P0129-BAROMETRIC PRESSURE OUT-OF-RANGE LOW

CIRCUIT SCHEMATIC

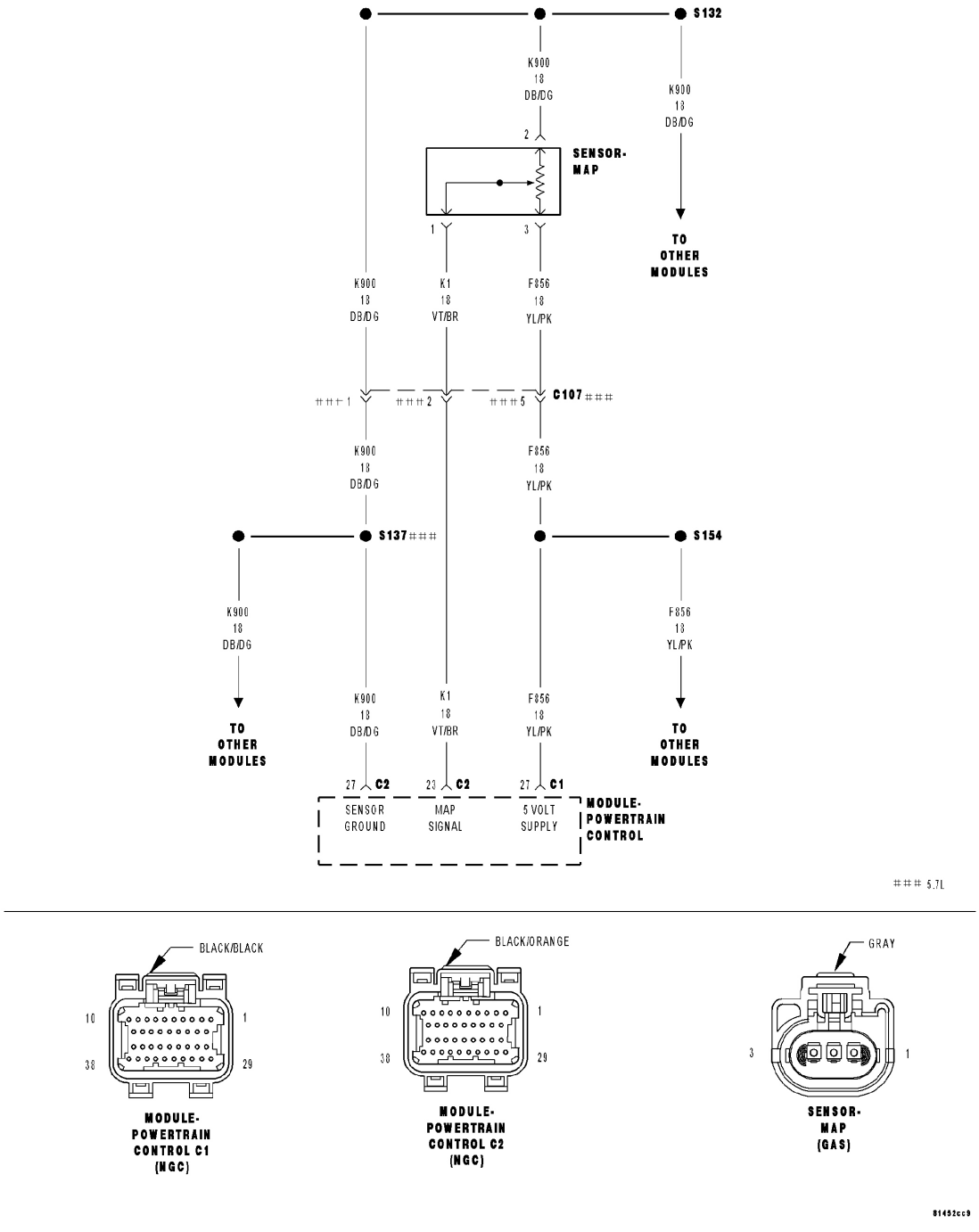

Fig. 65: Manifold Absolute Pressure & Engine Coolant Temperature Sensors Circuit Schematic
Courtesy of CHRYSLER LLC

ADDITIONAL WIRING

For complete wiring diagrams, refer to:

SYSTEM WIRING DIAGRAMS for R1500.

SYSTEM WIRING DIAGRAMS for R2500.

SYSTEM WIRING DIAGRAMS for R3500.

SYSTEM WIRING DIAGRAMS for R3500 HD.

MONITOR CONDITIONS

When Monitored:

With the ignition key on. No Cam or Crank signal within 75 ms. Engine speed less than 250 RPM.

SET CONDITIONS

- **Set Condition:**

  The PCM senses the voltage from the MAP sensor to be less than 2.2 volts but above 0.04 of a volt for 300 milliseconds. One Trip Fault. Three good trips to turn off the MIL. (The MIL will illuminate and the ETC lamp will flash, if equipped.)

