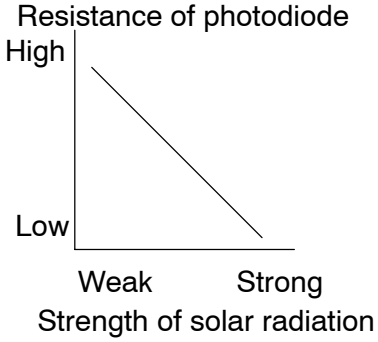
DTC	B1421	SOLAR SENSOR CIRCUIT (PASSENGER SIDE)

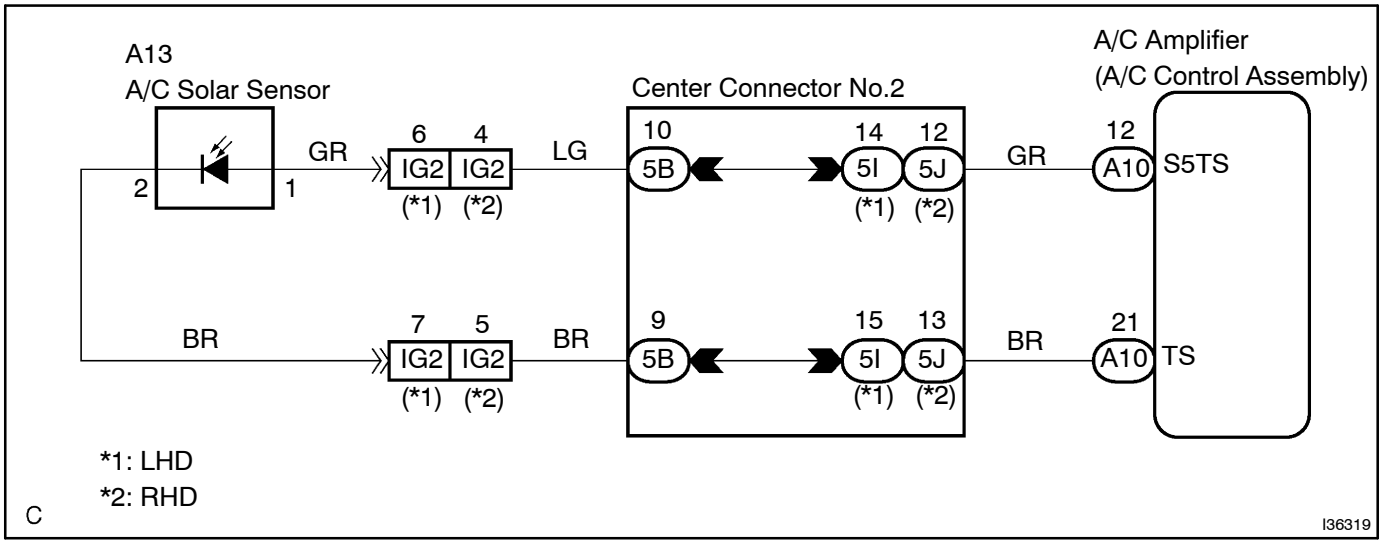
CIRCUIT DESCRIPTION



The A/C solar sensor is installed in the upper part of the instrument panel to detect the amount of solar sensor radiation with photodiode to control the heater and air conditioner "AUTO" function. It sends appropriate signals to the A/C amplifier. The output voltage of the A/C solar sensor changes in accordance with the amount of solar radiation. As the amount increases, the voltage increases. As the amount decreases, the voltage decreases. The A/C amplifier reads voltage output from the A/C solar sensor.

DTC No.	Detection Item	Trouble Area
B1421	Open or short in solar sensor circuit. (If the check is performed in a dark place, DTC B1424/24 may be displayed.)	• A/C solar sensor • Harness or connector between A/C solar sensor and A/C amplifier or body ECU • A/C amplifier

WIRING DIAGRAM



INSPECTION PROCEDURE

1	READ VALUE ON INTELLIGENT TESTER II

(a) Connect the intelligent tester II to DLC3.
(b) Turn the power 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.

