DTC	P0A38/257	GENERATOR TEMPERATURE SENSOR CIRCUIT LOW

DTC	P0A39/259	GENERATOR TEMPERATURE SENSOR CIRCUIT HIGH

CIRCUIT DESCRIPTION

The motor temperature sensor No. 2 detects the temperature of the transaxle fluid. The resistance of the thermistor installed in the motor temperature sensor No. 2 varies with the changes in the transaxle fluid temperature. The construction in the motor temperature sensor No. 2 and how it is connected to the HV control ECU are the same as those of the motor temperature sensor No. 1 (see the circuit description on page 05–336).

Based on the signal provided by the motor temperature sensor No. 2, the HV control ECU limits the load to prevent the motor from overheating. Furthermore, the HV control ECU checks the motor temperature sensor No. 2 for a wiring malfunction and the sensor for malfunction.

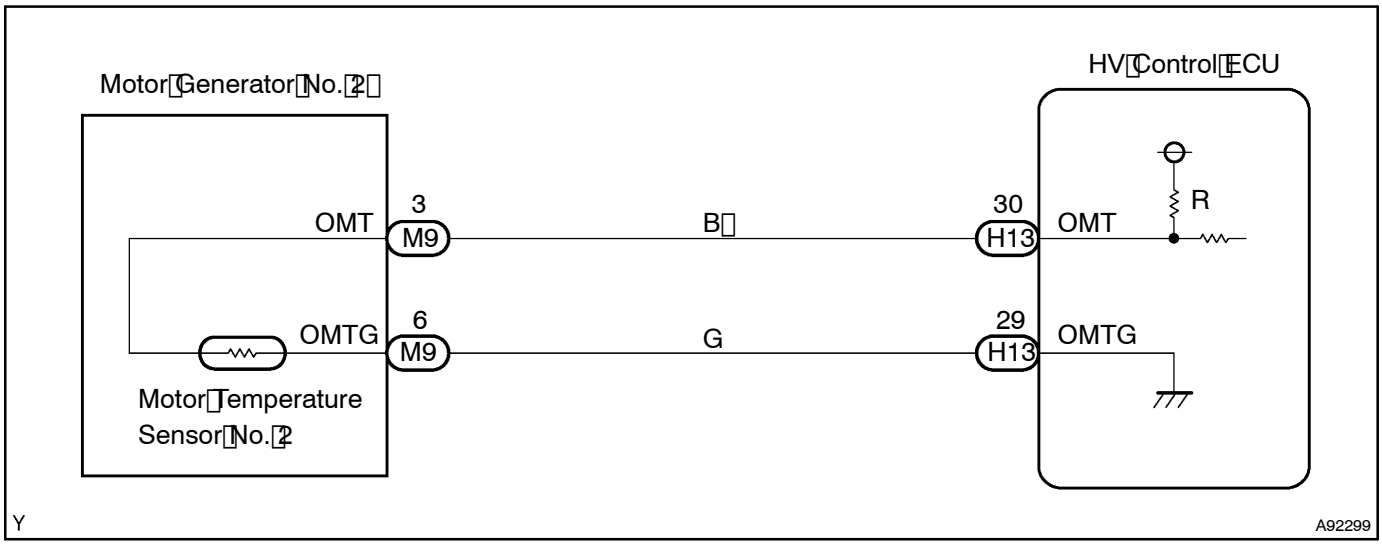
DTC No.	INF Code	DTC Detection Condition	Trouble Area
P0A38	257	GND short in motor temperature sensor No. 2 circuit	• Wire harness or connector • Hybrid vehicle motor • HV control ECU
P0A39	259	Open or +B short in motor temperature sensor No. 2 circuit	• Wire harness or connector • Hybrid vehicle motor • HV control ECU

HINT:

After confirming DTC P0A38 (INF 257) or P0A39 (INF 259), confirm Motor Temp No.2 in Powertrain / Hybrid Control / Data List using the intelligent tester II.

Temperature Displayed	Malfunction
–50°C (–58°F)	Open or +B short circuit
205°C (401°F)	GND short circuit

WIRING DIAGRAM



INSPECTION PROCEDURE

1 READ VALUE OF INTELLIGENT TESTER II (MOTOR TEMP NO. 2)

(a) Connect the intelligent tester II to the DLC3.
(b) Turn the power switch ON (IG).
(c) Turn the intelligent tester II ON.
(d) On the intelligent tester II, enter the following menus: Powertrain / Hybrid Control / Data List.
(e) Read the Motor Temp No. 2 value on the intelligent tester II.

