

Figure 6C2-1-16 PCM Oxygen Sensor Circuitry

INTAKE AIR TEMPERATURE (IAT) SENSOR

The Intake Air Temperature (IAT) sensor is a thermistor (a resistor that changes resistance with changes in temperature). The IAT sensor is mounted in the air cleaner housing.

The PCM supplies a 5V reference circuit and an earth circuit to the sensor. A low intake air temperature will produce a high resistance in the sensor (100,000 ohms at -40 degrees C), while a high air intake temperature will produce a low sensor resistance (70 ohms at 130 degrees C).

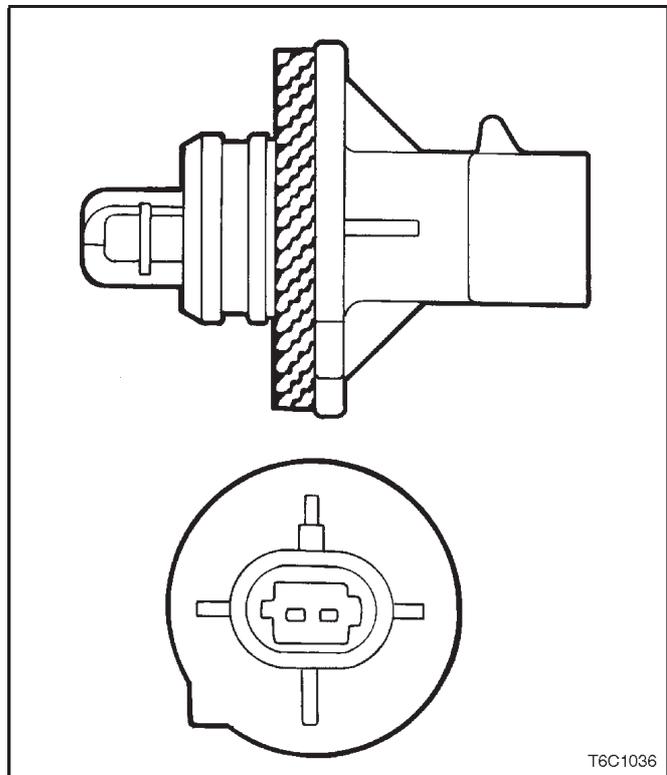


Figure 6C2-1-17 IAT Sensor

The circuit voltage will vary depending on the resistance of the IAT sensor. The voltage will be close to 5-volts when the sensor is cold, and the voltage will decrease as the sensor warms.

When the intake air is cold, such as when the engine is first started on a cold day, the IAT sensor resistance will be high. Therefore the PCM voltage signal will be, approximately 4 - 5 volts.

As the incoming air becomes warmer due to the increasing engine temperature, the IAT sensor resistance decreases, and the voltage will be between 1 and 2 volts.

The IAT sensor signal voltage is one of the parameters used by the PCM in calculating the fuel injector pulse width.

A fault in the IAT sensor circuit should set either a Diagnostic Trouble Code (DTC) 23 or a DTC 25. An intermittent fault in the IAT sensor circuit should set a DTC 26.

