

3083611T01	WIRE SHLD AWG 16 600V GRN/YEL (6 used)
3083920N02	CABLE, battery (white) (26.5 used)
3100811350	TERMINAL BLOCK: 4-contact
3983146N01	CONTACT, receptacle
4210217A02	STRAP, tie: .091 x 3.62" lg (14 used)
4210217A33	STRAP, tie: .190x15" lg (2 used)
4282828T01	CLAMP, cable, dual (3 used)
4282903N01	CLAMP, capacitor: 2" (3 used)
4282903N03	CLAMP, capacitor: 3" (2 used)
4882732C08	silicon (2 used)
5482885P02	LABEL, rocker switch
5483971N01	LABEL, high voltage
5484046N01	LABEL: "CAUTION-HEAVY"
6582847N27	6.3A, 250V (2 used)(see note 2)
7583056P01	PAD, snap-on (380MM lg)

Q600	4813824A10
Q602 thru 605	4813824A10
Q606	0180704F04
Q607	4813824D05
Q613	4813824A17
Q614	4813824A10
Q615	4882604N01
Q616,617	4813824A10
Q618	4800869829
Q656	4882604N01
Q657	0180704F04

R600	0611072A59
R601	0611077A56
R602	0611077B09
R603	0611072A59
R604	0611077A68
R605	0611077B23
R606	0611077B09
R607	0611072A59
R608	0611077A56
R609	0683962T73
R610	0611077B09
R611	0611077A74
R612,613	0611077B09
R614	0611077A90
R615	0611077H06
R616	0611077A98
R617	0611077B09
R618	0611077B23
R619	0611077B03
R620	0611077A90
R621	0611077B09
R622	0611077B43
R623	0611077H42
R624	0611077F79
R625	0611077B17
R626	0611077B09
R627	0611077B27
R628	0611077F63
R629	0611077E73
R630	0611077A68
R631,632	0611077G11
R633	0611077G14
R634	0611077F91
R635	0611077F71
R636	0611077F91
R637	0611040C91
R638	0611077E73
R639,640	0611077F91
R641	0611040C91
R642	0611040B96
R643	0611077A90
R644	0611072A49
R645	0611077A82
R646	0611077A90
R647	0683962T56
R649	0611077A84
R650	0611072A49
R651,652	0611077B27
R653	0611077A90
R654,655	0611077F71
R656,657	0611077B16
R658	0611077B09
R660	0611077B03
R662	1883452F02

S650	4083204B02
U600	5184621K74

transistor:
(see note)
 NPN
 NPN
 COMP PREP SUB ASSEMBLY
 TSTR NPN 30V .6A MPS2222RLRP
 PNP
 NPN
 silicon controlled rectifier
 NPN
 PNP
 silicon controlled rectifier
 COMP PREP SUB ASSEMBLY

resistor, fixed:
 2.7K +/-5%; 1/4 W
 180 ohms, +/-5%; 1/8W
 27K, +/-5%; 1/8 W
 2.7K +/-5%; 1/4 W
 560 ohms, +/-5%; 1/8 W
 100K, +/-5%; 1/8 W
 27K, +/-5%; 1/8 W
 2.7K +/-5%; 1/4 W
 180 ohms, +/-5%; 1/8W
 1K, +/-5%; 1W
 27K, +/-5%; 1/8 W
 1K, +/-5%; 1/8 W
 27K, +/-5%; 1/8 W
 4.7K, +/-5%; 1/8 W
 150K, +/-1%; 1/8W
 10K, +/-5%; 1/8 W
 27K, +/-5%; 1/8 W
 100K, +/-5%; 1/8 W
 15K, +/-5%; 1/8 W
 4.7K, +/-5%; 1/8 W
 27K, +/-5%; 1/8 W
 680K, +/-5%; 1/8 W
 357K, +/-1%; 1/8W
 7.5K, +/-1%; 1/8 W
 56K, +/-5%; 1/8 W
 27K, +/-5%; 1/8 W
 150K, +/-5%; 1/8W
 5.11K, +/-1%; 1/8 W
 604 ohms, +/-1%; 1/8 W
 560 ohms, +/-5%; 1/8 W
 15.8K, +/-1%; 1/8W
 16.9K, +/-1%; 1/8W
 10K, +/-1%; 1/8 W
 6.19K, +/-1%; 1/8W
 10K, +/-1%; 1/8 W
 10K, +/-0.5%; 1/4W
 604 ohms, +/-1%; 1/8 W
 10K, +/-1%; 1/8 W
 10K, +/-0.5%; 1/4W
 1.05K, +/-0.5%; 1/4W
 4.7K, +/-5%; 1/8 W
 1K, +/-5%, 1/4 W
 2.2K, +/-5%; 1/8 W
 4.7K, +/-5%; 1/8 W
 200 ohms, +/-5%; 1W
 2.7K, +/-5%; 1/8 W
 1K, +/-5%, 1/4 W
 150K, +/-5%; 1/8W
 4.7K, +/-5%; 1/8 W
 6.19K, +/-1%; 1/8W
 51K, +/-5%; 1/8W
 27K, +/-5%; 1/8 W
 15K, +/-5%; 1/8 W
 variable: 2K +/-10%; 1/2W

switch:
 slide: dpdt
integrated circuit:
(see note)
 Comparator

Notes: 1. For optimum performance, diodes must be ordered by Motorola part number.
 2. Fuses used on distribution board TRN7248 or battery charger board TRN7277.