POSSIBLE CAUSES

Possible Causes
(F856) 5-VOLT SUPPLY CIRCUIT SHORTED TO BATTERY VOLTAGE
(F856) 5-VOLT SUPPLY CIRCUIT OPEN
(F856) 5-VOLT SUPPLY CIRCUIT SHORTED TO GROUND
(K1) MAP SIGNAL CIRCUIT OPEN
(K1) MAP SIGNAL CIRCUIT SHORTED TO GROUND
(K1) MAP SIGNAL CIRCUIT SHORTED TO THE (K900) SENSOR GROUND CIRCUIT
MAP SENSOR
POWERTRAIN CONTROL MODULE (PCM)

Always perform the **PRE-DIAGNOSTIC TROUBLESHOOTING PROCEDURE** before proceeding.

DIAGNOSTIC TEST

1) ACTIVE DTC

Ignition on, engine not running.

With a scan tool, select View DTCs.

Is the DTC Active at this time.

Yes

Go To 2).

No

Refer to the **INTERMITTENT CONDITION** Diagnostic Procedure.

2) (F856) 5-VOLT SUPPLY CIRCUIT

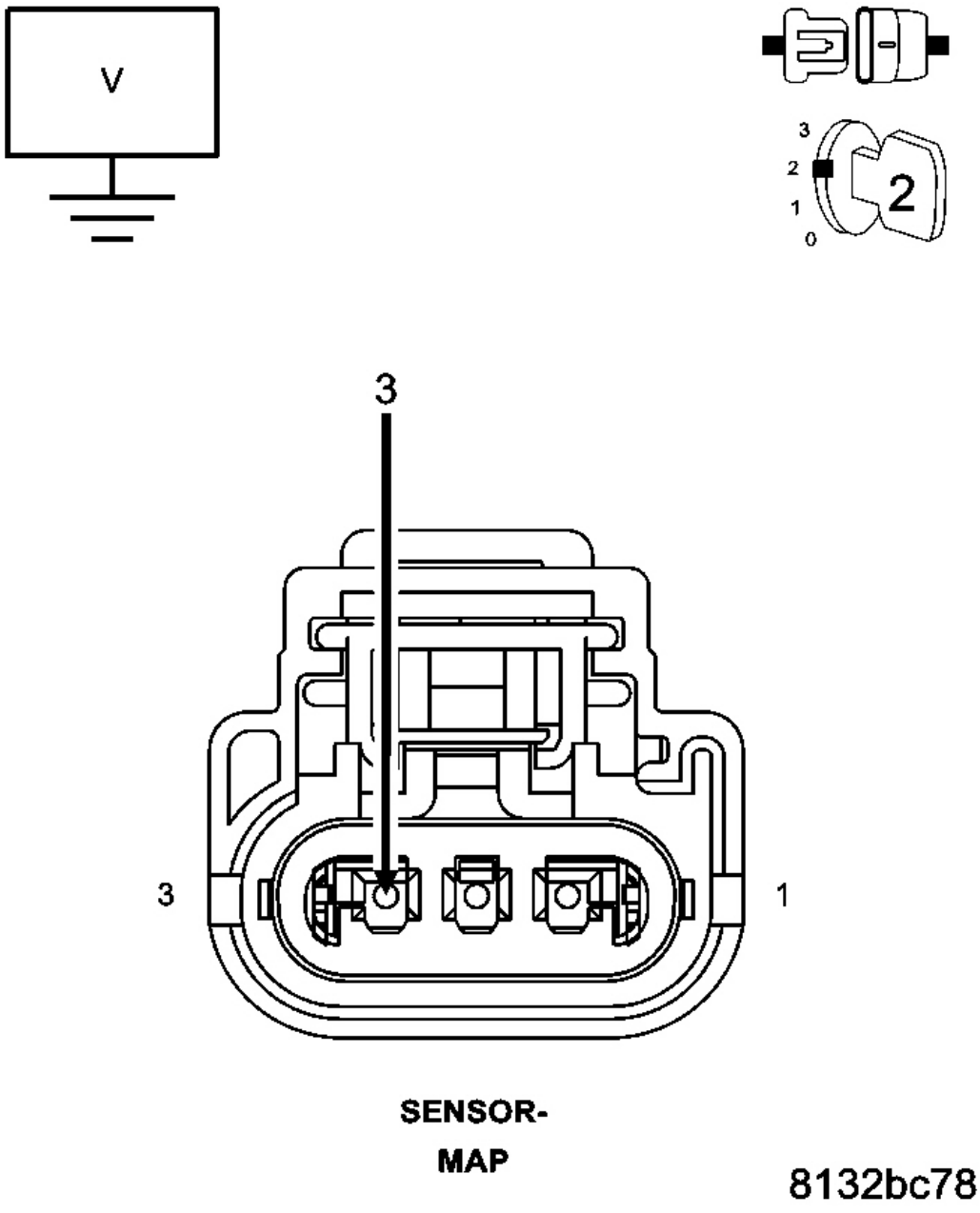

Fig. 66: Checking MAP Sensor 5-Volt Supply Circuit
Courtesy of CHRYSLER LLC

Turn the ignition off.

