to control high output with a small signal by Darlington connecting the high output power transistor.
- 8. Current detecting circuit**
A stable detection voltage is obtained by effecting adequate derating, using resistor with a low temperature factor.
- 9. Voltage detecting circuit**
A stable detection voltage is obtained using a highly precise metal oxide film resistor with a low temperature factor.
- 10. CC error (differential) amp**
A highly precise amplifier which uses a high-gain, low-drift OP Amp and compares output from the current detecting circuit with the current reference voltage.
- 11. CV error (differential) amp**
A highly precise amplifier which uses a high-gain, low-drift OP Amp and compares output from the voltage detecting circuit with the voltage reference voltage.
- 12. OR circuit**
Selects automatically one (using) the OR circuit from the CV or CC amp depending on output and setting.
- 13. Circuit power source**
Supplies regulated DC voltage to operate the control circuit and provides a protection function.
- 14. Voltage reference circuit**
This circuit is within the control power source feedback loop, and stably drives the temperature compensation zener diode.
- 15. Current reference circuit**
Drives the temperature compensation zener diode using the constant current circuit to provide a stable output.
- 16. OVP circuit**
Detects output voltage within a range of 15%-110% of the rated output voltage, according to the external overvoltage setting.
- 17. Overcurrent detecting circuit**
Detects when the current reaches a level of 125% of the rated current, using the signal from the current detecting circuit.
- 18. Temperature detecting switch**
Detects when the heat sink of series transistor becomes 100 °C with the thermal relay.
- 19. Constant-current circuit**
A discharge circuit for series transistor leakage current and the output capacitor.
- 20. Circuit protector drive circuit**
Drives the protector with the signals that come from the respective detecting circuits. It provides a constant and discharge circuit to minimize influence from small noise, etc.
- 21. Meter amp**
Selects output voltage, voltage or reference voltage with the V/I, OUTPUT and OVP and passes it through the buffer amp to provide stabilized meter output.

CIRCUIT DESCRIPTION

1. MAIN POWER SOURCE

The AC input voltage is rectified by D1-D4, and the output smoothed by the choke coils T2 and C1. The thyristors D1 and D2 are controlled in the phase control circuit. The rectified voltage goes through the series control transistors Q1-Qn and current detecting resistor R10, and is supplied to the output +OUT terminal. The -OUT terminal goes through D6 and returns to the rectification circuit.

2. REFERENCE VOLTAGE CIRCUIT

This circuit generates the control circuit power source and a variable reference voltage for voltage and current (V_{ref} , I_{ref}). The AC voltage is rectified by D1 and, a constant voltage of ± 15 V is generated in the constant voltage circuit which consists of Q1-Q8, U1 and D14.

The reference voltage of ± 15 V is generated by the zener diode D14.

-15 V is generated by the error amplifier U1 (1/2), reference voltage (D14) and the dividing resistors R20 and R21.

+15 V is generated by the error amplifier U1 (2/2) and dividing resistors R9 and R10.

The GND of the ± 15 V is indicated by $\downarrow V_G$ on the circuit diagram, and is connected to the +OUT terminal. The power source of this differential amplifier U1 is supplied by the zener diodes D6 and D9.

V_{ref} is the variable reference voltage for constant voltage control, and the V_{ref} voltage (0-10 V) is output between the rear terminals (3)-(5) from U3 (2/2), VR1 [VOLTAGE].

I_{ref} is the variable reference voltage for constant current control, and the V_{ref} voltage (0-10 V) is output to the rear terminals (8)-(11) from U3 (1/2), VR2 [CURRENT].

3. VOLTAGE/CURRENT CONTROL CIRCUIT (See Fig. 2)

With the floating type of voltage control, the control circuit is controlled using the +OUT terminal as a reference GND. The GND of the control power source ± 15 V ($\downarrow V_G$) is therefore of equal potential to the +OUT terminal.

The +OUT terminal voltage and a voltage divided by the voltage detecting resistors R42 and R43 are applied to the voltage control feedback amplifier U4.

Both input terminals of U4 are operated to keep the same potential.

The output from the feedback amplifier U4 goes through D26, is amplified by Q12 and Q13, passes through Q7 (Y86), and drives the base of the next stage current amplification circuit Q1-Qn. The voltage at both ends of the constant current detecting resistor R10 (0.025 ohms, 40 W) is used as a reference for the next constant current operation.

This point is the GND during constant current operation, is indicated by $\downarrow I_G$ on the circuit diagram, and becomes the reference point.

When the output current I_o flows, the voltage produced in the current detecting resistor R10 is applied to the control amplifier U5. The voltage divided to I_{ref} voltage feedback by R45 and R46 is applied to U5.

When the voltage at both ends of R10 exceeds this divided voltage (R45 and R46), U5 is operated to drive as the constant current through D27.

The output from U5 drives Q1-Qn (series regulators) through the same route as during constant voltage operation. When the current exceeds the constant current setting value, the operation of the feedback amplifier circuit U4 is simultaneously stopped, and the D26 route is interrupted. Namely D26 and D27 are control OR circuits.

4. METER CIRCUIT

The voltmeter indicating circuit detects voltage from the +OUT terminal, which goes through U2 (2/2), the OVP CHECK switch, U6 (1/2), the V/I CHECK switch, the OUTPUT ON/OFF switch, meter amp U7 (2/2) and is applied to the voltmeter.

When V/I CHECK is on, the V_{ref} voltage is applied directly to the meter amp U7 (2/2).

The voltage detected by the current detecting resistor R10 for the ammeter circuit goes through the V/I CHECK switch and is applied to the ammeter amp U7 (1/2).

During V/I CHECK, the I_{ref} voltage is applied directly to the meter amp U7 (1/2). Q1-Qn (series regulators) are controlled by Q10, Q12, Q13 (X73) and Q7 (Y86), by operating the OUTPUT ON/OFF switch, to turn output voltage ON and OFF.

5. OVP CIRCUIT AND OCP CIRCUIT

The D5 (zener diode) reference voltage that is divided with VR1 and the +OUT terminal voltage divided by R3, R4 is applied to the OVP voltage detecting comparator U1 (1/2). When the output voltage exceeds the voltage setting of VR1 (OVP setting VR), the output of U1 is inverted. The inverted output goes through D8, Q1 and D9, drives thyristor D10 and turns the breaker switch S1 OFF.

The reference (GND) of the OVP circuit is the same as the +OUT terminal V_G of the voltage control circuit.

The detecting voltage generated by the current detecting resistor R10 and the reference voltage of D28 (zener diode) is applied to the OCP current detecting comparator U6 (2/2).

If an excessive amount of current flows (overcurrent), the output of U6 (2/2) is inverted, it goes through D7, Q1 and D9 to drive the thyristor D10 and turns the breaker switch S1 OFF.

Furthermore, the thermal relay provided on the heat sink to prevent overheating of the series regulator transistor detects abnormal temperature rise, and turns the breaker switch S1 OFF through D6.

The OVP circuit, OCP circuit and overheating prevention protective circuit drive the breaker switch S1 with the OR

CIRCUIT DESCRIPTION

circuit that consists of D6, D7 and D8.

6. PHASE CONTROL CIRCUIT





The PD series power source features a phase control circuit to control the thyristors D1 and D2 of the main power source rectifying bridge, in order to minimize power loss of the series control transistors (Q1-Qn) by maintaining the voltage between the Q1-Qn collectors and emitters, regardless of load. The GND of this phase control circuit consists of the emitter of the series control transistors Q1-Qn, with an independent floating circuit from the unit power source.

A stable ± 15 V is generated for the phase control circuit power source by U10 and U11. A sawtooth wave that is synchronized with the AC power source line is generated by D42, D43 and U12. This sawtooth wave is applied to U13 (2/2). (See Fig. 3)

The collector voltage (V_{CE} detecting voltage) of the series control transistor is applied to the error amplifier U13 (1/2). The DC voltage of U13 (1/2) is added to the sawtooth wave of U12 (2/2) and applied to the input of U13 (2/2). The pulse width modulated (PWM) output of U13 (2/2) is finely differentiated by C64, etc., to drive the one shot multi U14.

The output of U14 (trigger gate pulse) is separated from the GND of the phase control circuit, and amplified by Q22 and Q23 to drive the thyristors (D1 and D2).

Note: GND indication of respective circuits

Case		Unit GND (Case or Chassis)
V_G		Voltage control circuit GND
I_G		Current control circuit GND (one end - point "a" of current detecting resistor R10)
		Phase control circuit GND (emitter point of series control transistors Q1-Qn)

Caution:

Do not short the insulation to the GND of the respective circuits when repairing breakdowns.

This may result in burning of the wiring and/or printed circuit board.

7. DPM UNIT (D type only)

The digital panel meter unit consists of the voltage indicator circuit and current indicator circuit, which both function the same electrically.

U1 (U31) is the 3-1/2 digit indication A/D converter, with a 7 segment LED driver incorporated. U2 (U32) generates the reference voltage.

The optimum value is set with VR1 (VR31), and VR2 (VR32) is for full scale adjustment. The A/D converter is provided with an external circuit constant to enable full scale indication of 1999 when 1.999 V is input, regardless of voltage indication, current indication and type of unit. Namely, these circuit constants are R1 (R31), C3 (C33), C4 (C34) and C5 (C35).

The main amp output of the amp unit (X37) is fed to the attenuator which consists of R20 (R50) and the amp unit R81 (R73). Voltage indication is 3-1/2 digits, but a 2nd attenuator is provided for 2 step auto range in case of indication 20 V or higher. When the indication in the U3 circuit exceeds 1999, a range up signal is output, and a range down signal is output when the indication is 1000 or lower. This signal is latched to the RS flip flop which comprises U4, is passed through Q1, Q2 and drives the decimal point LED. Simultaneously, Q3 drives the analog switch Q4.

Since the ground levels for the meter output of the voltage and current are different, the respective power supplies are isolated.

CIRCUIT DESCRIPTION

PRINCIPLE OF THE FLOATING REGULATOR

Vref: Reference voltage at CV
Iref: Reference voltage at CC
Vg: Ground at CV
Ig: Ground at CC

The output voltage at CC operation

$$V_o = \frac{R_2}{R_1} V_{ref}$$

The output current at CC operation

$$I_o = \frac{K}{R_s} I_{ref} \quad (\text{where } K = \frac{R_4}{R_3 + R_4})$$

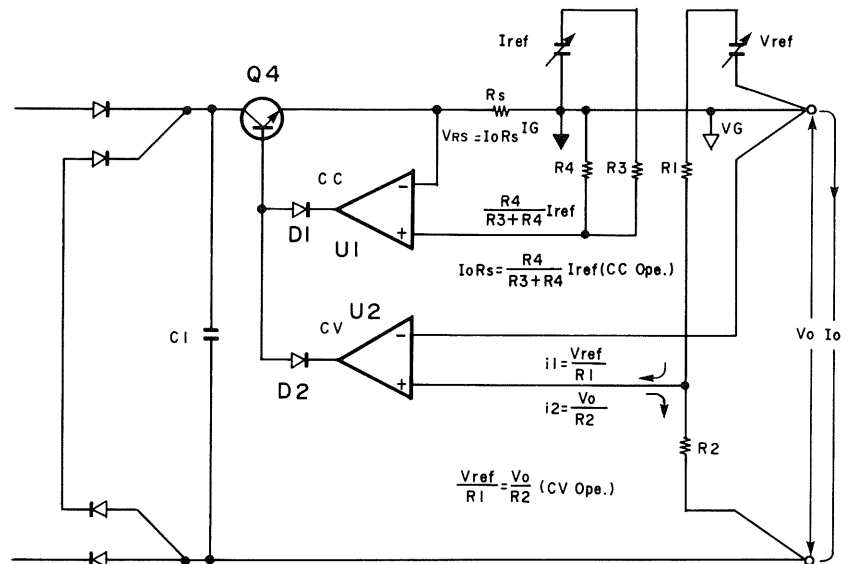


Fig. 2 With the PD series, the constant output voltage and current are obtained by changing the Vref and Iref.

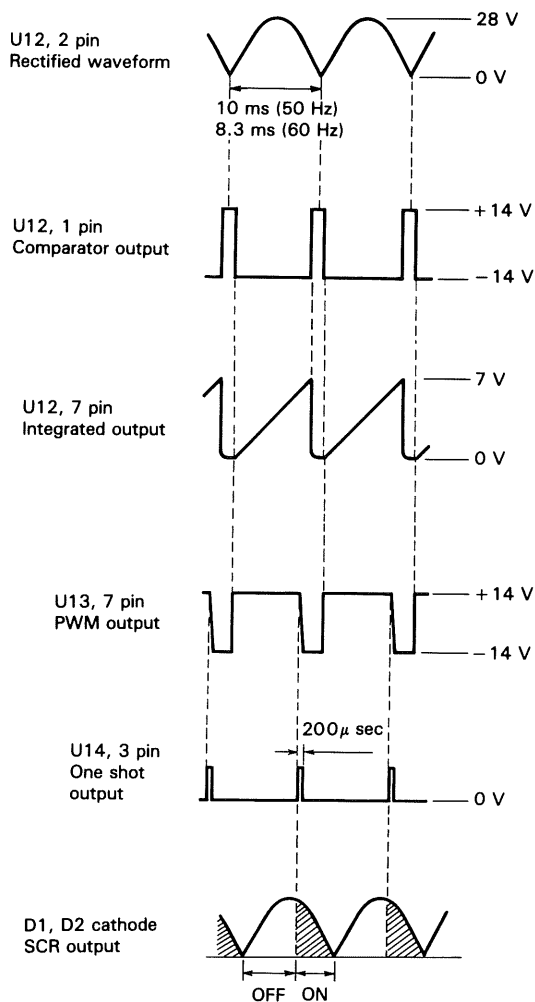


Fig. 3

ADJUSTMENT

ADJUSTMENT

To obtain the best performance, periodically calibrate the unit. Sometimes, only one mode need be calibrated, while at other times, all modes should be calibrated.

When one mode is calibrated, it must be noted that the other modes may be affected

When calibrating all modes, perform the calibration in specified sequence. The following calibration required an accurate measuring instrument and an insulated adjusting flat blade screwdriver.

For optimum adjustment, turn the power on and warm up this equipment sufficiently (more than 30 minutes) before starting.

Before calibrating the unit, check the power supply voltage and the zero of the voltmeter and ammeter.

TEST EQUIPMENT REQUIRED

The following instrument or their equivalent should be used for making adjustment.

Multimeter	8810A	FLUKE
Oscilloscope	CS-5165	KENWOOD

PREPARATION FOR ADJUSTMENT

- 1) The control and switch settings listed below should be used for each adjustment procedure.
Exceptions to these setting will be noted as occur.
- 2) Power cord should be correctly connected.
- 3) Short bar should be connected as follows.
⊕ - ⊕S, ⊖ - ⊖S, ① - ②, ③ - ④, ⑥ - ⑦, ⑧ - ⑨, ⑩ - ⊖ (on the front panel)
- 4) Heat sink should be insulated with respect to the chassis.
- 5) Unless otherwise specified, set each control as follows after completion of each adjustment.

POWER	ON
VOLTAGE	Maximum counterclockwise position
CURRENT	Maximum counterclockwise position
OUTPUT	OFF (■)
V/I CHECK	OFF (■)
OVP CHECK	OFF (■)
OVP adj. control	Maximum clockwise position

Item	Control and setting	Test Equip.	Adj. Control	Specifications	Procedure
C1 Voltage check		8810A		Less than 10V	Connect a multimeter to measure the voltage between C1 (+ side) and (- side).
± 15V check		8810A		± 15V ± 0.5V	Connect a multimeter to measure the voltage between OUTPUT (⊕) on the front panel and ± 15V test points on the AMP unit, respectively.
V _{CE} voltage coarse	VOLTAGE; maximum clockwise position CURRENT; maximum clockwise position	8810A	VR20	Approx 4.5V	Connect a multimeter to measure the voltage between collector and emitter of the transistor on the heat sink. See Fig. 4.
V _{REF} offset	OUTPUT; OFF VOLTAGE; maximum counterclockwise position CURRENT; maximum clockwise position	8810A	VR2	0V ± 0.5mV	Connect a multimeter between OUTPUT terminal ⊕S and control terminal NO.3 on the rear panel.
V _{REF} gain	VOLTAGE; maximum clockwise position CURRENT; maximum clockwise position	8810A	VR1	10.25V ± 0.03 V	Connect a multimeter between OUTPUT terminal ⊕S and control terminal NO.3 on the rear panel.
V meter offset	VOLTAGE; maximum counterclockwise position CURRENT; maximum clockwise position		VR8	0V D type; 0V ± 0V	Make adjustment while observing the V meter on the front panel.

ADJUSTMENT

Item	Control and setting	Test Equip.	Adj. Control	Specifications	Procedure
V OUT offset	OUTPUT; ON VOLTAGE; maximum counterclockwise position CURRENT; maximum clockwise position		VR11	0 V D type; 0 V \pm 0 V	Make adjustment while observing the V meter on the front panel.
V meter gain	CURRENT; maximum clockwise position V/I CHECK; OFF	8810A	VR7	Specified voltage(full scale) D type; specified voltage \pm 1 digit	Connect a multimeter between OUTPUT terminal \oplus and \ominus on the front panel. Rotating the VOLTAGE control to indicate specified voltage range on the multimeter. Make adjustment while observing the V meter on the front panel.
V check	OUTPUT; ON CURRENT; maximum clockwise position V/I CHECK; ON	8810A	VR5	Specified voltage (full soale) D type; specified voltage \pm 1 digit	
I _{REF} offset	OUTPUT; ON VOLTAGE; maximum clockwise position CURRENT; maximum counterclockwise position	8810A Load (1) Current detecting resistor	VR4	10mV \pm 1mV	Connect the multimeter between control terminal NO.8 and NO.11 on the rear panel.
I _{REF} gain	OUTPUT; ON VOLTAGE; maximum clockwise position CURRENT; optimum position		VR3	+ 2.5% for specified current	
I meter offset	OUTPUT; OFF VOLTAGE; maximum clockwise position CURRENT; maximum counterclockwise position		VR10	0A D type; 0A \pm 0A	
I meter gain	OUTPUT; ON VOLTAGE; maximum clockwise position CURRENT; optimum position V/I CHECK; OFF	8810A Load (1) Current detecting resistor	VR9	Specified current value(full scale) D type; specified current value \pm 1 digit	<ol style="list-style-type: none"> 1 Connect a load (1) which can accept the specified current value. 2 Set the value to specified current value by using the CURRENT control. 3 Make adjustment so that the value of I meter on the front panel becomes the specified current value.
I check	V/I CHECK; ON VOLTAGE; maximum clockwise position CURRENT; optimum position	8810A Load (1) Current detecting resistor	VR6	Specified current value (full scale) D type; specified current value \pm 1 digit	

Note: Be sure to adjust the I_{REF} gain, I meter offset and I check when the CC indicator is lit.

ADJUSTMENT

Item	Control and setting	Test Equip.	Adj. Control	Specifications	Procedure
V_{CE} voltage fine	VOLTAGE; maximum clockwise position CURRENT; maximum clockwise position	Load (2)	VR20	$4.5V \pm 0.1V$	Repeat entire procedure for V_{CE} coarse adjustment. Be sure to connect a load with which 10% current value for specified current can be supplied.

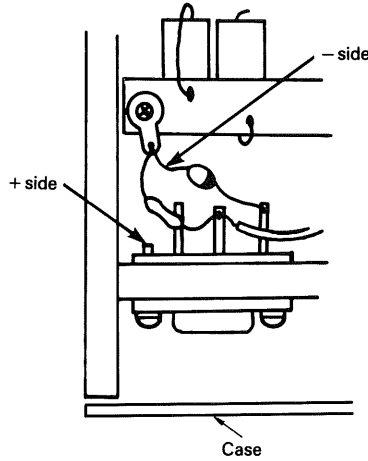


Fig. 4 Right side of heatsink

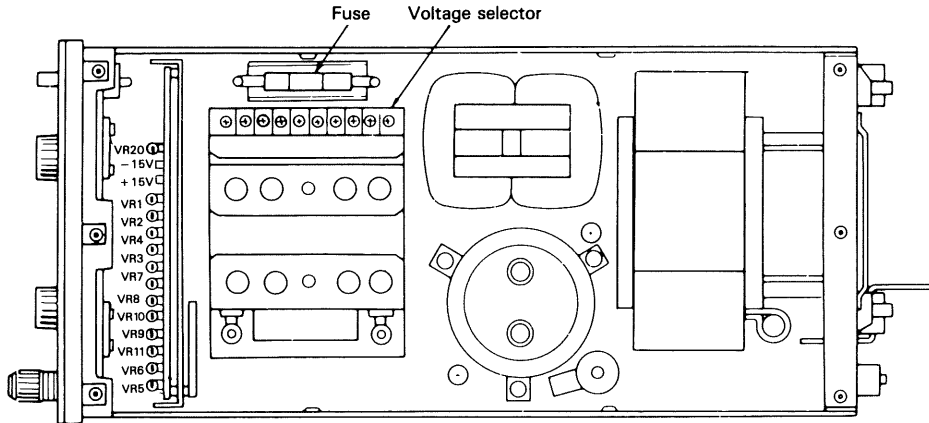


Fig. 5 Location of adj. control

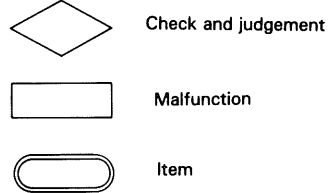
Current detecting resistor	10m Ω	50W, 0.1%	Note: With an electronic load (35 V, 30 A) for load (1) and (2), the adjustment may be easy.
Load (1)	0.1 Ω	300W, 5%	
Load (2)	5 Ω	150W, 5% (for PD18-30)	

TROUBLESHOOTING

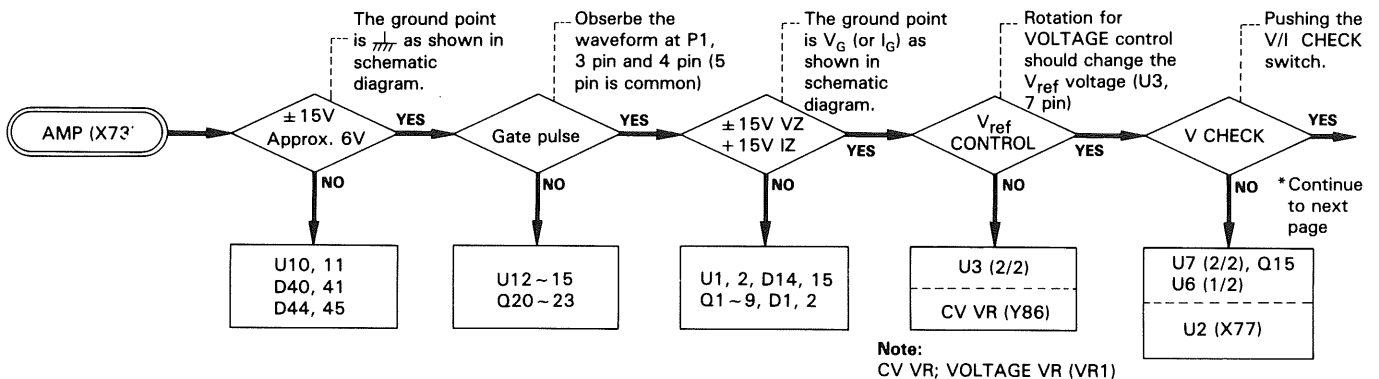
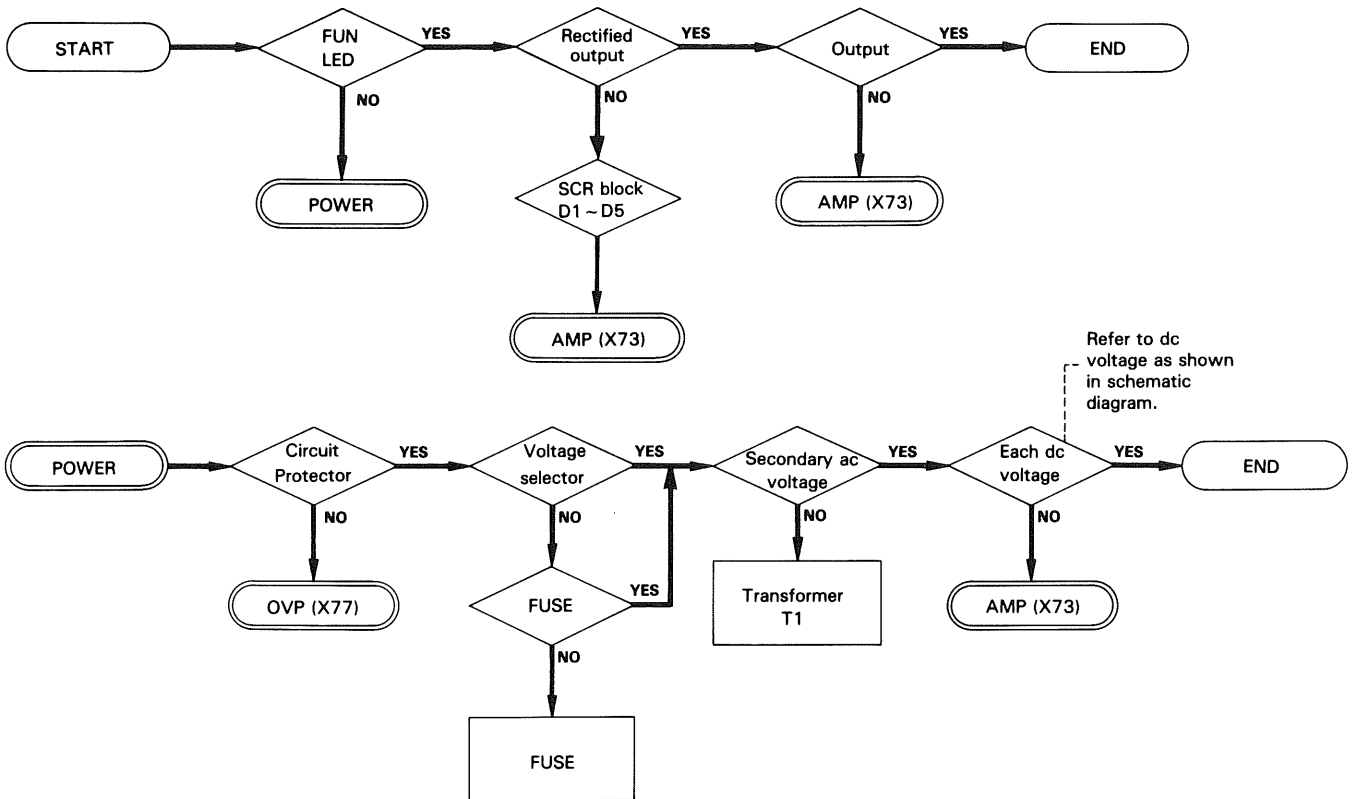
Index:

X86 ... Main chassis
 X73 ... X73-1550 (or X73-1560): AMP UNIT
 X77 ... X77-1400: OVP UNIT
 X81 ... X81-1980: C.I UNIT

Note:

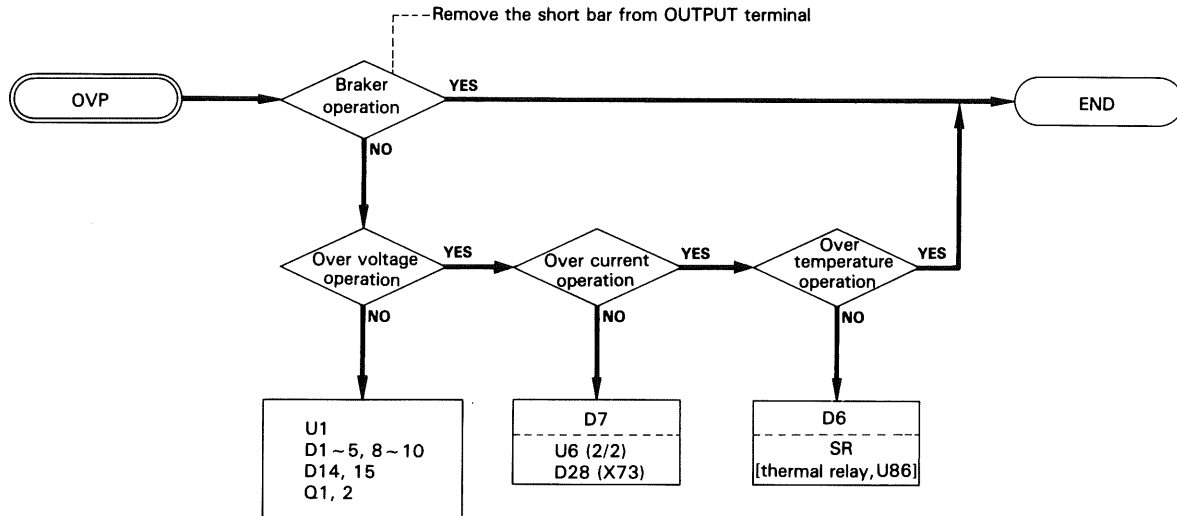
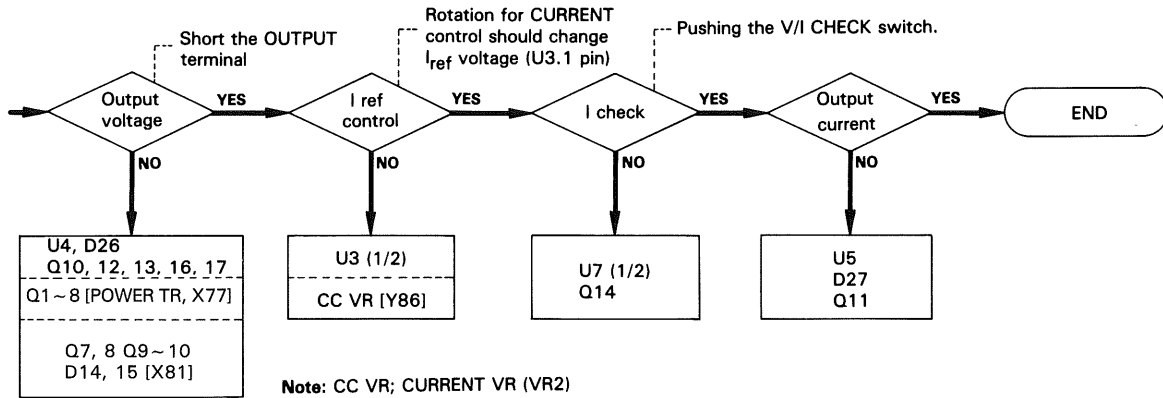


1. ANALOG METER SECTION



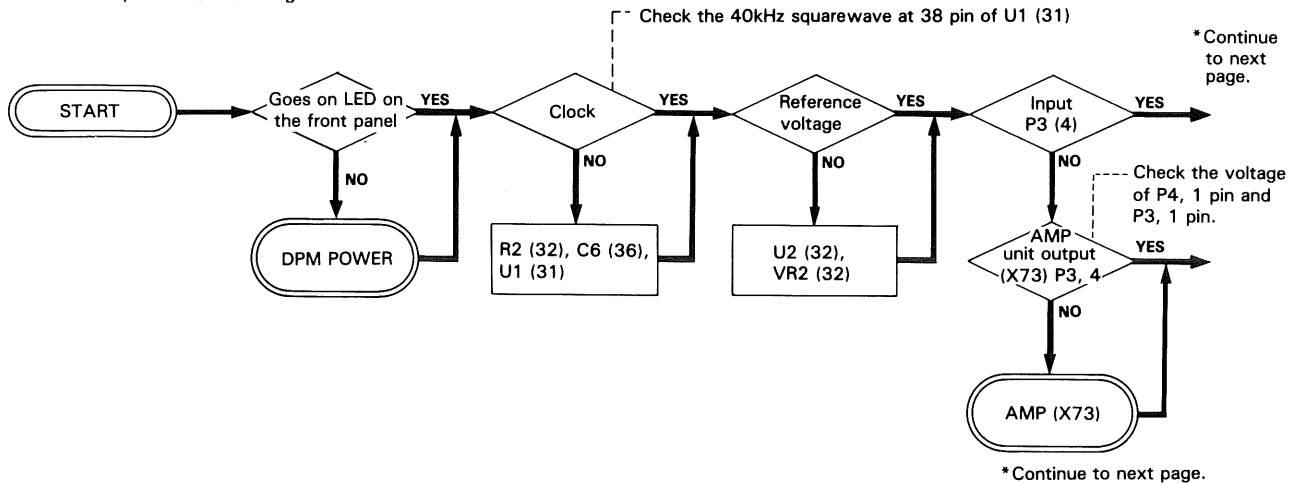
TROUBLESHOOTING

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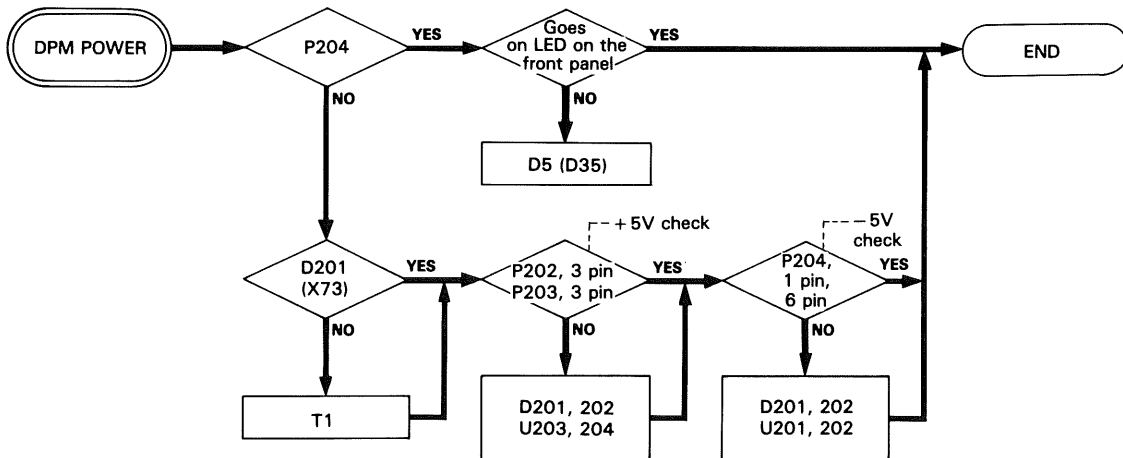
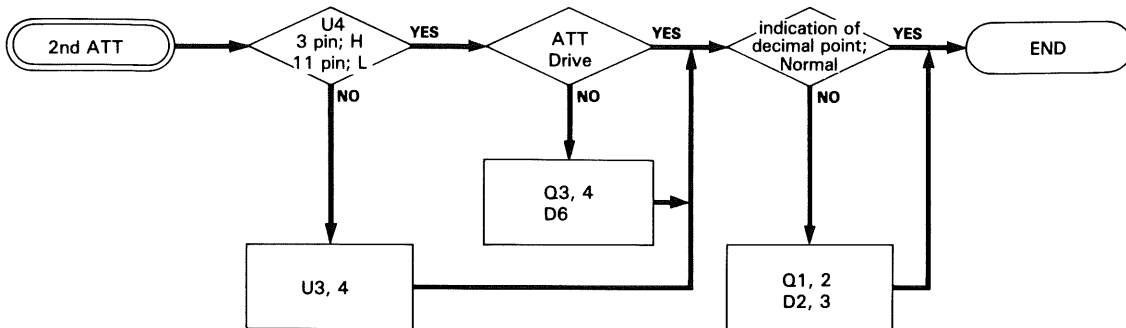
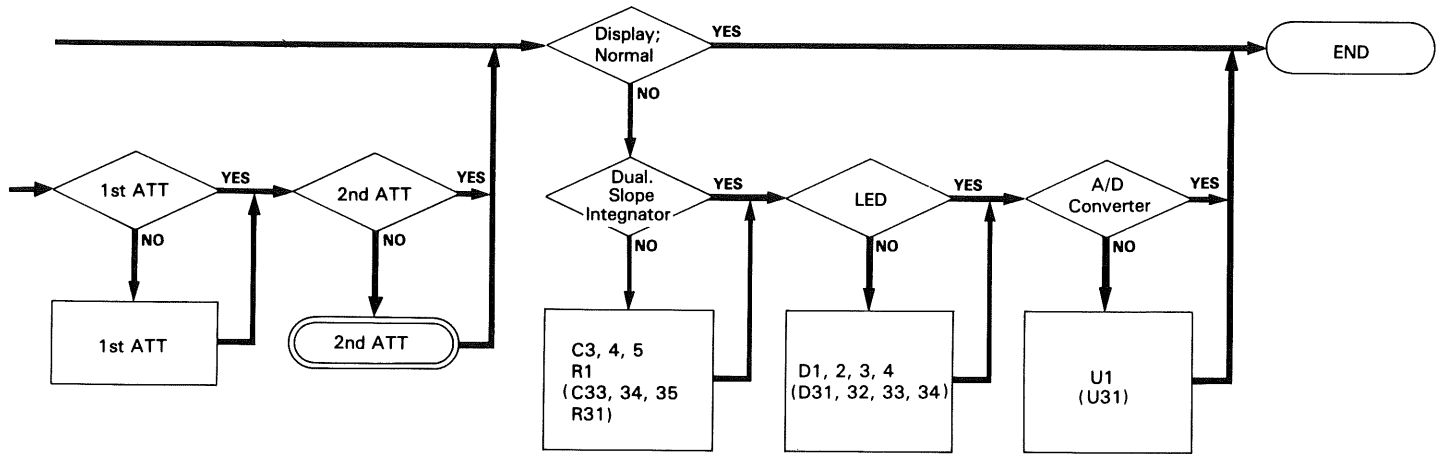
2. DIGITAL POWER METER SECTION

Power supply of P204; ±5V
P3, P4 full scale voltage



TROUBLESHOOTING

*Continue from front page.



PARTS LIST

PD8-20

Y86-1180-00

REF. NO	PARTS NO	NAME & DESCRIPTION
B31-0729-15	METER	
B41-0777-04	CAUTION LABEL	
B42-1930-04	LABEL (P.T)	
B50-7544-40	INSTRUCTION MANUAL;JAPANESE	
B50-7545-40	INSTRUCTION MANUAL;ENGLISH	
E18-0351-05	AC INLET	
E21-0663-04	EARTH TERMINAL	
E22-0181-05	LUG BOARD	
E23-0513-05	EARTH LUG,BNC	
E23-0520-05	EARTH LUG,TERMINAL	
E23-0541-05	EARTH LUG	
E23-0557-14	EARTH LUG,HEAT SINK	
E23-0564-05	EARTH LUG	
E30-1818-05	JIS POWER CORD SET	
E30-1819-15	IEC POWER CORD SET	
E30-1820-05	UL/CSA POWER CORD SET	
E30-1821-15	SAA POWER CODE SET	
E30-1929-05	BS POWER CORD	
F06-1031-05	FUSE(6.4X30MM) 10A/250V	
F06-4026-05	FUSE(6.4X30MM) 4A/250V	
F20-0642-04	INSULATOR	
H01-5772-24	CARTON BOX	
H10-2823-12	FOAMED STYRENE PAD (F)	
H10-2824-12	FOAMED STYRENE PAD (R)	
H19-0508-04	CARTON BOX,FOR AC CORD	
H21-0805-04	VINYL COVER	
H25-0029-04	POLYETHYLENE BAG,FUSE	
H25-0820-04	POLYETHYLENE BAG,AC COAD	
J13-0033-15	FUSE HOLDER	
J21-0392-04	HOLDER FOR OUTPUT LEAD	
J21-4503-04	BRACKET	
J21-4504-24	BRACKET	
J21-4561-04	BRACKET,FOR METER	
J21-4807-04	BRACKET	
J32-0876-05	BOSS	
J61-0525-05	CARD SPACER	
J61-0526-05	LOCKING CARD SPACER	
N09-0623-04	SCREW,SEMS PAN HD M3X8	
N09-0626-04	SCREW,SEMS PAN HD M3X10	
N09-0654-05	SCREW,SEMS PAN HD M4X8	
N09-0723-05	SCREW,SEMS PAN HD M5X10	
N09-0725-15	SCREW,SEMS PAN HD M4X12	
N09-0727-14	SCREW M6X14	
N09-0729-05	SCREW,SEMS PAN HD M4X60	
N09-0731-05	SCREW,SEMS PAN HD M3X12	
N09-0732-05	SCREW,TRUSS HD M5X8	
N09-0735-05	SCREW,SEMS PAN HD M4X6	
N09-0748-04	SCREW,SEMS PAN HD M4X12	
N09-0767-04	SCREW,SEMS PAN HD M3X16	
N14-0404-04	FLANGE NUT M3	
N14-0510-04	FLANGE NUT M6	
N14-0619-05	FLANGE NUT M10	
N14-0620-05	FLANGE NUT M4	
N19-0726-04	WASHER M5	
N30-3008-41	SCREW, PAN HD M3X8	
N30-4016-41	SCREW, PAN HD M4X16	
N32-3006-41	SCREW, FLAT HD M3X6	
N32-4016-41	SCREW, FLAT HD M4X16	
N33-4008-41	SCREW, OVAL HD M4X8	
C1 C90-0953-05	CAP. ELECTRO 68000	25V
C2 C90-0919-15	CAP. ELECTRO 1000	20% 50V
C3 C90-0920-05	CAP. ELECTRO 1000	20% 50V
C4 C91-0594-05	CAP. METALIZED 0.1	10% 250V
C5	NO USE	
C6 C91-0596-05	NOISE KILLER 0.2	20% 250V
C7 CF93AN2E334K	CAP. POLYESTER 0.33	10% 250V
C8 CF93AN2E334K	CAP. POLYESTER 0.33	10% 250V
C9 CF93AN2E334K	CAP. POLYESTER 0.33	10% 250V
C10 CE04EW1E101M	CAP. ELECTRO 100	20% 25V
C11 CE04EW1E101M	CAP. ELECTRO 100	20% 25V
D1 CQ08C	THYRISTOR	
D2 CQ08C	THYRISTOR	
D3 P20C	DIODE	
D4 P20C	DIODE	
D5 P19C	DIODE	
D6 P19C	DIODE	
D7 P19C	DIODE	
D8 AR4133S	LED;RED	
D9 AR4133S	LED;RED	
D10 BG4133S	LED;GREEN	
D11 TNR15G431K	VARISTOR	
P1 E10-1061-05	EDGE CARD CONNECTOR	
P2 E10-3661-05	EDGE CARD CONNECTOR	
R10 R92-1194-05	RES. FIXED 25M	5% 40W
R11 RD14DB3A330J	RES. CARBON 33	5% 1W

REF. NO	PARTS NO	NAME & DESCRIPTION
R12	RD14DB3A330J	RES. CARBON 33 5% 1W
R13	RD14DB3A330J	RES. CARBON 33 5% 1W
S1	S59-1501-15	CIRCUIT PROTECTOR
T1	L01-9494-25	POWER TRANSFORMER
T2	L15-0406-05	LOW-FREQUENCY CHOKE COIL
VR1	R29-0505-05	V. R. 10K
VR2	R05-3511-05	V. R. 10K
1	A01-1149-13	CASE
2	A10-1445-22	CHASSIS
3	A20-2775-25	DIECAST PANEL
4	A21-1062-03	DECORATIVE PANEL
5	B07-0713-04	ESCUTCHEON
6	B40-2765-04	SERIAL NO. PLATE
7	B40-2840-03	NAME PLATE
8	E20-0491-05	TERMINAL BLOCK 4P
9	E20-1291-15	TERMINAL BLOCK 12P
10	E21-0661-13	TERMINAL,RED
11	E21-0662-13	TERMINAL,BLACK
12	E29-0535-04	SHORTING BAR
13	E29-0536-14	SHORTING BAR (CONTROL TERM.)
14	E29-0537-14	SHORTING BAR (REAR OUTPUT)
15	E29-0538-04	OUTPUT TERMINAL,REAR
16	F01-0841-04	HEAT SINK
17	F01-0842-04	HEAT SINK
18	F01-0898-03	HEAT SINK
20	F19-0712-05	CAP FOR DP-652
21	F29-0501-05	TERMINAL CAP
22	J02-0049-14	LEG
23	J11-0504-05	CLAMPER
24	J21-2912-05	HOLDER FOR LED
25	J21-2948-04	BRACKET,RIGHT
26	J21-2949-04	BRACKET,LEFT
27	J21-2999-04	BRACKET,FOR HEAT SINK
28	J21-3000-04	BRACKET,FOR HEAT SINK
31	J21-4509-34	BRACKET,FOR HEAT SINK
33	J21-4570-23	BRACKET,FOR PCB
34	K01-0545-05	HANDLE
35	K21-0877-13	KNOB
36	K27-0528-14	KNOB,FOR PUSH SW
37	S51-1518-05	THERMAL SENSOR
38	T40-0421-05	FAN MOTOR
39	X73-1550-03	AMPLIFIER UNIT
41	X77-1400-02	OVV UNIT
42	X77-1810-00	CONTROL UNIT
43	X81-1980-03	C. I UNIT

PD8-20D

Y86-1200-00

REF. NO	PARTS NO	NAME & DESCRIPTION
B19-0738-13	FILTER	
B41-0777-04	CAUTION LABEL	
B50-7544-40	INSTRUCTION MANUAL;JAPANESE	
B50-7545-40	INSTRUCTION MANUAL;ENGLISH	
E18-0351-05	AC INLET	
E21-0663-04	EARTH TERMINAL	
E22-0181-05	LUG BOARD	
E23-0513-05	EARTH LUG,BNC	
E23-0520-05	EARTH LUG,TERMINAL	
E23-0541-05	EARTH LUG	
E23-0557-14	EARTH LUG,HEAT SINK	
E23-0564-05	EARTH LUG	
E30-1818-05	JIS POWER CORD SET	
E30-1819-15	IEC POWER CORD SET	
E30-1820-05	UL/CSA POWER CORD SET	
E30-1821-15	SAA POWER CODE SET	
E30-1929-05	BS POWER CORD	
F06-1031-05	FUSE(6.4X30MM) 10A/250V	
F06-4026-05	FUSE(6.4X30MM) 4A/250V	
F20-0642-04	INSULATOR	
F20-0647-05	INSULATOR	
H01-5776-24	CARTON BOX	
H10-2823-12	FOAMED STYRENE PAD (F)	
H10-2824-12	FOAMED STYRENE PAD (R)	
H19-0508-04	CARTON BOX,FOR AC CORD	
H21-0805-04	VINYL COVER	
H25-0029-04	POLYETHYLENE BAG,FUSE	
H25-0820-04	POLYETHYLENE BAG,AC COAD	
J13-0033-15	FUSE HOLDER	
J21-0392-04	HOLDER FOR OUTPUT LEAD	
J21-4503-04	BRACKET	
J21-4504-24	BRACKET	

PARTS LIST

REF. NO	PARTS NO	NAME & DESCRIPTION
	J21-4807-04	BRACKET
	J61-0525-05	CARD SPACER
	J61-0526-05	LOCKING CARD SPACER
	N09-0623-04	SCREW,SEMS PAN HD M3X8
	N09-0626-04	SCREW,SEMS PAN HD M3X10
	N09-0654-05	SCREW,SEMS PAN HD M4X8
	N09-0723-05	SCREW,SEMS PAN HD M5X10
	N09-0725-15	SCREW,SEMS PAN HD M4X12
	N09-0727-14	SCREW M6X14
	N09-0729-05	SCREW,SEMS PAN HD M4X60
	N09-0731-05	SCREW,SEMS PAN HD M3X12
	N09-0732-05	SCREW,TRUSS HD M5X8
	N09-0735-05	SCREW,SEMS PAN HD M4X6
	N09-0748-04	SCREW,SEMS PAN HD M4X12
	N09-0767-04	SCREW,SEMS PAN HD M3X16
	N14-0404-04	FLANGE NUT M3
	N14-0510-04	FLANGE NUT M6
	N14-0619-05	FLANGE NUT M10
	N14-0620-05	FLANGE NUT M4
	N19-0191-05	INSULATED WASHER, FOR TR.
	N19-0726-04	WASHER M5
	N30-3008-41	SCREW, PAN HD M3X8
	N32-3006-41	SCREW, FLAT HD M3X6
	N32-3008-41	SCREW, FLAT HD M3X8
	N32-4016-41	SCREW, FLAT HD M4X16
	N33-4008-41	SCREW, OVAL HD M4X8
C1	C90-0953-05	CAP. ELECTRO 68000 25V
C2	C90-0919-15	CAP. ELECTRO 1000 20% 50V
C3	C90-0920-05	CAP. ELECTRO 1000 20% 50V
C4	C91-0594-05	CAP. METALIZED 0.1 10% 250V
C5		NO USE
C6	C91-0596-05	NOISE KILLER 0.2 20% 250V
C7	CF93AN2E334K	CAP. POLYESTER 0.33 10% 250V
C8	CF93AN2E334K	CAP. POLYESTER 0.33 10% 250V
C9	CF93AN2E334K	CAP. POLYESTER 0.33 10% 250V
C10	CE04EW1E101M	CAP. ELECTRO 100 20% 25V
C11	CE04EW1E101M	CAP. ELECTRO 100 20% 25V
D1	CQ08C	THYRISTOR
D2	CQ08C	THYRISTOR
D3	P20C	DIODE
D4	P20C	DIODE
D5	P19C	DIODE
D6	P19C	DIODE
D7	P19C	DIODE
D8	AR4133S	LED;RED
D9	AR4133S	LED;RED
D10	BG4133S	LED;GREEN
D11	TNR15G431K	VARIATOR
P1	E10-1061-05	EDGE CARD CONNECTOR
P2	E10-3661-05	EDGE CARD CONNECTOR
R10	R92-1194-05	RES. FIXED 25K 5% 40W
R11	RD14DB3A330J	RES. CARBON 33 5% 1W
R12	RD14DB3A330J	RES. CARBON 33 5% 1W
R13	RD14DB3A330J	RES. CARBON 33 5% 1W
S1	S59-1501-15	CIRCUIT PROTECTOR
T1	L01-9494-25	POWER TRANSFORMER
T2	L15-0406-05	LOW-FREQUENCY CHOKE COIL
U203	UPC7805H	IC, VOLTAGE REGULATOR
U204	UPC7805H	IC, VOLTAGE REGULATOR
VR1	R29-0505-05	V. R. 10K
VR2	R05-3511-05	V. R. 10K
1	A01-1149-13	CASE
2	A10-1445-22	CHASSIS
3	A20-2775-25	DIECAST PANEL
4	A21-1065-03	DECORATIVE PANEL
5	B07-0713-04	ESCUTCHEON
6	B40-2765-04	SERIAL NO. PLATE
7	B40-2844-03	NAME PLATE
8	E20-0491-05	TERMINAL BLOCK 4P
9	E20-1291-15	TERMINAL BLOCK 12P
10	E21-0661-13	TERMINAL,RED
11	E21-0662-13	TERMINAL,BLACK
12	E29-0535-04	SHORTING BAR
13	E29-0536-14	SHORTING BAR (CONTROL TERM.)
14	E29-0537-14	SHORTING BAR (REAR OUTPUT)
15	E29-0538-04	OUTPUT TERMINAL,REAR
16	F01-0841-04	HEAT SINK
17	F01-0842-04	HEAT SINK
18	F01-0898-03	HEAT SINK
19	F07-0928-05	METER COVER
20	F19-0712-05	CAP FOR DP-652
21	F29-0501-05	TERMINAL CAP
22	J02-0049-14	LEG
23	J11-0504-05	CLAMPER
24	J21-2912-05	HOLDER FOR LED
25	J21-2948-04	BRACKET,RIGHT

REF. NO	PARTS NO	NAME & DESCRIPTION
26	J21-2948-04	BRACKET,LEFT
27	J21-2999-04	BRACKET,FOR HEAT SINK
28	J21-3000-04	BRACKET,FOR HEAT SINK
31	J21-4509-34	BRACKET,FOR HEAT SINK
32	J21-4513-03	BRACKET,FOR PCB
33	J21-4570-23	BRACKET,FOR PCB
34	K01-0545-05	HANDLE
35	K21-0877-13	KNOB
36	K27-0528-14	KNOB,FOR PUSH SW
37	S51-1518-05	THERMAL SENSOR
38	T40-0421-05	FAN MOTOR
39	X73-1560-03	AMP UNIT
40	X76-1260-03	DCM UNIT
41	X77-1400-02	OVV UNIT
42	X77-1810-00	CONTROL UNIT
43	X81-1980-03	C. I UNIT

PD8-30

Y86-1190-00

REF. NO	PARTS NO	NAME & DESCRIPTION
	B41-0779-04	CAUTION LABEL
	B42-1930-04	LABEL (P.T)
	B50-7544-40	INSTRUCTION MANUAL;JAPANESE
	B50-7545-40	INSTRUCTION MANUAL;ENGLISH
	E18-0363-05	INLET SOCKET
	E21-0663-04	EARTH TERMINAL
	E22-0181-05	LUG BOARD
	E23-0513-05	EARTH LUG,BNC
	E23-0520-05	EARTH LUG,TERMINAL
	E23-0557-14	EARTH LUG,HEAT SINK
	E23-0564-05	EARTH LUG
	E30-1819-15	IEC POWER CORD SET
	E30-1821-15	SAA POWER CODE SET
	E30-1873-05	JIS POWER CORD SET
	E30-1881-05	UL/CSA POWER CORD SET
	E30-1929-05	BS POWER CORD
	E38-0583-05	WIRE ASS'Y
	F05-1536-05	FUSE(6.4X30MM) 15A/250V
	F05-6028-05	FUSE(6.4X30MM) 6A/250V
	F20-0642-04	INSULATOR
	H01-5774-24	CARTON BOX
	H10-2823-12	FOAMED STYRENE PAD (F)
	H10-2824-12	FOAMED STYRENE PAD (R)
	H19-0508-04	CARTON BOX,FOR AC CORD
	H21-0805-04	VINYL COVER
	H25-0029-04	POLYETHYLENE BAG,FUSE
	H25-0820-04	POLYETHYLENE BAG,AC COAD
	J13-0506-05	FUSE HOLDER
	J21-0392-04	HOLDER FOR OUTPUT LEAD
	J21-4561-04	BRACKET,FOR METER
	J21-4563-04	BRACKET,FOR CONNECTOR
	J21-4808-04	BRACKET
	J32-0876-05	BOSS
	J61-0525-05	CARD SPACER
	J61-0526-05	LOCKING CARD SPACER
	N09-0623-04	SCREW,SEMS PAN HD M3X8
	N09-0626-04	SCREW,SEMS PAN HD M3X10
	N09-0654-05	SCREW,SEMS PAN HD M4X8
	N09-0718-05	SCREW,SEMS PAN HD M3X6
	N09-0723-05	SCREW,SEMS PAN HD M5X10
	N09-0725-15	SCREW,SEMS PAN HD M4X12
	N09-0727-14	SCREW M6X14
	N09-0729-05	SCREW,SEMS PAN HD M4X60
	N09-0731-05	SCREW,SEMS PAN HD M3X12
	N09-0732-05	SCREW,TRUSS HD M5X8
	N09-0748-04	SCREW,SEMS PAN HD M4X12
	N09-0767-04	SCREW,SEMS PAN HD M3X16
	N10-2030-41	NUT, HEX M3
	N14-0404-04	FLANGE NUT M3
	N14-0510-04	FLANGE NUT M6
	N14-0619-05	FLANGE NUT M10
	N14-0620-05	FLANGE NUT M4
	N14-0627-05	SPRING NUT M4
	N17-1030-41	LOCK WASHER M3
	N19-0198-04	WASHER M4
	N19-0726-04	WASHER M5
	N30-3008-41	SCREW, PAN HD M3X8
	N30-4016-41	SCREW, PAN HD M4X16
	N32-3006-41	SCREW, FLAT HD M3X6
	N32-4016-41	SCREW, FLAT HD M4X16
	N33-4008-41	SCREW, OVAL HD M4X8
C1	C90-0952-05	CAP. ELECTRO 150000 25V
C2	C90-0919-15	CAP. ELECTRO 1000 20% 50V
C3	C90-0920-05	CAP. ELECTRO 1000 20% 50V
C4	C91-0594-05	CAP. METALIZED 0.1 10% 250V

