

### General Information

**WARNING** This diagram is provided as a diagnostic tool for trained, experienced technicians only. Improper troubleshooting or repair can result in severe personal injury or death or property damage. See important instructions in the Service Manual.

#### Electrical Specifications

**SAE J1939 Backbone Resistance**

- Positive wire to return wire - 50 to 70 ohms
- Termination Resistance - 110 to 130 ohms

**All Continuity Checks**

- OK (no open circuit) # < 10 ohms

**All Shorts To Ground**

- OK (no short circuit) # > 100k ohms

**Short Circuit to External Voltage Source**

- OK (I < 1.5 VDC)

#### Sensor Specifications

**Engine Coolant Temperature Sensor**

- Torque = 20 N·m [177 in·lb]
- Torque = 23 N·m [204 in·lb]

**Engine Oil Pressure Sensor**

- Torque = 8 N·m [71 in·lb]

**Intake Manifold Air Pressure/Temperature Sensor**

- Torque = 8 N·m [71 in·lb]

### Specifications

**Sensor Supply Voltage**

- ECM - 4.75 to 5.25 VDC

**Solenoids**

- Fuel Pump Actuator - 2.0 to 4.5 ohms
- Injectors - Less than 2 ohms

**Engine Control Module (ECM) Connector**

- Retaining Cap/Screw Torque = 3 N·m [27 in·lb]

**Fuel Rail Pressure Sensor**

- Torque = 70 N·m [52 ft·lb]

**Engine Speed/Position Sensor (Camshaft)**

- Torque = 8 N·m [71 in·lb]

**Engine Speed/Position Sensor (Crankshaft)**

- Torque = 8 N·m [71 in·lb]

