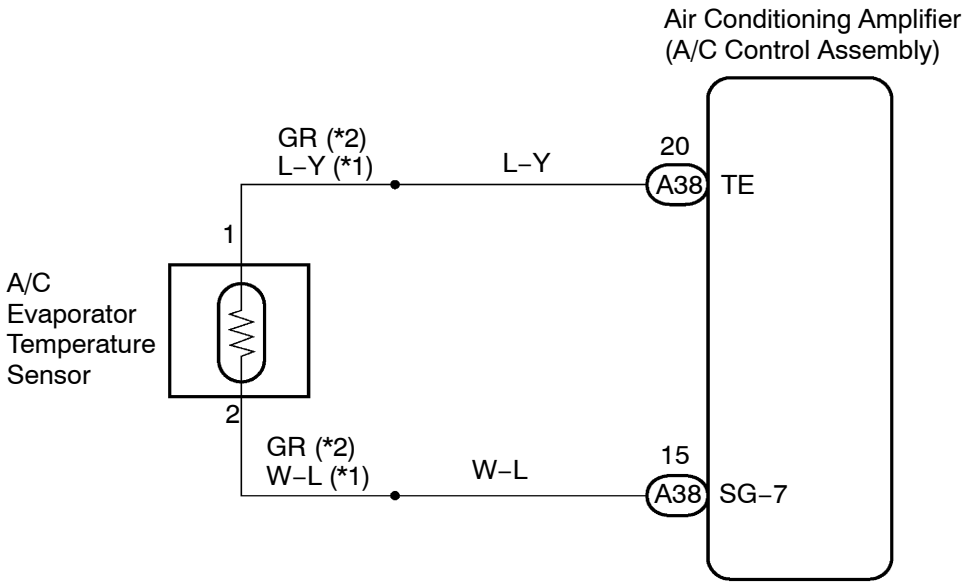
DTC	B1413	EVAPORATOR TEMPERATURE SENSOR CIRCUIT

CIRCUIT DESCRIPTION

This sensor detects the evaporator temperature and sends the appropriate signals to the A/C amplifier. It is used for frost prevention, temperature and time–lag air flow control.

DTC No.	Detection Item	Trouble Area
B1413	Evaporator temperature sensor circuit (Open or short)	• A/C evaporator temperature sensor • Harness or connector between A/C evaporator temperature sensor and A/C amplifier • A/C amplifier

WIRING DIAGRAM



C *1: LHD Models *2: RHD Models

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INSPECTION PROCEDURE

1	READ VALUE ON INTELLIGENT TESTER II

(a) Connect the intelligent tester II to the DLC3.
(b) Turn the ignition switch to the ON position and push the intelligent tester II main switch on.
(c) Select the item below in the DATA LIST, and read the display on the intelligent tester II.

DATA LIST / AIR CONDITIONER:

Item	Measure Item/Display (Range)	Normal Condition	Diagnostic Note
Evaporator temperature sensor (Evap Temp)	Evaporator temperature sensor / min.: –29.7°C (–21.46°F) max.: 59.55°C (139.19°F)	Actual evaporator temperature is displayed	–

OK:

The display is as specified in the normal condition.

Result:

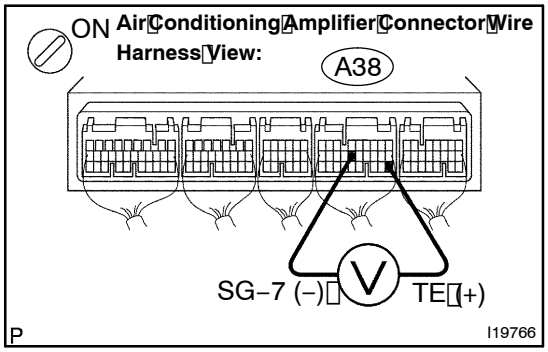
NG	A
OK (Checking from the PROBLEM SYMPTOM TABLE)	B
OK (Checking from the DTC)	C

B → **PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE** (SEE PAGE 05–778)

C → **REPLACE AIR CONDITIONING AMPLIFIER** (SEE PAGE 55–15)

A

2 INSPECT AIR CONDITIONING AMPLIFIER (TE – SG)



(a) Remove the A/C amplifier with connectors still connected.
(b) Turn the ignition switch to the ON position.
(c) Measure the voltage according to the value(s) in the table below.

Standard:

Tester connection	Condition	Specified condition
A38–20 (TE) – A38–15 (SG–7)	Ignition switch ON at 0°C (32°F)	2.0 to 2.4 V
A38–20 (TE) – A38–15 (SG–7)	Ignition switch ON at 15°C (59°F)	1.4 to 1.8 V

HINT:
As the temperature increases, the voltage decreases.

Result:

NG	A
OK (Checking from the PROBLEM SYMPTOM TABLE)	B
OK (Checking from the DTC)	C

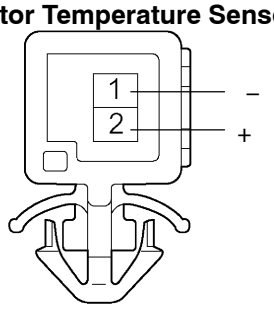
B → **PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE (SEE PAGE 05–778)**

C → **REPLACE AIR CONDITIONING AMPLIFIER (SEE PAGE 55–15)**

A

3 INSPECT A/C EVAPORATOR TEMPERATURE SENSOR

A/C Evaporator Temperature Sensor
Front View:



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(a) Remove the A/C evaporator temperature sensor.
(b) Measure the resistance according to the value(s) in table below.

