

PS-66

DC-DC CONVERTOR

INTRODUCTION

This service manual describes the latest service information for the **PS-66** DC-DC convertor at the time of publication.

To upgrade quality, any electrical or mechanical parts and internal circuits are subject to change without notice or obligation.

ORDERING PARTS

Be sure to include the following four points when ordering replacement parts:

1. 10-digit order numbers
2. Component part number and name
3. Equipment model name and unit name
4. Quantity required

<SAMPLE ORDER>

1110003140 IC LA1150N PS-66 MAIN UNIT 5 pieces
8810008560 Screw PH M3 x 8 SUS ZK PS-66 CHASSIS 10 pieces

Addresses are provided on the inside back cover for your convenience.

DANGER

NEVER connect the DC-DC convertor to an AC outlet or to a DC power supply that uses more than 32 V. This will ruin the DC-DC convertor.

DO NOT expose the DC-DC convertor to rain, snow or any liquids.

REPAIR NOTES

1. Make sure a problem is internal before disassembling the DC-DC convertor.
2. **DO NOT** open the DC-DC convertor until the DC-DC convertor is disconnected from its power source.
3. **DO NOT** force any of the variable components. Turn them slowly and smoothly.
4. **DO NOT** short any circuits or electronic parts. An insulated tuning tool **MUST** be used for all adjustments.
5. **DO NOT** keep power ON for a long time when the DC-DC convertor is defective.
6. **READ** the instructions of test equipment thoroughly before connecting equipment to the transceiver.

TABLE OF CONTENTS

SECTION 1 SPECIFICATIONS

SECTION 2 PARTS LIST

SECTION 3 BLOCK DIAGRAM

SECTION 4 VOLTAGE DIAGRAM

SECTION 1 SPECIFICATIONS

• Input voltage	: 19 – 32 V DC
• Output voltage	: 13.6 V DC
• Maximum current capacity	: 30 A
• Usable temperature range	: –30°C to +60°C –22°F to +140°F
• Dimensions (projections not included)	: 240(W) × 140(H) × 322(D) mm 7½(W) × 4¾(H) × 10⅞(D) in
• Weight	: 7 kg 15 lb. 7oz

All stated specifications are subject to change without notice or obligation.

SECTION 2 PARTS LIST

[MAIN UNIT]