PARTS LIST

REF. NO	PARTS NO	NAME & DESCRIPTION
C5	NO USE	
C6	C91-0596-05	NOISE KILLER 0.2 20% 250V
C7	CF93AN2E334K	CAP. POLYESTER 0.33 10% 250V
C8	CF93AN2E334K	CAP. POLYESTER 0.33 10% 250V
C9	CF93AN2E334K	CAP. POLYESTER 0.33 10% 250V
C10	CE04EW1E101M	CAP. ELECTRO 100 20% 25V
C11	CE04EW1E101M	CAP. ELECTRO 100 20% 25V
D1	CP08C	SCR
D2	CP08C	SCR
D3	P20C	DIODE
D4	P20C	DIODE
D5	P19C	DIODE
D6	P19C	DIODE
D7	P19C	DIODE
D8	AR4133S	LED;RED
D9	AR4133S	LED;RED
D10	BG4133S	LED;GREEN
D11	TNR15G431K	VARISTOR
M1	B31-0728-15	METER
M2	B31-0728-15	METER
P1	E10-1061-05	EDGE CARD CONNECTOR
P2	E10-3661-05	EDGE CARD CONNECTOR
R10	R92-1074-05	RES. WIRE-WOUND 0.012 5% 40W
R11	RD14DB3A330J	RES. CARBON 33 5% 1W
R12	RD14DB3A330J	RES. CARBON 33 5% 1W
R13	RD14DB3A330J	RES. CARBON 33 5% 1W
S1	S59-1501-15	CIRCUIT PROTECTOR
T1	L01-9484-25	POWER TRANSFORMER
T2	L15-0405-05	LOW-FREQUENCY CHOKE COIL
VR1	R29-0505-05	V. R. 10K
VR2	R05-3511-05	V. R. 10K
1	A01-1125-23	CASE
2	A10-1439-72	CHASSIS
3	A20-2775-25	DIECAST PANEL
4	A21-1062-03	DECORATIVE PANEL
5	B07-0713-04	ESCUTCHEON
6	B40-2765-04	SERIAL NO. PLATE
7	B40-2842-03	NAME PLATE
8	E20-0491-05	TERMINAL BLOCK 4P
9	E20-1291-15	TERMINAL BLOCK 12P
10	E21-0661-13	TERMINAL, RED
11	E21-0662-13	TERMINAL, BLACK
12	E29-0535-04	SHORTING BAR
13	E29-0536-14	SHORTING BAR (CONTROL TERM.)
14	E29-0537-14	SHORTING BAR (REAR OUTPUT)
15	E29-0538-04	OUTPUT TERMINAL, REAR
16	F01-0841-04	HEAT SINK
17	F01-0842-04	HEAT SINK
18	F01-0899-13	HEAT SINK
20	F19-0712-05	CAP FOR DP-652
21	F29-0501-05	TERMINAL CAP
22	J02-0049-14	LEG
23	J11-0504-05	CLAMPER
24	J21-2912-05	HOLDER FOR LED
25	J21-2948-04	BRACKET, RIGHT
26	J21-2949-04	BRACKET, LEFT
27	J21-2996-04	BRACKET FOR HEAT SINK
28	J21-2997-04	BRACKET FOR HEAT SINK
29	J21-4501-04	BRACKET
30	J21-4502-04	BRACKET
31	J21-4509-34	BRACKET, FOR HEAT SINK
33	J21-4570-23	BRACKET, FOR PCB
34	K01-0545-05	HANDLE
35	K21-0877-13	KNOB
36	K27-0528-14	KNOB, FOR PUSH SW
37	S51-1518-05	THERMAL SENSOR
38	T40-0421-05	FAN MOTOR
39	X73-1550-04	AMP UNIT
41	X77-1400-02	OVV UNIT
42	X77-1810-01	CONTROL UNIT
43	X81-1980-04	C.I UNIT

PD8-30D

Y86-1210-00

REF. NO	PARTS NO	NAME & DESCRIPTION
	B19-0738-13	FILTER
	B42-1930-04	LABEL (P.T)
	B50-7544-40	INSTRUCTION MANUAL; JAPANESE
	B50-7545-40	INSTRUCTION MANUAL; ENGLISH
	E21-0663-04	EARTH TERMINAL
	E22-0181-05	LUG BOARD
	E23-0513-05	EARTH LUG, BNC
	E23-0520-05	EARTH LUG, TERMINAL
	E23-0557-14	EARTH LUG, HEAT SINK
	E23-0564-05	EARTH LUG
	E30-1819-15	IEC POWER CORD SET
	E30-1821-15	SAA POWER CODE SET
	E30-1873-05	JIS POWER CORD SET
	E30-1881-05	UL/CSA POWER CORD SET
	E30-1929-05	BS POWER CORD
	F05-1536-05	FUSE (6.4X30MM) 15A/250V
	F05-6028-05	FUSE (6.4X30MM) 6A/250V
	F20-0642-04	INSULATOR
	F20-0647-05	INSULATOR
	H01-5778-24	CARTON BOX
	H10-2823-12	FOAMED STYRENE PAD (F)
	H10-2824-12	FOAMED STYRENE PAD (R)
	H19-0508-04	CARTON BOX, FOR AC CORD
	H21-0805-04	VINYL COVER
	H25-0029-04	POLYETHYLENE BAG, FUSE
	H25-0820-04	POLYETHYLENE BAG, AC COAD
	J13-0506-05	FUSE HOLDER
	J21-0392-04	HOLDER FOR OUTPUT LEAD
	J21-4563-04	BRACKET, FOR CONNECTOR
	J21-4808-04	BRACKET
	J32-0876-05	BOSS
	J61-0049-05	WIRE BAND
	J61-0525-05	CARD SPACER
	J61-0526-05	LOCKING CARD SPACER
	N09-0623-04	SCREW, SEMS PAN HD M3X8
	N09-0626-04	SCREW, SEMS PAN HD M3X10
	N09-0654-05	SCREW, SEMS PAN HD M4X8
	N09-0718-05	SCREW, SEMS PAN HD M3X6
	N09-0723-05	SCREW, SEMS PAN HD M5X10
	N09-0725-15	SCREW, SEMS PAN HD M4X12
	N09-0727-14	SCREW M6X14
	N09-0729-05	SCREW, SEMS PAN HD M4X60
	N09-0731-05	SCREW, SEMS PAN HD M3X12
	N09-0732-05	SCREW, TRUSS HD M5X8
	N09-0748-04	SCREW, SEMS PAN HD M4X12
	N09-0767-04	SCREW, SEMS PAN HD M3X16
	N10-2030-40	NUT, HEX M7X0.75
	N14-0404-04	FLANGE NUT M3
	N14-0510-04	FLANGE NUT M6
	N14-0619-05	FLANGE NUT M10
	N14-0620-05	FLANGE NUT M4
	N14-0627-05	SPRING NUT M4
	N17-1030-41	LOCK WASHER M3
	N19-0191-05	INSULATED WASHER, FOR TR.
	N19-0198-04	WASHER M4
	N19-0726-04	WASHER M5
	N30-3008-41	SCREW, PAN HD M3X8
	N32-3006-41	SCREW, FLAT HD M3X6
	N32-3008-41	SCREW, FLAT HD M3X8
	N32-4016-41	SCREW, FLAT HD M4X16
	N33-4008-41	SCREW, OVAL HD M4X8
C1	C90-0952-05	CAP. ELECTRO 150000 25V
C2	C90-0919-15	CAP. ELECTRO 1000 20% 50V
C3	C90-0920-05	CAP. ELECTRO 1000 20% 50V
C4	C91-0594-05	CAP. METALIZED 0.1 10% 250V
C5	NO USE	
C6	C91-0596-05	NOISE KILLER 0.2 20% 250V
C7	CF93AN2E334K	CAP. POLYESTER 0.33 10% 250V
C8	CF93AN2E334K	CAP. POLYESTER 0.33 10% 250V
C9	CF93AN2E334K	CAP. POLYESTER 0.33 10% 250V
C10	CE04EW1E101M	CAP. ELECTRO 100 20% 25V
C11	CE04EW1E101M	CAP. ELECTRO 100 20% 25V
D1	CP08C	SCR
D2	CP08C	SCR
D3	P20C	DIODE
D4	P20C	DIODE
D5	P19C	DIODE
D6	P19C	DIODE
D7	P19C	DIODE
D8	AR4133S	LED;RED
D9	AR4133S	LED;RED
D10	BG4133S	LED;GREEN
D11	TNR15G431K	VARISTOR
P1	E10-1061-05	EDGE CARD CONNECTOR
P2	E10-3661-05	EDGE CARD CONNECTOR

PARTS LIST

REF. NO	PARTS NO	NAME & DESCRIPTION
R10	R92-1074-05	RES. WIRE-WOUND 0.012 5% 40W
R11	RD14DB3A330J	RES. CARBON 33 5% 1W
R12	RD14DB3A330J	RES. CARBON 33 5% 1W
R13	RD14DB3A330J	RES. CARBON 33 5% 1W
S1	S59-1501-15	CIRCUIT PROTECTOR
T1	L01-9484-25	POWER TRANSFORMER
T2	L15-0405-05	LOW-FREQUENCY CHOKE COIL
U203	UPC7805H	IC, VOLTAGE REGULATOR
U204	UPC7805H	IC, VOLTAGE REGULATOR
VR1	R29-0505-05	V. R. 10K
VR2	R05-3511-05	V. R. 10K
1	A01-1125-23	CASE
2	A10-1439-72	CHASSIS
3	A20-2775-25	DIECAST PANEL
4	A21-1065-03	DECORATIVE PANEL
5	B07-0713-04	ESCUTCHEON
6	B40-2765-04	SERIAL NO. PLATE
7	B40-2846-03	NAME PLATE
8	E20-0491-05	TERMINAL BLOCK 4P
9	E20-1291-15	TERMINAL BLOCK 12P
10	E21-0661-13	TERMINAL, RED
11	E21-0662-13	TERMINAL, BLACK
12	E29-0535-04	SHORTING BAR
13	E29-0536-14	SHORTING BAR (CONTROL TERM.)
14	E29-0537-14	SHORTING BAR (REAR OUTPUT)
15	E29-0538-04	OUTPUT TERMINAL, REAR
16	F01-0841-04	HEAT SINK
17	F01-0842-04	HEAT SINK
18	F01-0899-13	HEAT SINK
19	F07-0928-05	METER COVER
20	F19-0712-05	CAP FOR DP-652
21	F29-0501-05	TERMINAL CAP
22	J02-0049-14	LEG
23	J11-0504-05	CLAMPER
24	J21-2912-05	HOLDER FOR LED
25	J21-2948-04	BRACKET, RIGHT
26	J21-2949-04	BRACKET, LEFT
27	J21-2996-04	BRACKET FOR HEAT SINK
28	J21-2997-04	BRACKET FOR HEAT SINK
29	J21-4501-04	BRACKET
30	J21-4502-04	BRACKET
31	J21-4509-34	BRACKET, FOR HEAT SINK
32	J21-4513-03	BRACKET, FOR PCB
33	J21-4570-23	BRACKET, FOR PCB
34	K01-0545-05	HANDLE
35	K21-0877-13	KNOB
36	K27-0528-14	KNOB, FOR PUSH SW
37	S51-1518-05	THERMAL SENSOR
38	T40-0421-05	FAN MOTOR
39	X73-1560-04	AMP UNIT
40	X76-1260-04	DPH UNIT
41	X77-1400-02	OVP UNIT
42	X77-1810-01	CONTROL UNIT
43	X81-1980-04	C. I UNIT

REF. NO	PARTS NO	NAME & DESCRIPTION
	H01-5738-24	CARTON BOX
	H10-2823-12	FOAMED STYRENE PAD (F)
	H10-2824-12	FOAMED STYRENE PAD (R)
	H19-0508-04	CARTON BOX, FOR AC CORD
	J13-0504-05	FUSE HOLDER
	J21-0392-04	HOLDER FOR OUTPUT LEAD
	J21-4503-04	BRACKET
	J21-4504-24	BRACKET
	J21-4561-04	BRACKET, FOR METER
	J21-4563-04	BRACKET, FOR CONNECTOR
	J21-4807-04	BRACKET
	J32-0876-05	BOSS
	J61-0525-05	CARD SPACER
	J61-0526-05	LOCKING CARD SPACER
	N09-0623-04	SCREW, SEMS PAN HD M3X8
	N09-0626-04	SCREW, SEMS PAN HD M3X10
	N09-0654-05	SCREW, SEMS PAN HD M4X8
	N09-0723-05	SCREW, SEMS PAN HD M5X10
	N09-0725-15	SCREW, SEMS PAN HD M4X12
	N09-0727-14	SCREW M6X14
	N09-0729-05	SCREW, SEMS PAN HD M4X60
	N09-0731-05	SCREW, SEMS PAN HD M3X12
	N09-0732-05	SCREW, TRUSS HD M5X8
	N09-0748-04	SCREW, SEMS PAN HD M4X12
	N09-0767-04	SCREW, SEMS PAN HD M3X16
	N10-2030-41	NUT, HEX M3
	N14-0404-04	FLANGE NUT M3
	N14-0510-04	FLANGE NUT M6
	N14-0618-05	HEXAGON CAP NUT M4
	N14-0619-05	FLANGE NUT M10
	N14-0620-05	FLANGE NUT M4
	N14-0627-05	SPRING NUT M4
	N15-1030-41	PLAIN WASHER M3
	N17-1030-41	LOCK WASHER M3
	N19-0198-04	WASHER M4
	N30-3008-41	SCREW, PAN HD M3X8
	N30-4012-41	SCREW, PAN HD M4X12
	N30-4016-41	SCREW, PAN HD M4X16
	N32-3006-41	SCREW, FLAT HD M3X6
	N32-4016-41	SCREW, FLAT HD M4X16
	N33-4008-41	SCREW, OVAL HD M4X8
C1	C90-0921-05	CAP. ELECTRO 68000 35V
C2	C90-0919-15	CAP. ELECTRO 1000 20% 50V
C3	C90-0920-05	CAP. ELECTRO 1000 20% 50V
C4	C91-0594-05	CAP. METALIZED 0.1 10% 250V
C5		NO USE
C6	C91-0596-05	NOISE KILLER 0.2 20% 250V
C7	CF93AN2E334K	CAP. POLYESTER 0.33 10% 250V
C8	CF93AN2E334K	CAP. POLYESTER 0.33 10% 250V
C9	CF93AN2E334K	CAP. POLYESTER 0.33 10% 250V
C10	CE04EW1E101M	CAP. ELECTRO 100 20% 25V
C11	CE04EW1E101M	CAP. ELECTRO 100 20% 25V
D1	CQ08C	THYRISTOR
D2	CQ08C	THYRISTOR
D3	P20C	DIODE
D4	P20C	DIODE
D5	P19C	DIODE
D6	P19C	DIODE
D7	P19C	DIODE
D8	AR4133S	LED; RED
D9	AR4133S	LED; RED
D10	BG4133S	LED; GREEN
D11	TNR15G431K	VARIATOR
M1	B31-0727-15	METER
M2	B31-0727-15	METER
R10	R92-1075-05	RES. WIRE-WOUND 0.025 5% 40W
R11	RS14AB3A330J	RES. METAL FILM 33 5% 1W
R12	RS14AB3A330J	RES. METAL FILM 33 5% 1W
R13	RS14AB3A330J	RES. METAL FILM 33 5% 1W
R14	RW26G3K471K	RES. WIRE-WOUND 470 10% 10W
S1	S59-1501-15	CIRCUIT PROTECTOR
T1	L01-9416-25	POWER TRANSFORMER
T2	L15-0402-05	CHOKE COIL
VR1	R29-0505-05	V. R. 10K
VR2	R05-3511-05	V. R. 10K
1	A01-1124-23	CASE
2	A10-1440-62	CHASSIS
3	A20-2775-25	DIECAST PANEL
4	A21-1062-03	DECORATIVE PANEL
5	B07-0713-04	ESCUTCHEON
6	B40-2765-04	SERIAL NO. PLATE
7	B40-2807-13	NAME PLATE
10	E21-0661-13	TERMINAL, RED
11	E21-0662-13	TERMINAL, BLACK
12	E29-0535-04	SHORTING BAR
13	E29-0536-14	SHORTING BAR (CONTROL TERM.)
14	E29-0537-14	SHORTING BAR (REAR OUTPUT)

PD18-20

Y86-1120-00

REF. NO	PARTS NO	NAME & DESCRIPTION
	B41-0767-04	CAUTION LABEL
	B42-1930-04	LABEL (P. T)
	B50-7544-40	INSTRUCTION MANUAL; JAPANESE
	B50-7545-40	INSTRUCTION MANUAL; ENGLISH
	E10-1061-05	EDGE CARD CONNECTOR
	E10-3661-05	EDGE CARD CONNECTOR
	E18-0363-05	INLET SOCKET
	E20-0491-05	TERMINAL BLOCK 4P
	E20-1291-05	TERMINAL BLOCK 12P
	E21-0663-04	EARTH TERMINAL
	E22-0181-05	LUG BOARD
	E23-0513-05	EARTH LUG, BNC
	E23-0520-05	EARTH LUG, TERMINAL
	E23-0541-05	EARTH LUG
	E23-0557-14	EARTH LUG, HEAT SINK
	E23-0564-05	EARTH LUG
	E30-1819-15	IEC POWER CORD SET
	E30-1821-15	SAA POWER CODE SET
	E30-1873-05	JIS POWER CORD SET
	E30-1881-05	UL/CSA POWER CORD SET
	E30-1929-05	BS POWER CORD
	F05-1535-05	FUSE (10X38MM) 15A/250V
	F06-8021-05	FUSE (10X38MM) 8A/250V
	F20-0642-04	INSULATOR

PARTS LIST

REF. NO	PARTS NO	NAME & DESCRIPTION
15	E29-0538-04	OUTPUT TERMINAL, REAR
16	F01-0841-04	HEAT SINK
17	F01-0842-04	HEAT SINK
18	F01-0898-03	HEAT SINK
20	F19-0712-05	CAP FOR DP-652
21	F29-0501-05	TERMINAL CAP
22	J02-0049-14	LEG
23	J11-0504-05	CLAMPER
24	J21-2912-05	HOLDER FOR LED
25	J21-2948-04	BRACKET, RIGHT
26	J21-2949-04	BRACKET, LEFT
27	J21-2999-04	BRACKET, FOR HEAT SINK
28	J21-3000-04	BRACKET, FOR HEAT SINK
31	J21-4509-34	BRACKET, FOR HEAT SINK
33	J21-4570-23	BRACKET, FOR PCB
34	K01-0545-05	HANDLE
35	K21-0877-13	KNOB
36	K27-0528-14	KNOB, FOR PUSH SW
37	S51-1518-05	THERMAL SENSOR
38	T40-0421-05	FAN MOTOR
39	X73-1550-02	AMP UNIT
41	X77-1400-00	OVP UNIT
42	X77-1810-00	CONTROL UNIT
43	X81-1980-00	C. I UNIT

REF. NO	PARTS NO	NAME & DESCRIPTION
	N14-0627-05	SPRING NUT M4
	N15-1030-41	PLAIN WASHER M3
	N16-0726-04	SPRING WASHER
	N17-1030-41	LOCK WASHER M3
	N19-0191-05	INSULATED WASHER, FOR TR.
	N19-0198-04	WASHER M4
	N30-3008-41	SCREW, PAN HD M3X8
	N30-4012-41	SCREW, PAN HD M4X12
	N32-3006-41	SCREW, FLAT HD M3X6
	N32-3008-41	SCREW, FLAT HD M3X8
	N32-4016-41	SCREW, FLAT HD M4X16
	N33-4008-41	SCREW, OVAL HD M4X8
	S59-1501-15	CIRCUIT PROTECTOR
C1	C90-0921-05	CAP. ELECTRO 68000 35V
C2	C90-0919-15	CAP. ELECTRO 1000 20% 50V
C3	C90-0920-05	CAP. ELECTRO 1000 20% 50V
C4	C91-0594-05	CAP. METALIZED 0.1 10% 250V
C5	NO USE	
C6	C91-0596-05	NOISE KILLER 0.2 20% 250V
C7	CF93AN2E334K	CAP. POLYESTER 0.33 10% 250V
C8	CF93AN2E334K	CAP. POLYESTER 0.33 10% 250V
C9	CF93AN2E334K	CAP. POLYESTER 0.33 10% 250V
C10	CE04EW1E101M	CAP. ELECTRO 100 20% 25V
C11	CE04EW1E101M	CAP. ELECTRO 100 20% 25V

PD18-20D

Y86-1150-00

REF. NO	PARTS NO	NAME & DESCRIPTION
	B19-0738-13	FILTER
	B41-0767-04	CAUTION LABEL
	B42-1930-04	LABEL (P.T)
	B50-7544-40	INSTRUCTION MANUAL; JAPANESE
	B50-7545-40	INSTRUCTION MANUAL; ENGLISH
	E21-0663-04	EARTH TERMINAL
	E22-0181-05	LUG BOARD
	E23-0513-05	EARTH LUG, BNC
	E23-0520-05	EARTH LUG, TERMINAL
	E23-0541-05	EARTH LUG
	E23-0557-14	EARTH LUG, HEAT SINK
	E23-0564-05	EARTH LUG
	E30-1819-15	IEC POWER CORD SET
	E30-1821-15	SAA POWER CODE SET
	E30-1873-05	JIS POWER CORD SET
	E30-1881-05	UL/CSA POWER CORD SET
	E30-1929-05	BS POWER CORD
	F05-1535-05	FUSE (10X38MM) 15A/250V
	F06-8021-05	FUSE (10X38MM) 8A/250V
	F20-0642-04	INSULATOR
	F20-0647-05	INSULATOR
	H01-5750-24	CARTON BOX
	H10-2823-12	FOAMED STYRENE PAD (F)
	H10-2824-12	FOAMED STYRENE PAD (R)
	H19-0508-04	CARTON BOX, FOR AC CORD
	H21-0805-04	VINYL COVER
	H25-0029-04	POLYETHYLENE BAG, FUSE
	H25-0820-04	POLYETHYLENE BAG, AC COAD
	J13-0504-05	FUSE HOLDER
	J21-0392-04	HOLDER FOR OUTPUT LEAD
	J21-4503-04	BRACKET
	J21-4504-24	BRACKET
	J21-4563-04	BRACKET, FOR CONNECTOR
	J21-4570-23	BRACKET, FOR PCB
	J21-4807-04	BRACKET
	J32-0876-05	BOSS
	J61-0525-05	CARD SPACER
	J61-0526-05	LOCKING CARD SPACER
	N09-0623-04	SCREW, SEMS PAN HD M3X8
	N09-0626-04	SCREW, SEMS PAN HD M3X10
	N09-0654-05	SCREW, SEMS PAN HD M4X8
	N09-0723-05	SCREW, SEMS PAN HD M5X10
	N09-0725-15	SCREW, SEMS PAN HD M4X12
	N09-0727-14	SCREW M6X14
	N09-0729-05	SCREW, SEMS PAN HD M4X60
	N09-0732-05	SCREW, TRUSS HD M5X8
	N09-0748-04	SCREW, SEMS PAN HD M4X12
	N09-0767-04	SCREW, SEMS PAN HD M3X16
	N10-2030-41	NUT, HEX M3
	N14-0404-04	FLANGE NUT M3
	N14-0510-04	FLANGE NUT M6
	N14-0618-05	HEXAGON CAP NUT M4
	N14-0619-05	FLANGE NUT M10
	N14-0620-05	FLANGE NUT M4

D1	CQ08C	THYRISTOR
D2	CQ08C	THYRISTOR
D3	P20C	DIODE
D4	P20C	DIODE
D5	P19C	DIODE
D6	P19C	DIODE
D7	P19C	DIODE
D8	AR4133S	LED; RED
D9	AR4133S	LED; RED
D10	BG4133S	LED; GREEN
D11	TNR15G431K	VARISTOR
P1	E10-1061-05	EDGE CARD CONNECTOR
P2	E10-3661-05	EDGE CARD CONNECTOR
R10	R92-1075-05	RES. WIRE-WOUND 0.025 5% 40W
R11	RS14AB3A330J	RES. METAL FILM 33 5% 1W
R12	RS14AB3A330J	RES. METAL FILM 33 5% 1W
R13	RS14AB3A330J	RES. METAL FILM 33 5% 1W
R14	RW26G3K471K	RES. WIRE-WOUND 470 10% 10W
T1	L01-9416-25	POWER TRANSFORMER
T2	L15-0402-05	CHOKO COIL
U203	UPC7805H	IC, VOLTAGE REGULATOR
U204	UPC7805H	IC, VOLTAGE REGULATOR
VR1	R29-0505-05	V. R. 10K
VR2	R05-3511-05	V. R. 10K
1	A01-1124-23	CASE
2	A10-1440-62	CHASSIS
3	A20-2775-25	DIECAST PANEL
4	A21-1065-03	DECORATIVE PANEL
5	B07-0713-04	ESCUTCHEON
6	B40-2765-04	SERIAL NO. PLATE
7	B40-2817-13	NAME PLATE
8	E20-0491-05	TERMINAL BLOCK 4P
9	E20-1291-15	TERMINAL BLOCK 12P
10	E21-0661-13	TERMINAL, RED
11	E21-0662-13	TERMINAL, BLACK
12	E29-0535-04	SHORTING BAR
13	E29-0536-14	SHORTING BAR (CONTROL TERM.)
14	E29-0537-14	SHORTING BAR (REAR OUTPUT)
15	E29-0538-04	OUTPUT TERMINAL, REAR
16	F01-0841-04	HEAT SINK
17	F01-0842-04	HEAT SINK
18	F01-0898-03	HEAT SINK
19	F07-0928-05	METER COVER
20	F19-0712-05	CAP FOR DP-652
21	F29-0501-05	TERMINAL CAP
22	J02-0049-14	LEG
23	J11-0504-05	CLAMPER
24	J21-2912-05	HOLDER FOR LED
25	J21-2948-04	BRACKET, RIGHT
26	J21-2949-04	BRACKET, LEFT
27	J21-2999-04	BRACKET, FOR HEAT SINK
28	J21-3000-04	BRACKET, FOR HEAT SINK
31	J21-4509-34	BRACKET, FOR HEAT SINK
32	J21-4513-03	BRACKET, FOR PCB
34	K01-0545-05	HANDLE
35	K21-0877-13	KNOB
36	K27-0528-14	KNOB, FOR PUSH SW
37	S51-1518-05	THERMAL SENSOR
38	T40-0421-05	FAN MOTOR
39	X73-1560-02	AMP UNIT
40	X76-1260-00	DPM UNIT
41	X77-1400-00	OVP UNIT
42	X77-1810-00	CONTROL UNIT
43	X81-1980-00	C. I UNIT

PARTS LIST

PD18-30

Y86-1130-00

REF. NO	PARTS NO	NAME & DESCRIPTION
	B41-0769-04	CAUTION LABEL
	B42-3820-05	LABEL, SMALL
	B50-7544-40	INSTRUCTION MANUAL; JAPANESE
	B50-7545-40	INSTRUCTION MANUAL; ENGLISH
	E18-0363-05	INLET SOCKET
	E21-0663-04	EARTH TERMINAL
	E22-0181-05	LUG BOARD
	E23-0513-05	EARTH LUG, BNC
	E23-0520-05	EARTH LUG, TERMINAL
	E23-0541-05	EARTH LUG
	E23-0557-14	EARTH LUG, HEAT SINK
	E23-0564-05	EARTH LUG
	E30-1874-05	JIS POWER CORD SET
	E30-1875-05	IEC POWER CORD SET
	E30-1876-05	SAA POWER CORD SET
	E30-1877-05	BS POWER CORD
	E30-1882-05	UL/CSA POWER CORD SET
	E31-2866-05	WIRE ASS'Y; HEAT SINK
	F05-1039-05	FUSE (10X38MM) 10A/250V
	F05-2037-05	FUSE (10X38MM) 20A/250V
	F20-0642-04	INSULATOR
	H01-5736-24	CARTON BOX
	H10-2823-12	FOAMED STYRENE PAD (F)
	H10-2824-12	FOAMED STYRENE PAD (R)
	H19-0508-04	CARTON BOX, FOR AC CORD
	J13-0504-05	FUSE HOLDER
	J21-0392-04	HOLDER FOR OUTPUT LEAD
	J21-4561-04	BRACKET, FOR METER
	J21-4563-04	BRACKET, FOR CONNECTOR
	J21-4808-04	BRACKET
	J32-0576-05	BOSS
	J61-0525-05	CARD SPACER
	J61-0526-05	LOCKING CARD SPACER
	N09-0623-04	SCREW, SEMS PAN HD M3X8
	N09-0626-04	SCREW, SEMS PAN HD M3X10
	N09-0654-05	SCREW, SEMS PAN HD M4X8
	N09-0718-05	SCREW, SEMS PAN HD M3X6
	N09-0723-05	SCREW, SEMS PAN HD M5X10
	N09-0725-15	SCREW, SEMS PAN HD M4X12
	N09-0727-14	SCREW M6X14
	N09-0729-05	SCREW, SEMS PAN HD M4X60
	N09-0731-05	SCREW, SEMS PAN HD M3X12
	N09-0732-05	SCREW, TRUSS HD M5X8
	N09-0748-04	SCREW, SEMS PAN HD M4X12
	N09-0767-04	SCREW, SEMS PAN HD M3X16
	N10-2030-41	NUT, HEX M3
	N14-0510-04	FLANGE NUT M6
	N14-0618-05	HEXAGON CAP NUT M4
	N14-0619-05	FLANGE NUT M10
	N14-0620-05	FLANGE NUT M4
	N17-1030-41	LOCK WASHER M3
	N30-3008-41	SCREW, PAN HD M3X8
	N30-4012-41	SCREW, PAN HD M4X12
	N30-4016-41	SCREW, PAN HD M4X16
	N32-3006-41	SCREW, FLAT HD M3X6
	N32-4016-41	SCREW, FLAT HD M4X16
	N33-4008-41	SCREW, OVAL HD M4X8
C1	C90-0922-15	CAP. ELECTRO 100000 35V
C2	C90-0919-15	CAP. ELECTRO 1000 20% 50V
C3	C90-0920-05	CAP. ELECTRO 1000 20% 50V
C4	C91-0594-05	CAP. METALIZED 0.1 10% 250V
C5		NO USE
C6	C91-0596-05	NOISE KILLER 0.2 20% 250V
C7	CF93AN2E334K	CAP. POLYESTER 0.33 10% 250V
C8	CF93AN2E334K	CAP. POLYESTER 0.33 10% 250V
C9	CF93AN2E334K	CAP. POLYESTER 0.33 10% 250V
C10	CE04EW1E101M	CAP. ELECTRO 100 20% 25V
C11	CE04EW1E101M	CAP. ELECTRO 100 20% 25V
D1	CP08C	SCR
D2	CP08C	SCR
D3	P20C	DIODE
D4	P20C	DIODE
D5	P19C	DIODE
D6	P19C	DIODE
D7	P19C	DIODE
D8	AR4133S	LED; RED
D9	AR4133S	LED; RED
D10	BG4133S	LED; GREEN
D11	TNR15G431K	VARISTOR
M1	B31-0725-15	METER
M2	B31-0725-15	METER
P1	E10-1061-05	EDGE CARD CONNECTOR
P2	E10-3661-05	EDGE CARD CONNECTOR
R10	R92-1074-05	RES. WIRE-WOUND 0.012 5% 40W

REF. NO	PARTS NO	NAME & DESCRIPTION
R11	RS14AB3A330J	RES. METAL FILM 33 5% 1W
R12	RS14AB3A330J	RES. METAL FILM 33 5% 1W
R13	RS14AB3A330J	RES. METAL FILM 33 5% 1W
R14	RW26G3K471K	RES. WIRE-WOUND 470 10% 10W
S1	S59-1501-15	CIRCUIT PROTECTOR
T1	L01-9426-25	POWER TRANSFORMER
T2	L15-0403-25	CHOKO COIL
VR1	R29-0505-05	V. R. 10K
VR2	R05-3511-05	V. R. 10K
1	A01-1125-23	CASE
2	A10-1439-72	CHASSIS
3	A20-2775-25	DIECAST PANEL
4	A21-1062-03	DECORATIVE PANEL
5	B07-0713-04	ESCUTCHEON
6	B40-2765-04	SERIAL NO. PLATE
7	B40-2803-13	NAME PLATE
8	E20-0491-05	TERMINAL BLOCK 4P
9	E20-1291-15	TERMINAL BLOCK 12P
10	E21-0661-13	TERMINAL, RED
11	E21-0662-13	TERMINAL, BLACK
12	E29-0535-04	SHORTING BAR
13	E29-0536-14	SHORTING BAR (CONTROL TERM.)
14	E29-0537-14	SHORTING BAR (REAR OUTPUT)
15	E29-0538-04	OUTPUT TERMINAL, REAR
16	F01-0841-04	HEAT SINK
17	F01-0842-04	HEAT SINK
18	F01-0899-13	HEAT SINK
20	F19-0712-05	CAP FOR DP-652
21	F29-0501-05	TERMINAL CAP
22	J02-0049-14	LEG
23	J11-0504-05	CLAMPER
24	J21-2912-05	HOLDER FOR LED
25	J21-2948-04	BRACKET, RIGHT
26	J21-2949-04	BRACKET, LEFT
27	J21-2996-04	BRACKET FOR HEAT SINK
28	J21-2997-04	BRACKET FOR HEAT SINK
29	J21-4501-04	BRACKET
30	J21-4502-04	BRACKET
31	J21-4509-34	BRACKET, FOR HEAT SINK
33	J21-4570-23	BRACKET, FOR PCB
34	K01-0545-05	HANDLE
35	K21-0877-13	KNOB
36	K27-0528-14	KNOB, FOR PUSH SW
37	S51-1518-05	THERMAL SENSOR
38	T40-0421-05	FAN MOTOR
39	X73-1550-00	AMP UNIT
41	X77-1400-00	QVP UNIT
42	X77-1810-01	CONTROL UNIT
43	X81-1980-01	C. I UNIT

PD18-30D

Y86-1160-00

REF. NO	PARTS NO	NAME & DESCRIPTION
	B19-0738-13	FILTER
	B41-0769-04	CAUTION LABEL
	B42-1930-04	LABEL (P. T)
	B50-7544-40	INSTRUCTION MANUAL; JAPANESE
	B50-7545-40	INSTRUCTION MANUAL; ENGLISH
	E18-0363-05	INLET SOCKET
	E21-0663-04	EARTH TERMINAL
	E22-0181-05	LUG BOARD
	E23-0513-05	EARTH LUG, BNC
	E23-0520-05	EARTH LUG, TERMINAL
	E23-0557-14	EARTH LUG, HEAT SINK
	E23-0557-14	EARTH LUG, HEAT SINK
	E23-0564-05	EARTH LUG
	E30-1874-05	JIS POWER CORD SET
	E30-1875-05	IEC POWER CORD SET
	E30-1876-05	SAA POWER CORD SET
	E30-1877-05	BS POWER CORD
	E30-1882-05	UL/CSA POWER CORD SET
	E38-0207-05	WIRE ASS'Y
	F05-1039-05	FUSE (10X38MM) 10A/250V
	F05-2037-05	FUSE (10X38MM) 20A/250V
	F20-0642-04	INSULATOR
	F20-0647-05	INSULATOR
	H01-5748-24	CARTON BOX
	H10-2823-12	FOAMED STYRENE PAD (F)
	H10-2824-12	FOAMED STYRENE PAD (R)
	H19-0508-04	CARTON BOX, FOR AC CORD
	H21-0805-04	VINYL COVER
	H25-0029-04	POLYETHYLENE BAG, FUSE

PARTS LIST

REF. NO	PARTS NO	NAME & DESCRIPTION
	H25-0820-04	POLYETHYLENE BAG, AC COAD
	J13-0504-05	FUSE HOLDER
	J21-0392-04	HOLDER FOR OUTPUT LEAD
	J21-4563-04	BRACKET, FOR CONNECTOR
	J21-4808-04	BRACKET
	J32-0876-05	BOSS
	J61-0525-05	CARD SPACER
	J61-0526-05	LOCKING CARD SPACER
	N09-0623-04	SCREW, SENS PAN HD M3X8
	N09-0626-04	SCREW, SENS PAN HD M3X10
	N09-0654-05	SCREW, SENS PAN HD M4X8
	N09-0718-05	SCREW, SENS PAN HD M3X6
	N09-0723-05	SCREW, SENS PAN HD M5X10
	N09-0725-15	SCREW, SENS PAN HD M4X12
	N09-0727-14	SCREW M6X14
	N09-0729-05	SCREW, SENS PAN HD M4X60
	N09-0731-05	SCREW, SENS PAN HD M3X12
	N09-0732-05	SCREW, TRUSS HD M5X8
	N09-0748-04	SCREW, SENS PAN HD M4X12
	N09-0767-04	SCREW, SENS PAN HD M3X16
	N10-2030-41	NUT, HEX M3
	N14-0404-04	FLANGE NUT M3
	N14-0510-04	FLANGE NUT M6
	N14-0618-05	HEXAGON CAP NUT M4
	N14-0619-05	FLANGE NUT M10
	N14-0620-05	FLANGE NUT M4
	N14-0627-05	SPRING NUT M4
	N15-1030-41	PLAIN WASHER M3
	N17-1030-41	LOCK WASHER M3
	N19-0191-05	INSULATED WASHER, FOR TR.
	N19-0198-04	WASHER M4
	N19-0726-04	WASHER M5
	N30-3008-41	SCREW, PAN HD M3X8
	N30-4012-41	SCREW, PAN HD M4X12
	N32-3006-41	SCREW, FLAT HD M3X6
	N32-3008-41	SCREW, FLAT HD M3X8
	N32-4016-41	SCREW, FLAT HD M4X16
	N33-4008-41	SCREW, OVAL HD M4X8
	S59-1501-15	CIRCUIT PROTECTOR
C1	C90-0922-15	CAP. ELECTRO 100000 35V
C2	C90-0919-15	CAP. ELECTRO 1000 20% 50V
C3	C90-0920-05	CAP. ELECTRO 1000 20% 50V
C4	C91-0594-05	CAP. METALIZED 0.1 10% 250V
C5		NO USE
C6	C91-0596-05	NOISE KILLER 0.2 20% 250V
C7	CF93AN2E334K	CAP. POLYESTER 0.33 10% 250V
C8	CF93AN2E334K	CAP. POLYESTER 0.33 10% 250V
C9	CF93AN2E334K	CAP. POLYESTER 0.33 10% 250V
C10	CE04EW1E101M	CAP. ELECTRO 100 20% 25V
C11	CE04EW1E101M	CAP. ELECTRO 100 20% 25V
D1	CP08C	SCR
D2	CP08C	SCR
D3	P20C	DIODE
D4	P20C	DIODE
D5	P19C	DIODE
D6	P19C	DIODE
D7	P19C	DIODE
D8	AR4133S	LED; RED
D9	AR4133S	LED; RED
D10	BG4133S	LED; GREEN
D11	TNR15G431K	VARIATOR
P1	E10-1061-05	EDGE CARD CONNECTOR
P2	E10-3661-05	EDGE CARD CONNECTOR
R10	R92-1074-05	RES. WIRE-WOUND 0.012 5% 40W
R11	RS14AB3A330J	RES. METAL FILM 33 5% 1W
R12	RS14AB3A330J	RES. METAL FILM 33 5% 1W
R13	RS14AB3A330J	RES. METAL FILM 33 5% 1W
R14	RW26G3K471K	RES. WIRE-WOUND 470 10% 10W
T1	L01-9426-25	POWER TRANSFORMER
T2	L15-0403-25	CHOKE COIL
U203	UPC7805H	IC, VOLTAGE REGULATOR
U204	UPC7805H	IC, VOLTAGE REGULATOR
VR1	R29-0505-05	V. R. 10K
VR2	R05-3511-05	V. R. 10K
1	A01-1125-23	CASE
2	A10-1439-72	CHASSIS
3	A20-2775-25	DIECAST PANEL
4	A21-1065-03	DECORATIVE PANEL
5	B07-0713-04	ESCUTCHEON
6	B40-2765-04	SERIAL NO. PLATE
7	B40-2813-13	NAME PLATE
8	E20-0491-05	TERMINAL BLOCK 4P
9	E20-1291-15	TERMINAL BLOCK 12P
10	E21-0661-13	TERMINAL, RED
11	E21-0662-13	TERMINAL, BLACK
12	E29-0535-04	SHORTING BAR
13	E29-0536-14	SHORTING BAR (CONTROL TERM.)

REF. NO	PARTS NO	NAME & DESCRIPTION
14	E29-0537-14	SHORTING BAR (REAR OUTPUT)
15	E29-0538-04	OUTPUT TERMINAL, REAR
16	F01-0841-04	HEAT SINK
17	F01-0842-04	HEAT SINK
18	F01-0899-13	HEAT SINK
19	F07-0928-05	METER COVER
20	F19-0712-05	CAP FOR DP-652
21	F29-0501-05	TERMINAL CAP
22	J02-0049-14	LEG
23	J11-0504-05	CLAMPER
24	J21-2912-05	HOLDER FOR LED
25	J21-2948-04	BRACKET, RIGHT
26	J21-2949-04	BRACKET, LEFT
27	J21-2996-04	BRACKET FOR HEAT SINK
28	J21-2997-04	BRACKET FOR HEAT SINK
29	J21-4501-04	BRACKET
30	J21-4502-04	BRACKET
31	J21-4509-34	BRACKET, FOR HEAT SINK
32	J21-4513-03	BRACKET, FOR PCB
33	J21-4570-23	BRACKET, FOR PCB
34	K01-0545-05	HANDLE
35	K21-0877-13	KNOB
36	K27-0528-14	KNOB, FOR PUSH SW
37	S51-1518-05	THERMAL SENSOR
38	T40-0421-05	FAN MOTOR
39	X73-1560-00	AMP UNIT
40	X76-1260-01	DPM UNIT
41	X77-1400-00	OVV UNIT
42	X77-1810-01	CONTROL UNIT
43	X81-1980-01	C. I UNIT

PD35-20

Y86-1140-00

REF. NO	PARTS NO	NAME & DESCRIPTION
	B31-0726-15	METER
	B41-0770-04	CAUTION LABEL
	B42-1930-04	LABEL (P. T)
	B50-7544-40	INSTRUCTION MANUAL; JAPANESE
	B50-7545-40	INSTRUCTION MANUAL; ENGLISH
	E18-0363-05	INLET SOCKET
	E21-0663-04	EARTH TERMINAL
	E22-0181-05	LUG BOARD
	E23-0513-05	EARTH LUG, BNC
	E23-0520-04	EARTH LUG, TERMINAL
	E30-1874-05	JIS POWER CORD SET
	E30-1875-05	IEC POWER CORD SET
	E30-1876-05	SAA POWER CORD SET
	E30-1877-05	BS POWER CORD
	E30-1882-05	UL/CSA POWER CORD SET
	E31-2862-05	WIRE ASS'Y; AC FAN
	F05-1039-05	FUSE (10X38MM) 10A/250V
	F05-2037-05	FUSE (10X38MM) 20A/250V
	F20-0642-04	INSULATOR
	F29-0504-05	VINYL TUBE FOR INSULATOR
	H01-5737-24	CARTON BOX
	H10-2823-12	FOAMED STYRENE PAD (F)
	H10-2824-12	FOAMED STYRENE PAD (R)
	H19-0508-04	CARTON BOX, FOR AC CORD
	J13-0504-05	FUSE HOLDER
	J21-0392-04	HOLDER FOR OUTPUT LEAD
	J21-4503-04	BRACKET
	J21-4504-24	BRACKET
	J21-4561-04	BRACKET, FOR METER
	J21-4563-04	BRACKET, FOR CONNECTOR
	J21-4807-04	BRACKET
	J32-0876-05	BOSS
	J61-0525-05	CARD SPACER
	J61-0526-05	LOCKING CARD SPACER
	N09-0623-04	SCREW, SENS PAN HD M3X8
	N09-0626-04	SCREW, SENS PAN HD M3X10
	N09-0654-05	SCREW, SENS PAN HD M4X8
	N09-0723-05	SCREW, SENS PAN HD M5X10
	N09-0725-15	SCREW, SENS PAN HD M4X12
	N09-0727-14	SCREW M6X14
	N09-0729-05	SCREW, SENS PAN HD M4X60
	N09-0731-05	SCREW, SENS PAN HD M3X12
	N09-0732-05	SCREW, TRUSS HD M5X8
	N09-0767-04	SCREW, SENS PAN HD M3X16
	N10-2030-41	NUT, HEX M3
	N14-0404-04	FLANGE NUT M3
	N14-0510-04	FLANGE NUT M6
	N14-0618-05	HEXAGON CAP NUT M4
	N14-0619-05	FLANGE NUT M10
	N14-0620-05	FLANGE NUT M4

PARTS LIST

REF. NO	PARTS NO	NAME & DESCRIPTION			
	N14-0627-05	SPRING NUT	M4		
	N15-1030-41	PLAIN WASHER	M3		
	N30-3008-41	SCREW, PAN HD	M3X8		
	N30-4012-41	SCREW, PAN HD	M4X12		
	N30-4016-41	SCREW, PAN HD	M4X16		
	N32-3006-41	SCREW, FLAT HD	M3X6		
	N32-4016-41	SCREW, FLAT HD	M4X16		
	N33-4008-41	SCREW, OVAL HD	M4X8		
C1	C90-0923-05	CAP. ELECTRO	39000		63V
C2	C90-0919-15	CAP. ELECTRO	1000	20%	50V
C3	C90-0920-05	CAP. ELECTRO	1000	20%	50V
C4	C91-0594-05	CAP. METALIZED	0.1	10%	250V
C5		NO USE			
C6	C91-0596-05	NOISE KILLER	0.2	20%	250V
C7	CF93AN2E334K	CAP. POLYESTER	0.33	10%	250V
C8	CF93AN2E334K	CAP. POLYESTER	0.33	10%	250V
C9	CF93AN2E334K	CAP. POLYESTER	0.33	10%	250V
C10	CE04EW1E101M	CAP. ELECTRO	100	20%	25V
C11	CE04EW1E101M	CAP. ELECTRO	100	20%	25V
D1	CQ08C	THYRISTOR			
D2	CQ08C	THYRISTOR			
D3	P20C	DIODE			
D4	P20C	DIODE			
D5	P19C	DIODE			
D6	P19C	DIODE			
D7	P19C	DIODE			
D8	AR4133S	LED;RED			
D9	AR4133S	LED;RED			
D10	BG4133S	LED;GREEN			
D11	TNR15G431K	VARISTOR			
R10	R92-1075-05	RES. WIRE-WOUND	0.025	5%	40W
R11	RS14AB3A330J	RES. METAL FILM	33	5%	1W
R12	RS14AB3A330J	RES. METAL FILM	33	5%	1W
R13	RS14AB3A330J	RES. METAL FILM	33	5%	1W
R14	RW26G4C471K	RES. WIRE-WOUND	470	10%	20W
R20	RW26G4C221K	RES. WIRE-WOUND	220	10%	20W
S1	S59-1501-15	CIRCUIT PROTECTOR			
T1	L01-9436-25	POWER TRANSFORMER			
T2	L15-0404-15	CHOKO COIL			
VR1	R29-0505-05	V. R.	10K		
VR2	R05-3511-05	V. R.	10K		
1	A01-1124-23	CASE			
2	A10-1440-62	CHASSIS			
3	A20-2775-25	DIECAST PANEL			
4	A21-1062-03	DECORATIVE PANEL			
5	B07-0713-04	ESCUTCHEON			
6	B40-2765-04	SERIAL NO. PLATE			
7	B40-2805-13	NAME PLATE			
8	E20-0491-05	TERMINAL BLOCK	4P		
9	E20-1291-15	TERMINAL BLOCK	12P		
10	E21-0661-13	TERMINAL, RED			
11	E21-0662-13	TERMINAL, BLACK			
12	E29-0535-04	SHORTING BAR			
13	E29-0536-14	SHORTING BAR (CONTROL TERM.)			
14	E29-0537-14	SHORTING BAR (REAR OUTPUT)			
15	E29-0538-04	OUTPUT TERMINAL, REAR			
16	F01-0841-04	HEAT SINK			
17	F01-0842-04	HEAT SINK			
18	F01-0898-03	HEAT SINK			
20	F19-0712-05	CAP FOR DP-652			
21	F29-0501-05	TERMINAL CAP			
22	J02-0049-14	LEG			
23	J11-0504-05	CLAMPER			
24	J21-2912-05	HOLDER FOR LED			
25	J21-2948-04	BRACKET, RIGHT			
26	J21-2949-04	BRACKET, LEFT			
27	J21-2999-04	BRACKET, FOR HEAT SINK			
28	J21-3000-04	BRACKET, FOR HEAT SINK			
31	J21-4509-34	BRACKET, FOR HEAT SINK			
33	J21-4570-23	BRACKET, FOR PCB			
34	K01-0545-05	HANDLE			
35	K21-0877-13	KNOB			
36	K27-0528-14	KNOB, FOR PUSH SW			
37	S51-1518-05	THERMAL SENSOR			
38	T40-0421-05	FAN MOTOR			
39	X73-1550-01	AMP UNIT			
41	X77-1400-01	OVP UNIT			
42	X77-1810-00	CONTROL UNIT			
43	X81-1980-02	C.I UNIT			

PD35-20D

Y86-1170-00

REF. NO	PARTS NO	NAME & DESCRIPTION			
	B19-0738-13	FILTER			
	B41-0769-04	CAUTION LABEL			
	B50-7544-40	INSTRUCTION MANUAL; JAPANESE			
	B50-7545-40	INSTRUCTION MANUAL; ENGLISH			
	E18-0363-05	INLET SOCKET			
	E21-0663-04	EARTH TERMINAL			
	E22-0181-05	LUG BOARD			
	E23-0513-05	EARTH LUG, BNC			
	E23-0520-05	EARTH LUG, TERMINAL			
	E23-0541-05	EARTH LUG			
	E23-0557-14	EARTH LUG, HEAT SINK			
	E23-0564-05	EARTH LUG			
	E30-1874-05	JIS POWER CORD SET			
	E30-1875-05	IEC POWER CORD SET			
	E30-1876-05	SAA POWER CORD SET			
	E30-1877-05	BS POWER CORD			
	E30-1882-05	UL/CSA POWER CORD SET			
	F05-1039-05	FUSE(10X38MM)	10A/250V		
	F05-2037-05	FUSE(10X38MM)	20A/250V		
	F20-0642-04	INSULATOR			
	F20-0647-05	INSULATOR			
	H01-5749-24	CARTON BOX			
	H10-2823-12	FOAMED STYRENE PAD (F)			
	H10-2824-12	FOAMED STYRENE PAD (R)			
	H19-0508-04	CARTON BOX, FOR AC CORD			
	H21-0805-04	VINYL COVER			
	H25-0029-04	POLYETHYLENE BAG, FUSE			
	H25-0820-04	POLYETHYLENE BAG, AC COAD			
	J13-0504-05	FUSE HOLDER			
	J21-0392-04	HOLDER FOR OUTPUT LEAD			
	J21-4503-04	BRACKET			
	J21-4504-24	BRACKET			
	J21-4563-04	BRACKET, FOR CONNECTOR			
	J21-4807-04	BRACKET			
	J32-0876-05	BOSS			
	J61-0525-05	CARD SPACER			
	J61-0526-05	LOCKING CARD SPACER			
	N09-0623-04	SCREW, SEMS PAN HD M3X8			
	N09-0626-04	SCREW, SEMS PAN HD M3X10			
	N09-0654-05	SCREW, SEMS PAN HD M4X8			
	N09-0723-05	SCREW, SEMS PAN HD M5X10			
	N09-0725-15	SCREW, SEMS PAN HD M4X12			
	N09-0727-14	SCREW	M6X14		
	N09-0729-05	SCREW, SEMS PAN HD M4X60			
	N09-0731-05	SCREW, SEMS PAN HD M3X12			
	N09-0732-05	SCREW, TRUSS HD	M5X8		
	N09-0767-04	SCREW, SEMS PAN HD M3X16			
	N10-2030-41	NUT, HEX	M3		
	N14-0404-04	FLANGE NUT	M3		
	N14-0510-04	FLANGE NUT	M6		
	N14-0618-05	HEXAGON CAP NUT	M4		
	N14-0619-05	FLANGE NUT	M10		
	N14-0620-05	FLANGE NUT	M4		
	N14-0627-05	SPRING NUT	M4		
	N15-1030-41	PLAIN WASHER	M3		
	N17-1030-41	LOCK WASHER	M3		
	N19-0191-05	INSULATED WASHER, FOR TR.			
	N19-0198-04	WASHER	M4		
	N19-0726-04	WASHER	M5		
	N30-3008-41	SCREW, PAN HD	M3X8		
	N30-4012-41	SCREW, PAN HD	M4X12		
	N32-3006-41	SCREW, FLAT HD	M3X6		
	N32-3008-41	SCREW, FLAT HD	M3X8		
	N32-4016-41	SCREW, FLAT HD	M4X16		
	N33-4008-41	SCREW, OVAL HD	M4X8		
	S59-1501-15	CIRCUIT PROTECTOR			
C1	C90-0923-05	CAP. ELECTRO	39000		63V
C2	C90-0919-15	CAP. ELECTRO	1000	20%	50V
C3	C90-0920-05	CAP. ELECTRO	1000	20%	50V
C4	C91-0594-05	CAP. METALIZED	0.1	10%	250V
C5		NO USE			
C6	C91-0596-05	NOISE KILLER	0.2	20%	250V
C7	CF93AN2E334K	CAP. POLYESTER	0.33	10%	250V
C8	CF93AN2E334K	CAP. POLYESTER	0.33	10%	250V
C9	CF93AN2E334K	CAP. POLYESTER	0.33	10%	250V
C10	CE04EW1E101M	CAP. ELECTRO	100	20%	25V
C11	CE04EW1E101M	CAP. ELECTRO	100	20%	25V
D1	CQ08C	THYRISTOR			
D2	CQ08C	THYRISTOR			
D3	P20C	DIODE			
D4	P20C	DIODE			
D5	P19C	DIODE			
D6	P19C	DIODE			
D7	P19C	DIODE			
D8	AR4133S	LED;RED			
D9	AR4133S	LED;RED			
D10	BG4133S	LED;GREEN			

PARTS LIST

REF. NO	PARTS NO	NAME & DESCRIPTION
D11	TNR15G431K	VARISTOR
P1	E10-1061-05	EDGE CARD CONNECTOR
P2	E10-3661-05	EDGE CARD CONNECTOR
R10	R92-1075-05	RES. WIRE-WOUND 0.025 5% 40W
R11	RS14AB3A330J	RES. METAL FILM 33 5% 1W
R12	RS14AB3A330J	RES. METAL FILM 33 5% 1W
R13	RS14AB3A330J	RES. METAL FILM 33 5% 1W
R14	RW26G4C471K	RES. WIRE-WOUND 470 10% 20W
R20	RW26G4C221K	RES. WIRE-WOUND 220 10% 20W
T1	L01-9436-25	POWER TRANSFORMER
T2	L15-0404-15	CHOKO COIL
U203	UPC7805H	IC, VOLTAGE REGULATOR
U204	UPC7805H	IC, VOLTAGE REGULATOR
VR1	R29-0505-05	V. R. 10K
VR2	R05-3511-05	V. R. 10K
1	A01-1124-23	CASE
2	A10-1440-62	CHASSIS
3	A20-2775-25	DIECAST PANEL
4	A21-1065-03	DECORATIVE PANEL
5	B07-0713-04	ESCUTCHEON
6	B40-2765-04	SERIAL NO. PLATE
7	B40-2815-13	NAME PLATE
8	E20-0491-05	TERMINAL BLOCK 4P
9	E20-1291-15	TERMINAL BLOCK 12P
10	E21-0661-13	TERMINAL, RED
11	E21-0662-13	TERMINAL, BLACK
12	E29-0535-04	SHORTING BAR
13	E29-0536-14	SHORTING BAR (CONTROL TERM.)
14	E29-0537-14	SHORTING BAR (REAR OUTPUT)
15	E29-0538-04	OUTPUT TERMINAL, REAR
16	F01-0841-04	HEAT SINK
17	F01-0842-04	HEAT SINK
18	F01-0898-03	HEAT SINK
19	F07-0928-05	METER COVER
20	F19-0712-05	CAP FOR DP-652
21	F29-0501-05	TERMINAL CAP
22	J02-0049-14	LEG
23	J11-0504-05	CLAMPER
24	J21-2912-05	HOLDER FOR LED
25	J21-2948-04	BRACKET, RIGHT
26	J21-2949-04	BRACKET, LEFT
27	J21-2999-04	BRACKET, FOR HEAT SINK
28	J21-3000-04	BRACKET, FOR HEAT SINK
31	J21-4509-34	BRACKET, FOR HEAT SINK
32	J21-4513-03	BRACKET, FOR PCB
33	J21-4570-23	BRACKET, FOR PCB
34	K01-0545-05	HANDLE
35	K21-0877-13	KNOB
36	K27-0528-14	KNOB, FOR PUSH SW
37	S51-1518-05	THERMAL SENSOR
38	T40-0421-05	FAN MOTOR
39	X73-1560-01	AMP UNIT
40	X76-1260-02	DPM UNIT
41	X77-1400-01	OVP UNIT
42	X77-1810-00	CONTROL UNIT
43	X81-1980-02	C. I UNIT

