

## SECTION 19. BATTERY ASSEMBLY

### 19.1 DESCRIPTION

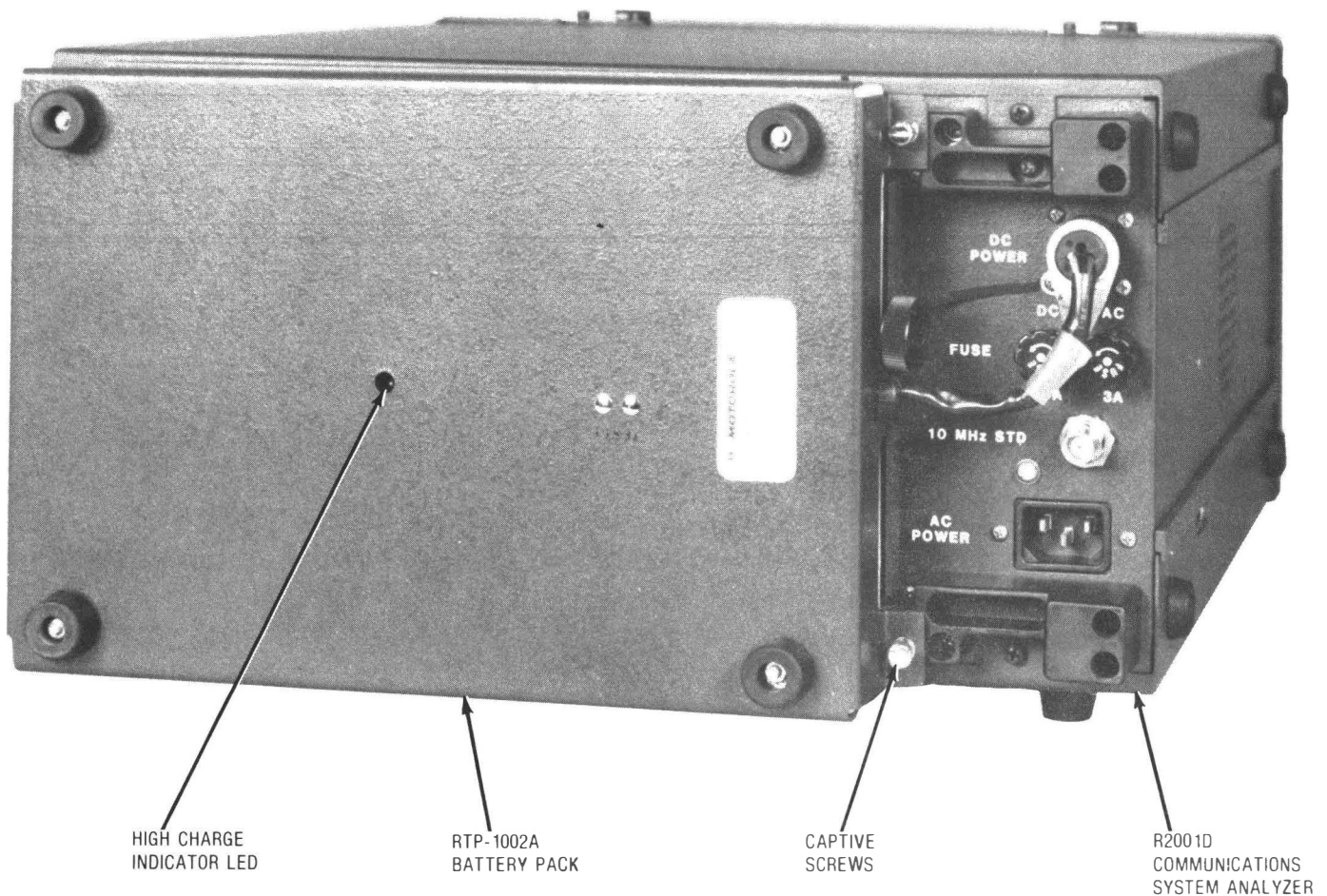
The RTP-1002A Battery Assembly consists of a battery pack and charger designed to be mounted to the back of the R2001D Communications System Analyzer (Figure 19-1). The unit contains battery capacity to operate the System Analyzer for approximately one hour. A constant-current charging system can recharge the batteries in 16 hours.