Result:

Temperature Displayed	Proceed to
–50°C (–58°F)	A
205°C (401°F)	B
–49°C to 204°C (–57°F to 400°F)	C

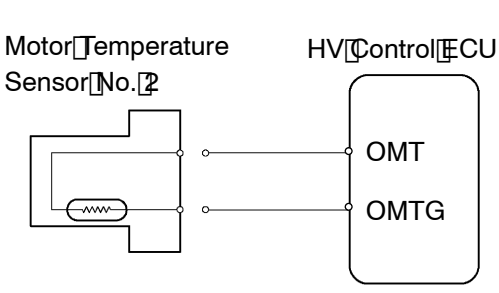
HINT:
- If there is an open or +B short circuit, the intelligent tester II indicates –50°C (–58°F).
- If there is a GND short circuit, the intelligent tester II indicates 205°C (401°F).

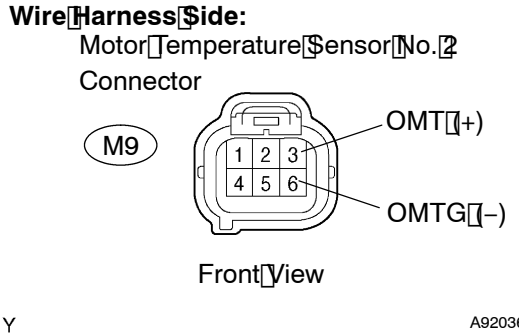
B → **Go to step 5**

C → **CHECK FOR INTERMITTENT PROBLEMS (See page 05–232)**

A

2 INSPECT HYBRID VEHICLE MOTOR ASSY (CHECK FOR OPEN OR +B SHORT)





(a) Disconnect the M9 motor temperature sensor No. 2 connector.
(b) Turn the power switch ON (IG).
(c) Measure the voltage between the terminals of the motor temperature sensor No. 2 connector.

Result:

Tester Connection	Voltage	Proceed to
OMT (M9–3) – OMTG (M9–6)	Approximately 5 V	A
OMT (M9–3) – OMTG (M9–6)	9 to 14V	B
OMT (M9–3) – OMTG (M9–6)	Approximately 0 V	C

HINT:
The motor temperature sensor No. 2 is unavailable as an individual service part. Therefore, when replacing it, the hybrid vehicle motor must be replaced.

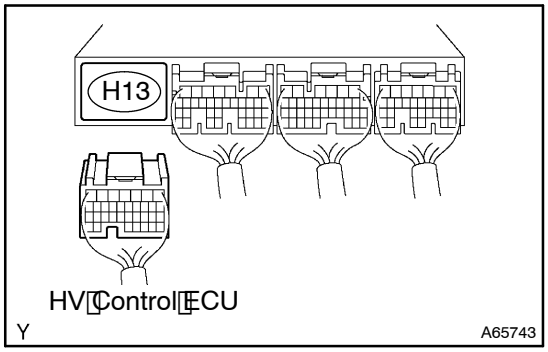
(d) Reconnect the motor temperature sensor No. 2 connector.

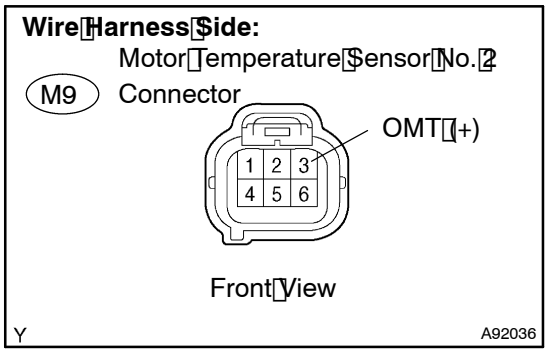
B	Go to step 3
C	Go to step 4

A

REPLACE HYBRID VEHICLE MOTOR ASSY

3 CHECK HARNESS AND CONNECTOR(CHECK FOR +B SHORT)





(a) Disconnect the H13 HV control ECU connector.
(b) Disconnect the M9 motor temperature sensor No.2 connector.
(c) Turn the power switch ON (IG).
(d) Measure the voltage between the terminal of the motor temperature sensor No.2 connector and body ground.
Standard:

tester Connection	Specified Condition
OMT (M9–3) – Body ground	Approximately 0 V

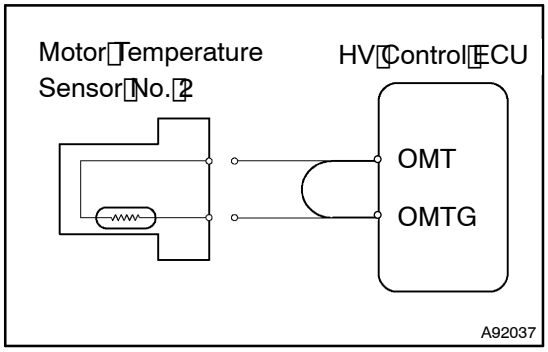
(e) Reconnect the HV control ECU connector.
(f) Reconnect the motor temperature sensor No.2 connector.

