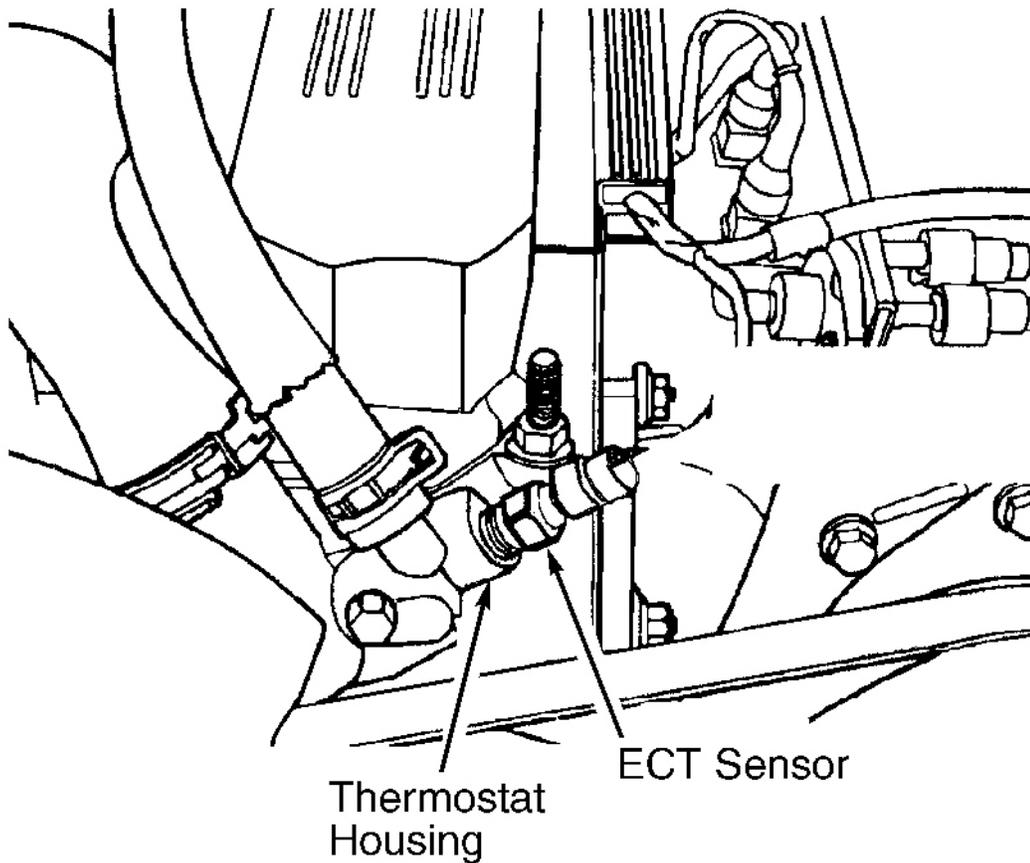


**DTC P0117: ECT SENSOR VOLTAGE TOO LOW**

**NOTE:** For connector terminal identification, see **CONNECTOR IDENTIFICATION** . For circuit identification and wiring diagram, see **CHEROKEE** wiring diagram in **WIRING DIAGRAMS** article.

**NOTE:** **DTC P0117: ECT SENSOR VOLTAGE TOO LOW** is monitored with ignition on and battery voltage more than 10.4 volts. DTC may be stored in Powertrain Control Module (PCM) when PCM senses Engine Coolant Temperature (ECT) sensor voltage is less than .8 volt for more than 3 seconds. Possible causes are: defective ECT sensor, defective PCM, defective connectors or defective wiring.

