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Brand:	Crate
Model	TD-70
Product:	Amplifier
Description:	Schematic

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D

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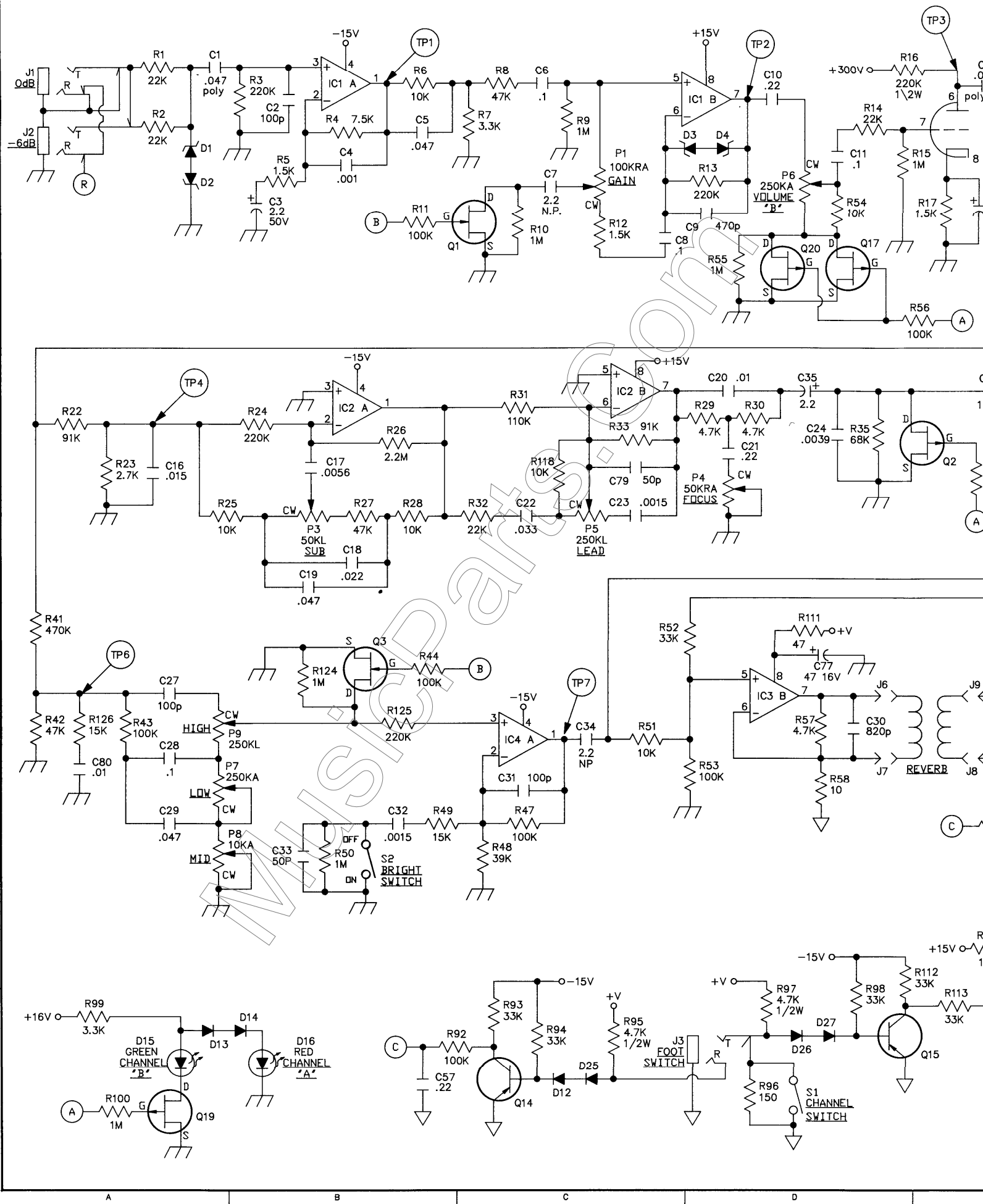
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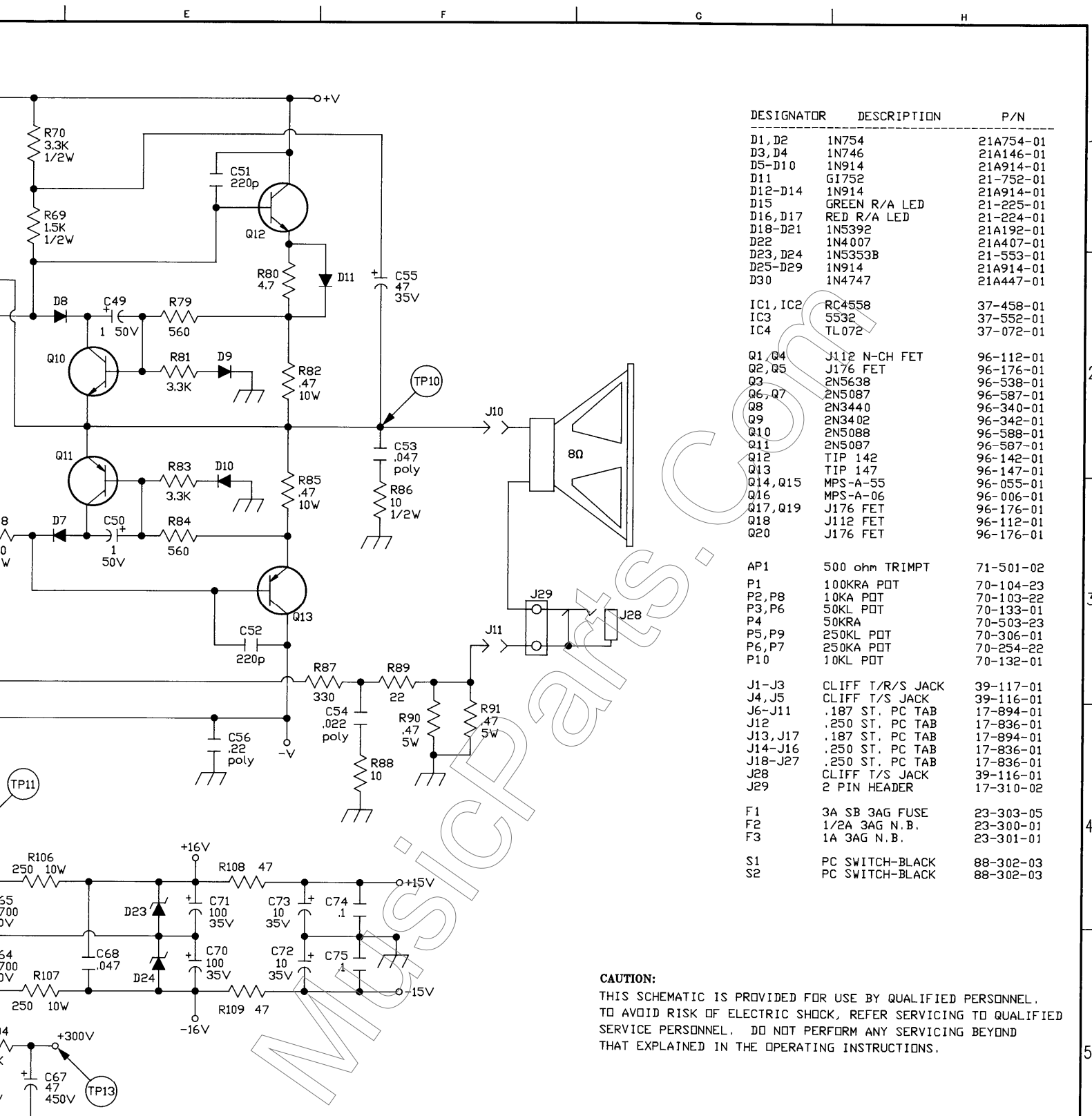
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DESIGNATOR	DESCRIPTION	P/N
D1, D2	1N754	21A754-01
D3, D4	1N746	21A146-01
D5-D10	1N914	21A914-01