Disconnect the MAP Sensor harness connector.

Ignition on, engine not running.

Measure the voltage on the (F856) 5-volt Supply circuit in the MAP Sensor harness connector.

Is the voltage between 4.5 to 5.2 volts?

Yes

Go To 3).

No

Go To 7).

3) MAP SENSOR

With a scan tool, monitor the MAP Sensor voltage with the Sensor harness connector disconnected.

Is the voltage above 2.2 volts?

Yes

Verify that there is good pin to terminal contact in the Sensor and Powertrain Control Module connectors. Replace the MAP Sensor if no problems were found with the connectors.

Perform **POWERTRAIN VERIFICATION TEST** .

No

Go To 4).

4) (K1) MAP SIGNAL CIRCUIT OPEN

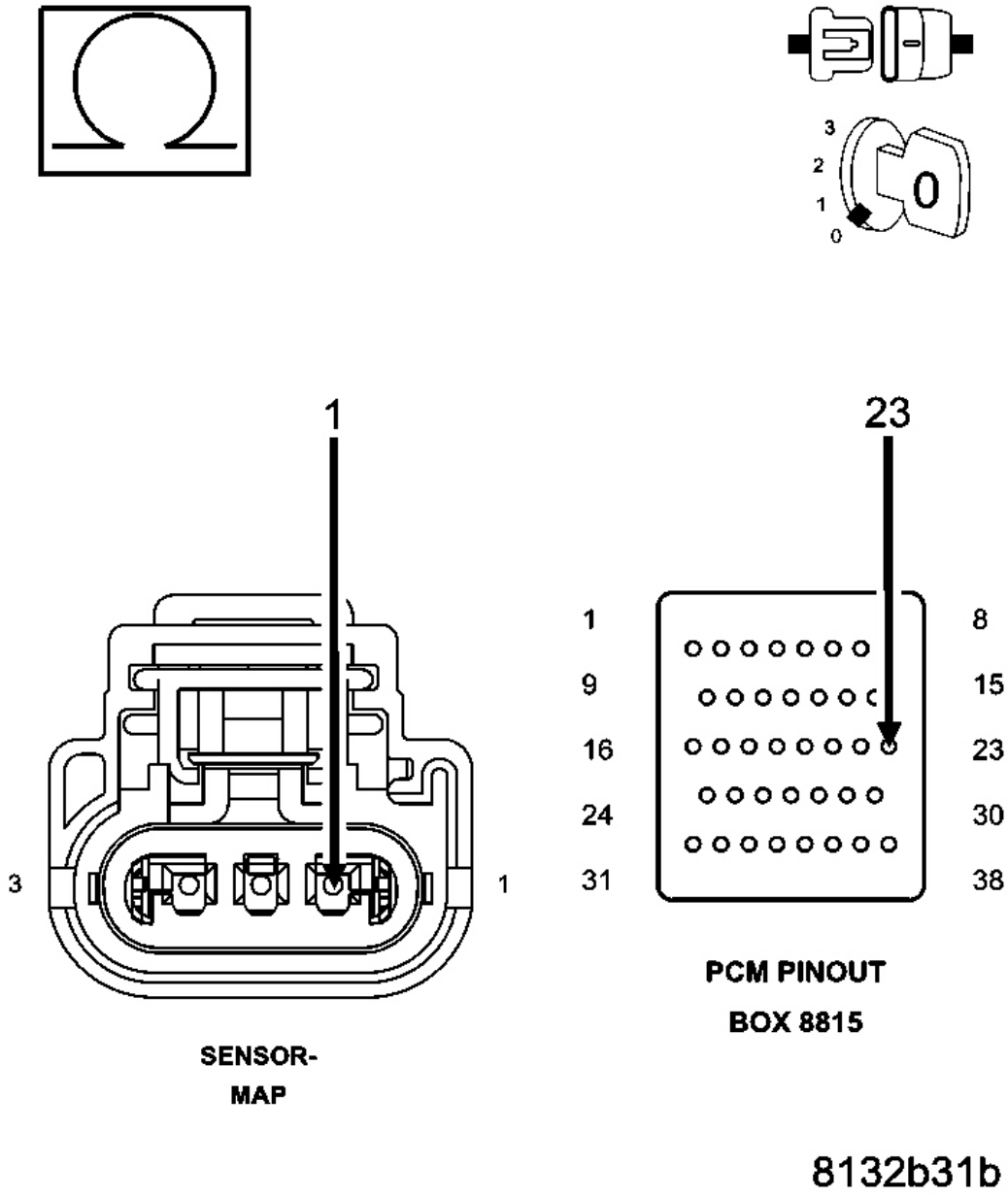

Fig. 67: Checking MAP Sensor Signal Circuit
Courtesy of CHRYSLER LLC

Turn the ignition off.