PARTS LIST

PD8-20 AMP UNIT

X73-1550-03

REF. NO	PARTS NO	NAME & DESCRIPTION			
	E23-0508-04	TEST TERMINAL			
	F01-0845-04	HEAT SINK			
	F01-0846-05	HEAT SINK, EXTRUDED			
	F20-0647-05	INSULATOR			
	J25-5062-22	PCB (UNMOUNTED)			
	N09-0623-04	SCREW, SEMS PAN HD M3X8			
	N19-0191-05	WASHER NONMETAL			
	R92-0150-05	JUMPING RES.	ZERO OHM (10MM)		
C1	CQ92M2A104K	CAP. MYLAR	0.1	10%	100V
C2	CQ92M2A104K	CAP. MYLAR	0.1	10%	100V
C3	C90-0924-05	CAP. ELECTRO	330	20%	50V
C4	CE04EW1E100M	CAP. ELECTRO	10	20%	25V
C5	CE04EW1E221M	CAP. ELECTRO	220	20%	25V
C6	C90-0939-05	CAP. ELECTRO	470	20%	35V
C7	CE04EW1E100M	CAP. ELECTRO	10	20%	25V
C8	CE04EW1E100M	CAP. ELECTRO	10	20%	25V
C9	CE04EW1E221M	CAP. ELECTRO	220	20%	25V
C10	C90-0924-05	CAP. ELECTRO	330	20%	50V
C11	CE04EW1E101M	CAP. ELECTRO	100	20%	25V
C12	CE04EW1HR33M	CAP. ELECTRO	0.33	20%	50V
C13	CE04EW1H4R7M	CAP. ELECTRO	4.7	20%	50V
C14	CE04EW1E100M	CAP. ELECTRO	10	20%	25V
C15	C91-1203-05	CAP. CERAMIC	1.5	80/-20%	25V
C16	CC45CH1H101J	CAP. CERAMIC	100P	5%	50V
C17	C91-1203-05	CAP. CERAMIC	1.5	80/-20%	25V
C18	CC45CH1H101J	CAP. CERAMIC	100P	5%	50V
C19	CS15E1E4R7M	CAP. TANTALUM	4.7	20%	25V
C20	CQ92P2A471J	CAP. MYLAR	470P	5%	100V
C21	NO USE				
C22	CQ92P2A332J	CAP. MYLAR	3300P	5%	100V
C23	NO USE				
C24	CF92V1H332J	CAP. POLYESTER	3300P	5%	50V
C27	CS15E1E100M	CAP. TANTALUM	10	20%	25V
C28	CC45CH1H101J	CAP. CERAMIC	100P	5%	50V
C29	CS15E1E100M	CAP. TANTALUM	10	20%	25V
C30	CC45CH1H101J	CAP. CERAMIC	100P	5%	50V
C31	CF92V1H103J	CAP. POLYESTER	0.01	5%	50V
C32	CC45CH1H101J	CAP. CERAMIC	100P	5%	50V
C33	CF92V1H103J	CAP. POLYESTER	0.01	5%	50V
C34	CF92V1H103J	CAP. POLYESTER	0.01	5%	50V
C35	CF92V1H103J	CAP. POLYESTER	0.01	5%	50V
C36	CF92V1H473J	CAP. POLYESTER	0.047	5%	50V
C37	CF92V1H103J	CAP. POLYESTER	0.01	5%	50V
C38	CF92V1H473J	CAP. POLYESTER	0.047	5%	50V
C39	CF92V1H473J	CAP. POLYESTER	0.047	5%	50V
C40	CF92V1H473J	CAP. POLYESTER	0.047	5%	50V
C41	CF92V1H473J	CAP. POLYESTER	0.047	5%	50V
C42	CC45CH1H101J	CAP. CERAMIC	100P	5%	50V
C43	CC45CH1H101J	CAP. CERAMIC	100P	5%	50V
C44	CF92V1H472J	CAP. POLYESTER	4700P	5%	50V
C45	CF92V1H472J	CAP. POLYESTER	4700P	5%	50V
C50	CQ92M2A104K	CAP. MYLAR	0.1	10%	100V
C51	CQ92M2A104K	CAP. MYLAR	0.1	10%	100V
C52	C90-0924-05	CAP. ELECTRO	330	20%	50V
C53	CF92V1H103J	CAP. POLYESTER	0.01	5%	50V
C54	CF92V1H103J	CAP. POLYESTER	0.01	5%	50V
C55	CE04EW1E100M	CAP. ELECTRO	10	20%	25V
C56	C90-0924-05	CAP. ELECTRO	330	20%	50V
C57	CF92V1H103J	CAP. POLYESTER	0.01	5%	50V
C58	CF92V1H103J	CAP. POLYESTER	0.01	5%	50V
C59	CE04EW1E100M	CAP. ELECTRO	10	20%	25V
C60	CF92V1H103J	CAP. POLYESTER	0.01	5%	50V
C61	CC45CH1H470J	CAP. CERAMIC	47P	5%	50V
C62	C91-0595-05	CAP. PLASTIC	0.033	2%	100V
C63	CC45CH1H101J	CAP. CERAMIC	100P	5%	50V
C64	CF92V1H102J	CAP. POLYESTER	1000P	5%	50V
C65	CF92V1H103J	CAP. POLYESTER	0.01	5%	50V
C66	CF92V1H472J	CAP. POLYESTER	4700P	5%	50V
C67	CE04EW1E100M	CAP. ELECTRO	10	20%	25V
C68	CF92V1H103J	CAP. POLYESTER	0.01	5%	50V
C69	CF92V1H473J	CAP. POLYESTER	0.047	5%	50V
C72	CF92V1H103J	CAP. POLYESTER	0.01	5%	50V
C73	CF92V1H224J	CAP. POLYESTER	0.22	5%	50V
C74	CC45CH1H101J	CAP. CERAMIC	100P	5%	50V
C75	CE04EW1E100M	CAP. ELECTRO	10	20%	25V
C76	CE04EW1C471M	CAP. ELECTRO	470	20%	16V
D1	S1VB60	DIODE, STACK			
D2	S1VB60	DIODE, STACK			
D3	DSA1A2	DIODE			
D4	DSA1A2	DIODE			
D5	NO USE				
D6	RD13F(B2)	DIODE, ZENER	12.97V		
D7	MTZ9.1JC	DIODE, ZENER	9.07V		
D8	1SS132	DIODE			
D9	RD13F(B2)	DIODE, ZENER	12.97V		

REF. NO	PARTS NO	NAME & DESCRIPTION			
D10	MTZ9.1JC	DIODE, ZENER	9.07V		
D11	1SS132	DIODE			
D12	MTZ4.7JA	DIODE, ZENER	4.56V		
D13	1SS132	DIODE			
D14	HZT7A3	DIODE, ZENER	6.75V		
D15	HZT7A3	DIODE, ZENER	6.75V		
D16	1SS132	DIODE			
D17	1SS132	DIODE			
D18	1SS132	DIODE			
D19	1SS132	DIODE			
D20	1SS132	DIODE			
D21	1SS132	DIODE			
D22	1SS132	DIODE			
D23	1SS132	DIODE			
D24	1SS132	DIODE			
D25	1SS132	DIODE			
D26	1SS132	DIODE			
D27	1SS132	DIODE			
D28	MTZ5.1JB	DIODE, ZENER	5.07V		
D29	1SS132	DIODE			
D30	MTZ5.1JB	DIODE, ZENER	5.07V		
D31	DSA1A2	DIODE			
D32	DSA1A2	DIODE			
D40	S1VB60	DIODE, STACK			
D41	S1VB60	DIODE, STACK			
D42	DSA1A2	DIODE			
D43	DSA1A2	DIODE			
D44	DSA1A2	DIODE			
D45	DSA1A2	DIODE			
D46	MTZ6.2JB	DIODE, ZENER	6.12V		
D47	1SS132	DIODE			
D48	1SS132	DIODE			
D49	1SS132	DIODE			
D50	1SS132	DIODE			
D51	RD10F(B2)	DIODE, ZENER	9.75V		
D52	RD10F(B2)	DIODE, ZENER	9.75V		
D53	1SS132	DIODE			
D54	1SS132	DIODE			
D55	1SS132	DIODE			
D56	1SS132	DIODE			
D57	1SS132	DIODE			
D58	1SS132	DIODE			
D59	MTZ8.2JC	DIODE, ZENER	8.24V		
D60	1SS132	DIODE			
D61	1SS132	DIODE			
D62	1SS132	DIODE			
D63	1SS132	DIODE			
D64	1SS132	DIODE			
D65	1SS132	DIODE			
P3	E40-0273-05	PIN CONNECTOR	2P		
P4	E40-0273-05	PIN CONNECTOR	2P		
Q1	2SD613(E)	TR. SI, NPN			
Q2	2SC2785(F)	TR. SI, NPN			
Q3	2SC2785(F)	TR. SI, NPN			
Q4	2SA1408(O)	TR. SI, PNP			
Q5	2SB633(E)	TR. SI, PNP			
Q6	2SA1175(F)	TR. SI, PNP			
Q7	2SA1175(F)	TR. SI, PNP			
Q8	2SC3621(O)	TR. SI, NPN			
Q9	2SC3064(F)	TR. SI, NPN			
Q10	2SC2785(F)	TR. SI, NPN			
Q11	2SC2785(F)	TR. SI, NPN			
Q12	2SC2459(GR)	TR. SI, NPN			
Q13	2SC3621(O)	TR. SI, NPN			
Q14	2SK170(BL)	FET, N-CHANNEL			
Q15	2SK170(BL)	FET, N-CHANNEL			
Q16	2SK170(BL)	FET, N-CHANNEL			
Q17	2SK170(BL)	FET, N-CHANNEL			
Q20	2SK170(BL)	FET, N-CHANNEL			
Q21	2SC2785(F)	TR. SI, NPN			
Q22	2SC3621(O)	TR. SI, NPN			
Q23	2SC3621(O)	TR. SI, NPN			
R1	RD14BB2E101J	RES. CARBON	100	5%	1/4W
R2	RD14BB2E101J	RES. CARBON	100	5%	1/4W
R3	RD14DB3D471J	RES. CARBON	470	5%	2W
R4	RD14BB2E561J	RES. CARBON	560	5%	1/4W
R5	RD14DB2H512J	RES. CARBON	5.1K	5%	1/2W
R6	RD14BB2C102J	RES. CARBON	1K	5%	1/6W
R7	RD14DB2H2R7J	RES. CARBON	2.7	5%	1/2W
R8	RD14BB2C153J	RES. CARBON	15K	5%	1/6W
R9	RN14BC2E7501F	RES. METAL FILM	7.5K	1%	1/4W
R10	RN14BC2E7501F	RES. METAL FILM	7.5K	1%	1/4W
R11	RD14DB3D471J	RES. CARBON	470	5%	2W
R12	RD14BB2E561J	RES. CARBON	560	5%	1/4W
R13	RD14DB2H512J	RES. CARBON	5.1K	5%	1/2W
R14	RD14BB2C102J	RES. CARBON	1K	5%	1/6W
R15	RD14DB2H2R7J	RES. CARBON	2.7	5%	1/2W
R16	RD14BB2C153J	RES. CARBON	15K	5%	1/6W

PARTS LIST

REF. NO	PARTS NO	NAME & DESCRIPTION			
R17	RD14BB2C682J	RES. CARBON	6.8K	5%	1/6W
R18	RN14BC2E3600F	RES. METAL FILM	360	1%	1/4W
R19	RN14BC2E4300F	RES. METAL FILM	430	1%	1/4W
R20	RN14BC2E2701F	RES. METAL FILM	2.7K	1%	1/4W
R21	RN14BC2E3301F	RES. METAL FILM	3.3K	1%	1/4W
R24	RD14BB2C153J	RES. CARBON	15K	5%	1/6W
R25	RD14BB2C153J	RES. CARBON	15K	5%	1/6W
R26	RD14BB2E243J	RES. CARBON	24K	5%	1/4W
K27	RD14BB2E820J	RES. CARBON	82	5%	1/4W
R28	RD14BB2E182J	RES. CARBON	1.8K	5%	1/4W
R29	RD14BB2E181J	RES. CARBON	180	5%	1/4W
R30	RN14BE2E3601D	RES. METAL FILM	3.6K	0.5%	1/4W
R31	RD14BB2C102J	RES. CARBON	1K	5%	1/6W
R32	RN14BC2E1003F	RES. METAL FILM	100K	1%	1/4W
R33	RN14BC2E3600F	RES. METAL FILM	360	1%	1/4W
R34	RD14BB2C151J	RES. CARBON	150	5%	1/6W
R35	RN14BC2E1102F	RES. METAL FILM	11K	1%	1/4W
R36	RN14BE2E5101D	RES. METAL FILM	5.1K	0.5%	1/4W
R37	RD14BB2C102J	RES. CARBON	1K	5%	1/6W
R38	RN14BC2E1003F	RES. METAL FILM	100K	1%	1/4W
R39	RN14BC2E3600F	RES. METAL FILM	360	1%	1/4W
R40	RD14BB2C221J	RES. CARBON	220	5%	1/6W
R41	RN14BC2E1622F	RES. METAL FILM	16.2K	1%	1/4W
R42	RN14BE2H1002DKW	RES. METAL FILM	10K	0.5%	1/2W
R43	RN14BE2H8061DKW	RES. METAL FILM	8.06K	0.5%	1/2W
R44	NO USE				
R45	RN14BE2H1002DKW	RES. METAL FILM	10K	0.5%	1/2W
R46	RN14BE2H5230DKW	RES. METAL FILM	523	0.5%	1/2W
R47	RD14BB2C102J	RES. CARBON	1K	5%	1/6W
R48	RD14BB2C102J	RES. CARBON	1K	5%	1/6W
R49	RN14BC2E4702F	RES. METAL FILM	47K	1%	1/4W
R50	RD14BB2C102J	RES. CARBON	1K	5%	1/6W
R51	RD14BB2C102J	RES. CARBON	1K	5%	1/6W
R52	RN14BC2E1001F	RES. METAL FILM	1K	1%	1/4W
R53	RD14BB2E162J	RES. CARBON	1.6K	5%	1/4W
R54	RN14BC2E4301F	RES. METAL FILM	4.3K	1%	1/4W
R55	RN14BC2E6200F	RES. METAL FILM	620	1%	1/4W
R56	RD14BB2C122J	RES. CARBON	1.2K	5%	1/6W
R57	RD14BB2C621J	RES. CARBON	620	5%	1/6W
R58	RD14BB2C102J	RES. CARBON	1K	5%	1/6W
R59	RD14BB2C102J	RES. CARBON	1K	5%	1/6W
R60	RD14BB2C102J	RES. CARBON	1K	5%	1/6W
R61	RD14BB2C102J	RES. CARBON	1K	5%	1/6W
R62	RD14BB2C122J	RES. CARBON	1.2K	5%	1/6W
R63	RD14BB2C473J	RES. CARBON	47K	5%	1/6W
R64	RN14BC2E1002F	RES. METAL FILM	10K	1%	1/4W
R65	RD14BB3A101J	RES. CARBON	100	5%	1W
R66	RN14BC2E1001F	RES. METAL FILM	1K	1%	1/4W
R67	RD14BB2C104J	RES. CARBON	100K	5%	1/6W
R68	RN14BC2E1003F	RES. METAL FILM	100K	1%	1/4W
R69	RN14BC2E4701F	RES. METAL FILM	4.7K	1%	1/4W
R70	RN14BC2E1500F	RES. METAL FILM	150	1%	1/4W
R71	RD14BB2C471J	RES. CARBON	470	5%	1/6W
R72	RN14BC2E6801F	RES. METAL FILM	6.8K	1%	1/4W
R73	RN14BC2E1802F	RES. METAL FILM	18K	1%	1/4W
R74	RD14BB2C104J	RES. CARBON	100K	5%	1/6W
R75	RD14BB2C104J	RES. CARBON	100K	5%	1/6W
R76	RN14BC2E1003F	RES. METAL FILM	100K	1%	1/4W
R77	RN14BC2E4701F	RES. METAL FILM	4.7K	1%	1/4W
R78	RN14BC2E1500F	RES. METAL FILM	150	1%	1/4W
R79	RD14BB2C471J	RES. CARBON	470	5%	1/6W
R80	RN14BC2E6801F	RES. METAL FILM	6.8K	1%	1/4W
R81	RN14BC2E1802F	RES. METAL FILM	18K	1%	1/4W
R82	RN14BC2E5101F	RES. METAL FILM	5.1K	1%	1/4W
R83	RD14BB2C104J	RES. CARBON	100K	5%	1/6W
R84	RN14BC2E1003F	RES. METAL FILM	100K	1%	1/4W
R85	RN14BC2E820R0F	RES. METAL FILM	82.0	1%	1/4W
R86	RD14BB2C101J	RES. CARBON	100	5%	1/6W
R87	RN14BC2E5101F	RES. METAL FILM	5.1K	1%	1/4W
R88	RN14BC2E1002F	RES. METAL FILM	10K	1%	1/4W
R89	RD14BB2C333J	RES. CARBON	33K	5%	1/6W
R90	RD14BB2C333J	RES. CARBON	33K	5%	1/6W
R91	NO USE				
R92	RD14BB2C153J	RES. CARBON	15K	5%	1/6W
R93	RD14BB2C473J	RES. CARBON	47K	5%	1/6W
R94	RD14BB2C473J	RES. CARBON	47K	5%	1/6W
R95	RD14BB2E330J	RES. CARBON	33	5%	1/4W
R100	RD14BB2E101J	RES. CARBON	100	5%	1/4W
R101	RD14BB2E101J	RES. CARBON	100	5%	1/4W
R102	RD14DB2H392J	RES. CARBON	3.9K	5%	1/2W
R103	RD14BB2C103J	RES. CARBON	10K	5%	1/6W
R104	RD14BB2C153J	RES. CARBON	15K	5%	1/6W
R105	RD14BB2C123J	RES. CARBON	12K	5%	1/6W
R106	RD14BB2C332J	RES. CARBON	3.3K	5%	1/6W
R107	RD14BB2C472J	RES. CARBON	4.7K	5%	1/6W
R108	RN14BC2E4703F	RES. METAL FILM	470K	1%	1/4W
R109	RD14BB2C104J	RES. CARBON	100K	5%	1/6W
R110	RD14BB2C222J	RES. CARBON	2.2K	5%	1/6W
R111	RN14BC2E2202F	RES. METAL FILM	22K	1%	1/4W
R112	RD14BB2C682J	RES. CARBON	6.8K	5%	1/6W
R113	RN14BK2C3303F	RES. METAL FILM	330K	1%	1/6W

REF. NO	PARTS NO	NAME & DESCRIPTION			
R114	RD14BB2C470J	RES. CARBON	47	5%	1/6W
R115	RD14BB2C104J	RES. CARBON	100K	5%	1/6W
R116	RD14BB2C472J	RES. CARBON	4.7K	5%	1/6W
R117	RD14BB2C224J	RES. CARBON	220K	5%	1/6W
R118	RD14BB2C103J	RES. CARBON	10K	5%	1/6W
R119	RD14BB2C122J	RES. CARBON	1.2K	5%	1/6W
R120	RD14BB3D472J	RES. CARBON	4.7K	5%	2W
R121	RD14BB2C104J	RES. CARBON	100K	5%	1/6W
R122	R92-1076-05	RES. METAL GLAZE	27M	5%	1/2W
R123	RD14BB2C472J	RES. CARBON	4.7K	5%	1/6W
R124	RD14BB2C105J	RES. CARBON	1M	5%	1/6W
R127	RD14BB2C911J	RES. CARBON	910	5%	1/6W
R128	RN14BC2E5601F	RES. METAL FILM	5.6K	1%	1/4W
R129	RD14BB2C472J	RES. CARBON	4.7K	5%	1/6W
R130	RD14BB2C103J	RES. CARBON	10K	5%	1/6W
R131	RN14BC2E2202F	RES. METAL FILM	22K	1%	1/4W
R132	RD14BB2C102J	RES. CARBON	1K	5%	1/6W
R133	RD14BB2C103J	RES. CARBON	10K	5%	1/6W
R134	RD14BB2C103J	RES. CARBON	10K	5%	1/6W
R135	RD14BB2C102J	RES. CARBON	1K	5%	1/6W
R136	RD14BB2C472J	RES. CARBON	4.7K	5%	1/6W
R137	RD14BB2C102J	RES. CARBON	1K	5%	1/6W
R138	RD14BB2C102J	RES. CARBON	1K	5%	1/6W
R139	RD14BB3A330J	RES. CARBON	33	5%	1W
R140	RD14BB3A330J	RES. CARBON	33	5%	1W
R141	RD14BB2H102J	RES. CARBON	1K	5%	1/2W
R142	RD14BB2H102J	RES. CARBON	1K	5%	1/2W
R143	NO USE				
R144	RD14BB2C103J	RES. CARBON	10K	5%	1/6W
U1	TL082CP	IC, OP AMP			
U2	NJM7815A	IC, VOLTAGE REGULATOR			
U3	TL082CP	IC, OP AMP			
U4	OP07DP	OPERATIONAL AMPRIFFIER			
U5	OP07DP	OPERATIONAL AMPRIFFIER			
U6	NJM4558D	IC, DUAL OP ANP			
U7	TL082CP	IC, OP AMP			
U10	NJM7815A	IC, VOLTAGE REGULATOR			
U11	UPC7915H-1	IC, 3-TERMINAL REGULATOR			
U12	NJM4558D	IC, DUAL OP ANP			
U13	TL082CP	IC, OP AMP			
U14	NJM555D	IC, TIMER			
U15	TLP521-1(A)	IC, PHOTO COUPLER			
VR1	R12-1558-05	RES. SEMI FIXED	2K		
VR2	R12-4514-05	RES. SEMI FIXED	50K		
VR3	R12-2515-05	RES. SEMI FIXED	5K		
VR4	R12-4514-05	RES. SEMI FIXED	50K		
VR5	R12-3544-05	RES. SEMI FIXED	10K		
VR6	R12-3545-05	RES. SEMI FIXED	20K		
VR7	R12-1540-05	RES. SEMI FIXED	2.5K		
VR8	R12-4514-05	RES. SEMI FIXED	50K		
VR9	R12-1540-05	RES. SEMI FIXED	2.5K		
VR10	R12-4514-05	RES. SEMI FIXED	50K		
VR11	R12-4514-05	RES. SEMI FIXED	50K		
VR20	R12-3544-05	RES. SEMI FIXED	10K		

PARTS LIST

PD8-20D AMP UNIT

X73-1560-03

REF. NO	PARTS NO	NAME & DESCRIPTION
	E23-0508-04	TEST TERMINAL
	F01-0845-04	HEAT SINK
	F01-0846-05	HEAT SINK, EXTRUDED
	F20-0647-05	INSULATOR
	J25-5062-22	PCB (UNMOUNTED)
	N09-0623-04	SCREW, SEMS PAN HD M3X8
	N19-0191-05	WASHER NONMETAL
C1	CQ92M2A104K	CAP. NYLAR 0.1 10% 100V
C2	CQ92M2A104K	CAP. NYLAR 0.1 10% 100V
C3	C90-0924-05	CAP. ELECTRO 330 20% 50V
C4	CE04EW1E100M	CAP. ELECTRO 10 20% 25V
C5	CE04EW1E221M	CAP. ELECTRO 220 20% 25V
C6	C90-0939-05	CAP. ELECTRO 470 20% 35V
C7	CE04EW1E100M	CAP. ELECTRO 10 20% 25V
C8	CE04EW1E100M	CAP. ELECTRO 10 20% 25V
C9	CE04EW1E221M	CAP. ELECTRO 220 20% 25V
C10	C90-0924-05	CAP. ELECTRO 330 20% 50V
C11	CE04EW1E101M	CAP. ELECTRO 100 20% 25V
C12	CE04EW1HR33M	CAP. ELECTRO 0.33 20% 50V
C13	CE04EW1H4R7M	CAP. ELECTRO 4.7 20% 50V
C14	CE04EW1E100M	CAP. ELECTRO 10 20% 25V
C15	C91-1203-05	CAP. CERAMIC 1.5 80/-20% 25V
C16	CC45CH1H101J	CAP. CERAMIC 100P 5% 50V
C17	C91-1203-05	CAP. CERAMIC 1.5 80/-20% 25V
C18	CC45CH1H101J	CAP. CERAMIC 100P 5% 50V
C19	CS15E1E4R7M	CAP. TANTALUM 4.7 20% 25V
C20	CQ92P2A471J	CAP. NYLAR 470P 5% 100V
C21	NO USE	
C22	CQ92P2A332J	CAP. NYLAR 3300P 5% 100V
C23	NO USE	
C24	CF92V1H332J	CAP. POLYESTER 3300P 5% 50V
C27	CS15E1E100M	CAP. TANTALUM 10 20% 25V
C28	CC45CH1H101J	CAP. CERAMIC 100P 5% 50V
C29	CS15E1E100M	CAP. TANTALUM 10 20% 25V
C30	CC45CH1H101J	CAP. CERAMIC 100P 5% 50V
C31	CF92V1H103J	CAP. POLYESTER 0.01 5% 50V
C32	CC45CH1H101J	CAP. CERAMIC 100P 5% 50V
C33	CF92V1H103J	CAP. POLYESTER 0.01 5% 50V
C34	CF92V1H103J	CAP. POLYESTER 0.01 5% 50V
C35	CF92V1H103J	CAP. POLYESTER 0.01 5% 50V
C36	CF92V1H473J	CAP. POLYESTER 0.047 5% 50V
C37	CF92V1H103J	CAP. POLYESTER 0.01 5% 50V
C38	CF92V1H473J	CAP. POLYESTER 0.047 5% 50V
C39	CF92V1H473J	CAP. POLYESTER 0.047 5% 50V
C40	CF92V1H473J	CAP. POLYESTER 0.047 5% 50V
C41	CF92V1H473J	CAP. POLYESTER 0.047 5% 50V
C42	CC45CH1H101J	CAP. CERAMIC 100P 5% 50V
C43	CC45CH1H101J	CAP. CERAMIC 100P 5% 50V
C44	CF92V1H472J	CAP. POLYESTER 4700P 5% 50V
C45	CF92V1H472J	CAP. POLYESTER 4700P 5% 50V
C50	CQ92M2A104K	CAP. NYLAR 0.1 10% 100V
C51	CQ92M2A104K	CAP. NYLAR 0.1 10% 100V
C52	C90-0924-05	CAP. ELECTRO 330 20% 50V
C53	CF92V1H103J	CAP. POLYESTER 0.01 5% 50V
C54	CF92V1H103J	CAP. POLYESTER 0.01 5% 50V
C55	CE04EW1E100M	CAP. ELECTRO 10 20% 25V
C56	C90-0924-05	CAP. ELECTRO 330 20% 50V
C57	CF92V1H103J	CAP. POLYESTER 0.01 5% 50V
C58	CF92V1H103J	CAP. POLYESTER 0.01 5% 50V
C59	CE04EW1E100M	CAP. ELECTRO 10 20% 25V
C60	CF92V1H103J	CAP. POLYESTER 0.01 5% 50V
C61	CC45CH1H470J	CAP. CERAMIC 47P 5% 50V
C62	C91-0595-05	CAP. PLASTIC 0.033 2% 100V
C63	CC45CH1H101J	CAP. CERAMIC 100P 5% 50V
C64	CF92V1H102J	CAP. POLYESTER 1000P 5% 50V
C65	CF92V1H103J	CAP. POLYESTER 0.01 5% 50V
C66	CF92V1H472J	CAP. POLYESTER 4700P 5% 50V
C67	CE04EW1E100M	CAP. ELECTRO 10 20% 25V
C68	CF92V1H103J	CAP. POLYESTER 0.01 5% 50V
C69	CF92V1H473J	CAP. POLYESTER 0.047 5% 50V
C70	CE04BW1E100M	CAP. ELECTRO 10 20% 25V
C71	CE04BW1E100M	CAP. ELECTRO 10 20% 25V
C72	CF92V1H103J	CAP. POLYESTER 0.01 5% 50V
C73	CF92V1H224J	CAP. POLYESTER 0.22 5% 50V
C74	CC45CH1H101J	CAP. CERAMIC 100P 5% 50V
C75	CE04EW1E100M	CAP. ELECTRO 10 20% 25V
C76	CE04EW1C471M	CAP. ELECTRO 470 20% 16V
C201	CE04EW1E471M	CAP. ELECTRO 470 20% 25V
C202	CE04EW1E470M	CAP. ELECTRO 47 20% 25V
C203	CE04EW1E471M	CAP. ELECTRO 470 20% 25V
C204	CE04EW1E470M	CAP. ELECTRO 47 20% 25V
C205	CF92V1H473J	CAP. POLYESTER 0.047 5% 50V
C206	CF92V1H103J	CAP. POLYESTER 0.01 5% 50V
C207	CF92V1H473J	CAP. POLYESTER 0.047 5% 50V
C208	CF92V1H103J	CAP. POLYESTER 0.01 5% 50V

REF. NO	PARTS NO	NAME & DESCRIPTION
C209	CF92V1H473J	CAP. POLYESTER 0.047 5% 50V
C210	CF92V1H103J	CAP. POLYESTER 0.01 5% 50V
C211	CF92V1H473J	CAP. POLYESTER 0.047 5% 50V
C212	CF92V1H103J	CAP. POLYESTER 0.01 5% 50V
D1	S1VB60	DIODE, STACK
D2	S1VB60	DIODE, STACK
D3	DSA1A2	DIODE
D4	DSA1A2	DIODE
D5	NO USE	
D6	RD13F(B2)	DIODE, ZENER 12.97V
D7	MTZ9.1JC	DIODE, ZENER 9.07V
D8	1SS132	DIODE
D9	RD13F(B2)	DIODE, ZENER 12.97V
D10	MTZ9.1JC	DIODE, ZENER 9.07V
D11	1SS132	DIODE
D12	MTZ4.7JA	DIODE, ZENER 4.56V
D13	1SS132	DIODE
D14	HZT7A3	DIODE, ZENER 6.75V
D15	HZT7A3	DIODE, ZENER 6.75V
D16	1SS132	DIODE
D17	1SS132	DIODE
D18	1SS132	DIODE
D19	1SS132	DIODE
D20	1SS132	DIODE
D21	1SS132	DIODE
D22	1SS132	DIODE
D23	1SS132	DIODE
D24	1SS132	DIODE
D25	1SS132	DIODE
D26	1SS132	DIODE
D27	1SS132	DIODE
D28	MTZ5.1JB	DIODE, ZENER 5.07V
D29	1SS132	DIODE
D30	MTZ5.1JB	DIODE, ZENER 5.07V
D31	DSA1A2	DIODE
D32	DSA1A2	DIODE
D40	S1VB60	DIODE, STACK
D41	S1VB60	DIODE, STACK
D42	DSA1A2	DIODE
D43	DSA1A2	DIODE
D44	DSA1A2	DIODE
D45	DSA1A2	DIODE
D46	MTZ6.2JB	DIODE, ZENER 6.12V
D47	1SS132	DIODE
D48	1SS132	DIODE
D49	1SS132	DIODE
D50	1SS132	DIODE
D51	RD10F(B2)	DIODE, ZENER 9.75V
D52	RD10F(B2)	DIODE, ZENER 9.75V
D53	1SS132	DIODE
D54	1SS132	DIODE
D55	1SS132	DIODE
D56	1SS132	DIODE
D57	1SS132	DIODE
D58	1SS132	DIODE
D59	MTZ8.2JC	DIODE, ZENER 8.24V
D60	1SS132	DIODE
D61	1SS132	DIODE
D62	1SS132	DIODE
D63	1SS132	DIODE
D64	1SS132	DIODE
D65	1SS132	DIODE
D201	S1VB60	DIODE, STACK
D202	S1VB60	DIODE, STACK
P3	E40-0273-05	PIN CONNECTOR 2P
P4	E40-0273-05	PIN CONNECTOR 2P
P201	E40-0673-05	PIN CONNECTOR 6P
P202	E40-0373-05	PIN CONNECTOR 3P
P203	E40-0373-05	PIN CONNECTOR 3P
P204	E40-0673-05	PIN CONNECTOR 6P
Q1	2SD613(E)	TR. SI, NPN
Q2	2SC2785(F)	TR. SI, NPN
Q3	2SC2785(F)	TR. SI, NPN
Q4	2SA1408(O)	TR. SI, PNP
Q5	2SB363(E)	TR. SI, PNP
Q6	2SA1175(F)	TR. SI, PNP
Q7	2SA1175(F)	TR. SI, PNP
Q8	2SC3621(O)	TR. SI, NPN
Q9	2SC3064(F)	TR. SI, NPN
Q10	2SC2785(F)	TR. SI, NPN
Q11	2SC2785(F)	TR. SI, NPN
Q12	2SC2459(GR)	TR. SI, NPN
Q13	2SC3621(O)	TR. SI, NPN
Q14	2SK170(BL)	FET, N-CHANNEL
Q15	2SK170(BL)	FET, N-CHANNEL
Q16	2SK170(BL)	FET, N-CHANNEL
Q17	2SK170(BL)	FET, N-CHANNEL

PARTS LIST

REF. NO	PARTS NO	NAME & DESCRIPTION
Q20	2SK170(BL)	FET, N-CHANNEL
Q21	2SC2785(F)	TR. SI, NPN
Q22	2SC3621(O)	TR. SI, NPN
Q23	2SC3621(O)	TR. SI, NPN
R1	RD14BB2E101J	RES. CARBON 100 5% 1/4W
R2	RD14BB2E101J	RES. CARBON 100 5% 1/4W
R3	RD14DB3D471J	RES. CARBON 470 5% 2W
R4	RD14BB2E561J	RES. CARBON 560 5% 1/4W
R5	RD14DB2H512J	RES. CARBON 5.1K 5% 1/2W
R6	RD14BB2C102J	RES. CARBON 1K 5% 1/6W
R7	RD14DB2H2R7J	RES. CARBON 2.7 5% 1/2W
R8	RD14BB2C153J	RES. CARBON 15K 5% 1/6W
R9	RN14BC2E7501F	RES. METAL FILM 7.5K 1% 1/4W
R10	RN14BC2E7501F	RES. METAL FILM 7.5K 1% 1/4W
R11	RD14DB3D471J	RES. CARBON 470 5% 2W
R12	RD14BB2E561J	RES. CARBON 560 5% 1/4W
R13	RD14DB2H512J	RES. CARBON 5.1K 5% 1/2W
R14	RD14BB2C102J	RES. CARBON 1K 5% 1/6W
R15	RD14DB2H2R7J	RES. CARBON 2.7 5% 1/2W
R16	RD14BB2C153J	RES. CARBON 15K 5% 1/6W
R17	RD14BB2C682J	RES. CARBON 6.8K 5% 1/6W
R18	RN14BC2E3600F	RES. METAL FILM 360 1% 1/4W
R19	RN14BC2E4300F	RES. METAL FILM 430 1% 1/4W
R20	RN14BC2E2701F	RES. METAL FILM 2.7K 1% 1/4W
R21	RN14BC2E3301F	RES. METAL FILM 3.3K 1% 1/4W
R24	RD14BB2C153J	RES. CARBON 15K 5% 1/6W
R25	RD14BB2C153J	RES. CARBON 15K 5% 1/6W
R26	RD14BB2E243J	RES. CARBON 24K 5% 1/4W
R27	RD14BB2E820J	RES. CARBON 82 5% 1/4W
R28	RD14BB2E182J	RES. CARBON 1.8K 5% 1/4W
R29	RD14BB2E181J	RES. CARBON 180 5% 1/4W
R30	RN14BE2E3601D	RES. METAL FILM 3.6K 0.5% 1/4W
R31	RD14BB2C102J	RES. CARBON 1K 5% 1/6W
R32	RN14BC2E1003F	RES. METAL FILM 100K 1% 1/4W
R33	RN14BC2E3600F	RES. METAL FILM 360 1% 1/4W
R34	RD14BB2C151J	RES. CARBON 150 5% 1/6W
R35	RN14BC2E1102F	RES. METAL FILM 11K 1% 1/4W
R36	RN14BE2E5101D	RES. METAL FILM 5.1K 0.5% 1/4W
R37	RD14BB2C102J	RES. CARBON 1K 5% 1/6W
R38	RN14BC2E1003F	RES. METAL FILM 100K 1% 1/4W
R39	RN14BC2E3600F	RES. METAL FILM 360 1% 1/4W
R40	RD14BB2C221J	RES. CARBON 220 5% 1/6W
R41	RN14BC2E1622F	RES. METAL FILM 16.2K 1% 1/4W
R42	RN14BE2H1002DKW	RES. METAL FILM 10K 0.5% 1/2W
R43	RN14BE2H8061DKW	RES. METAL FILM 8.06K 0.5% 1/2W
R44	R92-0150-05	JUMPING RES. ZERO OHM(10MM)
R45	RN14BE2H1002DKW	RES. METAL FILM 10K 0.5% 1/2W
R46	RN14BE2H3740DKW	RES. METAL FILM 374 0.5% 1/2W
R47	RD14BB2C102J	RES. CARBON 1K 5% 1/6W
R48	RD14BB2C102J	RES. CARBON 1K 5% 1/6W
R49	RN14BC2E4702F	RES. METAL FILM 47K 1% 1/4W
R50	RD14BB2C102J	RES. CARBON 1K 5% 1/6W
R51	RD14BB2C102J	RES. CARBON 1K 5% 1/6W
R52	RN14BC2E1001F	RES. METAL FILM 1K 1% 1/4W
R53	RD14BB2E162J	RES. CARBON 1.6K 5% 1/4W
R54	RN14BC2E4301F	RES. METAL FILM 4.3K 1% 1/4W
R55	RN14BC2E6200F	RES. METAL FILM 620 1% 1/4W
R56	RD14BB2C122J	RES. CARBON 1.2K 5% 1/6W
R57	RD14BB2C621J	RES. CARBON 620 5% 1/6W
R58	RD14BB2C102J	RES. CARBON 1K 5% 1/6W
R59	RD14BB2C102J	RES. CARBON 1K 5% 1/6W
R60	RD14BB2C102J	RES. CARBON 1K 5% 1/6W
R61	RD14BB2C102J	RES. CARBON 1K 5% 1/6W
R62	RD14BB2C122J	RES. CARBON 1.2K 5% 1/6W
R63	RD14BB2C473J	RES. CARBON 47K 5% 1/6W
R64	RN14BC2E1002F	RES. METAL FILM 10K 1% 1/4W
R65	RD14DB3A101J	RES. CARBON 100 5% 1W
R66	RN14BC2E1001F	RES. METAL FILM 1K 1% 1/4W
R67	RD14BB2C104J	RES. CARBON 100K 5% 1/6W
R68	RN14BC2E1003F	RES. METAL FILM 100K 1% 1/4W
R69	RN14BC2E4701F	RES. METAL FILM 4.7K 1% 1/4W
R70	RN14BC2E1500F	RES. METAL FILM 150 1% 1/4W
R71	RD14BB2C471J	RES. CARBON 470 5% 1/6W
R72	RN14BC2E6801F	RES. METAL FILM 6.8K 1% 1/4W
R73	R92-0150-05	JUMPING RES. ZERO OHM(10MM)
R74	RD14BB2C104J	RES. CARBON 100K 5% 1/6W
R75	RD14BB2C104J	RES. CARBON 100K 5% 1/6W
R76	RN14BC2E1003F	RES. METAL FILM 100K 1% 1/4W
R77	RN14BC2E4701F	RES. METAL FILM 4.7K 1% 1/4W
R78	RN14BC2E1500F	RES. METAL FILM 150 1% 1/4W
R79	RD14BB2C471J	RES. CARBON 470 5% 1/6W
R80	RN14BC2E6801F	RES. METAL FILM 6.8K 1% 1/4W
R81	R92-0150-05	JUMPING RES. ZERO OHM(10MM)
R82	RN14BC2E5101F	RES. METAL FILM 5.1K 1% 1/4W
R83	RD14BB2C104J	RES. CARBON 100K 5% 1/6W
R84	RN14BC2E1003F	RES. METAL FILM 100K 1% 1/4W
R85	RN14BC2E82R0F	RES. METAL FILM 82.0 1% 1/4W
R86	RD14BB2C101J	RES. CARBON 100 5% 1/6W
R87	RN14BC2E5101F	RES. METAL FILM 5.1K 1% 1/4W
R88	RN14BC2E1002F	RES. METAL FILM 10K 1% 1/4W

REF. NO	PARTS NO	NAME & DESCRIPTION
R89	RD14BB2C333J	RES. CARBON 33K 5% 1/6W
R90	RD14BB2C333J	RES. CARBON 33K 5% 1/6W
R91	NO USE	
R92	RD14BB2C153J	RES. CARBON 15K 5% 1/6W
R93	RD14BB2C473J	RES. CARBON 47K 5% 1/6W
R94	RD14BB2C473J	RES. CARBON 47K 5% 1/6W
R95	RD14BB2E330J	RES. CARBON 33 5% 1/4W
R100	RD14BB2E101J	RES. CARBON 100 5% 1/4W
R101	RD14BB2E101J	RES. CARBON 100 5% 1/4W
R102	RD14DB2H392J	RES. CARBON 3.9K 5% 1/2W
R103	RD14BB2C103J	RES. CARBON 10K 5% 1/6W
R104	RD14BB2C153J	RES. CARBON 15K 5% 1/6W
R105	RD14BB2C123J	RES. CARBON 12K 5% 1/6W
R106	RD14BB2C333J	RES. CARBON 3.3K 5% 1/6W
R107	RD14BB2C472J	RES. CARBON 4.7K 5% 1/6W
R108	RN14BC2E4703F	RES. METAL FILM 470K 1% 1/4W
R109	RD14BB2C104J	RES. CARBON 100K 5% 1/6W
R110	RD14BB2C222J	RES. CARBON 2.2K 5% 1/6W
R111	RN14BC2E2202F	RES. METAL FILM 22K 1% 1/4W
R112	RD14BB2C682J	RES. CARBON 6.8K 5% 1/6W
R113	RN14BK2C3303F	RES. METAL FILM 330K 1% 1/6W
R114	RD14BB2C470J	RES. CARBON 47 5% 1/6W
R115	RD14BB2C104J	RES. CARBON 100K 5% 1/6W
R116	RD14BB2C472J	RES. CARBON 4.7K 5% 1/6W
R117	RD14BB2C224J	RES. CARBON 220K 5% 1/6W
R118	RD14BB2C103J	RES. CARBON 10K 5% 1/6W
R119	RD14BB2C122J	RES. CARBON 1.2K 5% 1/6W
R120	RD14DB3D472J	RES. CARBON 4.7K 5% 2W
R121	RD14BB2C104J	RES. CARBON 100K 5% 1/6W
R122	R92-1076-05	RES. METAL GLAZE27M 5% 1/2W
R123	RD14BB2C472J	RES. CARBON 4.7K 5% 1/6W
R124	RD14BB2C105J	RES. CARBON 1M 5% 1/6W
R127	RD14BB2C911J	RES. CARBON 910 5% 1/6W
R128	RN14BC2E5601F	RES. METAL FILM 5.6K 1% 1/4W
R129	RD14BB2C472J	RES. CARBON 4.7K 5% 1/6W
R130	RD14BB2C103J	RES. CARBON 10K 5% 1/6W
R131	RN14BC2E2202F	RES. METAL FILM 22K 1% 1/4W
R132	RD14BB2C102J	RES. CARBON 1K 5% 1/6W
R133	RD14BB2C103J	RES. CARBON 10K 5% 1/6W
R134	RD14BB2C103J	RES. CARBON 10K 5% 1/6W
R135	RD14BB2C102J	RES. CARBON 1K 5% 1/6W
R136	RD14BB2C472J	RES. CARBON 4.7K 5% 1/6W
R137	RD14BB2C102J	RES. CARBON 1K 5% 1/6W
R138	RD14BB2C102J	RES. CARBON 1K 5% 1/6W
R139	RD14DB3A330J	RES. CARBON 33 5% 1W
R140	RD14DB3A330J	RES. CARBON 33 5% 1W
R141	RD14DB2H102J	RES. CARBON 1K 5% 1/2W
R142	RD14DB2H102J	RES. CARBON 1K 5% 1/2W
R143	NO USE	
R144	RD14BB2C103J	RES. CARBON 10K 5% 1/6W
U1	TL082CP	IC,OP AMP
U2	NJM7815A	IC,VOLTAGE REGULATOR
U3	TL082CP	IC,OP AMP
U4	OP07DP	OPERATIONAL ANPRIFIER
U5	OP07DP	OPERATIONAL ANPRIFIER
U6	NJM4558D	IC,DUAL OP AMP
U7	TL082CP	IC,OP AMP
U10	NJM7815A	IC,VOLTAGE REGULATOR
U11	UPC7915H-1	IC,3-TERMINAL REGULATOR
U12	NJM4558D	IC,DUAL OP AMP
U13	TL082CP	IC,OP AMP
U14	NJM555D	IC,TIMER
U15	TLP521-1(A)	IC,PHOTO COUPLER
U201	LM79L05ACZ	IC,REGULATOR
U202	LM79L05ACZ	IC,REGULATOR
VR1	R12-1558-05	RES. SEMI FIXED 2K
VR2	R12-4514-05	RES. SEMI FIXED 50K
VR3	R12-2515-05	RES. SEMI FIXED 5K
VR4	R12-4514-05	RES. SEMI FIXED 50K
VR5	R12-3555-05	RES. SEMI FIXED 10K
VR6	R12-3556-05	RES. SEMI FIXED 20K
VR7	R12-1540-05	RES. SEMI FIXED 2.5K
VR8	R12-4514-05	RES. SEMI FIXED 50K
VR9	R12-1540-05	RES. SEMI FIXED 2.5K
VR10	R12-4514-05	RES. SEMI FIXED 50K
VR11	R12-4514-05	RES. SEMI FIXED 50K
VR20	R12-3544-05	RES. SEMI FIXED 10K

PARTS LIST

PD8-30 AMP UNIT

X73-1550-04

REF. NO	PARTS NO	NAME & DESCRIPTION
	E23-0508-04	TEST TERMINAL
	F01-0845-04	HEAT SINK
	F01-0846-05	HEAT SINK, EXTRUDED
	F20-0647-05	INSULATOR
	J25-5062-22	PCB (UNMOUNTED)
	N09-0623-04	SCREW, SEMS PAN HD M3X8
	N19-0191-05	WASHER NONMETAL
	R92-0150-05	JUMPING RES. ZERO OHM (10NH)
C1	CQ92M2A104K	CAP. MYLAR 0.1 10% 100V
C2	CQ92M2A104K	CAP. MYLAR 0.1 10% 100V
C3	C90-0924-05	CAP. ELECTRO 330 20% 50V
C4	CE04EW1E100M	CAP. ELECTRO 10 20% 25V
C5	CE04EW1E221M	CAP. ELECTRO 220 20% 25V
C6	C90-0939-05	CAP. ELECTRO 470 20% 35V
C7	CE04EW1E100M	CAP. ELECTRO 10 20% 25V
C8	CE04EW1E100M	CAP. ELECTRO 10 20% 25V
C9	CE04EW1E221M	CAP. ELECTRO 220 20% 25V
C10	C90-0924-05	CAP. ELECTRO 330 20% 50V
C11	CE04EW1E101M	CAP. ELECTRO 100 20% 25V
C12	CE04EW1HR33M	CAP. ELECTRO 0.33 20% 50V
C13	CE04EW1H4R7M	CAP. ELECTRO 4.7 20% 50V
C14	CE04EW1E100M	CAP. ELECTRO 10 20% 25V
C15	C91-1203-05	CAP. CERAMIC 1.5 80/-20% 25V
C16	CC45CH1H101J	CAP. CERAMIC 100P 5% 50V
C17	C91-1203-05	CAP. CERAMIC 1.5 80/-20% 25V
C18	CC45CH1H101J	CAP. CERAMIC 100P 5% 50V
C19	CS15E1E4R7M	CAP. TANTALUM 4.7 20% 25V
C20	CQ92P2A471J	CAP. MYLAR 470P 5% 100V
C21	NO USE	
C22	CQ92P2A332J	CAP. MYLAR 3300P 5% 100V
C23	NO USE	
C24	CF92V1H332J	CAP. POLYESTER 3300P 5% 50V
C27	CS15E1E100M	CAP. TANTALUM 10 20% 25V
C28	CC45CH1H101J	CAP. CERAMIC 100P 5% 50V
C29	CS15E1E100M	CAP. TANTALUM 10 20% 25V
C30	CC45CH1H101J	CAP. CERAMIC 100P 5% 50V
C31	CF92V1H103J	CAP. POLYESTER 0.01 5% 50V
C32	CC45CH1H101J	CAP. CERAMIC 100P 5% 50V
C33	CF92V1H103J	CAP. POLYESTER 0.01 5% 50V
C34	CF92V1H103J	CAP. POLYESTER 0.01 5% 50V
C35	CF92V1H103J	CAP. POLYESTER 0.01 5% 50V
C36	CF92V1H473J	CAP. POLYESTER 0.047 5% 50V
C37	CF92V1H103J	CAP. POLYESTER 0.01 5% 50V
C38	CF92V1H473J	CAP. POLYESTER 0.047 5% 50V
C39	CF92V1H473J	CAP. POLYESTER 0.047 5% 50V
C40	CF92V1H473J	CAP. POLYESTER 0.047 5% 50V
C41	CF92V1H473J	CAP. POLYESTER 0.047 5% 50V
C42	CC45CH1H101J	CAP. CERAMIC 100P 5% 50V
C43	CC45CH1H101J	CAP. CERAMIC 100P 5% 50V
C44	CF92V1H472J	CAP. POLYESTER 4700P 5% 50V
C45	CF92V1H472J	CAP. POLYESTER 4700P 5% 50V
C50	CQ92M2A104K	CAP. MYLAR 0.1 10% 100V
C51	CQ92M2A104K	CAP. MYLAR 0.1 10% 100V
C52	C90-0924-05	CAP. ELECTRO 330 20% 50V
C53	CF92V1H103J	CAP. POLYESTER 0.01 5% 50V
C54	CF92V1H103J	CAP. POLYESTER 0.01 5% 50V
C55	CE04EW1E100M	CAP. ELECTRO 10 20% 25V
C56	C90-0924-05	CAP. ELECTRO 330 20% 50V
C57	CF92V1H103J	CAP. POLYESTER 0.01 5% 50V
C58	CF92V1H103J	CAP. POLYESTER 0.01 5% 50V
C59	CE04EW1E100M	CAP. ELECTRO 10 20% 25V
C60	CF92V1H103J	CAP. POLYESTER 0.01 5% 50V
C61	CC45CH1H470J	CAP. CERAMIC 47P 5% 50V
C62	C91-0595-05	CAP. PLASTIC 0.033 2% 100V
C63	CC45CH1H101J	CAP. CERAMIC 100P 5% 50V
C64	CF92V1H102J	CAP. POLYESTER 1000P 5% 50V
C65	CF92V1H103J	CAP. POLYESTER 0.01 5% 50V
C66	CF92V1H472J	CAP. POLYESTER 4700P 5% 50V
C67	CE04EW1E100M	CAP. ELECTRO 10 20% 25V
C68	CF92V1H103J	CAP. POLYESTER 0.01 5% 50V
C69	CF92V1H473J	CAP. POLYESTER 0.047 5% 50V
C72	CF92V1H103J	CAP. POLYESTER 0.01 5% 50V
C73	CF92V1H224J	CAP. POLYESTER 0.22 5% 50V
C74	CC45CH1H101J	CAP. CERAMIC 100P 5% 50V
C75	CE04EW1E100M	CAP. ELECTRO 10 20% 25V
C76	CE04EW1C471M	CAP. ELECTRO 470 20% 16V
D1	S1VB60	DIODE, STACK
D2	S1VB60	DIODE, STACK
D3	DSA1A2	DIODE
D4	DSA1A2	DIODE
D5	NO USE	
D6	RD13F(B2)	DIODE, ZENER 12.97V
D7	MTZ9.1JC	DIODE, ZENER 9.07V
D8	1SS132	DIODE

REF. NO	PARTS NO	NAME & DESCRIPTION
D9	RD13F(B2)	DIODE, ZENER 12.97V
D10	MTZ9.1JC	DIODE, ZENER 9.07V
D11	1SS132	DIODE
D12	MTZ4.7JA	DIODE, ZENER 4.56V
D13	1SS132	DIODE
D14	HZT7A3	DIODE, ZENER 6.75V
D15	HZT7A3	DIODE, ZENER 6.75V
D16	1SS132	DIODE
D17	1SS132	DIODE
D18	1SS132	DIODE
D19	1SS132	DIODE
D20	1SS132	DIODE
D21	1SS132	DIODE
D22	1SS132	DIODE
D23	1SS132	DIODE
D24	1SS132	DIODE
D25	1SS132	DIODE
D26	1SS132	DIODE
D27	1SS132	DIODE
D28	MTZ5.1JB	DIODE, ZENER 5.07V
D29	1SS132	DIODE
D30	MTZ5.1JB	DIODE, ZENER 5.07V
D31	DSA1A2	DIODE
D32	DSA1A2	DIODE
D40	S1VB60	DIODE, STACK
D41	S1VB60	DIODE, STACK
D42	DSA1A2	DIODE
D43	DSA1A2	DIODE
D44	DSA1A2	DIODE
D45	DSA1A2	DIODE
D46	MTZ6.2JB	DIODE, ZENER 6.12V
D47	1SS132	DIODE
D48	1SS132	DIODE
D49	1SS132	DIODE
D50	1SS132	DIODE
D51	RD10F(B2)	DIODE, ZENER 9.75V
D52	RD10F(B2)	DIODE, ZENER 9.75V
D53	1SS132	DIODE
D54	1SS132	DIODE
D55	1SS132	DIODE
D56	1SS132	DIODE
D57	1SS132	DIODE
D58	1SS132	DIODE
D59	MTZ8.2JC	DIODE, ZENER 8.24V
D60	1SS132	DIODE
D61	1SS132	DIODE
D62	1SS132	DIODE
D63	1SS132	DIODE
D64	1SS132	DIODE
D65	1SS132	DIODE
P3	E40-0273-05	PIN CONNECTOR 2P
P4	E40-0273-05	PIN CONNECTOR 2P
Q1	2SD613(E)	TR. SI, NPN
Q2	2SC2785(F)	TR. SI, NPN
Q3	2SC2785(F)	TR. SI, NPN
Q4	2SA1408(O)	TR. SI, PNP
Q5	2SB633(E)	TR. SI, PNP
Q6	2SA1175(F)	TR. SI, PNP
Q7	2SA1175(F)	TR. SI, PNP
Q8	2SC3621(O)	TR. SI, NPN
Q9	2SC3064(F)	TR. SI, NPN
Q10	2SC2785(F)	TR. SI, NPN
Q11	2SC2785(F)	TR. SI, NPN
Q12	2SC2459(GR)	TR. SI, NPN
Q13	2SC3621(O)	TR. SI, NPN
Q14	2SK170(BL)	FET, N-CHANNEL
Q15	2SK170(BL)	FET, N-CHANNEL
Q16	2SK170(BL)	FET, N-CHANNEL
Q17	2SK170(BL)	FET, N-CHANNEL
Q20	2SK170(BL)	FET, N-CHANNEL
Q21	2SC2785(F)	TR. SI, NPN
Q22	2SC3621(O)	TR. SI, NPN
Q23	2SC3621(O)	TR. SI, NPN
R1	RD14BB2E101J	RES. CARBON 100 5% 1/4W
R2	RD14BB2E101J	RES. CARBON 100 5% 1/4W
R3	RD14DB3D471J	RES. CARBON 470 5% 2W
R4	RD14BB2E561J	RES. CARBON 560 5% 1/4W
R5	RD14DB2H512J	RES. CARBON 5.1K 5% 1/2W
R6	RD14BB2C102J	RES. CARBON 1K 5% 1/6W
R7	RD14DB2H2R7J	RES. CARBON 2.7 5% 1/2W
R8	RD14BB2C153J	RES. CARBON 15K 5% 1/6W
R9	RN14BC2E7501F	RES. METAL FILM 7.5K 1% 1/4W
R10	RN14BC2E7501F	RES. METAL FILM 7.5K 1% 1/4W
R11	RD14DB3D471J	RES. CARBON 470 5% 2W
R12	RD14BB2E561J	RES. CARBON 560 5% 1/4W
R13	RD14DB2H512J	RES. CARBON 5.1K 5% 1/2W
R14	RD14BB2C102J	RES. CARBON 1K 5% 1/6W
R15	RD14DB2H2R7J	RES. CARBON 2.7 5% 1/2W