D11	GI752	21-752-01
D12-D14	1N914	21A914-01
D15	GREEN R/A LED	21-225-01
D16, D17	RED R/A LED	21-224-01
D18-D21	1N5392	21A192-01
D22	1N4007	21A407-01
D23, D24	1N5353B	21-553-01
D25-D29	1N914	21A914-01
D30	1N4747	21A447-01
IC1, IC2	RC4558	37-458-01
IC3	5532	37-552-01
IC4	TL072	37-072-01
Q1, Q4	J112 N-CH FET	96-112-01
Q2, Q5	J176 FET	96-176-01
Q3	2N5638	96-538-01
Q6, Q7	2N5087	96-587-01
Q8	2N3440	96-340-01
Q9	2N3402	96-342-01
Q10	2N5088	96-588-01
Q11	2N5087	96-587-01
Q12	TIP 142	96-142-01
Q13	TIP 147	96-147-01
Q14, Q15	MPS-A-55	96-055-01
Q16	MPS-A-06	96-006-01
Q17, Q19	J176 FET	96-176-01
Q18	J112 FET	96-112-01
Q20	J176 FET	96-176-01
AP1	500 ohm TRIMPT	71-501-02
P1	100KRA PDT	70-104-23
P2, P8	10KA PDT	70-103-22
P3, P6	50KL PDT	70-133-01
P4	50KRA	70-503-23
P5, P9	250KL PDT	70-306-01
P6, P7	250KA PDT	70-254-22
P10	10KL PDT	70-132-01
J1-J3	CLIFF T/R/S JACK	39-117-01
J4, J5	CLIFF T/S JACK	39-116-01
J6-J11	.187 ST. PC TAB	17-894-01
J12	.250 ST. PC TAB	17-836-01
J13, J17	.187 ST. PC TAB	17-894-01
J14-J16	.250 ST. PC TAB	17-836-01
