

CODE 23

MANIFOLD AIR TEMPERATURE (MAT) SENSOR CIRCUIT (LOW TEMPERATURE INDICATED) 2.8L "P" SERIES (PORT)

Circuit Description:

The MAT sensor uses a thermistor to control the signal voltage to the ECM. The ECM applies a voltage (about 4-6 volts) on CKT 472 to the sensor. When the air is cold the sensor (thermistor) resistance is high, therefore, the ECM will see a high signal voltage. If the air is warm the sensor resistance is low therefore the ECM will see a low voltage.

Test Description: Numbers below refer to circled numbers on the diagnostic chart.

- Code 23 will set if:
 - A signal voltage indicates a manifold air temperature below -25°C (-13°F) for 3 seconds.
 - Time since engine start is 1 minute
or
 - Engine not running
 - MAT temperature less than -25°C (-13°F)
 - No Code 15
 - Coolant temperature reading greater than -26°C (-15°F)
- A Code 23 will set, due to an open sensor, wire, or connection. This test will determine if the wiring and ECM are OK.
- This will determine if the signal CKT 472 or the 5V return CKT 469 is open.

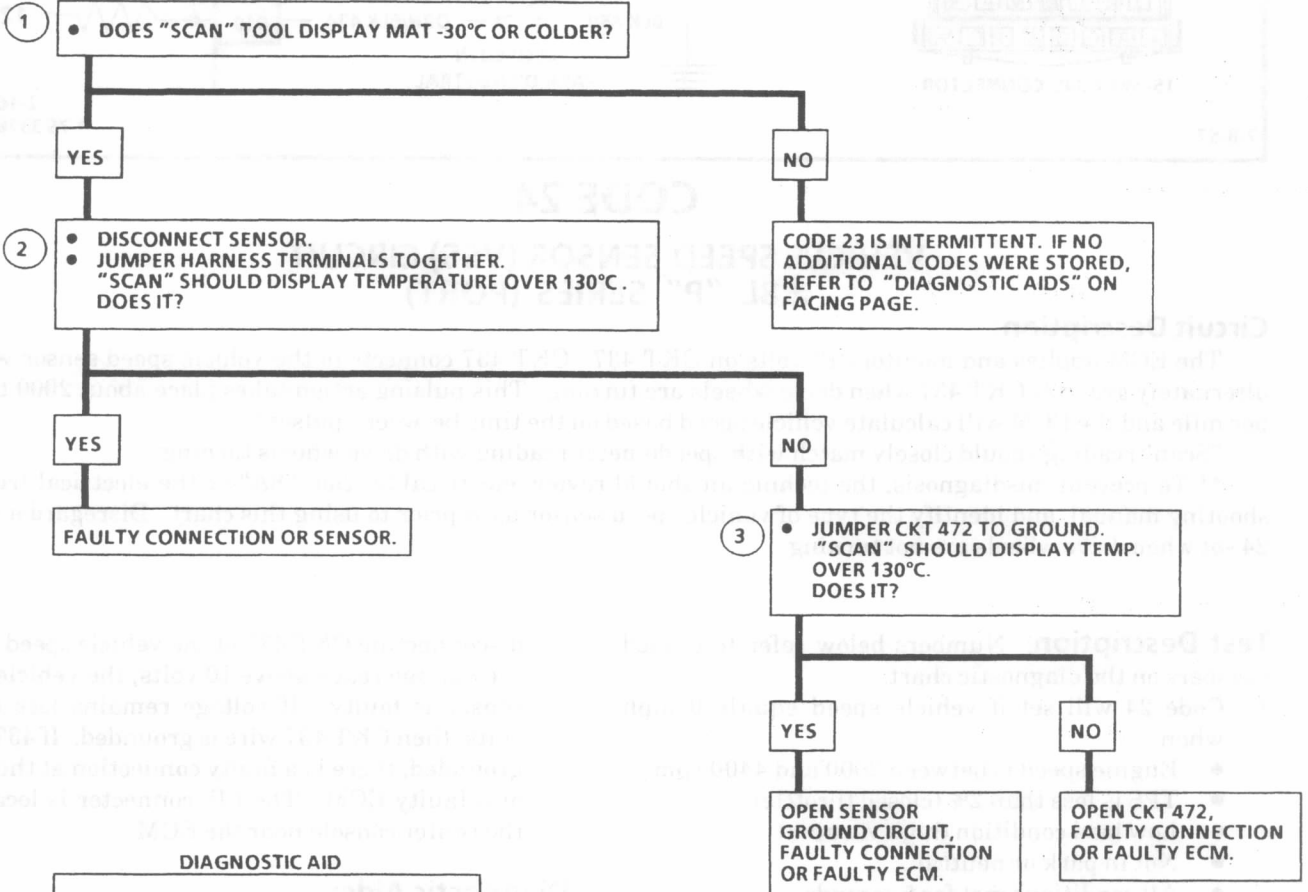
Diagnostic Aids:

A "Scan" tool reads temperature of the air entering the engine and should read close to ambient air temperature when engine is cold, and rises as underhood temperature increases.

Inspect CKTS 472 & 469 for intermittent opens. If Code 33 is also set carefully inspect CKT 469.

Refer to "Intermittents" in Section "B".

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DIAGNOSTIC AID

MAT SENSOR		
TEMPERATURE TO RESISTANCE VALUES (APPROXIMATE)		
°F	°C	OHMS
210	100	185
160	70	450
100	38	1,800
70	20	3,400
40	4	7,500
20	-7	13,500
0	-18	25,000
-40	-40	100,700

CLEAR CODES AND CONFIRM "CLOSED LOOP" OPERATION AND NO "SERVICE ENGINE SOON" LIGHT.