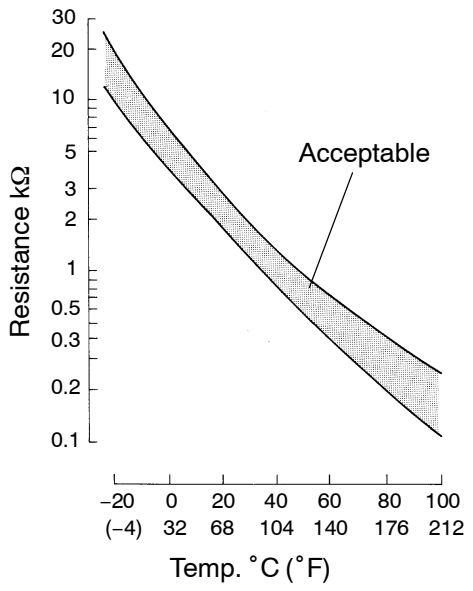
DI6JY–01

DTC	24	Intake Air Temp. Sensor Circuit Malfunction

CIRCUIT DESCRIPTION

Fig. 1



The intake air temperature sensor is built into the air cleaner cap and senses the intake air temperature. A thermistor built in the sensor changes the resistance value according to the intake air temperature. The lower the intake air temperature, the greater the thermistor, the lower the thermistor resistance value (See Fig. 1).

The intake air temperature sensor is connected to the engine ECU. The 5 V power source voltage in the engine ECU is applied to the intake air temperature sensor from terminal THA via a resistor R. That is, resistor R and the intake air temperature sensor are connected in series. When the resistance value of the intake air temperature sensor changes, based on this signal, the engine ECU increases the fuel injection volume to improve drivability during cold engine operation.

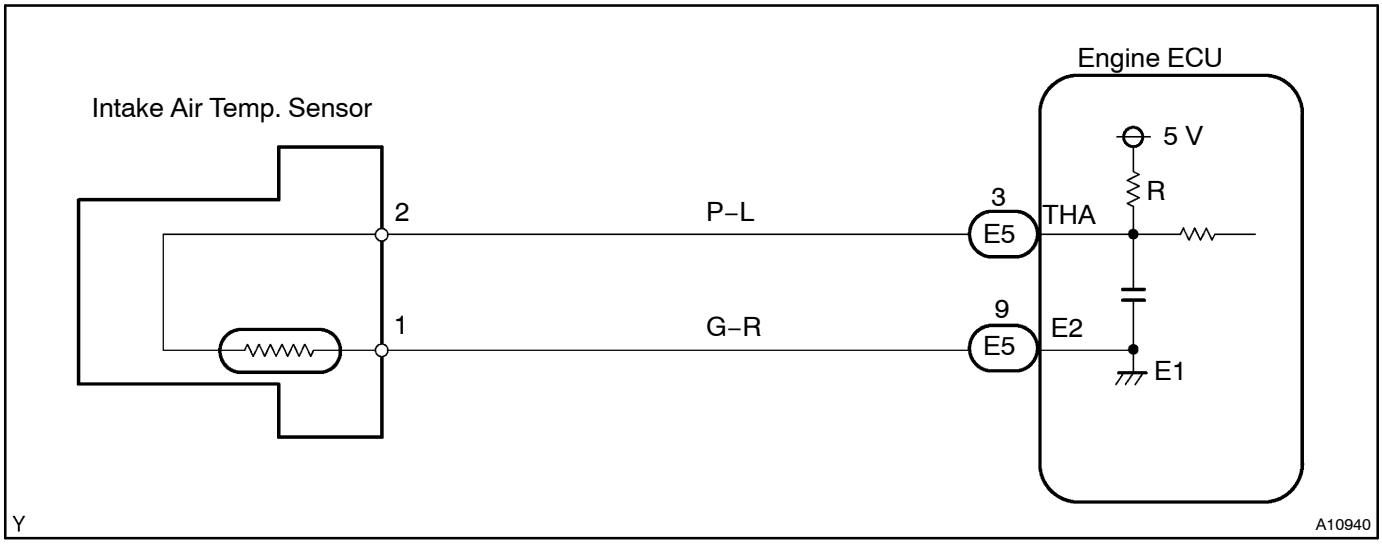
DTC No.	DTC Detecting Condition	Trouble Area
24 (1)	Resistance value of in intake air temp. sensor circuit value goes out of compensentation value for 0.5 sec. or more	• Open or short in intake air temp. sensor circuit • Intake air temp. sensor • Engine ECU

HINT:

After confirming DTC 24, use the hand–held tester to confirm the intake air temperature from the CURRENT DATA.

Temperature displayed	Malfunction
–40°C (–40°F)	Open circuit
140°C (284°F) or more	Short circuit

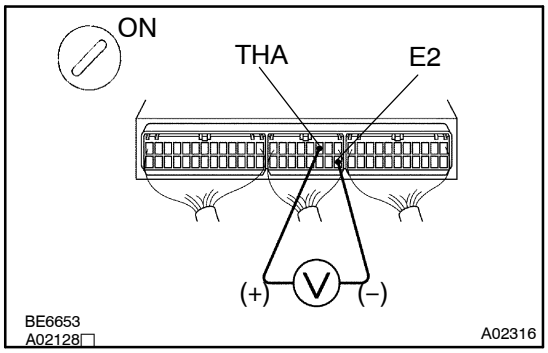
WIRING DIAGRAM



INSPECTION PROCEDURE

HINT:
If DTC 22, 24, 35 and 39, E2 (sensor ground) may be open.

1	**Check voltage between terminals THA and E2 of engine ECU connector.**



PREPARATION:

(a) Remove the glove compartment (See page ED–25).
(b) Turn the ignition switch ON.

CHECK:

Measure the voltage between terminals THA and E2 of the engine ECU connector.

OK:

Intake Air Temp. °C (°F)	Voltage
20 (68) (Engine is cool)	2.5 – 2.8 V
80 (176) (Engine is hot)	4.4 – 4.5 V

OK	**Check for intermittent problems (See page DI–3).**

NG

2	**Check intake air temperature sensor (See page ED–17).**

NG	**Replace intake air temperature sensor.**

OK

3	**Check for open and short in harness and connector between engine ECU and intake air temperature sensor (See page IN–20).**

NG → **Repair or replace harness or connector.**

OK

Check and replace engine ECU (See page IN–20).