PARTS LIST

REF. NO	PARTS NO	NAME & DESCRIPTION			
R16	RD14BB2C153J	RES. CARBON	15K	5%	1/6W
R17	RD14BB2C682J	RES. CARBON	6.8K	5%	1/6W
R18	RN14BC2E3600F	RES. METAL FILM	360	1%	1/4W
R19	RN14BC2E4300F	RES. METAL FILM	430	1%	1/4W
R20	RN14BC2E2701F	RES. METAL FILM	2.7K	1%	1/4W
R21	RN14BC2E3301F	RES. METAL FILM	3.3K	1%	1/4W
R24	RD14BB2C153J	RES. CARBON	15K	5%	1/6W
R25	RD14BB2C153J	RES. CARBON	15K	5%	1/6W
R26	RD14BB2E243J	RES. CARBON	24K	5%	1/4W
R27	RD14BB2E820J	RES. CARBON	82	5%	1/4W
R28	RD14BB2E182J	RES. CARBON	1.8K	5%	1/4W
R29	RD14BB2E181J	RES. CARBON	180	5%	1/4W
R30	RN14BE2E3601D	RES. METAL FILM	3.6K	0.5%	1/4W
R31	RD14BB2C102J	RES. CARBON	1K	5%	1/6W
R32	RN14BC2E1003F	RES. METAL FILM	100K	1%	1/4W
R33	RN14BC2E3600F	RES. METAL FILM	360	1%	1/4W
R34	RD14BB2C151J	RES. CARBON	150	5%	1/6W
R35	RN14BC2E1102F	RES. METAL FILM	11K	1%	1/4W
R36	RN14BE2E5101D	RES. METAL FILM	5.1K	0.5%	1/4W
R37	RD14BB2C102J	RES. CARBON	1K	5%	1/6W
R38	RN14BC2E1003F	RES. METAL FILM	100K	1%	1/4W
R39	RN14BC2E3600F	RES. METAL FILM	360	1%	1/4W
R40	RD14BB2C221J	RES. CARBON	220	5%	1/6W
R41	RN14BC2E1622F	RES. METAL FILM	16.2K	1%	1/4W
R42	RN14BE2H1002DKW	RES. METAL FILM	10K	0.5%	1/2W
R43	RN14BE2H8061DKW	RES. METAL FILM	8.06K	0.5%	1/2W
R44	NO USE				
R45	RN14BE2H1002DKW	RES. METAL FILM	10K	0.5%	1/2W
R46	RN14BE2H3740DKW	RES. METAL FILM	374	0.5%	1/2W
R47	RD14BB2C102J	RES. CARBON	1K	5%	1/6W
R48	RD14BB2C102J	RES. CARBON	1K	5%	1/6W
R49	RN14BC2E4702F	RES. METAL FILM	47K	1%	1/4W
R50	RD14BB2C102J	RES. CARBON	1K	5%	1/6W
R51	RD14BB2C102J	RES. CARBON	1K	5%	1/6W
R52	RN14BC2E1001F	RES. METAL FILM	1K	1%	1/4W
R53	RD14BB2E162J	RES. CARBON	1.6K	5%	1/4W
R54	RN14BC2E4301F	RES. METAL FILM	4.3K	1%	1/4W
R55	RN14BC2E4300F	RES. METAL FILM	430	1%	1/4W
R56	RD14BB2C122J	RES. CARBON	1.2K	5%	1/6W
R57	RD14BB2C101J	RES. CARBON	100	5%	1/6W
R58	RD14BB2C102J	RES. CARBON	1K	5%	1/6W
R59	RD14BB2C102J	RES. CARBON	1K	5%	1/6W
R60	RD14BB2C102J	RES. CARBON	1K	5%	1/6W
R61	RD14BB2C102J	RES. CARBON	1K	5%	1/6W
R62	RD14BB2C122J	RES. CARBON	1.2K	5%	1/6W
R63	RD14BB2C473J	RES. CARBON	47K	5%	1/6W
R64	RN14BC2E1002F	RES. METAL FILM	10K	1%	1/4W
R65	RD14DB3A101J	RES. CARBON	100	5%	1W
R66	RN14BC2E7150F	RES. METAL FILM	715	1%	1/4W
R67	RD14BB2C104J	RES. CARBON	100K	5%	1/6W
R68	RN14BC2E1003F	RES. METAL FILM	100K	1%	1/4W
R69	RN14BC2E4701F	RES. METAL FILM	4.7K	1%	1/4W
R70	RN14BC2E1500F	RES. METAL FILM	150	1%	1/4W
R71	RD14BB2C471J	RES. CARBON	470	5%	1/6W
R72	RN14BC2E6801F	RES. METAL FILM	6.8K	1%	1/4W
R73	RN14BC2E1802F	RES. METAL FILM	18K	1%	1/4W
R74	RD14BB2C104J	RES. CARBON	100K	5%	1/6W
R75	RD14BB2C104J	RES. CARBON	100K	5%	1/6W
R76	RN14BC2E1003F	RES. METAL FILM	100K	1%	1/4W
R77	RN14BC2E4701F	RES. METAL FILM	4.7K	1%	1/4W
R78	RN14BC2E1500F	RES. METAL FILM	150	1%	1/4W
R79	RD14BB2C471J	RES. CARBON	470	5%	1/6W
R80	RN14BC2E6801F	RES. METAL FILM	6.8K	1%	1/4W
R81	RN14BC2E1802F	RES. METAL FILM	18K	1%	1/4W
R82	RN14BC2E5101F	RES. METAL FILM	5.1K	1%	1/4W
R83	RD14BB2C104J	RES. CARBON	100K	5%	1/6W
R84	RN14BC2E1003F	RES. METAL FILM	100K	1%	1/4W
R85	RN14BC2E82R0F	RES. METAL FILM	82.0	1%	1/4W
R86	RD14BB2C101J	RES. CARBON	100	5%	1/6W
R87	RN14BC2E5101F	RES. METAL FILM	5.1K	1%	1/4W
R88	RN14BC2E1002F	RES. METAL FILM	10K	1%	1/4W
R89	RD14BB2C333J	RES. CARBON	33K	5%	1/6W
R90	RD14BB2C333J	RES. CARBON	33K	5%	1/6W
R91	NO USE				
R92	RD14BB2C153J	RES. CARBON	15K	5%	1/6W
R93	RD14BB2C473J	RES. CARBON	47K	5%	1/6W
R94	RD14BB2C473J	RES. CARBON	47K	5%	1/6W
R95	RD14BB2E330J	RES. CARBON	33	5%	1/4W
R100	RD14BB2E101J	RES. CARBON	100	5%	1/4W
R101	RD14BB2E101J	RES. CARBON	100	5%	1/4W
R102	RD14BB2H392J	RES. CARBON	3.9K	5%	1/2W
R103	RD14BB2C103J	RES. CARBON	10K	5%	1/6W
R104	RD14BB2C153J	RES. CARBON	15K	5%	1/6W
R105	RD14BB2C123J	RES. CARBON	12K	5%	1/6W
R106	RD14BB2C332J	RES. CARBON	3.3K	5%	1/6W
R107	RD14BB2C472J	RES. CARBON	4.7K	5%	1/6W
R108	RN14BC2E4703F	RES. METAL FILM	470K	1%	1/4W
R109	RD14BB2C104J	RES. CARBON	100K	5%	1/6W
R110	RD14BB2C222J	RES. CARBON	2.2K	5%	1/6W
R111	RN14BC2E2202F	RES. METAL FILM	22K	1%	1/4W
R112	RD14BB2C682J	RES. CARBON	6.8K	5%	1/6W

REF. NO	PARTS NO	NAME & DESCRIPTION			
R113	RN14BK2C3303F	RES. METAL FILM	330K	1%	1/6W
R114	RD14BB2C470J	RES. CARBON	47	5%	1/6W
R115	RD14BB2C104J	RES. CARBON	100K	5%	1/6W
R116	RD14BB2C472J	RES. CARBON	4.7K	5%	1/6W
R117	RD14BB2C224J	RES. CARBON	220K	5%	1/6W
R118	RD14BB2C103J	RES. CARBON	10K	5%	1/6W
R119	RD14BB2C122J	RES. CARBON	1.2K	5%	1/6W
R120	RD14BB2C472J	RES. CARBON	4.7K	5%	2W
R121	RD14BB2C104J	RES. CARBON	100K	5%	1/6W
R122	R92-1076-05	RES. METAL GLAZE	27M	5%	1/2W
R123	RD14BB2C472J	RES. CARBON	4.7K	5%	1/6W
R124	RD14BB2C105J	RES. CARBON	1M	5%	1/6W
R127	RD14BB2C911J	RES. CARBON	910	5%	1/6W
R128	RN14BC2E5601F	RES. METAL FILM	5.6K	1%	1/4W
R129	RD14BB2C472J	RES. CARBON	4.7K	5%	1/6W
R130	RD14BB2C103J	RES. CARBON	10K	5%	1/6W
R131	RN14BC2E2202F	RES. METAL FILM	22K	1%	1/4W
R132	RD14BB2C102J	RES. CARBON	1K	5%	1/6W
R133	RD14BB2C103J	RES. CARBON	10K	5%	1/6W
R134	RD14BB2C103J	RES. CARBON	10K	5%	1/6W
R135	RD14BB2C102J	RES. CARBON	1K	5%	1/6W
R136	RD14BB2C472J	RES. CARBON	4.7K	5%	1/6W
R137	RD14BB2C102J	RES. CARBON	1K	5%	1/6W
R138	RD14BB2C102J	RES. CARBON	1K	5%	1/6W
R139	RD14DB3A330J	RES. CARBON	33	5%	1W
R140	RD14DB3A330J	RES. CARBON	33	5%	1W
R141	RD14DB2H102J	RES. CARBON	1K	5%	1/2W
R142	RD14DB2H102J	RES. CARBON	1K	5%	1/2W
R143	NO USE				
R144	RD14BB2C103J	RES. CARBON	10K	5%	1/6W
U1	TL082CP	IC, OP AMP			
U2	NJM7815A	IC, VOLTAGE REGULATOR			
U3	TL082CP	IC, OP AMP			
U4	OP07DP	OPERATIONAL AMPRIFFIER			
U5	OP07DP	OPERATIONAL AMPRIFFIER			
U6	NJM4558D	IC, DUAL OP AMP			
U7	TL082CP	IC, OP AMP			
U10	NJM7815A	IC, VOLTAGE REGULATOR			
U11	UPC7915H-1	IC, 3-TERMINAL REGULATOR			
U12	NJM4558D	IC, DUAL OP AMP			
U13	TL082CP	IC, OP AMP			
U14	NJM555D	IC, TIMER			
U15	TLP521-1(A)	IC, PHOTO COUPLER			
VR1	R12-1558-05	RES. SEMI FIXED	2K		
VR2	R12-4514-05	RES. SEMI FIXED	50K		
VR3	R12-2515-05	RES. SEMI FIXED	5K		
VR4	R12-4514-05	RES. SEMI FIXED	50K		
VR5	R12-3544-05	RES. SEMI FIXED	10K		
VR6	R12-3545-05	RES. SEMI FIXED	20K		
VR7	R12-1540-05	RES. SEMI FIXED	2.5K		
VR8	R12-4514-05	RES. SEMI FIXED	50K		
VR9	R12-1540-05	RES. SEMI FIXED	2.5K		
VR10	R12-4514-05	RES. SEMI FIXED	50K		
VR11	R12-4514-05	RES. SEMI FIXED	50K		
VR20	R12-3544-05	RES. SEMI FIXED	10K		

PARTS LIST

PD8-30D AMP UNIT

X73-1560-04

REF. NO	PARTS NO	NAME & DESCRIPTION			
	E23-0508-04	TEST TERMINAL			
	F01-0845-04	HEAT SINK			
	F01-0846-05	HEAT SINK, EXTRUDED			
	F20-0647-05	INSULATOR			
	J25-0562-22	PCB (UNMOUNTED)			
	N09-0623-04	SCREW, SEMS PAN HD M3X8			
	N19-0191-05	WASHER NONMETAL			
C1	CQ92M2A104K	CAP. MYLAR	0.1	10%	100V
C2	CQ92M2A104K	CAP. MYLAR	0.1	10%	100V
C3	C90-0924-05	CAP. ELECTRO	330	20%	50V
C4	CE04EW1E100M	CAP. ELECTRO	10	20%	25V
C5	CE04EW1E221M	CAP. ELECTRO	220	20%	25V
C6	C90-0939-05	CAP. ELECTRO	470	20%	35V
C7	CE04EW1E100M	CAP. ELECTRO	10	20%	25V
C8	CE04EW1E100M	CAP. ELECTRO	10	20%	25V
C9	CE04EW1E221M	CAP. ELECTRO	220	20%	25V
C10	C90-0924-05	CAP. ELECTRO	330	20%	50V
C11	CE04EW1E101M	CAP. ELECTRO	100	20%	25V
C12	CE04EW1HR33M	CAP. ELECTRO	0.33	20%	50V
C13	CE04EW1H4R7M	CAP. ELECTRO	4.7	20%	50V
C14	CE04EW1E100M	CAP. ELECTRO	10	20%	25V
C15	C91-1203-05	CAP. CERAMIC	1.5	80/-20%	25V
C16	CC45CH1H101J	CAP. CERAMIC	100P	5%	50V
C17	C91-1203-05	CAP. CERAMIC	1.5	80/-20%	25V
C18	CC45CH1H101J	CAP. CERAMIC	100P	5%	50V
C19	CS15E1E4R7M	CAP. TANTALUM	4.7	20%	25V
C20	CQ92P2A471J	CAP. MYLAR	470P	5%	100V
C21	NO USE				
C22	CQ92P2A332J	CAP. MYLAR	3300P	5%	100V
C23	NO USE				
C24	CF92V1H332J	CAP. POLYESTER	3300P	5%	50V
C27	CS15E1E100M	CAP. TANTALUM	10	20%	25V
C28	CC45CH1H101J	CAP. CERAMIC	100P	5%	50V
C29	CS15E1E100M	CAP. TANTALUM	10	20%	25V
C30	CC45CH1H101J	CAP. CERAMIC	100P	5%	50V
C31	CF92V1H103J	CAP. POLYESTER	0.01	5%	50V
C32	CC45CH1H101J	CAP. CERAMIC	100P	5%	50V
C33	CF92V1H103J	CAP. POLYESTER	0.01	5%	50V
C34	CF92V1H103J	CAP. POLYESTER	0.01	5%	50V
C35	CF92V1H103J	CAP. POLYESTER	0.01	5%	50V
C36	CF92V1H473J	CAP. POLYESTER	0.047	5%	50V
C37	CF92V1H103J	CAP. POLYESTER	0.01	5%	50V
C38	CF92V1H473J	CAP. POLYESTER	0.047	5%	50V
C39	CF92V1H473J	CAP. POLYESTER	0.047	5%	50V
C40	CF92V1H473J	CAP. POLYESTER	0.047	5%	50V
C41	CF92V1H473J	CAP. POLYESTER	0.047	5%	50V
C42	CC45CH1H101J	CAP. CERAMIC	100P	5%	50V
C43	CC45CH1H101J	CAP. CERAMIC	100P	5%	50V
C44	CF92V1H472J	CAP. POLYESTER	4700P	5%	50V
C45	CF92V1H472J	CAP. POLYESTER	4700P	5%	50V
C50	CQ92M2A104K	CAP. MYLAR	0.1	10%	100V
C51	CQ92M2A104K	CAP. MYLAR	0.1	10%	100V
C52	C90-0924-05	CAP. ELECTRO	330	20%	50V
C53	CF92V1H103J	CAP. POLYESTER	0.01	5%	50V
C54	CF92V1H103J	CAP. POLYESTER	0.01	5%	50V
C55	CE04EW1E100M	CAP. ELECTRO	10	20%	25V
C56	C90-0924-05	CAP. ELECTRO	330	20%	50V
C57	CF92V1H103J	CAP. POLYESTER	0.01	5%	50V
C58	CF92V1H103J	CAP. POLYESTER	0.01	5%	50V
C59	CE04EW1E100M	CAP. ELECTRO	10	20%	25V
C60	CF92V1H103J	CAP. POLYESTER	0.01	5%	50V
C61	CC45CH1H470J	CAP. CERAMIC	47P	5%	50V
C62	C91-0595-05	CAP. PLASTIC	0.033	2%	100V
C63	CC45CH1H101J	CAP. CERAMIC	100P	5%	50V
C64	CF92V1H102J	CAP. POLYESTER	1000P	5%	50V
C65	CF92V1H103J	CAP. POLYESTER	0.01	5%	50V
C66	CF92V1H472J	CAP. POLYESTER	4700P	5%	50V
C67	CE04EW1E100M	CAP. ELECTRO	10	20%	25V
C68	CF92V1H103J	CAP. POLYESTER	0.01	5%	50V
C69	CF92V1H473J	CAP. POLYESTER	0.047	5%	50V
C70	CE04BW1E100M	CAP. ELECTRO	10	20%	25V
C71	CE04BW1E100M	CAP. ELECTRO	10	20%	25V
C72	CF92V1H103J	CAP. POLYESTER	0.01	5%	50V
C73	CF92V1H224J	CAP. POLYESTER	0.22	5%	50V
C74	CC45CH1H101J	CAP. CERAMIC	100P	5%	50V
C75	CE04EW1E100M	CAP. ELECTRO	10	20%	25V
C76	CE04EW1C471M	CAP. ELECTRO	470	20%	16V
C201	CE04EW1E471M	CAP. ELECTRO	470	20%	25V
C202	CE04EW1E470M	CAP. ELECTRO	47	20%	25V
C203	CE04EW1E471M	CAP. ELECTRO	470	20%	25V
C204	CE04EW1E470M	CAP. ELECTRO	47	20%	25V
C205	CF92V1H473J	CAP. POLYESTER	0.047	5%	50V
C206	CF92V1H103J	CAP. POLYESTER	0.01	5%	50V
C207	CF92V1H473J	CAP. POLYESTER	0.047	5%	50V
C208	CF92V1H103J	CAP. POLYESTER	0.01	5%	50V

REF. NO	PARTS NO	NAME & DESCRIPTION			
C209	CF92V1H473J	CAP. POLYESTER	0.047	5%	50V
C210	CF92V1H103J	CAP. POLYESTER	0.01	5%	50V
C211	CF92V1H473J	CAP. POLYESTER	0.047	5%	50V
C212	CF92V1H103J	CAP. POLYESTER	0.01	5%	50V
D1	S1VB60	DIODE, STACK			
D2	S1VB60	DIODE, STACK			
D3	DSA1A2	DIODE			
D4	DSA1A2	DIODE			
D5	NO USE				
D6	RD13F(B2)	DIODE, ZENER	12.97V		
D7	MTZ9.1JC	DIODE, ZENER	9.07V		
D8	1SS132	DIODE			
D9	RD13F(B2)	DIODE, ZENER	12.97V		
D10	MTZ9.1JC	DIODE, ZENER	9.07V		
D11	1SS132	DIODE			
D12	MTZ4.7JA	DIODE, ZENER	4.56V		
D13	1SS132	DIODE			
D14	HZT7A3	DIODE, ZENER	6.75V		
D15	HZT7A3	DIODE, ZENER	6.75V		
D16	1SS132	DIODE			
D17	1SS132	DIODE			
D18	1SS132	DIODE			
D19	1SS132	DIODE			
D20	1SS132	DIODE			
D21	1SS132	DIODE			
D22	1SS132	DIODE			
D23	1SS132	DIODE			
D24	1SS132	DIODE			
D25	1SS132	DIODE			
D26	1SS132	DIODE			
D27	1SS132	DIODE			
D28	MTZ5.1JB	DIODE, ZENER	5.07V		
D29	1SS132	DIODE			
D30	MTZ5.1JB	DIODE, ZENER	5.07V		
D31	DSA1A2	DIODE			
D32	DSA1A2	DIODE			
D40	S1VB60	DIODE, STACK			
D41	S1VB60	DIODE, STACK			
D42	DSA1A2	DIODE			
D43	DSA1A2	DIODE			
D44	DSA1A2	DIODE			
D45	DSA1A2	DIODE			
D46	MTZ6.2JB	DIODE, ZENER	6.12V		
D47	1SS132	DIODE			
D48	1SS132	DIODE			
D49	1SS132	DIODE			
D50	1SS132	DIODE			
D51	RD10F(B2)	DIODE, ZENER	9.75V		
D52	RD10F(B2)	DIODE, ZENER	9.75V		
D53	1SS132	DIODE			
D54	1SS132	DIODE			
D55	1SS132	DIODE			
D56	1SS132	DIODE			
D57	1SS132	DIODE			
D58	1SS132	DIODE			
D59	MTZ8.2JC	DIODE, ZENER	8.24V		
D60	1SS132	DIODE			
D61	1SS132	DIODE			
D62	1SS132	DIODE			
D63	1SS132	DIODE			
D64	1SS132	DIODE			
D65	1SS132	DIODE			
D201	S1VB60	DIODE, STACK			
D202	S1VB60	DIODE, STACK			
P3	E40-0273-05	PIN CONNECTOR	2P		
P4	E40-0273-05	PIN CONNECTOR	2P		
P201	E40-0673-05	PIN CONNECTOR	6P		
P202	E40-0373-05	PIN CONNECTOR	3P		
P203	E40-0373-05	PIN CONNECTOR	3P		
P204	E40-0673-05	PIN CONNECTOR	6P		
Q1	2SD613(E)	TR. S1, NPN			
Q2	2SC2785(F)	TR. S1, NPN			
Q3	2SC2785(F)	TR. S1, NPN			
Q4	2SA1408(O)	TR. S1, PNP			
Q5	2SB633(E)	TR. S1, PNP			
Q6	2SA1175(F)	TR. S1, PNP			
Q7	2SA1175(F)	TR. S1, PNP			
Q8	2SC3621(O)	TR. S1, NPN			
Q9	2SC3064(F)	TR. S1, NPN			
Q10	2SC2785(F)	TR. S1, NPN			
Q11	2SC2785(F)	TR. S1, NPN			
Q12	2SC2439(GR)	TR. S1, NPN			
Q13	2SC3621(O)	TR. S1, NPN			
Q14	2SK170(BL)	FET, N-CHANNEL			
Q15	2SK170(BL)	FET, N-CHANNEL			
Q16	2SK170(BL)	FET, N-CHANNEL			
Q17	2SK170(BL)	FET, N-CHANNEL			

PARTS LIST

REF. NO	PARTS NO	NAME & DESCRIPTION
Q20	2SK170(BL)	FET, N-CHANNEL
Q21	2SC2785(F)	TR. SI, NPN
Q22	2SC3621(O)	TR. SI, NPN
Q23	2SC3621(O)	TR. SI, NPN
R1	RD14BB2E101J	RES. CARBON 100 5% 1/4W
R2	RD14BB2E101J	RES. CARBON 100 5% 1/4W
R3	RD14DB3D471J	RES. CARBON 470 5% 2W
R4	RD14BB2E561J	RES. CARBON 560 5% 1/4W
R5	RD14DB2H512J	RES. CARBON 5.1K 5% 1/2W
R6	RD14BB2C102J	RES. CARBON 1K 5% 1/6W
R7	RD14DB2H2R7J	RES. CARBON 2.7 5% 1/2W
R8	RD14BB2C153J	RES. CARBON 15K 5% 1/6W
R9	RN14BC2E7501F	RES. METAL FILM 7.5K 1% 1/4W
R10	RN14BC2E7501F	RES. METAL FILM 7.5K 1% 1/4W
R11	RD14DB3D471J	RES. CARBON 470 5% 2W
R12	RD14BB2E561J	RES. CARBON 560 5% 1/4W
R13	RD14DB2H512J	RES. CARBON 5.1K 5% 1/2W
R14	RD14BB2C102J	RES. CARBON 1K 5% 1/6W
R15	RD14DB2H2R7J	RES. CARBON 2.7 5% 1/2W
R16	RD14BB2C153J	RES. CARBON 15K 5% 1/6W
R17	RD14BB2C682J	RES. CARBON 6.8K 5% 1/6W
R18	RN14BC2E3600F	RES. METAL FILM 360 1% 1/4W
R19	RN14BC2E4300F	RES. METAL FILM 430 1% 1/4W
R20	RN14BC2E2701F	RES. METAL FILM 2.7K 1% 1/4W
R21	RN14BC2E3301F	RES. METAL FILM 3.3K 1% 1/4W
R24	RD14BB2C153J	RES. CARBON 15K 5% 1/6W
R25	RD14BB2C153J	RES. CARBON 15K 5% 1/6W
R26	RD14BB2E243J	RES. CARBON 24K 5% 1/4W
R27	RD14BB2E820J	RES. CARBON 82 5% 1/4W
R28	RD14BB2E182J	RES. CARBON 1.8K 5% 1/4W
R29	RD14BB2E181J	RES. CARBON 180 5% 1/4W
R30	RN14BE2E3601D	RES. METAL FILM 3.6K 0.5% 1/4W
R31	RD14BB2C102J	RES. CARBON 1K 5% 1/6W
R32	RN14BC2E1003F	RES. METAL FILM 100K 1% 1/4W
R33	RN14BC2E3600F	RES. METAL FILM 360 1% 1/4W
R34	RD14BB2C151J	RES. CARBON 150 5% 1/6W
R35	RN14BC2E1102F	RES. METAL FILM 11K 1% 1/4W
R36	RN14BE2E5101D	RES. METAL FILM 5.1K 0.5% 1/4W
R37	RD14BB2C102J	RES. CARBON 1K 5% 1/6W
R38	RN14BC2E1003F	RES. METAL FILM 100K 1% 1/4W
R39	RN14BC2E3600F	RES. METAL FILM 360 1% 1/4W
R40	RD14BB2C221J	RES. CARBON 220 5% 1/6W
R41	RN14BC2E1622F	RES. METAL FILM 16.2K 1% 1/4W
R42	RN14BE2H1002DKW	RES. METAL FILM 10K 0.5% 1/2W
R43	RN14BE2H8061DKW	RES. METAL FILM 8.06K 0.5% 1/2W
R44	R92-0150-05	JUMPING RES. ZERO OHM(10MM)
R45	RN14BE2H1002DKW	RES. METAL FILM 10K 0.5% 1/2W
R46	RN14BE2H3740DKW	RES. METAL FILM 374 0.5% 1/2W
R47	RD14BB2C102J	RES. CARBON 1K 5% 1/6W
R48	RD14BB2C102J	RES. CARBON 1K 5% 1/6W
R49	RN14BC2E4702F	RES. METAL FILM 47K 1% 1/4W
R50	RD14BB2C102J	RES. CARBON 1K 5% 1/6W
R51	RD14BB2C102J	RES. CARBON 1K 5% 1/6W
R52	RN14BC2E1001F	RES. METAL FILM 1K 1% 1/4W
R53	RD14BB2E162J	RES. CARBON 1.6K 5% 1/4W
R54	RN14BC2E4301F	RES. METAL FILM 4.3K 1% 1/4W
R55	RN14BC2E4300F	RES. METAL FILM 430 1% 1/4W
R56	RD14BB2C122J	RES. CARBON 1.2K 5% 1/6W
R57	RD14BB2C101J	RES. CARBON 100 5% 1/6W
R58	RD14BB2C102J	RES. CARBON 1K 5% 1/6W
R59	RD14BB2C102J	RES. CARBON 1K 5% 1/6W
R60	RD14BB2C102J	RES. CARBON 1K 5% 1/6W
R61	RD14BB2C102J	RES. CARBON 1K 5% 1/6W
R62	RD14BB2C122J	RES. CARBON 1.2K 5% 1/6W
R63	RD14BB2C473J	RES. CARBON 47K 5% 1/6W
R64	RN14BC2E1002F	RES. METAL FILM 10K 1% 1/4W
R65	RD14DB3A101J	RES. CARBON 100 5% 1W
R66	RN14BC2E7150F	RES. METAL FILM 715 1% 1/4W
R67	RD14BB2C104J	RES. CARBON 100K 5% 1/6W
R68	RN14BC2E1003F	RES. METAL FILM 100K 1% 1/4W
R69	RN14BC2E4701F	RES. METAL FILM 4.7K 1% 1/4W
R70	RN14BC2E1500F	RES. METAL FILM 150 1% 1/4W
R71	RD14BB2C471J	RES. CARBON 470 5% 1/6W
R72	RN14BC2E6801F	RES. METAL FILM 6.8K 1% 1/4W
R73	R92-0150-05	JUMPING RES. ZERO OHM(10MM)
R74	RD14BB2C104J	RES. CARBON 100K 5% 1/6W
R75	RD14BB2C104J	RES. CARBON 100K 5% 1/6W
R76	RN14BC2E1003F	RES. METAL FILM 100K 1% 1/4W
R77	RN14BC2E4701F	RES. METAL FILM 4.7K 1% 1/4W
R78	RN14BC2E1500F	RES. METAL FILM 150 1% 1/4W
R79	RD14BB2C471J	RES. CARBON 470 5% 1/6W
R80	RN14BC2E6801F	RES. METAL FILM 6.8K 1% 1/4W
R81	R92-0150-05	JUMPING RES. ZERO OHM(10MM)
R82	RN14BC2E5101F	RES. METAL FILM 5.1K 1% 1/4W
R83	RD14BB2C104J	RES. CARBON 100K 5% 1/6W
R84	RN14BC2E1003F	RES. METAL FILM 100K 1% 1/4W
R85	RN14BC2E820F	RES. METAL FILM 82.0 1% 1/4W
R86	RD14BB2C101J	RES. CARBON 100 5% 1/6W
R87	RN14BC2E5101F	RES. METAL FILM 5.1K 1% 1/4W
R88	RN14BC2E1002F	RES. METAL FILM 10K 1% 1/4W

REF. NO	PARTS NO	NAME & DESCRIPTION
R89	RD14BB2C333J	RES. CARBON 33K 5% 1/6W
R90	RD14BB2C333J	RES. CARBON 33K 5% 1/6W
R91	NO USE	
R92	RD14BB2C153J	RES. CARBON 15K 5% 1/6W
R93	RD14BB2C473J	RES. CARBON 47K 5% 1/6W
R94	RD14BB2C473J	RES. CARBON 47K 5% 1/6W
R95	RD14BB2E330J	RES. CARBON 33 5% 1/4W
R100	RD14BB2E101J	RES. CARBON 100 5% 1/4W
R101	RD14BB2E101J	RES. CARBON 100 5% 1/4W
R102	RD14DB2H392J	RES. CARBON 3.9K 5% 1/2W
R103	RD14BB2C103J	RES. CARBON 10K 5% 1/6W
R104	RD14BB2C153J	RES. CARBON 15K 5% 1/6W
R105	RD14BB2C123J	RES. CARBON 12K 5% 1/6W
R106	RD14BB2C332J	RES. CARBON 3.3K 5% 1/6W
R107	RD14BB2C472J	RES. CARBON 4.7K 5% 1/6W
R108	RN14BC2E4703F	RES. METAL FILM 470K 1% 1/4W
R109	RD14BB2C104J	RES. CARBON 100K 5% 1/6W
R110	RD14BB2C222J	RES. CARBON 2.2K 5% 1/6W
R111	RN14BC2E2202F	RES. METAL FILM 22K 1% 1/4W
R112	RD14BB2C682J	RES. CARBON 6.8K 5% 1/6W
R113	RN14BK2C3303F	RES. METAL FILM 330K 1% 1/6W
R114	RD14BB2C470J	RES. CARBON 47 5% 1/6W
R115	RD14BB2C104J	RES. CARBON 100K 5% 1/6W
R116	RD14BB2C472J	RES. CARBON 4.7K 5% 1/6W
R117	RD14BB2C224J	RES. CARBON 220K 5% 1/6W
R118	RD14BB2C103J	RES. CARBON 10K 5% 1/6W
R119	RD14BB2C122J	RES. CARBON 1.2K 5% 1/6W
R120	RD14DB3D472J	RES. CARBON 4.7K 5% 2W
R121	RD14BB2C104J	RES. CARBON 100K 5% 1/6W
R122	R92-1076-05	RES. METAL GLAZE27M 5% 1/2W
R123	RD14BB2C472J	RES. CARBON 4.7K 5% 1/6W
R124	RD14BB2C105J	RES. CARBON 1M 5% 1/6W
R127	RD14BB2C911J	RES. CARBON 910 5% 1/6W
R128	RN14BC2E5601F	RES. METAL FILM 5.6K 1% 1/4W
R129	RD14BB2C472J	RES. CARBON 4.7K 5% 1/6W
R130	RD14BB2C103J	RES. CARBON 10K 5% 1/6W
R131	RN14BC2E2202F	RES. METAL FILM 22K 1% 1/4W
R132	RD14BB2C102J	RES. CARBON 1K 5% 1/6W
R133	RD14BB2C103J	RES. CARBON 10K 5% 1/6W
R134	RD14BB2C103J	RES. CARBON 10K 5% 1/6W
R135	RD14BB2C102J	RES. CARBON 1K 5% 1/6W
R136	RD14BB2C472J	RES. CARBON 4.7K 5% 1/6W
R137	RD14BB2C102J	RES. CARBON 1K 5% 1/6W
R138	RD14BB2C102J	RES. CARBON 1K 5% 1/6W
R139	RD14DB3A330J	RES. CARBON 33 5% 1W
R140	RD14DB3A330J	RES. CARBON 33 5% 1W
R141	RD14DB2H102J	RES. CARBON 1K 5% 1/2W
R142	RD14DB2H102J	RES. CARBON 1K 5% 1/2W
R143	NO USE	
R144	RD14BB2C103J	RES. CARBON 10K 5% 1/6W
U1	TL082CP	IC,OP AMP
U2	NJM7815A	IC,VOLTAGE REGULATOR
U3	TL082CP	IC,OP AMP
U4	OP07DP	OPERATIONAL AMPRIFIER
U5	OP07DP	OPERATIONAL AMPRIFIER
U6	NJM4558D	IC,DUAL OP AMP
U7	TL082CP	IC,OP AMP
U10	NJM7815A	IC,VOLTAGE REGULATOR
U11	UPC7915H-1	IC,3-TERMINAL REGULATOR
U12	NJM4558D	IC,DUAL OP AMP
U13	TL082CP	IC,OP AMP
U14	NJM555D	IC,TIMER
U15	TLP521-1(A)	IC,PHOTO COUPLER
U201	LM79L05ACZ	IC,REGULATOR
U202	LM79L05ACZ	IC,REGULATOR
VR1	R12-1558-05	RES. SEMI FIXED 2K
VR2	R12-4514-05	RES. SEMI FIXED 50K
VR3	R12-2515-05	RES. SEMI FIXED 5K
VR4	R12-4514-05	RES. SEMI FIXED 50K
VR5	R12-3555-05	RES. SEMI FIXED 10K
VR6	R12-3556-05	RES. SEMI FIXED 20K
VR7	R12-1540-05	RES. SEMI FIXED 2.5K
VR8	R12-4514-05	RES. SEMI FIXED 50K
VR9	R12-1540-05	RES. SEMI FIXED 2.5K
VR10	R12-4514-05	RES. SEMI FIXED 50K
VR11	R12-4514-05	RES. SEMI FIXED 50K
VR20	R12-3544-05	RES. SEMI FIXED 10K

PARTS LIST

PD18-20 AMP UNIT

X73-1550-02

REF. NO	PARTS NO	NAME & DESCRIPTION
	E23-0508-04	TEST TERMINAL
	F01-0845-04	HEAT SINK
	F01-0846-05	HEAT SINK, EXTRUDED
	F20-0647-05	INSULATOR
	J25-5062-22	PCB (UNMOUNTED)
	N09-0623-04	SCREW, SEMS PAN HD M3X8
	N19-0191-05	WASHER NONMETAL
	R92-0150-05	JUMPING RES. ZERO OHM (10HM)
C1	CQ92M2A104K	CAP. NYLAR 0.1 10% 100V
C2	CQ92M2A104K	CAP. NYLAR 0.1 10% 100V
C3	C90-0924-05	CAP. ELECTRO 330 20% 50V
C4	CE04EW1E100M	CAP. ELECTRO 10 20% 25V
C5	CE04EW1E221M	CAP. ELECTRO 220 20% 25V
C6	C90-0939-05	CAP. ELECTRO 470 20% 35V
C7	CE04EW1E100M	CAP. ELECTRO 10 20% 25V
C8	CE04EW1E100M	CAP. ELECTRO 10 20% 25V
C9	CE04EW1E221M	CAP. ELECTRO 220 20% 25V
C10	C90-0924-05	CAP. ELECTRO 330 20% 50V
C11	CE04EW1E101M	CAP. ELECTRO 100 20% 25V
C12	CE04EW1HR33M	CAP. ELECTRO 0.33 20% 50V
C13	CE04EW1H4R7M	CAP. ELECTRO 4.7 20% 50V
C14	CE04EW1E100M	CAP. ELECTRO 10 20% 25V
C15	C91-1203-05	CAP. CERAMIC 1.5 80/-20% 25V
C16	CC45CH1H101J	CAP. CERAMIC 100P 5% 50V
C17	C91-1203-05	CAP. CERAMIC 1.5 80/-20% 25V
C18	CC45CH1H101J	CAP. CERAMIC 100P 5% 50V
C19	CS15E1H2R2M	CAP. TANTALUM 2.2 20% 50V
C20	CQ92P2A332J	CAP. NYLAR 3300P 5% 100V
C21	CC45CH1H390J	CAP. CERAMIC 39P 5% 50V
C22	CQ92P2A332J	CAP. NYLAR 3300P 5% 100V
C23	CC45CH1H390J	CAP. CERAMIC 39P 5% 50V
C24	CF92V1H332J	CAP. POLYESTER 3300P 5% 50V
C27	CS15E1E100M	CAP. TANTALUM 10 20% 25V
C28	CC45CH1H101J	CAP. CERAMIC 100P 5% 50V
C29	CS15E1E100M	CAP. TANTALUM 10 20% 25V
C30	CC45CH1H101J	CAP. CERAMIC 100P 5% 50V
C31	CF92V1H103J	CAP. POLYESTER 0.01 5% 50V
C32	CC45CH1H101J	CAP. CERAMIC 100P 5% 50V
C33	CF92V1H103J	CAP. POLYESTER 0.01 5% 50V
C34	CF92V1H103J	CAP. POLYESTER 0.01 5% 50V
C35	CF92V1H103J	CAP. POLYESTER 0.01 5% 50V
C36	CF92V1H473J	CAP. POLYESTER 0.047 5% 50V
C37	CF92V1H103J	CAP. POLYESTER 0.01 5% 50V
C38	CF92V1H473J	CAP. POLYESTER 0.047 5% 50V
C39	CF92V1H473J	CAP. POLYESTER 0.047 5% 50V
C40	CF92V1H473J	CAP. POLYESTER 0.047 5% 50V
C41	CF92V1H473J	CAP. POLYESTER 0.047 5% 50V
C42	CC45CH1H101J	CAP. CERAMIC 100P 5% 50V
C43	CC45CH1H101J	CAP. CERAMIC 100P 5% 50V
C44	CF92V1H472J	CAP. POLYESTER 4700P 5% 50V
C45	CF92V1H472J	CAP. POLYESTER 4700P 5% 50V
C50	CQ92M2A104K	CAP. NYLAR 0.1 10% 100V
C51	CQ92M2A104K	CAP. NYLAR 0.1 10% 100V
C52	C90-0924-05	CAP. ELECTRO 330 20% 50V
C53	CF92V1H103J	CAP. POLYESTER 0.01 5% 50V
C54	CF92V1H103J	CAP. POLYESTER 0.01 5% 50V
C55	CE04EW1E100M	CAP. ELECTRO 10 20% 25V
C56	C90-0924-05	CAP. ELECTRO 330 20% 50V
C57	CF92V1H103J	CAP. POLYESTER 0.01 5% 50V
C58	CF92V1H103J	CAP. POLYESTER 0.01 5% 50V
C59	CE04EW1E100M	CAP. ELECTRO 10 20% 25V
C60	CF92V1H103J	CAP. POLYESTER 0.01 5% 50V
C61	CC45CH1H470J	CAP. CERAMIC 47P 5% 50V
C62	C91-0595-05	CAP. PLASTIC 0.033 2% 100V
C63	CC45CH1H101J	CAP. CERAMIC 100P 5% 50V
C64	CF92V1H102J	CAP. POLYESTER 1000P 5% 50V
C65	CF92V1H103J	CAP. POLYESTER 0.01 5% 50V
C66	CF92V1H472J	CAP. POLYESTER 4700P 5% 50V
C67	CE04EW1E100M	CAP. ELECTRO 10 20% 25V
C68	CF92V1H103J	CAP. POLYESTER 0.01 5% 50V
C69	CF92V1H473J	CAP. POLYESTER 0.047 5% 50V
C72	CF92V1H103J	CAP. POLYESTER 0.01 5% 50V
C73	CF92V1H224J	CAP. POLYESTER 0.22 5% 50V
C74	CC45CH1H101J	CAP. CERAMIC 100P 5% 50V
C75	CE04EW1E100M	CAP. ELECTRO 10 20% 25V
C76	CE04EW1C471M	CAP. ELECTRO 470 20% 16V
D1	S1VB60	DIODE, STACK
D2	S1VB60	DIODE, STACK
D3	DSA1A2	DIODE
D4	DSA1A2	DIODE
D5	NO USE	
D6	RD13F(B2)	DIODE, ZENER 12.97V
D7	MTZ9.1JC	DIODE, ZENER 9.07V
D8	1SS132	DIODE

REF. NO	PARTS NO	NAME & DESCRIPTION
D9	RD13F(B2)	DIODE, ZENER 12.97V
D10	MTZ9.1JC	DIODE, ZENER 9.07V
D11	1SS132	DIODE
D12	MTZ4.7JA	DIODE, ZENER 4.56V
D13	1SS132	DIODE
D14	HZT7A3	DIODE, ZENER 6.75V
D15	HZT7A3	DIODE, ZENER 6.75V
D16	1SS132	DIODE
D17	1SS132	DIODE
D18	1SS132	DIODE
D19	1SS132	DIODE
D20	1SS132	DIODE
D21	1SS132	DIODE
D22	1SS132	DIODE
D23	1SS132	DIODE
D24	1SS132	DIODE
D25	1SS132	DIODE
D26	1SS132	DIODE
D27	1SS132	DIODE
D28	MTZ5.1JB	DIODE, ZENER 5.07V
D29	1SS132	DIODE
D30	MTZ5.1JB	DIODE, ZENER 5.07V
D31	DSA1A2	DIODE
D32	DSA1A2	DIODE
D35	MTZ8.2JC	DIODE, ZENER 8.24V
D36	MTZ8.2JC	DIODE, ZENER 8.24V
D40	S1VB60	DIODE, STACK
D41	S1VB60	DIODE, STACK
D42	DSA1A2	DIODE
D43	DSA1A2	DIODE
D44	DSA1A2	DIODE
D45	DSA1A2	DIODE
D46	MTZ6.2JB	DIODE, ZENER 6.12V
D47	1SS132	DIODE
D48	1SS132	DIODE
D49	1SS132	DIODE
D50	1SS132	DIODE
D51	RD10F(B2)	DIODE, ZENER 9.75V
D52	RD10F(B2)	DIODE, ZENER 9.75V
D53	1SS132	DIODE
D54	1SS132	DIODE
D55	1SS132	DIODE
D56	1SS132	DIODE
D57	1SS132	DIODE
D58	1SS132	DIODE
D59	MTZ8.2JC	DIODE, ZENER 8.24V
D60	1SS132	DIODE
D61	1SS132	DIODE
D62	1SS132	DIODE
D63	1SS132	DIODE
D64	1SS132	DIODE
D65	1SS132	DIODE
P3	E40-0273-05	PIN CONNECTOR 2P
P4	E40-0273-05	PIN CONNECTOR 2P
Q1	2SD613(E)	TR. S1, NPN
Q2	2SC2785(F)	TR. S1, NPN
Q3	2SC2785(F)	TR. S1, NPN
Q4	2SA1408(O)	TR. S1, PNP
Q5	2SB633(E)	TR. S1, PNP
Q6	2SA1175(F)	TR. S1, PNP
Q7	2SA1175(F)	TR. S1, PNP
Q8	2SC3621(O)	TR. S1, NPN
Q9	2SC3064(F)	TR. S1, NPN
Q10	2SC2785(F)	TR. S1, NPN
Q11	2SC2785(F)	TR. S1, NPN
Q12	2SC2459(GR)	TR. S1, NPN
Q13	2SC3621(O)	TR. S1, NPN
Q14	2SK170(BL)	FET, N-CHANNEL
Q15	2SK170(BL)	FET, N-CHANNEL
Q16	2SK170(BL)	FET, N-CHANNEL
Q17	2SK170(BL)	FET, N-CHANNEL
Q20	2SK170(BL)	FET, N-CHANNEL
Q21	2SC2785(F)	TR. S1, NPN
Q22	2SC3621(O)	TR. S1, NPN
Q23	2SC3621(O)	TR. S1, NPN
R1	RD14BB2E101J	RES. CARBON 100 5% 1/4W
R2	RD14BB2E101J	RES. CARBON 100 5% 1/4W
R3	RD14DB3D471J	RES. CARBON 470 5% 2W
R4	RD14BB2E561J	RES. CARBON 560 5% 1/4W
R5	RD14DB2H512J	RES. CARBON 5.1K 5% 1/2W
R6	RD14BB2C102J	RES. CARBON 1K 5% 1/6W
R7	RD14DB2H2R7J	RES. CARBON 2.7 5% 1/2W
R8	RD14BB2C153J	RES. CARBON 15K 5% 1/6W
R9	RN14BC2E7501F	RES. METAL FILM 7.5K 1% 1/4W
R10	RN14BC2E7501F	RES. METAL FILM 7.5K 1% 1/4W
R11	RD14DB3D471J	RES. CARBON 470 5% 2W
R12	RD14BB2E561J	RES. CARBON 560 5% 1/4W

PARTS LIST

REF. NO	PARTS NO	NAME & DESCRIPTION			
R13	RD14BB2H512J	RES. CARBON	5.1K	5%	1/2W
R14	RD14BB2C102J	RES. CARBON	1K	5%	1/6W
R15	RD14BB2H2R7J	RES. CARBON	2.7	5%	1/2W
R16	RD14BB2C153J	RES. CARBON	15K	5%	1/6W
R17	RD14BB2C682J	RES. CARBON	6.8K	5%	1/6W
R18	RN14BC2E3600F	RES. METAL FILM	360	1%	1/4W
R19	RN14BC2E4300F	RES. METAL FILM	430	1%	1/4W
R20	RN14BC2E2701F	RES. METAL FILM	2.7K	1%	1/4W
R21	RN14BC2E3301F	RES. METAL FILM	3.3K	1%	1/4W
R24	RD14BB2C153J	RES. CARBON	15K	5%	1/6W
R25	RD14BB2C153J	RES. CARBON	15K	5%	1/6W
R26	RD14BB2E243J	RES. CARBON	24K	5%	1/4W
R27	RD14BB2E820J	RES. CARBON	82	5%	1/4W
R28	RD14BB2E182J	RES. CARBON	1.8K	5%	1/4W
R29	RD14BB2E181J	RES. CARBON	180	5%	1/4W
R30	RN14BE2E3601D	RES. METAL FILM	3.6K	0.5%	1/4W
R31	RD14BB2C102J	RES. CARBON	1K	5%	1/6W
R32	RN14BC2E1003F	RES. METAL FILM	100K	1%	1/4W
R33	RN14BC2E3600F	RES. METAL FILM	360	1%	1/4W
R34	RD14BB2C151J	RES. CARBON	150	5%	1/6W
R35	RN14BC2E1102F	RES. METAL FILM	11K	1%	1/4W
R36	RN14BE2E5101D	RES. METAL FILM	5.1K	0.5%	1/4W
R37	RD14BB2C102J	RES. CARBON	1K	5%	1/6W
R38	RN14BC2E1003F	RES. METAL FILM	100K	1%	1/4W
R39	RN14BC2E3600F	RES. METAL FILM	360	1%	1/4W
R40	RD14BB2C221J	RES. CARBON	220	5%	1/6W
R41	RN14BC2E1622F	RES. METAL FILM	16.2K	1%	1/4W
R42	RN14BE2H1002DKW	RES. METAL FILM	10K	0.5%	1/2W
R43	RN14BE2H1802DKW	RES. METAL FILM	18K	0.5%	1/2W
R44	NO USE				
R45	RN14BE2H1002DKW	RES. METAL FILM	10K	0.5%	1/2W
R46	RN14BE2H5230DKW	RES. METAL FILM	523	0.5%	1/2W
R47	RD14BB2C102J	RES. CARBON	1K	5%	1/6W
R48	RD14BB2C102J	RES. CARBON	1K	5%	1/6W
R49	RN14BC2E2701F	RES. METAL FILM	2.7K	1%	1/4W
R50	RD14BB2C102J	RES. CARBON	1K	5%	1/6W
R51	RD14BB2C102J	RES. CARBON	1K	5%	1/6W
R52	RN14BC2E1001F	RES. METAL FILM	1K	1%	1/4W
R53	RD14BB2E162J	RES. CARBON	1.6K	5%	1/4W
R54	RN14BC2E4301F	RES. METAL FILM	4.3K	1%	1/4W
R55	RN14BC2E6200F	RES. METAL FILM	620	1%	1/4W
R56	RD14BB2C122J	RES. CARBON	1.2K	5%	1/6W
R57	RD14BB2C621J	RES. CARBON	620	5%	1/6W
R58	RD14BB2C102J	RES. CARBON	1K	5%	1/6W
R59	RD14BB2C102J	RES. CARBON	1K	5%	1/6W
R60	RD14BB2C102J	RES. CARBON	1K	5%	1/6W
R61	RD14BB2C102J	RES. CARBON	1K	5%	1/6W
R62	RD14BB2C122J	RES. CARBON	1.2K	5%	1/6W
R63	RD14BB2C223J	RES. CARBON	22K	5%	1/6W
R64	RN14BC2E1002F	RES. METAL FILM	10K	1%	1/4W
R65	RD14BB3A101J	RES. CARBON	100	5%	1W
R66	RN14BC2E1001F	RES. METAL FILM	1K	1%	1/4W
R67	RD14BB2C104J	RES. CARBON	100K	5%	1/6W
R68	RN14BC2E1003F	RES. METAL FILM	100K	1%	1/4W
R69	RN14BC2E4701F	RES. METAL FILM	4.7K	1%	1/4W
R70	RN14BC2E1500F	RES. METAL FILM	150	1%	1/4W
R71	RD14BB2C471J	RES. CARBON	470	5%	1/6W
R72	RN14BC2E6801F	RES. METAL FILM	6.8K	1%	1/4W
R73	RN14BC2E1802F	RES. METAL FILM	18K	1%	1/4W
R74	RD14BB2C104J	RES. CARBON	100K	5%	1/6W
R75	RD14BB2C104J	RES. CARBON	100K	5%	1/6W
R76	RN14BC2E1003F	RES. METAL FILM	100K	1%	1/4W
R77	RN14BC2E4701F	RES. METAL FILM	4.7K	1%	1/4W
R78	RN14BC2E1500F	RES. METAL FILM	150	1%	1/4W
R79	RD14BB2C471J	RES. CARBON	470	5%	1/6W
R80	RN14BC2E6801F	RES. METAL FILM	6.8K	1%	1/4W
R81	RN14BC2E1802F	RES. METAL FILM	18K	1%	1/4W
R82	RN14BC2E5101F	RES. METAL FILM	5.1K	1%	1/4W
R83	RD14BB2C104J	RES. CARBON	100K	5%	1/6W
R84	RN14BC2E1003F	RES. METAL FILM	100K	1%	1/4W
R85	RN14BC2E82R0F	RES. METAL FILM	82.0	1%	1/4W
R86	RD14BB2C101J	RES. CARBON	100	5%	1/6W
R87	RN14BC2E5101F	RES. METAL FILM	5.1K	1%	1/4W
R88	RN14BC2E1002F	RES. METAL FILM	10K	1%	1/4W
R89	RD14BB2C333J	RES. CARBON	33K	5%	1/6W
R90	RD14BB2C333J	RES. CARBON	33K	5%	1/6W
R91	NO USE				
R92	RD14BB2C153J	RES. CARBON	15K	5%	1/6W
R93	RD14BB2C473J	RES. CARBON	47K	5%	1/6W
R94	RD14BB2C473J	RES. CARBON	47K	5%	1/6W
R95	RD14BB2E750J	RES. CARBON	75	5%	1/4W
R100	RD14BB2E101J	RES. CARBON	100	5%	1/4W
R101	RD14BB2E101J	RES. CARBON	100	5%	1/4W
R102	RD14DB2H392J	RES. CARBON	3.9K	5%	1/2W
R103	RD14BB2C103J	RES. CARBON	10K	5%	1/6W
R104	RD14BB2C153J	RES. CARBON	15K	5%	1/6W
R105	RD14BB2C123J	RES. CARBON	12K	5%	1/6W
R106	RD14BB2C332J	RES. CARBON	3.3K	5%	1/6W
R107	RD14BB2C472J	RES. CARBON	4.7K	5%	1/6W
R108	RN14BC2E4703F	RES. METAL FILM	470K	1%	1/4W
R109	RD14BB2C104J	RES. CARBON	100K	5%	1/6W

REF. NO	PARTS NO	NAME & DESCRIPTION			
R110	RD14BB2C222J	RES. CARBON	2.2K	5%	1/6W
R111	RN14BC2E2202F	RES. METAL FILM	22K	1%	1/4W
R112	RD14BB2C682J	RES. CARBON	6.8K	5%	1/6W
R113	RN14BK2C3303F	RES. METAL FILM	330K	1%	1/6W
R114	RD14BB2C470J	RES. CARBON	47	5%	1/6W
R115	RD14BB2C104J	RES. CARBON	100K	5%	1/6W
R116	RD14BB2C472J	RES. CARBON	4.7K	5%	1/6W
R117	RD14BB2C224J	RES. CARBON	220K	5%	1/6W
R118	RD14BB2C103J	RES. CARBON	10K	5%	1/6W
R119	RD14BB2C122J	RES. CARBON	1.2K	5%	1/6W
R120	RD14BB3D472J	RES. CARBON	4.7K	5%	2W
R121	RD14BB2C104J	RES. CARBON	100K	5%	1/6W
R122	R92-1076-05	RES. METAL GLAZE	E27H	5%	1/2W
R123	RD14BB2C472J	RES. CARBON	4.7K	5%	1/6W
R124	RD14BB2C105J	RES. CARBON	1M	5%	1/6W
R127	RD14BB2C911J	RES. CARBON	910	5%	1/6W
R128	RN14BC2E5601F	RES. METAL FILM	5.6K	1%	1/4W
R129	RD14BB2C472J	RES. CARBON	4.7K	5%	1/6W
R130	RD14BB2C103J	RES. CARBON	10K	5%	1/6W
R131	RN14BC2E2202F	RES. METAL FILM	22K	1%	1/4W
R132	RD14BB2C102J	RES. CARBON	1K	5%	1/6W
R133	RD14BB2C103J	RES. CARBON	10K	5%	1/6W
R134	RD14BB2C103J	RES. CARBON	10K	5%	1/6W
R135	RD14BB2C102J	RES. CARBON	1K	5%	1/6W
R136	RD14BB2C472J	RES. CARBON	4.7K	5%	1/6W
R137	RD14BB2C102J	RES. CARBON	1K	5%	1/6W
R138	RD14BB2C102J	RES. CARBON	1K	5%	1/6W
R139	RD14DB3A330J	RES. CARBON	33	5%	1W
R140	RD14DB3A330J	RES. CARBON	33	5%	1W
R141	RD14DB2H102J	RES. CARBON	1K	5%	1/2W
R142	RD14DB2H102J	RES. CARBON	1K	5%	1/2W
R143	NO USE				
R144	RD14BB2C103J	RES. CARBON	10K	5%	1/6W
U1	TL082CP	IC, OP AMP			
U2	NJM7815A	IC, VOLTAGE REGULATOR			
U3	TL082CP	IC, OP AMP			
U4	LM308AH	IC, OP AMP			
U5	LM308AH	IC, OP AMP			
U6	NJM4558D	IC, DUAL OP AMP			
U7	TL082CP	IC, OP AMP			
U10	NJM7815A	IC, VOLTAGE REGULATOR			
U11	UPC7915H-1	IC, 3-TERMINAL REGULATOR			
U12	NJM4558D	IC, DUAL OP AMP			
U13	TL082CP	IC, OP AMP			
U14	NJM555D	IC, TIMER			
U15	TLP521-1(A)	IC, PHOTO COUPLER			
VR1	R12-1528-05	RES. SEMI FIXED	1KB		
VR2	R12-4514-05	RES. SEMI FIXED	50K		
VR3	R12-2515-05	RES. SEMI FIXED	5K		
VR4	R12-4514-05	RES. SEMI FIXED	50K		
VR5	R12-3544-05	RES. SEMI FIXED	10K		
VR6	R12-3545-05	RES. SEMI FIXED	20K		
VR7	R12-1540-05	RES. SEMI FIXED	2.5K		
VR8	R12-4514-05	RES. SEMI FIXED	50K		
VR9	R12-1540-05	RES. SEMI FIXED	2.5K		
VR10	R12-4514-05	RES. SEMI FIXED	50K		
VR11	R12-4514-05	RES. SEMI FIXED	50K		
VR20	R12-3544-05	RES. SEMI FIXED	10K		