REF NO.	ORDER NO.	DESCRIPTION	
IC1	1110001410	IC	TL494CN
IC2	1170000120	IC	TLP531 GR
IC3	1170000130	IC	TLP541G
IC4	1110000070	IC	μPC358C
IC5	1180000330	IC	TA78L012AP
Q1	1510000560	TRANSISTOR	2SA817 Y
Q2	1510000560	TRANSISTOR	2SA817 Y
Q3	1560000370	FET	2SK564
Q4	1560000370	FET	2SK564
Q5	1560000370	FET	2SK564
Q6	1560000370	FET	2SK564
D1	1710000530	DIODE	S3V-10
D2	1710000350	DIODE	1N4002
D3	1710000540	DIODE	1S1588
D4	1710000540	DIODE	1S1588
D5	1710000510	DIODE	ERG75-01
D6	1710000510	DIODE	ERG75-01
D7	6910002110	DB-9 G	
D8	1710000540	DIODE	1S1588
D9	1710000540	DIODE	1S1588
D10	1710000540	DIODE	1S1588
D11	1710000540	DIODE	1S1588
D12	1730000100	ZENER	RD5.1E B2
D13	1730000100	ZENER	RD5.1E B2
D15	1730000310	ZENER	RD15E B2
D16	1730000310	ZENER	RD15E B2
D17	1730000310	ZENER	RD15E B2
D18	1730000310	ZENER	RD15E B2
L2	6140001620	COIL	LR-177A
L5	5920000270	TRANSFOM	K27031C-V
L8	6180001850	COIL	FL 9H 331K
L9	6180001850	COIL	FL 9H 331K
T1	5920000260	TRANSFOM	24V-3
R1	7010001030	RESISTOR	R25XJ 100 Ω
R2	7010001340	RESISTOR	R25XJ 33 kΩ
R3	7010005050	RESISTOR	R25XJ 13 kΩ
R4	7010005060	RESISTOR	R25XJ 5.1 kΩ
R5	7010001330	RESISTOR	R25XJ 27 kΩ
R6	7010001150	RESISTOR	R25XJ 1 kΩ
R7	7010001200	RESISTOR	R25XJ 2.7 kΩ
R8	7010001190	RESISTOR	R25XJ 2.2 kΩ
R9	7010001140	RESISTOR	R25XJ 820 Ω
R10	7010001230	RESISTOR	R25XJ 4.7 kΩ
R11	7010001130	RESISTOR	R25XJ 680 Ω
R12	7010001230	RESISTOR	R25XJ 4.7 kΩ
R13	7010001230	RESISTOR	R25XJ 4.7 kΩ
R14	7010001160	RESISTOR	R25XJ 1.2 kΩ
R15	7010001190	RESISTOR	R25XJ 2.2 kΩ
R16	7010001110	RESISTOR	R25XJ 470 Ω
R17	7010001340	RESISTOR	R25XJ 33 kΩ
R18	7010001070	RESISTOR	R25XJ 220 Ω
R19	7010001240	RESISTOR	R25XJ 5.6 kΩ
R20	7010001210	RESISTOR	R25XJ 3.3 kΩ
R21	7010001150	RESISTOR	R25XJ 1 kΩ
R22	7010001150	RESISTOR	R25XJ 1 kΩ
R23	7010001020	RESISTOR	R25XJ 82 Ω
R24	7010001020	RESISTOR	R25XJ 82 Ω
R26	7010001020	RESISTOR	R25XJ 82 Ω
R27	7010001020	RESISTOR	R25XJ 82 Ω
R29	7070000310	RESISTOR	CRH100X R-02J 10 Ω
R30	7070000310	RESISTOR	CRH100X R-02J 10 Ω
R31	7070000310	RESISTOR	CRH100X R-02J 10 Ω
R32	7070000310	RESISTOR	CRH100X R-02J 10 Ω
R33	7070000270	RESISTOR	CRH100X R-02J 100 Ω
R34	8930011190	TERMINAL	TERMINAL C (RA-2)
R35	7010001140	RESISTOR	R25XJ 820 Ω

[MAIN UNIT]

REF NO.	ORDER NO.	DESCRIPTION	
R36	7070000270	RESISTOR	CRH100X R-02J 100 Ω
R37	7070000270	RESISTOR	CRH100X R-02J 100 Ω
