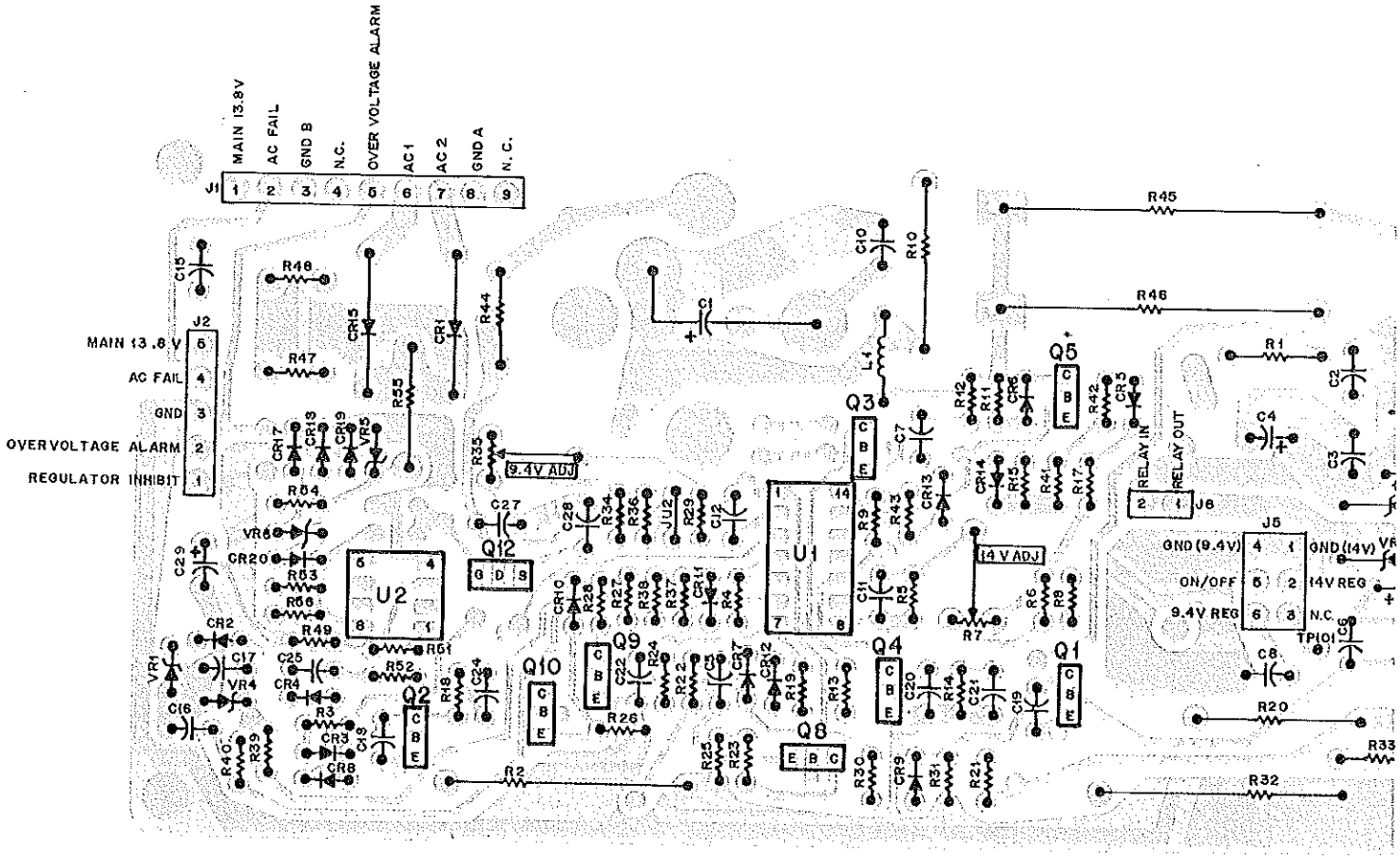
STANDARD POWER SUPPLY
MODEL TPN1191A

CURRENT VE



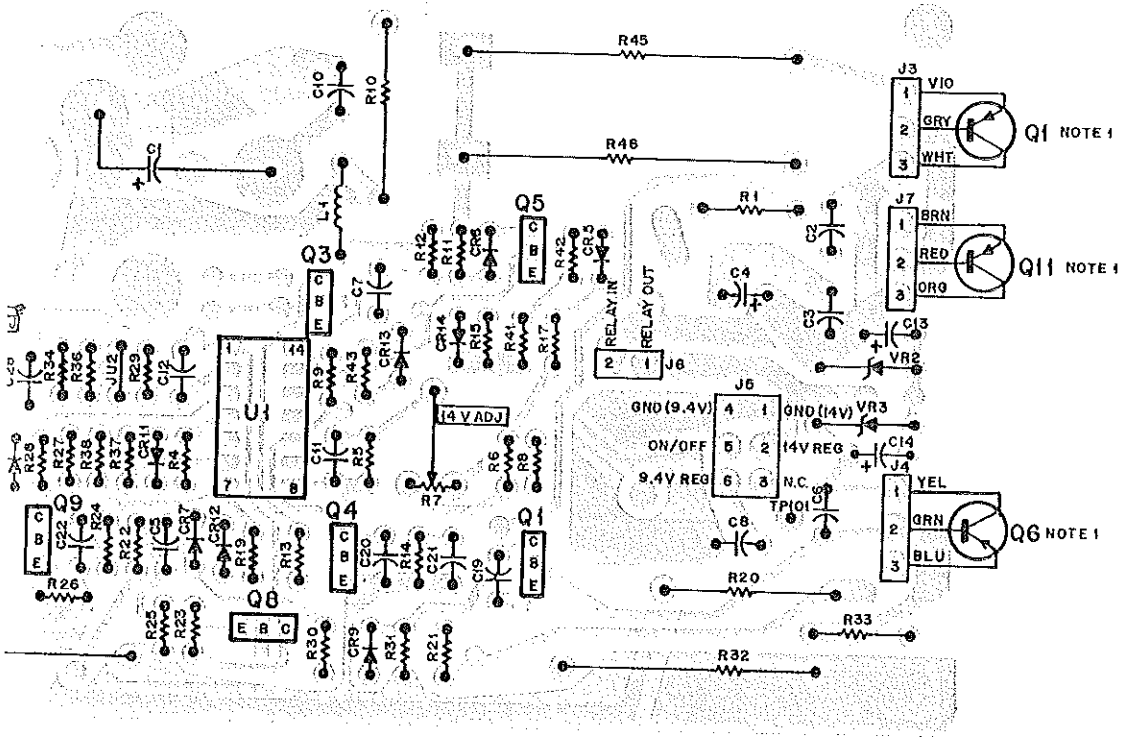
NOTES:
1. Q1, Q6 AND Q11 ARE P/O THE TRN5299A HEAT SINK KIT.

COMPONENT SIDE 8D-CEPS-45129-O
SOLDER SIDE 8D-CEPS-45130-O
OL-CEPS-45131-O

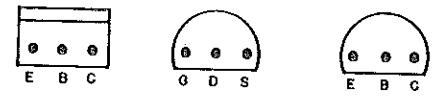
SHOWN FROM COMPONENT SIC

TRN5119B Auxiliary Regulator Board
Schematic Diagram, Circuit Board Detail,
and Parts List
Motorola No. PEPS-38130-B
(Sheet 1 of 3)
10/16/87-UP

