

DTC	B1412/12	AMBIENT TEMPERATURE SENSOR CIRCUIT
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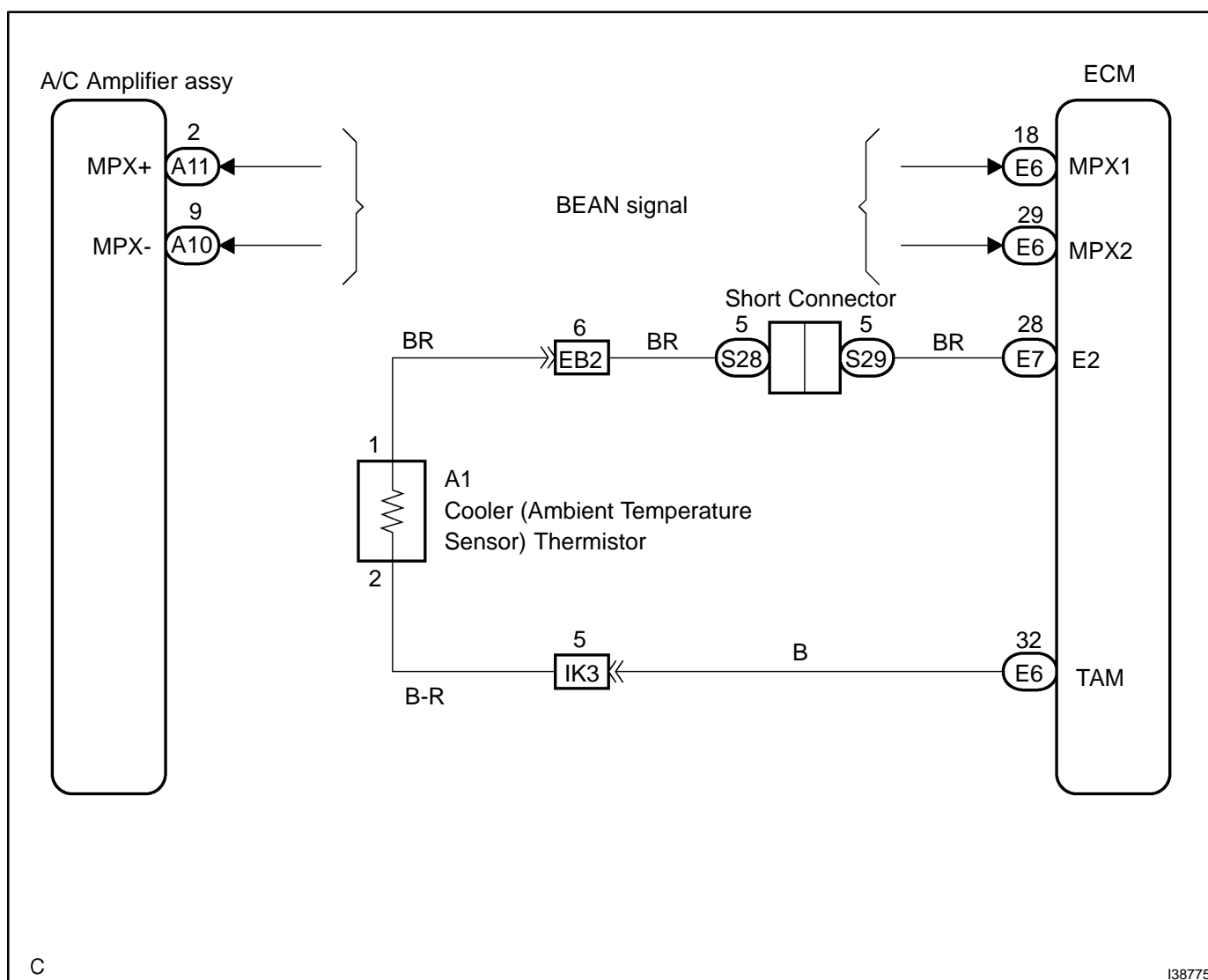
CIRCUIT DESCRIPTION

The ECM and A/C amplifier communicate via BEAN.

This sensor detects the temperature outside the cabin and sends the appropriate signals to the A/C amplifier assy.

DTC No.	Detection item	Trouble Area
B1412/12	Open or short in ambient temperature sensor circuit	<ul style="list-style-type: none"> Cooler (ambient temperature sensor) thermistor Harness or connector between cooler (ambient temperature sensor) thermistor and ECM ECM A/C amplifier assy

WIRING DIAGRAM



C

I38775

INSPECTION PROCEDURE

HINT:

In case of using the hand-held tester, start the inspection step 1 and in case of not using the hand-held tester, start from step 2.

