

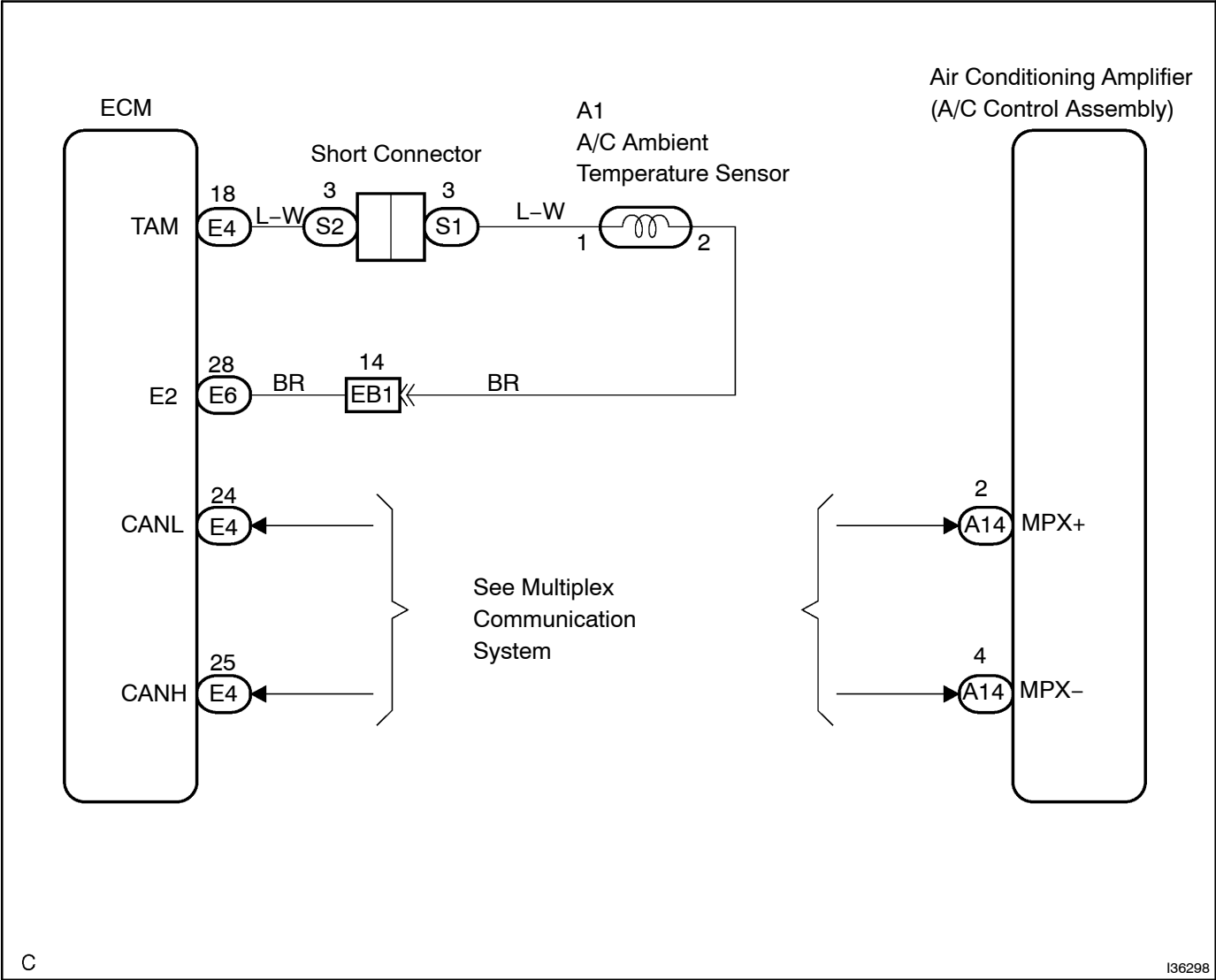
DTC	B1412	AMBIENT TEMPERATURE SENSOR CIRCUIT
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CIRCUIT DESCRIPTION

The sensor connected to the ECM detects fluctuations in the ambient temperature that is used for controlling the interior temperature. The sensor sends a signal to the A/C amplifier via the ECM.