CURRENT VERSION



TRANSISTOR BASE DETAILS - TOP VIEW



COMPONENT SIDE : BD-CEPS-45129-0
SOLDER SIDE BD-CEPS-45130-0
OL-CEPS-45131-0

SHOWN FROM COMPONENT SIDE

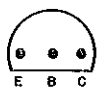
parts list

TRN5119B Auxiliary Regulator Board — PL-10782-O

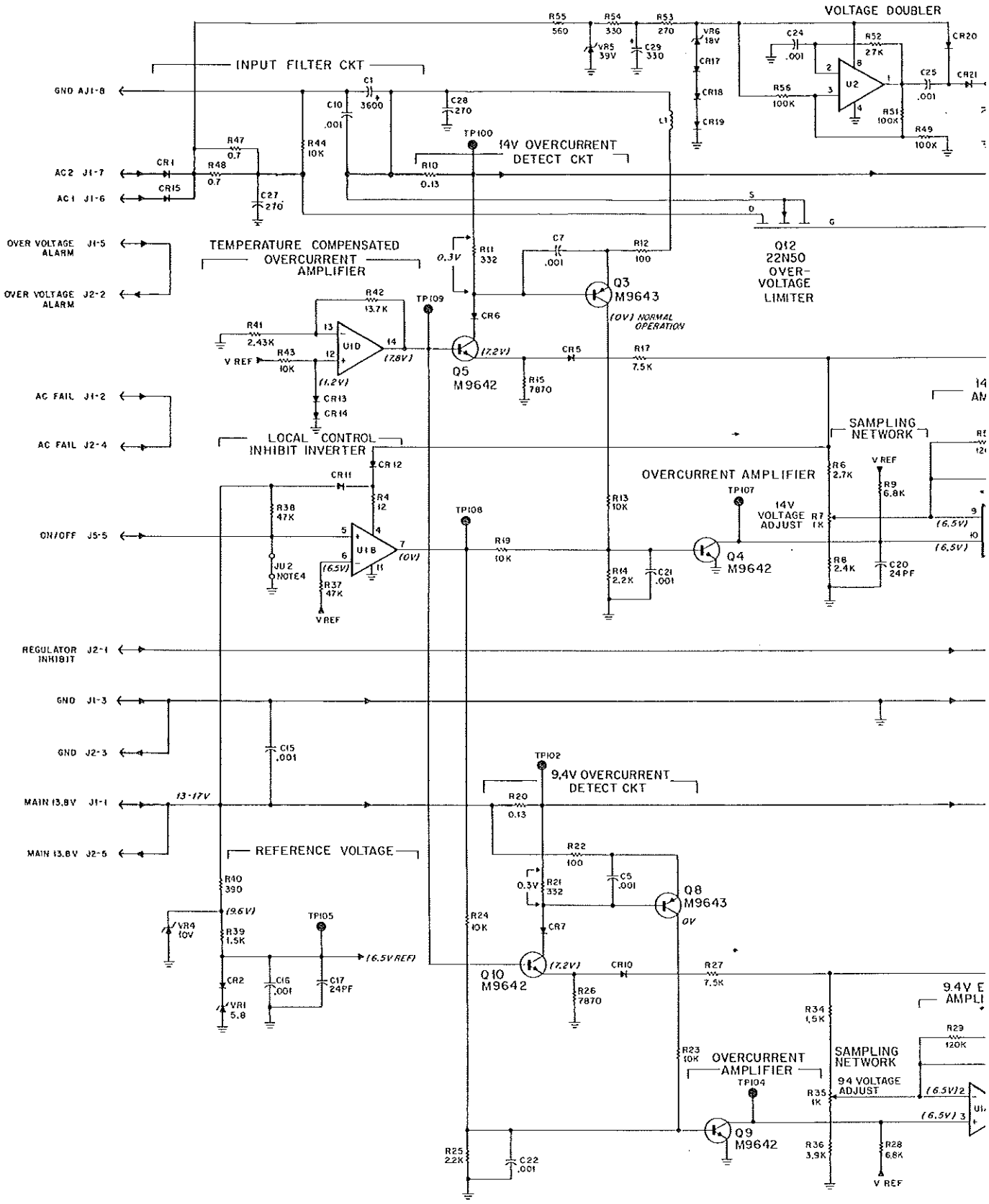
REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION
		capacitor, fixed: uF ±10% 100V unless otherwise stated
C1	2382394A19	3600 -10+150% 40V
C2,3	2111015B13	.001
C4	2384665F15	330 -10+50% 25V
C5 thru 8	2111015B13	.001
C9	2384665F15	330 -10+50% 25V
C10	2111015B13	.001
C11,12	2182428B21	.01 +10-30%
C13,14	2384538G02	4.7 ±20% 20V
C15,16	2111015B13	.001
C17	2111022G39	24 ±5% 50V
C18,19	2111015B13	.001
C20	2111022G39	24 ±5% 50V
C21 thru 26	2111015B13	.001
C27,28	2182187B22	270; 200V
C29	2311037A53	330 ±20% 35V
		diode: (see note)
CR1	4882525G13	silicon
CR2 thru 12	4883654H01	silicon
CR13,14	4882392B18	silicon
CR15	4882525G13	silicon
CR17 thru 21	4883654H01	silicon
		connector, receptacle:
J1	2882984N12	male 8-contact
J2	0983497F08	female 5-contact
J3	2882984N02	male 3-contact
J4	2882984N03	male 3-contact
J5	0180754D88	connector assembly: consists of:
	1584953L01	housing, receptacle; 6-position
	3982977N01	contact, receptacle; 6 used
J6	2882984N01	male 2-contact
J7	2882984N02	male 3-contact
		jumper:
JU1,2	0611009F23	zero ohm
		coil, rf:
L1	2483961B01	choke
		transistor: (see note)
Q2	4800869833	NPN; type M9833
Q3	4800869643	PNP; type M9643
Q4,5	4800869642	NPN; type M9642
Q7	4800869833	NPN; type M9833
Q8	4800869643	PNP; type M9643
Q9,10	4800869642	NPN; type M9642
Q12	4882022N50	N-channel FET type 22N50 — SCR
		resistor, fixed: ±5%; 1/4W: unless otherwise stated
R1	0611009A49	1k
R2	1782177B16	100 ±10% 5W
R3	0611009E57	2200
R4	0611009E03	12
R5	0611009E99	120k
R6	0611009E59	2700
R7	1884944C10	variable 1k ±20% 0.10W
R8	0611009E58	2400
R9	0611009E69	6800
R10	1782036G24	0.13; 2W
R11	0684444A01	332 ±1%
R12	0611009E25	100
R13	0611009E73	10k
R14	0611009E57	2200
R15	0610621C81	7870 ±1%
R17	0610621C79	7500 ±1%
R18	0611009E61	3300
R19	0611009E73	10k
R20	1782036G24	0.13; 2W
R21	0684444A01	332 ±1%
R22	0611009E25	100
R23,24	0611009E73	10k
R25	0611009E57	2200
R26	0610621C81	7870 ±1%
R27	0610621C79	7500 ±1%
R28	0611009E69	6800
R29	0611009E99	120k
R30	0611009E57	2200
R31	0611009E61	3300
R32	1782177B16	100 ±10% 5W
R33	0611009A33	220
R34	0611009E53	1500
R35	1884944C10	variable 1k ±20% 0.10W
R36	0611009E63	3900
R37,38	0611009E89	47k
R39	0611009E53	1500
R40	0611009E39	390
R41	0610621C27	2150 ±1%
R42	0610621D05	13.7k ±1%
R43	0611009E73	10k
R44	0611009A73	10k
R45,46	1782177B64	2.6; 10W
R47,48	1782177B12	0.7 ±10%; 5W
R49	0611009E97	100k