A schematic of the battery pack is shown at the end of the section in Figure 19-2, and the printed wiring board assembly and a parts location detail are coordinated with the parts list in Figure 19-3.

### 19.2 INSTALLATION

The battery pack is quickly installed on the R2001D System Analyzer. With the Analyzer disconnected from the ac line, remove the blower ac connector from the socket on the rear panel of the unit. Remove the two thumbscrews and clips that hold the blower to the rear panel. Lift the blower off and set it aside, noting the position of the blower in relation to the two locating pins on the rear panel. Reverse this procedure to reinstall the blower. Put the caution label (P/N 54-80379A 76) on the rear panel of your System Analyzer.

Place the battery pack's left edge tabs into the left feet slots on the Analyzer's rear panel. Two captive screws on the battery pack's right edge engage threaded holes in the rear panel's right feet. Tighten these screws snugly, but do not overtighten. Install the cable from the battery pack in the DC IN jack on the rear panel of the unit, and reconnect the ac line cord.



84-7665

Figure 19-1. Battery Pack - Mounting Detail

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### 19.3 OPERATION

The battery pack is automatically engaged when no ac power is present, and when the POWER switch is set at either ON or STANDBY. When ac power is applied, the Analyzer automatically switches the battery pack out of the circuit and draws its power from the ac power source.

When the POWER switch is set at OFF or STANDBY, and ac power is applied to the System Analyzer, the battery pack draws dc current from the Analyzer to activate the charging circuit. The charging circuit delivers approximately 750 mA of current until the battery voltage reaches 14V. As the battery voltage reaches 14V, the current drops to approximately 25 mA, and the high-charge indicator LED goes out.

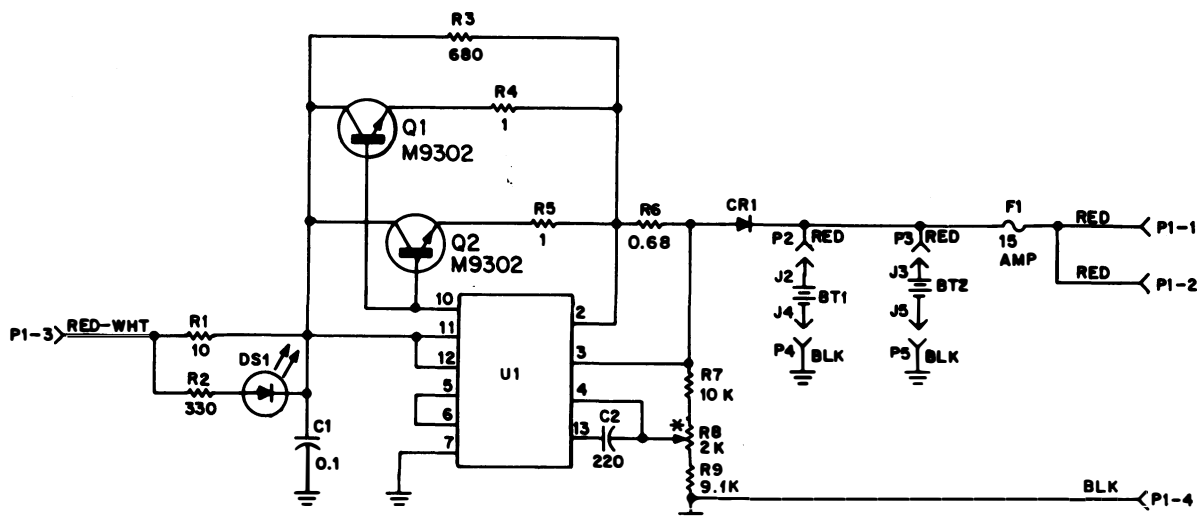
To extend the time the battery can operate the System Analyzer, keep the unit's POWER switch set at STANDBY whenever possible. Because of the low

trickle-charge rate, the batteries can be left charging indefinitely without damage from overcharging.