J18-J27	.250 ST. PC TAB	17-836-01
J28	CLIFF T/S JACK	39-116-01
J29	2 PIN HEADER	17-310-02
F1	3A SB 3AG FUSE	23-303-05
F2	1/2A 3AG N.B.	23-300-01
F3	1A 3AG N.B.	23-301-01
S1	PC SWITCH-BLACK	88-302-03
S2	PC SWITCH-BLACK	88-302-03

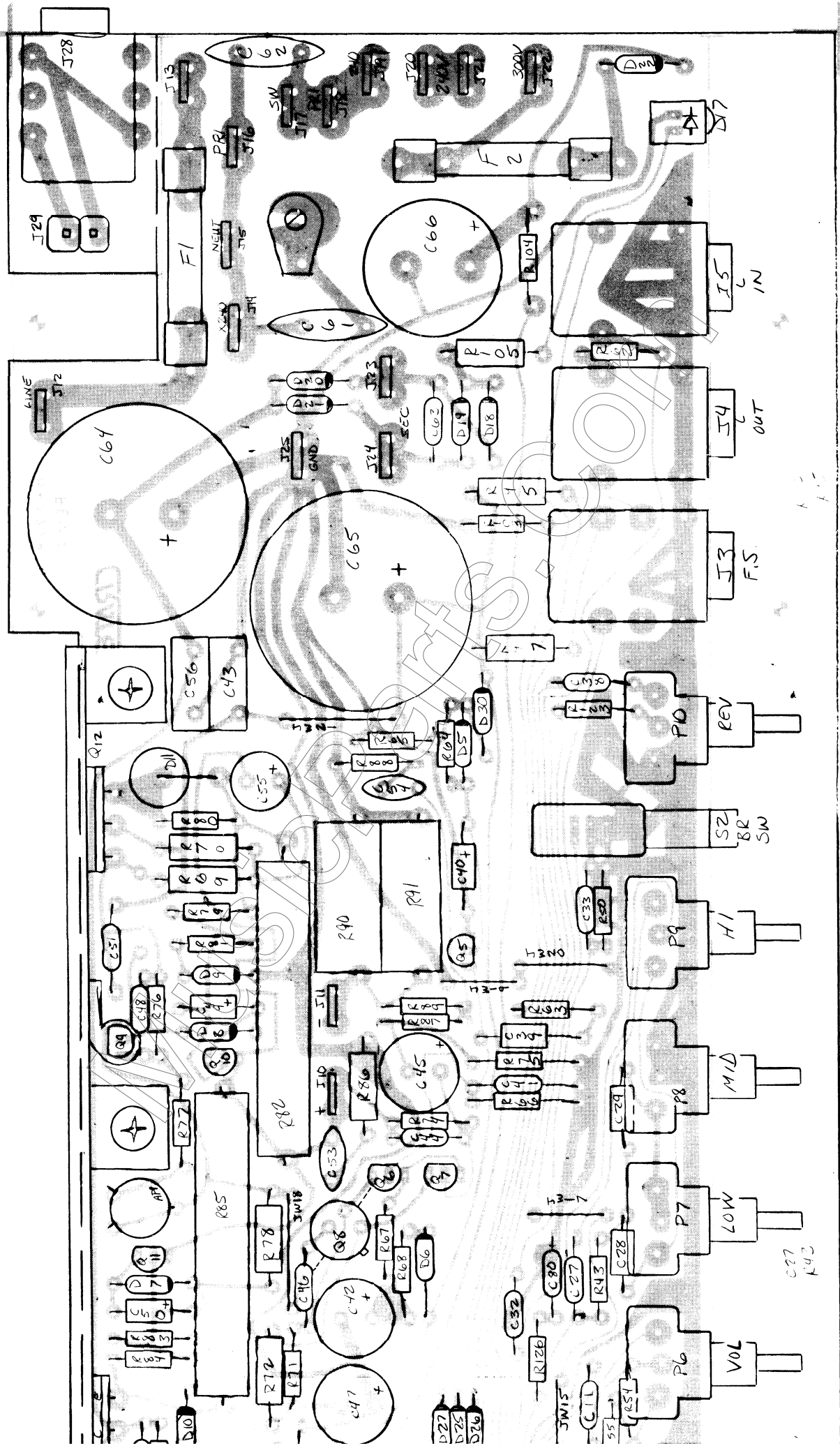
CAUTION:

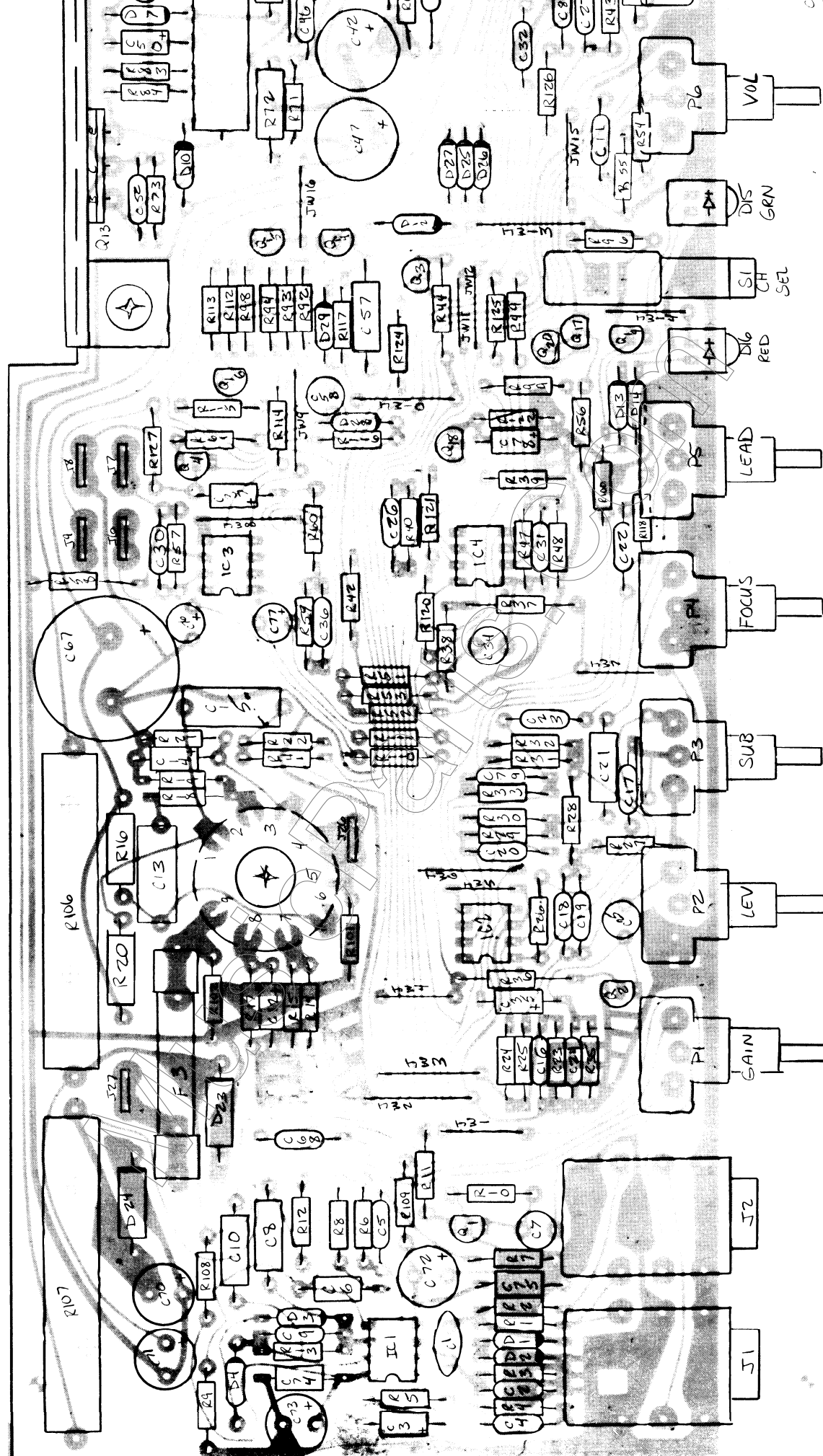
THIS SCHEMATIC IS PROVIDED FOR USE BY QUALIFIED PERSONNEL. TO AVOID RISK OF ELECTRIC SHOCK, REFER SERVICING TO QUALIFIED SERVICE PERSONNEL. DO NOT PERFORM ANY SERVICING BEYOND THAT EXPLAINED IN THE OPERATING INSTRUCTIONS.

NOTES

- 1) CAUTION: SHOCK HAZARD!!
THIS UNIT CONTAINS HAZARDOUS VOLTAGE. DISCONNECT POWER AND BE SURE POWER SUPPLY IS DISCHARGED BEFORE TOUCHING INTERNAL PARTS.
- 2) UNLESS NOTED, RESISTOR VALUES IN OHMS, 1/4W-5% TOL. CAPACITOR VALUES IN MICROFARADS, 50V-10% TOL.
- 3) VOLTAGES ARE MEASURED WITH 1 MEGOHM OSCILLOSCOPE AND 10 MEGOHM DIGITAL VOLT-METER.
- 4) CIRCUIT GROUND ∇ CHASSIS GROUND ∇
- 5) SET BIAS TO 15mV FOR MOTOROLA OUTPUT TRANSISTORS, (10mV FOR TI) ACROSS R65 OR R66 WITH NO SIGNAL AND 8Ω LOAD.