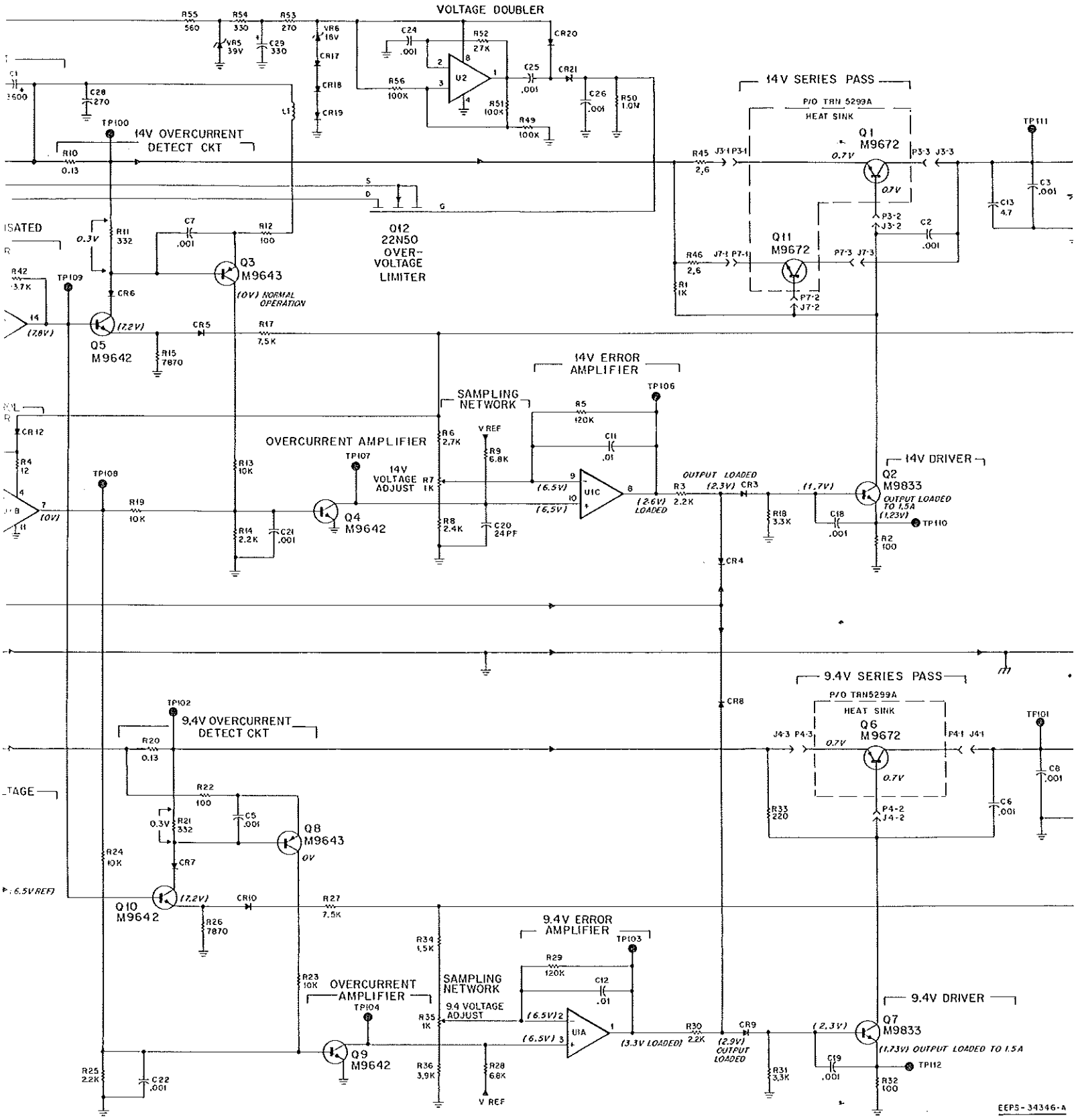
REFERENCE SYMBOL	MOTOROLA PART NO.	DESCRIPTION
R50	0611009F22	1meg
R51	0611009E97	100k
R52	0611009E83	27k
R53	0611009E35	270
R54	0611009E37	330
R55	0600125A43	560; 1/2W
R56	0611009E97	100k
		integrated circuit: (see note)
U1	5183629M08	quad operational amplifier
U2	5184621K85	dual operational amplifier
		voltage regulator: (see note)
VR1	4882256C61	Zener type 5.6V
VR2	4882256C53	Zener type 18V
VR3	4882256C13	Zener type 14V
VR4	4882256C11	Zener type 10V
VR5	4882256C58	Zener type 39V
VR6	4882256C53	Zener type 18V
		non-referenced items
	2683472R01	HEAT SINK