PARTS LIST

PD18-20D AMP UNIT

X73-1560-02

REF. NO	PARTS NO	NAME & DESCRIPTION			
	E23-0508-04	TEST TERMINAL			
	F01-0845-04	HEAT SINK			
	F01-0846-05	HEAT SINK, EXTRUDED			
	F20-0647-05	INSULATOR			
	J25-5062-22	PCB (UNMOUNTED)			
	N09-0623-04	SCREW, SEMS PAN HD M3X8			
	N19-0191-05	WASHER NONMETAL			
C1	CQ92M2A104K	CAP. NYLAR	0.1	10%	100V
C2	CQ92M2A104K	CAP. NYLAR	0.1	10%	100V
C3	C90-0924-05	CAP. ELECTRO	330	20%	50V
C4	CE04EW1E100M	CAP. ELECTRO	10	20%	25V
C5	CE04EW1E221M	CAP. ELECTRO	220	20%	25V
C6	C90-0939-05	CAP. ELECTRO	470	20%	35V
C7	CE04EW1E100M	CAP. ELECTRO	10	20%	25V
C8	CE04EW1E100M	CAP. ELECTRO	10	20%	25V
C9	CE04EW1E221M	CAP. ELECTRO	220	20%	25V
C10	C90-0924-05	CAP. ELECTRO	330	20%	50V
C11	CE04EW1E101M	CAP. ELECTRO	100	20%	25V
C12	CE04EW1HR33M	CAP. ELECTRO	0.33	20%	50V
C13	CE04EW1H4R7M	CAP. ELECTRO	4.7	20%	50V
C14	CE04EW1E100M	CAP. ELECTRO	10	20%	25V
C15	C91-1203-05	CAP. CERAMIC	1.5	80/-20%	25V
C16	CC45CH1H101J	CAP. CERAMIC	100P	5%	50V
C17	C91-1203-05	CAP. CERAMIC	1.5	80/-20%	25V
C18	CC45CH1H101J	CAP. CERAMIC	100P	5%	50V
C19	CS15E1H2R2M	CAP. TANTALUM	2.2	20%	50V
C20	CQ92P2A332J	CAP. NYLAR	3300P	5%	100V
C21	CC45CH1H390J	CAP. CERAMIC	39P	5%	50V
C22	CQ92P2A332J	CAP. NYLAR	3300P	5%	100V
C23	CC45CH1H390J	CAP. CERAMIC	39P	5%	50V
C24	CF92V1H332J	CAP. POLYESTER	3300P	5%	50V
C27	CS15E1E100M	CAP. TANTALUM	10	20%	25V
C28	CC45CH1H101J	CAP. CERAMIC	100P	5%	50V
C29	CS15E1E100M	CAP. TANTALUM	10	20%	25V
C30	CC45CH1H101J	CAP. CERAMIC	100P	5%	50V
C31	CF92V1H103J	CAP. POLYESTER	0.01	5%	50V
C32	CC45CH1H101J	CAP. CERAMIC	100P	5%	50V
C33	CF92V1H103J	CAP. POLYESTER	0.01	5%	50V
C34	CF92V1H103J	CAP. POLYESTER	0.01	5%	50V
C35	CF92V1H103J	CAP. POLYESTER	0.01	5%	50V
C36	CF92V1H473J	CAP. POLYESTER	0.047	5%	50V
C37	CF92V1H103J	CAP. POLYESTER	0.01	5%	50V
C38	CF92V1H473J	CAP. POLYESTER	0.047	5%	50V
C39	CF92V1H473J	CAP. POLYESTER	0.047	5%	50V
C40	CF92V1H473J	CAP. POLYESTER	0.047	5%	50V
C41	CF92V1H473J	CAP. POLYESTER	0.047	5%	50V
C42	CC45CH1H101J	CAP. CERAMIC	100P	5%	50V
C43	CC45CH1H101J	CAP. CERAMIC	100P	5%	50V
C44	CF92V1H472J	CAP. POLYESTER	4700P	5%	50V
C45	CF92V1H472J	CAP. POLYESTER	4700P	5%	50V
C50	CQ92M2A104K	CAP. NYLAR	0.1	10%	100V
C51	CQ92M2A104K	CAP. NYLAR	0.1	10%	100V
C52	C90-0924-05	CAP. ELECTRO	330	20%	50V
C53	CF92V1H103J	CAP. POLYESTER	0.01	5%	50V
C54	CF92V1H103J	CAP. POLYESTER	0.01	5%	50V
C55	CE04EW1E100M	CAP. ELECTRO	10	20%	25V
C56	C90-0924-05	CAP. ELECTRO	330	20%	50V
C57	CF92V1H103J	CAP. POLYESTER	0.01	5%	50V
C58	CF92V1H103J	CAP. POLYESTER	0.01	5%	50V
C59	CE04EW1E100M	CAP. ELECTRO	10	20%	25V
C60	CF92V1H103J	CAP. POLYESTER	0.01	5%	50V
C61	CC45CH1H470J	CAP. CERAMIC	47P	5%	50V
C62	C91-0595-05	CAP. PLASTIC	0.033	2%	100V
C63	CC45CH1H101J	CAP. CERAMIC	100P	5%	50V
C64	CF92V1H102J	CAP. POLYESTER	1000P	5%	50V
C65	CF92V1H103J	CAP. POLYESTER	0.01	5%	50V
C66	CF92V1H472J	CAP. POLYESTER	4700P	5%	50V
C67	CE04EW1E100M	CAP. ELECTRO	10	20%	25V
C68	CF92V1H103J	CAP. POLYESTER	0.01	5%	50V
C69	CF92V1H473J	CAP. POLYESTER	0.047	5%	50V
C70	CE04BW1E100M	CAP. ELECTRO	10	20%	25V
C71	CE04BW1E100M	CAP. ELECTRO	10	20%	25V
C72	CF92V1H103J	CAP. POLYESTER	0.01	5%	50V
C73	CF92V1H224J	CAP. POLYESTER	0.22	5%	50V
C74	CC45CH1H101J	CAP. CERAMIC	100P	5%	50V
C75	CE04EW1E100M	CAP. ELECTRO	10	20%	25V
C76	CE04EW1C471M	CAP. ELECTRO	470	20%	16V
C201	CE04EW1E471M	CAP. ELECTRO	470	20%	25V
C202	CE04EW1E470M	CAP. ELECTRO	47	20%	25V
C203	CE04EW1E471M	CAP. ELECTRO	470	20%	25V
C204	CE04EW1E470M	CAP. ELECTRO	47	20%	25V
C205	CF92V1H473J	CAP. POLYESTER	0.047	5%	50V
C206	CF92V1H103J	CAP. POLYESTER	0.01	5%	50V
C207	CF92V1H473J	CAP. POLYESTER	0.047	5%	50V
C208	CF92V1H103J	CAP. POLYESTER	0.01	5%	50V

REF. NO	PARTS NO	NAME & DESCRIPTION			
C209	CF92V1H473J	CAP. POLYESTER	0.047	5%	50V
C210	CF92V1H103J	CAP. POLYESTER	0.01	5%	50V
C211	CF92V1H473J	CAP. POLYESTER	0.047	5%	50V
C212	CF92V1H103J	CAP. POLYESTER	0.01	5%	50V
D1	S1VB60	DIODE, STACK			
D2	S1VB60	DIODE, STACK			
D3	DSA1A2	DIODE			
D4	DSA1A2	DIODE			
D5	NO USE				
D6	RD13F(B2)	DIODE, ZENER	12.97V		
D7	MT29.1JC	DIODE, ZENER	9.07V		
D8	1SS132	DIODE			
D9	RD13F(B2)	DIODE, ZENER	12.97V		
D10	MT29.1JC	DIODE, ZENER	9.07V		
D11	1SS132	DIODE			
D12	MT24.7JA	DIODE, ZENER	4.56V		
D13	1SS132	DIODE			
D14	HZT7A3	DIODE, ZENER	6.75V		
D15	HZT7A3	DIODE, ZENER	6.75V		
D16	1SS132	DIODE			
D17	1SS132	DIODE			
D18	1SS132	DIODE			
D19	1SS132	DIODE			
D20	1SS132	DIODE			
D21	1SS132	DIODE			
D22	1SS132	DIODE			
D23	1SS132	DIODE			
D24	1SS132	DIODE			
D25	1SS132	DIODE			
D26	1SS132	DIODE			
D27	1SS132	DIODE			
D28	MT25.1JB	DIODE, ZENER	5.07V		
D29	1SS132	DIODE			
D30	MT25.1JB	DIODE, ZENER	5.07V		
D31	DSA1A2	DIODE			
D32	DSA1A2	DIODE			
D35	MT28.2JC	DIODE, ZENER	8.24V		
D36	MT28.2JC	DIODE, ZENER	8.24V		
D40	S1VB60	DIODE, STACK			
D41	S1VB60	DIODE, STACK			
D42	DSA1A2	DIODE			
D43	DSA1A2	DIODE			
D44	DSA1A2	DIODE			
D45	DSA1A2	DIODE			
D46	MT26.2JB	DIODE, ZENER	6.12V		
D47	1SS132	DIODE			
D48	1SS132	DIODE			
D49	1SS132	DIODE			
D50	1SS132	DIODE			
D51	RD10F(B2)	DIODE, ZENER	9.75V		
D52	RD10F(B2)	DIODE, ZENER	9.75V		
D53	1SS132	DIODE			
D54	1SS132	DIODE			
D55	1SS132	DIODE			
D56	1SS132	DIODE			
D57	1SS132	DIODE			
D58	1SS132	DIODE			
D59	MT28.2JC	DIODE, ZENER	8.24V		
D60	1SS132	DIODE			
D61	1SS132	DIODE			
D62	1SS132	DIODE			
D63	1SS132	DIODE			
D64	1SS132	DIODE			
D65	1SS132	DIODE			
D201	S1VB60	DIODE, STACK			
D202	S1VB60	DIODE, STACK			
P3	E40-0273-05	PIN CONNECTOR	2P		
P4	E40-0273-05	PIN CONNECTOR	2P		
P201	E40-0673-05	PIN CONNECTOR	6P		
P202	E40-0373-05	PIN CONNECTOR	3P		
P203	E40-0373-05	PIN CONNECTOR	3P		
P204	E40-0673-05	PIN CONNECTOR	6P		
Q1	2SD613(E)	TR. S1, NPN			
Q2	2SC2785(F)	TR. S1, NPN			
Q3	2SC2785(F)	TR. S1, NPN			
Q4	2SA1408(O)	TR. S1, PNP			
Q5	2SB633(E)	TR. S1, PNP			
Q6	2SA1175(F)	TR. S1, PNP			
Q7	2SA1175(F)	TR. S1, PNP			
Q8	2SC3621(O)	TR. S1, NPN			
Q9	2SC3064(F)	TR. S1, NPN			
Q10	2SC2785(F)	TR. S1, NPN			
Q11	2SC2785(F)	TR. S1, NPN			
Q12	2SC2459(GR)	TR. S1, NPN			
Q13	2SC3621(O)	TR. S1, NPN			
Q14	2SK170(BL)	FET, N-CHANNEL			

PARTS LIST

REF. NO	PARTS NO	NAME & DESCRIPTION
Q15	2SK170(BL)	FET, N-CHANNEL
Q16	2SK170(BL)	FET, N-CHANNEL
Q17	2SK170(BL)	FET, N-CHANNEL
Q20	2SK170(BL)	FET, N-CHANNEL
Q21	2SC2785(F)	TR. SI, NPN
Q22	2SC3621(O)	TR. SI, NPN
Q23	2SC3621(O)	TR. SI, NPN
R1	RD14BB2E101J	RES. CARBON 100 5% 1/4W
R2	RD14BB2E101J	RES. CARBON 100 5% 1/4W
R3	RD14DB3D471J	RES. CARBON 470 5% 2W
R4	RD14BB2E561J	RES. CARBON 560 5% 1/4W
R5	RD14DB2H512J	RES. CARBON 5.1K 5% 1/2W
R6	RD14BB2C102J	RES. CARBON 1K 5% 1/6W
R7	RD14DB2H2R7J	RES. CARBON 2.7 5% 1/2W
R8	RD14BB2C153J	RES. CARBON 15K 5% 1/6W
R9	RN14BC2E7501F	RES. METAL FILM 7.5K 1% 1/4W
R10	RN14BC2E7501F	RES. METAL FILM 7.5K 1% 1/4W
R11	RD14DB3D471J	RES. CARBON 470 5% 2W
R12	RD14BB2E561J	RES. CARBON 560 5% 1/4W
R13	RD14DB2H512J	RES. CARBON 5.1K 5% 1/2W
R14	RD14BB2C102J	RES. CARBON 1K 5% 1/6W
R15	RD14DB2H2R7J	RES. CARBON 2.7 5% 1/2W
R16	RD14BB2C153J	RES. CARBON 15K 5% 1/6W
R17	RD14BB2C682J	RES. CARBON 6.8K 5% 1/6W
R18	RN14BC2E3600F	RES. METAL FILM 360 1% 1/4W
R19	RN14BC2E4300F	RES. METAL FILM 430 1% 1/4W
R20	RN14BC2E2701F	RES. METAL FILM 2.7K 1% 1/4W
R21	RN14BC2E3301F	RES. METAL FILM 3.3K 1% 1/4W
R24	RD14BB2C153J	RES. CARBON 15K 5% 1/6W
R25	RD14BB2C153J	RES. CARBON 15K 5% 1/6W
R26	RD14BB2E243J	RES. CARBON 24K 5% 1/4W
R27	RD14BB2E820J	RES. CARBON 82 5% 1/4W
R28	RD14BB2E182J	RES. CARBON 1.8K 5% 1/4W
R29	RD14BB2E181J	RES. CARBON 180 5% 1/4W
R30	RN14BE2E3601D	RES. METAL FILM 3.6K 0.5% 1/4W
R31	RD14BB2C102J	RES. CARBON 1K 5% 1/6W
R32	RN14BC2E1003F	RES. METAL FILM 100K 1% 1/4W
R33	RN14BC2E3600F	RES. METAL FILM 360 1% 1/4W
R34	RD14BB2C151J	RES. CARBON 150 5% 1/6W
R35	RN14BC2E1102F	RES. METAL FILM 11K 1% 1/4W
R36	RN14BE2E5101D	RES. METAL FILM 5.1K 0.5% 1/4W
R37	RD14BB2C102J	RES. CARBON 1K 5% 1/6W
R38	RN14BC2E1003F	RES. METAL FILM 100K 1% 1/4W
R39	RN14BC2E3600F	RES. METAL FILM 360 1% 1/4W
R40	RD14BB2C221J	RES. CARBON 220 5% 1/6W
R41	RN14BC2E1622F	RES. METAL FILM 16.2K 1% 1/4W
R42	RN14BE2H1002DKW	RES. METAL FILM 10K 0.5% 1/2W
R43	RN14BE2H1802DKW	RES. METAL FILM 18K 0.5% 1/2W
R44	R92-0150-05	JUMPING RES. ZERO OHM(10MM)
R45	RN14BE2H1002DKW	RES. METAL FILM 10K 0.5% 1/2W
R46	RN14BE2H3740DKW	RES. METAL FILM 374 0.5% 1/2W
R47	RD14BB2C102J	RES. CARBON 1K 5% 1/6W
R48	RD14BB2C102J	RES. CARBON 1K 5% 1/6W
R49	RN14BC2E2701F	RES. METAL FILM 2.7K 1% 1/4W
R50	RD14BB2C102J	RES. CARBON 1K 5% 1/6W
R51	RD14BB2C102J	RES. CARBON 1K 5% 1/6W
R52	RN14BC2E1001F	RES. METAL FILM 1K 1% 1/4W
R53	RD14BB2E162J	RES. CARBON 1.6K 5% 1/4W
R54	RN14BC2E4301F	RES. METAL FILM 4.3K 1% 1/4W
R55	RN14BC2E6200F	RES. METAL FILM 620 1% 1/4W
R56	RD14BB2C122J	RES. CARBON 1.2K 5% 1/6W
R57	RD14BB2C621J	RES. CARBON 620 5% 1/6W
R58	RD14BB2C102J	RES. CARBON 1K 5% 1/6W
R59	RD14BB2C102J	RES. CARBON 1K 5% 1/6W
R60	RD14BB2C102J	RES. CARBON 1K 5% 1/6W
R61	RD14BB2C102J	RES. CARBON 1K 5% 1/6W
R62	RD14BB2C122J	RES. CARBON 1.2K 5% 1/6W
R63	RD14BB2C223J	RES. CARBON 22K 5% 1/6W
R64	RN14BC2E1002F	RES. METAL FILM 10K 1% 1/4W
R65	RD14DB3A101J	RES. CARBON 100 5% 1W
R66	RN14BC2E1001F	RES. METAL FILM 1K 1% 1/4W
R67	RD14BB2C104J	RES. CARBON 100K 5% 1/6W
R68	RN14BC2E1003F	RES. METAL FILM 100K 1% 1/4W
R69	RN14BC2E4701F	RES. METAL FILM 4.7K 1% 1/4W
R70	RN14BC2E1500F	RES. METAL FILM 150 1% 1/4W
R71	RD14BB2C471J	RES. CARBON 470 5% 1/6W
R72	RN14BC2E6801F	RES. METAL FILM 6.8K 1% 1/4W
R73	R92-0150-05	JUMPING RES. ZERO OHM(10MM)
R74	RD14BB2C104J	RES. CARBON 100K 5% 1/6W
R75	RD14BB2C104J	RES. CARBON 100K 5% 1/6W
R76	RN14BC2E1003F	RES. METAL FILM 100K 1% 1/4W
R77	RN14BC2E4701F	RES. METAL FILM 4.7K 1% 1/4W
R78	RN14BC2E1500F	RES. METAL FILM 150 1% 1/4W
R79	RD14BB2C471J	RES. CARBON 470 5% 1/6W
R80	RN14BC2E6801F	RES. METAL FILM 6.8K 1% 1/4W
R81	R92-0150-05	JUMPING RES. ZERO OHM(10MM)
R82	RN14BC2E5101F	RES. METAL FILM 5.1K 1% 1/4W
R83	RD14BB2C104J	RES. CARBON 100K 5% 1/6W
R84	RN14BC2E1003F	RES. METAL FILM 100K 1% 1/4W
R85	RN14BC2E820F	RES. METAL FILM 82.0 1% 1/4W

REF. NO	PARTS NO	NAME & DESCRIPTION
R86	RD14BB2C101J	RES. CARBON 100 5% 1/6W
R87	RN14BC2E5101F	RES. METAL FILM 5.1K 1% 1/4W
R88	RN14BC2E1002F	RES. METAL FILM 10K 1% 1/4W
R89	RD14BB2C333J	RES. CARBON 33K 5% 1/6W
R90	RD14BB2C333J	RES. CARBON 33K 5% 1/6W
R91	NO USE	
R92	RD14BB2C153J	RES. CARBON 15K 5% 1/6W
R93	RD14BB2C473J	RES. CARBON 47K 5% 1/6W
R94	RD14BB2C473J	RES. CARBON 47K 5% 1/6W
R95	RD14BB2E750J	RES. CARBON 75 5% 1/4W
R100	RD14BB2E101J	RES. CARBON 100 5% 1/4W
R101	RD14BB2E101J	RES. CARBON 100 5% 1/4W
R102	RD14DB2H392J	RES. CARBON 3.9K 5% 1/2W
R103	RD14BB2C103J	RES. CARBON 10K 5% 1/6W
R104	RD14BB2C153J	RES. CARBON 15K 5% 1/6W
R105	RD14BB2C123J	RES. CARBON 12K 5% 1/6W
R106	RD14BB2C332J	RES. CARBON 3.3K 5% 1/6W
R107	RD14BB2C472J	RES. CARBON 4.7K 5% 1/6W
R108	RN14BC2E4703F	RES. METAL FILM 470K 1% 1/4W
R109	RD14BB2C104J	RES. CARBON 100K 5% 1/6W
R110	RD14BB2C222J	RES. CARBON 2.2K 5% 1/6W
R111	RN14BC2E2202F	RES. METAL FILM 22K 1% 1/4W
R112	RD14BB2C682J	RES. CARBON 6.8K 5% 1/6W
R113	RN14BK2C3303F	RES. METAL FILM 330K 1% 1/6W
R114	RD14BB2C470J	RES. CARBON 47 5% 1/6W
R115	RD14BB2C104J	RES. CARBON 100K 5% 1/6W
R116	RD14BB2C472J	RES. CARBON 4.7K 5% 1/6W
R117	RD14BB2C224J	RES. CARBON 220K 5% 1/6W
R118	RD14BB2C103J	RES. CARBON 10K 5% 1/6W
R119	RD14BB2C122J	RES. CARBON 1.2K 5% 1/6W
R120	RD14DB3D472J	RES. CARBON 4.7K 5% 2W
R121	RD14BB2C104J	RES. CARBON 100K 5% 1/6W
R122	R92-1076-05	RES. METAL GLAZE27M 5% 1/2W
R123	RD14BB2C472J	RES. CARBON 4.7K 5% 1/6W
R124	RD14BB2C105J	RES. CARBON 1M 5% 1/6W
R127	RD14BB2C911J	RES. CARBON 910 5% 1/6W
R128	RN14BC2E5601F	RES. METAL FILM 5.6K 1% 1/4W
R129	RD14BB2C472J	RES. CARBON 4.7K 5% 1/6W
R130	RD14BB2C103J	RES. CARBON 10K 5% 1/6W
R131	RN14BC2E2202F	RES. METAL FILM 22K 1% 1/4W
R132	RD14BB2C102J	RES. CARBON 1K 5% 1/6W
R133	RD14BB2C103J	RES. CARBON 10K 5% 1/6W
R134	RD14BB2C103J	RES. CARBON 10K 5% 1/6W
R135	RD14BB2C102J	RES. CARBON 1K 5% 1/6W
R136	RD14BB2C472J	RES. CARBON 4.7K 5% 1/6W
R137	RD14BB2C102J	RES. CARBON 1K 5% 1/6W
R138	RD14BB2C102J	RES. CARBON 1K 5% 1/6W
R139	RD14DB3A330J	RES. CARBON 33 5% 1W
R140	RD14DB3A330J	RES. CARBON 33 5% 1W
R141	RD14DB2H102J	RES. CARBON 1K 5% 1/2W
R142	RD14DB2H102J	RES. CARBON 1K 5% 1/2W
R143	NO USE	
R144	RD14BB2C103J	RES. CARBON 10K 5% 1/6W
U1	TL082CP	IC,OP AMP
U2	NJM7815A	IC,VOLTAGE REGULATOR
U3	TL082CP	IC,OP AMP
U4	LM308AH	IC,OP AMP
U5	LM308AH	IC,OP AMP
U6	NJM4558D	IC,DUAL OP ANP
U7	TL082CP	IC,OP AMP
U10	NJM7815A	IC,VOLTAGE REGULATOR
U11	UPC7915H-1	IC,3-TERMINAL REGULATOR
U12	NJM4558D	IC,DUAL OP AMP
U13	TL082CP	IC,OP AMP
U14	NJM555D	IC,TIMER
U15	TLP521-1(A)	IC,PHOTO COUPLER
U201	LM79L05ACZ	IC,REGULATOR
U202	LM79L05ACZ	IC,REGULATOR
VR1	R12-1558-05	RES. SEMI FIXED 2K
VR2	R12-4514-05	RES. SEMI FIXED 50K
VR3	R12-2515-05	RES. SEMI FIXED 5K
VR4	R12-4514-05	RES. SEMI FIXED 50K
VR5	R12-3555-05	RES. SEMI FIXED 10K
VR6	R12-3556-05	RES. SEMI FIXED 20K
VR7	R12-1540-05	RES. SEMI FIXED 2.5K
VR8	R12-4514-05	RES. SEMI FIXED 50K
VR9	R12-1540-05	RES. SEMI FIXED 2.5K
VR10	R12-4514-05	RES. SEMI FIXED 50K
VR11	R12-4514-05	RES. SEMI FIXED 50K
VR20	R12-3544-05	RES. SEMI FIXED 10K

PARTS LIST

PD18-30 AMP UNIT

X73-1550-00

REF. NO	PARTS NO	NAME & DESCRIPTION
	E23-0508-04	TEST TERMINAL
	F01-0845-04	HEAT SINK
	F01-0846-05	HEAT SINK, EXTRUDED
	F20-0647-05	INSULATOR
	J25-5062-22	PCB (UNMOUNTED)
	N09-0623-04	SCREW, SEMS PAN HD M3X8
	N19-0191-05	WASHER NONMETAL
	R92-0150-05	JUMPING RES. ZERO OHN(10MM)
C1	CQ92M2A104K	CAP. NYLAR 0.1 10% 100V
C2	CQ92M2A104K	CAP. NYLAR 0.1 10% 100V
C3	C90-0924-05	CAP. ELECTRO 330 20% 50V
C4	CE04EW1E100M	CAP. ELECTRO 10 20% 25V
C5	CE04EW1E221M	CAP. ELECTRO 220 20% 25V
C6	C90-0939-05	CAP. ELECTRO 470 20% 35V
C7	CE04EW1E100M	CAP. ELECTRO 10 20% 25V
C8	CE04EW1E100M	CAP. ELECTRO 10 20% 25V
C9	CE04EW1E221M	CAP. ELECTRO 220 20% 25V
C10	C90-0924-05	CAP. ELECTRO 330 20% 50V
C11	CE04EW1E101M	CAP. ELECTRO 100 20% 25V
C12	CE04EW1HR33M	CAP. ELECTRO 0.33 20% 50V
C13	CE04EW1H4R7M	CAP. ELECTRO 4.7 20% 50V
C14	CE04EW1E100M	CAP. ELECTRO 10 20% 25V
C15	C91-1203-05	CAP. CERAMIC 1.5 80/-20% 25V
C16	CC45CH1H101J	CAP. CERAMIC 100P 5% 50V
C17	C91-1203-05	CAP. CERAMIC 1.5 80/-20% 25V
C18	CC45CH1H101J	CAP. CERAMIC 100P 5% 50V
C19	CS15E1H2R2M	CAP. TANTALUM 2.2 20% 50V
C20	CQ92P2A332J	CAP. NYLAR 3300P 5% 100V
C21	CC45CH1H390J	CAP. CERAMIC 39P 5% 50V
C22	CQ92P2A332J	CAP. NYLAR 3300P 5% 100V
C23	CC45CH1H390J	CAP. CERAMIC 39P 5% 50V
C24	CF92V1H332J	CAP. POLYESTER 3300P 5% 50V
C27	CS15E1E100M	CAP. TANTALUM 10 20% 25V
C28	CC45CH1H101J	CAP. CERAMIC 100P 5% 50V
C29	CS15E1E100M	CAP. TANTALUM 10 20% 25V
C30	CC45CH1H101J	CAP. CERAMIC 100P 5% 50V
C31	CF92V1H103J	CAP. POLYESTER 0.01 5% 50V
C32	CC45CH1H101J	CAP. CERAMIC 100P 5% 50V
C33	CF92V1H103J	CAP. POLYESTER 0.01 5% 50V
C34	CF92V1H103J	CAP. POLYESTER 0.01 5% 50V
C35	CF92V1H103J	CAP. POLYESTER 0.01 5% 50V
C36	CF92V1H473J	CAP. POLYESTER 0.047 5% 50V
C37	CF92V1H103J	CAP. POLYESTER 0.01 5% 50V
C38	CF92V1H473J	CAP. POLYESTER 0.047 5% 50V
C39	CF92V1H473J	CAP. POLYESTER 0.047 5% 50V
C40	CF92V1H473J	CAP. POLYESTER 0.047 5% 50V
C41	CF92V1H473J	CAP. POLYESTER 0.047 5% 50V
C42	CC45CH1H101J	CAP. CERAMIC 100P 5% 50V
C43	CC45CH1H101J	CAP. CERAMIC 100P 5% 50V
C44	CF92V1H472J	CAP. POLYESTER 4700P 5% 50V
C45	CF92V1H472J	CAP. POLYESTER 4700P 5% 50V
C50	CQ92M2A104K	CAP. NYLAR 0.1 10% 100V
C51	CQ92M2A104K	CAP. NYLAR 0.1 10% 100V
C52	C90-0924-05	CAP. ELECTRO 330 20% 50V
C53	CF92V1H103J	CAP. POLYESTER 0.01 5% 50V
C54	CF92V1H103J	CAP. POLYESTER 0.01 5% 50V
C55	CE04EW1E100M	CAP. ELECTRO 10 20% 25V
C56	C90-0924-05	CAP. ELECTRO 330 20% 50V
C57	CF92V1H103J	CAP. POLYESTER 0.01 5% 50V
C58	CF92V1H103J	CAP. POLYESTER 0.01 5% 50V
C59	CE04EW1E100M	CAP. ELECTRO 10 20% 25V
C60	CF92V1H103J	CAP. POLYESTER 0.01 5% 50V
C61	CC45CH1H470J	CAP. CERAMIC 47P 5% 50V
C62	C91-0595-05	CAP. PLASTIC 0.033 2% 100V
C63	CC45CH1H101J	CAP. CERAMIC 100P 5% 50V
C64	CF92V1H102J	CAP. POLYESTER 1000P 5% 50V
C65	CF92V1H103J	CAP. POLYESTER 0.01 5% 50V
C66	CF92V1H472J	CAP. POLYESTER 4700P 5% 50V
C67	CE04EW1E100M	CAP. ELECTRO 10 20% 25V
C68	CF92V1H103J	CAP. POLYESTER 0.01 5% 50V
C69	CF92V1H473J	CAP. POLYESTER 0.047 5% 50V
C72	CF92V1H103J	CAP. POLYESTER 0.01 5% 50V
C73	CF92V1H224J	CAP. POLYESTER 0.22 5% 50V
C74	CC45CH1H101J	CAP. CERAMIC 100P 5% 50V
C75	CE04EW1E100M	CAP. ELECTRO 10 20% 25V
C76	CE04EW1C471M	CAP. ELECTRO 470 20% 16V
D1	S1VB60	DIODE, STACK
D2	S1VB60	DIODE, STACK
D3	DSA1A2	DIODE
D4	DSA1A2	DIODE
D5	NO USE	
D6	RD13F(B2)	DIODE, ZENER 12.97V
D7	MTZ9.1JC	DIODE, ZENER 9.07V

REF. NO	PARTS NO	NAME & DESCRIPTION
D8	1SS132	DIODE
D9	RD13F(B2)	DIODE, ZENER 12.97V
D10	MTZ9.1JC	DIODE, ZENER 9.07V
D11	1SS132	DIODE
D12	MTZ4.7JA	DIODE, ZENER 4.56V
D13	1SS132	DIODE
D14	HZT7A3	DIODE, ZENER 6.75V
D15	HZT7A3	DIODE, ZENER 6.75V
D16	1SS132	DIODE
D17	1SS132	DIODE
D18	1SS132	DIODE
D19	1SS132	DIODE
D20	1SS132	DIODE
D21	1SS132	DIODE
D22	1SS132	DIODE
D23	1SS132	DIODE
D24	1SS132	DIODE
D25	1SS132	DIODE
D26	1SS132	DIODE
D27	1SS132	DIODE
D28	MTZ5.1JB	DIODE, ZENER 5.07V
D29	1SS132	DIODE
D30	MTZ5.1JB	DIODE, ZENER 5.07V
D31	DSA1A2	DIODE
D32	DSA1A2	DIODE
D35	MTZ8.2JC	DIODE, ZENER 8.24V
D36	MTZ8.2JC	DIODE, ZENER 8.24V
D40	S1VB60	DIODE, STACK
D41	S1VB60	DIODE, STACK
D42	DSA1A2	DIODE
D43	DSA1A2	DIODE
D44	DSA1A2	DIODE
D45	DSA1A2	DIODE
D46	MTZ6.2JB	DIODE, ZENER 6.12V
D47	1SS132	DIODE
D48	1SS132	DIODE
D49	1SS132	DIODE
D50	1SS132	DIODE
D51	RD10F(B2)	DIODE, ZENER 9.75V
D52	RD10F(B2)	DIODE, ZENER 9.75V
D53	1SS132	DIODE
D54	1SS132	DIODE
D55	1SS132	DIODE
D56	1SS132	DIODE
D57	1SS132	DIODE
D58	1SS132	DIODE
D59	MTZ8.2JC	DIODE, ZENER 8.24V
D60	1SS132	DIODE
D61	1SS132	DIODE
D62	1SS132	DIODE
D63	1SS132	DIODE
D64	1SS132	DIODE
D65	1SS132	DIODE
P3	E40-0273-05	PIN CONNECTOR 2P
P4	E40-0273-05	PIN CONNECTOR 2P
Q1	2SD613(E)	TR. SI, NPN
Q2	2SC2785(F)	TR. SI, NPN
Q3	2SC2785(F)	TR. SI, NPN
Q4	2SA1408(O)	TR. SI, PNP
Q5	2SB633(E)	TR. SI, PNP
Q6	2SA1175(F)	TR. SI, PNP
Q7	2SA1175(F)	TR. SI, PNP
Q8	2SC3621(O)	TR. SI, NPN
Q9	2SC3064(F)	TR. SI, NPN
Q10	2SC2785(F)	TR. SI, NPN
Q11	2SC2785(F)	TR. SI, NPN
Q12	2SC2459(GR)	TR. SI, NPN
Q13	2SC3621(O)	TR. SI, NPN
Q14	2SK170(BL)	FET, N-CHANNEL
Q15	2SK170(BL)	FET, N-CHANNEL
Q16	2SK170(BL)	FET, N-CHANNEL
Q17	2SK170(BL)	FET, N-CHANNEL
Q20	2SK170(BL)	FET, N-CHANNEL
Q21	2SC2785(F)	TR. SI, NPN
Q22	2SC3621(O)	TR. SI, NPN
Q23	2SC3621(O)	TR. SI, NPN
R1	RD14BB2E101J	RES. CARBON 100 5% 1/4W
R2	RD14BB2E101J	RES. CARBON 100 5% 1/4W
R3	RD14DB3D471J	RES. CARBON 470 5% 2W
R4	RD14BB2E561J	RES. CARBON 560 5% 1/4W
R5	RD14DB2H512J	RES. CARBON 5.1K 5% 1/2W
R6	RD14BP2C102J	RES. CARBON 1K 5% 1/6W
R7	RD14DB2H2R7J	RES. CARBON 2.7 5% 1/2W
R8	RD14BB2C153J	RES. CARBON 15K 5% 1/6W
R9	RN14BC2E7501F	RES. METAL FILM 7.5K 1% 1/4W
R10	RN14BC2E7501F	RES. METAL FILM 7.5K 1% 1/4W
R11	RD14DB3D471J	RES. CARBON 470 5% 2W

PARTS LIST

REF. NO	PARTS NO	NAME & DESCRIPTION			
R12	RD14BB2E561J	RES. CARBON	560	5%	1/4W
R13	RD14DB2H512J	RES. CARBON	5.1K	5%	1/2W
R14	RD14BB2C102J	RES. CARBON	1K	5%	1/6W
R15	RD14DB2H2R7J	RES. CARBON	2.7	5%	1/2W
R16	RD14BB2C153J	RES. CARBON	15K	5%	1/6W
R17	RD14BB2C682J	RES. CARBON	6.8K	5%	1/6W
R18	RN14BC2E3600F	RES. METAL FILM	360	1%	1/4W
R19	RN14BC2E4300F	RES. METAL FILM	430	1%	1/4W
R20	RN14BC2E2701F	RES. METAL FILM	2.7K	1%	1/4W
R21	RN14BC2E3301F	RES. METAL FILM	3.3K	1%	1/4W
R24	RD14BB2C153J	RES. CARBON	15K	5%	1/6W
R25	RD14BB2C153J	RES. CARBON	15K	5%	1/6W
R26	RD14BB2E243J	RES. CARBON	24K	5%	1/4W
R27	RD14BB2E820J	RES. CARBON	82	5%	1/4W
R28	RD14BB2E182J	RES. CARBON	1.8K	5%	1/4W
R29	RD14BB2E181J	RES. CARBON	180	5%	1/4W
R30	RN14BE2E3601D	RES. METAL FILM	3.6K	0.5%	1/4W
R31	RD14BB2C102J	RES. CARBON	1K	5%	1/6W
R32	RN14BC2E1003F	RES. METAL FILM	100K	1%	1/4W
R33	RN14BC2E3600F	RES. METAL FILM	360	1%	1/4W
R34	RD14BB2C151J	RES. CARBON	150	5%	1/6W
R35	RN14BC2E1102F	RES. METAL FILM	11K	1%	1/4W
R36	RN14BE2E5101D	RES. METAL FILM	5.1K	0.5%	1/4W
R37	RD14BB2C102J	RES. CARBON	1K	5%	1/6W
R38	RN14BC2E1003F	RES. METAL FILM	100K	1%	1/4W
R39	RN14BC2E3600F	RES. METAL FILM	360	1%	1/4W
R40	RD14BB2C221J	RES. CARBON	220	5%	1/6W
R41	RN14BC2E1622F	RES. METAL FILM	16.2K	1%	1/4W
R42	RN14BE2H1002DKW	RES. METAL FILM	10K	0.5%	1/2W
R43	RN14BE2H1802DKW	RES. METAL FILM	18K	0.5%	1/2W
R44	NO USE				
R45	RN14BE2H1002DKW	RES. METAL FILM	10K	0.5%	1/2W
R46	RN14BE2H3740DKW	RES. METAL FILM	374	0.5%	1/2W
R47	RD14BB2C102J	RES. CARBON	1K	5%	1/6W
R48	RD14BB2C102J	RES. CARBON	1K	5%	1/6W
R49	RN14BC2E2701F	RES. METAL FILM	2.7K	1%	1/4W
R50	RD14BB2C102J	RES. CARBON	1K	5%	1/6W
R51	RD14BB2C102J	RES. CARBON	1K	5%	1/6W
R52	RN14BC2E1001F	RES. METAL FILM	1K	1%	1/4W
R53	RD14BB2E162J	RES. CARBON	1.6K	5%	1/4W
R54	RN14BC2E4301F	RES. METAL FILM	4.3K	1%	1/4W
R55	RN14BC2E4300F	RES. METAL FILM	430	1%	1/4W
R56	RD14BB2C122J	RES. CARBON	1.2K	5%	1/6W
R57	RD14BB2C101J	RES. CARBON	100	5%	1/6W
R58	RD14BB2C102J	RES. CARBON	1K	5%	1/6W
R59	RD14BB2C102J	RES. CARBON	1K	5%	1/6W
R60	RD14BB2C102J	RES. CARBON	1K	5%	1/6W
R61	RD14BB2C102J	RES. CARBON	1K	5%	1/6W
R62	RD14BB2C122J	RES. CARBON	1.2K	5%	1/6W
R63	RD14BB2C223J	RES. CARBON	22K	5%	1/6W
R64	RN14BC2E1002F	RES. METAL FILM	10K	1%	1/4W
R65	RD14DB3A101J	RES. CARBON	100	5%	1W
R66	RN14BC2E7150F	RES. METAL FILM	715	1%	1/4W
R67	RD14BB2C104J	RES. CARBON	100K	5%	1/6W
R68	RN14BC2E1003F	RES. METAL FILM	100K	1%	1/4W
R69	RN14BC2E4701F	RES. METAL FILM	4.7K	1%	1/4W
R70	RN14BC2E1500F	RES. METAL FILM	150	1%	1/4W
R71	RD14BB2C471J	RES. CARBON	470	5%	1/6W
R72	RN14BC2E6801F	RES. METAL FILM	6.8K	1%	1/4W
R73	RN14BC2E1802F	RES. METAL FILM	18K	1%	1/4W
R74	RD14BB2C104J	RES. CARBON	100K	5%	1/6W
R75	RD14BB2C104J	RES. CARBON	100K	5%	1/6W
R76	RN14BC2E1003F	RES. METAL FILM	100K	1%	1/4W
R77	RN14BC2E4701F	RES. METAL FILM	4.7K	1%	1/4W
R78	RN14BC2E1500F	RES. METAL FILM	150	1%	1/4W
R79	RD14BB2C471J	RES. CARBON	470	5%	1/6W
R80	RN14BC2E6801F	RES. METAL FILM	6.8K	1%	1/4W
R81	RN14BC2E1802F	RES. METAL FILM	18K	1%	1/4W
R82	RN14BC2E5101F	RES. METAL FILM	5.1K	1%	1/4W
R83	RD14BB2C104J	RES. CARBON	100K	5%	1/6W
R84	RN14BC2E1003F	RES. METAL FILM	100K	1%	1/4W
R85	RN14BC2E820R0F	RES. METAL FILM	82.0	1%	1/4W
R86	RD14BB2C101J	RES. CARBON	100	5%	1/6W
R87	RN14BC2E5101F	RES. METAL FILM	5.1K	1%	1/4W
R88	RN14BC2E1002F	RES. METAL FILM	10K	1%	1/4W
R89	RD14BB2C333J	RES. CARBON	33K	5%	1/6W
R90	RD14BB2C333J	RES. CARBON	33K	5%	1/6W
R91	NO USE				
R92	RD14BB2C153J	RES. CARBON	15K	5%	1/6W
R93	RD14BB2C473J	RES. CARBON	47K	5%	1/6W
R94	RD14BB2C473J	RES. CARBON	47K	5%	1/6W
R95	RD14BB2E750J	RES. CARBON	75	5%	1/4W
R100	RD14BB2E101J	RES. CARBON	100	5%	1/4W
R101	RD14BB2E101J	RES. CARBON	100	5%	1/4W
R102	RD14DB2H392J	RES. CARBON	3.9K	5%	1/2W
R103	RD14BB2C103J	RES. CARBON	10K	5%	1/6W
R104	RD14BB2C153J	RES. CARBON	15K	5%	1/6W
R105	RD14BB2C123J	RES. CARBON	12K	5%	1/6W
R106	RD14BB2C332J	RES. CARBON	3.3K	5%	1/6W
R107	RD14BB2C472J	RES. CARBON	4.7K	5%	1/6W
R108	RN14BC2E4703F	RES. METAL FILM	470K	1%	1/4W

REF. NO	PARTS NO	NAME & DESCRIPTION			
R109	RD14BB2C104J	RES. CARBON	100K	5%	1/6W
R110	RD14BB2C222J	RES. CARBON	2.2K	5%	1/6W
R111	RN14BC2E2202F	RES. METAL FILM	22K	1%	1/4W
R112	RD14BB2C682J	RES. CARBON	6.8K	5%	1/6W
R113	RN14BK2C3303F	RES. METAL FILM	330K	1%	1/6W
R114	RD14BB2C470J	RES. CARBON	47	5%	1/6W
R115	RD14BB2C104J	RES. CARBON	100K	5%	1/6W
R116	RD14BB2C472J	RES. CARBON	4.7K	5%	1/6W
R117	RD14BB2C224J	RES. CARBON	220K	5%	1/6W
R118	RD14BB2C103J	RES. CARBON	10K	5%	1/6W
R119	RD14BB2C122J	RES. CARBON	1.2K	5%	1/6W
R120	RD14DB3D472J	RES. CARBON	4.7K	5%	2W
R121	RD14BB2C104J	RES. CARBON	100K	5%	1/6W
R122	R92-1076-05	RES. METAL GLAZE	27M	5%	1/2W
R123	RD14BB2C472J	RES. CARBON	4.7K	5%	1/6W
R124	RD14BB2C105J	RES. CARBON	1M	5%	1/6W
R127	RD14BB2C911J	RES. CARBON	910	5%	1/6W
R128	RN14BC2E5601F	RES. METAL FILM	5.6K	1%	1/4W
R129	RD14BB2C472J	RES. CARBON	4.7K	5%	1/6W
R130	RD14BB2C103J	RES. CARBON	10K	5%	1/6W
R131	RN14BC2E2202F	RES. METAL FILM	22K	1%	1/4W
R132	RD14BB2C102J	RES. CARBON	1K	5%	1/6W
R133	RD14BB2C103J	RES. CARBON	10K	5%	1/6W
R134	RD14BB2C103J	RES. CARBON	10K	5%	1/6W
R135	RD14BB2C102J	RES. CARBON	1K	5%	1/6W
R136	RD14BB2C472J	RES. CARBON	4.7K	5%	1/6W
R137	RD14BB2C102J	RES. CARBON	1K	5%	1/6W
R138	RD14BB2C102J	RES. CARBON	1K	5%	1/6W
R139	RD14DB3A330J	RES. CARBON	33	5%	1W
R140	RD14DB3A330J	RES. CARBON	33	5%	1W
R141	RD14DB2H102J	RES. CARBON	1K	5%	1/2W
R142	RD14DB2H102J	RES. CARBON	1K	5%	1/2W
R143	NO USE				
R144	RD14BB2C103J	RES. CARBON	10K	5%	1/6W
U1	TL082CP	IC, OP AMP			
U2	NJM7815A	IC, VOLTAGE REGULATOR			
U3	TL082CP	IC, OP AMP			
U4	LM308AH	IC, OP AMP			
U5	LM308AH	IC, OP AMP			
U6	NJM4558D	IC, DUAL OP AMP			
U7	TL082CP	IC, OP AMP			
U10	NJM7815A	IC, VOLTAGE REGULATOR			
U11	UPC7915H-1	IC, 3-TERMINAL REGULATOR			
U12	NJM4558D	IC, DUAL OP AMP			
U13	TL082CP	IC, OP AMP			
U14	NJM555D	IC, TIMER			
U15	TLP521-1(A)	IC, PHOTO COUPLER			
VR1	R12-1558-05	RES. SEMI FIXED	2K		
VR2	R12-4514-05	RES. SEMI FIXED	50K		
VR3	R12-2515-05	RES. SEMI FIXED	5K		
VR4	R12-4514-05	RES. SEMI FIXED	50K		
VR5	R12-3544-05	RES. SEMI FIXED	10K		
VR6	R12-3545-05	RES. SEMI FIXED	20K		
VR7	R12-1540-05	RES. SEMI FIXED	2.5K		
VR8	R12-4514-05	RES. SEMI FIXED	50K		
VR9	R12-1540-05	RES. SEMI FIXED	2.5K		
VR10	R12-4514-05	RES. SEMI FIXED	50K		
VR11	R12-4514-05	RES. SEMI FIXED	50K		
VR20	R12-3544-05	RES. SEMI FIXED	10K		

PARTS LIST

PD18-30D AMP UNIT

X73-1560-00

REF. NO	PARTS NO	NAME & DESCRIPTION
	E23-0508-04	TEST TERMINAL
	F01-0845-04	HEAT SINK
	F01-0846-05	HEAT SINK, EXTRUDED
	F20-0647-05	INSULATOR
	J25-5062-22	PCB (UNMOUNTED)
	N09-0623-04	SCREW, SEMS PAN HD M3X8
	N19-0191-05	WASHER NONMETAL
C1	CQ92M2A104K	CAP. NYLAR 0.1 10% 100V
C2	CQ92M2A104K	CAP. NYLAR 0.1 10% 100V
C3	C90-0924-05	CAP. ELECTRO 330 20% 50V
C4	CE04EW1E100M	CAP. ELECTRO 10 20% 25V
C5	CE04EW1E221M	CAP. ELECTRO 220 20% 25V
C6	C90-0939-05	CAP. ELECTRO 470 20% 35V
C7	CE04EW1E100M	CAP. ELECTRO 10 20% 25V
C8	CE04EW1E100M	CAP. ELECTRO 10 20% 25V
C9	CE04EW1E221M	CAP. ELECTRO 220 20% 25V
C10	C90-0924-05	CAP. ELECTRO 330 20% 50V
C11	CE04EW1E101M	CAP. ELECTRO 100 20% 25V
C12	CE04EW1HR33M	CAP. ELECTRO 0.33 20% 50V
C13	CE04EW1H4R7M	CAP. ELECTRO 4.7 20% 50V
C14	CE04EW1E100M	CAP. ELECTRO 10 20% 25V
C15	C91-1203-05	CAP. CERAMIC 1.5 80/-20% 25V
C16	CC45CH1H101J	CAP. CERAMIC 100P 5% 50V
C17	C91-1203-05	CAP. CERAMIC 1.5 80/-20% 25V
C18	CC45CH1H101J	CAP. CERAMIC 100P 5% 50V
C19	CS15E1H2R2M	CAP. TANTALUM 2.2 20% 50V
C20	CQ92P2A332J	CAP. NYLAR 3300P 5% 100V
C21	CC45CH1H390J	CAP. CERAMIC 39P 5% 50V
C22	CQ92P2A332J	CAP. NYLAR 3300P 5% 100V
C23	CC45CH1H390J	CAP. CERAMIC 39P 5% 50V
C24	CF92V1H332J	CAP. POLYESTER 3300P 5% 50V
C27	CS15E1E100M	CAP. TANTALUM 10 20% 25V
C28	CC45CH1H101J	CAP. CERAMIC 100P 5% 50V
C29	CS15E1E100M	CAP. TANTALUM 10 20% 25V
C30	CC45CH1H101J	CAP. CERAMIC 100P 5% 50V
C31	CF92V1H103J	CAP. POLYESTER 0.01 5% 50V
C32	CC45CH1H101J	CAP. CERAMIC 100P 5% 50V
C33	CF92V1H103J	CAP. POLYESTER 0.01 5% 50V
C34	CF92V1H103J	CAP. POLYESTER 0.01 5% 50V
C35	CF92V1H103J	CAP. POLYESTER 0.01 5% 50V
C36	CF92V1H473J	CAP. POLYESTER 0.047 5% 50V
C37	CF92V1H103J	CAP. POLYESTER 0.01 5% 50V
C38	CF92V1H473J	CAP. POLYESTER 0.047 5% 50V
C39	CF92V1H473J	CAP. POLYESTER 0.047 5% 50V
C40	CF92V1H473J	CAP. POLYESTER 0.047 5% 50V
C41	CF92V1H473J	CAP. POLYESTER 0.047 5% 50V
C42	CC45CH1H101J	CAP. CERAMIC 100P 5% 50V
C43	CC45CH1H101J	CAP. CERAMIC 100P 5% 50V
C44	CF92V1H472J	CAP. POLYESTER 4700P 5% 50V
C45	CF92V1H472J	CAP. POLYESTER 4700P 5% 50V
C50	CQ92M2A104K	CAP. NYLAR 0.1 10% 100V
C51	CQ92M2A104K	CAP. NYLAR 0.1 10% 100V
C52	C90-0924-05	CAP. ELECTRO 330 20% 50V
C53	CF92V1H103J	CAP. POLYESTER 0.01 5% 50V
C54	CF92V1H103J	CAP. POLYESTER 0.01 5% 50V
C55	CE04EW1E100M	CAP. ELECTRO 10 20% 25V
C56	C90-0924-05	CAP. ELECTRO 330 20% 50V
C57	CF92V1H103J	CAP. POLYESTER 0.01 5% 50V
C58	CF92V1H103J	CAP. POLYESTER 0.01 5% 50V
C59	CE04EW1E100M	CAP. ELECTRO 10 20% 25V
C60	CF92V1H103J	CAP. POLYESTER 0.01 5% 50V
C61	CC45CH1H470J	CAP. CERAMIC 47P 5% 50V
C62	C91-0595-05	CAP. PLASTIC 0.033 2% 100V
C63	CC45CH1H101J	CAP. CERAMIC 100P 5% 50V
C64	CF92V1H102J	CAP. POLYESTER 1000P 5% 50V
C65	CF92V1H103J	CAP. POLYESTER 0.01 5% 50V
C66	CF92V1H472J	CAP. POLYESTER 4700P 5% 50V
C67	CE04EW1E100M	CAP. ELECTRO 10 20% 25V
C68	CF92V1H103J	CAP. POLYESTER 0.01 5% 50V
C69	CF92V1H473J	CAP. POLYESTER 0.047 5% 50V
C70	CE04BW1E100M	CAP. ELECTRO 10 20% 25V
C71	CE04BW1E100M	CAP. ELECTRO 10 20% 25V
C72	CF92V1H103J	CAP. POLYESTER 0.01 5% 50V
C73	CF92V1H224J	CAP. POLYESTER 0.22 5% 50V
C74	CC45CH1H101J	CAP. CERAMIC 100P 5% 50V
C75	CE04EW1E100M	CAP. ELECTRO 10 20% 25V
C76	CE04EW1C471M	CAP. ELECTRO 470 20% 16V
C201	CE04EW1E471M	CAP. ELECTRO 470 20% 25V
C202	CE04EW1E470M	CAP. ELECTRO 47 20% 25V
C203	CE04EW1E471M	CAP. ELECTRO 470 20% 25V
C204	CE04EW1E470M	CAP. ELECTRO 47 20% 25V
C205	CF92V1H473J	CAP. POLYESTER 0.047 5% 50V
C206	CF92V1H103J	CAP. POLYESTER 0.01 5% 50V
C207	CF92V1H473J	CAP. POLYESTER 0.047 5% 50V
C208	CF92V1H103J	CAP. POLYESTER 0.01 5% 50V

REF. NO	PARTS NO	NAME & DESCRIPTION
C209	CF92V1H473J	CAP. POLYESTER 0.047 5% 50V
C210	CF92V1H103J	CAP. POLYESTER 0.01 5% 50V
C211	CF92V1H473J	CAP. POLYESTER 0.047 5% 50V
C212	CF92V1H103J	CAP. POLYESTER 0.01 5% 50V
D1	S1VB60	DIODE, STACK
D2	S1VB60	DIODE, STACK
D3	DSA1A2	DIODE
D4	DSA1A2	DIODE
D5	NO USE	
D6	RD13F(B2)	DIODE, ZENER 12.97V
D7	MTZ9.1JC	DIODE, ZENER 9.07V
D8	1SS132	DIODE
D9	RD13F(B2)	DIODE, ZENER 12.97V
D10	MTZ9.1JC	DIODE, ZENER 9.07V
D11	1SS132	DIODE
D12	MTZ4.7JA	DIODE, ZENER 4.56V
D13	1SS132	DIODE
D14	HZT7A3	DIODE, ZENER 6.75V
D15	HZT7A3	DIODE, ZENER 6.75V
D16	1SS132	DIODE
D17	1SS132	DIODE
D18	1SS132	DIODE
D19	1SS132	DIODE
D20	1SS132	DIODE
D21	1SS132	DIODE
D22	1SS132	DIODE
D23	1SS132	DIODE
D24	1SS132	DIODE
D25	1SS132	DIODE
D26	1SS132	DIODE
D27	1SS132	DIODE
D28	MTZ5.1JB	DIODE, ZENER 5.07V
D29	1SS132	DIODE
D30	MTZ5.1JB	DIODE, ZENER 5.07V
D31	DSA1A2	DIODE
D32	DSA1A2	DIODE
D35	MTZ8.2JC	DIODE, ZENER 8.24V
D36	MTZ8.2JC	DIODE, ZENER 8.24V
D40	S1VB60	DIODE, STACK
D41	S1VB60	DIODE, STACK
D42	DSA1A2	DIODE
D43	DSA1A2	DIODE
D44	DSA1A2	DIODE
D45	DSA1A2	DIODE
D46	MTZ6.2JB	DIODE, ZENER 6.12V
D47	1SS132	DIODE
D48	1SS132	DIODE
D49	1SS132	DIODE
D50	1SS132	DIODE
D51	RD10F(B2)	DIODE, ZENER 9.75V
D52	RD10F(B2)	DIODE, ZENER 9.75V
D53	1SS132	DIODE
D54	1SS132	DIODE
D55	1SS132	DIODE
D56	1SS132	DIODE
D57	1SS132	DIODE
D58	1SS132	DIODE
D59	MTZ8.2JC	DIODE, ZENER 8.24V
D60	1SS132	DIODE
D61	1SS132	DIODE
D62	1SS132	DIODE
D63	1SS132	DIODE
D64	1SS132	DIODE
D65	1SS132	DIODE
D201	S1VB60	DIODE, STACK
D202	S1VB60	DIODE, STACK
P3	E40-0273-05	PIN CONNECTOR 2P
P4	E40-0273-05	PIN CONNECTOR 2P
P201	E40-0673-05	PIN CONNECTOR 6P
P202	E40-0373-05	PIN CONNECTOR 3P
P203	E40-0373-05	PIN CONNECTOR 3P
P204	E40-0673-05	PIN CONNECTOR 6P
Q1	2SD613(E)	TR. SI, NPN
Q2	2SC2785(F)	TR. SI, NPN
Q3	2SC2785(F)	TR. SI, NPN
Q4	2SA1408(O)	TR. SI, PNP
Q5	2SB633(E)	TR. SI, PNP
Q6	2SA1175(F)	TR. SI, PNP
Q7	2SA1175(F)	TR. SI, PNP
Q8	2SC3621(O)	TR. SI, NPN
Q9	2SC306(F)	TR. SI, NPN
Q10	2SC2785(F)	TR. SI, NPN
Q11	2SC2785(F)	TR. SI, NPN
Q12	2SC2459(GR)	TR. SI, NPN
Q13	2SC3621(O)	TR. SI, NPN
Q14	2SK170(BL)	FET, N-CHANNEL