R38	7070000270	RESISTOR	CRH100X R-02J 100 Ω
R39	7070000270	RESISTOR	CRH100X R-02J 100 Ω
R40	7070000270	RESISTOR	CRH100X R-02J 100 Ω
R41	7010001340	RESISTOR	R25XJ 33 kΩ
R42	7010001240	RESISTOR	R25XJ 5.6 kΩ
R43	7010001450	RESISTOR	R25XJ 220 kΩ
R44	7010001490	RESISTOR	R25XJ 470 kΩ
R45	7310001610	TRIMMER	GF06X B1K
R46	7310001620	TRIMMER	GF06X B500
R47	7010004490	RESISTOR	R20J 220 kΩ
C1	4310000320	MYLAR	50 F2D 474K
C2	4310000320	MYLAR	50 F2D 474K
C3	4510002070	ELECTROLYTIC	50 MS 470 μF
C4	4510002070	ELECTROLYTIC	50 MS 470 μF
C5	4510002070	ELECTROLYTIC	50 MS 470 μF
C6	4310000320	MYLAR	50 F2D 474K
C7	4310000120	MYLAR	50 F2D 473K
C8	4310000120	MYLAR	50 F2D 473K
C9	4510002070	ELECTROLYTIC	50 MS 470 μF
C12	4310000670	MYLAR	630 MMW 103K
C13	4310000670	MYLAR	630 MMW 103K
C14	4310000670	MYLAR	630 MMW 103K
C15	4310000670	MYLAR	630 MMW 103K
C16	4510002610	ELECTROLYTIC	ECEA1VF471
C17	4510002610	ELECTROLYTIC	ECEA1VF471
C18	4510002610	ELECTROLYTIC	ECEA1VF471
C19	4510002610	ELECTROLYTIC	ECEA1VF471
C22	4310000670	MYLAR	630 MMW 103K
C23	4310000670	MYLAR	630 MMW 103K
C24	4310000670	MYLAR	630 MMW 103K
C25	4310000670	MYLAR	630 MMW 103K
C26	4310000670	MYLAR	630 MMW 103K
C27	4510002620	ELECTROLYTIC	ECEM1ER153ER
C28	4510002070	ELECTROLYTIC	50 MS 470 μF
C29	4510002070	ELECTROLYTIC	50 MS 470 μF
C30	4310000320	MYLAR	50 F2D 474K
C31	4510002070	ELECTROLYTIC	50 MS 470 μF
C32	4310000320	MYLAR	50 F2D 474K
C33	4310000670	MYLAR	630 MMW 103K
C35	4510002630	ELECTROLYTIC	50 SS 47 μF
C36	4310000020	MYLAR	50 F2D 103K
C37	4310000030	MYLAR	50 F2D 104K
C38	4310000030	MYLAR	50 F2D 104K
C39	4310000020	MYLAR	50 F2D 103K
C40	4310000020	MYLAR	50 F2D 103K
C41	4510001100	ELECTROLYTIC	16 MS7 10 μF
C42	4510001100	ELECTROLYTIC	16 MS7 10 μF
C43	4310000120	MYLAR	50 F2D 473K
C44	4310000030	MYLAR	50 F2D 104K
C45	4510001160	ELECTROLYTIC	50 MS7 1 μF
C46	4510002640	ELECTROLYTIC	25 SS 47 μF
C47	4510000390	ELECTROLYTIC	35 SS 470 μF (10×20)
C49	4510000370	ELECTROLYTIC	400 MMW 474K
C50	4310000030	MYLAR	50 F2D 104K
C51	4510000340	ELECTROLYTIC	35 MS 470 μF
C52	4310000320	MYLAR	50 F2D 474K
C53	4310000320	MYLAR	50 F2D 474K
RL1	6330000600	RELAY	VF-12HN
F1	5220000120	HOLDER	S-N1301
F2	5210000060	FUSE	FGB 5A
S1	2260000710	SWITCH	VLK01-11
J1	6510006800	CONNECTOR	5273-02A
J2	6510006810	CONNECTOR	5273-03A
J3	6510006820	CONNECTOR	5273-04A