1. Turn ignition on, with engine off. Using scan tool, read ECT sensor voltage. If voltage is less than .5 volt, go to next step. If voltage is .5 volt or more, go to step 6).
2. Turn ignition off. Disconnect ECT sensor connector. See **Fig. 24** . Clean and/or repair connector as necessary. Turn ignition on, with engine off. Using scan tool, read ECT sensor voltage. If voltage is more than 4 volts, replace ECT sensor. Perform TEST VER-5A. If voltage is 4 volts or less, go to next step.
3. Turn ignition off. Ensure ECT sensor connector is still disconnected. Disconnect PCM connectors. PCM is located in engine compartment. See PCM LOCATION table under SYSTEM DIAGNOSTICS. Clean and/or repair connectors as necessary. Using an ohmmeter, check resistance between ground and ECT sensor connector, signal circuit (Tan/Black wire). If resistance is less than 5 ohms, repair short to ground in signal circuit. Perform TEST VER-5A. If resistance is 5 ohms or more, go to next step.
4. Ensure ignition is off. Ensure ECT sensor and PCM connectors are still disconnected. Using ohmmeter, check resistance between ECT sensor connector, signal circuit (Tan/Black wire) and sensor ground circuit (Brown/Yellow wire). If resistance is less than 5 ohms, repair signal circuit for short to sensor ground circuit. Perform TEST VER-5A. If resistance is 5 ohms or more, go to next step.
5. At this time, PCM is assumed to be defective. Replace PCM. Perform TEST VER-5A.
6. Turn ignition on, with engine off. Wiggle ECT sensor connector and wiring harness while monitoring ECT sensor voltage. See **Fig. 24** . If voltage changes while wiggling connector and wiring harness, repair connector or wiring harness where wiggling caused voltage to change. Perform TEST VER-5A. If voltage does not change, go to next step.
7. Turn ignition off. Visually inspect related connectors and wiring harness for damage. Repair connectors and wiring harness as necessary. Perform TEST VER-5A. If connectors and wiring harness are okay, test is complete.



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**Fig. 24: Locating ECT Sensor**  
Courtesy of CHRYSLER CORP.

**DTC P0118: ECT SENSOR VOLTAGE TOO HIGH**

- NOTE:** For connector terminal identification, see **CONNECTOR IDENTIFICATION** . For circuit identification and wiring diagram, see **CHEROKEE** wiring diagram in **WIRING DIAGRAMS** article.
- NOTE:** **P0118: ECT SENSOR VOLTAGE TOO HIGH** is monitored with ignition on and battery voltage more than 10.4 volts. DTC may be stored in Powertrain Control Module (PCM) when PCM senses Engine Coolant Temperature (ECT) sensor voltage is more than 4.98 volts for more than 3 seconds. Possible causes are: defective ECT sensor, defective PCM, defective connectors or defective wiring.

1. Turn ignition on, with engine off. Using scan tool, read ECT sensor voltage. If voltage is more than 4.5



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volts, go to next step. If voltage is 4.5 volts or less, go to step 6).

2. Turn ignition off. Disconnect ECT sensor connector. Clean and/or repair connector as necessary. Connect a jumper wire between ground and ECT sensor connector, sensor ground circuit (Brown/Yellow wire). Turn ignition on, with engine off. Using scan tool, read ECT sensor voltage. If voltage is less than one volt, repair open sensor ground circuit. Perform TEST VER-5A. If voltage is one volt or more, go to next step.
3. Turn ignition off. Ensure ECT sensor connector is still disconnected. Connect a jumper wire between ECT sensor connector, signal circuit (Tan/Black wire) and sensor ground circuit (Brown/Yellow wire). Turn ignition on, with engine off. Using scan tool, read ECT sensor voltage. If voltage is less than one volt, replace ECT sensor. Perform TEST VER-5A. If voltage is one volt or more, go to next step.
4. Turn ignition off. Ensure ECT sensor connector is still disconnected. Disconnect PCM connectors. PCM is located in engine compartment. See PCM LOCATION table under SYSTEM DIAGNOSTICS. Clean and/or repair connectors as necessary. Using an ohmmeter, check resistance of ECT sensor signal circuit (Tan/Black wire) between ECT sensor and PCM. If resistance is less than 5 ohms, go to next step. If resistance is 5 ohms or more, repair open signal circuit. Perform TEST VER-5A.
5. At this time, PCM is assumed to be defective. Replace PCM. Perform TEST VER-5A.
6. Ensure ignition is on, with engine off. Wiggle ECT sensor connector and wiring harness while monitoring ECT sensor voltage. If voltage changes while wiggling connector and wiring harness, repair connector or wiring harness where wiggling caused voltage to change. Perform TEST VER-5A. If voltage does not change, go to next step.
7. Turn ignition off. Visually inspect related connectors and wiring harness for damage. Repair connectors and wiring harness as necessary. Perform TEST VER-5A. If connectors and wiring harness are okay, test is complete.