TRN7241B 14V Battery Charger Board

Reference Symbol	Motorola Part No.	Description
capacitor, fixed:		
C600 thru 603	2113741B69	0.1 uF, +/-5%; 50 V
C604	0884637L31	0.047 uF, +/-10%; 250V
C606	2113741B69	0.1 uF, +/-5%; 50 V
C607	2311049A08	1 uF, +/-10%; 35 V
C608	2113741B69	0.1 uF, +/-5%; 50 V
C609	2313748G09	10 uF, +/-20%; 35 V
C610	2113741B69	0.1 uF, +/-5%; 50 V
C611	2113741B45	0.01 uF, +/-5%; 50 V
C612	2313748G14	22 uF, +/-20%; 35V
C613	2113741B69	0.1 uF, +/-5%; 50 V
C614	2311049A08	1 uF, +/-10%; 35 V
C615	2313748G21	100 uF, +/-20%; 16V
diode: (see note)		
CR600 thru 609	4813833C10	0.1A, 70 V
CR610 thru 613	4813833B06	1A; 600 V
CR614	4813833C10	0.1A, 70 V
CR615	4813833B06	1A; 600 V
light emitting diode:		
DS600	4884404E16	grn
fuse:		
F600,601	0910548A04	Fuse Block
connector:		
J600	2813922A04	plug: 4-contact
J601	2880006R02	plug: 2-contact
J602	2880004T06	plug: 6-contact
J603	2882984N14	plug: 9-contact
J604	2813922A03	HDR 3 POS STR .1 CTR GLD PLTD
J605	2880004T02	plug: 2-contact
J606 thru 608	2910231A10	terminal, circuit board
inductor:		
L600	7685120U01	CORE, Ferrite bead, leaded

U601	5113819D04	General Purpose Differential Operational Amplifier
U602	5184621K74	Comparator
		voltage regulator: (see note)
VR600	5183222M81	Adjustable Precision Shunt Regulator
VR601	4882479V11	DIODE ZENER 11V
		non-referenced items:
	2683472R01	HEAT SINK
	4882965F02	thyristor
	5482006W01	Label, PCB barcode
	5482006W02	RIBBON, thermal XFER
	5484960T01	Label, barcode: 6.3 x 12.7MM, white

Note: For optimum performance, diodes, transistors, and integrated circuits must be ordered by Motorola part number.

U601	5184621K74	integrated circuit: (see note) Comparator
VR601	4883461E40	voltage regulator: (see note) Zener 5.1V

Note: For optimum performance, diodes, transistors, and integrated circuits must be ordered by Motorola part number.

TRN7242A 14V Distribution Board

Reference Symbol	Motorola Part No.	Description
		capacitor, fixed:
C601	2311049A15	4.7 uF, +/-10%; 35V
C602,603	2113740B32	20 pF, +/-5%; 50 V
C604	2113740B49	100 pF, +/-5%; 50 V
		diode: (see note)
CR601 thru 603	4813833C10	0.1A, 70 V
		light emitting diode:
DS601	4884404E16	gm
		fuse:
F601,602	0910548A04	Fuse Block
		connector:
J602	2880004T06	plug: 6-contact
J603	2882984N14	plug: 9-contact
		connector:
P601	2910231A10	terminal, circuit board
		transistor: (see note)
Q601	4813824D21	TSTR LOW NOISE PNP 60V 2N5087
Q602	4813824D05	TSTR NPN 30V .6A MPS2222RLRP
Q603	4800869806	NPN
		resistor, fixed:
R601	0611040C51	3.83K, +/-0.5%; 1/4W
R602	0611040C41	3.01K, +/-0.5%; 1/4W
R603	0611040C15	1.62K, +/-0.5%; 1/4W
R604	0611086C55	680 ohms, +/-5%; 2W
R605	0611009A67	5.6K, +/-5%; 1/4W
R606	0611077A98	10K, +/-5%; 1/8 W
R607	0611086A61	1.2K, +/-5%; 1W
R608	0611077A90	4.7K, +/-5%; 1/8 W
R609	0611086A03	1 ohms, +/-5%; 1W
R610	0611077A60	270 ohms, +/-5%; 1/8 W
R611 thru 613	1782036G03	2 ohms, +/-5%; 2W
R614	0611077A98	10K, +/-5%; 1/8 W
R615	0611077B05	18K, +/-5%; 1/8 W
R616	0611086A63	1.5K, +/-5%; 1W
R617	0611086A61	1.2K, +/-5%; 1W
R618	1782036G03	2 ohms, +/-5%; 2W
R619	0611077A01	0 ohm, +/-5%; 0 W

TRN7248A Distribution Board

Reference Symbol	Motorola Part No.	Description
		capacitor, fixed:
C601	2311049A15	4.7 uF, +/-10%; 35V
C602,603	2113740B32	20 pF, +/-5%; 50 V
C604	2113740B49	100 pF, +/-5%; 50 V
		diode: (see note)
CR601 thru 603	4813833C10	0.1A, 70 V
		light emitting diode:
DS601	4884404E16	gm
		fuse:
F601,602	0910548A04	Fuse Block
		connector:
J602,603	2882984N14	plug: 9-contact
		connector:
P601	2910231A10	terminal, circuit board
		transistor: (see note)
Q601	4813824D21	TSTR LOW NOISE PNP 60V 2N5087
Q602	4813824D05	TSTR NPN 30V .6A MPS2222RLRP
Q603	4800869806	NPN
		resistor, fixed:
R601	0611040D25	22.1K, +/-0.5%; 1/4W
R602	0611040D09	15K, +/-0.5%; 1/4W
R603	0611040C41	3.01K, +/-0.5%; 1/4W
R604	0611086C55	680 ohms, +/-5%; 2W
R605	0611009A67	5.6K, +/-5%; 1/4W
R606	0611077A98	10K, +/-5%; 1/8 W
R607	0611086A61	1.2K, +/-5%; 1W
R608	0611077A90	4.7K, +/-5%; 1/8 W
R609	0611086A03	1 ohms, +/-5%; 1W
R610	0611077A60	270 ohms, +/-5%; 1/8 W
R611 thru 613	1782036G03	2 ohms, +/-5%; 2W
R614	0611077A98	10K, +/-5%; 1/8 W
R615	0611077B05	18K, +/-5%; 1/8 W
R616	0611086A63	1.5K, +/-5%; 1W
R617	0611086A61	1.2K, +/-5%; 1W
R618	1782036G03	2 ohms, +/-5%; 2W
		integrated circuit: (see note)
U601	5184621K74	Comparator