SIGNATURES:	DATE:	1980 BORNHAY DR. ST. LOUIS, MISSOURI 63146
DRAWN: ML	7-25-90	PROJECT NAME:
CHK'D:		TD-70 AMP
APP'D:	10-15-93	DRAWING NAME:
ISSUED:		SCHEMATIC
PLOT DATE:	10/09/90	DRAWING NO. 16-117-01
PLOT TIME:	09:49:08	SCALE: NONE
FILE NAME:	16117011	SHEET: 2 of 2





DESIGNATOR	DESCRIPTION	P/N	R30						
R1	22KΩ	76-223-01	R31	110KΩ	76-472-01	R63	15KΩ	76-153-01	R63
R2	22KΩ	76-223-01	R32	22KΩ	76-114-01	R64	2.2MΩ	76-225-01	R64
R3	220KΩ	76-224-01	R33	91KΩ	76-223-01	R65	2.7KΩ	76-272-01	R65
R4	7.5KΩ	76-752-01	R35	68KΩ	76-913-01	R66	27KΩ	76-273-01	R66
R5	1.5KΩ	76-152-01	R36	100KΩ	76-683-01	R67	27KΩ	76-273-01	R67
R6	10KΩ	76-103-01	R37	33KΩ	76-104-01	R68	47Ω	76-470-01	R68
R7	3.3KΩ	76-332-01	R38	15KΩ	76-333-01	R69	1.5KΩ 1/2W	77-152-01	R69
R8	47KΩ	76-473-01	R39	3.3KΩ	76-153-01	R70	3.3KΩ 1/2W	77-332-01	R70
R9	1MΩ	76-105-01	R40	47KΩ	76-332-01	R71	680Ω	76-681-01	R71
R10	1MΩ	76-105-01	R41	470KΩ	76-473-01	R72	10Ω 1/2W	77-100-01	R72
R11	100KΩ	76-104-01	R42	47KΩ	76-474-01	R73	47Ω	76-470-01	R73
R12	1.5KΩ	76-152-01	R43	100KΩ	76-473-01	R74	27KΩ	76-273-01	R74
R13	220KΩ	76-224-01	R44	100KΩ	76-104-01	R75	330Ω	76-331-01	R75
R14	22KΩ	76-223-01	R47	100KΩ	76-104-01	R76	1.5KΩ	76-152-01	R76
R15	1MΩ	76-105-01	R48	39KΩ	76-104-01	R77	330Ω	76-331-01	R77
R16	220KΩ 1/2W	77-224-01	R49	15KΩ	76-393-01	R78	220Ω 1/2W	77-221-01	R78
R17	1.5KΩ	76-152-01	R50	1MΩ	76-153-01	R79	560Ω	76-561-01	R79
R18	68KΩ	76-683-01	R51	10KΩ	76-105-01	R80	4.7Ω	76-047-01	R80
R19	68KΩ	76-683-01	R52	33KΩ	76-103-01	R81	3.3KΩ	76-332-01	R81
R20	220KΩ 1/2W	77-224-01	R53	100KΩ	76-333-01	R82	.47 ohm/10W	78-470-10	R82
R21	1.5KΩ	76-152-01	R54	10KΩ	76-104-01	R83	3.3KΩ	76-332-01	R83
R22	91KΩ	76-913-01	R55	1MΩ	76-103-01	R84	560Ω	76-561-01	R84
R23	2.7KΩ	76-272-01	R56	100KΩ	76-105-01	R85	.47 ohm/10W	78-470-10	R85
R24	220KΩ	76-224-01	R57	4.7KΩ	76-104-01	R86	10Ω 1/2W	77-100-01	R86
R25	10KΩ	76-103-01	R58	10Ω	76-472-01	R87	330Ω	76-331-01	R87
R26	2.2MΩ	76-225-01	R59	18KΩ	76-100-01	R88	10Ω	76-100-01	R88
R27	47KΩ	76-473-01	R60	1.5KΩ	76-183-01	R89	22Ω	76-220-01	R89
R28	10KΩ	76-103-01	R61	100KΩ	76-152-01	R90	.47ohm/5W	78-470-05	R90
R29	4.7KΩ	76-472-01	R62	1KΩ	76-154-01	R91	.47ohm/5W	78-470-05	R91
					76-102-01	R92	100KΩ	76-104-01	R92
						R93	33KΩ	76-333-01	R93
R94	33KΩ	76-333-01	R125	220KΩ	76-224-01	C27	100pF/200V	10A101-21	C27
R95	4.7KΩ 1/2W	77-472-01	R126	15KΩ	76-153-01	C28	.1μF/50V	10A104-01	C28
R96	150Ω	76-151-01	R127	47KΩ	76-473-01	C29	.047μF/100V	10A473-11	C29
R97	4.7KΩ 1/2W	77-472-01				C30	820pF/100V	10A821-11	C30
