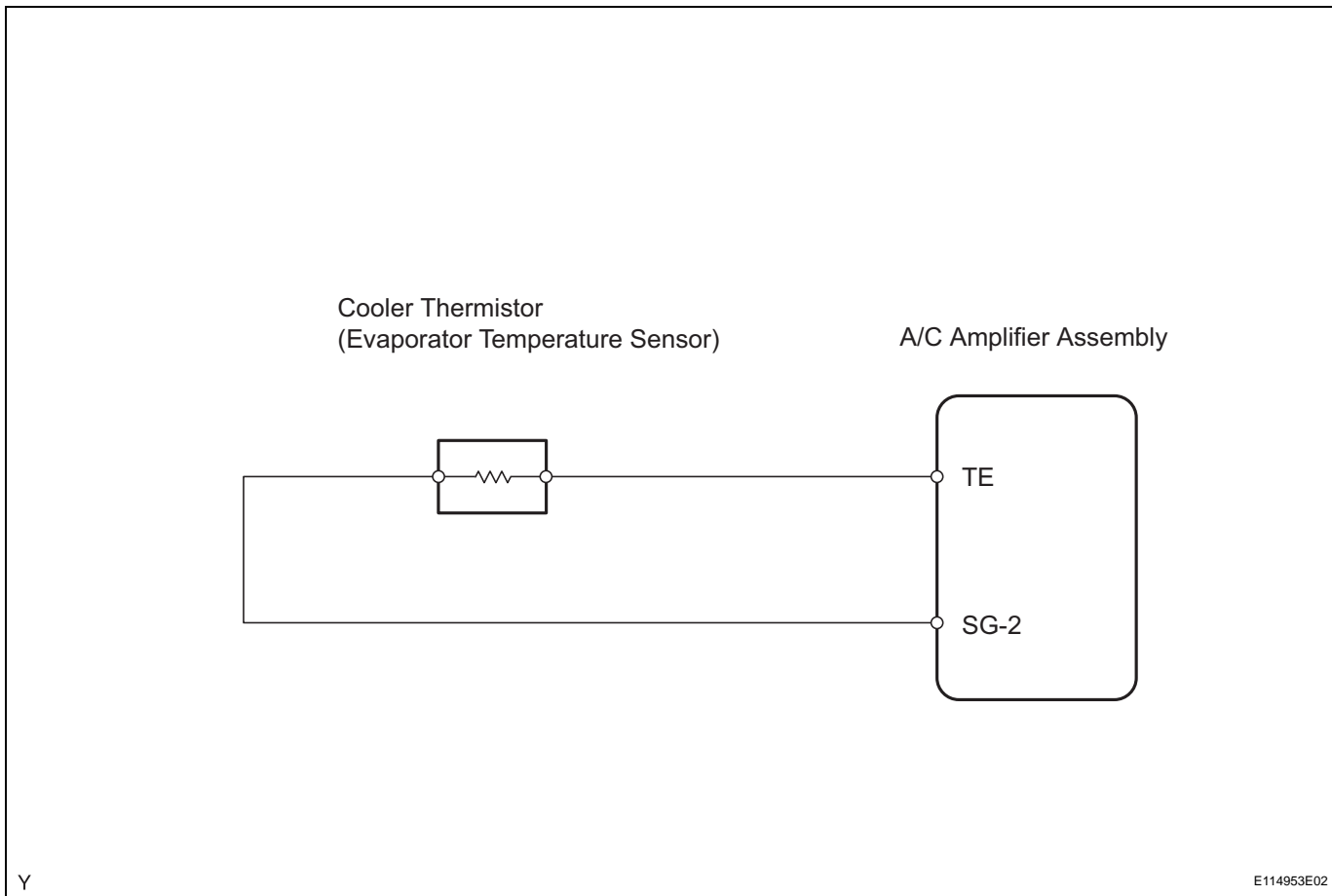


DTC**B1413****Evaporator Temperature Sensor Circuit****DESCRIPTION**

The evaporator temperature sensor is installed on the evaporator in the A/C unit. It detects the temperature of the cooled air that has passed through the evaporator and controls the air conditioning. Then it sends appropriate signals to the A/C amplifier assembly. The resistance of the evaporator temperature sensor changes in accordance with the temperature of the cooled air that has passed through the evaporator. As the temperature decreases, the resistance increases. As the temperature increases, the resistance decreases.

The A/C amplifier assembly applies voltage (5 V) to the evaporator temperature sensor and reads voltage changes as the resistance of the evaporator temperature sensor changes. This sensor is used for frost prevention.

DTC No.	DTC Detection Condition	Trouble Area
B1413	Open or short in evaporator temperature sensor circuit	<ul style="list-style-type: none"> • Cooler thermistor • Harness and connector between cooler thermistor and A/C amplifier • A/C amplifier assembly

WIRING DIAGRAM**1****READ VALUE OF INTELLIGENT TESTER (COOLER THERMISTOR)**

- (a) Check the DATA LIST for proper functioning of the cooler thermistor (evaporator temperature sensor).