1 READ VALUE OF HAND-HELD TESTER

- Connect the hand-held tester to the DLC3.
- Turn the ignition switch ON and push the hand-held tester main switch ON.
- Select the items below in the DATA LIST, and read the displays on the hand-held tester.

A C:

Item	Measurement Item/Display (Range)	Normal Condition	Diagnostic Note
AMBI TEMP SENS	Ambient temperature sensor /min.: -23.3°C (-9.94°F) max.: 65.95°C (150.71°F)	Actual ambient temperature	-
AMBI TEMP	adjusted ambient temperature /min.: -30.8°C (-23.44°F) max.: 50.8°C (123.44°F)	Actual ambient temperature	-

Result:

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

B

REPLACE ECM

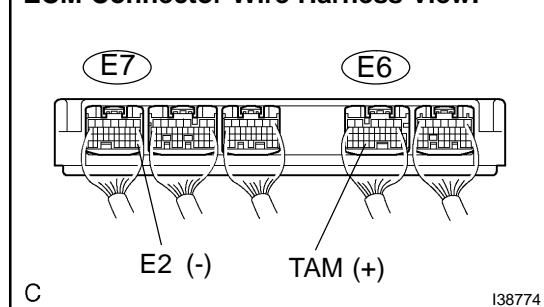
C

PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE(SEE PAGE 05-1 129)

A

2 INSPECT ECM(TAM, E2)

ECM Connector Wire Harness View:



- Remove ECM with connectors still connected.
- Turn ignition switch ON.
- Measure the voltage according to the value(s) in the table below.

Standard:

Tester connection	Condition	Specified condition
E6-32 (TAM) - E7-28 (E2)	at 25°C (77°F)	1.4 to 1.8 V
E6-32 (TAM) - E7-28 (E2)	at 40°C (104°F)	0.8 to 1.2 V

HINT:

As the temperature increases, the voltage decreases.

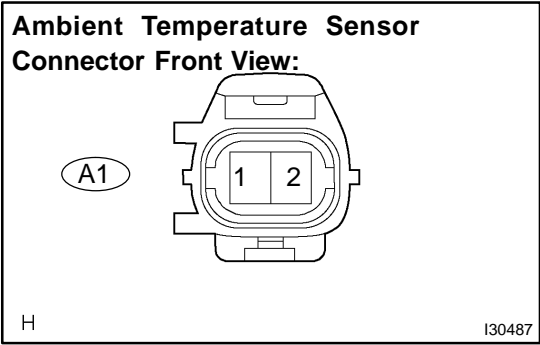
OK

REPLACE ECM

NG

3

INSPECT COOLER (AMBIENT TEMP. SENSOR) THERMISTOR



- (a)
- Remove cooler (ambient temperature sensor) thermistor.
- (b)
- Measure the resistance according to the value(s) in the table below.

Standard:

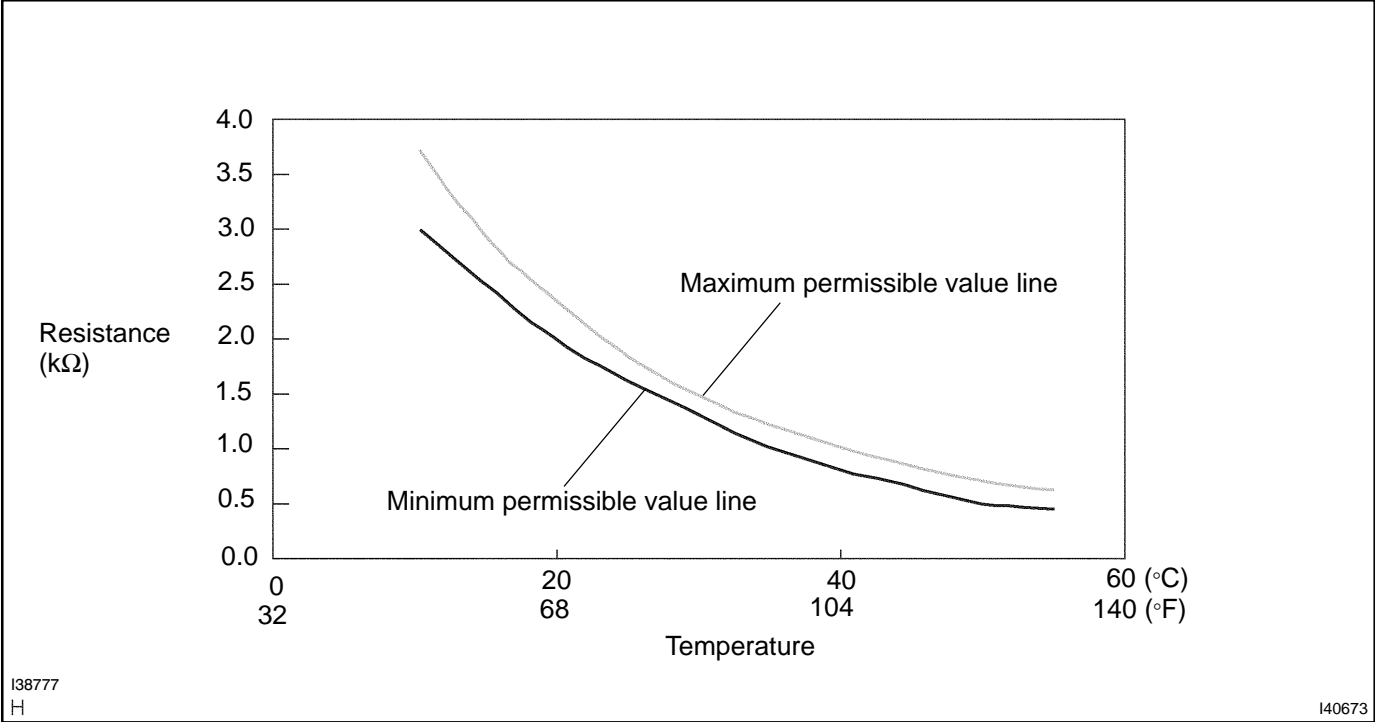
Tester connection	Condition	Specified condition
A1-1 - A1-2	10°C (50°F)	3.00 to 3.73 kΩ
A1-1 - A1-2	15°C (59°F)	2.45 to 2.88 kΩ
A1-1 - A1-2	20°F (68°F)	1.95 to 2.30 kΩ
A1-1 - A1-2	25°C (77°F)	1.60 to 1.80 kΩ
A1-1 - A1-2	30°C (86°F)	1.28 to 1.47 kΩ
A1-1 - A1-2	35°C (95°F)	1.00 to 1.22 kΩ
A1-1 - A1-2	40°C (104°F)	0.80 to 1.00 kΩ
A1-1 - A1-2	45°C (113°F)	0.65 to 0.85 kΩ
A1-1 - A1-2	50°C (122°F)	0.50 to 0.70 kΩ
A1-1 - A1-2	55°C (131°F)	0.44 to 0.60 kΩ
A1-1 - A1-2	60°C (140°F)	0.36 to 0.50 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 decreases (see the chart below).



NG

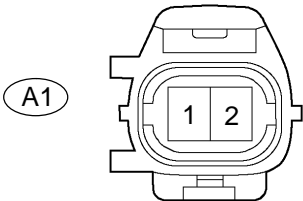
REPLACE COOLER (AMBIENT TEMP. SENSOR) THERMISTOR

OK

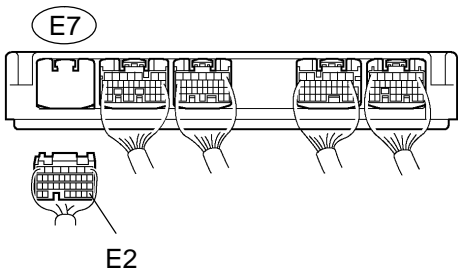
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CHECK HARNESS AND CONNECTOR(COOLER (AMBIENT TEMPERATURE SENSOR) THERMISTOR - ECM)

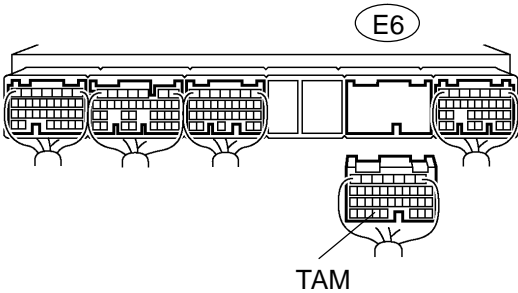
Ambient Temperature Sensor
Connector Front View:



ECM Connector Wire Harness View:



ECM Connector Wire Harness View:



I41016

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

Standard:

Tester connection	Condition	Specified condition
E7-28 (E2) - A1-1	Always	Below 1 Ω
E6-32 (TAM) - A1-2	Always	Below 1 Ω
E7-28 (E2) - Body ground	Always	10 k Ω or higher
E6-32 (TAM) - Body ground	Always	10 k Ω or higher

NG

REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

REPLACE ECM