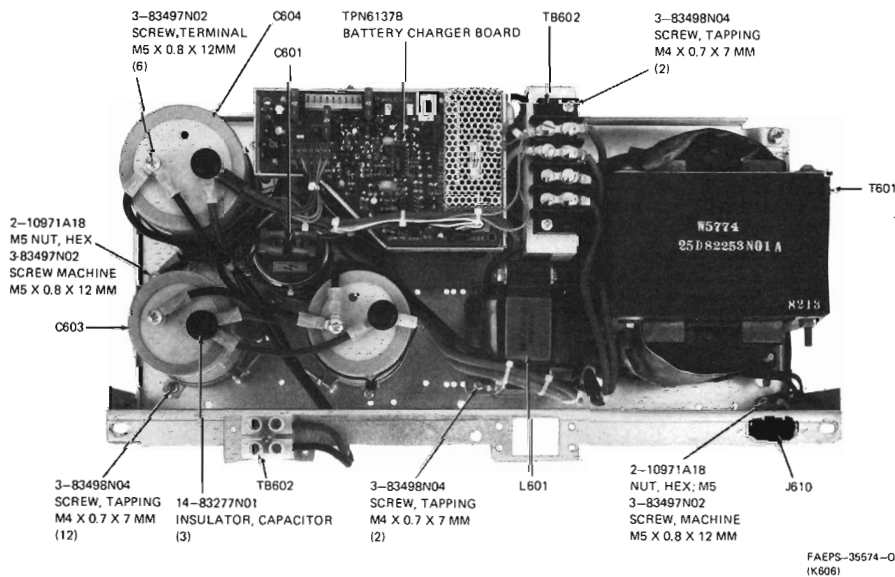
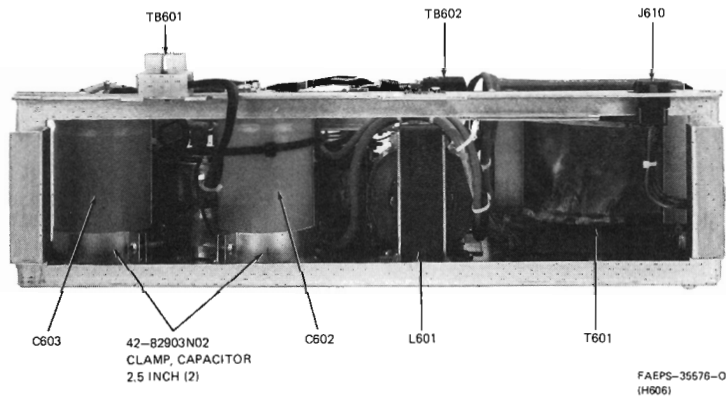
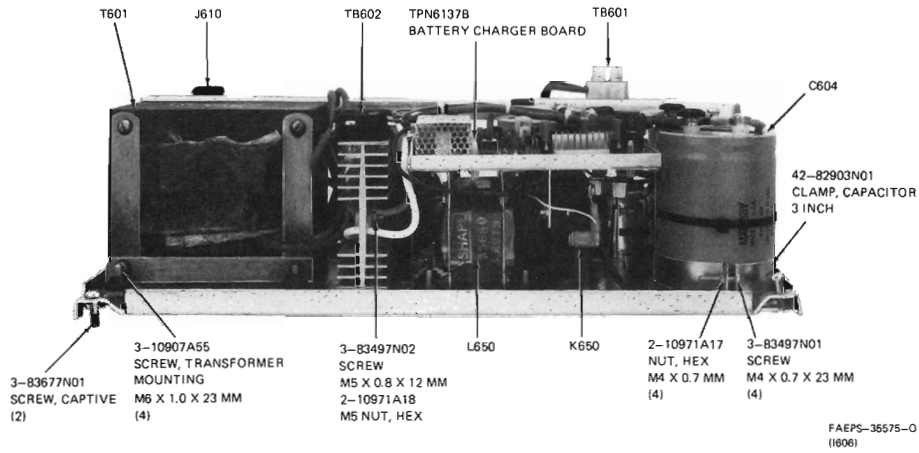