At high ambient temperature, if you plan to operate the Analyzer from the ac line for long periods of time, remove the battery pack and reinstall the blower assembly.

#### **CAUTION**

*Do NOT permit battery discharge below 10.4 Vdc (as indicated on the CRT in DVM display mode); immediately turn the unit OFF. Allowing battery discharge below this level may permanently damage the battery. To recharge the batteries, plug the System Analyzer into ac power (117/234 Vac) with the POWER switch set at OFF or STANDBY.*



\* WITH THE BATTERIES REMOVED (BT1 AND BT2) AND A 30-OHM, 10 WATT RESISTOR IN PLACE OF THE BATTERIES, SET RB FOR  $14.45V \pm 50MV$  USING A DIGITAL VOLTMETER ACROSS THE BATTERY TERMINALS.

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Figure 19-2. Battery Pack - Schematic

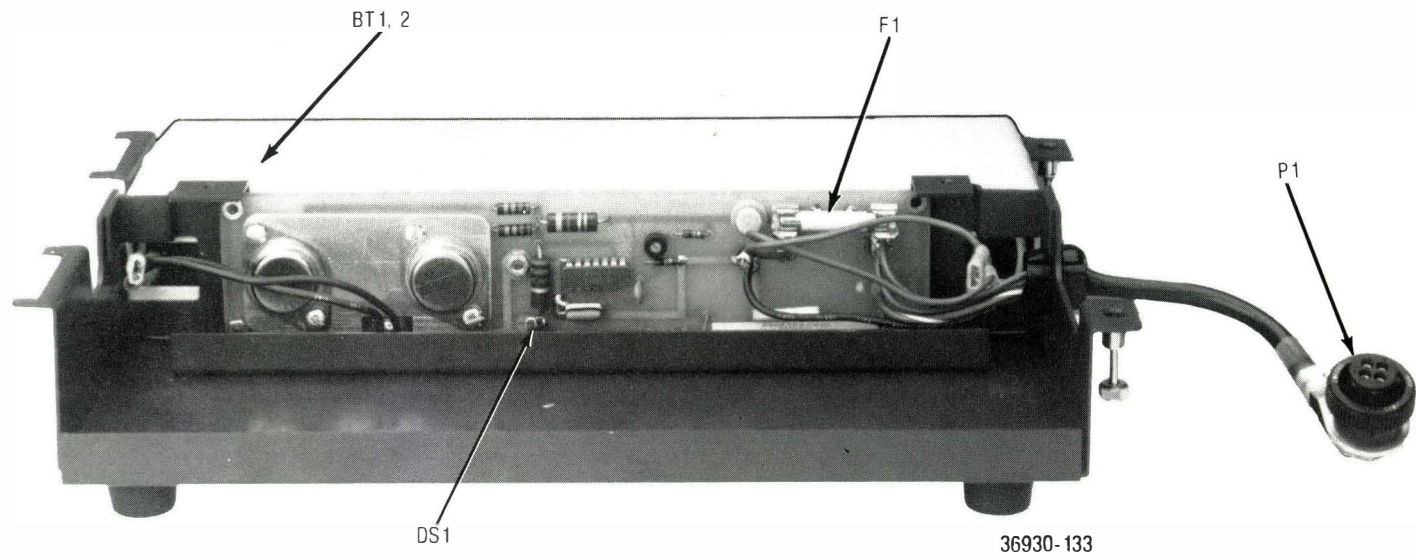


Figure 19-3b. Battery Pack - Parts Location Detail

**BATTERY PACK**  
RTP-1002A

Find No.	Qty. Req.	Part No.	Nomenclature	Part Value
BT001	1	60-80340A88	BATTERY, 12V	6-CELL
BT002	1	60-80340A88	BATTERY, 12V	6-CELL
C 001	1	8-82096J18	CAPACITOR, FIXED	1µF-10-250
C 002	1	21-83596E10	CAPACITOR, FIXED	220pF-20-500
CR001	1	48-82525G01	DIODE, SILICON	
DS001	1	48-82019L05	LED	