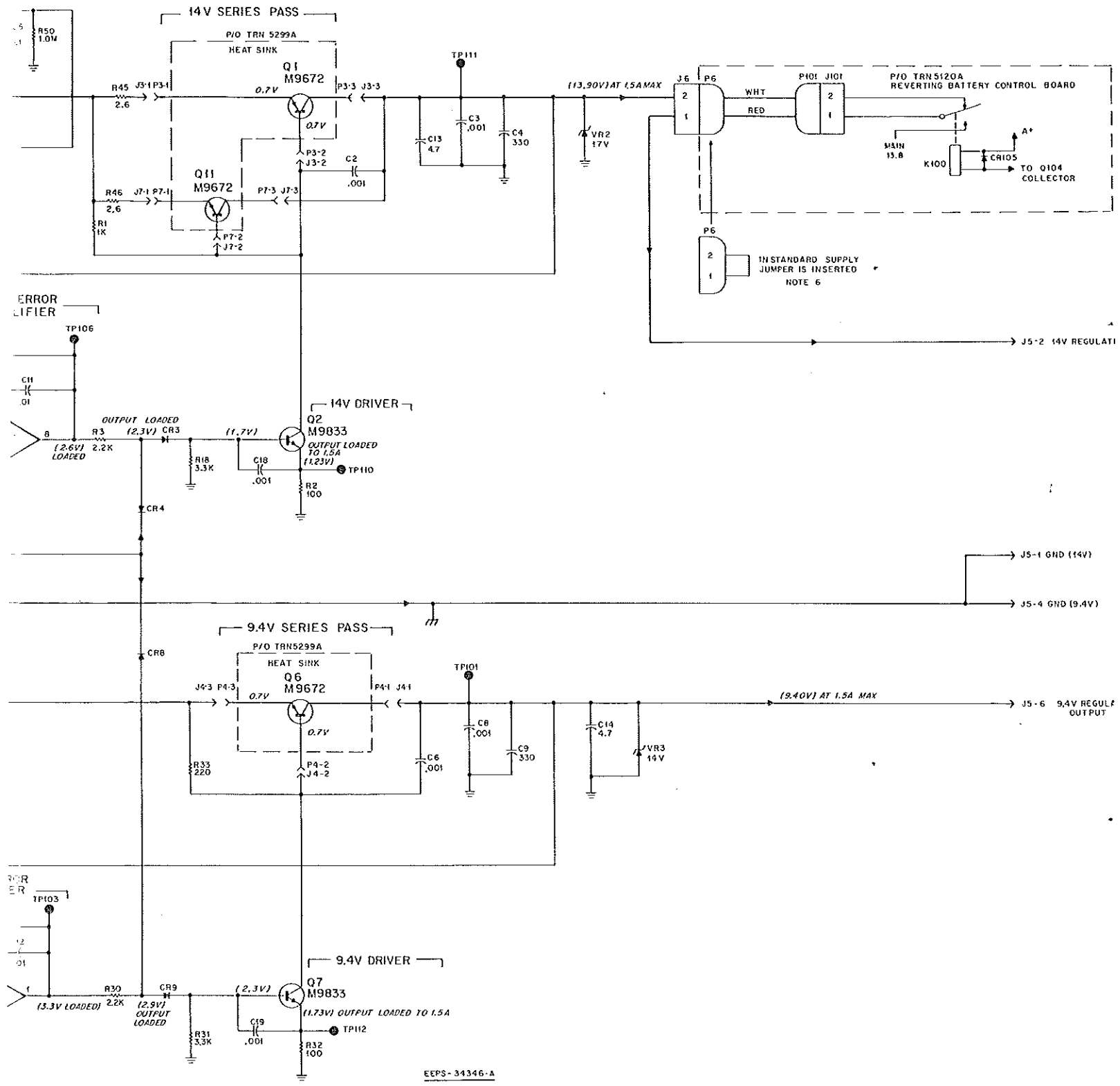
DETAILS - TOP VIEW

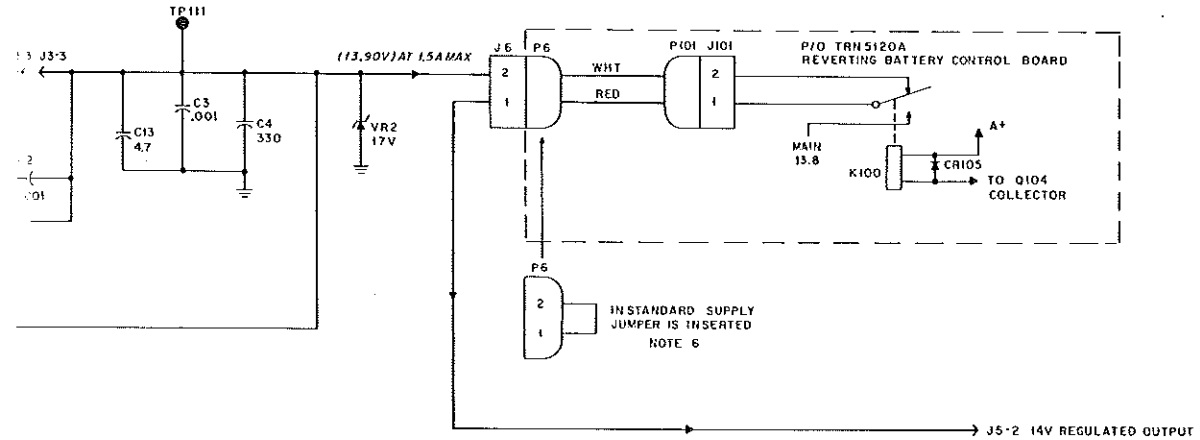


Q2, Q5, Q7, Q10


INPUT FILTER CKT
VOLTAGE DOUBLER
14V OVERCURRENT DETECT CKT
TEMPERATURE COMPENSATED OVERCURRENT AMPLIFIER
Q12 22N50 OVER-VOLTAGE LIMITER
Q3 M9643
Q5 M9642
LOCAL CONTROL INHIBIT INVERTER
SAMPLING NETWORK
OVERCURRENT AMPLIFIER
14V VOLTAGE ADJUST
Q4 M9642
9,4V OVERCURRENT DETECT CKT
REFERENCE VOLTAGE
Q8 M9643
Q10 M9642
OVERCURRENT AMPLIFIER
94 VOLTAGE ADJUST
Q9 M9642
GND AJ1-8
AC2 J1-7
AC1 J1-6
OVER VOLTAGE ALARM J1-5
OVER VOLTAGE ALARM J2-2
AC FAIL J1-2
AC FAIL J2-4
ON/OFF J5-5
REGULATOR INHIBIT
GND J1-3
GND J2-3
MAIN 13.8V J1-1
MAIN 13.8V J2-5
V REF
(6.5V REF)


VOLTAGE DOUBLER
14V SERIES PASS
P/O TRN 5299A
HEAT SINK
Q1
M9672
14V OVERCURRENT
DETECT CKT
Q12
22N50
OVER-
VOLTAGE
LIMITER
Q11
M9672
Q3
M9643
(0V) NORMAL OPERATION
Q5
M9642
14V ERROR
AMPLIFIER
SAMPLING
NETWORK
OVERCURRENT AMPLIFIER
14V
VOLTAGE
ADJUST
14V DRIVER
Q2
M9833
OUTPUT LOADED
TO 1.5A
(1.23V)
Q4
M9642
9.4V SERIES PASS
P/O TRN5299A
HEAT SINK
Q6
M9672
9.4V OVERCURRENT
DETECT CKT
Q8
M9643
Q10
M9642
9.4V ERROR
AMPLIFIER
SAMPLING
NETWORK
9.4 VOLTAGE
ADJUST
OVERCURRENT
AMPLIFIER
Q9
M9642
9.4V DRIVER
Q7
M9833
(1.73V) OUTPUT LOADED TO 1.5A
V REF
EEPS-34346-A