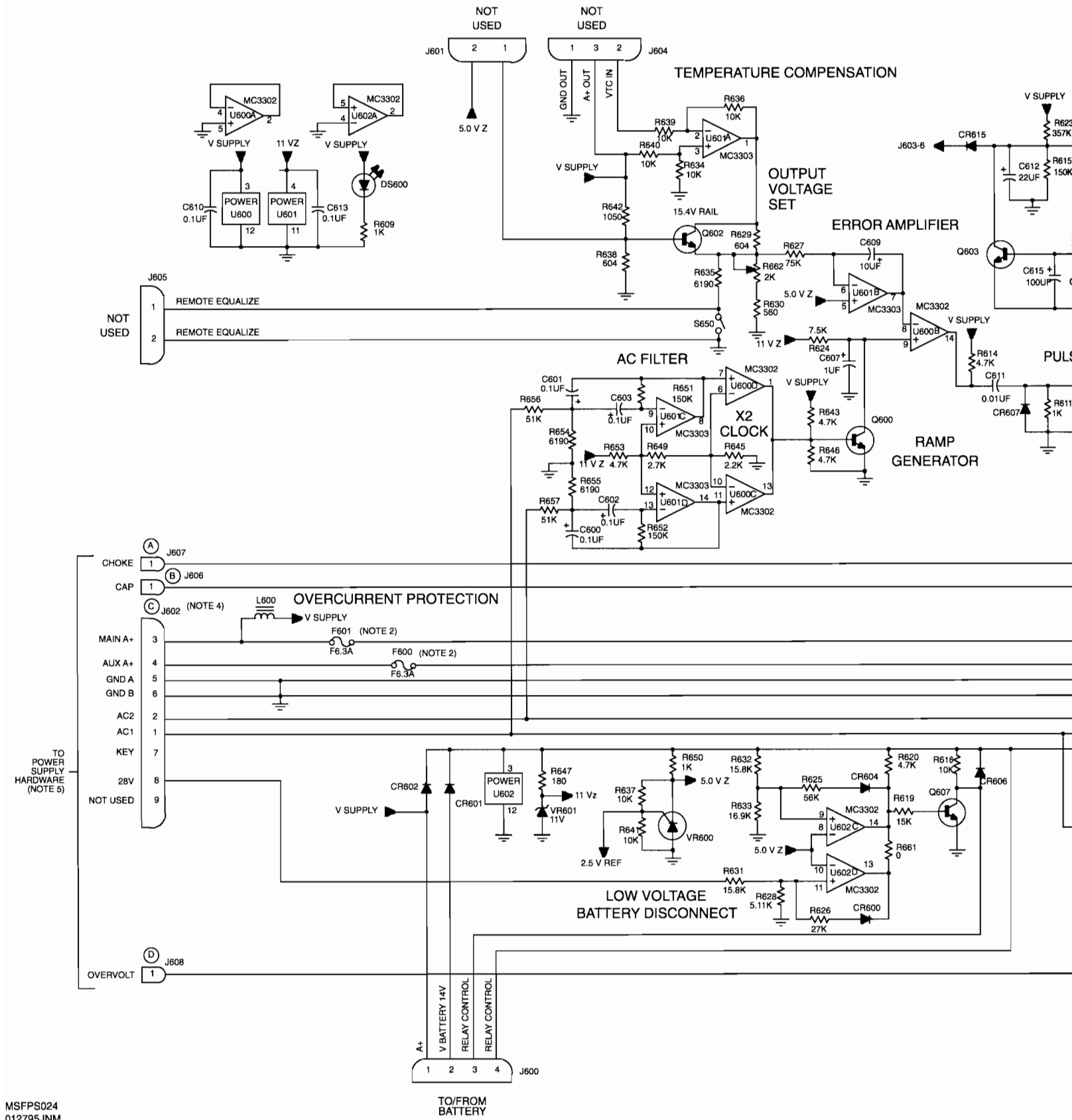
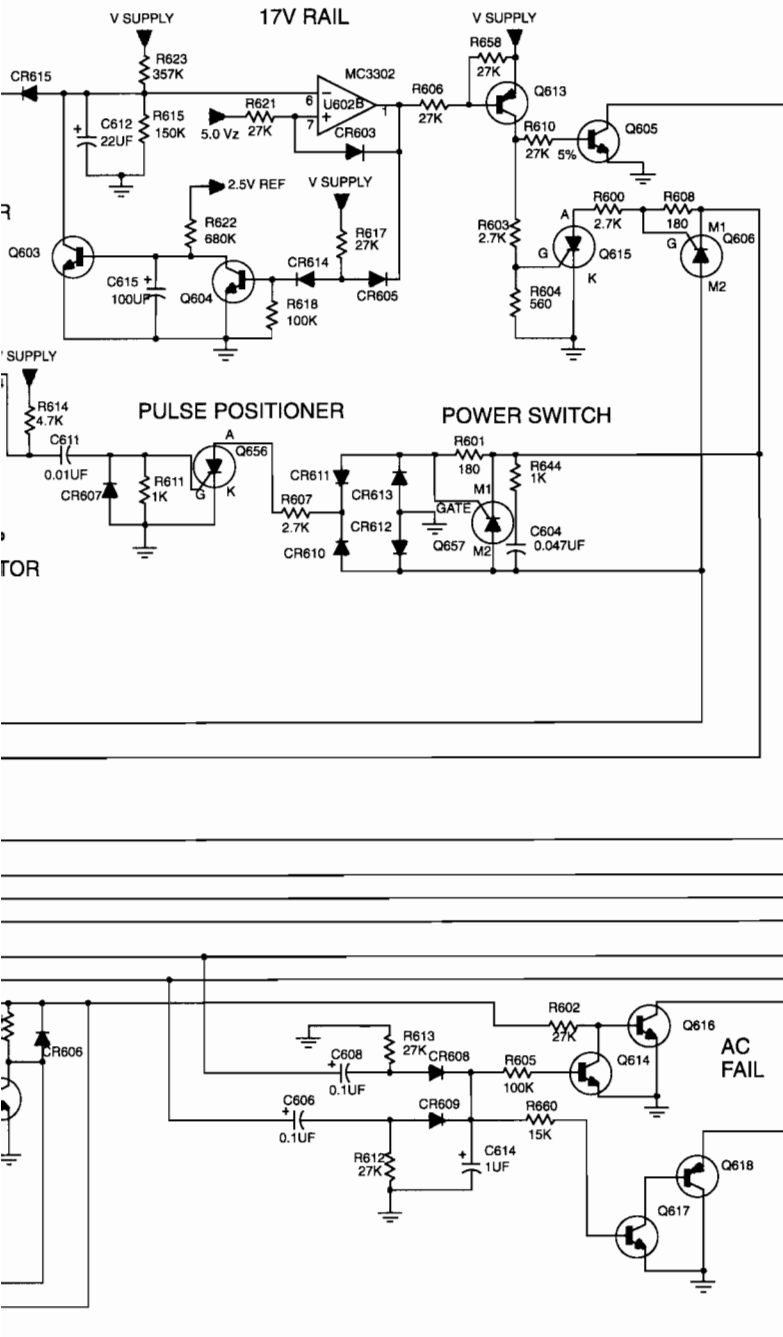


