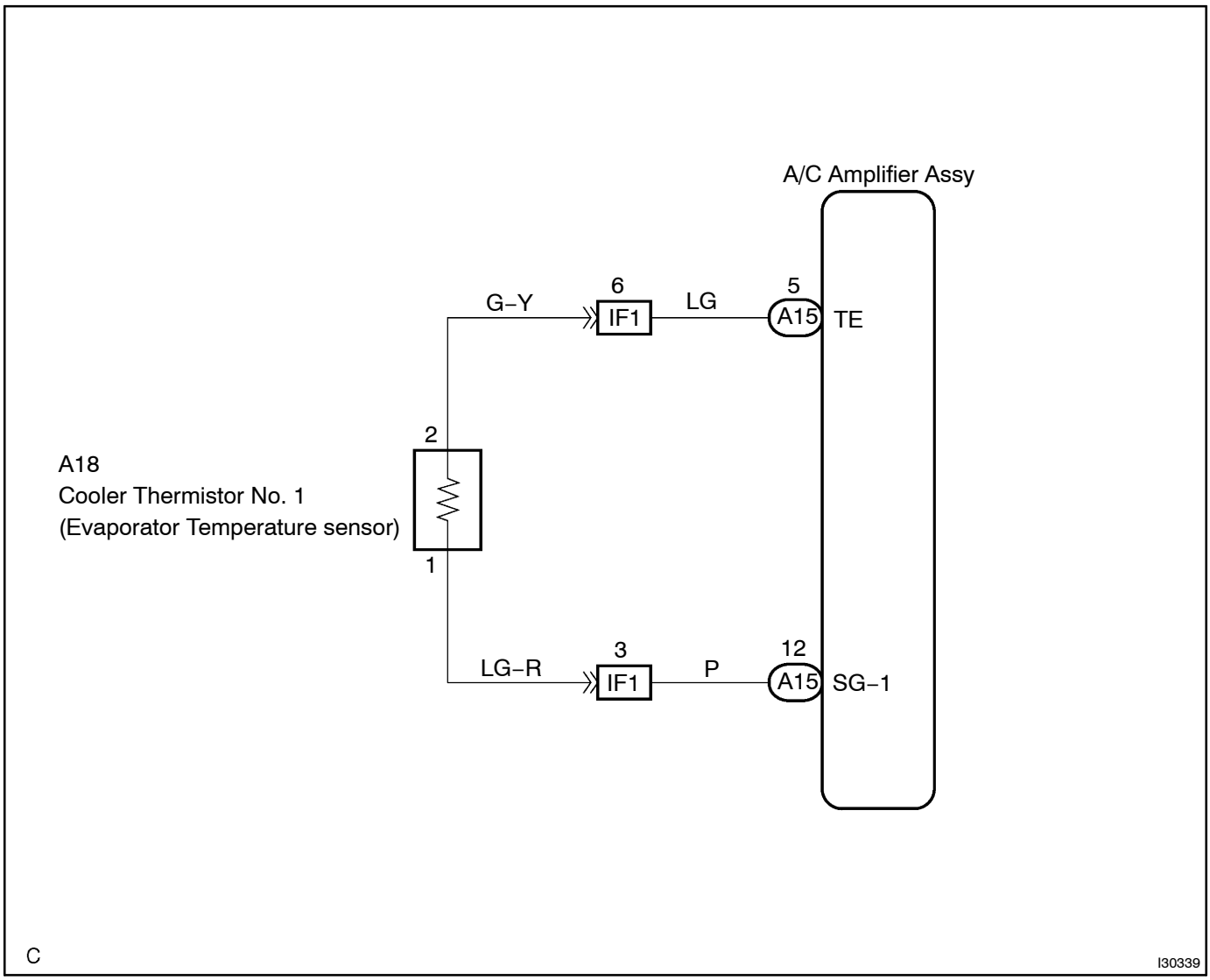
DTC	B1413/13	EVAPORATOR TEMPERATURE SENSOR CIRCUIT

CIRCUIT DESCRIPTION

This sensor detects the temperature inside the cooling unit and sends the appropriate signals to the A/C amplifier assy.