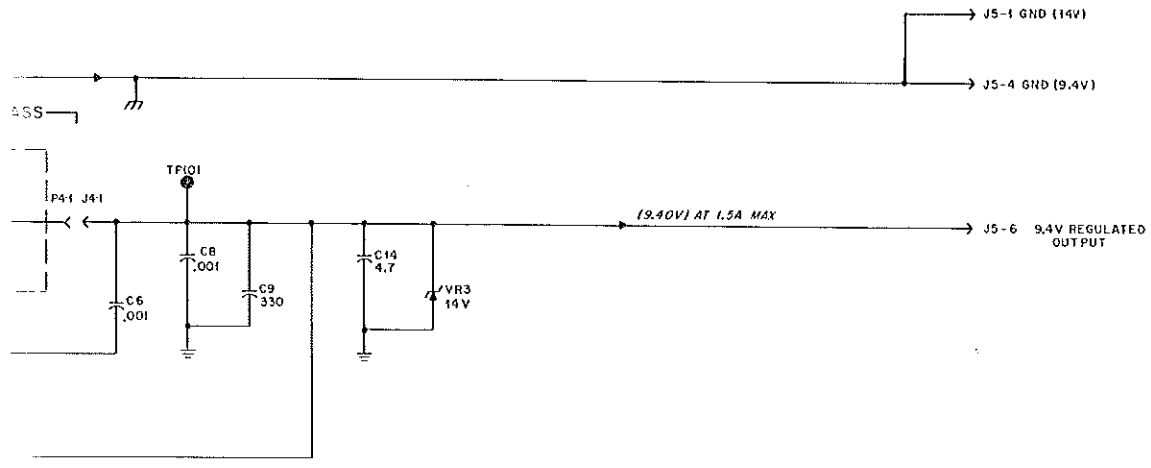

14V SERIES PASS
P/O TRN 5299A
HEAT SINK
Q1
M9672
0.7V
0.7V
R45
2.6
J3-1 P3-1
P3-3 J3-3
P3-2
J3-2
C2
.001
Q11
M9672
R46
2.6
J7-1 P7-1
P7-3 J7-3
P7-2
J7-2
R1
1K
TP111
C13
4.7
C3
.001
C4
330
(13.90V) AT 1.5A MAX
VR2
17V
J6
P6
2
1
WHT
RED
P101 J101
P/O TRN 5120A
REVERTING BATTERY CONTROL BOARD
MAIN
13.8
K100
CR105
A+
TO Q104
COLLECTOR
P6
2
1
IN STANDARD SUPPLY
JUMPER IS INSERTED
NOTE 6
J5-2 14V REGULATI
ERROR
LIFIER
TP106
C11
.01
OUTPUT LOADED
(2.6V)
LOADED
R3
2.2K
(2.3V)
CR3
(1.7V)
14V DRIVER
Q2
M9833
OUTPUT LOADED
TO 1.5A
(1.23V)
TP110
R18
3.3K
C18
.001
R2
100
CR4
J5-1 GND (14V)
J5-4 GND (9.4V)
9.4V SERIES PASS
P/O TRN5299A
HEAT SINK
Q6
M9672
0.7V
0.7V
J4-3 P4-3
P4-1 J4-1
TP101
(9.40V) AT 1.5A MAX
J5-6 9.4V REGULA
OUTPUT
C8
.001
C9
330
C14
4.7
VR3
14V
R33
220
P4-2
J4-2
C6
.001
CR8
TP103
(3.3V LOADED)
R30
2.2K
(2.9V)
OUTPUT
LOADED
CR9
(2.3V)
9.4V DRIVER
Q7
M9833
(1.73V) OUTPUT LOADED TO 1.5A
TP112
R31
3.3K
C19
.001
R32
100
EEPS-34346-A



/ DRIVER

ADED

TP110



4V DRIVER

UT LOADED TO 1.5A

112

EEPS-34346-A

NOTES:

1. Unless otherwise indicated; microfarads; and inductor v
2. Integrated circuits on this b
3. IC types and connections fo

Reference Designation
U1
U2

4. Remove JU2 when on/off sw
5. DC voltages are nominal. Fo
6. For non-battery supply (star
7. Add JU1 only if battery cha board TRN5120A.

TRN511
Schemati
and Part
Motorol
(Sheet 2
10/16/87-L