S.=Surface mount

[MAIN UNIT]

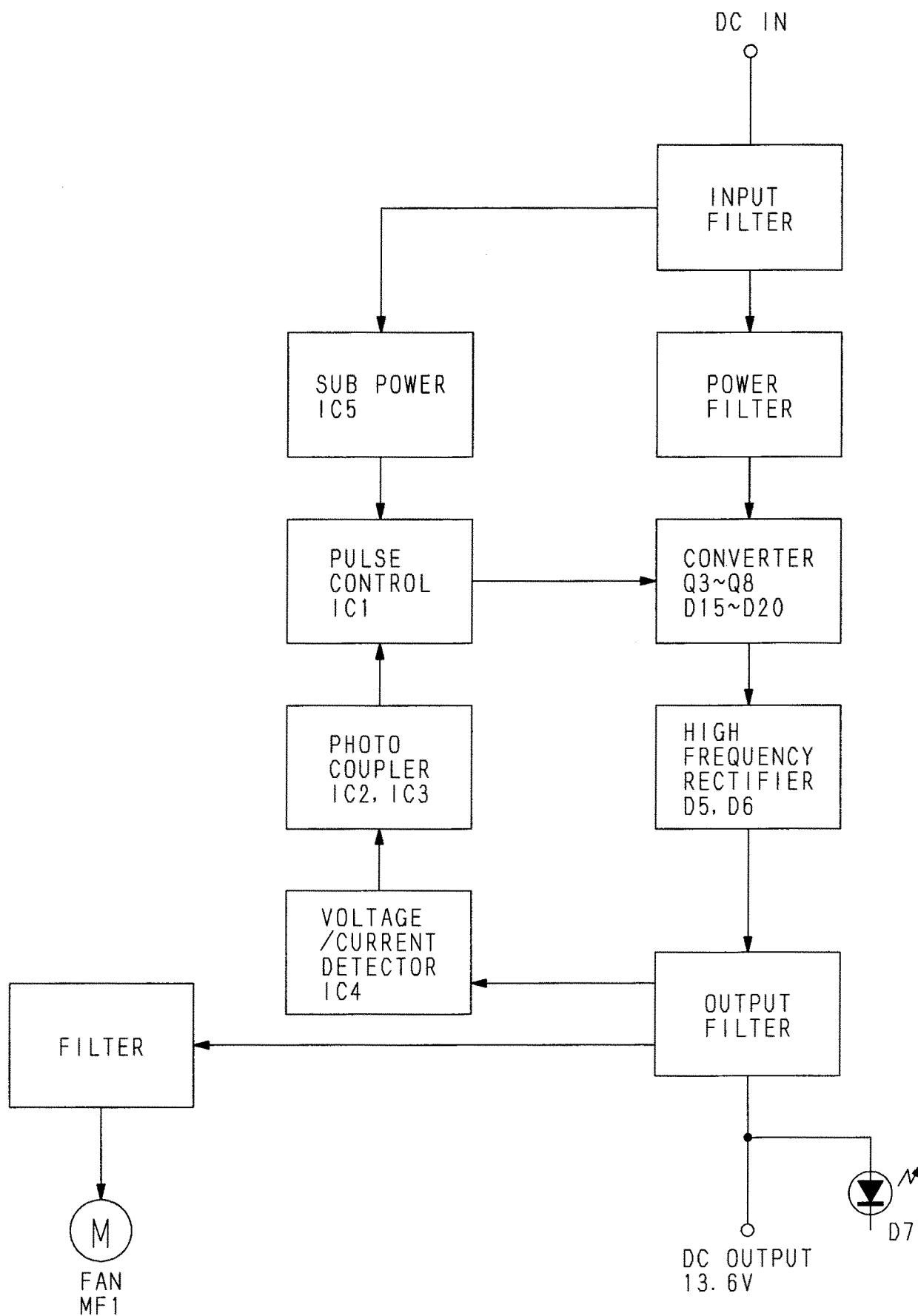
REF NO.	ORDER NO.	DESCRIPTION	
J5	6510006720	CONNECTOR	T-9 50A7 (RED)
J6	6510006730	CONNECTOR	T-9 50A7 (BLACK)
J7	6510006720	CONNECTOR	T-9 50A7 (RED)
J8	6510006730	CONNECTOR	T-9 50A7 (BLACK)
J9	6510006740	CONNECTOR	T-10
W50	6910001030	JUMPER	IPS-1041-4
W51	6910001030	JUMPER	IPS-1041-4
W52	6910001030	JUMPER	IPS-1041-4
W53	6910001030	JUMPER	IPS-1041-4
W54	6910001030	JUMPER	IPS-1041-4
W55	6910001030	JUMPER	IPS-1041-4
W56	6910001030	JUMPER	IPS-1041-4
WS2	8970013220	WIRE	EX433 J LEAD SET (15)/MA
WS3	8970013230	WIRE	EX433 J BOARD SET (11)/MA
WS7	8600015660	HARNESS	J04MA
WS8	8600015670	HARNESS	P04MA
WS9	8600012120	HARNESS	P01MA
WS10	8600012130	HARNESS	P02MA
WS11	8600012140	HARNESS	P03MA
EP1	8930011240	RUBBER	TC-30A
EP2	8930011250	SHEET	TO-3P (NEW TC)
EP3	8930011170	TERMINAL	TERMINAL A
EP4	8930011180	TERMINAL	TERMINAL B
EP6	8930011200	TERMINAL	TERMINAL D
EP7	8930011210	TERMINAL	TERMINAL E
EP8	8930011220	TERMINAL	TERMINAL F
EP9	8930011230	TERMINAL	TERMINAL G
EP10	6510006970	CONNECTOR	250L 3.2(d)
EP11	8810004820	SCREW	M3 × 6 BS
EP12	6510006830	CONNECTOR	1.25-3
EP16	0910015601	PCB	B 1469A
EP17	0910015611	PCB	B 1470A
EP18	0910015621	PCB	B 1471A
EP19	0910015580	PCB	B 1467
EP20	0910015591	PCB	B 1468A
EP21	8950000310	M.OTHER	XT-1178A
EP22	8950000300	M.OTHER	B-72Q
EP23	6910002100	SCREEN	TR16 × 8 × 16 D12A
EP24	6910002090	SCREEN	TR23 × 11 × 14 3A6
EP27	6510003070	TERMINAL	R5.5-8
EP28	8810003130	SCREW	A M2.6×6
EP29	8830000180	SCREW	M 2.6 NI BS
EP30	9045102901	TUBE	IRRAX 0.7(d) L=3 mm
EP31	8860000080	SCREW	A 4 (M3) AG BS
EP32	8860000130	SCREW	B 5 (M3) AG BS
EP33	9026995012	TUBE	1.2(d) L=20 mm
EP34	6510000520	CONNECTOR	L-3552-1L4P
EP35	8860000120	SCREW	B 4 (M3) AG BS
EP36	6510006870	TERMINAL	5.5-S8