DTC No.	Detection item	Trouble Area
B1412	Ambient temperature sensor circuit (Open or short)	• A/C ambient temperature sensor • Harness or connector between cooler A/C ambient temperature sensor and ECM • ECM

WIRING DIAGRAM



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	Measurement Item/Display (Range)	Normal Condition	Diagnostic Note
Ambient temperature sensor (Ambi Temp Sens)	Ambient temperature sensor / min.: -23.3°C (-9.94°F) max.: 65.95°C (150.71°F)	Actual ambient 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)**

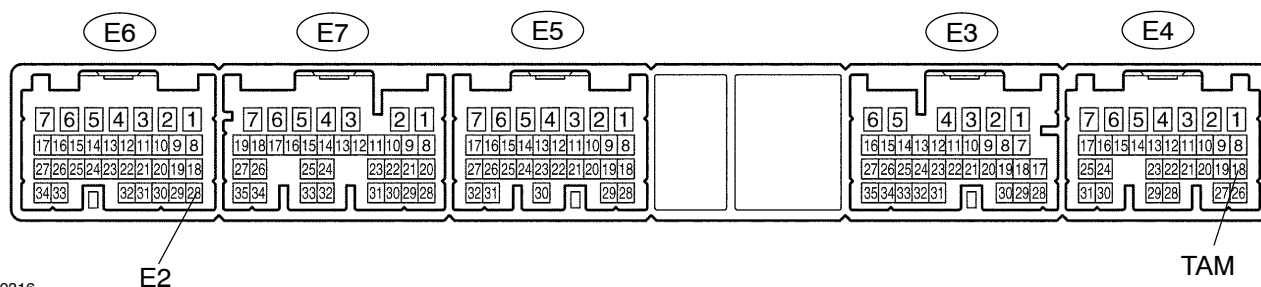
C

**REPLACE AIR CONDITIONING AMPLIFIER
(SEE PAGE 55-16)**

A

2 INSPECT ECM(TAM - E2)

ECM Connector Wire Harness View:



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

Standard:

Tester connection	Condition	Specified condition
E4-18 (TAM) - E6-28 (E2)	Ignition switch ON at 25°C (77°F)	2.0 ± 0.2 V
E4-18 (TAM) - E6-28 (E2)	Ignition switch ON at 40°C (104°F)	1.4 ± 0.2 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

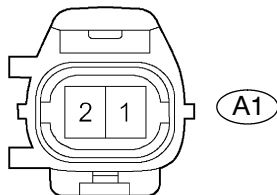
REPLACE ECM (SEE PAGE 10-21)

A

3 INSPECT A/C AMBIENT TEMPERATURE SENSOR

A/C Ambient Temperature Sensor

Connector Front View:



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- Remove the A/C ambient temperature sensor.
- Measure the resistance according to the value(s) in the table below.

Standard:

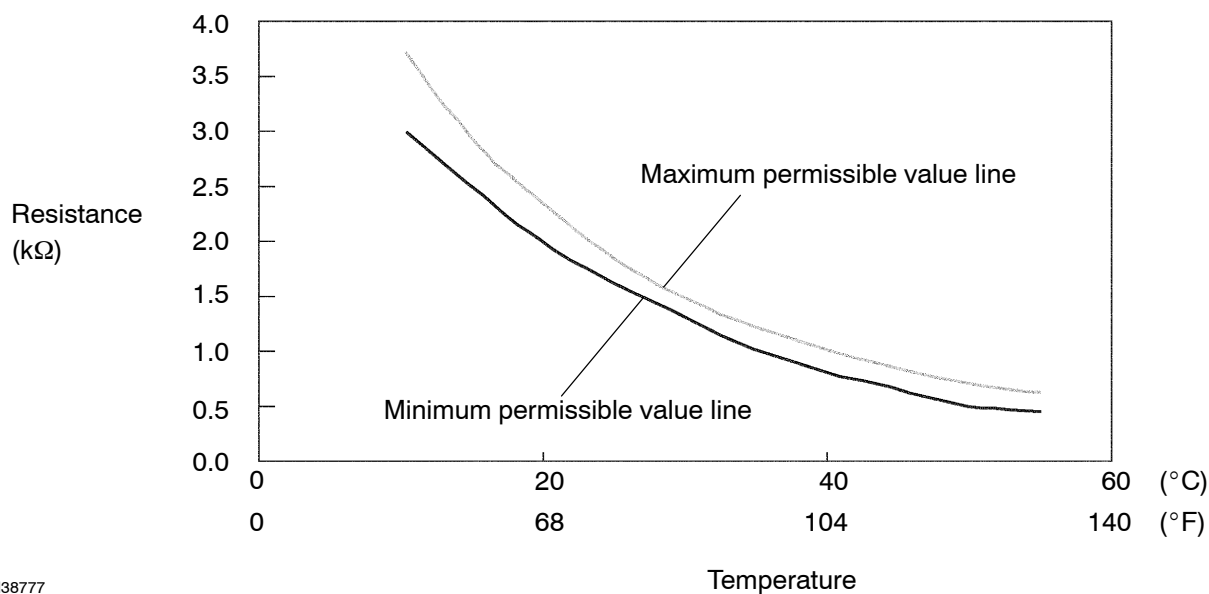
Tester connection	Condition	Specified condition
A1-1 - A1-2	10°C (50°F)	3.00 to 3.73 kΩ
A1-1 - A1-2	15°C (59°F)	2.45 to 2.88 kΩ
A1-1 - A1-2	20°C (68°F)	1.95 to 2.30 kΩ
A1-1 - A1-2	25°C (77°F)	1.60 to 1.80 kΩ
A1-1 - A1-2	30°C (86°F)	1.28 to 1.47 kΩ
A1-1 - A1-2	35°C (95°F)	1.00 to 1.22 kΩ
A1-1 - A1-2	40°C (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 graph below).



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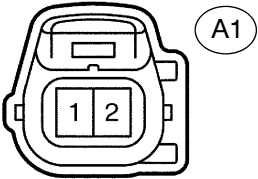
REPLACE A/C AMBIENT TEMPERATURE SENSOR

OK

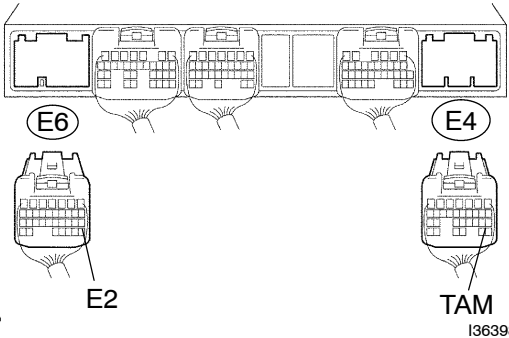
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CHECK HARNESS AND CONNECTOR(ECM-A/C AMBIENT TEMPERATURE SENSOR) (SEE PAGE 01-44)

A/C Ambient Temperature Sensor
Connector Front View:



ECM Connector Wire Harness View:



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

Standard:

Tester connection	Condition	Specified condition
E4-18 (TAM) – A1-1	Always	Below 1 Ω
E6-28 (E2) – A1-2	Always	Below 1 Ω
E4-18 (TAM) – Body ground	Always	10 kΩ or higher
E6-28 (E2) – Body ground	Always	10 kΩ or higher

NG

REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

REPLACE ECM (SEE PAGE 10-21)