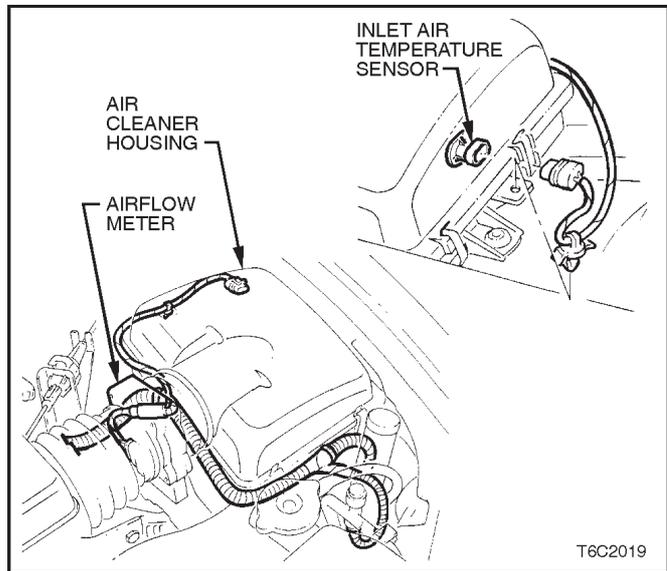


Figure 6C2-1-18 IAT Sensor Location

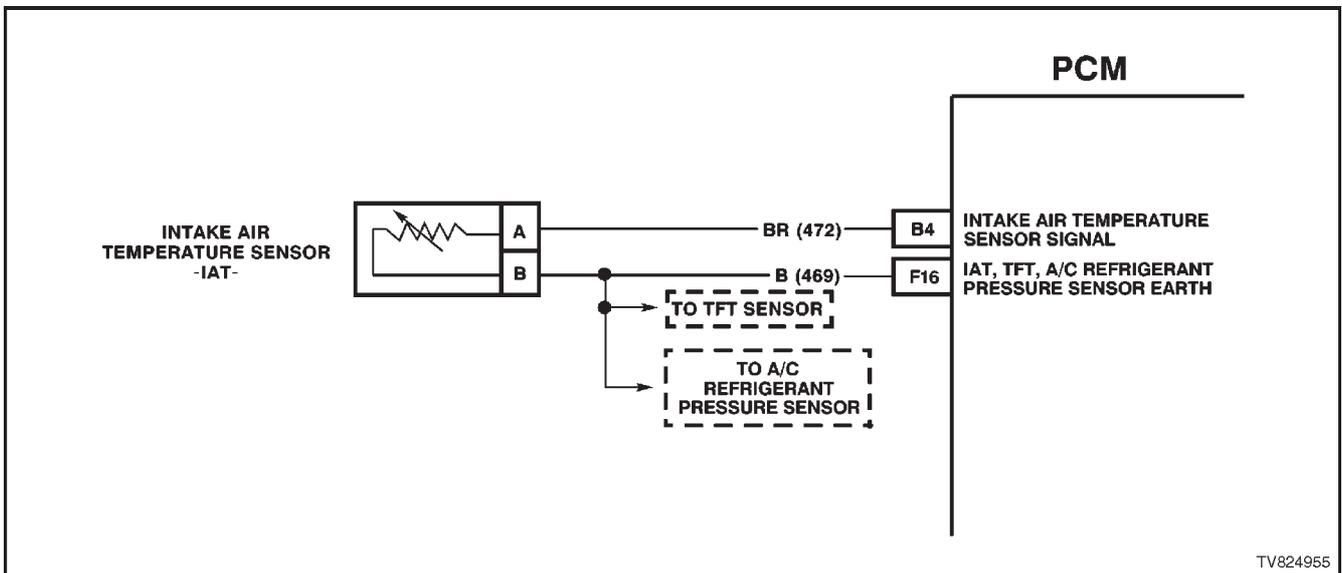


Figure 6C2-1-19 PCM IAT Sensor Circuit

MASS AIR FLOW (MAF) SENSOR

The Mass Air Flow (MAF) sensor used on this engine utilizes a heated element. A heated element in the MAF sensor is placed in the air flow stream of the engine intake air system. The heating element is maintained at a constant temperature above the ambient air temperature. The amount of current required to maintain the heated element at the ambient temperature is a direct function of the mass flow rate of the air over the heated element.

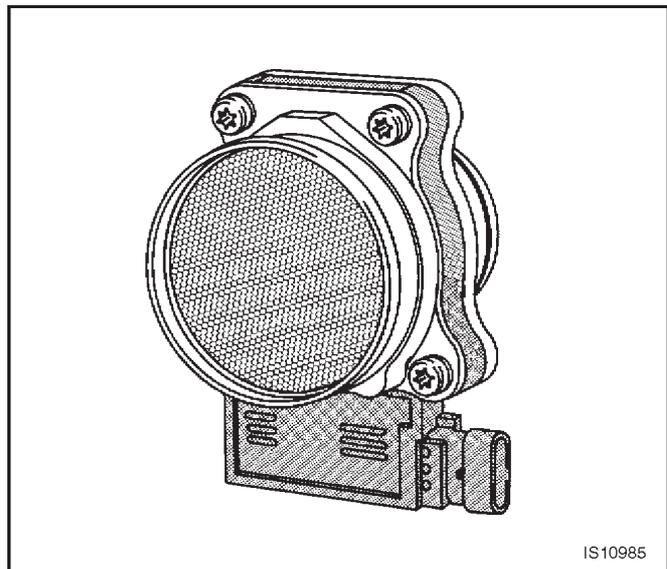


Figure 6C2-1-20 Mass Air Flow Sensor