[Y UNIT]

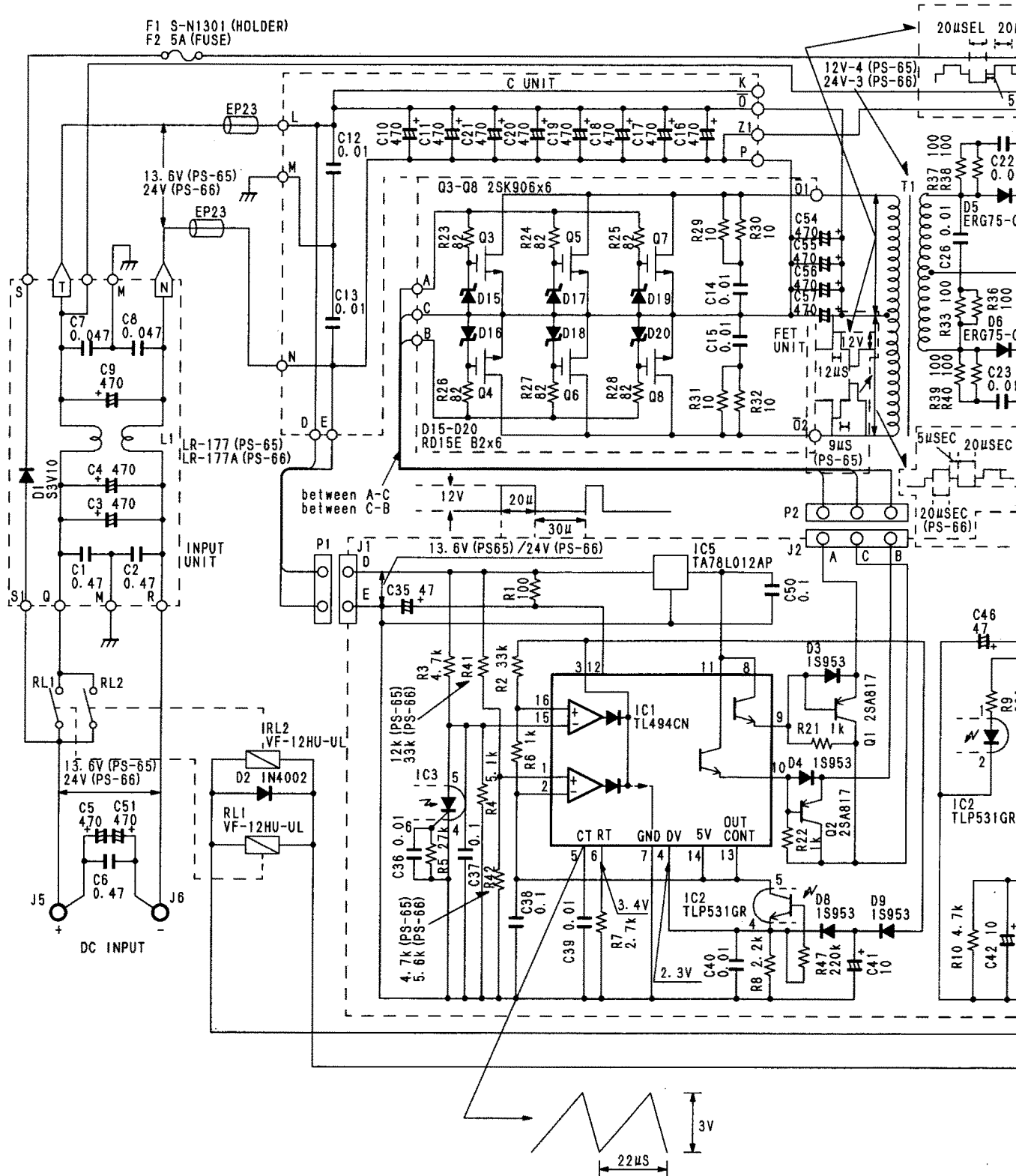
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EP1	8900001800	CABLE	OPC-180
EP2	5210000060	FUSE	FG8 5A