PARTS LIST

REF. NO	PARTS NO	NAME & DESCRIPTION
Q15	2SK170(BL)	FET, N-CHANNEL
Q16	2SK170(BL)	FET, N-CHANNEL
Q17	2SK170(BL)	FET, N-CHANNEL
Q20	2SK170(BL)	FET, N-CHANNEL
Q21	2SC2785(F)	TR. SI, NPN
Q22	2SC3621(O)	TR. SI, NPN
Q23	2SC3621(O)	TR. SI, NPN
R1	RD14BB2E101J	RES. CARBON 100 5% 1/4W
R2	RD14BB2E101J	RES. CARBON 100 5% 1/4W
R3	RD14BB3D471J	RES. CARBON 470 5% 2W
R4	RD14BB2E561J	RES. CARBON 560 5% 1/4W
R5	RD14DB2H512J	RES. CARBON 5.1K 5% 1/2W
R6	RD14BB2C102J	RES. CARBON 1K 5% 1/6W
R7	RD14DB2H2R7J	RES. CARBON 2.7 5% 1/2W
R8	RD14BB2C153J	RES. CARBON 15K 5% 1/6W
R9	RN14BC2E7501F	RES. METAL FILM 7.5K 1% 1/4W
R10	RN14BC2E7501F	RES. METAL FILM 7.5K 1% 1/4W
R11	RD14DB3D471J	RES. CARBON 470 5% 2W
R12	RD14BB2E561J	RES. CARBON 560 5% 1/4W
R13	RD14DB2H512J	RES. CARBON 5.1K 5% 1/2W
R14	RD14BB2C102J	RES. CARBON 1K 5% 1/6W
R15	RD14DB2H2R7J	RES. CARBON 2.7 5% 1/2W
R16	RD14BB2C153J	RES. CARBON 15K 5% 1/6W
R17	RD14BB2C682J	RES. CARBON 6.8K 5% 1/6W
R18	RN14BC2E3600F	RES. METAL FILM 360 1% 1/4W
R19	RN14BC2E4300F	RES. METAL FILM 430 1% 1/4W
R20	RN14BC2E2701F	RES. METAL FILM 2.7K 1% 1/4W
R21	RN14BC2E3301F	RES. METAL FILM 3.3K 1% 1/4W
R24	RD14BB2C153J	RES. CARBON 15K 5% 1/6W
R25	RD14BB2C153J	RES. CARBON 15K 5% 1/6W
R26	RD14BB2E243J	RES. CARBON 24K 5% 1/4W
R27	RD14BB2E820J	RES. CARBON 82 5% 1/4W
R28	RD14BB2E182J	RES. CARBON 1.8K 5% 1/4W
R29	RD14BB2E181J	RES. CARBON 180 5% 1/4W
R30	RN14BE2E3601D	RES. METAL FILM 3.6K 0.5% 1/4W
R31	RD14BB2C102J	RES. CARBON 1K 5% 1/6W
R32	RN14BC2E1003F	RES. METAL FILM 100K 1% 1/4W
R33	RN14BC2E3600F	RES. METAL FILM 360 1% 1/4W
R34	RD14BB2C151J	RES. CARBON 150 5% 1/6W
R35	RN14BC2E1102F	RES. METAL FILM 11K 1% 1/4W
R36	RN14BE2E5101D	RES. METAL FILM 5.1K 0.5% 1/4W
R37	RD14BB2C102J	RES. CARBON 1K 5% 1/6W
R38	RN14BC2E1003F	RES. METAL FILM 100K 1% 1/4W
R39	RN14BC2E3600F	RES. METAL FILM 360 1% 1/4W
R40	RD14BB2C221J	RES. CARBON 220 5% 1/6W
R41	RN14BC2E1622F	RES. METAL FILM 16.2K 1% 1/4W
R42	RN14BE2H1002DKW	RES. METAL FILM 10K 0.5% 1/2W
R43	RN14BE2H1802DKW	RES. METAL FILM 18K 0.5% 1/2W
R44	R92-0150-05	JUMPING RES. ZERO OHM(10MM)
R45	RN14BE2H1002DKW	RES. METAL FILM 10K 0.5% 1/2W
R46	RN14BE2H3740DKW	RES. METAL FILM 374 0.5% 1/2W
R47	RD14BB2C102J	RES. CARBON 1K 5% 1/6W
R48	RD14BB2C102J	RES. CARBON 1K 5% 1/6W
R49	RN14BC2E2701F	RES. METAL FILM 2.7K 1% 1/4W
R50	RD14BB2C102J	RES. CARBON 1K 5% 1/6W
R51	RD14BB2C102J	RES. CARBON 1K 5% 1/6W
R52	RN14BC2E1001F	RES. METAL FILM 1K 1% 1/4W
R53	RD14BB2E162J	RES. CARBON 1.6K 5% 1/4W
R54	RN14BC2E4301F	RES. METAL FILM 4.3K 1% 1/4W
R55	RN14BC2E4300F	RES. METAL FILM 430 1% 1/4W
R56	RD14BB2C122J	RES. CARBON 1.2K 5% 1/6W
R57	RD14BB2C101J	RES. CARBON 100 5% 1/6W
R58	RD14BB2C102J	RES. CARBON 1K 5% 1/6W
R59	RD14BB2C102J	RES. CARBON 1K 5% 1/6W
R60	RD14BB2C102J	RES. CARBON 1K 5% 1/6W
R61	RD14BB2C102J	RES. CARBON 1K 5% 1/6W
R62	RD14BB2C122J	RES. CARBON 1.2K 5% 1/6W
R63	RD14BB2C223J	RES. CARBON 22K 5% 1/6W
R64	RN14BC2E1002F	RES. METAL FILM 10K 1% 1/4W
R65	RD14DB3A101J	RES. CARBON 100 5% 1W
R66	RN14BC2E7150F	RES. METAL FILM 715 1% 1/4W
R67	RD14BB2C104J	RES. CARBON 100K 5% 1/6W
R68	RN14BC2E1003F	RES. METAL FILM 100K 1% 1/4W
R69	RN14BC2E4701F	RES. METAL FILM 4.7K 1% 1/4W
R70	RN14BC2E1500F	RES. METAL FILM 150 1% 1/4W
R71	RD14BB2C471J	RES. CARBON 470 5% 1/6W
R72	RN14BC2E6801F	RES. METAL FILM 6.8K 1% 1/4W
R73	R92-0150-05	JUMPING RES. ZERO OHM(10MM)
R74	RD14BB2C104J	RES. CARBON 100K 5% 1/6W
R75	RD14BB2C104J	RES. CARBON 100K 5% 1/6W
R76	RN14BC2E1003F	RES. METAL FILM 100K 1% 1/4W
R77	RN14BC2E4701F	RES. METAL FILM 4.7K 1% 1/4W
R78	RN14BC2E1500F	RES. METAL FILM 150 1% 1/4W
R79	RD14BB2C471J	RES. CARBON 470 5% 1/6W
R80	RN14BC2E6801F	RES. METAL FILM 6.8K 1% 1/4W
R81	R92-0150-05	JUMPING RES. ZERO OHM(10MM)
R82	RN14BC2E5101F	RES. METAL FILM 5.1K 1% 1/4W
R83	RD14BB2C104J	RES. CARBON 100K 5% 1/6W
R84	RN14BC2E1003F	RES. METAL FILM 100K 1% 1/4W
R85	RN14BC2E820F	RES. METAL FILM 82.0 1% 1/4W

REF. NO	PARTS NO	NAME & DESCRIPTION
R86	RD14BB2C101J	RES. CARBON 100 5% 1/6W
R87	RN14BC2E5101F	RES. METAL FILM 5.1K 1% 1/4W
R88	RN14BC2E1002F	RES. METAL FILM 10K 1% 1/4W
R89	RD14BB2C333J	RES. CARBON 33K 5% 1/6W
R90	RD14BB2C333J	RES. CARBON 33K 5% 1/6W
R91	NO USE	
R92	RD14BB2C153J	RES. CARBON 15K 5% 1/6W
R93	RD14BB2C473J	RES. CARBON 47K 5% 1/6W
R94	RD14BB2C473J	RES. CARBON 47K 5% 1/6W
R95	RD14BB2E750J	RES. CARBON 75 5% 1/4W
R100	RD14BB2E101J	RES. CARBON 100 5% 1/4W
R101	RD14BB2E101J	RES. CARBON 100 5% 1/4W
R102	RD14DB2H392J	RES. CARBON 3.9K 5% 1/2W
R103	RD14BB2C103J	RES. CARBON 10K 5% 1/6W
R104	RD14BB2C153J	RES. CARBON 15K 5% 1/6W
R105	RD14BB2C123J	RES. CARBON 12K 5% 1/6W
R106	RD14BB2C332J	RES. CARBON 3.3K 5% 1/6W
R107	RD14BB2C472J	RES. CARBON 4.7K 5% 1/6W
R108	RN14BC2E4703F	RES. METAL FILM 470K 1% 1/4W
R109	RD14BB2C104J	RES. CARBON 100K 5% 1/6W
R110	RD14BB2C222J	RES. CARBON 2.2K 5% 1/6W
R111	RN14BC2E2202F	RES. METAL FILM 22K 1% 1/4W
R112	RD14BB2C682J	RES. CARBON 6.8K 5% 1/6W
R113	RN14BC2C3303F	RES. METAL FILM 330K 1% 1/6W
R114	RD14BB2C470J	RES. CARBON 47 5% 1/6W
R115	RD14BB2C104J	RES. CARBON 100K 5% 1/6W
R116	RD14BB2C472J	RES. CARBON 4.7K 5% 1/6W
R117	RD14BB2C224J	RES. CARBON 220K 5% 1/6W
R118	RD14BB2C103J	RES. CARBON 10K 5% 1/6W
R119	RD14BB2C122J	RES. CARBON 1.2K 5% 1/6W
R120	RD14DB3D472J	RES. CARBON 4.7K 5% 2W
R121	RD14BB2C104J	RES. CARBON 100K 5% 1/6W
R122	R92-1076-05	RES. METAL GLAZE 27M 5% 1/2W
R123	RD14BB2C472J	RES. CARBON 4.7K 5% 1/6W
R124	RD14BB2C105J	RES. CARBON 1M 5% 1/6W
R127	RD14BB2C911J	RES. CARBON 910 5% 1/6W
R128	RN14BC2E5601F	RES. METAL FILM 5.6K 1% 1/4W
R129	RD14BB2C472J	RES. CARBON 4.7K 5% 1/6W
R130	RD14BB2C103J	RES. CARBON 10K 5% 1/6W
R131	RN14BC2E2202F	RES. METAL FILM 22K 1% 1/4W
R132	RD14BB2C102J	RES. CARBON 1K 5% 1/6W
R133	RD14BB2C103J	RES. CARBON 10K 5% 1/6W
R134	RD14BB2C103J	RES. CARBON 10K 5% 1/6W
R135	RD14BB2C102J	RES. CARBON 1K 5% 1/6W
R136	RD14BB2C472J	RES. CARBON 4.7K 5% 1/6W
R137	RD14BB2C102J	RES. CARBON 1K 5% 1/6W
R138	RD14BB2C102J	RES. CARBON 1K 5% 1/6W
R139	RD14DB3A330J	RES. CARBON 33 5% 1W
R140	RD14DB3A330J	RES. CARBON 33 5% 1W
R141	RD14DB2H102J	RES. CARBON 1K 5% 1/2W
R142	RD14DB2H102J	RES. CARBON 1K 5% 1/2W
R143	NO USE	
R144	RD14BB2C103J	RES. CARBON 10K 5% 1/6W
U1	TL082CP	IC, OP AMP
U2	NJM7815A	IC, VOLTAGE REGULATOR
U3	TL082CP	IC, OP AMP
U4	LN308AH	IC, OP AMP
U5	LN308AH	IC, OP AMP
U6	NJM4558D	IC, DUAL OP AMP
U7	TL082CP	IC, OP AMP
U10	NJM7815A	IC, VOLTAGE REGULATOR
U11	UPC7915H-1	IC, 3-TERMINAL REGULATOR
U12	NJM4558D	IC, DUAL OP AMP
U13	TL082CP	IC, OP AMP
U14	NJM555D	IC, TIMER
U15	TLP521-1(A)	IC, PHOTO COUPLER
U201	LN79L05ACZ	IC, REGULATOR
U202	LN79L05ACZ	IC, REGULATOR
VR1	R12-1558-05	RES. SEMI FIXED 2K
VR2	R12-4514-05	RES. SEMI FIXED 50K
VR3	R12-2515-05	RES. SEMI FIXED 5K
VR4	R12-4514-05	RES. SEMI FIXED 50K
VR5	R12-3555-05	RES. SEMI FIXED 10K
VR6	R12-3556-05	RES. SEMI FIXED 20K
VR7	R12-1540-05	RES. SEMI FIXED 2.5K
VR8	R12-4514-05	RES. SEMI FIXED 50K
VR9	R12-1540-05	RES. SEMI FIXED 2.5K
VR10	R12-4514-05	RES. SEMI FIXED 50K
VR11	R12-4514-05	RES. SEMI FIXED 50K
VR20	R12-3544-05	RES. SEMI FIXED 10K

PARTS LIST

PD35-20 AMP UNIT

X73-1550-01

REF. NO	PARTS NO	NAME & DESCRIPTION			
	E23-0508-04	TEST TERMINAL			
	F01-0845-04	HEAT SINK			
	F01-0846-05	HEAT SINK, EXTRUDED			
	F20-0647-05	INSULATOR			
	J25-5062-22	PCB (UNMOUNTED)			
	N09-0623-04	SCREW, SEMS PAN HD M3X8			
	N19-0191-05	WASHER NONMETAL			
C1	CQ92M2A104K	CAP. NYLAR	0.1	10%	100V
C2	CQ92M2A104K	CAP. NYLAR	0.1	10%	100V
C3	C90-0924-05	CAP. ELECTRO	330	20%	50V
C4	CE04EW1E100M	CAP. ELECTRO	10	20%	25V
C5	CE04EW1E221M	CAP. ELECTRO	220	20%	25V
C6	C90-0939-05	CAP. ELECTRO	470	20%	35V
C7	CE04EW1E100M	CAP. ELECTRO	10	20%	25V
C8	CE04EW1E100M	CAP. ELECTRO	10	20%	25V
C9	CE04EW1E221M	CAP. ELECTRO	220	20%	25V
C10	C90-0924-05	CAP. ELECTRO	330	20%	50V
C11	CE04EW1E101M	CAP. ELECTRO	100	20%	25V
C12	CE04EW1HR33M	CAP. ELECTRO	0.33	20%	50V
C13	CE04EW1H4R7M	CAP. ELECTRO	4.7	20%	50V
C14	CE04EW1E100M	CAP. ELECTRO	10	20%	25V
C15	C91-1203-05	CAP. CERAMIC	1.5	80/-20%	25V
C16	CC45CH1H101J	CAP. CERAMIC	100P	5%	50V
C17	C91-1203-05	CAP. CERAMIC	1.5	80/-20%	25V
C18	CC45CH1H101J	CAP. CERAMIC	100P	5%	50V
C19	CS15E1H10M	CAP. TANTALUM	1	20%	50V
C20	CQ92P2A332J	CAP. NYLAR	3300P	5%	100V
C21	CC45CH1H390J	CAP. CERAMIC	39P	5%	50V
C22	CQ92P2A332J	CAP. NYLAR	3300P	5%	100V
C23	CC45CH1H390J	CAP. CERAMIC	39P	5%	50V
C24	CF92V1H332J	CAP. POLYESTER	3300P	5%	50V
C27	CS15E1E100M	CAP. TANTALUM	10	20%	25V
C28	CC45CH1H101J	CAP. CERAMIC	100P	5%	50V
C29	CS15E1E100M	CAP. TANTALUM	10	20%	25V
C30	CC45CH1H101J	CAP. CERAMIC	100P	5%	50V
C31	CF92V1H103J	CAP. POLYESTER	0.01	5%	50V
C32	CC45CH1H101J	CAP. CERAMIC	100P	5%	50V
C33	CF92V1H103J	CAP. POLYESTER	0.01	5%	50V
C34	CF92V1H103J	CAP. POLYESTER	0.01	5%	50V
C35	CF92V1H103J	CAP. POLYESTER	0.01	5%	50V
C36	CF92V1H473J	CAP. POLYESTER	0.047	5%	50V
C37	CF92V1H103J	CAP. POLYESTER	0.01	5%	50V
C38	CF92V1H473J	CAP. POLYESTER	0.047	5%	50V
C39	CF92V1H473J	CAP. POLYESTER	0.047	5%	50V
C40	CF92V1H473J	CAP. POLYESTER	0.047	5%	50V
C41	CF92V1H473J	CAP. POLYESTER	0.047	5%	50V
C42	CC45CH1H101J	CAP. CERAMIC	100P	5%	50V
C43	CC45CH1H101J	CAP. CERAMIC	100P	5%	50V
C44	CF92V1H472J	CAP. POLYESTER	4700P	5%	50V
C45	CF92V1H472J	CAP. POLYESTER	4700P	5%	50V
C50	CQ92M2A104K	CAP. NYLAR	0.1	10%	100V
C51	CQ92M2A104K	CAP. NYLAR	0.1	10%	100V
C52	C90-0924-05	CAP. ELECTRO	330	20%	50V
C53	CF92V1H103J	CAP. POLYESTER	0.01	5%	50V
C54	CF92V1H103J	CAP. POLYESTER	0.01	5%	50V
C55	CE04EW1E100M	CAP. ELECTRO	10	20%	25V
C56	C90-0924-05	CAP. ELECTRO	330	20%	50V
C57	CF92V1H103J	CAP. POLYESTER	0.01	5%	50V
C58	CF92V1H103J	CAP. POLYESTER	0.01	5%	50V
C59	CE04EW1E100M	CAP. ELECTRO	10	20%	25V
C60	CF92V1H103J	CAP. POLYESTER	0.01	5%	50V
C61	CC45CH1H470J	CAP. CERAMIC	47P	5%	50V
C62	C91-0595-05	CAP. PLASTIC	0.033	2%	100V
C63	CC45CH1H101J	CAP. CERAMIC	100P	5%	50V
C64	CF92V1H102J	CAP. POLYESTER	1000P	5%	50V
C65	CF92V1H103J	CAP. POLYESTER	0.01	5%	50V
C66	CF92V1H472J	CAP. POLYESTER	4700P	5%	50V
C67	CE04EW1E100M	CAP. ELECTRO	10	20%	25V
C68	CF92V1H103J	CAP. POLYESTER	0.01	5%	50V
C69	CF92V1H473J	CAP. POLYESTER	0.047	5%	50V
C72	CF92V1H103J	CAP. POLYESTER	0.01	5%	50V
C73	CF92V1H224J	CAP. POLYESTER	0.22	5%	50V
C74	CC45CH1H101J	CAP. CERAMIC	100P	5%	50V
C75	CE04EW1E100M	CAP. ELECTRO	10	20%	25V
C76	CE04EW1C471M	CAP. ELECTRO	470	20%	16V
D1	S1VB60	DIODE, STACK			
D2	S1VB60	DIODE, STACK			
D3	DSA1A2	DIODE			
D4	DSA1A2	DIODE			
D5	NO USE				
D6	RD13F(B2)	DIODE, ZENER	12.97V		
D7	MTZ9.1JC	DIODE, ZENER	9.07V		
D8	1SS132	DIODE			
D9	RD13F(B2)	DIODE, ZENER	12.97V		

REF. NO	PARTS NO	NAME & DESCRIPTION			
D10	MTZ9.1JC	DIODE, ZENER	9.07V		
D11	1SS132	DIODE			
D12	MTZ4.7JA	DIODE, ZENER	4.56V		
D13	1SS132	DIODE			
D14	HZT7A3	DIODE, ZENER	6.75V		
D15	HZT7A3	DIODE, ZENER	6.75V		
D16	1SS132	DIODE			
D17	1SS132	DIODE			
D18	1SS132	DIODE			
D19	1SS132	DIODE			
D20	1SS132	DIODE			
D21	1SS132	DIODE			
D22	1SS132	DIODE			
D23	1SS132	DIODE			
D24	1SS132	DIODE			
D25	1SS132	DIODE			
D26	1SS132	DIODE			
D27	1SS132	DIODE			
D28	MTZ5.1JB	DIODE, ZENER	5.07V		
D29	1SS132	DIODE			
D30	MTZ5.1JB	DIODE, ZENER	5.07V		
D31	DSA1A2	DIODE			
D32	DSA1A2	DIODE			
D35	MTZ8.2JC	DIODE, ZENER	8.24V		
D36	MTZ8.2JC	DIODE, ZENER	8.24V		
D40	S1VB60	DIODE, STACK			
D41	S1VB60	DIODE, STACK			
D42	DSA1A2	DIODE			
D43	DSA1A2	DIODE			
D44	DSA1A2	DIODE			
D45	DSA1A2	DIODE			
D46	MTZ6.2JB	DIODE, ZENER	6.12V		
D47	1SS132	DIODE			
D48	1SS132	DIODE			
D49	1SS132	DIODE			
D50	1SS132	DIODE			
D51	RD10F(B2)	DIODE, ZENER	9.75V		
D52	RD10F(B2)	DIODE, ZENER	9.75V		
D53	1SS132	DIODE			
D54	1SS132	DIODE			
D55	1SS132	DIODE			
D56	1SS132	DIODE			
D57	1SS132	DIODE			
D58	1SS132	DIODE			
D59	MTZ8.2JC	DIODE, ZENER	8.24V		
D60	1SS132	DIODE			
D61	1SS132	DIODE			
D62	1SS132	DIODE			
D63	1SS132	DIODE			
D64	1SS132	DIODE			
D65	1SS132	DIODE			
P3	E40-0273-05	PIN CONNECTOR	2P		
P4	E40-0273-05	PIN CONNECTOR	2P		
Q1	2SD613(E)	TR. S1, NPN			
Q2	2SC2785(F)	TR. S1, NPN			
Q3	2SC2785(F)	TR. S1, NPN			
Q4	2SA1408(O)	TR. S1, PNP			
Q5	2SB633(E)	TR. S1, PNP			
Q6	2SA1175(F)	TR. S1, PNP			
Q7	2SA1175(F)	TR. S1, PNP			
Q8	2SC3621(O)	TR. S1, NPN			
Q9	2SC3064(F)	TR. S1, NPN			
Q10	2SC2785(F)	TR. S1, NPN			
Q11	2SC2785(F)	TR. S1, NPN			
Q12	2SC2459(GR)	TR. S1, NPN			
Q13	2SC3621(O)	TR. S1, NPN			
Q14	2SK170(BL)	FET, N-CHANNEL			
Q15	2SK170(BL)	FET, N-CHANNEL			
Q16	2SK170(BL)	FET, N-CHANNEL			
Q17	2SK170(BL)	FET, N-CHANNEL			
Q20	2SK170(BL)	FET, N-CHANNEL			
Q21	2SC2785(F)	TR. S1, NPN			
Q22	2SC3621(O)	TR. S1, NPN			
Q23	2SC3621(O)	TR. S1, NPN			
R1	RD14BB2E101J	RES. CARBON	100	5%	1/4W
R2	RD14BB2E101J	RES. CARBON	100	5%	1/4W
R3	RD14DB3D471J	RES. CARBON	470	5%	2W
R4	RD14BB2E561J	RES. CARBON	560	5%	1/4W
R5	RD14DB2H512J	RES. CARBON	5.1K	5%	1/2W
R6	RD14BB2C102J	RES. CARBON	1K	5%	1/6W
R7	RD14DB2H2R7J	RES. CARBON	2.7	5%	1/2W
R8	RD14BB2C153J	RES. CARBON	15K	5%	1/6W
R9	RN14BC2E7501F	RES. METAL FILM	7.5K	1%	1/4W
R10	RN14BC2E7501F	RES. METAL FILM	7.5K	1%	1/4W
R11	RD14DB3D471J	RES. CARBON	470	5%	2W
R12	RD14BB2E561J	RES. CARBON	560	5%	1/4W
R13	RD14DB2H512J	RES. CARBON	5.1K	5%	1/2W

PARTS LIST

REF. NO	PARTS NO	NAME & DESCRIPTION			
R14	RD14BB2C102J	RES. CARBON	1K	5%	1/6W
R15	RD14DB2H2R7J	RES. CARBON	2.7	5%	1/2W
R16	RD14BB2C153J	RES. CARBON	15K	5%	1/6W
R17	RD14BB2C682J	RES. CARBON	6.8K	5%	1/6W
R18	RN14BC2E3600F	RES. METAL FILM	360	1%	1/4W
R19	RN14BC2E4300F	RES. METAL FILM	430	1%	1/4W
R20	RN14BC2E2701F	RES. METAL FILM	2.7K	1%	1/4W
R21	RN14BC2E3301F	RES. METAL FILM	3.3K	1%	1/4W
R24	RD14BB2C153J	RES. CARBON	15K	5%	1/6W
R25	RD14BB2C153J	RES. CARBON	15K	5%	1/6W
R26	RD14BB2E243J	RES. CARBON	24K	5%	1/4W
R27	RD14BB2E820J	RES. CARBON	82	5%	1/4W
R28	RD14BB2E182J	RES. CARBON	1.8K	5%	1/4W
R29	RD14BB2E181J	RES. CARBON	180	5%	1/4W
R30	RN14BE2E3601D	RES. METAL FILM	3.6K	0.5%	1/4W
R31	RD14BB2C102J	RES. CARBON	1K	5%	1/6W
R32	RN14BC2E1003F	RES. METAL FILM	100K	1%	1/4W
R33	RN14BC2E3600F	RES. METAL FILM	360	1%	1/4W
R34	RD14BB2C151J	RES. CARBON	150	5%	1/6W
R35	RN14BC2E1102F	RES. METAL FILM	11K	1%	1/4W
R36	RN14BE2E5101D	RES. METAL FILM	5.1K	0.5%	1/4W
R37	RD14BB2C102J	RES. CARBON	1K	5%	1/6W
R38	RN14BC2E1003F	RES. METAL FILM	100K	1%	1/4W
R39	RN14BC2E3600F	RES. METAL FILM	360	1%	1/4W
R40	RD14BB2C221J	RES. CARBON	220	5%	1/6W
R41	RN14BC2E1622F	RES. METAL FILM	16.2K	1%	1/4W
R42	RN14BE2H1002DKW	RES. METAL FILM	10K	0.5%	1/2W
R43	RN14BE2H1802DKW	RES. METAL FILM	18K	0.5%	1/2W
R44	RN14BE2H1802DKW	RES. METAL FILM	18K	0.5%	1/2W
R45	RN14BE2H1002DKW	RES. METAL FILM	10K	0.5%	1/2W
R46	RN14BE2H5230DKW	RES. METAL FILM	523	0.5%	1/2W
R47	RD14BB2C102J	RES. CARBON	1K	5%	1/6W
R48	RD14BB2C102J	RES. CARBON	1K	5%	1/6W
R49	RN14BC2E2701F	RES. METAL FILM	2.7K	1%	1/4W
R50	RD14BB2C102J	RES. CARBON	1K	5%	1/6W
R51	RD14BB2C102J	RES. CARBON	1K	5%	1/6W
R52	RN14BC2E1001F	RES. METAL FILM	1K	1%	1/4W
R53	RD14BB2E162J	RES. CARBON	1.6K	5%	1/4W
R54	RN14BC2E4301F	RES. METAL FILM	4.3K	1%	1/4W
R55	RN14BC2E6200F	RES. METAL FILM	620	1%	1/4W
R56	RD14BB2C122J	RES. CARBON	1.2K	5%	1/6W
R57	RD14BB2C621J	RES. CARBON	620	5%	1/6W
R58	RD14BB2C102J	RES. CARBON	1K	5%	1/6W
R59	RD14BB2C102J	RES. CARBON	1K	5%	1/6W
R60	RD14BB2C102J	RES. CARBON	1K	5%	1/6W
R61	RD14BB2C102J	RES. CARBON	1K	5%	1/6W
R62	RD14BB2C122J	RES. CARBON	1.2K	5%	1/6W
R63	RD14BB2C223J	RES. CARBON	22K	5%	1/6W
R64	RN14BC2E1002F	RES. METAL FILM	10K	1%	1/4W
R65	RD14DB3A101J	RES. CARBON	100	5%	1W
R66	RN14BC2E1001F	RES. METAL FILM	1K	1%	1/4W
R67	RD14BB2C104J	RES. CARBON	100K	5%	1/6W
R68	RN14BC2E1003F	RES. METAL FILM	100K	1%	1/4W
R69	RN14BC2E4701F	RES. METAL FILM	4.7K	1%	1/4W
R70	RN14BC2E1500F	RES. METAL FILM	150	1%	1/4W
R71	RD14BB2C471J	RES. CARBON	470	5%	1/6W
R72	RN14BC2E6801F	RES. METAL FILM	6.8K	1%	1/4W
R73	RN14BC2E1802F	RES. METAL FILM	18K	1%	1/4W
R74	RD14BB2C104J	RES. CARBON	100K	5%	1/6W
R75	RD14BB2C104J	RES. CARBON	100K	5%	1/6W
R76	RN14BC2E1003F	RES. METAL FILM	100K	1%	1/4W
R77	RN14BC2E4701F	RES. METAL FILM	4.7K	1%	1/4W
R78	RN14BC2E1500F	RES. METAL FILM	150	1%	1/4W
R79	RD14BB2C471J	RES. CARBON	470	5%	1/6W
R80	RN14BC2E6801F	RES. METAL FILM	6.8K	1%	1/4W
R81	RN14BC2E1802F	RES. METAL FILM	18K	1%	1/4W
R82	RN14BC2E5101F	RES. METAL FILM	5.1K	1%	1/4W
R83	RD14BB2C104J	RES. CARBON	100K	5%	1/6W
R84	RN14BC2E1003F	RES. METAL FILM	100K	1%	1/4W
R85	RN14BC2E82R0F	RES. METAL FILM	82.0	1%	1/4W
R86	RD14BB2C101J	RES. CARBON	100	5%	1/6W
R87	RN14BC2E5101F	RES. METAL FILM	5.1K	1%	1/4W
R88	RN14BC2E1002F	RES. METAL FILM	10K	1%	1/4W
R89	RD14BB2C333J	RES. CARBON	33K	5%	1/6W
R90	RD14BB2C333J	RES. CARBON	33K	5%	1/6W
R91	NO USE				
R92	RD14BB2C153J	RES. CARBON	15K	5%	1/6W
R93	RD14BB2C473J	RES. CARBON	47K	5%	1/6W
R94	RD14BB2C473J	RES. CARBON	47K	5%	1/6W
R95	RD14BB2E151J	RES. CARBON	150	5%	1/4W
R100	RD14BB2E101J	RES. CARBON	100	5%	1/4W
R101	RD14BB2E101J	RES. CARBON	100	5%	1/4W
R102	RD14DB2H392J	RES. CARBON	3.9K	5%	1/2W
R103	RD14BB2C103J	RES. CARBON	10K	5%	1/6W
R104	RD14BB2C153J	RES. CARBON	15K	5%	1/6W
R105	RD14BB2C123J	RES. CARBON	12K	5%	1/6W
R106	RD14BB2C332J	RES. CARBON	3.3K	5%	1/6W
R107	RD14BB2C472J	RES. CARBON	4.7K	5%	1/6W
R108	RN14BC2E4703F	RES. METAL FILM	470K	1%	1/4W
R109	RD14BB2C104J	RES. CARBON	100K	5%	1/6W
R110	RD14BB2C222J	RES. CARBON	2.2K	5%	1/6W

REF. NO	PARTS NO	NAME & DESCRIPTION			
R111	RN14BC2E2202F	RES. METAL FILM	22K	1%	1/4W
R112	RD14BB2C682J	RES. CARBON	6.8K	5%	1/6W
R113	RN14BK2C3303F	RES. METAL FILM	330K	1%	1/6W
R114	RD14BB2C470J	RES. CARBON	47	5%	1/6W
R115	RD14BB2C104J	RES. CARBON	100K	5%	1/6W
R116	RD14BB2C472J	RES. CARBON	4.7K	5%	1/6W
R117	RD14BB2C224J	RES. CARBON	220K	5%	1/6W
R118	RD14BB2C103J	RES. CARBON	10K	5%	1/6W
R119	RD14BB2C122J	RES. CARBON	1.2K	5%	1/6W
R120	RD14DB3D472J	RES. CARBON	4.7K	5%	2W
R121	RD14BB2C104J	RES. CARBON	100K	5%	1/6W
R122	R92-1076-05	RES. METAL GLAZE	27M	5%	1/2W
R123	RD14BB2C472J	RES. CARBON	4.7K	5%	1/6W
R124	RD14BB2C105J	RES. CARBON	1M	5%	1/6W
R127	RD14BB2C911J	RES. CARBON	910	5%	1/6W
R128	RN14BC2E5601F	RES. METAL FILM	5.6K	1%	1/4W
R129	RD14BB2C472J	RES. CARBON	4.7K	5%	1/6W
R130	RD14BB2C103J	RES. CARBON	10K	5%	1/6W
R131	RN14BC2E2202F	RES. METAL FILM	22K	1%	1/4W
R132	RD14BB2C102J	RES. CARBON	1K	5%	1/6W
R133	RD14BB2C103J	RES. CARBON	10K	5%	1/6W
R134	RD14BB2C103J	RES. CARBON	10K	5%	1/6W
R135	RD14BB2C102J	RES. CARBON	1K	5%	1/6W
R136	RD14BB2C472J	RES. CARBON	4.7K	5%	1/6W
R137	RD14BB2C102J	RES. CARBON	1K	5%	1/6W
R138	RD14BB2C102J	RES. CARBON	1K	5%	1/6W
R139	RD14DB3A330J	RES. CARBON	33	5%	1W
R140	RD14DB3A330J	RES. CARBON	33	5%	1W
R141	RD14DB2H102J	RES. CARBON	1K	5%	1/2W
R142	RD14DB2H102J	RES. CARBON	1K	5%	1/2W
R143	NO USE				
R144	RD14BB2C103J	RES. CARBON	10K	5%	1/6W
U1	TL082CP	IC, OP AMP			
U2	NJM7815A	IC, VOLTAGE REGULATOR			
U3	TL082CP	IC, OP AMP			
U4	LM308AH	IC, OP AMP			
U5	LM308AH	IC, OP AMP			
U6	NJM4558D	IC, DUAL OP AMP			
U7	TL082CP	IC, OP AMP			
U10	NJM7815A	IC, VOLTAGE REGULATOR			
U11	UPC7915H-1	IC, 3-TERMINAL REGULATOR			
U12	NJM4558D	IC, DUAL OP AMP			
U13	TL082CP	IC, OP AMP			
U14	NJM555D	IC, TIMER			
U15	TLP521-1(A)	IC, PHOTO COUPLER			
VR1	R12-1558-05	RES. SEMI FIXED	2K		
VR2	R12-4514-05	RES. SEMI FIXED	50K		
VR3	R12-2515-05	RES. SEMI FIXED	5K		
VR4	R12-4514-05	RES. SEMI FIXED	50K		
VR5	R12-3544-05	RES. SEMI FIXED	10K		
VR6	R12-3545-05	RES. SEMI FIXED	20K		
VR7	R12-1540-05	RES. SEMI FIXED	2.5K		
VR8	R12-4514-05	RES. SEMI FIXED	50K		
VR9	R12-1540-05	RES. SEMI FIXED	2.5K		
VR10	R12-4514-05	RES. SEMI FIXED	50K		
VR11	R12-4514-05	RES. SEMI FIXED	50K		
VR20	R12-3544-05	RES. SEMI FIXED	10K		

PARTS LIST

PD35-20D AMP UNIT

X73-1560-01

REF. NO	PARTS NO	NAME & DESCRIPTION			
	E23-0508-04	TEST TERMINAL			
	F01-0845-04	HEAT SINK			
	F01-0846-05	HEAT SINK, EXTRUDED			
	F20-0647-05	INSULATOR			
	J25-5062-22	PCB (UNMOUNTED)			
	N09-0623-04	SCREW, SEMS PAN HD M3X8			
	N19-0191-05	WASHER NONMETAL			
C1	CQ92M2A104K	CAP. MYLAR	0.1	10%	100V
C2	CQ92M2A104K	CAP. MYLAR	0.1	10%	100V
C3	C90-0924-05	CAP. ELECTRO	330	20%	50V
C4	CE04EW1E100M	CAP. ELECTRO	10	20%	25V
C5	CE04EW1E221M	CAP. ELECTRO	220	20%	25V
C6	C90-0939-05	CAP. ELECTRO	470	20%	35V
C7	CE04EW1E100M	CAP. ELECTRO	10	20%	25V
C8	CE04EW1E100M	CAP. ELECTRO	10	20%	25V
C9	CE04EW1E221M	CAP. ELECTRO	220	20%	25V
C10	C90-0924-05	CAP. ELECTRO	330	20%	50V
C11	CE04EW1E101M	CAP. ELECTRO	100	20%	25V
C12	CE04EWHR333M	CAP. ELECTRO	0.33	20%	50V
C13	CE04EWH4R7M	CAP. ELECTRO	4.7	20%	50V
C14	CE04EW1E100M	CAP. ELECTRO	10	20%	25V
C15	C91-1203-05	CAP. CERAMIC	1.5	80/-20%	25V
C16	CC45CH1H101J	CAP. CERAMIC	100P	5%	50V
C17	C91-1203-05	CAP. CERAMIC	1.5	80/-20%	25V
C18	CC45CH1H101J	CAP. CERAMIC	100P	5%	50V
C19	CS15E1H10M	CAP. TANTALUM	1	20%	50V
C20	CQ92P2A332J	CAP. MYLAR	3300P	5%	100V
C21	CC45CH1H390J	CAP. CERAMIC	39P	5%	50V
C22	CQ92P2A332J	CAP. MYLAR	3300P	5%	100V
C23	CC45CH1H390J	CAP. CERAMIC	39P	5%	50V
C24	CF92V1H332J	CAP. POLYESTER	3300P	5%	50V
C27	CS15E1E100M	CAP. TANTALUM	10	20%	25V
C28	CC45CH1H101J	CAP. CERAMIC	100P	5%	50V
C29	CS15E1E100M	CAP. TANTALUM	10	20%	25V
C30	CC45CH1H101J	CAP. CERAMIC	100P	5%	50V
C31	CF92V1H103J	CAP. POLYESTER	0.01	5%	50V
C32	CC45CH1H101J	CAP. CERAMIC	100P	5%	50V
C33	CF92V1H103J	CAP. POLYESTER	0.01	5%	50V
C34	CF92V1H103J	CAP. POLYESTER	0.01	5%	50V
C35	CF92V1H103J	CAP. POLYESTER	0.01	5%	50V
C36	CF92V1H473J	CAP. POLYESTER	0.047	5%	50V
C37	CF92V1H103J	CAP. POLYESTER	0.01	5%	50V
C38	CF92V1H473J	CAP. POLYESTER	0.047	5%	50V
C39	CF92V1H473J	CAP. POLYESTER	0.047	5%	50V
C40	CF92V1H473J	CAP. POLYESTER	0.047	5%	50V
C41	CF92V1H473J	CAP. POLYESTER	0.047	5%	50V
C42	CC45CH1H101J	CAP. CERAMIC	100P	5%	50V
C43	CC45CH1H101J	CAP. CERAMIC	100P	5%	50V
C44	CF92V1H472J	CAP. POLYESTER	4700P	5%	50V
C45	CF92V1H472J	CAP. POLYESTER	4700P	5%	50V
C50	CQ92M2A104K	CAP. MYLAR	0.1	10%	100V
C51	CQ92M2A104K	CAP. MYLAR	0.1	10%	100V
C52	C90-0924-05	CAP. ELECTRO	330	20%	50V
C53	CF92V1H103J	CAP. POLYESTER	0.01	5%	50V
C54	CF92V1H103J	CAP. POLYESTER	0.01	5%	50V
C55	CE04EW1E100M	CAP. ELECTRO	10	20%	25V
C56	C90-0924-05	CAP. ELECTRO	330	20%	50V
C57	CF92V1H103J	CAP. POLYESTER	0.01	5%	50V
C58	CF92V1H103J	CAP. POLYESTER	0.01	5%	50V
C59	CE04EW1E100M	CAP. ELECTRO	10	20%	25V
C60	CF92V1H103J	CAP. POLYESTER	0.01	5%	50V
C61	CC45CH1H470J	CAP. CERAMIC	47P	5%	50V
C62	C91-0595-05	CAP. PLASTIC	0.033	2%	100V
C63	CC45CH1H101J	CAP. CERAMIC	100P	5%	50V
C64	CF92V1H102J	CAP. POLYESTER	1000P	5%	50V
C65	CF92V1H103J	CAP. POLYESTER	0.01	5%	50V
C66	CF92V1H472J	CAP. POLYESTER	4700P	5%	50V
C67	CE04EW1E100M	CAP. ELECTRO	10	20%	25V
C68	CF92V1H103J	CAP. POLYESTER	0.01	5%	50V
C69	CF92V1H473J	CAP. POLYESTER	0.047	5%	50V
C70	CE04BW1E100M	CAP. ELECTRO	10	20%	25V
C71	CE04BW1E100M	CAP. ELECTRO	10	20%	25V
C72	CF92V1H103J	CAP. POLYESTER	0.01	5%	50V
C73	CF92V1H224J	CAP. POLYESTER	0.22	5%	50V
C74	CC45CH1H101J	CAP. CERAMIC	100P	5%	50V
C75	CE04EW1E100M	CAP. ELECTRO	10	20%	25V
C76	CE04EW1C471M	CAP. ELECTRO	470	20%	16V
C201	CE04EW1E471M	CAP. ELECTRO	470	20%	25V
C202	CE04EW1E470M	CAP. ELECTRO	47	20%	25V
C203	CE04EW1E471M	CAP. ELECTRO	470	20%	25V
C204	CE04EW1E470M	CAP. ELECTRO	47	20%	25V
C205	CF92V1H473J	CAP. POLYESTER	0.047	5%	50V
C206	CF92V1H103J	CAP. POLYESTER	0.01	5%	50V
C207	CF92V1H473J	CAP. POLYESTER	0.047	5%	50V
C208	CF92V1H103J	CAP. POLYESTER	0.01	5%	50V

REF. NO	PARTS NO	NAME & DESCRIPTION			
C209	CF92V1H473J	CAP. POLYESTER	0.047	5%	50V
C210	CF92V1H103J	CAP. POLYESTER	0.01	5%	50V
C211	CF92V1H473J	CAP. POLYESTER	0.047	5%	50V
C212	CF92V1H103J	CAP. POLYESTER	0.01	5%	50V
D1	S1VB60	DIODE, STACK			
D2	S1VB60	DIODE, STACK			
D3	DSA1A2	DIODE			
D4	DSA1A2	DIODE			
D5	NO USE				
D6	RD13F(B2)	DIODE, ZENER	12.97V		
D7	MTZ9.1JC	DIODE, ZENER	9.07V		
D8	1SS132	DIODE			
D9	RD13F(B2)	DIODE, ZENER	12.97V		
D10	MTZ9.1JC	DIODE, ZENER	9.07V		
D11	1SS132	DIODE			
D12	MTZ4.7JA	DIODE, ZENER	4.56V		
D13	1SS132	DIODE			
D14	HZT7A3	DIODE, ZENER	6.75V		
D15	HZT7A3	DIODE, ZENER	6.75V		
D16	1SS132	DIODE			
D17	1SS132	DIODE			
D18	1SS132	DIODE			
D19	1SS132	DIODE			
D20	1SS132	DIODE			
D21	1SS132	DIODE			
D22	1SS132	DIODE			
D23	1SS132	DIODE			
D24	1SS132	DIODE			
D25	1SS132	DIODE			
D26	1SS132	DIODE			
D27	1SS132	DIODE			
D28	MTZ5.1JB	DIODE, ZENER	5.07V		
D29	1SS132	DIODE			
D30	MTZ5.1JB	DIODE, ZENER	5.07V		
D31	DSA1A2	DIODE			
D32	DSA1A2	DIODE			
D35	MTZ8.2JC	DIODE, ZENER	8.24V		
D36	MTZ8.2JC	DIODE, ZENER	8.24V		
D40	S1VB60	DIODE, STACK			
D41	S1VB60	DIODE, STACK			
D42	DSA1A2	DIODE			
D43	DSA1A2	DIODE			
D44	DSA1A2	DIODE			
D45	DSA1A2	DIODE			
D46	MTZ6.2JB	DIODE, ZENER	6.12V		
D47	1SS132	DIODE			
D48	1SS132	DIODE			
D49	1SS132	DIODE			
D50	1SS132	DIODE			
D51	RD10F(B2)	DIODE, ZENER	9.75V		
D52	RD10F(B2)	DIODE, ZENER	9.75V		
D53	1SS132	DIODE			
D54	1SS132	DIODE			
D55	1SS132	DIODE			
D56	1SS132	DIODE			
D57	1SS132	DIODE			
D58	1SS132	DIODE			
D59	MTZ8.2JC	DIODE, ZENER	8.24V		
D60	1SS132	DIODE			
D61	1SS132	DIODE			
D62	1SS132	DIODE			
D63	1SS132	DIODE			
D64	1SS132	DIODE			
D65	1SS132	DIODE			
D201	S1VB60	DIODE, STACK			
D202	S1VB60	DIODE, STACK			
P3	E40-0273-05	PIN CONNECTOR	2P		
P4	E40-0273-05	PIN CONNECTOR	2P		
P201	E40-0673-05	PIN CONNECTOR	6P		
P202	E40-0373-05	PIN CONNECTOR	3P		
P203	E40-0373-05	PIN CONNECTOR	3P		
P204	E40-0673-05	PIN CONNECTOR	6P		
Q1	2SD613(E)	TR. SI, NPN			
Q2	2SC2785(F)	TR. SI, NPN			
Q3	2SC2785(F)	TR. SI, NPN			
Q4	2SA1408(O)	TR. SI, PNP			
Q5	2SB633(E)	TR. SI, PNP			
Q6	2SA1175(F)	TR. SI, PNP			
Q7	2SA1175(F)	TR. SI, PNP			
Q8	2SC3621(O)	TR. SI, NPN			
Q9	2SC3064(F)	TR. SI, NPN			
Q10	2SC2785(F)	TR. SI, NPN			
Q11	2SC2785(F)	TR. SI, NPN			
Q12	2SC2459(GR)	TR. SI, NPN			
Q13	2SC3621(O)	TR. SI, NPN			
Q14	2SK170(BL)	FET, N-CHANNEL			

PARTS LIST

REF. NO	PARTS NO	NAME & DESCRIPTION			
Q15	2SK170 (BL)	FET, N-CHANNEL			
Q16	2SK170 (BL)	FET, N-CHANNEL			
Q17	2SK170 (BL)	FET, N-CHANNEL			
Q20	2SK170 (BL)	FET, N-CHANNEL			
Q21	2SC2785 (F)	TR. SI, NPN			
Q22	2SC3621 (O)	TR. SI, NPN			
Q23	2SC3621 (O)	TR. SI, NPN			
R1	RD14BB2E101J	RES. CARBON	100	5%	1/4W
R2	RD14BB2E101J	RES. CARBON	100	5%	1/4W
R3	RD14DB3D471J	RES. CARBON	470	5%	2W
R4	RD14BB2E561J	RES. CARBON	560	5%	1/4W
R5	RD14DB2H512J	RES. CARBON	5.1K	5%	1/2W
R6	RD14BB2C102J	RES. CARBON	1K	5%	1/6W
R7	RD14DB2H2R7J	RES. CARBON	2.7	5%	1/2W
R8	RD14BB2C153J	RES. CARBON	15K	5%	1/6W
R9	RN14BC2E7501F	RES. METAL FILM	7.5K	1%	1/4W
R10	RN14BC2E7501F	RES. METAL FILM	7.5K	1%	1/4W
R11	RD14DB3D471J	RES. CARBON	470	5%	2W
R12	RD14BB2E561J	RES. CARBON	560	5%	1/4W
R13	RD14DB2H512J	RES. CARBON	5.1K	5%	1/2W
R14	RD14BB2C102J	RES. CARBON	1K	5%	1/6W
R15	RD14DB2H2R7J	RES. CARBON	2.7	5%	1/2W
R16	RD14BB2C153J	RES. CARBON	15K	5%	1/6W
R17	RD14BB2C682J	RES. CARBON	6.8K	5%	1/6W
R18	RN14BC2E3600F	RES. METAL FILM	360	1%	1/4W
R19	RN14BE2E4300F	RES. METAL FILM	430	1%	1/4W
R20	RN14BC2E2701F	RES. METAL FILM	2.7K	1%	1/4W
R21	RN14BC2E3301F	RES. METAL FILM	3.3K	1%	1/4W
R24	RD14BB2C153J	RES. CARBON	15K	5%	1/6W
R25	RD14BB2C153J	RES. CARBON	15K	5%	1/6W
R26	RD14BB2E243J	RES. CARBON	24K	5%	1/4W
R27	RD14BB2E820J	RES. CARBON	82	5%	1/4W
R28	RD14BB2E182J	RES. CARBON	1.8K	5%	1/4W
R29	RD14BB2E181J	RES. CARBON	180	5%	1/4W
R30	RN14BE2E3601D	RES. METAL FILM	3.6K	0.5%	1/4W
R31	RD14BB2C102J	RES. CARBON	1K	5%	1/6W
R32	RN14BC2E1003F	RES. METAL FILM	100K	1%	1/4W
R33	RN14BC2E3600F	RES. METAL FILM	360	1%	1/4W
R34	RD14BB2C151J	RES. CARBON	150	5%	1/6W
R35	RN14BC2E1102F	RES. METAL FILM	11K	1%	1/4W
R36	RN14BE2E5101D	RES. METAL FILM	5.1K	0.5%	1/4W
R37	RD14BB2C102J	RES. CARBON	1K	5%	1/6W
R38	RN14BC2E1003F	RES. METAL FILM	100K	1%	1/4W
R39	RN14BC2E3600F	RES. METAL FILM	360	1%	1/4W
R40	RD14BB2C221J	RES. CARBON	220	5%	1/6W
R41	RN14BC2E1622F	RES. METAL FILM	16.2K	1%	1/4W
R42	RN14BE2H1002DKW	RES. METAL FILM	10K	0.5%	1/2W
R43	RN14BE2H1802DKW	RES. METAL FILM	18K	0.5%	1/2W
R44	RN14BE2H1802DKW	RES. METAL FILM	18K	0.5%	1/2W
R45	RN14BE2H1002DKW	RES. METAL FILM	10K	0.5%	1/2W
R46	RN14BE2H3740DKW	RES. METAL FILM	374	0.5%	1/2W
R47	RD14BB2C102J	RES. CARBON	1K	5%	1/6W
R48	RD14BB2C102J	RES. CARBON	1K	5%	1/6W
R49	RN14BC2E2701F	RES. METAL FILM	2.7K	1%	1/4W
R50	RD14BB2C102J	RES. CARBON	1K	5%	1/6W
R51	RD14BB2C102J	RES. CARBON	1K	5%	1/6W
R52	RN14BC2E1001F	RES. METAL FILM	1K	1%	1/4W
R53	RD14BB2E162J	RES. CARBON	1.6K	5%	1/4W
R54	RN14BC2E4301F	RES. METAL FILM	4.3K	1%	1/4W
R55	RN14BC2E6200F	RES. METAL FILM	620	1%	1/4W
R56	RD14BB2C122J	RES. CARBON	1.2K	5%	1/6W
R57	RD14BB2C621J	RES. CARBON	620	5%	1/6W
R58	RD14BB2C102J	RES. CARBON	1K	5%	1/6W
R59	RD14BB2C102J	RES. CARBON	1K	5%	1/6W
R60	RD14BB2C102J	RES. CARBON	1K	5%	1/6W
R61	RD14BB2C102J	RES. CARBON	1K	5%	1/6W
R62	RD14BB2C122J	RES. CARBON	1.2K	5%	1/6W
R63	RD14BB2C223J	RES. CARBON	22K	5%	1/6W
R64	RN14BC2E1002F	RES. METAL FILM	10K	1%	1/4W
R65	RD14DB3A101J	RES. CARBON	100	5%	1W
R66	RN14BC2E1001F	RES. METAL FILM	1K	1%	1/4W
R67	RD14BB2C104J	RES. CARBON	100K	5%	1/6W
R68	RN14BC2E1003F	RES. METAL FILM	100K	1%	1/4W
R69	RN14BC2E4701F	RES. METAL FILM	4.7K	1%	1/4W
R70	RN14BC2E1500F	RES. METAL FILM	150	1%	1/4W
R71	RD14BB2C471J	RES. CARBON	470	5%	1/6W
R72	RN14BC2E6801F	RES. METAL FILM	6.8K	1%	1/4W
R73	R92-0150-05	JUMPING RES. ZERO OHM (10NH)			
R74	RD14BB2C104J	RES. CARBON	100K	5%	1/6W
R75	RD14BB2C104J	RES. CARBON	100K	5%	1/6W
R76	RN14BC2E1003F	RES. METAL FILM	100K	1%	1/4W
R77	RN14BC2E4701F	RES. METAL FILM	4.7K	1%	1/4W
R78	RN14BC2E1500F	RES. METAL FILM	150	1%	1/4W
R79	RD14BB2C471J	RES. CARBON	470	5%	1/6W
R80	RN14BC2E6801F	RES. METAL FILM	6.8K	1%	1/4W
R81	R92-0150-05	JUMPING RES. ZERO OHM (10NH)			
R82	RN14BC2E5101F	RES. METAL FILM	5.1K	1%	1/4W
R83	RD14BB2C104J	RES. CARBON	100K	5%	1/6W
R84	RN14BC2E1003F	RES. METAL FILM	100K	1%	1/4W
R85	RN14BC2E82R0F	RES. METAL FILM	82.0	1%	1/4W