Disconnect the C2 PCM harness connector.

CAUTION: Do not probe the PCM harness connectors. Probing the PCM harness connectors will damage the PCM terminals resulting in poor terminal to pin connection. Install Miller Special Tool #8815 to perform diagnosis.

Measure the resistance of the (K1) MAP Signal circuit from the MAP Sensor harness connector to the appropriate terminal of special tool #8815.

Is the resistance below 5.0 ohms?

Yes

Go To 5).

No

Repair the open in the (K1) MAP Signal circuit.
Perform **POWERTRAIN VERIFICATION TEST** .

5) (K1) MAP SIGNAL CIRCUIT SHORTED TO THE (K900) SENSOR GROUND CIRCUIT

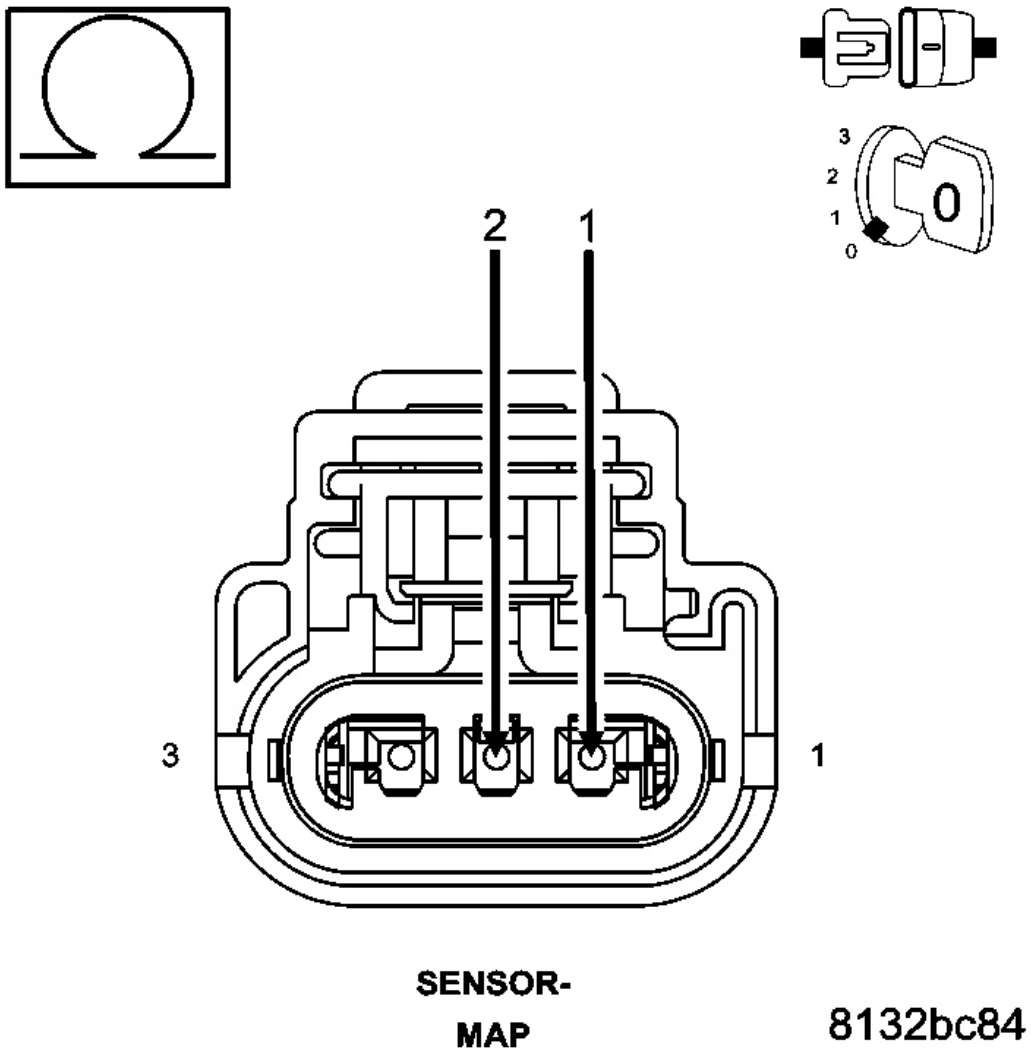

Fig. 68: Checking Manifold Absolute Pressure Sensor Signal Circuit Shorted To Sensor Ground Circuit
Courtesy of CHRYSLER LLC

Measure the resistance between the (K900) Sensor ground circuit and the (K1) MAP Signal circuit in the MAP Sensor harness connector.