R98	33KΩ	76-333-01	C1	.047/100V POLY	10-473-03	C31	100pF/200V	10A101-21	C31
R99	3.3KΩ	76-332-01	C2	100pF/200V	10A101-21	C32	.0015μF/50V	10A152-11	C32
R100	1MΩ	76-105-01	C3	2.2μF/50V	12A225-51	C33	50pF/200V	10A500-21	C33
R101	150Ω	76-151-01	C4	.001μF/100V	10A102-11	C34	2.2 MFD 50V NP	12-225-81	C34
R102	330Ω	76-331-01	C5	.047μF/100V	10A473-11	C35	2.2μF/50V	12A225-51	C35
R103	470KΩ	76-474-01	C6	.1μF/50V	10A104-01	C36	.001μF/100V	10A102-11	C36
R104	10KΩ	76-103-01	C7	2.2 MFD 50V NP	12-225-81	C37	2.2μF/50V	12A225-51	C37
R105	4.7KΩ 1/2W	77-472-01	C8	.1μF/50V	10A104-01	C38	.1μF/50V	10A104-01	C38
R106	250 ohm 10W	78-251-10	C9	470pF/100V	10A471-11	C39	.44μF/50V	10A224-01	C39
R107	250 ohm 10W	78-251-10	C10	.22μF/50V	10A224-01	C40	2.2μF/50V	12A225-51	C40
R108	47Ω	76-470-01	C11	.1μF/50V	10A104-01	C41	.001μF/100V	10A102-11	C41
R109	47Ω	76-470-01	C12	2.2μF/50V	12A225-51	C42	220 MFD 50V RAD	12-227-02	C42
R110	47Ω	76-470-01	C13	.047μF/600V	10-473-61	C43	.22MFD POLYCAP	10-224-05	C43
R111	47Ω	76-470-01	C14	2.2μF/50V	12A225-51	C44	220pF/100V	10A221-11	C44
R112	33KΩ	76-333-01	C15	.047μF/600V	10-473-61	C45	10u/35V	12-106-32	C45
R113	33KΩ	76-333-01	C16	.015μF/50V	10A153-01	C46	220pF/100V	10A221-11	C46
R114	10KΩ	76-103-01	C17	.0056μF/50V	10A562-01	C47	220pF/100V	10A221-11	C47
R115	18KΩ	76-183-01	C18	.022μF/50V	10A223-01	C48	220 MFD 50V RAD	12-227-02	C48
R116	470KΩ	76-474-01	C19	.047μF/100V	10A473-11	C49	.001μF/100V	10A102-11	C49
R117	470KΩ	76-474-01	C20	.01μF/100V	10A103-11	C50	1μF/50V	12A105-51	C50
R118	10KΩ	76-103-01	C21	.22μF/50V	10A224-01	C51	1μF/50V	12A105-51	C51
R119	10KΩ	76-103-01	C22	.023μF/50V	10A333-01	C52	220pF/100V	10A221-11	C52
R120	470KΩ	76-474-01	C23	.0015μF/50V	10A152-11	C53	220pF/100V	10A221-11	C53
R121	1KΩ	76-102-01	C24	.0039μF/50V	10A392-01	C54	.047/100V POLY	10-473-03	C54
R122	470KΩ	76-474-01	C25	.0039μF/50V	12-105-81	C55	.022uF POLYCAP	10-223-02	C55
R123	10KΩ	76-103-01	C26	1.0uF/50V NP	10A101-21	C56	47 MFD/35V	12-476-32	C56
R124	1MΩ	76-105-01	C26	100pF/200V		C57	.22MFD POLYCAP	10-224-03	C57
							.22μF/50V	10A224-01	
C58	3.3uF/50V NP	12-335-82	D4	1N746	21A146-01				
C61	.0027uF U.L.	10-272-01	D5	1N914	21A914-01				
C62	.0027uF U.L.	10-272-01	D6	1N914	21A914-01				
C63	.01μF/100V	10A103-11	D7	1N914	21A914-01				
C64	4700u/50V	12-478-52	D8	1N914	21A914-01				
C65	4700u/50V	12-478-52	D9	1N914	21A914-01				
C66	47u/450V	12-476-42	D10	1N914	21A914-01				
C67	47u/450V	12-476-42	D11	61752	21-752-01				
C68	.047μF/100V	10A473-11	D12	1N914	21A914-01				
C70	100 MFD/35V	12-107-32	D13	1N914	21A914-01				