REF. NO	PARTS NO	NAME & DESCRIPTION			
R86	RD14BB2C101J	RES. CARBON	100	5%	1/6W
R87	RN14BC2E5101F	RES. METAL FILM	5.1K	1%	1/4W
R88	RN14BC2E1002F	RES. METAL FILM	10K	1%	1/4W
R89	RD14BB2C333J	RES. CARBON	33K	5%	1/6W
R90	RD14BB2C333J	RES. CARBON	33K	5%	1/6W
R91	NO USE				
R92	RD14BB2C153J	RES. CARBON	15K	5%	1/6W
R93	RD14BB2C473J	RES. CARBON	47K	5%	1/6W
R94	RD14BB2C473J	RES. CARBON	47K	5%	1/6W
R95	RD14BB2E151J	RES. CARBON	150	5%	1/4W
R100	RD14BB2E101J	RES. CARBON	100	5%	1/4W
R101	RD14BB2E101J	RES. CARBON	100	5%	1/4W
R102	RD14DB2H392J	RES. CARBON	3.9K	5%	1/2W
R103	RD14BB2C103J	RES. CARBON	10K	5%	1/6W
R104	RD14BB2C153J	RES. CARBON	15K	5%	1/6W
R105	RD14BB2C123J	RES. CARBON	12K	5%	1/6W
R106	RD14BB2C332J	RES. CARBON	3.3K	5%	1/6W
R107	RD14BB2C472J	RES. CARBON	4.7K	5%	1/6W
R108	RN14BC2E4703F	RES. METAL FILM	470K	1%	1/4W
R109	RD14BB2C104J	RES. CARBON	100K	5%	1/6W
R110	RD14BB2C222J	RES. CARBON	2.2K	5%	1/6W
R111	RN14BC2E2202F	RES. METAL FILM	22K	1%	1/4W
R112	RD14BB2C682J	RES. CARBON	6.8K	5%	1/6W
R113	RN14BC2C3303F	RES. METAL FILM	330K	1%	1/6W
R114	RD14BB2C470J	RES. CARBON	47	5%	1/6W
R115	RD14BB2C104J	RES. CARBON	100K	5%	1/6W
R116	RD14BB2C472J	RES. CARBON	4.7K	5%	1/6W
R117	RD14BB2C224J	RES. CARBON	220K	5%	1/6W
R118	RD14BB2C103J	RES. CARBON	10K	5%	1/6W
R119	RD14BB2C122J	RES. CARBON	1.2K	5%	1/6W
R120	RD14DB3D472J	RES. CARBON	4.7K	5%	2W
R121	RD14BB2C104J	RES. CARBON	100K	5%	1/6W
R122	R92-1076-05	RES. METAL GLAZE	27M	5%	1/2W
R123	RD14BB2C472J	RES. CARBON	4.7K	5%	1/6W
R124	RD14BB2C105J	RES. CARBON	1M	5%	1/6W
R127	RD14BB2C911J	RES. CARBON	910	5%	1/6W
R128	RN14BC2E5601F	RES. METAL FILM	5.6K	1%	1/4W
R129	RD14BB2C472J	RES. CARBON	4.7K	5%	1/6W
R130	RD14BB2C103J	RES. CARBON	10K	5%	1/6W
R131	RN14BC2E2202F	RES. METAL FILM	22K	1%	1/4W
R132	RD14BB2C102J	RES. CARBON	1K	5%	1/6W
R133	RD14BB2C103J	RES. CARBON	10K	5%	1/6W
R134	RD14BB2C103J	RES. CARBON	10K	5%	1/6W
R135	RD14BB2C102J	RES. CARBON	1K	5%	1/6W
R136	RD14BB2C472J	RES. CARBON	4.7K	5%	1/6W
R137	RD14BB2C102J	RES. CARBON	1K	5%	1/6W
R138	RD14BB2C102J	RES. CARBON	1K	5%	1/6W
R139	RD14DB3A330J	RES. CARBON	33	5%	1W
R140	RD14DB3A330J	RES. CARBON	33	5%	1W
R141	RD14DB2H102J	RES. CARBON	1K	5%	1/2W
R142	RD14DB2H102J	RES. CARBON	1K	5%	1/2W
R143	NO USE				
R144	RD14BB2C103J	RES. CARBON	10K	5%	1/6W
U1	TL082CP	IC, OP AMP			
U2	NJM7815A	IC, VOLTAGE REGULATOR			
U3	TL082CP	IC, OP AMP			
U4	LM308AH	IC, OP AMP			
U5	LM308AH	IC, OP AMP			
U6	NJM4558D	IC, DUAL OP AMP			
U7	TL082CP	IC, OP AMP			
U10	NJM7815A	IC, VOLTAGE REGULATOR			
U11	UPC7915H-1	IC, 3-TERMINAL REGULATOR			
U12	NJM4558D	IC, DUAL OP AMP			
U13	TL082CP	IC, OP AMP			
U14	NJM555D	IC, TIMER			
U15	TLP521-1(A)	IC, PHOTO COUPLER			
U201	LM79L05ACZ	IC, REGULATOR			
U202	LM79L05ACZ	IC, REGULATOR			
VR1	R12-1558-05	RES. SEMI FIXED	2K		
VR2	R12-4514-05	RES. SEMI FIXED	50K		
VR3	R12-2515-05	RES. SEMI FIXED	5K		
VR4	R12-4514-05	RES. SEMI FIXED	50K		
VR5	R12-3555-05	RES. SEMI FIXED	10K		
VR6	R12-3556-05	RES. SEMI FIXED	20K		
VR7	R12-1540-05	RES. SEMI FIXED	2.5K		
VR8	R12-4514-05	RES. SEMI FIXED	50K		
VR9	R12-1540-05	RES. SEMI FIXED	2.5K		
VR10	R12-4514-05	RES. SEMI FIXED	50K		
VR11	R12-4514-05	RES. SEMI FIXED	50K		
VR20	R12-3544-05	RES. SEMI FIXED	10K		

PARTS LIST

PD8-20D D.P.M UNIT

X76-1260-03

REF. NO	PARTS NO	NAME & DESCRIPTION			
	J25-5119-02	PCB (UNMOUNTED)			
C1	CE04CW1A470M	CAP. ELECTRO	47	20%	10V
C2	CE04CW1A100M	CAP. ELECTRO	10	20%	10V
C3	CF92V1H224J	CAP. POLYESTER	0.22	5%	50V
C4	CF92V1H473J	CAP. POLYESTER	0.047	5%	50V
C5	CF92V1H104J	CAP. POLYESTER	0.1	5%	50V
C6	CM93BD2A101J	CAP. MICA	100P	5%	100V
C7	CF92V1H223J	CAP. POLYESTER	0.022	5%	50V
C31	CE04CW1A470M	CAP. ELECTRO	47	20%	10V
C32	CE04CW1A100M	CAP. ELECTRO	10	20%	10V
C33	CF92V1H224J	CAP. POLYESTER	0.22	5%	50V
C34	CF92V1H473J	CAP. POLYESTER	0.047	5%	50V
C35	CF92V1H104J	CAP. POLYESTER	0.1	5%	50V
C36	CM93BD2A101J	CAP. MICA	100P	5%	100V
C37	CF92V1H223J	CAP. POLYESTER	0.022	5%	50V
D1	GL-9D03D	LED			
D2	GL-9D03D	LED			
D3	GL-9D03D	LED			
D4	GL-9D03D	LED			
D5	LT-9002D	LED			
D32	GL-9D03D	LED			
D33	GL-9D03D	LED			
D34	GL-9D03D	LED			
D35	LT-9002D	LED			
P3	E31-2513-15	LEAD WIRE WITH CONNECTOR			
P4	E31-2512-15	LEAD WIRE WITH CONNECTOR			
P204	E31-2520-15	LEAD WIRE WITH CONNECTOR			
R1	RN14BK2C4703F	RES. METAL FILM	470K	1%	1/6W
R2	RN14BK2C1103F	RES. METAL FILM	110K	1%	1/6W
R3	RD14BB2C182J	RES. CARBON	1.8K	5%	1/6W
R4	RN14BE2E1502F	RES. METAL FILM	15K	1%	1/4W
R5	RN14BE2E1002F	RES. METAL FILM	10K	1%	1/4W
R6	RD14BB2C161J	RES. CARBON	160	5%	1/6W
R7	RD14BB2C391J	RES. CARBON	390	5%	1/6W
R18	RD14BB2C104J	RES. CARBON	100K	5%	1/6W
R19	NO USE				
R20	RN14BC2E4701F	RES. METAL FILM	4.7K	1%	1/4W
R25	RN14BC2E1802F	RES. METAL FILM	18K	1%	1/4W
R26	RD14BB2C161J	RES. CARBON	160	5%	1/6W
R31	RN14BK2C4703F	RES. METAL FILM	470K	1%	1/6W
R32	RN14BK2C1103F	RES. METAL FILM	110K	1%	1/6W
R33	RD14BB2C182J	RES. CARBON	1.8K	5%	1/6W
R34	RN14BE2E1502F	RES. METAL FILM	15K	1%	1/4W
R35	RN14BE2E1002F	RES. METAL FILM	10K	1%	1/4W
R36	RD14BB2C161J	RES. CARBON	160	5%	1/6W
R37	NO USE				
R38	RD14BB2C391J	RES. CARBON	390	5%	1/6W
R48	RD14BB2C104J	RES. CARBON	100K	5%	1/6W
R49	NO USE				
R50	RN14BC2E9760F	RES. METAL FILM	976	1%	1/4W
R55	RN14BC2E1802F	RES. METAL FILM	18K	1%	1/4W
R56	RD14BB2C161J	RES. CARBON	160	5%	1/6W
U1	TSC7107CPL-A	IC, OPERATIONAL AMPLIFIER			
U2	LM336Z-2.5	IC, REFERENCE DIODE			
U31	TSC7107CPL-A	IC, OPERATIONAL AMPLIFIER			
U32	LM336Z-2.5	IC, REFERENCE DIODE			
VR1	R12-3546-05	RES. SEMI FIXED	10K		
VR2	R12-0568-05	RES. SEMI FIXED	500		
VR31	R12-3546-05	RES. SEMI FIXED	10K		
VR32	R12-0568-05	RES. SEMI FIXED	500		

PD8-30D D.P.M UNIT

X76-1260-04

REF. NO	PARTS NO	NAME & DESCRIPTION			
	J25-5119-02	PCB (UNMOUNTED)			
C1	CE04CW1A470M	CAP. ELECTRO	47	20%	10V
C2	CE04CW1A100M	CAP. ELECTRO	10	20%	10V
C3	CF92V1H224J	CAP. POLYESTER	0.22	5%	50V
C4	CF92V1H473J	CAP. POLYESTER	0.047	5%	50V
C5	CF92V1H104J	CAP. POLYESTER	0.1	5%	50V
C6	CM93BD2A101J	CAP. MICA	100P	5%	100V
C7	CF92V1H223J	CAP. POLYESTER	0.022	5%	50V
C31	CE04CW1A470M	CAP. ELECTRO	47	20%	10V
C32	CE04CW1A100M	CAP. ELECTRO	10	20%	10V
C33	CF92V1H224J	CAP. POLYESTER	0.22	5%	50V
C34	CF92V1H473J	CAP. POLYESTER	0.047	5%	50V
C35	CF92V1H104J	CAP. POLYESTER	0.1	5%	50V
C36	CM93BD2A101J	CAP. MICA	100P	5%	100V
C37	CF92V1H223J	CAP. POLYESTER	0.022	5%	50V
D1	GL-9D03D	LED			
D2	GL-9D03D	LED			
D3	GL-9D03D	LED			
D4	GL-9D03D	LED			
D5	LT9002D	LED			
D32	GL-9D03D	LED			
D33	GL-9D03D	LED			
D34	GL-9D03D	LED			
D35	LT9002D	LED			
P3	E31-2513-15	LEAD WIRE WITH CONNECTOR			
P4	E31-2512-15	LEAD WIRE WITH CONNECTOR			
P204	E31-2520-15	LEAD WIRE WITH CONNECTOR			
R1	RN14BK2C4703F	RES. METAL FILM	470K	1%	1/6W
R2	RN14BK2C1103F	RES. METAL FILM	110K	1%	1/6W
R3	RD14BB2C182J	RES. CARBON	1.8K	5%	1/6W
R4	RN14BE2E1502F	RES. METAL FILM	15K	1%	1/4W
R5	RN14BE2E1002F	RES. METAL FILM	10K	1%	1/4W
R6	RD14BB2C161J	RES. CARBON	160	5%	1/6W
R7	RD14BB2C391J	RES. CARBON	390	5%	1/6W
R18	RD14BB2C104J	RES. CARBON	100K	5%	1/6W
R19	NO USE				
R20	RN14BC2E4701F	RES. METAL FILM	4.7K	1%	1/4W
R25	RN14BC2E1802F	RES. METAL FILM	18K	1%	1/4W
R26	RD14BB2C161J	RES. CARBON	160	5%	1/6W
R31	RN14BK2C4703F	RES. METAL FILM	470K	1%	1/6W
R32	RN14BK2C1103F	RES. METAL FILM	110K	1%	1/6W
R33	RD14BB2C182J	RES. CARBON	1.8K	5%	1/6W
R34	RN14BE2E1502F	RES. METAL FILM	15K	1%	1/4W
R35	RN14BE2E1002F	RES. METAL FILM	10K	1%	1/4W
R36	RD14BB2C161J	RES. CARBON	160	5%	1/6W
R37	NO USE				
R38	RD14BB2C391J	RES. CARBON	390	5%	1/6W
R48	RD14BB2C104J	RES. CARBON	100K	5%	1/6W
R49	NO USE				
R50	RN14BC2E1501F	RES. METAL FILM	1.5K	1%	1/4W
R55	RN14BC2E1802F	RES. METAL FILM	18K	1%	1/4W
R56	RD14BB2C161J	RES. CARBON	160	5%	1/6W
U1	TSC7107CPL-A	IC, OPERATIONAL AMPLIFIER			
U2	LM336Z-2.5	IC, REFERENCE DIODE			
U31	TSC7107CPL-A	IC, OPERATIONAL AMPLIFIER			
U32	LM336Z-2.5	IC, REFERENCE DIODE			
VR1	R12-3546-05	RES. SEMI FIXED	10K		
VR2	R12-0568-05	RES. SEMI FIXED	500		
VR31	R12-3546-05	RES. SEMI FIXED	10K		
VR32	R12-0568-05	RES. SEMI FIXED	500		

PARTS LIST

PD18-20D D.P.M UNIT

X76-1260-00

REF. NO	PARTS NO	NAME & DESCRIPTION			
	J25-5119-02	PCB (UNMOUNTED)			
C1	CE04CW1A470M	CAP. ELECTRO	47	20%	10V
C2	CE04CW1A100M	CAP. ELECTRO	10	20%	10V
C3	CF92V1H224J	CAP. POLYESTER	0.22	5%	50V
C4	CF92V1H473J	CAP. POLYESTER	0.047	5%	50V
C5	CF92V1H104J	CAP. POLYESTER	0.1	5%	50V
C6	CM93BD2A101J	CAP. MICA	100P	5%	100V
C7	CF92V1H223J	CAP. POLYESTER	0.022	5%	50V
C31	CE04CW1A470M	CAP. ELECTRO	47	20%	10V
C32	CE04CW1A100M	CAP. ELECTRO	10	20%	10V
C33	CF92V1H224J	CAP. POLYESTER	0.22	5%	50V
C34	CF92V1H473J	CAP. POLYESTER	0.047	5%	50V
C35	CF92V1H104J	CAP. POLYESTER	0.1	5%	50V
C36	CM93BD2A101J	CAP. MICA	100P	5%	100V
C37	CF92V1H223J	CAP. POLYESTER	0.022	5%	50V
D1	GL-9D03D	LED			
D2	GL-9D03D	LED			
D3	GL-9D03D	LED			
D4	GL-9D03D	LED			
D5	LT-9002D	LED			
D32	GL-9D03D	LED			
D33	GL-9D03D	LED			
D34	GL-9D03D	LED			
D35	LT-9002D	LED			
P3	E31-2513-15	LEAD WIRE WITH CONNECTOR			
P4	E31-2512-15	LEAD WIRE WITH CONNECTOR			
P204	E31-2520-15	LEAD WIRE WITH CONNECTOR			
R1	RN14BK2C4703F	RES. METAL FILM	470K	1%	1/6W
R2	RN14BK2C1103F	RES. METAL FILM	110K	1%	1/6W
R3	RD14BB2C182J	RES. CARBON	1.8K	5%	1/6W
R4	RN14BE2E1502F	RES. METAL FILM	15K	1%	1/4W
R5	RN14BE2E1002F	RES. METAL FILM	10K	1%	1/4W
R6	RD14BB2C161J	RES. CARBON	160	5%	1/6W
R7	RD14BB2C391J	RES. CARBON	390	5%	1/6W
R18	RD14BB2C104J	RES. CARBON	100K	5%	1/6W
R19	NO USE				
R20	RN14BC2E1502F	RES. METAL FILM	15K	1%	1/4W
R25	RN14BC2E1802F	RES. METAL FILM	18K	1%	1/4W
R26	RD14BB2C161J	RES. CARBON	160	5%	1/6W
R31	RN14BK2C4703F	RES. METAL FILM	470K	1%	1/6W
R32	RN14BK2C1103F	RES. METAL FILM	110K	1%	1/6W
R33	RD14BB2C182J	RES. CARBON	1.8K	5%	1/6W
R34	RN14BE2E1502F	RES. METAL FILM	15K	1%	1/4W
R35	RN14BE2E1002F	RES. METAL FILM	10K	1%	1/4W
R36	RD14BB2C161J	RES. CARBON	160	5%	1/6W
R37	NO USE				
R38	RD14BB2C391J	RES. CARBON	390	5%	1/6W
R48	RD14BB2C104J	RES. CARBON	100K	5%	1/6W
R49	NO USE				
R50	RN14BC2E9760F	RES. METAL FILM	976	1%	1/4W
R55	RN14BC2E1802F	RES. METAL FILM	18K	1%	1/4W
R56	RD14BB2C161J	RES. CARBON	160	5%	1/6W
U1	TSC7107CPL-A	IC, OPERATIONAL AMPLIFIER			
U2	LM336Z-2.5	IC, REFERENCE DIODE			
U31	TSC7107CPL-A	IC, OPERATIONAL AMPLIFIER			
U32	LM336Z-2.5	IC, REFERENCE DIODE			
VR1	R12-3546-05	RES. SEMI FIXED	10K		
VR2	R12-0568-05	RES. SEMI FIXED	500		
VR31	R12-3546-05	RES. SEMI FIXED	10K		
VR32	R12-0568-05	RES. SEMI FIXED	500		

PD18-30D D.P.M UNIT

X76-1260-01

REF. NO	PARTS NO	NAME & DESCRIPTION			
	J25-5119-02	PCB (UNMOUNTED)			
C1	CE04CW1A470M	CAP. ELECTRO	47	20%	10V
C2	CE04CW1A100M	CAP. ELECTRO	10	20%	10V
C3	CF92V1H224J	CAP. POLYESTER	0.22	5%	50V
C4	CF92V1H473J	CAP. POLYESTER	0.047	5%	50V
C5	CF92V1H104J	CAP. POLYESTER	0.1	5%	50V
C6	CM93BD2A101J	CAP. MICA	100P	5%	100V
C7	CF92V1H223J	CAP. POLYESTER	0.022	5%	50V
C31	CE04CW1A470M	CAP. ELECTRO	47	20%	10V
C32	CE04CW1A100M	CAP. ELECTRO	10	20%	10V
C33	CF92V1H224J	CAP. POLYESTER	0.22	5%	50V
C34	CF92V1H473J	CAP. POLYESTER	0.047	5%	50V
C35	CF92V1H104J	CAP. POLYESTER	0.1	5%	50V
C36	CM93BD2A101J	CAP. MICA	100P	5%	100V
C37	CF92V1H223J	CAP. POLYESTER	0.022	5%	50V
D1	GL-9D03D	LED			
D2	GL-9D03D	LED			
D3	GL-9D03D	LED			
D4	GL-9D03D	LED			
D5	LT-9002D	LED			
D32	GL-9D03D	LED			
D33	GL-9D03D	LED			
D34	GL-9D03D	LED			
D35	LT-9002D	LED			
P3	E31-2513-15	LEAD WIRE WITH CONNECTOR			
P4	E31-2512-15	LEAD WIRE WITH CONNECTOR			
P204	E31-2520-15	LEAD WIRE WITH CONNECTOR			
R1	RN14BK2C4703F	RES. METAL FILM	470K	1%	1/6W
R2	RN14BK2C1103F	RES. METAL FILM	110K	1%	1/6W
R3	RD14BB2C182J	RES. CARBON	1.8K	5%	1/6W
R4	RN14BE2E1502F	RES. METAL FILM	15K	1%	1/4W
R5	RN14BE2E1002F	RES. METAL FILM	10K	1%	1/4W
R6	RD14BB2C161J	RES. CARBON	160	5%	1/6W
R7	RD14BB2C391J	RES. CARBON	390	5%	1/6W
R18	RD14BB2C104J	RES. CARBON	100K	5%	1/6W
R19	NO USE				
R20	RN14BC2E1502F	RES. METAL FILM	15K	1%	1/4W
R25	RN14BC2E1802F	RES. METAL FILM	18K	1%	1/4W
R26	RD14BB2C161J	RES. CARBON	160	5%	1/6W
R31	RN14BK2C4703F	RES. METAL FILM	470K	1%	1/6W
R32	RN14BK2C1103F	RES. METAL FILM	110K	1%	1/6W
R33	RD14BB2C182J	RES. CARBON	1.8K	5%	1/6W
R34	RN14BE2E1502F	RES. METAL FILM	15K	1%	1/4W
R35	RN14BE2E1002F	RES. METAL FILM	10K	1%	1/4W
R36	RD14BB2C161J	RES. CARBON	160	5%	1/6W
R37	NO USE				
R38	RD14BB2C391J	RES. CARBON	390	5%	1/6W
R48	RD14BB2C104J	RES. CARBON	100K	5%	1/6W
R49	NO USE				
R50	RN14BC2E1501F	RES. METAL FILM	1.5K	1%	1/4W
R55	RN14BC2E1802F	RES. METAL FILM	18K	1%	1/4W
R56	RD14BB2C161J	RES. CARBON	160	5%	1/6W
U1	TSC7107CPL-A	IC, OPERATIONAL AMPLIFIER			
U2	LM336Z-2.5	IC, REFERENCE DIODE			
U31	TSC7107CPL-A	IC, OPERATIONAL AMPLIFIER			
U32	LM336Z-2.5	IC, REFERENCE DIODE			
VR1	R12-3546-05	RES. SEMI FIXED	10K		
VR2	R12-0568-05	RES. SEMI FIXED	500		
VR31	R12-3546-05	RES. SEMI FIXED	10K		
VR32	R12-0568-05	RES. SEMI FIXED	500		

PARTS LIST

PD35-20D D.P.M UNIT

X76-1260-02

REF. NO	PARTS NO	NAME & DESCRIPTION			
	J25-5119-02	PCB (UNMOUNTED)			
C1	CE04CW1A470M	CAP. ELECTRO	47	20%	10V
C2	CE04CW1A100M	CAP. ELECTRO	10	20%	10V
C3	CF92V1H224J	CAP. POLYESTER	0.22	5%	50V
C4	CF92V1H473J	CAP. POLYESTER	0.047	5%	50V
C5	CF92V1H104J	CAP. POLYESTER	0.1	5%	50V
C6	CH93BD2A101J	CAP. MICA	100P	5%	100V
C7	CF92V1H223J	CAP. POLYESTER	0.022	5%	50V
C8	C91-1205-05	CAP. CERAMIC	0.1	80/-20%	50V
C9	NO USE				
C10	CE04CW1V2R2M	CAP. ELECTRO	2.2	20%	35V
C11	C91-0591-05	CAP. CERAMIC	0.22		50V
C31	CE04CW1A470M	CAP. ELECTRO	47	20%	10V
C32	CE04CW1A100M	CAP. ELECTRO	10	20%	10V
C33	CF92V1H224J	CAP. POLYESTER	0.22	5%	50V
C34	CF92V1H473J	CAP. POLYESTER	0.047	5%	50V
C35	CF92V1H104J	CAP. POLYESTER	0.1	5%	50V
C36	CH93BD2A101J	CAP. MICA	100P	5%	100V
C37	CF92V1H223J	CAP. POLYESTER	0.022	5%	50V
D1	GL-9D03D	LED			
D2	GL-9D03D	LED			
D3	GL-9D03D	LED			
D4	GL-9D03D	LED			
D5	LT-9002D	LED			
D6	1SS132	DIODE			
D7	1S1544A	DIODE			
D8	1S1544A	DIODE			
D9	1SS132	DIODE			
D32	GL-9D03D	LED			
D33	GL-9D03D	LED			
D34	GL-9D03D	LED			
D35	LT-9002D	LED			
P3	E31-2513-15	LEAD WIRE WITH CONNECTOR			
P4	E31-2512-15	LEAD WIRE WITH CONNECTOR			
P204	E31-2520-15	LEAD WIRE WITH CONNECTOR			
Q1	DTC144EF	TR. SI, NPN			
Q2	DTC144EF	TR. SI, NPN			
Q3	DTA124EF	TR. SI, PNP			
Q4	2SK117(GR)	FET, N-CHANNEL			
R1	RN14BK2C4703F	RES. METAL FILM	470K	1%	1/6W
R2	RN14BK2C1103F	RES. METAL FILM	110K	1%	1/6W
R3	RD14BB2C182J	RES. CARBON	1.8K	5%	1/6W
R4	RN14BE2E1502F	RES. METAL FILM	15K	1%	1/4W
R5	RN14BE2E1002F	RES. METAL FILM	10K	1%	1/4W
R6	RD14BB2C161J	RES. CARBON	160	5%	1/6W
R9	RD14BB2C123J	RES. CARBON	12K	5%	1/6W
R10	RD14BB2C333J	RES. CARBON	33K	5%	1/6W
R11	RD14BB2C104J	RES. CARBON	100K	5%	1/6W
R12	RD14BB2C104J	RES. CARBON	100K	5%	1/6W
R13	RD14BB2C103J	RES. CARBON	10K	5%	1/6W
R14	R92-1061-05	JUMPING RES. ZERO OHM (5MM)			
R15	RD14BB2C301J	RES. CARBON	300	5%	1/6W
R16	RD14BB2C301J	RES. CARBON	300	5%	1/6W
R17	RD14BB2C103J	RES. CARBON	10K	5%	1/6W
R18	RD14BB2C104J	RES. CARBON	100K	5%	1/6W
R19	RN14BC2E1601F	RES. METAL FILM	1.6K	1%	1/4W
R20	RN14BC2E2203F	RES. METAL FILM	220K	1%	1/4W
R21	RN14BK2C2001F	RES. METAL FILM	2K	1%	1/6W
R22	RN14BK2C1501F	RES. METAL FILM	1.5K	1%	1/6W
R23	RN14BK2C1301F	RES. METAL FILM	1.3K	1%	1/6W
R24	RN14BK2C2201F	RES. METAL FILM	2.2K	1%	1/6W
R25	RN14BC2E1802F	RES. METAL FILM	18K	1%	1/4W
R26	RD14BB2C161J	RES. CARBON	160	5%	1/6W
R27	RD14BB2C364J	RES. CARBON	360K	5%	1/6W
R28	R92-1171-05	RES. METAL FILM	12K	1%	1/5W
R29	R92-1144-05	RES. METAL FILM	7.5K	1%	1/5W
R30	NO USE				
R31	RN14BK2C4703F	RES. METAL FILM	470K	1%	1/6W
R32	RN14BK2C1103F	RES. METAL FILM	110K	1%	1/6W
R33	RD14BB2C182J	RES. CARBON	1.8K	5%	1/6W
R34	RN14BE2E1502F	RES. METAL FILM	15K	1%	1/4W
R35	RN14BE2E1002F	RES. METAL FILM	10K	1%	1/4W
R36	RD14BB2C161J	RES. CARBON	160	5%	1/6W
R37	NO USE				
R38	RD14BB2C391J	RES. CARBON	390	5%	1/6W
R48	RD14BB2C104J	RES. CARBON	100K	5%	1/6W
R49	NO USE				
R50	RN14BC2E9760F	RES. METAL FILM	976	1%	1/4W
R55	RN14BC2E1802F	RES. METAL FILM	18K	1%	1/4W

REF. NO	PARTS NO	NAME & DESCRIPTION			
R56	RD14BB2C161J	RES. CARBON	160	5%	1/6W
U1	TSC7107CPL-A	IC, OPERATIONAL AMPLIFIER			
U2	LM336Z-2.5	IC, REFERENCE DIODE			
U3	LM339N	QUAD COMPARATOR			
U4	MC1401BCP	QUAD 2-INPUT NAND GATE			
U31	TSC7107CPL-A	IC, OPERATIONAL AMPLIFIER			
U32	LM336Z-2.5	IC, REFERENCE DIODE			
VR1	R12-3546-05	RES. SEMI FIXED	10K		
VR2	R12-0568-05	RES. SEMI FIXED	500		
VR3	R12-0568-05	RES. SEMI FIXED	500		
VR31	R12-3546-05	RES. SEMI FIXED	10K		
VR32	R12-0568-05	RES. SEMI FIXED	500		

PD8-20/PD8-20D PD8-30/PD8-30D OVP UNIT

X77-1400-02

REF. NO	PARTS NO	NAME & DESCRIPTION			
	J19-1641-14	HOLDER FOR LED			
	J25-5158-33	PCB (UNMOUNTED)			
C1	CF92V1H103J	CAP. POLYESTER	0.01	5%	50V
C2	CE04EW1C101M	CAP. ELECTRO	100	20%	16V
C3	CK45B1H102K	CAP. CERAMIC	1000P	10%	50V
C4	CF92V1H103J	CAP. POLYESTER	0.01	5%	50V
C5	CE04EW1C101M	CAP. ELECTRO	100	20%	16V
C6	CE04EW1C101M	CAP. ELECTRO	100	20%	16V
C7	CE04EW1H470M	CAP. ELECTRO	47	20%	50V
D1	DSA1A2	DIODE			
D2	DSA1A2	DIODE			
D3	DSA1A2	DIODE			
D4	DSA1A2	DIODE			
D5	RD6.2E(B3)	DIODE, ZENER	6.34V		
D6	1SS132	DIODE			
D7	1SS132	DIODE			
D8	1SS132	DIODE			
D9	1SS132	DIODE			
D10	CSM2B2A30	SCR			
D11	DSA1A2	DIODE			
D12	1SS132	DIODE			
D13	LN222RP	LED; RED			
D14	DSA1A2	DIODE			
D15	DSA1A2	DIODE			
D16	1SS132	DIODE			
D17	1SS132	DIODE			
P5	E40-0273-05	PIN CONNECTOR	2P		
P6	E40-1373-05	PIN CONNECTOR	13P		
P7	E40-0273-05	PIN CONNECTOR	2P		
P8	E40-0373-05	PIN CONNECTOR	3P		
P9	E40-0273-05	PIN CONNECTOR	2P		
P10	E40-0273-05	PIN CONNECTOR	2P		
P11	E40-0273-05	PIN CONNECTOR	2P		
P12	E40-0273-05	PIN CONNECTOR	2P		
P302	E40-0273-05	PIN CONNECTOR	2P		
P303	NO USE				
P304	E40-0273-05	PIN CONNECTOR	2P		
P305	E40-0273-05	PIN CONNECTOR	2P		
Q1	2SC3621(O)	TR. SI, NPN			
Q2	2SA1175(F)	TR. SI, PNP			
Q3	2SC2785(F)	TR. SI, NPN			
Q4	2SC2785(F)	TR. SI, NPN			
Q5	2SA1175(F)	TR. SI, PNP			
R1	RD14DB3A102J	RES. CARBON	1K	5%	1W
R2	RD14DB3A102J	RES. CARBON	1K	5%	1W
R3	RN14BE2E3831D	RES. METAL FILM	3.83K0.5%	1/4W	
R4	RN14BE2E2321DKW	RES. METAL FILM	2.32K0.5%	1/4W	
R5	RN14BC2E2200F	RES. METAL FILM	220	1%	1/4W
R6	RN14BC2E1000F	RES. METAL FILM	100	1%	1/4W
R7	RN14BC2H7500F	RES. METAL FILM	750	1%	1/2W
R8	RD14BB2C102J	RES. CARBON	1K	5%	1/6W
R9	RD14BB2C392J	RES. CARBON	3.9K	5%	1/6W
R10	RD14BB2C471J	RES. CARBON	470	5%	1/6W
R11	RD14BB2C102J	RES. CARBON	1K	5%	1/6W
R12	RD14BB2C272J	RES. CARBON	2.7K	5%	1/6W
R13	RD14BB2C471J	RES. CARBON	470	5%	1/6W
R14	RD14BB2C102J	RES. CARBON	1K	5%	1/6W
R15	RD14BB2C102J	RES. CARBON	1K	5%	1/6W
R16	RD14BB2C223J	RES. CARBON	22K	5%	1/6W

REF. NO	PARTS NO	NAME & DESCRIPTION			
R17	RD14BB2C103J	RES. CARBON	10K	5%	1/6W
R18	RD14BB2C221J	RES. CARBON	220	5%	1/6W
R19	RD14BB2C102J	RES. CARBON	1K	5%	1/6W
R20	RD14BB2C362J	RES. CARBON	3.6K	5%	1/6W
R21	RD14BB2C182J	RES. CARBON	1.8K	5%	1/6W
R22	RD14BB2C621J	RES. CARBON	620	5%	1/6W
R23	RD14BB2C101J	RES. CARBON	100	5%	1/6W
R24	RD14BB2H222J	RES. CARBON	2.2K	5%	1/2W
R25	RD14BB2H102J	RES. CARBON	1K	5%	1/2W
R26	RD14BB2C103J	RES. CARBON	10K	5%	1/6W
R27	RD14BB2C512J	RES. CARBON	5.1K	5%	1/6W
R28	RD14BB2C361J	RES. CARBON	360	5%	1/6W
R31	R92-0150-05	JUMPING RES. ZERO OHM (10MM)			
R32	RD14BB2C183J	RES. CARBON	18K	5%	1/6W
R33	RD14BB2C272J	RES. CARBON	2.7K	5%	1/6W
R34	RD14BB2E162J	RES. CARBON	1.6K	5%	1/4W
S1	S40-1519-05	PUSH SWITCH			
S2	S40-1518-05	PUSH SWITCH			
S3	S40-1518-05	PUSH SWITCH			

PD18-20/PD18-20D PD18-30/PD18-30D OVP UNIT

X77-1400-00

REF. NO	PARTS NO	NAME & DESCRIPTION			
	J19-1641-14	HOLDER FOR LED			
	J25-5158-33	PCB (UNMOUNTED)			
C1	CF92V1H103J	CAP. POLYESTER	0.01	5%	50V
C2	CE04EW1C101M	CAP. ELECTRO	100	20%	16V
C3	CK45B1H102K	CAP. CERAMIC	1000P	10%	50V
C4	CF92V1H103J	CAP. POLYESTER	0.01	5%	50V
C5	CE04EW1C101M	CAP. ELECTRO	100	20%	16V
C6	CE04EW1C101M	CAP. ELECTRO	100	20%	16V
C7	CE04EW1H470M	CAP. ELECTRO	47	20%	50V
D1	DSA1A2	DIODE			
D2	DSA1A2	DIODE			
D3	DSA1A2	DIODE			
D4	DSA1A2	DIODE			
D5	RD6.2E(B3)	DIODE, ZENER	6.34V		
D6	1SS132	DIODE			
D7	1SS132	DIODE			
D8	1SS132	DIODE			
D9	1SS132	DIODE			
D10	CSM2B2A30	SCR			
D11	DSA1A2	DIODE			

PARTS LIST

REF. NO	PARTS NO	NAME & DESCRIPTION
Q3	2SC2785(F)	TR. SI, NPN
Q4	2SC2785(F)	TR. SI, NPN
Q5	2SA1175(F)	TR. SI, PNP
R1	RD14DB3A102J	RES. CARBON 1K 5% 1W
R2	RD14DB3A102J	RES. CARBON 1K 5% 1W
R3	RN14BE2E3831D	RES. METAL FILM 3.83K 0.5% 1/4W
R4	RN14BE2H2402DKW	RES. METAL FILM 24K 0.5% 1/2W
R5	RN14BC2E2200F	RES. METAL FILM 220 1% 1/4W
R6	RN14BC2E1000F	RES. METAL FILM 100 1% 1/4W
R7	RN14BC2H7500F	RES. METAL FILM 750 1% 1/2W
R8	RD14BB2C102J	RES. CARBON 1K 5% 1/6W
R9	RD14BB2C392J	RES. CARBON 3.9K 5% 1/6W
R10	RD14BB2C471J	RES. CARBON 470 5% 1/6W
R11	RD14BB2C102J	RES. CARBON 1K 5% 1/6W
R12	RD14BB2C272J	RES. CARBON 2.7K 5% 1/6W
R13	RD14BB2C471J	RES. CARBON 470 5% 1/6W
R14	RD14BB2C102J	RES. CARBON 1K 5% 1/6W
R15	RD14BB2C102J	RES. CARBON 1K 5% 1/6W
R16	RD14BB2C223J	RES. CARBON 22K 5% 1/6W
R17	RD14BB2C103J	RES. CARBON 10K 5% 1/6W
R18	RD14BB2C221J	RES. CARBON 220 5% 1/6W
R19	RD14BB2C102J	RES. CARBON 1K 5% 1/6W
R20	RD14BB2C362J	RES. CARBON 3.6K 5% 1/6W
R21	RD14BB2C182J	RES. CARBON 1.8K 5% 1/6W
R22	RD14BB2C621J	RES. CARBON 620 5% 1/6W
R23	RD14BB2C101J	RES. CARBON 100 5% 1/6W
R24	RD14DB2H222J	RES. CARBON 2.2K 5% 1/2W
R25	RD14DB2H102J	RES. CARBON 1K 5% 1/2W
R26	RD14BB2C103J	RES. CARBON 10K 5% 1/6W
R27	RD14BB2C512J	RES. CARBON 5.1K 5% 1/6W
R28	RD14BB2C361J	RES. CARBON 360 5% 1/6W
R31	R92-0150-05	JUMPING RES. ZERO OHM(10MM)
R32	RD14BB2C183J	RES. CARBON 18K 5% 1/6W
R33	RD14BB2C272J	RES. CARBON 2.7K 5% 1/6W
R34	RD14BB2E162J	RES. CARBON 1.6K 5% 1/4W
S1	S40-1519-05	PUSH SWITCH
S2	S40-1518-05	PUSH SWITCH
S3	S40-1518-05	PUSH SWITCH
U1	NJM311D	IC, COMPARATOR
U2	UPC4558C	IC, OP AMP
VR1	R12-1542-05	RES. SEMI FIXED 2.5K

PD8-20/PD8-20D PD18-20/PD18-20D PD35-20/PD35-20D CONTROL UNIT X77-1810-00

REF. NO	PARTS NO	NAME & DESCRIPTION
D1	J73-0195-03 DSA1A2	PCB (UNMOUNTED) DIODE
P1	E23-0556-05	G. TERMINAL
P2	E23-0556-05	G. TERMINAL
P3	E23-0556-05	G. TERMINAL
P4	E23-0556-05	G. TERMINAL
P9	E40-0574-05	PIN CONNECTOR 5P
Q1	2SC3281(R)	TR. SI, NPN
Q2	2SC3281(R)	TR. SI, NPN
Q3	2SC3281(R)	TR. SI, NPN
Q4	2SC3281(R)	TR. SI, NPN
Q5	2SC3281(R)	TR. SI, NPN
Q6	2SC3281(R)	TR. SI, NPN
R1	RD14KB3FR15J	RES. CARBON 0.15 5% 3W
R2	RD14KB3FR15J	RES. CARBON 0.15 5% 3W
R3	RD14KB3FR15J	RES. CARBON 0.15 5% 3W
R4	RD14KB3FR15J	RES. CARBON 0.15 5% 3W
R5	RD14KB3FR15J	RES. CARBON 0.15 5% 3W
R6	RD14KB3FR15J	RES. CARBON 0.15 5% 3W
R9	RD14DB2H101J	RES. CARBON 100 5% 1/2W
R10	NO USE	
R11	R92-0150-05	JUMPING RES. ZERO OHM(10MM)
R12	R92-0150-05	JUMPING RES. ZERO OHM(10MM)
R13	R92-0150-05	JUMPING RES. ZERO OHM(10MM)
R14	R92-0150-05	JUMPING RES. ZERO OHM(10MM)
R15	R92-0150-05	JUMPING RES. ZERO OHM(10MM)

PD8-30/PD8-30D PD18-30/PD18-30D CONTROL UNIT X77-1810-01

REF. NO	PARTS NO	NAME & DESCRIPTION
D1	J73-0196-03 DSA1A2	PCB (UNMOUNTED) DIODE
P5	E23-0556-05	G. TERMINAL
P6	E23-0556-05	G. TERMINAL
P7	E23-0556-05	G. TERMINAL
P8	E23-0556-05	G. TERMINAL
P9	E40-0574-05	PIN CONNECTOR 5P
Q1	2SC3281(R)	TR. SI, NPN
Q2	2SC3281(R)	TR. SI, NPN
Q3	2SC3281(R)	TR. SI, NPN
Q4	2SC3281(R)	TR. SI, NPN
Q5	2SC3281(R)	TR. SI, NPN
Q6	2SC3281(R)	TR. SI, NPN
Q7	2SC3281(R)	TR. SI, NPN
Q8	2SC3281(R)	TR. SI, NPN
R1	RD14KB3FR15J	RES. CARBON 0.15 5% 3W
R2	RD14KB3FR15J	RES. CARBON 0.15 5% 3W
R3	RD14KB3FR15J	RES. CARBON 0.15 5% 3W
R4	RD14KB3FR15J	RES. CARBON 0.15 5% 3W
R5	RD14KB3FR15J	RES. CARBON 0.15 5% 3W
R6	RD14KB3FR15J	RES. CARBON 0.15 5% 3W
R7	RD14KB3FR15J	RES. CARBON 0.15 5% 3W
R8	RD14KB3FR15J	RES. CARBON 0.15 5% 3W
R9	RD14DB2H101J	RES. CARBON 100 5% 1/2W
R10	NO USE	
R11	R92-0150-05	JUMPING RES. ZERO OHM(10MM)
R12	R92-0150-05	JUMPING RES. ZERO OHM(10MM)
R13	R92-0150-05	JUMPING RES. ZERO OHM(10MM)
R14	R92-0150-05	JUMPING RES. ZERO OHM(10MM)
R15	R92-0150-05	JUMPING RES. ZERO OHM(10MM)

PD8-20/PD8-20D C.I UNIT X81-1980-03

REF. NO	PARTS NO	NAME & DESCRIPTION
C12	F29-0505-05	VINYL TUBE FOR INSULATOR
C13	J25-5157-03	PCB (UNMOUNTED)
C14	CF92V1H473J	CAP. POLYESTER 0.047 5% 50V
D14	RD15F(B2)	DIODE ZENER
D15	RD15F(B2)	DIODE ZENER
P13	E40-0673-05	PIN CONNECTOR 6P
P307	E40-0773-05	PIN CONNECTOR 7P
P308	E40-0873-05	PIN CONNECTOR 8P
P309	E40-0473-05	PIN CONNECTOR 4P
P310	E40-0474-05	PIN CONNECTOR 4P
P311	NO USE	
P312	E40-0374-05	PIN CONNECTOR 3P
Q7	2SC3855(0)	TR. SI, NPN
Q8	2SA1491(0)	TR. SI, PNP
Q9	2SC3066(F,G)	TR. SI, NPN
Q10	2SK170(BL)	FET, N-CHANNEL
R8	RD14BB2E821J	RES. CARBON 820 5% 1/4W
R9	RD14DB2H101J	RES. CARBON 100 5% 1/2W
R14	RD14DB3D471J	RES. CARBON 470 5% 2W
R15	RD14DB3F102J	RES. CARBON 1K 5% 3W
R16	RD14DB3F102J	RES. CARBON 1K 5% 3W
R17	RD14BB2C102J	RES. CARBON 1K 5% 1/6W
R18	RD14BB2C102J	RES. CARBON 1K 5% 1/6W
R19	RD14DB2H5R6J	RES. CARBON 5.6 5% 1/2W
R22	RD14BB2C102J	RES. CARBON 1K 5% 1/6W

PD8-30/PD8-30D C.I UNIT X81-1980-04

REF. NO	PARTS NO	NAME & DESCRIPTION
C14	F29-0505-05	VINYL TUBE FOR INSULATOR
	J25-5157-03	PCB (UNMOUNTED)
	CF92V1H473J	CAP. POLYESTER 0.047 5% 50V
D14	RD15F(B2)	DIODE ZENER
D15	RD15F(B2)	DIODE ZENER
P13	E40-0673-05	PIN CONNECTOR 6P
P307	E40-0773-05	PIN CONNECTOR 7P
P308	E40-0873-05	PIN CONNECTOR 8P
P309	E40-0473-05	PIN CONNECTOR 4P
P310	E40-0474-05	PIN CONNECTOR 4P
P311	NO USE	
P312	E40-0374-05	PIN CONNECTOR 3P
Q7	2SC3855(0)	TR. SI, NPN
Q8	2SA1491(0)	TR. SI, PNP
Q9	2SC3066(F,G)	TR. SI, NPN
Q10	2SK170(BL)	FET, N-CHANNEL
R8	RD14BB2E821J	RES. CARBON 820 5% 1/4W
R9	RD14DB2H101J	RES. CARBON 100 5% 1/2W
R14	RD14DB3D471J	RES. CARBON 470 5% 2W
R15	RD14DB3F102J	RES. CARBON 1K 5% 3W
R16	RD14DB3F102J	RES. CARBON 1K 5% 3W
R17	RD14BB2C102J	RES. CARBON 1K 5% 1/6W
R18	RD14BB2C102J	RES. CARBON 1K 5% 1/6W
R19	RD14DB2H5R6J	RES. CARBON 5.6 5% 1/2W
R22	RD14BB2C102J	RES. CARBON 1K 5% 1/6W

PD18-20/PD18-20D C.I UNIT X81-1980-00

REF. NO	PARTS NO	NAME & DESCRIPTION
C12	F29-0505-05	VINYL TUBE FOR INSULATOR
C13	J25-5157-03	PCB (UNMOUNTED)
C14	CF92V1H473J	CAP. POLYESTER 0.047 5% 50V
D14	RD15F(B2)	DIODE ZENER
D15	RD15F(B2)	DIODE ZENER
P13	E40-0673-05	PIN CONNECTOR 6P
P307	E40-0773-05	PIN CONNECTOR 7P
P308	E40-0873-05	PIN CONNECTOR 8P
P309	E40-0473-05	PIN CONNECTOR 4P
P310	E40-0474-05	PIN CONNECTOR 4P
P311	NO USE	
P312	E40-0374-05	PIN CONNECTOR 3P
Q7	2SC3855(0)	TR. SI, NPN
Q8	2SA1491(0)	TR. SI, PNP
Q9	2SC3066(F,G)	TR. SI, NPN
Q10	2SK170(BL)	FET, N-CHANNEL
R8	RD14BB2E152J	RES. CARBON 1.5K 5% 1/4W
R9	R92-1120-05	RES. METAL FILM 33 5% 1/2W
R15	RS14AB3F102J	RES. METAL FILM 1K 5% 3W
R16	RS14AB3F102J	RES. METAL FILM 1K 5% 3W
R17	RD14BB2C102J	RES. CARBON 1K 5% 1/6W
R18	RD14BB2C102J	RES. CARBON 1K 5% 1/6W
R19	R92-1117-05	RES. METAL FILM 3.9 5% 1/2W
R20	RD14DB3D561J	RES. CARBON 560 5% 2W
R21	NO USE	
R22	RD14BB2C102J	RES. CARBON 1K 5% 1/6W

PD18-30 PD18-30D C.I UNIT X81-1980-01

REF. NO	PARTS NO	NAME & DESCRIPTION
C12	F29-0505-05	VINYL TUBE FOR INSULATOR
C13	J25-5157-03	PCB (UNMOUNTED)
C14	CF92V1H473J	CAP. POLYESTER 0.047 5% 50V
D14	RD15F(B2)	DIODE ZENER
D15	RD15F(B2)	DIODE ZENER
P13	E40-0673-05	PIN CONNECTOR 6P
P307	E40-0773-05	PIN CONNECTOR 7P
P308	E40-0873-05	PIN CONNECTOR 8P
P309	E40-0473-05	PIN CONNECTOR 4P
P310	E40-0474-05	PIN CONNECTOR 4P
P311	NO USE	
P312	E40-0374-05	PIN CONNECTOR 3P
Q7	2SC3855(0)	TR. SI, NPN
Q8	2SA1491(0)	TR. SI, PNP
Q9	2SC3066(F,G)	TR. SI, NPN
Q10	2SK170(BL)	FET, N-CHANNEL
R8	RD14BB2E152J	RES. CARBON 1.5K 5% 1/4W
R9	R92-1120-05	RES. METAL FILM 33 5% 1/2W
R15	RS14AB3F102J	RES. METAL FILM 1K 5% 3W
R16	RS14AB3F102J	RES. METAL FILM 1K 5% 3W
R17	RD14BB2C102J	RES. CARBON 1K 5% 1/6W
R18	RD14BB2C102J	RES. CARBON 1K 5% 1/6W
R19	R92-1117-05	RES. METAL FILM 3.9 5% 1/2W
R20	RD14DB3D561J	RES. CARBON 560 5% 2W
R21	RD14BB2E243J	RES. CARBON 24K 5% 1/4W
R22	RD14BB2C102J	RES. CARBON 1K 5% 1/6W

PD35-20/PD35-20D C.I UNIT X81-1980-02

REF. NO	PARTS NO	NAME & DESCRIPTION
C12	F29-0505-05	VINYL TUBE FOR INSULATOR
C13	J25-5157-03	PCB (UNMOUNTED)
C14	CF92V1H473J	CAP. POLYESTER 0.047 5% 50V
D14	RD15F(B2)	DIODE ZENER
D15	RD15F(B2)	DIODE ZENER
P13	E40-0673-05	PIN CONNECTOR 6P
P307	E40-0773-05	PIN CONNECTOR 7P
P308	E40-0873-05	PIN CONNECTOR 8P
P309	E40-0473-05	PIN CONNECTOR 4P
P310	E40-0474-05	PIN CONNECTOR 4P
P311	E40-0274-05	PIN CONNECTOR 2P
P312	E40-0374-05	PIN CONNECTOR 3P
Q7	2SC3855(0)	TR. SI, NPN
Q8	2SA1491(0)	TR. SI, PNP
Q9	2SC3066(F,G)	TR. SI, NPN
Q10	2SK170(BL)	FET, N-CHANNEL
R8	RD14BB2E152J	RES. CARBON 1.5K 5% 1/4W
R9	R92-1120-05	RES. METAL FILM 33 5% 1/2W
R15	RS14AB3F102J	RES. METAL FILM 1K 5% 3W
R16	RS14AB3F102J	RES. METAL FILM 1K 5% 3W
R17	RD14BB2C102J	RES. CARBON 1K 5% 1/6W
R18	RD14BB2C102J	RES. CARBON 1K 5% 1/6W
R19	R92-1056-05	RES. METAL FILM 2.2 5% 1/2W
R20	NO USE	
R21	RD14BB2E243J	RES. CARBON 24K 5% 1/4W
R22	RD14BB2C102J	RES. CARBON 1K 5% 1/6W

PD8-20 (D) SCHEMATIC DIAGRAM

CAUTION 1; CV operation — Main signal —

Condition of measurement.
 CC VR → MAX.
 CV VR → MAX.
 OUTPUT → OPEN
 OUTPUT SW → ON
 OVP VR → MAX.

At measurement, the DMM
 GND line is the + output
 terminal
 (Front panel ⊕ or rear panel
 ⊖)

(In the circuit diagram, indicated
 with "⊕")

- Ⓐ; Measured voltage obtained under
 measuring condition of CAUTION 1.
- Ⓑ; Measured voltage obtained under
 measuring condition of CAUTION 2.
- Ⓒ; Measured voltage obtained under
 measuring condition of CAUTION 3.

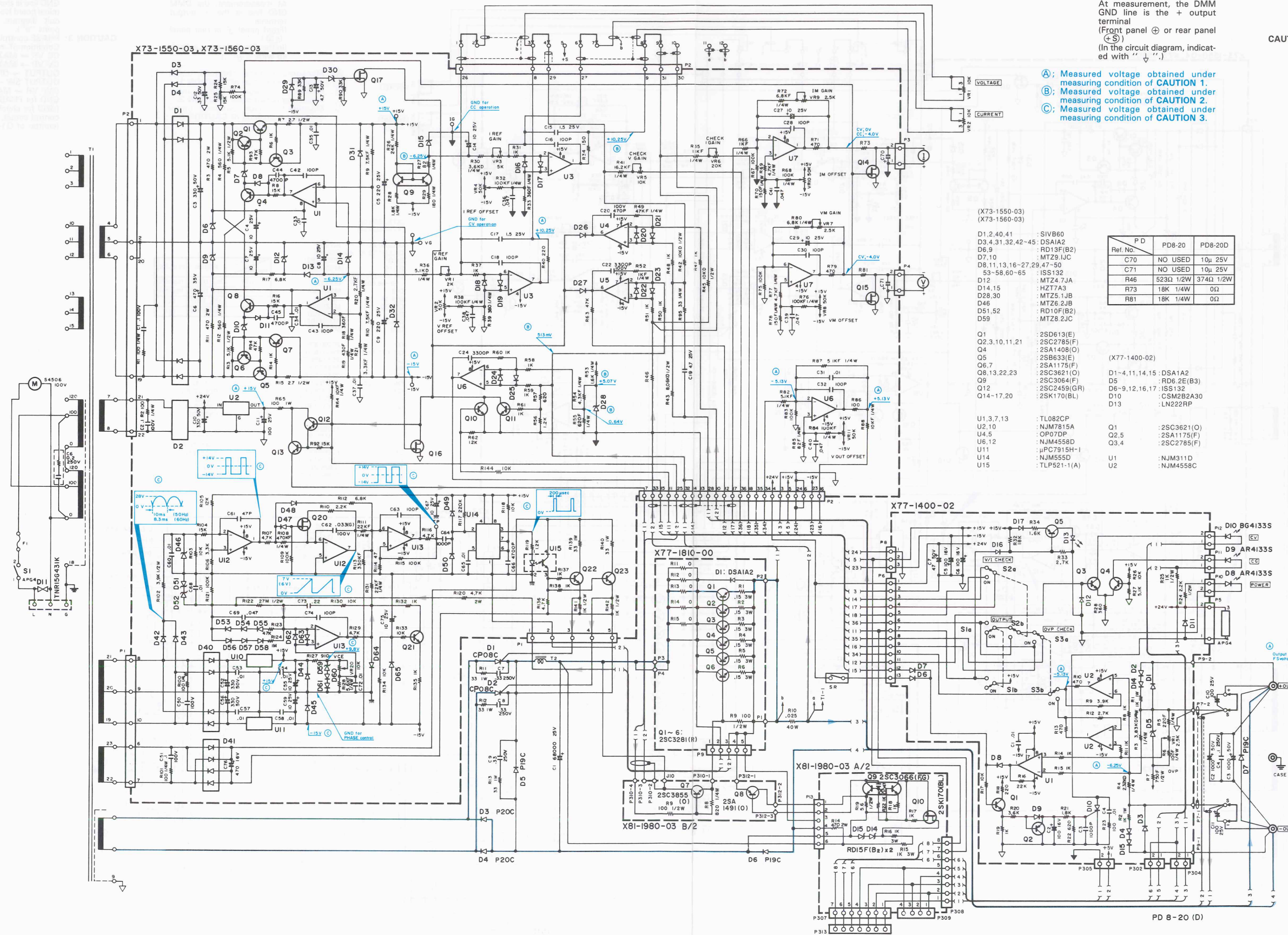
CAUTION 2; CC operation —

Condition of measurement
 CC VR → MAX.
 CV VR → MAX.
 OUTPUT → SHORT
 OUTPUT SW → ON
 OVP VR → MAX.

At measurement, the DMM
 GND line is the rear panel terminal
 board No. 11 (in the circuit
 diagram, connected to
 point "a").