Is the resistance below 5.0 ohms?

Yes

Repair the short between the (K900) Sensor ground circuit and the (K1) MAP Signal circuit.

Perform **POWERTRAIN VERIFICATION TEST** .

No

Go To 6).

6) (K1) MAP SIGNAL CIRCUIT SHORTED TO GROUND

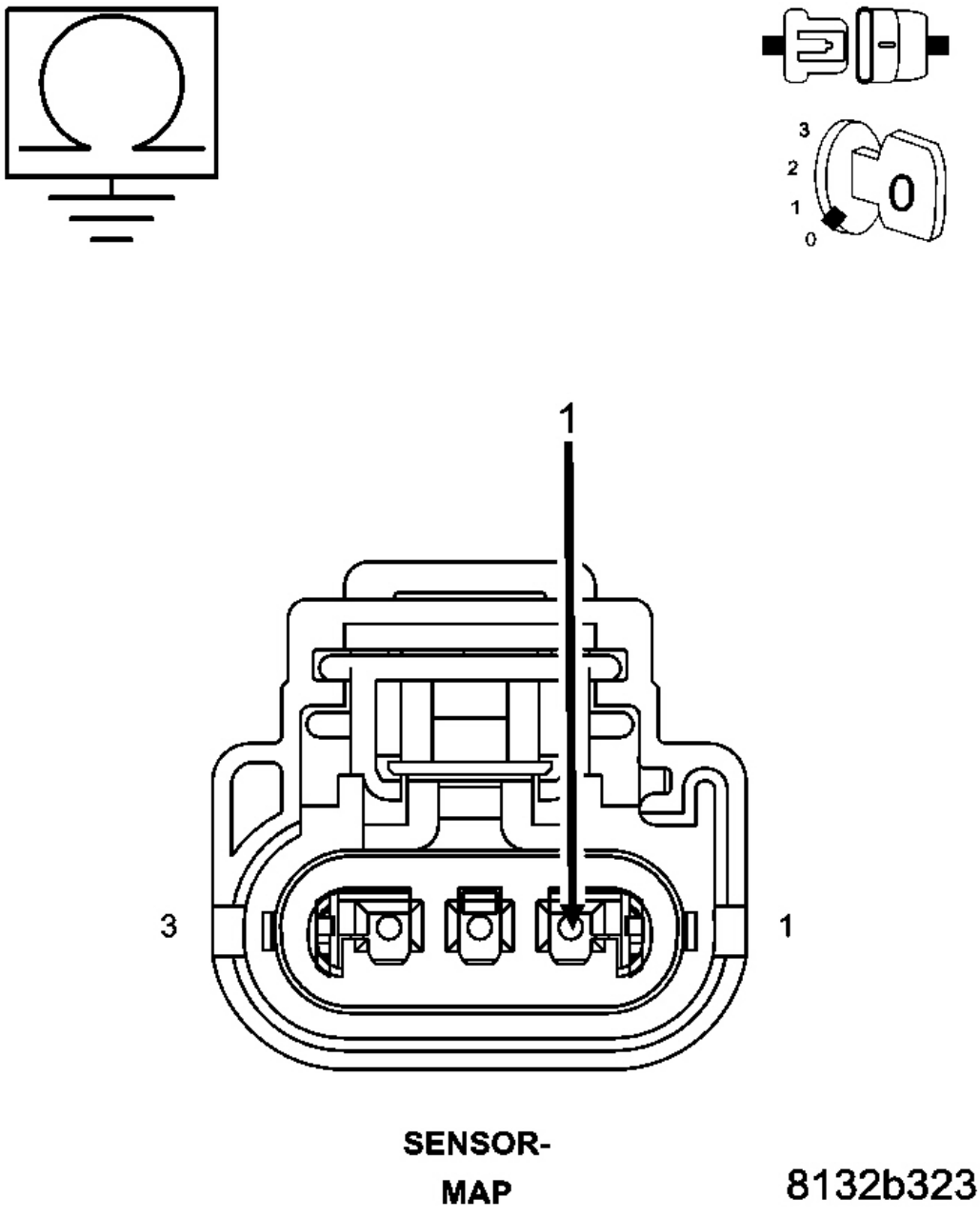

Fig. 69: Checking MAP Sensor Signal Circuit For Short To Ground
Courtesy of CHRYSLER LLC

Measure the resistance between ground and the (K1) MAP Signal circuit in the MAP Sensor harness connector.

Is the resistance below 100 ohms?