C71	100 MFD/35V	12-107-32	D14	1N914	21A914-01				
C72	10u/35V	12-106-32	D15	GREEN R/A LED	21-225-01				
C73	10u/35V	12-106-32	D16	RED R/A LED	21-224-01				
C74	.1uF/50V	10A104-01	D17	RED R/A LED	21-224-01				
C75	.1μF/50V	10A104-01	D18	1N5392	21A192-01				
C76	47uF/16V	12-476-12	D19	1N5392	21A192-01				
C77	47uF/16V	12-476-12	D20	1N5392	21A192-01				
C78	1μF/50V	12A105-51	D21	1N5392	21A192-01				
C79	50pF/200V	10A500-21	D22	1N4007	21A407-01				
C80	.01μF/100V	10A103-11	D23	1N5353B	21-553-01				
			D24	1N5353B	21-553-01				
D1	1N754	21A754-01	D25	1N914	21A914-01				
D2	1N754	21A754-01	D26	1N914	21A914-01				
D3	1N746	21A146-01	D27	1N914	21A914-01				
			D28	1N914	21A914-01				
			D29	1N914	21A914-01				
			D30	1N4747	21A447-01				

IC1	RC4558	37-458-01	P2	10KA POT	70-103-22	J24	.250 ST. PC TAB	17-836-01
IC2	RC4558	37-458-01	P3	50KL POT	70-133-01	J25	.250 ST. PC TAB	17-836-01
IC3	5532	37-532-01	P4	50KRA	70-503-23	J26	.250 ST. PC TAB	17-836-01
IC4	TL072	37-072-01	P5	250KL POT	70-306-01	J27	.250 ST. PC TAB	17-836-01
			P6	250KA POT	70-254-22	J28	CLIFF T/S JACK	39-116-01
			P7	250KA POT	70-254-22	J29	2 PIN HEADER	17-310-02
Q1	J112 N-CH FET	96-112-01	P8	10KA POT	70-103-22			
Q2	J176 FET	96-176-01	P9	250KL POT	70-306-01			
Q3	2N5638	96-538-01	P10	10KL	70-133-01	JW1-21	JUMPER	76-000-05
Q4	J112 N-CH FET	96-112-01						
Q5	J176 FET	96-176-01	J1	CLIFF T/R/S JACK	39-117-01			
Q6	2N5087	96-587-01	J2	CLIFF T/R/S JACK	39-117-01			
Q7	2N5087	96-587-01	J3	CLIFF T/R/S JACK	39-117-01			
Q8	2N3440	96-340-01	J4	CLIFF T/S JACK	39-116-01			
Q9	2N3402	96-342-01	J5	CLIFF T/S JACK	39-116-01			
Q10	2N5088	96-588-01	J6	.187 ST. PC TAB	17-894-01			
Q11	2N5087	96-587-01	J7	.187 ST. PC TAB	17-894-01			
Q12	TIP 142	96-142-01	J8	.187 ST. PC TAB	17-894-01			
Q13	TIP 147	96-147-01	J9	.187 ST. PC TAB	17-894-01			
Q14	MPS-A-55	96-055-01	J10	.187 ST. PC TAB	17-894-01			
Q15	MPS-A-55	96-055-01	J11	.187 ST. PC TAB	17-894-01			
Q16	MPS-A-06	96-006-01	J12	.250 ST. PC TAB	17-836-01			
Q17	J176 FET	96-176-01	J13	.187 ST. PC TAB	17-894-01			
Q18	J112 FET	96-112-01	J14	.250 ST. PC TAB	17-836-01			
Q19	J176 FET	96-176-01	J15	.250 ST. PC TAB	17-836-01			
Q20	J176 FET	96-176-01	J16	.250 ST. PC TAB	17-836-01			
			J17	.187 ST. PC TAB	17-894-01			
AP1	500 ohm TRIMPT	71-501-02	J18	.250 ST. PC TAB	17-836-01			
			J19	.250 ST. PC TAB	17-836-01			
P1	100KRA	70-104-23	J20	.250 ST. PC TAB	17-836-01			
			J21	.250 ST. PC TAB	17-836-01			
			J22	.250 ST. PC TAB	17-836-01			
			J23	.250 ST. PC TAB	17-836-01			