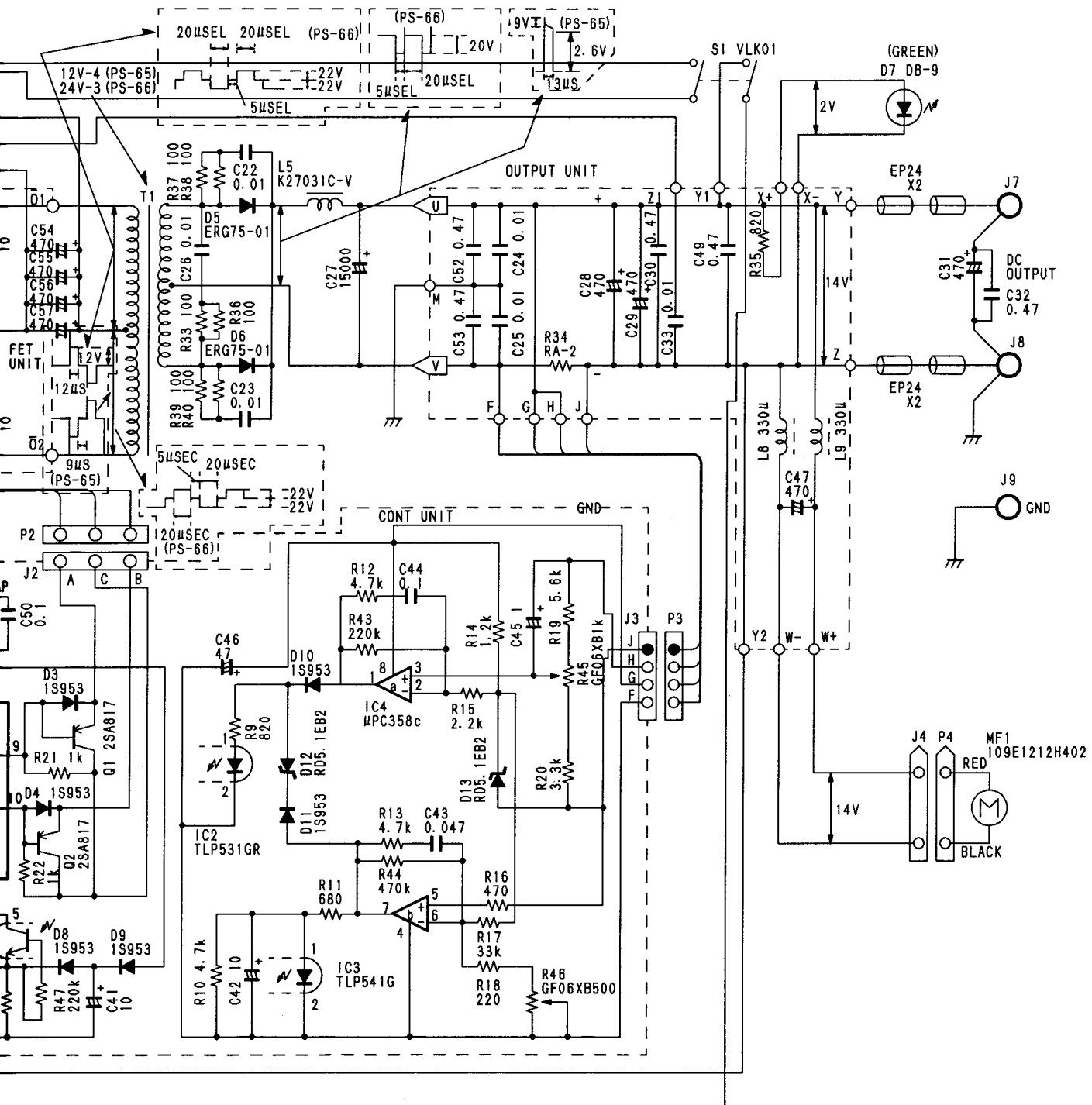
S.=Surface mount

SECTION 3 BLOCK DIAGRAM



SECTION 4 VOLTAGE DIAGRAM





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