Yes

Repair the short to ground in the (K1) MAP Signal circuit.
Perform **POWERTRAIN VERIFICATION TEST** .

No

Go To 10).

7) (F856) 5-VOLT SUPPLY CIRCUIT SHORTED TO VOLTAGE

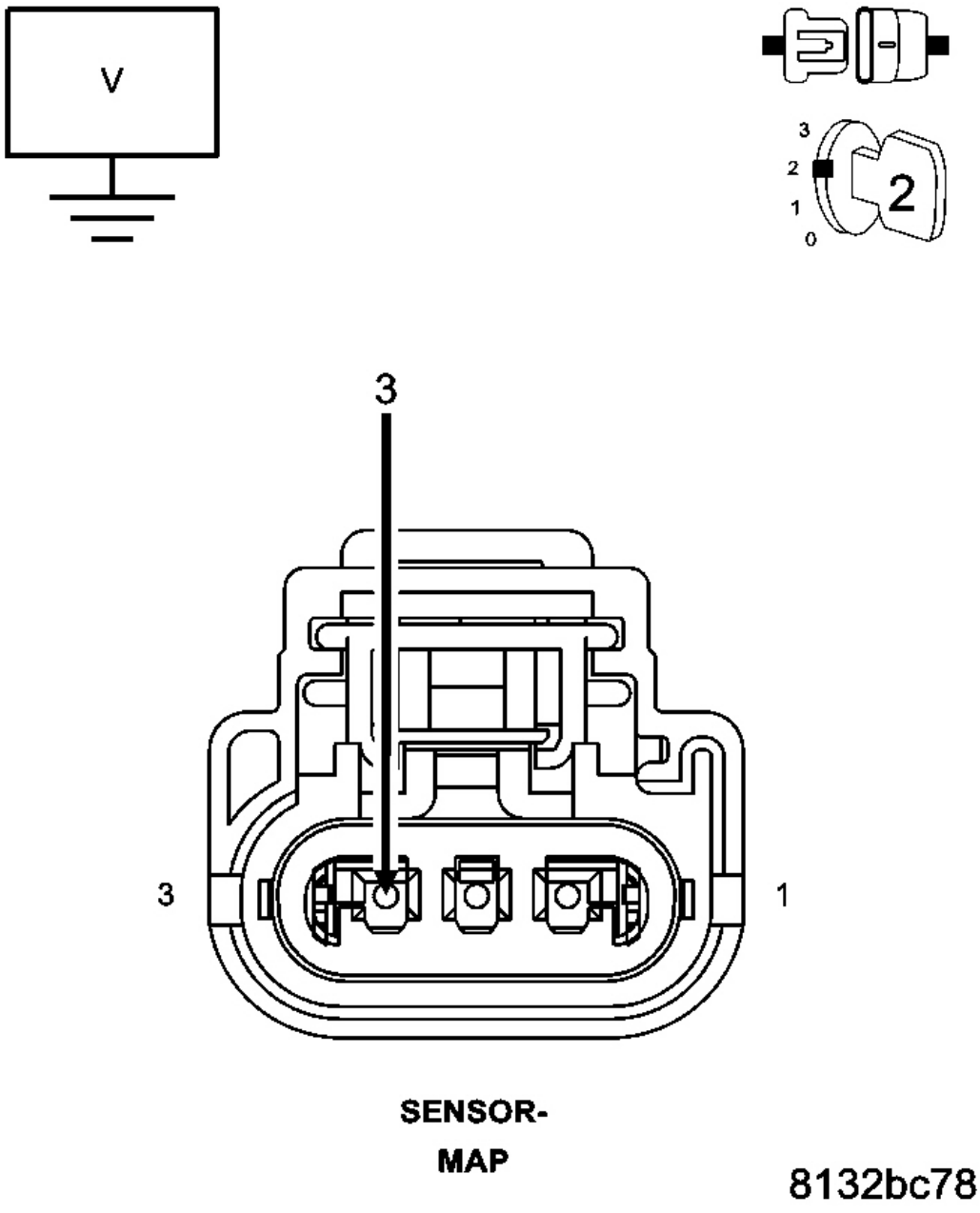

Fig. 70: Checking MAP Sensor 5-Volt Supply Circuit
Courtesy of CHRYSLER LLC

Turn the ignition off.

Disconnect the C1 PCM harness connector.

Ignition on, engine not running.

Measure the voltage on the (F856) 5-volt Supply circuit in the MAP Sensor harness connector.

Is there any voltage present?

Yes

Repair the short to voltage in the (F856) 5-volt Supply circuit.
Perform **POWERTRAIN VERIFICATION TEST** .

No

Go To 8).