DTC No.	Detection Item	Trouble Area
B1413/13	Open or short in evaporator temperature sensor circuit.	• Cooler thermistor No. 1 (Evaporator temperature sensor) • Harness or connector between cooler thermistor No. 1 and A/C amplifier assy. • A/C amplifier assy.

WIRING DIAGRAM



INSPECTION PROCEDURE

HINT:
In case of using the intelligent tester II, start the inspection from step 1 and in case of not using the intelligent tester II, start from step 2.

1 READ VALUE ON INTELLIGENT TESTER II

(a) Connect the intelligent tester II to the DLC3.
(b) Turn the ignition switch ON 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.

A C:

Item	Measurement 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	–

Result:

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

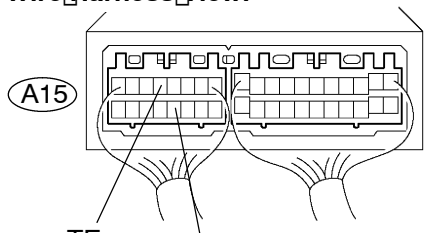
B → **REPLACE AIRCONDITIONER AMPLIFIER ASSY**

C → **PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE (SEE PAGE 05–435)**

A

2 INSPECT AIRCONDITIONER AMPLIFIER ASSY(TE, SG–1)

A/C Amplifier Connector Wire Harness View:



(a) Remove A/C amplifier assy 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.

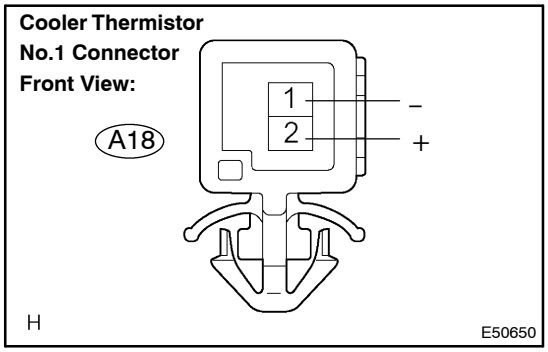
Standard:

Tester connection	Condition	Specified condition
A15–5 (TE) – A15–12 (SG–1)	at 0°C (32°F)	2.0 to 2.4 V
A15–5 (TE) – A15–12 (SG–1)	at 15°C (59°F)	1.4 to 1.8 V

OK → **REPLACE AIRCONDITIONER AMPLIFIER ASSY**

NG

3 INSPECT COOLER THERMISTOR NO.1(EVAPORATOR TEMPERATURE SENSOR)



(a) Remove cooler thermistor No. 1.

(b) Check resistance between terminals 1 and 2 of cooler thermistor No. 1 at each temperature, as shown in the chart.

Standard:

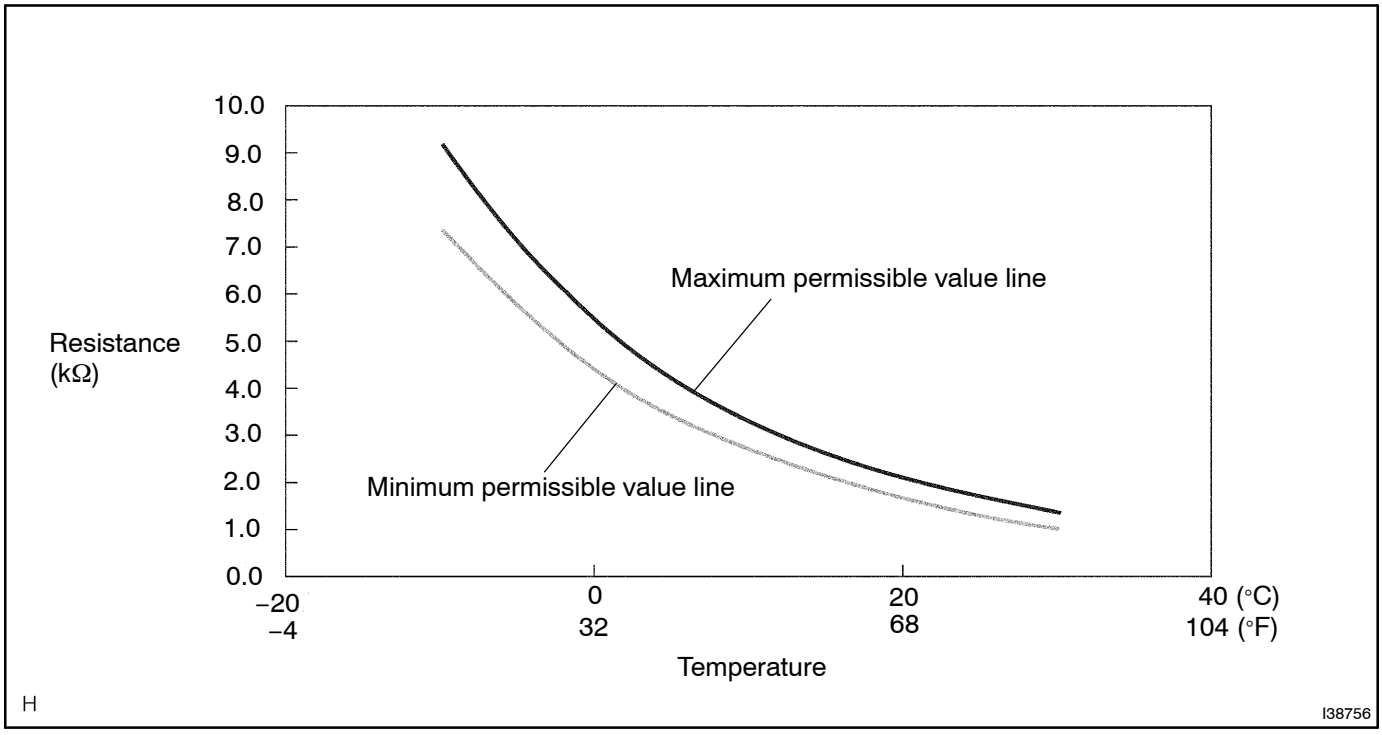
Tester connection	Condition	Specified condition
A18–1 – A18–2	–10°C (14°F)	7.40 to 9.20 kΩ
A18–1 – A18–2	–5°C (23°F)	5.65 to 7.00 kΩ
A18–1 – A18–2	0°C (32°F)	4.35 to 5.40 kΩ
A18–1 – A18–2	5°C (41°F)	3.40 to 4.20 kΩ
A18–1 – A18–2	10°C (50°F)	2.68 to 3.30 kΩ
A18–1 – A18–2	15°C (59°F)	2.10 to 2.60 kΩ
A18–1 – A18–2	20°C (68°F)	1.66 to 2.10 kΩ
A18–1 – A18–2	25°C (77°F)	1.32 to 1.66 kΩ
A18–1 – A18–2	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, it must be the same as the ambient temperature.**

HINT:

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

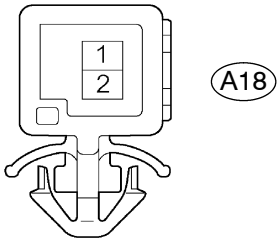


NG	**REPLACE COOLER THERMISTOR NO.1(EVAPORATOR TEMPERATURE SENSOR)**

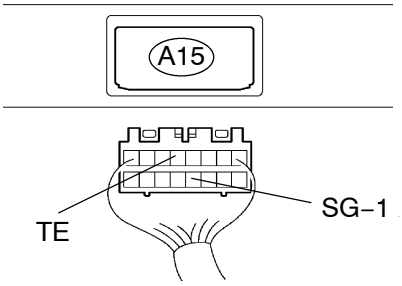
OK

4	**CHECK HARNESS AND CONNECTOR(COOLER THERMISTER NO.1 (EVAPORATOR TEMPERATURE SENSOR) – A/C AMPLIFIER ASSY)**

Cooler Thermistor No.1 Connector Wire Harness View:



A/C Amplifier Connector Wire Harness View:



I41012

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

Standard:

Tester connection	Condition	Specified condition
A15–5 (TE) – A18–2	Always	Below 1 Ω
A15–12 (SG–1) – A18–1	Always	Below 1 Ω
A15–5 (TE) – Body ground	Always	10 kΩ or higher
A15–12 (SG–1) – Body ground	Always	10 kΩ or higher

NG	**REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK

REPLACE AIRCONDITIONER AMPLIFIER ASSY