Figure 5-1 TPN1185 Mechanical Parts Location Diagram

Battery Charger Board Schematic and Overlays



MSFSP024
012795JNM

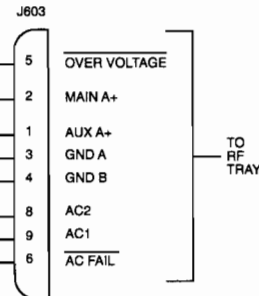


NOTES:

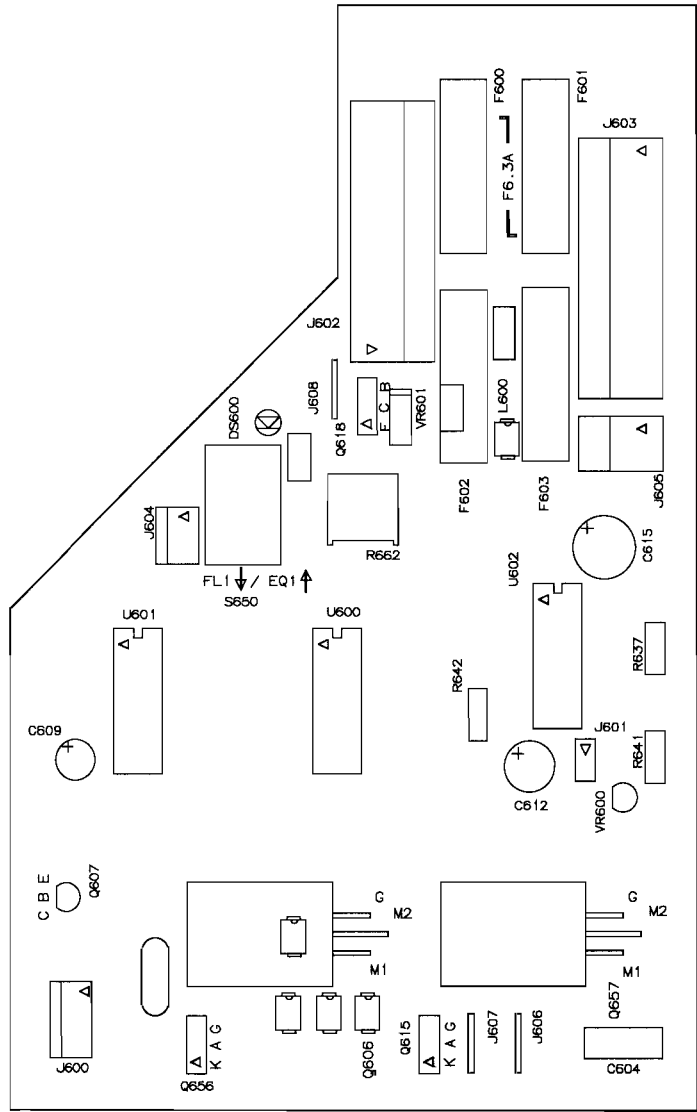
1. THE TRN7241 AND TRN7277 BATTERY CHARGER BOARDS ARE IDENTICAL EXCEPT FOR THE CONNECTOR USED AT J602. SEE NOTE 4.
2. FUSES F600 AND F601 ARE PART OF HARDWARE KITS TRN5620, TRN5621, TRN5968, TRN7098, TRN7116, TRN7213, TRN7229, TRN7237, TRN7332 OR TRN7274 WHICH ARE USED IN POWER SUPPLIES USING TRN7241 OR TRN7277 BOARDS.
3. UNLESS OTHERWISE SPECIFIED, RESISTOR VALUES ARE IN OHMS, CAPACITOR VALUES ARE IN MICROFARADS, AND INDUCTOR VALUES ARE IN MILLIHENRIES.
4. THE TRN7241 USES A 6 PIN CONNECTOR AT J602. PINS 7, 8 AND 9 SHOWN ARE ONLY AVAILABLE ON TRN7277.
5. THE TRN7241 AND TRN7277 BATTERY CHARGER BOARDS CAN BE CONNECTED TO ANY OF THE POWER SUPPLY HARDWARE KITS LISTED IN THE TABLE BELOW.

TRN7241	TRN7277
TRN5621	TRN7098
TRN5968	TRN7229
TRN7116	TRN7237
TRN7213	
TRN7274	

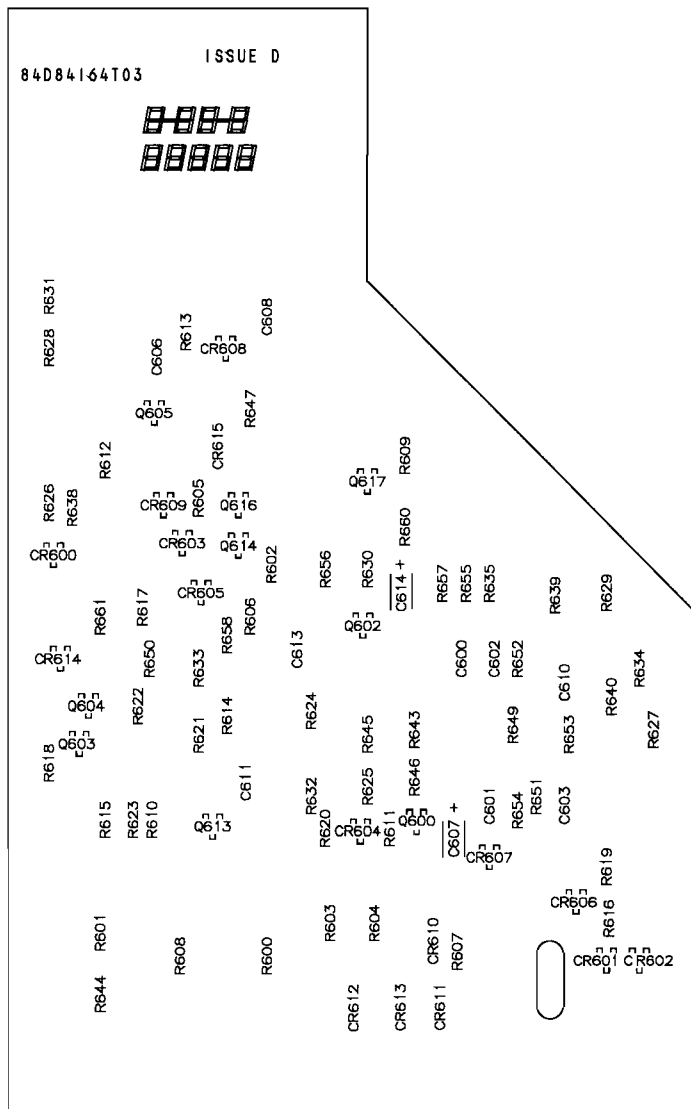
6. TRN7241 AND TRN7277 OVERLAYS CAN BE FOUND ON THE NEXT PAGE.



LEGEND:	IN THIS MANUAL	INTERNATIONAL EQUIVALENT
OFF PAGE REFERENCE	Ⓐ	
CHASSIS PROTECTIVE EARTH GND		
CIRCUIT GND		



COMPONENT SIDE



SOLDER SIDE

MSFPS025
022295JNM

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U601	5113819D04	General Purpose Differential Operational Amplifier
U602	5184621K74	Comparator
		voltage regulator: (see note)
VR600	5183222M81	Adjustable Precision Shunt Regulator
VR601	4882479V11	DIODE ZENER 11V
		non-referenced items:
	2683472R01	HEAT SINK
	4882965F02	thyristor
	5482006W01	Label, PCB barcode
	5482006W02	RIBBON, thermal XFER
	5484960T01	Label, barcode: 6.3 x 12.7MM, white

Note: For optimum performance, diodes, transistors, and integrated circuits must be ordered by Motorola part number.