8) (F856) 5-VOLT SUPPLY CIRCUIT OPEN

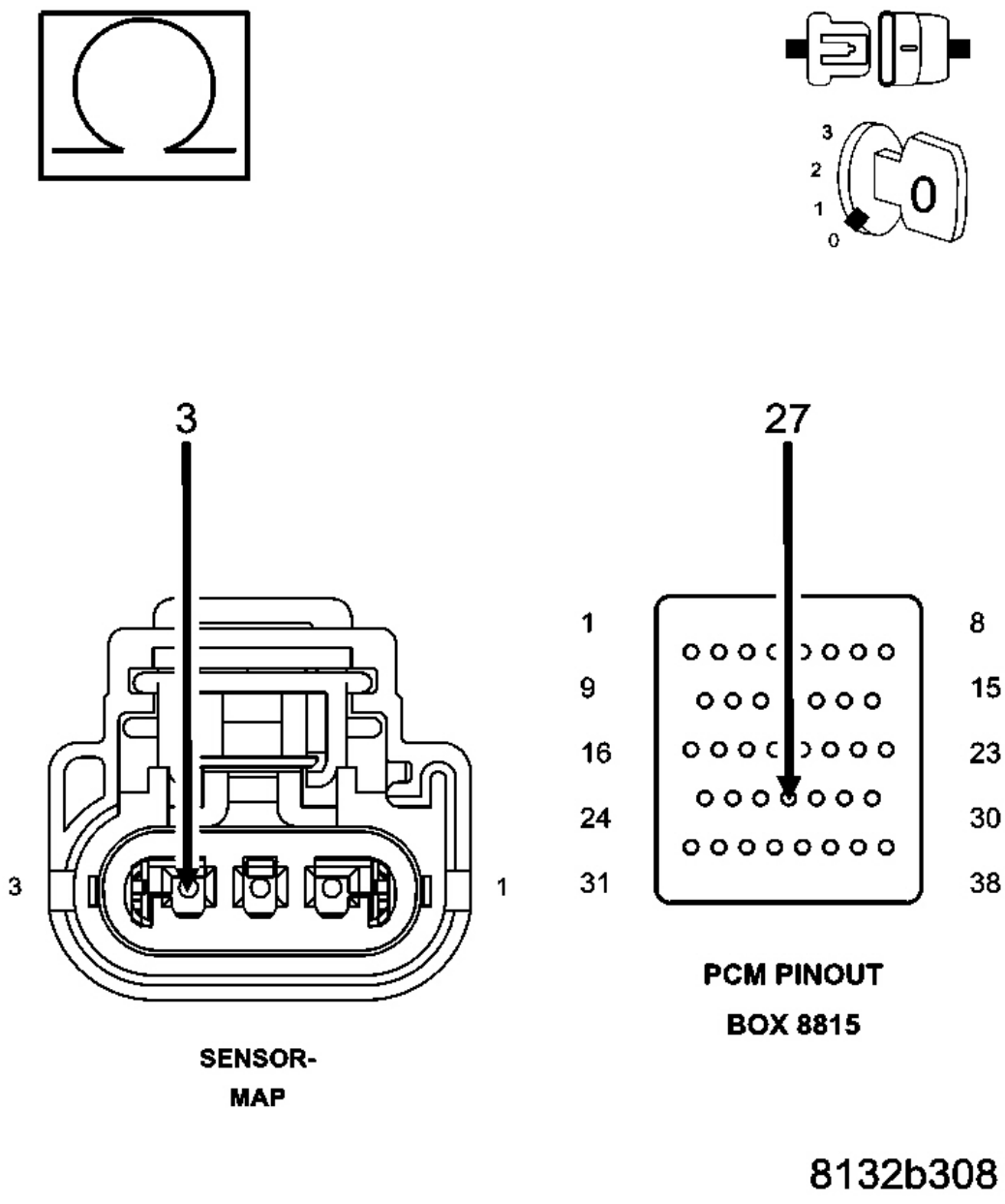

Fig. 71: Checking MAP Sensor 5-Volt Supply Circuit
Courtesy of CHRYSLER LLC

Turn the ignition off.

CAUTION: Do not probe the PCM harness connectors. Probing the PCM harness connectors will damage the PCM terminals resulting in poor terminal

to pin connection. Install Miller Special Tool #8815 to perform diagnosis.

Measure the resistance of the (F856) 5-volt Supply circuit from the MAP Sensor harness connector to the appropriate terminal of special tool #8815.

Is the resistance below 5.0 ohms?

Yes

Go To 9).

No

Repair the open in the (F856) 5-volt Supply circuit.

Perform **POWERTRAIN VERIFICATION TEST** .