F 001	1	65-804906	FUSE	15A SLOW BLOW
Q 001	1	48-869302	TRANSISTOR	NPN, TYPE M9302
Q 002	1	48-869302	TRANSISTOR	NPN, TYPE M9302
R 001	1	17-80344A60	RESISTOR	10-10-10
R 002	1	6-124C37	RESISTOR	330-10-1/4
R 003	1	6-126C45	RESISTOR	680-10-1
R 004	1	6-125B70	RESISTOR	1-5-1/2

Find No.	Qty. Req.	Part No.	Nomenclature	Part Value
R 005	1	6-125B70	RESISTOR	1-5-1/2
R 006	1	17-80344A71	RESISTOR	68-5-2
R 007	1	6-124A73	RESISTOR	10K-5-1/4
R 008	1	18-80342A10	RESISTOR, VARIABLE	2K-20-1/2
R 009	1	6-124A72	RESISTOR	9.1K-5-1/4
U 001	1	51-80342A59	INTEGRATED CIRCUIT	MC1723CL
	1	15-80340A92	COVER, BATTERY CASE	
	4	3-120938	SCREW, MACHINE	4-40 X 5/16"
	4	4-7667	WASHER, LOCK: NO. 4	
	1	64-80342A54	EXTERNAL TOOTH	
	4	2-7005	PLATE, HEATSINK	
	4	4-7666	NUT, HEX	6-32
	1	14-80340A91	WASHER, LOCK: NO. 6	
	1	75-82566B01	EXTERNAL TOOTH	
	4	3-80342A46	INSULATOR BOARD	
	5	3-136774	FOOT, RUBBER	6-32 X 1/2"
	2	3-132840	SCREW, MACHINE	4-40 X 1/4"
	5	4-7667	SCREW, MACHINE	8-32 X 5/8"
	1	54-80379A76	WASHER, LOCK: NO. 4	
	1	42-850925	EXTERNAL TOOTH	
			LABEL, CAUTION	
			CLAMP	

**BATTERY PACK**  
(RTP-1002A)

Figure 19-3a. Printed Wiring Board Assembly and Parts List  
Figure 19-3b. Parts Location Detail and Parts List