TRN7241B 14V Battery Charger Board

Reference Symbol	Motorola Part No.	Description
		capacitor, fixed:
C600 thru 603	2113741B69	0.1 uF, +/-5%; 50 V
C604	0884637L31	0.047 uF, +/-10%; 250V
C606	2113741B69	0.1 uF, +/-5%; 50 V
C607	2311049A08	1 uF, +/-10%; 35 V
C608	2113741B69	0.1 uF, +/-5%; 50 V
C609	2313748G09	10 uF, +/-20%; 35 V
C610	2113741B69	0.1 uF, +/-5%; 50 V
C611	2113741B45	0.01 uF, +/-5%; 50 V
C612	2313748G14	22 uF, +/-20%; 35V
C613	2113741B69	0.1 uF, +/-5%; 50 V
C614	2311049A08	1 uF, +/-10%; 35 V
C615	2313748G21	100 uF, +/-20%; 16V
		diode: (see note)
CR600 thru 609	4813833C10	0.1A, 70 V
CR610 thru 613	4813833B06	1A; 600 V
CR614	4813833C10	0.1A, 70 V
CR615	4813833B06	1A; 600 V
		light emitting diode:
DS600	4884404E16	gsm
		fuse:
F600,601	0910548A04	Fuse Block
		connector:
J600	2813922A04	plug; 4-contact
J601	2880006R02	plug; 2-contact
J602	2880004T06	plug; 6-contact
J603	2882984N14	plug; 9-contact
J604	2813922A03	HDR 3 POS STR .1 CTR GLD PLTD
J605	2880004T02	plug; 2-contact
J606 thru 608	2910231A10	terminal, circuit board
		inductor:
L600	7685120U01	CORE, Ferrite bead, leaded

Q600	4813824A10
Q602 thru 605	4813824A10
Q606	0180704F04
Q607	4813824D05
Q613	4813824A17
Q614	4813824A10
Q615	4882604N01
Q616,617	4813824A10
Q618	4800869829
Q656	4882604N01
Q657	0180704F04

R600	0611072A59
R601	0611077A56
R602	0611077B09
R603	0611072A59
R604	0611077A68
R605	0611077B23
R606	0611077B09
R607	0611072A59
R608	0611077A56
R609	0683962T73
R610	0611077B09
R611	0611077A74
R612,613	0611077B09
R614	0611077A90
R615	0611077H06
R616	0611077A98
R617	0611077B09
R618	0611077B23
R619	0611077B03
R620	0611077A90
R621	0611077B09
R622	0611077B43
R623	0611077H42
R624	0611077F79
R625	0611077B17
R626	0611077B09
R627	0611077B27
R628	0611077F63
R629	0611077E73
R630	0611077A68
R631,632	0611077G11
R633	0611077G14
R634	0611077F91
R635	0611077F71
R636	0611077F91
R637	0611040C91
R638	0611077E73
R639,640	0611077F91
R641	0611040C91
R642	0611040B96
R643	0611077A90
R644	0611072A49
R645	0611077A82
R646	0611077A90
R647	0683962T56
R649	0611077A84
R650	0611072A49
R651,652	0611077B27
R653	0611077A90
R654,655	0611077F71
R656,657	0611077B16
R658	0611077B09
R660	0611077B03
R662	1883452F02

S650	4083204B02
U600	5184621K74

transistor:
(see note)

NPN
NPN
COMP PREP SUB ASSEMBLY
TSTR NPN 30V .6A MPS2222RLRP
PNP
NPN
silicon controlled rectifier
NPN
PNP
silicon controlled rectifier
COMP PREP SUB ASSEMBLY

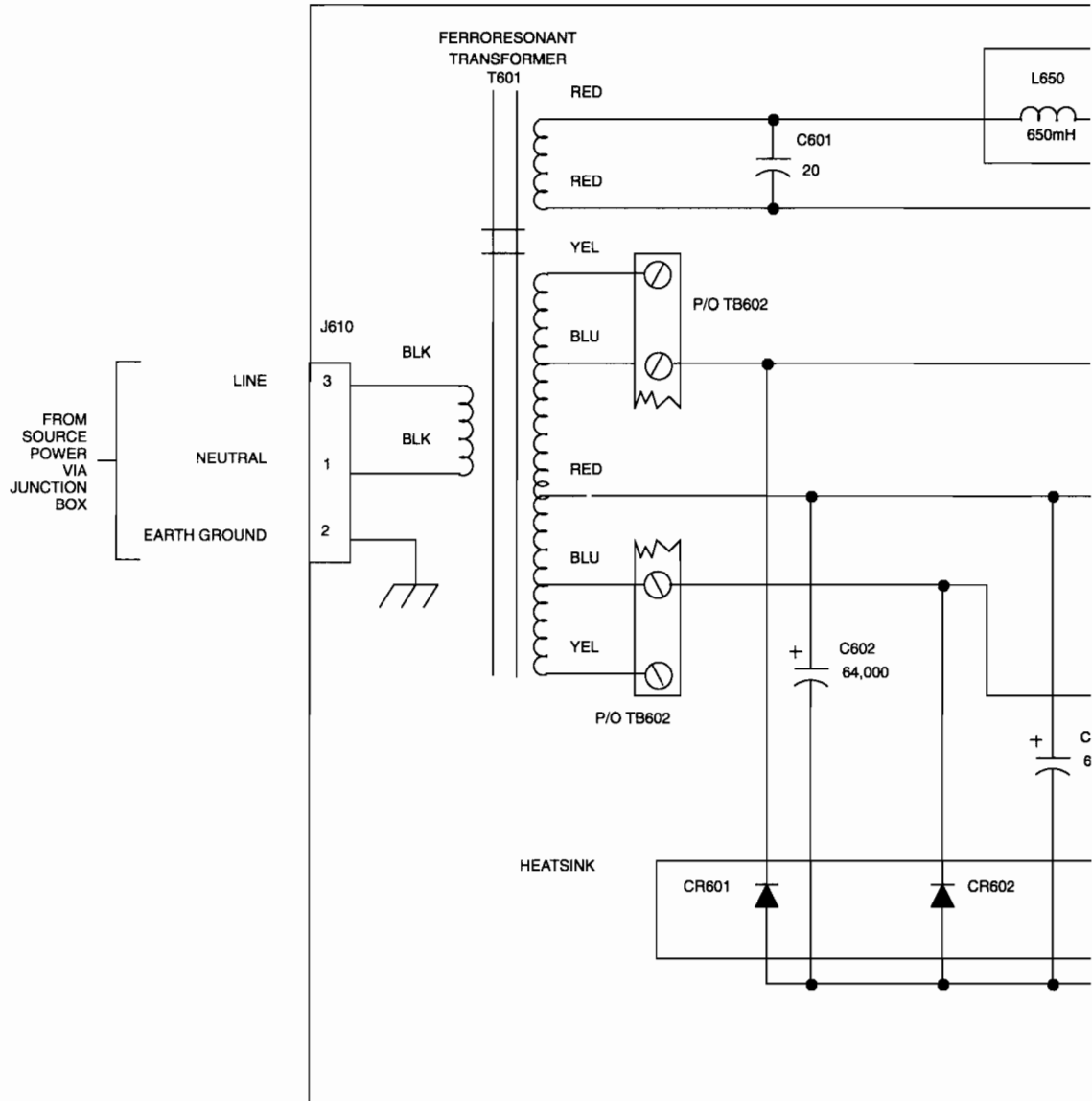
resistor, fixed:

2.7K +/-5%; 1/4 W
180 ohms, +/-5%; 1/8W
27K, +/-5%; 1/8 W
2.7K +/-5%; 1/4 W
560 ohms, +/-5%; 1/8 W
100K, +/-5%; 1/8 W
27K, +/-5%; 1/8 W
2.7K +/-5%; 1/4 W
180 ohms, +/-5%; 1/8W
1K, +/-5%; 1W
27K, +/-5%; 1/8 W
1K, +/-5%; 1/8 W
27K, +/-5%; 1/8 W
4.7K, +/-5%; 1/8 W
150K, +/-1%; 1/8W
10K, +/-5%; 1/8 W
27K, +/-5%; 1/8 W
100K, +/-5%; 1/8 W
15K, +/-5%; 1/8 W
4.7K, +/-5%; 1/8 W
27K, +/-5%; 1/8 W
680K, +/-5%; 1/8 W
357K, +/-1%; 1/8W
7.5K, +/-1%; 1/8 W
56K, +/-5%; 1/8 W
27K, +/-5%; 1/8 W
150K, +/-5%; 1/8W
5.11K, +/-1%; 1/8 W
604 ohms, +/-1%; 1/8 W
560 ohms, +/-5%; 1/8 W
15.8K, +/-1%; 1/8W
16.9K, +/-1%; 1/8W
10K, +/-1%; 1/8 W
6.19K, +/-1%; 1/8W
10K, +/-1%; 1/8 W
10K, +/-0.5%; 1/4W
604 ohms, +/-1%; 1/8 W
10K, +/-1%; 1/8 W
10K, +/-0.5%; 1/4W
1.05K, +/-0.5%; 1/4W
4.7K, +/-5%; 1/8 W
1K, +/-5%, 1/4 W
2.2K, +/-5%; 1/8 W
4.7K, +/-5%; 1/8 W
200 ohms, +/-5%; 1W
2.7K, +/-5%; 1/8 W
1K, +/-5%, 1/4 W
150K, +/-5%; 1/8W
4.7K, +/-5%; 1/8 W
6.19K, +/-1%; 1/8W
51K, +/-5%; 1/8W
27K, +/-5%; 1/8 W
15K, +/-5%; 1/8 W
variable: 2K +/-10%; 1/2W

switch:
slide: dpdt**integrated circuit:**
(see note)