CAUTION 3; PHASE control —

Condition of measurement
 CC VR → MAX.
 CV VR → MAX.
 OUTPUT → OPEN
 OUTPUT SW → ON
 OVP VR → MAX.
 GND for PHASE control
 (emitter of Q1-Q6)



- (X73-1550-03)
 (X73-1560-03)
- D1, 2, 4, 0, 41 : S1VB60
 - D3, 4, 31, 32, 42-45 : DSA1A2
 - D6 : RD13F(B2)
 - D7, 10 : MTZ9, 1JC
 - D8, 11, 13, 16-27, 29, 47-50 : 53-58, 60-65 : ISS132
 - D12 : MTZ4, 7JA
 - D14, 15 : HZT7A3
 - D28, 30 : MTZ5, 1JB
 - D46 : MTZ6, 2JB
 - D51, 52 : RD10F(B2)
 - D59 : MTZ8, 2JC
- Q1 : 2SD613(E)
 Q2, 3, 10, 11, 21 : 2SC2785(F)
 Q4 : 2SA1408(O)
 Q5 : 2SB633(E)
 Q6, 7 : 2SA1175(F)
 Q8, 13, 22, 23 : 2SC3621(O)
 Q9 : 2SC3084(F)
 Q12 : 2SC2459(GR)
 Q14-17, 20 : 2SK170(BL)
- U1, 3, 7, 13 : TL082CP
 U2, 10 : NJM7915A
 U4, 5 : OP70DP
 U6, 12 : NJM4558D
 U11 : μPC7915H-1
 U14 : NJM555D
 U15 : TLP521-1(A)

Ref. No.	PD	PD8-20	PD8-20D
C70	NO USED	10μ 25V	
C71	NO USED	10μ 25V	
R46	52Ω 1/2W	374Ω 1/2W	
R73	18K 1/4W	0Ω	
R81	18K 1/4W	0Ω	

- (X77-1400-02)
- D1-4, 11, 14, 15 : DSA1A2
 - D5 : RD6, 2E(B3)
 - D6-9, 12, 16, 17 : ISS132
 - D10 : CSM2B2A30
 - D13 : LN222RP
- Q1 : 2SC3621(O)
 Q2, 5 : 2SA1175(F)
 Q3, 4 : 2SC2785(F)
- U1 : NJM311D
 U2 : NJM4558C

PD8-30 (D) SCHEMATIC DIAGRAM

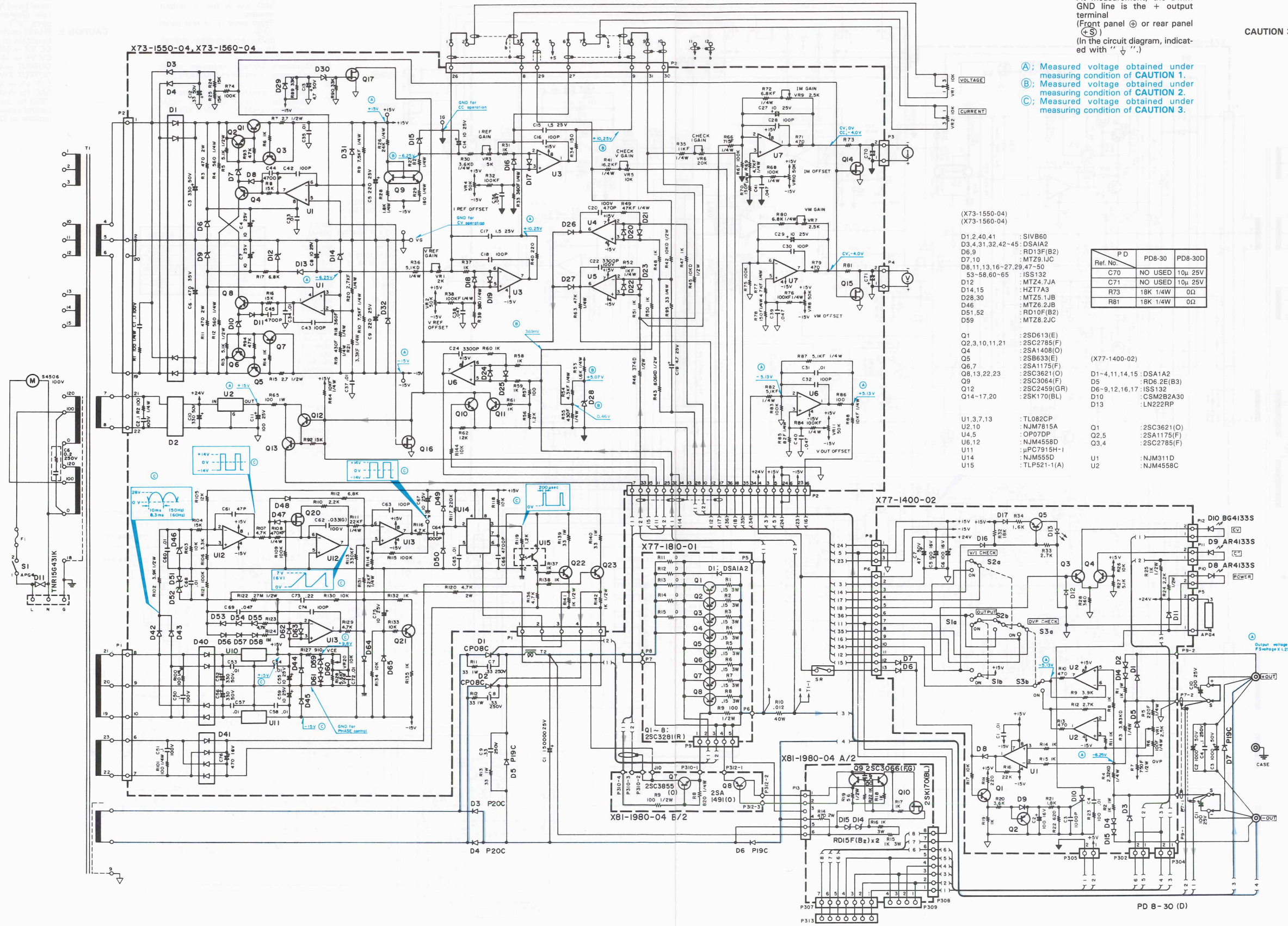
CAUTION 1; CV operation — Main signal —

Condition of measurement.
 CC VR → MAX.
 CV VR → MAX.
 OUTPUT → OPEN
 OUTPUT SW → ON
 OVP VR → MAX.
 At measurement, the DMM
 GND line is the + output
 terminal
 (Front panel ⊕ or rear panel
 ⊖)
 (In the circuit diagram, indicat-
 ed with "⊕".)

CAUTION 2; CC operation —
 Condition of measurement
 CC VR → MAX.
 CV VR → MAX.
 OUTPUT → SHORT
 OUTPUT SW → ON
 OVP VR → MAX.
 At measurement, the DMM
 GND line is the rear panel ter-
 minal board No. 11 (in the cir-
 cuit diagram, conected to
 point "a").

CAUTION 3; PHASE control
 Condition of measurement
 CC VR → MAX.
 CV VR → MAX.
 OUTPUT → OPEN
 OUTPUT SW → ON
 OVP VR → MAX.
 GND for PHASE control ⊖
 (GND for checking the phase
 control circuit;
 emitter of Q1-Q6)

A; Measured voltage obtained under
 measuring condition of CAUTION 1.
 B; Measured voltage obtained under
 measuring condition of CAUTION 2.
 C; Measured voltage obtained under
 measuring condition of CAUTION 3.



(X73-1550-04)
 (X73-1560-04)

- D1, 2, 40, 41 : SIVB60
- D3, 4, 31, 32, 42-45 : DSA1A2
- D6, 9 : RD13F(B2)
- D7, 10 : MTZ3.1UC
- D8, 11, 13, 16-27, 29, 47-50 : ISS132
- D12 : MTZ4.7JA
- D14, 15 : HZT7A3
- D28, 30 : MTZ5.1JB
- D46 : MTZ6.2JB
- D51, 52 : RD10F(B2)
- D59 : MTZ6.2JC

Ref. No.	PD8-30	PD8-30D
C70	NO USED	10μ 25V
C71	NO USED	10μ 25V
R73	18K 1/4W	Ω
R81	18K 1/4W	Ω

- Q1 : 2SD613(E)
- Q2, 3, 10, 11, 21 : 2SC2785(F)
- Q4 : 2SA1408(O)
- Q5 : 2SB633(E)
- Q6, 7 : 2SA1175(F)
- Q8, 13, 22, 23 : 2SC3621(O)
- Q9 : 2SC3064(F)
- Q12 : 2SC2459(GR)
- Q14-17, 20 : 2SK170(BL)

(X77-1400-02)

- D1-4, 11, 14, 15 : DSA1A2
- D5 : RD6.2E(B3)
- D6-9, 12, 16, 17 : ISS132
- D10 : CSM2B2A30
- D13 : LN222RP

- U1, 3, 7, 13 : TL082CP
- U2, 10 : NJM7815A
- U4, 5 : OP07DP
- U6, 12 : NJM4558D
- U11 : μPC7915H-1
- U14 : NJM555D
- U15 : TLP521-1(A)

- Q1 : 2SC3621(O)
- Q2, 5 : 2SA1175(F)
- Q3, 4 : 2SC2785(F)
- U1 : NJM311D
- U2 : NJM4558C

PD18-20 (D) SCHEMATIC DIAGRAM

CAUTION 1; CV operation — Main signal —

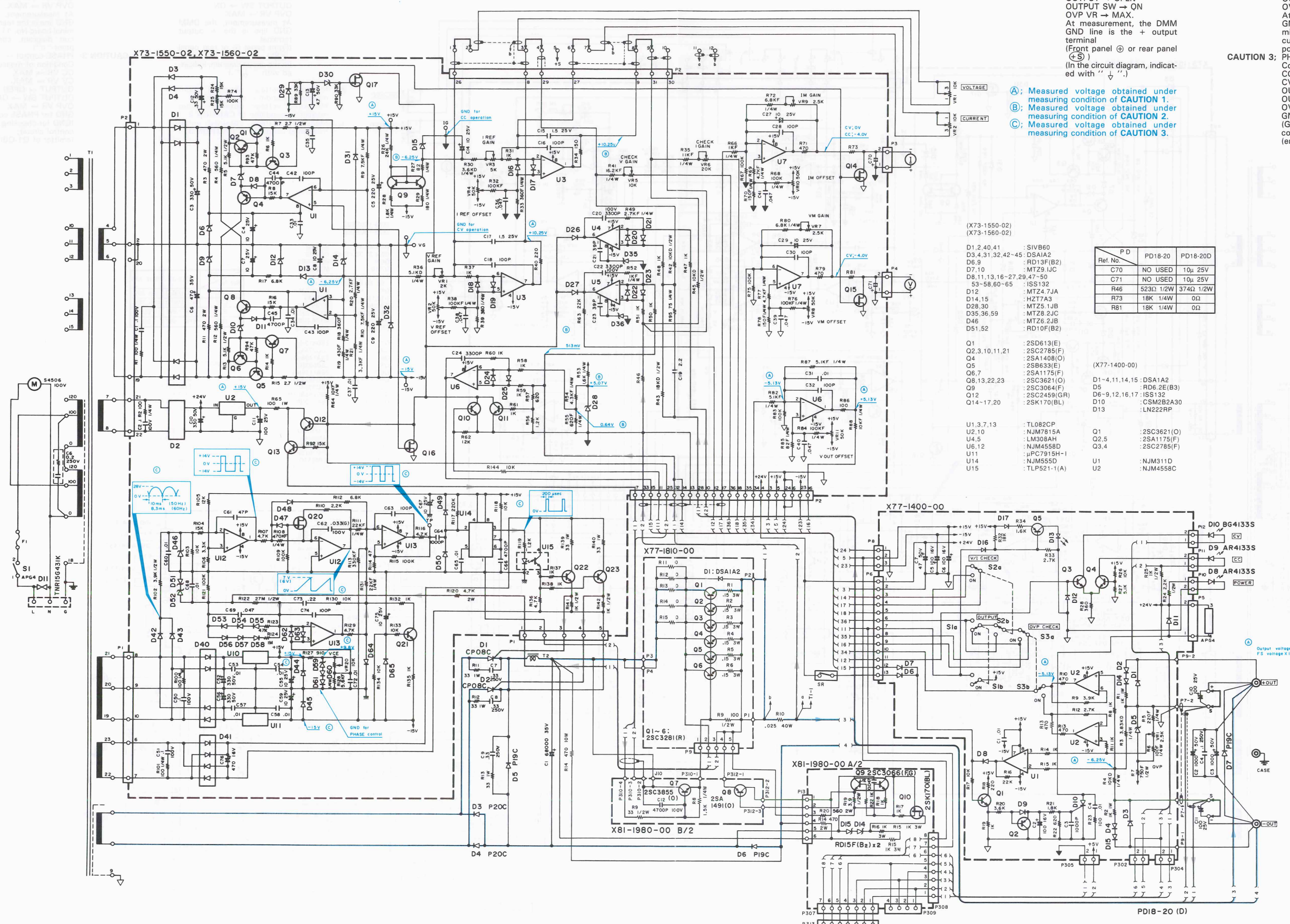
CAUTION 2; CC operation —

Condition of measurement.
 CC VR → MAX.
 CV VR → MAX.
 OUTPUT → OPEN
 OUTPUT SW → ON
 OVP VR → MAX.
 At measurement, the DMM
 GND line is the + output
 terminal
 (Front panel ⊕ or rear panel
 ⊕S)
 (In the circuit diagram, indicat-
 ed with "↓".)

Condition of measurement
 CC VR → MAX.
 CV VR → MAX.
 OUTPUT → SHORT
 OUTPUT SW → ON
 OVP VR → MAX.
 At measurement, the DMM
 GND line is the rear panel ter-
 minal board No. 11 (in the cir-
 cuit diagram, connected to
 point "a").

CAUTION 3; PHASE control —
 Condition of measurement
 CC VR → MAX.
 CV VR → MAX.
 OUTPUT → OPEN
 OUTPUT SW → ON
 OVP VR → MAX.
 GND for PHASE control
 (GND for checking the phase
 control circuit;
 (emitter of Q1-Q6))

- A; Measured voltage obtained under measuring condition of CAUTION 1.
- B; Measured voltage obtained under measuring condition of CAUTION 2.
- C; Measured voltage obtained under measuring condition of CAUTION 3.



(X73-1550-02)
(X73-1560-02)

Ref. No.	PD18-20	PD18-20D
D1	2.40, 41	:SIVB60
D3, 4, 31, 32, 42-45	:DSAIA2	
D6, 9	:RD13F(B2)	
D7, 10	:MTZ9, IJC	
D8, 11, 13, 16-27, 29, 47-50	:ISS132	
53-58, 60-65	:MTZ4, 7JA	
D14, 15	:H2T7A3	
D28, 30	:MTZ5, 1JB	
D35, 36, 59	:MTZ6, 2JC	
D46	:MTZ6, 2JB	
D51, 52	:RD10F(B2)	

(X77-1400-00)

Ref. No.	PD18-20	PD18-20D
D1-4, 11, 14, 15	:DSAIA2	
D5	:RD6, 2E(B3)	
D6-9, 12, 16, 17	:ISS132	
D10	:CSM2B2A30	
D13	:LN222RP	

Q1	:2SD613(E)
Q2, 3, 10, 11, 21	:2SC2785(F)
Q4	:2SA1408(O)
Q5	:2SB633(E)
Q6, 7	:2SA1175(F)
Q8, 13, 22, 23	:2SC3621(O)
Q9	:2SC3064(F)
Q12	:2SC2459(GR)
Q14-17, 20	:2SK170(BL)

U1, 3, 7, 13	:TL082CP
U2, 10	:NUM7815A
U4, 5	:LM308AH
U6, 12	:NJM4558D
U11	:μPC7915H-1
U14	:NJM555D
U15	:TLP521-1(A)

Q1	:2SC3621(O)
Q2, 5	:2SA1175(F)
Q3, 4	:2SC2785(F)

Q1 : NJM311D
 U2 : NJM4558C

PD18-30 (D) SCHEMATIC DIAGRAM

CAUTION 1: CV operation — Main signal —

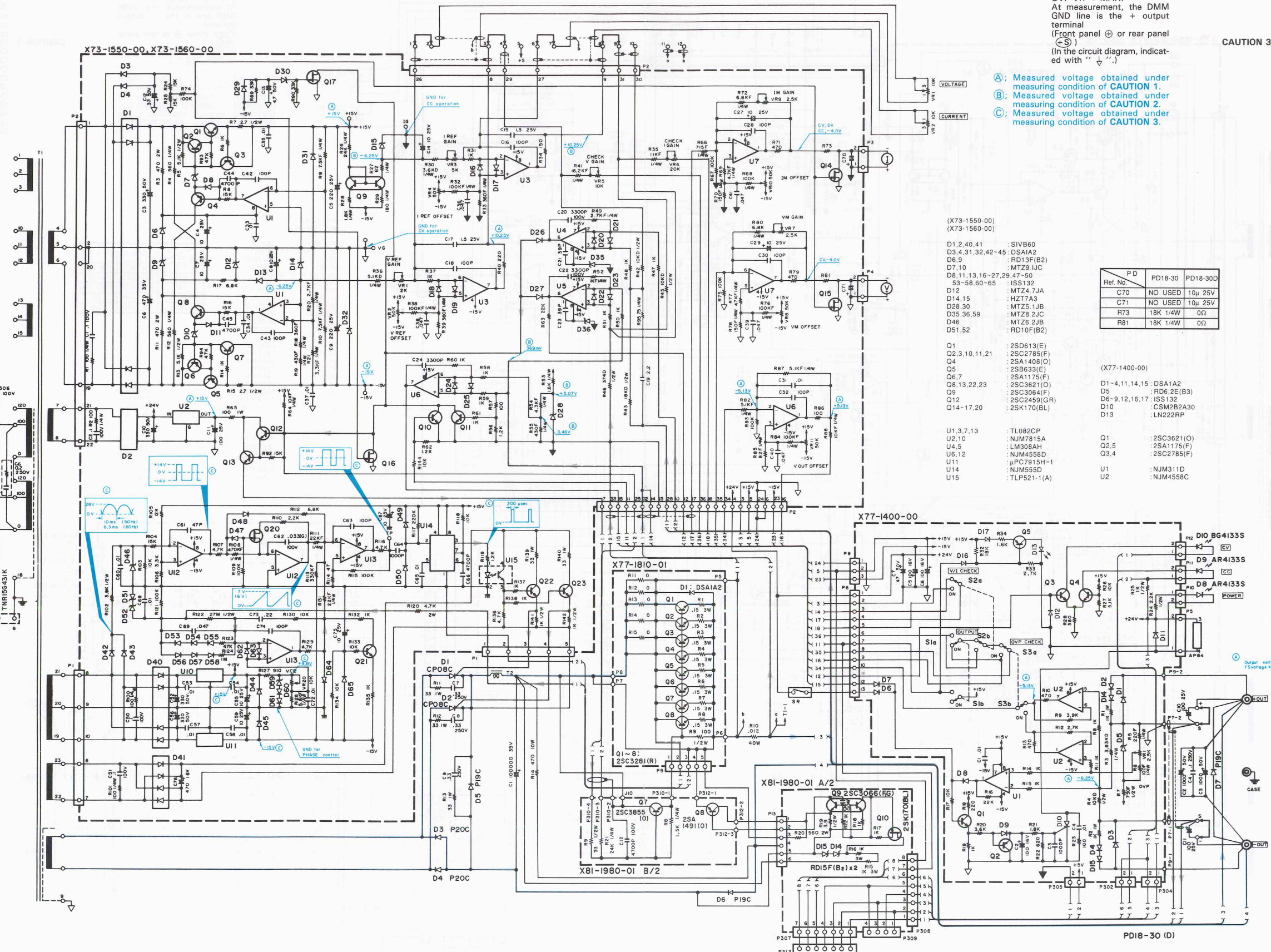
Condition of measurement.
 CC VR → MAX.
 CV VR → MAX.
 OUTPUT → OPEN
 OUTPUT SW → ON
 OVP VR → MAX.
 At measurement, the DMM
 GND line is the + output
 terminal
 (Front panel ⊕ or rear panel
 ⊕)
 (In the circuit diagram, indicat-
 ed with "⊕".)

CAUTION 2: CC operation —

Condition of measurement
 CC VR → MAX.
 CV VR → MAX.
 OUTPUT → SHORT
 OUTPUT SW → ON
 OVP VR → MAX.
 At measurement, the DMM
 GND line is the rear panel ter-
 minal board No. 11 (in the cir-
 cuit diagram, connected to
 point "a").
 CAUTION 3: PHASE control —

Condition of measurement
 CC VR → MAX.
 CV VR → MAX.
 OUTPUT → OPEN
 OUTPUT SW → ON
 OVP VR → MAX.
 GND for PHASE control
 (GND for checking the phase
 control circuit;
 emitter of Q1-Q6)

A: Measured voltage obtained under
 measuring condition of CAUTION 1.
 B: Measured voltage obtained under
 measuring condition of CAUTION 2.
 C: Measured voltage obtained under
 measuring condition of CAUTION 3.



(X73-1550-00)
 (X73-1560-00)

- D1,2,40,41 : SIVB60
- D3,4,31,32,42-45 : DSA1A2
- D6,9 : RD13F(B2)
- D7,10 : MTZ9.1JC
- D8,11,13,16-27,29,47-50 : ISS132
- 53-58,60-65 : ISS132
- D12 : MTZ4.7JA
- D14,15 : HZ17A3
- D28,30 : MTZ5.1JB
- D35,36,59 : MTZ6.2JC
- D46 : MTZ6.2JB
- D51,52 : RD10F(B2)

Ref. No.	P D	PD18-30	PD18-30D
C70	NO USED	10μ 25V	
C71	NO USED	10μ 25V	
R73	18K 1/4W	0Ω	
R81	18K 1/4W	0Ω	

- Q1 : 2SD613(E)
- Q2,3,10,11,21 : 2SC2785(F)
- Q4 : 2SA1408(O)
- Q5 : 2SB633(E)
- Q6,7 : 2SA1175(F)
- Q8,13,22,23 : 2SC3621(O)
- Q9 : 2SC3064(F)
- Q12 : 2SC2459(GR)
- Q14-17,20 : 2SK170(BL)

- (X77-1400-00)
- D1-4,11,14,15 : DSA1A2
- D5 : RD6.2E(B3)
- D6-9,12,16,17 : ISS132
- D10 : CSM2B2A30
- D13 : LN222RP
- Q1 : 2SC3621(O)
- Q2,5 : 2SA1175(F)
- Q3,4 : 2SC2785(F)
- U1 : NJM311D
- U2 : NJM4558C

- U1,3,7,13 : TL082CP
- U2,10 : NJM7815A
- U4,5 : LM308AH
- U6,12 : NJM4558D
- U11 : μPC7915H-1
- U14 : NJM555D
- U15 : TLP521-1(A)

PD35-20 (D) SCHEMATIC DIAGRAM

CAUTION 1; CV operation — Main signal

Condition of measurement.
 CC VR → MAX.
 CV VR → MAX.
 OUTPUT → OPEN
 OUTPUT SW → ON
 OVP VR → MAX.

At measurement, the DMM
 GND line is the + output
 terminal
 (Front panel ⊕ or rear panel
 ⊕)
 (In the circuit diagram, indicat-
 ed with "⊕".)

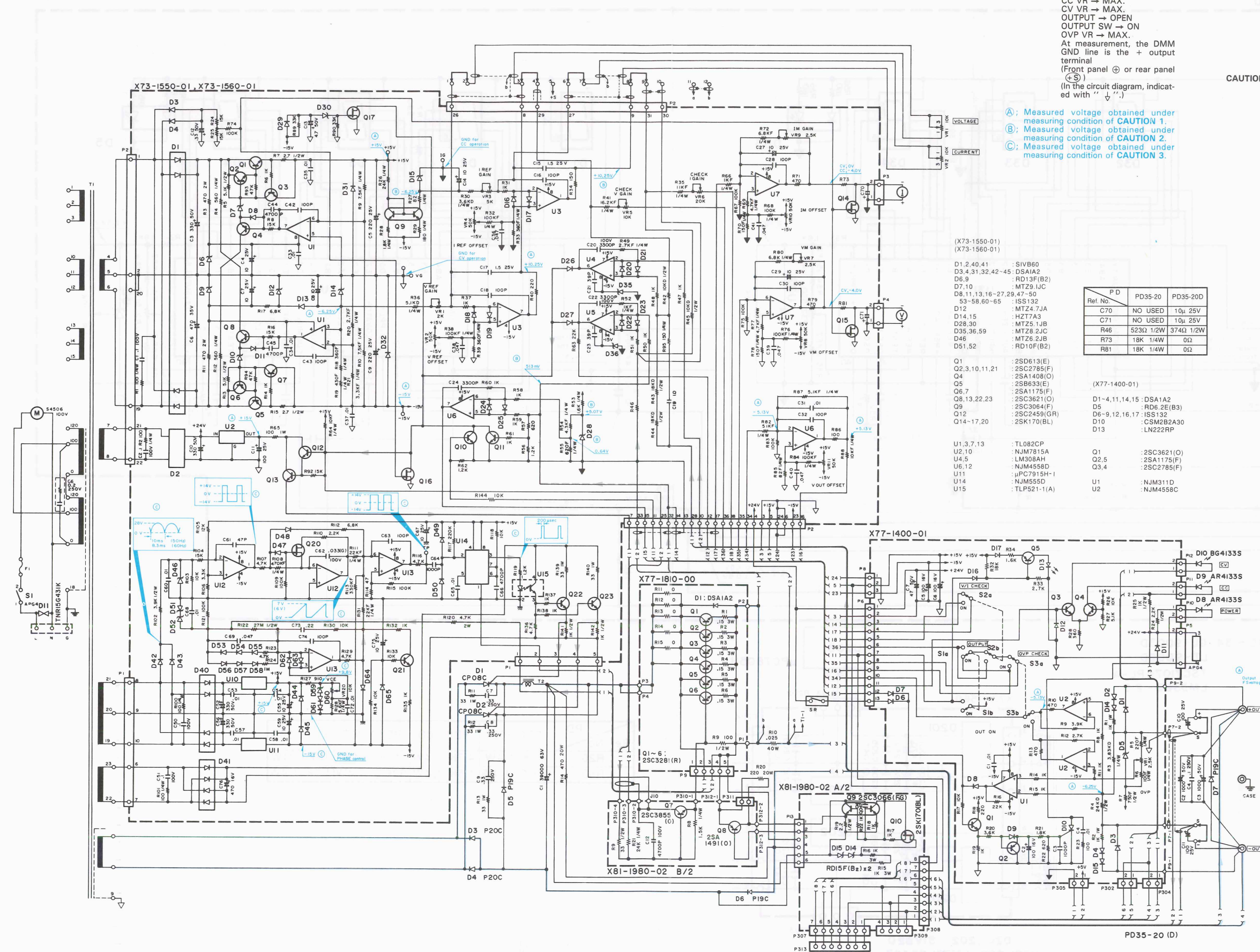
CAUTION 2; CC operation

Condition of measurement
 CC VR → MAX.
 CV VR → MAX.
 OUTPUT → SHORT
 OUTPUT SW → ON
 OVP VR → MAX.
 At measurement, the DMM
 GND line is the rear panel ter-
 minal board No. 11 (in the cir-
 cuit diagram, connected to
 point "a").

CAUTION 3; PHASE control

Condition of measurement
 CC VR → MAX.
 CV VR → OPEN
 OUTPUT SW → ON
 OVP VR → MAX.
 GND for PHASE control ⊕
 (GND for checking the phase
 control circuit;
 emitter of Q1-Q6)

- A: Measured voltage obtained under measuring condition of CAUTION 1.
- B: Measured voltage obtained under measuring condition of CAUTION 2.
- C: Measured voltage obtained under measuring condition of CAUTION 3.



(X73-1550-01)
(X73-1560-01)

- D1, 2, 40, 41 : SIVB60
- D3, 4, 31, 32, 42-45 : DSA1A2
- D6, 9 : RD13F(B2)
- D7, 10 : MTZ9, IJC
- D8, 11, 13, 16-27, 29, 47-50 : ISS132
- D9, 53-58, 60-65 : ISS132
- D12 : MTZ4, 7JA
- D14, 15 : HZT7A3
- D28, 30 : MTZ5, 1JB
- D35, 36, 59 : MTZ6, 2JC
- D46 : MTZ6, 2JB
- D51, 52 : RD10F(B2)

Ref. No.	P/D	PD35-20	PD35-20D
C70	NO USED	10μ 25V	
C71	NO USED	10μ 25V	
R46	523Ω 1/2W	374Ω 1/2W	
R73	18K 1/4W	0Ω	
R81	18K 1/4W	0Ω	

- Q1 : 2SD613(E)
- Q2, 3, 10, 11, 21 : 2SC2785(F)
- Q4 : 2SA1408(O)
- Q6, 7 : 2SB633(E)
- Q8, 13, 22, 23 : 2SA1175(F)
- Q9 : 2SC3621(O)
- Q12 : 2SC2459(GR)
- Q14-17, 20 : 2SK170(BL)

(X77-1400-01)

- D1-4, 11, 14, 15 : DSA1A2
- D5 : RD6, 2E(B3)
- D6-9, 12, 16, 17 : ISS132
- D10 : CSM2B2A30
- D13 : LN222RP

- U1, 3, 7, 13 : TL082CP
- U2, 10 : NJM7815A
- U4, 5 : LM308AH
- U6, 12 : NJM4558D
- U11 : μPC7915H-1
- U14 : NJM555D
- U15 : TLP521-1(A)

- Q1 : 2SC3621(O)
- Q2, 5 : 2SA1175(F)
- Q3, 4 : 2SC2785(F)
- U1 : NJM311D
- U2 : NJM4558C

(X77-1810-00)

- D1 : DSA1A2
- Q1 : 2SC3621(O)
- Q2 : 2SA1175(F)
- Q3 : 2SC2785(F)
- Q4 : 2SC2785(F)
- Q5 : 2SC2785(F)
- Q6 : 2SC2785(F)
- Q7 : 2SC2785(F)
- Q8 : 2SC2785(F)
- Q9 : 2SC2785(F)
- Q10 : 2SC2785(F)
- Q11 : 2SC2785(F)
- Q12 : 2SC2785(F)
- Q13 : 2SC2785(F)
- Q14 : 2SC2785(F)
- Q15 : 2SC2785(F)
- Q16 : 2SC2785(F)
- Q17 : 2SC2785(F)
- Q18 : 2SC2785(F)
- Q19 : 2SC2785(F)
- Q20 : 2SC2785(F)
- Q21 : 2SC2785(F)
- Q22 : 2SC2785(F)
- Q23 : 2SC2785(F)

(X77-1400-01)

- D17 : BG4133S
- D9 : AR4133S
- D8 : AR4133S
- D12 : AR4133S
- D11 : AR4133S
- D10 : AR4133S
- D13 : AR4133S
- D14 : AR4133S
- D15 : AR4133S
- D16 : AR4133S
- D18 : AR4133S
- D19 : AR4133S
- D20 : AR4133S
- D21 : AR4133S
- D22 : AR4133S
- D23 : AR4133S
- D24 : AR4133S
- D25 : AR4133S
- D26 : AR4133S
- D27 : AR4133S
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- D30 : AR4133S
- D31 : AR4133S
- D32 : AR4133S
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- D34 : AR4133S
- D35 : AR4133S
- D36 : AR4133S
- D37 : AR4133S
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- D39 : AR4133S
- D40 : AR4133S
- D41 : AR4133S
- D42 : AR4133S
- D43 : AR4133S
- D44 : AR4133S
- D45 : AR4133S
- D46 : AR4133S
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- D90 : AR4133S
- D91 : AR4133S
- D92 : AR4133S
- D93 : AR4133S
- D94 : AR4133S
- D95 : AR4133S
- D96 : AR4133S
- D97 : AR4133S
- D98 : AR4133S
- D99 : AR4133S
- D100 : AR4133S

(X81-1980-02 A/2)

- D15 : DSA1A2
- D14 : DSA1A2
- D13 : DSA1A2
- D12 : DSA1A2
- D11 : DSA1A2
- D10 : DSA1A2
- D9 : DSA1A2
- D8 : DSA1A2
- D7 : DSA1A2
- D6 : DSA1A2
- D5 : DSA1A2
- D4 : DSA1A2
- D3 : DSA1A2
- D2 : DSA1A2
- D1 : DSA1A2

(X81-1980-02 B/2)

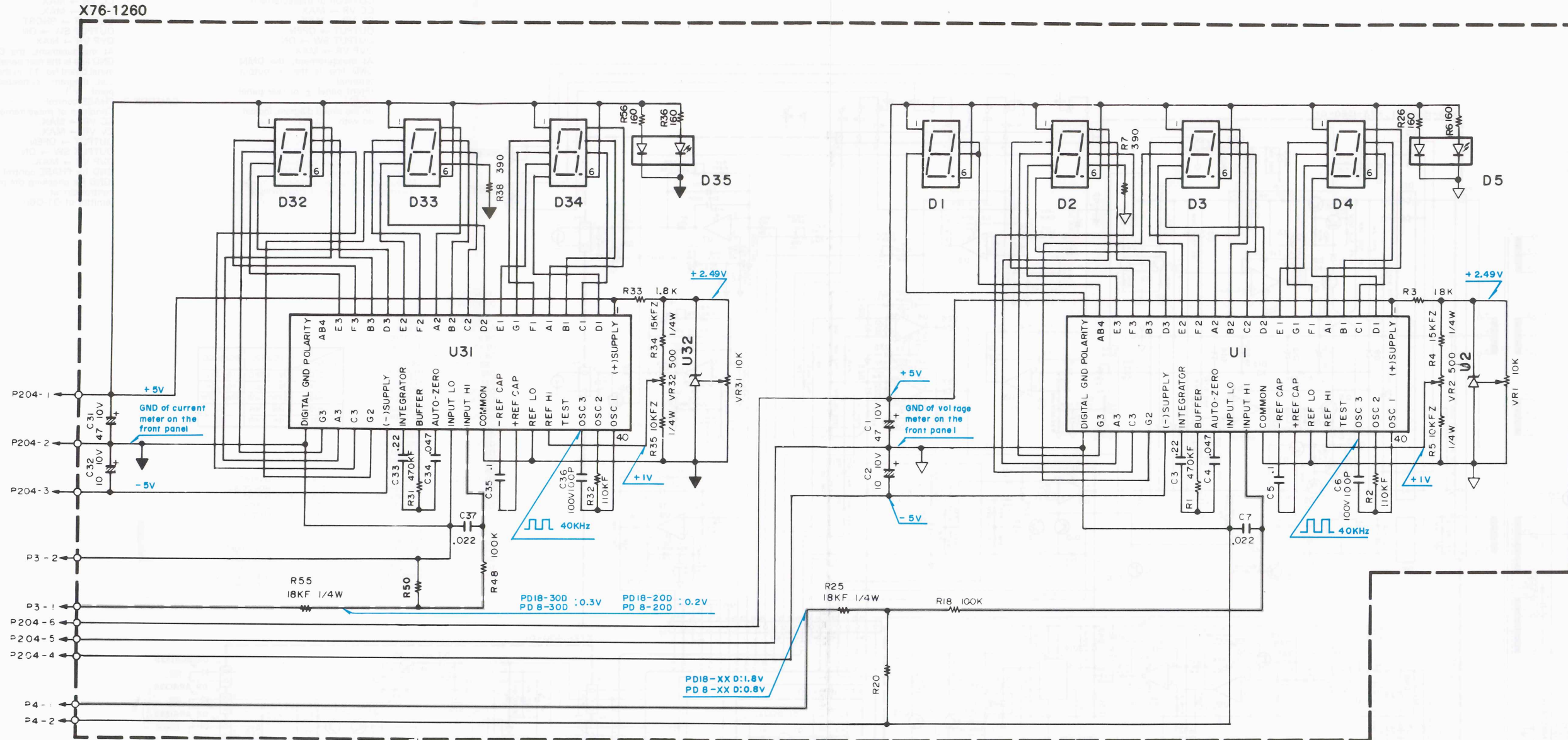
- D15 : DSA1A2
- D14 : DSA1A2
- D13 : DSA1A2
- D12 : DSA1A2
- D11 : DSA1A2
- D10 : DSA1A2
- D9 : DSA1A2
- D8 : DSA1A2
- D7 : DSA1A2
- D6 : DSA1A2
- D5 : DSA1A2
- D4 : DSA1A2
- D3 : DSA1A2
- D2 : DSA1A2
- D1 : DSA1A2

(X91-1980-02 A/2)

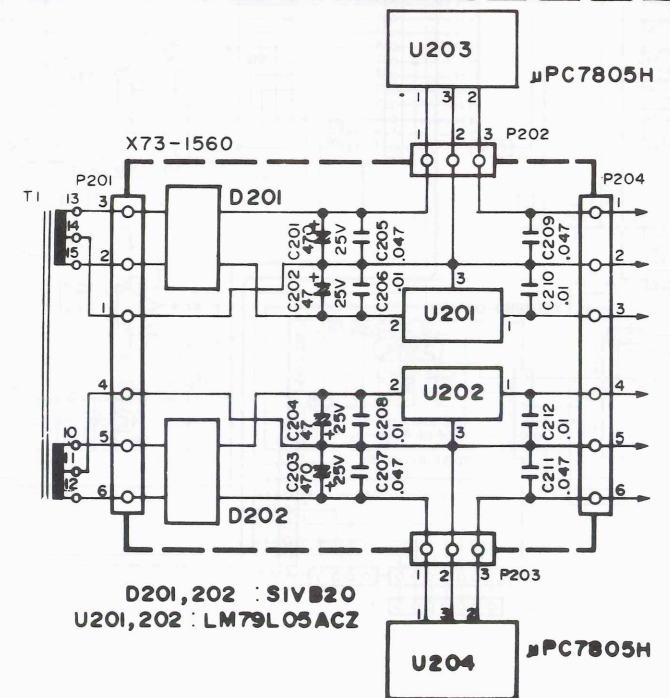
- D15 : DSA1A2
- D14 : DSA1A2
- D13 : DSA1A2
- D12 : DSA1A2
- D11 : DSA1A2
- D10 : DSA1A2
- D9 : DSA1A2
- D8 : DSA1A2
- D7 : DSA1A2
- D6 : DSA1A2
- D5 : DSA1A2
- D4 : DSA1A2
- D3 : DSA1A2
- D2 : DSA1A2
- D1 : DSA1A2

PD35-20 (D)

PD8-20D / PD8-30D / PD18-20D / PD18-30D SCHEMATIC DIAGRAM



- D1 ~ 4, 32 ~ 34 : GL-9D03D
- D5, 35 : LT-9002D
- U1, 31 : TSC7107CPL-A
- U2, 32 : LM336Z-2.5

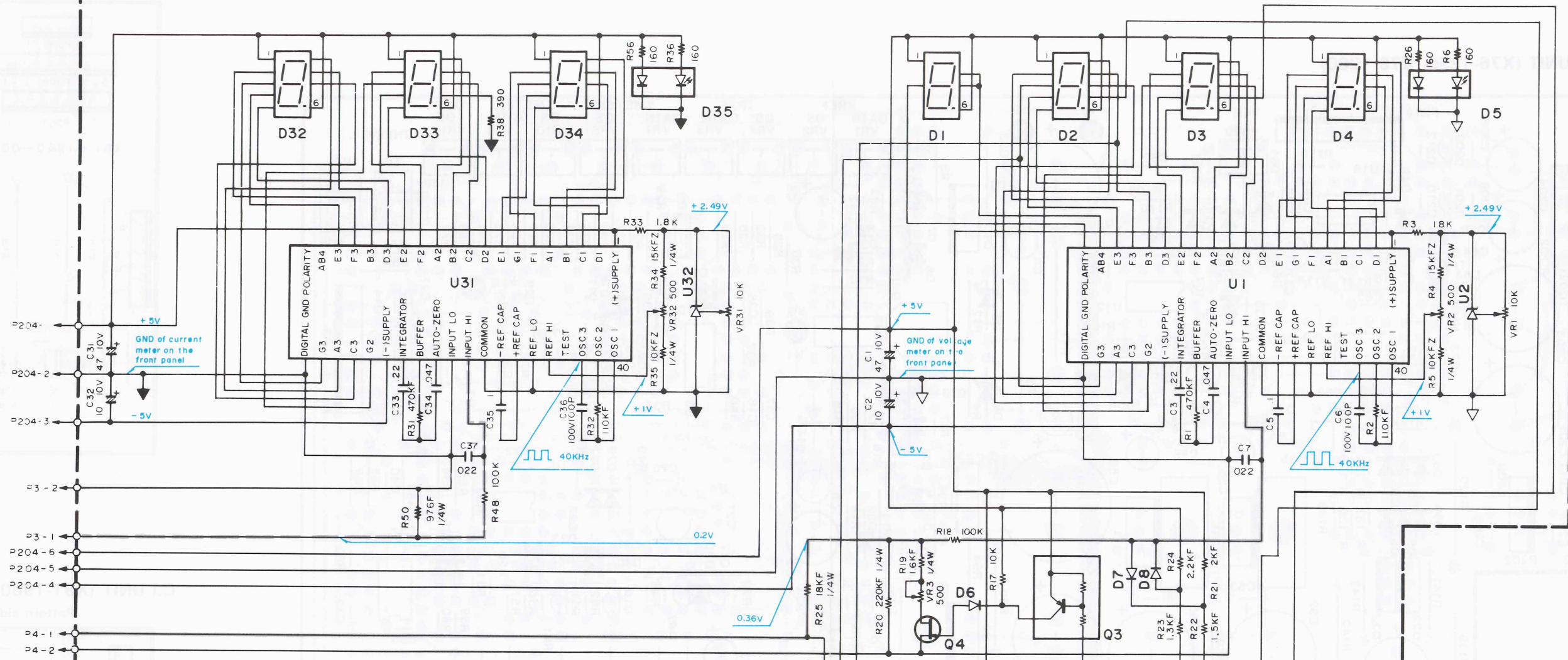


Ref. No. \ PD	PD8-20D	PD8-30D	PD18-20D	PD18-30D
R20	4.7K 1/4W	4.7K 1/4W	15K 1/4W	15K 1/4W
R50	976Ω 1/4W	1.5K 1/4W	976Ω 1/4W	1.5K 1/4W

CAUTION: CC operation ———
CV operation ———

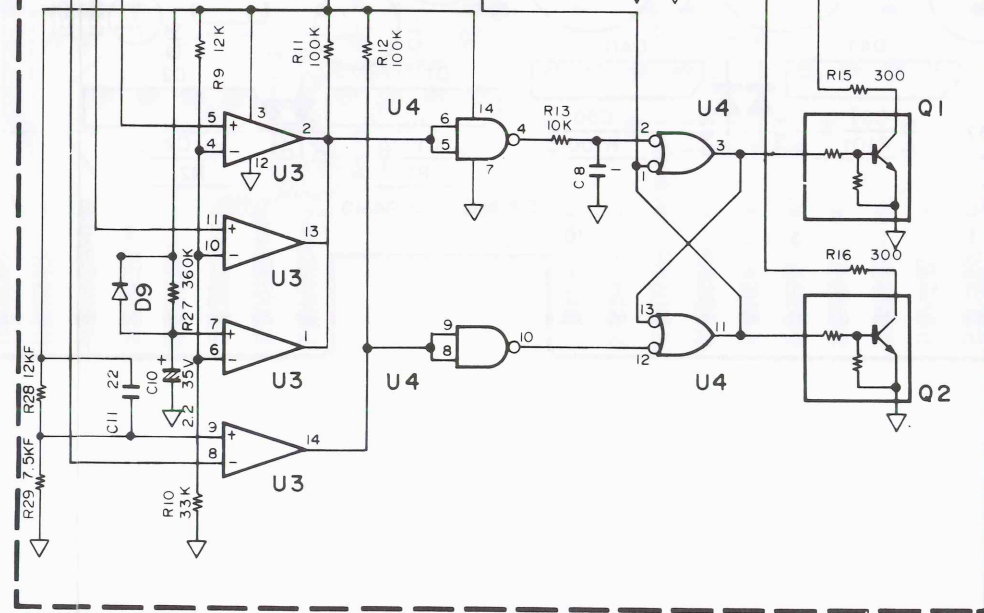
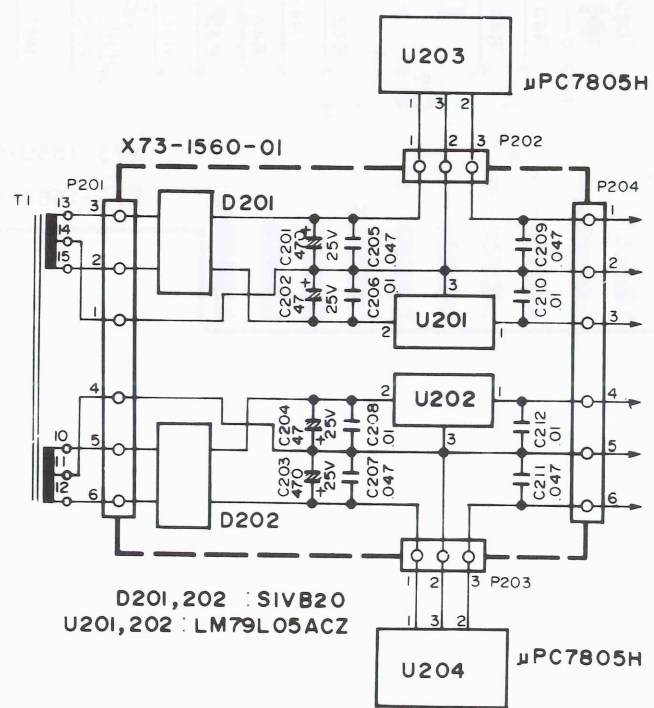
PD35-20D SCHEMATIC DIAGRAM

X76-1260-02



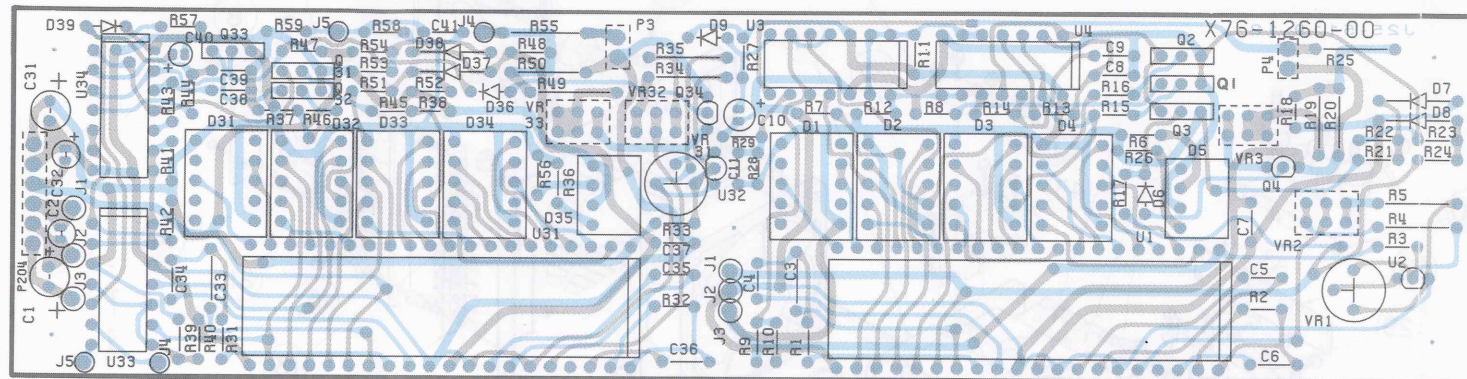
- D1 ~ 4, 32 ~ 34 : GL-9D03D
- D5, 35 : LT-9002D
- D6, 9 : ISS132
- D7, 8 : ISI544A
- Q1, 2 : DTC144EF
- Q3 : DTA124EF
- Q4 : 2SK117(GR)
- U1, 31 : TSC7107CPL-A
- U2, 32 : LM336Z-2.5
- U3 : LM339N
- U4 : MCI4011BCP

CAUTION: CC operation - - - - -
CV operation - - - - -



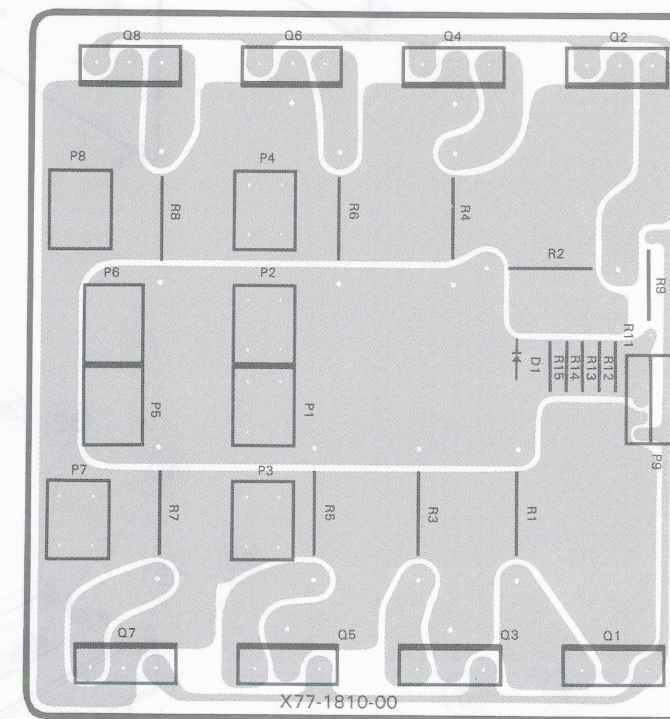
P.C. BOARD

DPM UNIT (X76-1260)

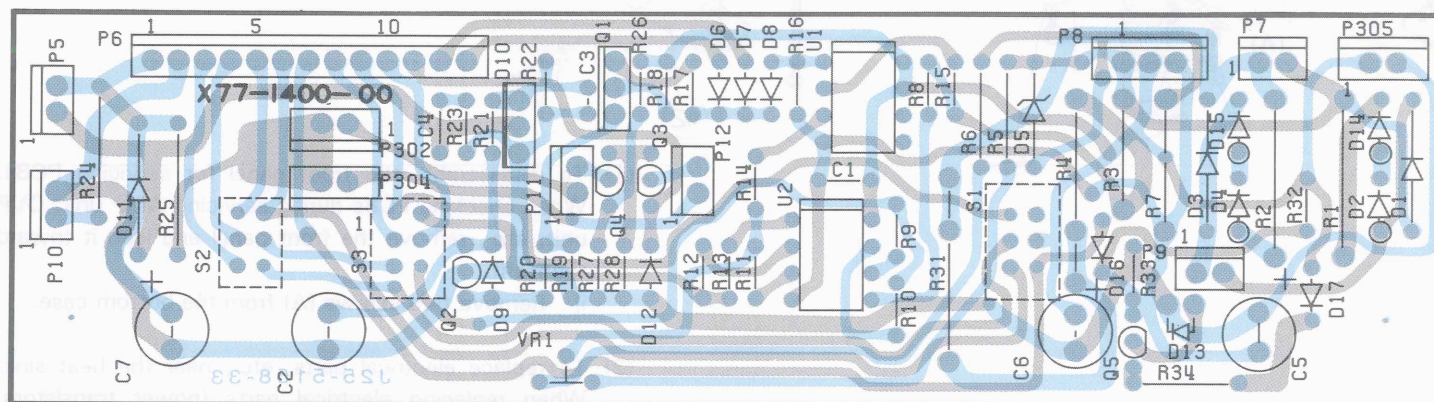


CONTROL UNIT (X77-1810)

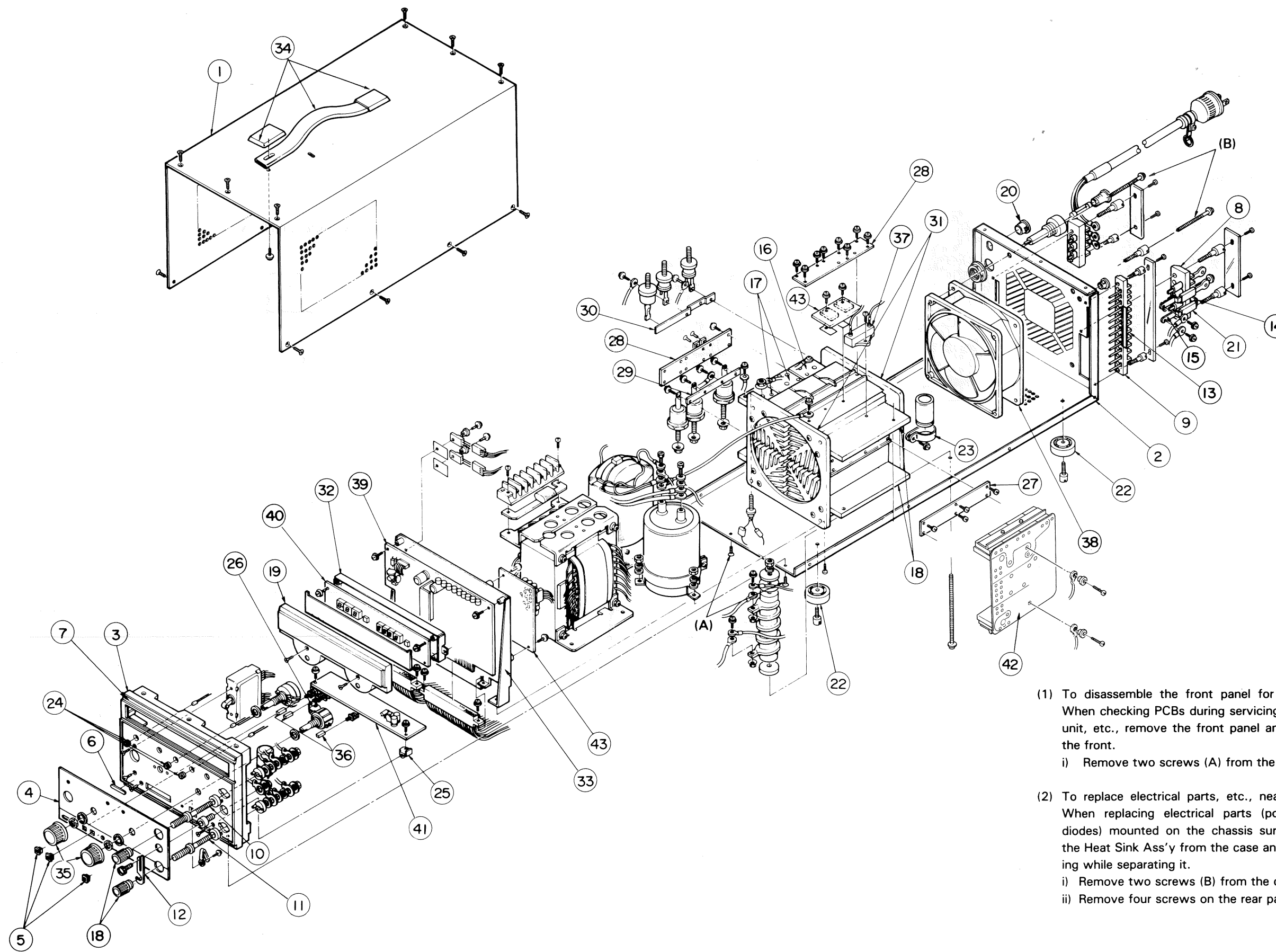
Pattern side view



OVP UNIT (X77-1400)



DISASSEMBLY



(1) To disassemble the front panel for servicing PCBs:
When checking PCBs during servicing AMP unit, OVP unit, etc., remove the front panel and lean it toward the front.

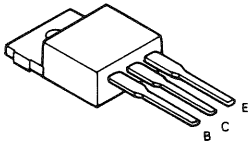
i) Remove two screws (A) from the bottom case.

(2) To replace electrical parts, etc., near the heat sink:
When replacing electrical parts (power transistors, diodes) mounted on the chassis surface, disconnect the Heat Sink Ass'y from the case and perform servicing while separating it.

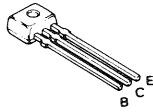
i) Remove two screws (B) from the chassis.

ii) Remove four screws on the rear panel.

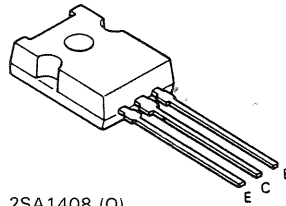
SEMICONDUCTORS



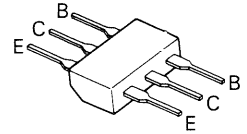
2SB633 (E)
2SD613 (E)



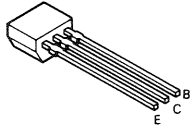
2SA1175 (F)
2SC2785 (F)



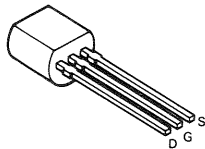
2SA1408 (O)
2SC3621 (O)



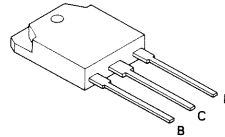
2SC3064 (F)
2SC3066 (F, G)



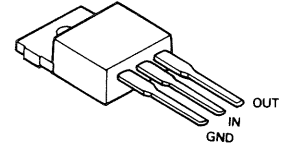
2SC2459 (GR)



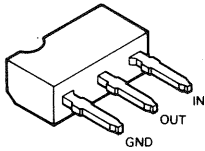
2SK170
2SK117



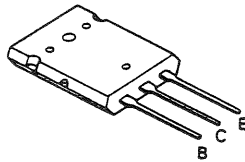
2SA1491 (O)
2SC3855 (O)



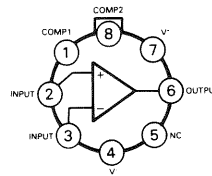
μPC7915HA-1



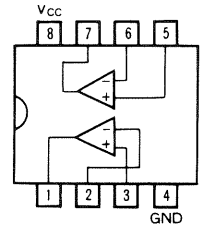
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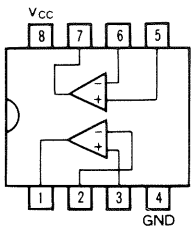
2SC3281 (R)



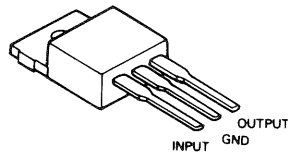
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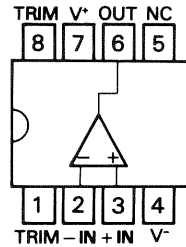
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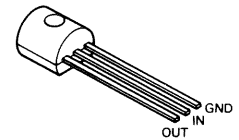
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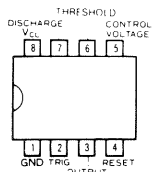
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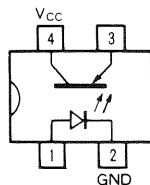
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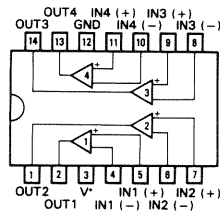
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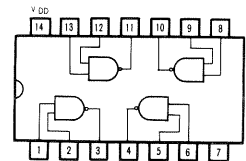
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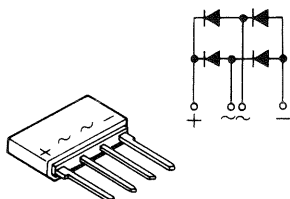
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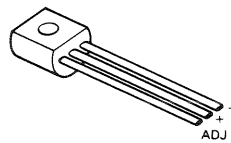
LM339



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