9) (F856) 5-VOLT SUPPLY CIRCUIT SHORTED TO GROUND

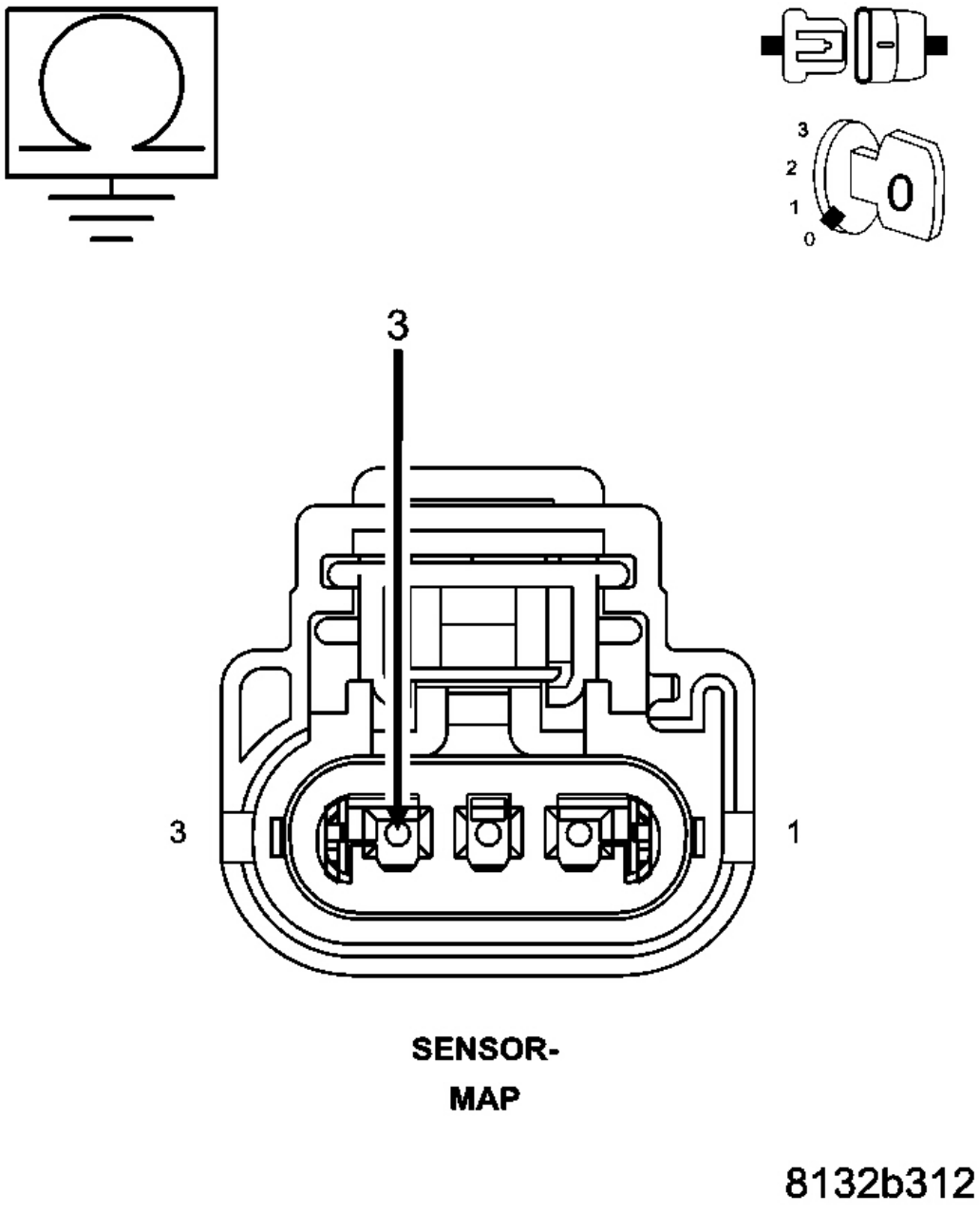

Fig. 72: Checking MAP Sensor 5-Volt Supply Circuit
Courtesy of CHRYSLER LLC

Measure the resistance between ground and the (F856) 5-volt Supply circuit in the MAP Sensor harness connector.

Is the resistance below 100 ohms?

Yes

Repair the short to ground in the (F856) 5-volt Supply circuit.
Perform **POWERTRAIN VERIFICATION TEST** .

No

Go To 10).

10) POWERTRAIN CONTROL MODULE (PCM)

Using the wiring diagram/schematic as a guide, inspect the wiring and connectors between the MAP Sensor and the Powertrain Control Module (PCM).

Look for any chafed, pierced, pinched, or partially broken wires.

Look for broken, bent, pushed out or corroded terminals. Verify that there is good pin to terminal contact in the Sensor and Control Module connectors.

Refer to any Technical Service Bulletins that may apply.

Were there any problems found?

Yes

Repair as necessary.
Perform **POWERTRAIN VERIFICATION TEST** .

No

Replace and program the Powertrain Control Module per Service Information.
Perform **POWERTRAIN VERIFICATION TEST** .