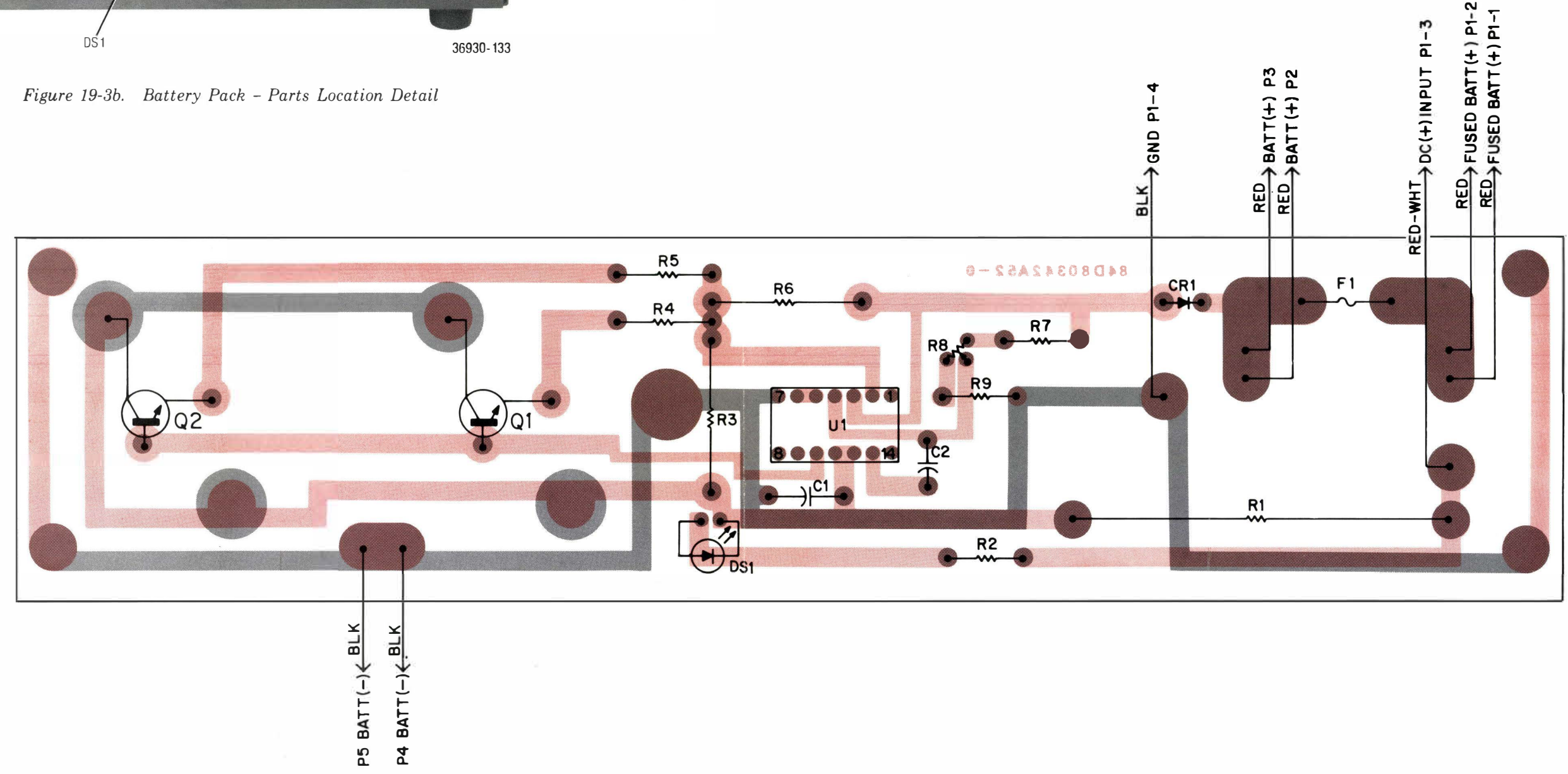


Figure 19-3a. Battery Pack - Printed Wiring Board Assembly

**Cable Assembly (P1)**  
(1-80303A91)

1	15-10811A08	HOUSING, CONNECTOR	4-PIN
4	9-83741F01	CONTACT, RECEPTACLE	
1	42-80340A90	CLAMP, CABLE	
1	2-2888	NUT, HEX	5/8-24

**Battery Case**  
(1-80304A71)

1	27-80335A41	CASE, BATTERY	
2	3-80340A89	SCREW, CAPTIVE	6-32 X 21/32"
1	41-80342A53	SPRING, CLIP	

**Circuit Board Assembly**  
(1-80304A72)

2	42-82690A01	CLIP, FUSEHOLDER	
4	43-865080	STANDOFF, THREADED	

**Lead Assembly, Battery (Red)**  
(1-80304A73)

1	30-10310A26	WIRE, NO. 16 STRANDED	4-1/2"
1	29-859118	CONTACT, RECEPTACLE	

**Lead Assembly, Battery (Black)**  
(1-80304A74)

1	10-134301	WIRE, NO. 16 STRANDED	4-1/2"
1	29-859118	CONTACT, RECEPTACLE	