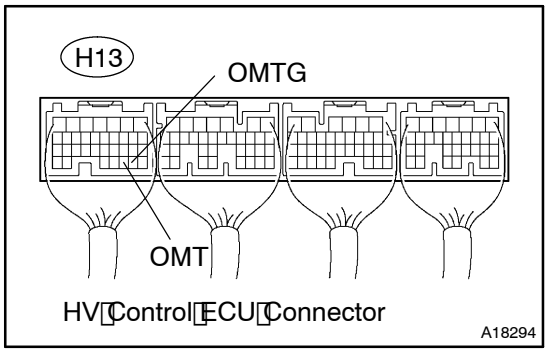
NG	REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

REPLACE HYBRID VEHICLE CONTROL ECU (See page 21–128)

4	READ VALUE OF INTELLIGENT TESTER II(CHECK FOR OPEN IN HYBRID VEHICLE CONTROL ECU)





(a) Disconnect the M9 motor temperature sensor No. 2 connector.
(b) Connect terminals OMT and OMTG of the H13 HV control ECU connector.
(c) Turn the power switch ON (IG).
(d) On the intelligent tester II, enter the following menus: Powertrain / Hybrid Control / Data List.
(e) Read the Motor Temp No. 2 value.
Standard: 205°C (401°F)

HINT:
If the intelligent tester II indicates a temperature of −50°C (−58°F), check the connection of the HV control ECU. If it is connected normally, replace the HV control ECU.

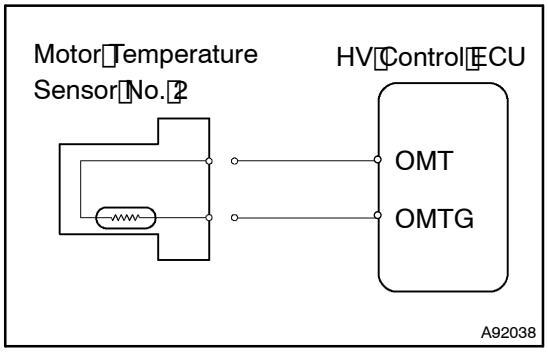
(f) Reconnect the motor temperature sensor No. 2 connector.

NG	REPLACE HYBRID VEHICLE CONTROL ECU (See page 21–128)

OK

REPAIR OR REPLACE HARNESS OR CONNECTOR

5	READ VALUE OF INTELLIGENT TESTER II(CHECK FOR GND SHORT IN WIRE HARNESS)



(a) Disconnect the M9 motor temperature sensor No. 2 connector.
(b) Turn the power switch ON (IG).
(c) On the intelligent tester II, enter the following menus: Powertrain / Hybrid Control / Data List.
(d) Read the Motor Temp No. 2 value.
Standard: −50°C (−58°F)
(e) Reconnect the motor temperature sensor No. 2 connector.

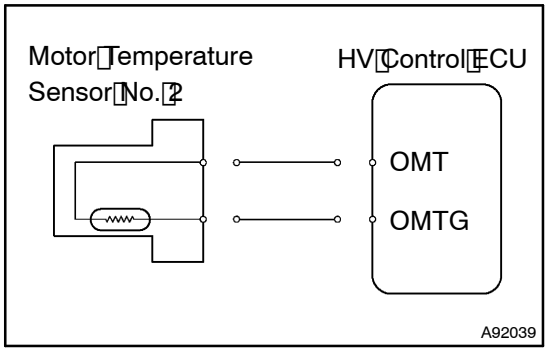
HINT:
The motor temperature sensor No. 2 is unavailable as an individual service part. Therefore, when replacing it, the hybrid vehicle motor must be replaced.

NG	Go to step 6

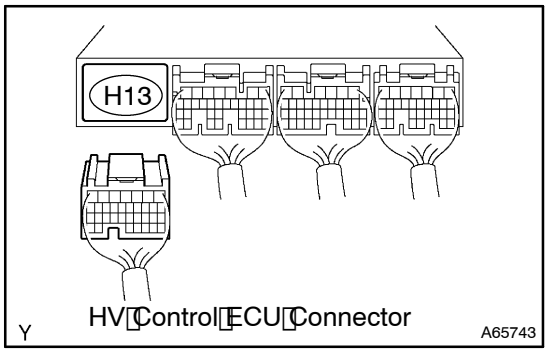
OK

REPLACE HYBRID VEHICLE MOTOR ASSY

6	READ VALUE OF INTELLIGENT TESTER II (CHECK FOR GND SHORT IN HYBRID VEHICLE CONTROL ECU)



(a) Disconnect the H13 HV control ECU connector.
(b) Turn the power switch ON (IG).
(c) On the intelligent tester II, enter the following menus: Powertrain / Hybrid Control / Data List.
(d) Read the Motor Temp No. 2 value.
Standard: –50°C (–58°F)
(e) Reconnect the HV control ECU connector.



NG → **REPLACE HYBRID VEHICLE CONTROL ECU (See page 21–128)**

OK →

REPAIR OR REPLACE HARNESS OR CONNECTOR