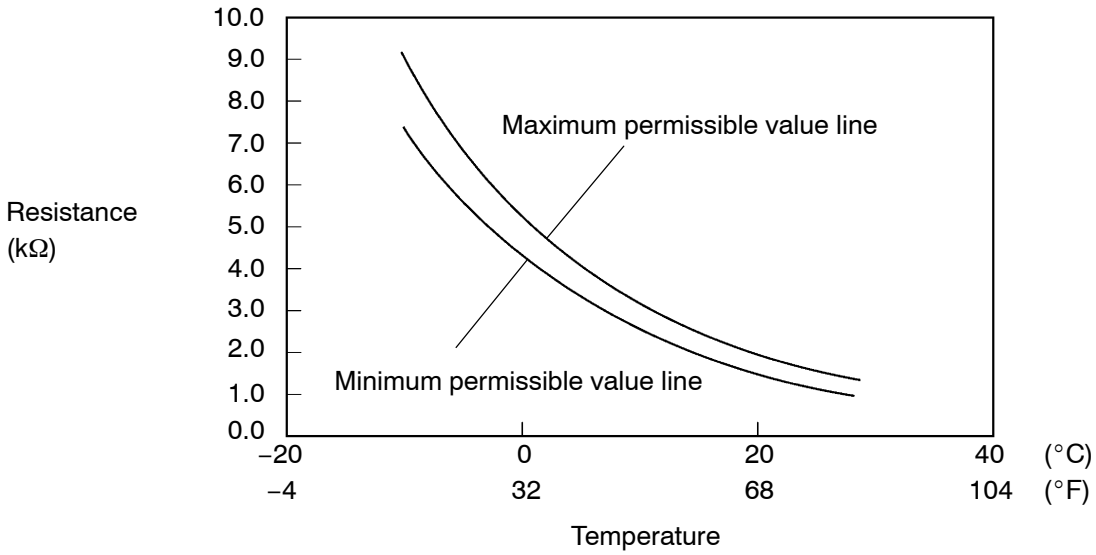
Standard:

Tester connection	Condition	Specified condition
1 – 2	–10°C (14°F)	7.40 to 9.20 kΩ
1 – 2	–5°C (23°F)	5.65 to 7.00 kΩ
1 – 2	0°C (32°F)	4.35 to 5.40 kΩ
1 – 2	5°C (41°F)	3.40 to 4.20 kΩ
1 – 2	10°C (50°F)	2.68 to 3.30 kΩ
1 – 2	15°C (59°F)	2.10 to 2.60 kΩ
1 – 2	20°C (68°F)	1.66 to 2.10 kΩ
1 – 2	25°C (77°F)	1.32 to 1.66 kΩ
1 – 2	30°C (86°F)	1.05 to 1.35 kΩ

NOTICE:

- **Even slightly touching the sensor may change the resistance value. Be sure to hold the connector of the sensor.**
- **When measuring, the sensor temperature must be the same as the ambient temperature.**

HINT:
As the temperature increases, the resistance decrease (see the graph below).



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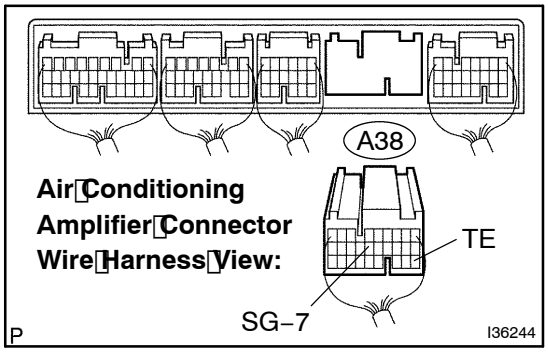
NG → REPLACE A/C EVAPORATOR TEMPERATURE SENSOR

HINT:
When replacing the evaporator temperature sensor, the attached sub–harness should be replaced along the sensor.

OK

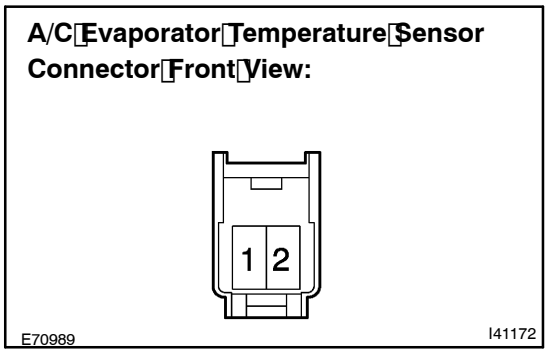
4 CHECK HARNESS AND CONNECTOR(AIR CONDITIONING AMPLIFIER – A/C EVAPORATOR TEMPERATURE SENSOR) (SEE PAGE 01–44)



(a) Measure the resistance according to the value(s) in the table below.

Standard:

Tester connection	Condition	Specified condition
A38–20 (TE) – 1	Always	Below 1 Ω
A38–15 (SG–7) – 2	Always	Below 1 Ω
A38–20 (TE) – Body ground	Always	10 kΩ or higher
A38–15 (SG–7) – Body ground	Always	10 kΩ or higher



NG → REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

REPLACE AIR CONDITIONING AMPLIFIER (SEE PAGE 55–16)