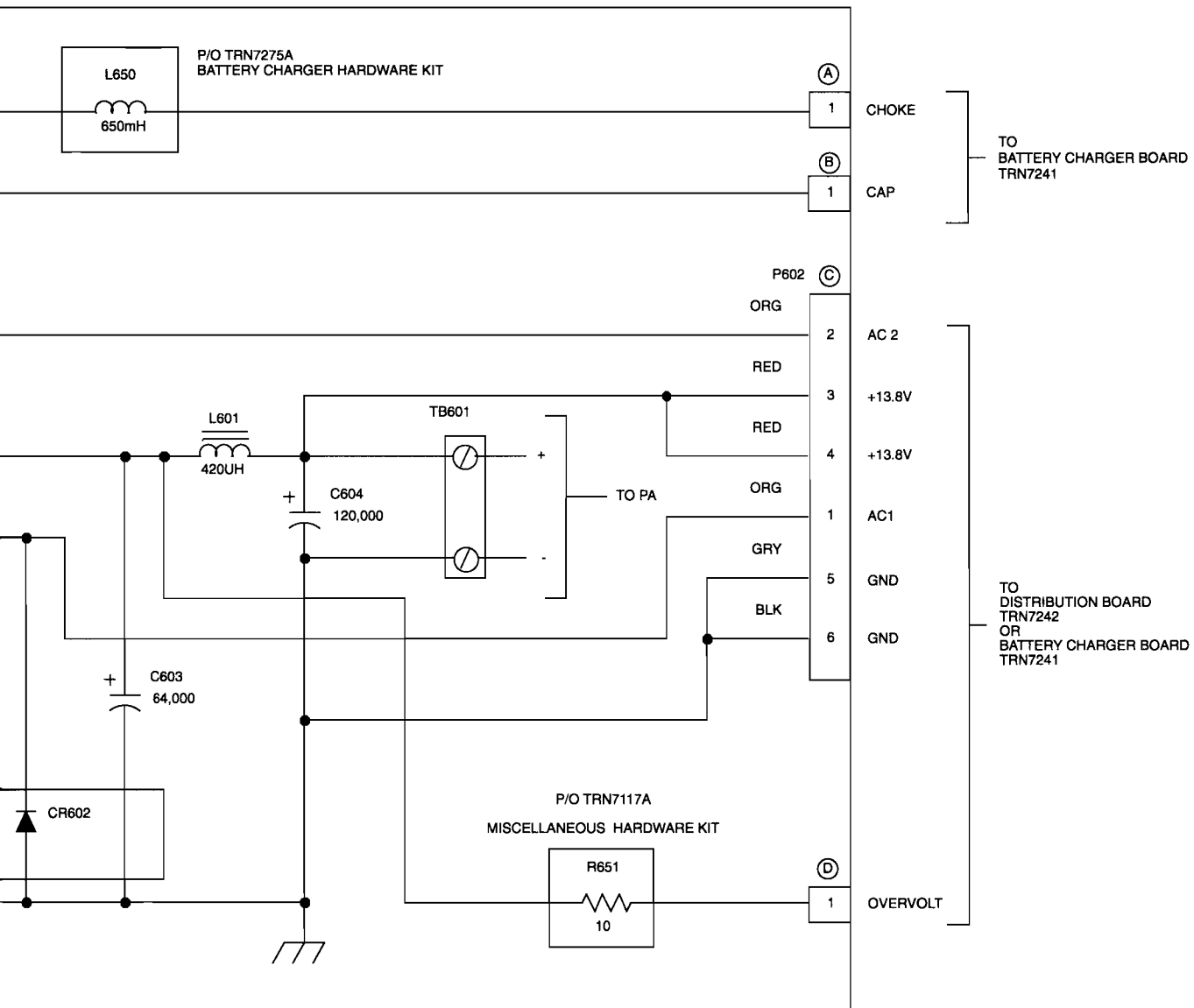
Comparator

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NOTES:

1. UNLESS OTHERWISE SPECIFIED RESISTOR VALUES ARE IN OHMS, CAPACITOR VALUES ARE IN MICROFARADS, AND INDUCTOR VALUES ARE IN MILLIHENRIES.
2. R651 IS MOUNTED ON THE POWER SUPPLY CHASSIS.



LEGEND:	IN THIS MANUAL	INTERNATIONAL EQUIVALENT
OFF PAGE REFERENCE	Ⓐ	
CHASSIS PROTECTIVE EARTH GND		
CIRCUIT GND		

TRN7213B Hardware Kit

Reference Symbol	Motorola Part No.	Description
		capacitor, fixed:
C601	0882682N01	20 uF, +/-6%; 330 V
C602, C603	2382681N01	64000 uF, +75%/-7%; 20V (2 used)
C604	2382681N02	120000 uF, +75%/-10%; 20V
		diode: (see note 1)
CR601,602	4882732C09	silicon
		inductor:
L601	2582686N01	420 UH
		transformer:
T601	2582253N03	PWR
		non-referenced items:
	0180701F32	TERMINAL BLOCK & WIRE
	0180752D44	HEAT SINK
	0180757D40	CONNECTOR
	0210971A17	NUT, hex: M4 x 0.7 (4 used)
	0210971A19	NUT, hex: M6 x 1 (2 used)
	0310928B30	SCREW, locking: TT5 x 0.8 x 10 (2 used)
	0383498N04	SCREW, tapping: M4 x 0.7 x 7 (18 used)
	0383498N06	SCREW, tapping: M4 x 0.7 x 16 (3 used)
	0383498N14	SCREW, tapping: M4 x 0.7 x 18
	0400007651	WASHER, lock: No.8 internal tooth (9 used)
	0400007658	WASHER, lock: No. 10 internal tooth (13 used)
	0400119331	WASHER, lock: No. 1/4, medium split (2 used)
	0400135873	WASHER, flat: .281 x .750 x .060" (2 used)
	0483423R01	WASHER, flat, rectangular (2 used)
	0483499N01	WASHER, lug, insulator (3 used)
	0582904N01	GROMMET: M12.70 mtg hole (4 used)
	0983360N01	CONNECTOR, receptacle: 6-contact
	1483277N01	INSULATOR, lug (3 used)
	1484088N01	INSULATOR, capacitor terminal (2 used)
	2682902N01	HEAT SINK
	2783747T05	CHASSIS PWR SUPPLY

2982607B05	LUG, ring tongue: No. 10 mtg hole, .760" lg (5 used)
2982607B06	LUG, ring tongue: No. 10 mtg hole, .625" lg (3 used)
2982607B09	LUG, ring tongue: No. 8 mtg hole, .855" lg (2 used)
2982907N05	TERMINAL, ring tongue: No. 10 mtg hole, 26.5MM (5 used)
2982907N07	TERMINAL, ring tongue: No. 10 mtg hole (red) (2 used)
2983137N01	TERMINAL, parallel splice (2 used)
2983501T02	LUG MALE TERMINAL (2 used)
3000813233	CABLE, battery (red) (17.5 used)
3000831572	CABLE, battery (black) (40.25 used)
3010286A21	18STIVBK (9 used)
3010286A26	WIRE, stranded: #18 GREY (9 used)
3010286B77	WIRE, stranded: #18 ORANGE (21 used)
3010286D01	16STIVGNLY (6 used)
3083920N02	CABLE, battery (white) (12.5 used)
3100811350	TERMINAL BLOCK: 4-contact
3183576K02	TERMINAL STRIP: 3-contact
3983146N01	CONTACT, receptacle
4210217A02	STRAP, tie: .091 x 3.62" lg (16 used)
4210217A33	STRAP, tie: .190x15" lg (4 used)
4282828T01	CLAMP, cable, dual
4282903N01	CLAMP, capacitor: 2"
4282903N02	CLAMP, capacitor, 2.5" (2 used)
4282903N03	CLAMP, capacitor: 3"
5483971N01	LABEL, high voltag
5484046N01	LABEL: "CAUTION-HEAVY"
5484497M87	LABEL, ID: 7/8 X 1/4" (3 used)
6582847N27	6.3A, 250V (2 used)(see note 2)
7583056P01	PAD, snap-on (380MM lg)

- Notes: 1. For optimum performance, diodes must be ordered by Motorola part number.
 2. Fuses used on distribution board TRN7242 or battery charger board TRN7241.