A/C amplifier assembly

Item	Measurement Item / Display (Range)	Normal Condition	Diagnostic Note
EVAP TEMP (Evaporator temperature sensor)	Evaporator temperature / Min.: -29.7°C (-21.46°F), Max.: 59.55°C (139.019°F)	Actual evaporator temperature is displayed	Open in circuit: -29.7°C (-21.46°F) (continuous, regardless of actual temperature) Short in circuit: 59.55°C (139.19°F) (continuous, regardless of actual temperature)

OK:

The display is as specified in the normal condition.

Result

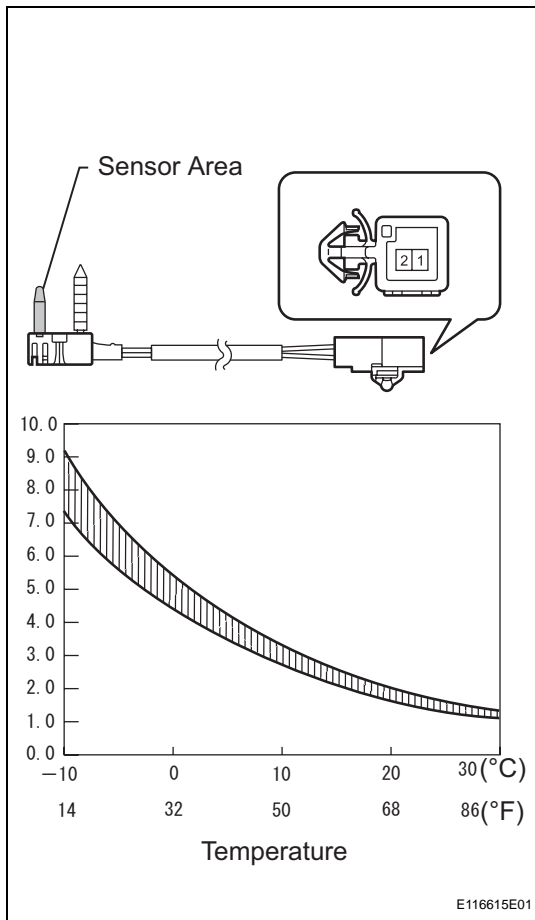
Result	Proceed to
NG	A
OK (when troubleshooting according to Problem Symptoms Table)	B
OK (when troubleshooting according to DTC Chart)	C

B → **PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE**

C → **CHECK INTERMITTENT PROBLEM**

A

2 INSPECT COOLER THERMISTOR



- (a) Remove the cooler thermistor (evaporator temperature sensor).
 - (b) Measure the resistance of the thermistor.
- Standard resistance**

Tester Connection	Condition	Specified Condition
1 - 2	-10°C (14°F)	7.30 to 9.10 kΩ
1 - 2	-5°C (23°F)	5.65 to 6.95 kΩ
1 - 2	0°C (32°F)	4.40 to 5.35 kΩ
1 - 2	5°C (41°F)	3.40 to 4.15 kΩ
1 - 2	10°C (50°F)	2.70 to 3.25 kΩ
1 - 2	15°C (59°F)	2.14 to 2.58 kΩ
1 - 2	20°C (68°F)	1.71 to 2.05 kΩ
1 - 2	25°C (77°F)	1.38 to 1.64 kΩ
1 - 2	30°C (86°F)	1.11 to 1.32 kΩ

NOTICE:

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

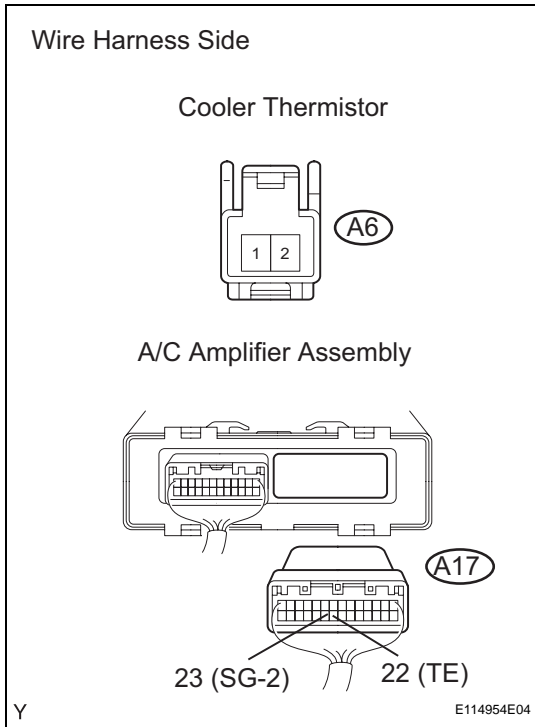
HINT:

As the temperature increases, the resistance decreases (see graph).

NG → **REPLACE COOLER THERMISTOR**

OK

3 CHECK WIRE HARNESS (COOLER THERMISTOR - AIR CONDITIONING AMPLIFIER)



- (a) Disconnect the A6 thermistor connector.
- (b) Disconnect the A17 amplifier connector.
- (c) Measure the resistance of the wire harness side connectors.

Standard resistance

Tester Connection	Specified Condition
A17-22 (TE) - A6-2	Below 1 Ω
A17-23 (SG-2) - A6-1	Below 1 Ω

NG REPAIR OR REPLACE HARNESS AND CONNECTOR

OK

REPLACE AIR CONDITIONING AMPLIFIER ASSEMBLY