DATA LIST / AIR CONDITIONER:

Item	Measurement Item/Display (Range)	Normal Condition	Diagnostic Note
Solar sensor (D side) Solar Sens–D	Solar sensor (Driver side) / min.: 0, max.: 255	Increases as brightness increases	Open in the circuit: 0 Short in the circuit: 255

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

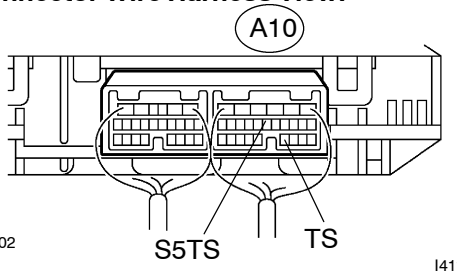
B → **PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE (SEE PAGE 05–1035)**

C → **REPLACE AIR CONDITIONING AMPLIFIER (SEE PAGE 55–52)**

A

2 INSPECT AIR CONDITIONING AMPLIFIER(S5TS – TS)

Air Conditioning Amplifier Connector Wire Harness View:



(a) Remove the air A/C amplifier with connectors still connected.

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

Standard:

Tester connection	Condition	Specified condition
A10–12 (S5TS) – A10–21 (TS)	Power switch ON (ON) Sensor is subject to electric light	0.8 to 4.3 V
A10–12 (S5TS) – A10–21 (TS)	Power switch ON (ON) Sensor is covered with a cloth	Below 0.8 V

HINT:

- As the inspection light is moved away from the sensor, the voltage increases.
- Use an incandescent lamp for inspection. Bring it within 30 cm (11.8 in.) of the A/C solar sensor (cooler (solar sensor) thermistor).

Result:

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

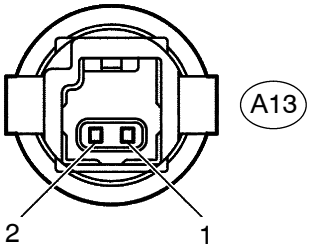
B → **PROCEED TO NEXT CIRCUIT INSPECTION SHOWN IN PROBLEM SYMPTOMS TABLE (SEE PAGE 05–1035)**

C → **REPLACE AIR CONDITIONING AMPLIFIER (SEE PAGE 55–52)**

A

3 INSPECT A/C SOLAR SENSOR

A/C Solar Sensor Connector
Front View:



E50667 E72857

(a) Remove the A/C solar sensor.
(b) Disconnect the connector from the A/C solar sensor.
(c) Measure the resistance according to the value(s) in the table below.
(d) Connect the positive (+) lead from the ohmmeter to terminal 2 and negative (–) lead to terminal 1 of the A/C solar sensor.

Standard:

Tester connection	Condition	Specified condition
A13–1 – A13–2	Sensor is subject to electric light	Except ∞ Ω
A13–1 – A13–2	Sensor is covered with a cloth	∞ Ω (No continuity)

NOTICE:
The connection procedure for using a digital tester such as an TOYOTA electrical tester is shown above. When using an analog tester, connect the positive (+) lead to terminal 1 and negative (–) lead to terminal 2 of the A/C solar sensor.
HINT:

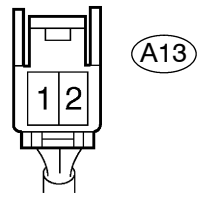
- As the inspection light is moved away from the sensor, the voltage increases.
- Use an incandescent lamp for inspection. Bring it within 30 cm (11.8 in.) of the A/C solar sensor.

NG → **REPLACE A/C SOLAR SENSOR**

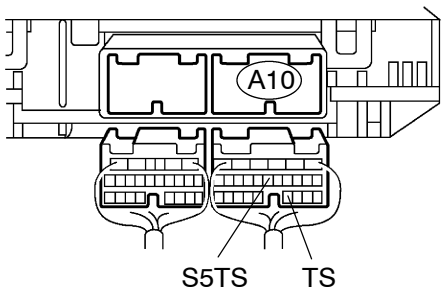
OK

4	CHECK HARNESS AND CONNECTOR(A/C SOLAR SENSOR – AIR CONDITONING AMPLIFIER)(SEE PAGE 01–46)

A/C Solar Sensor
Connector Front View:



Air Conditioning Amplifier Connector Wire Harness View:



(a) Disconnect the connector from the A/C solar sensor.
(b) Measure the resistance according to the value(s) in the table below.

Standard:

Tester connection	Condition	Specified condition
A10–12 (S5TS) – A13–1	Always	Below 1 Ω
A10–21 (TS) – A13–2	Always	Below 1 Ω
A10–12 (S5TS) – Body ground	Always	10 kΩ or higher
A10–21 (TS) – Body ground	Always	10 kΩ or higher

NG → **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK

REPLACE AIR CONDITIONING AMPLIFIER (SEE PAGE 55–52)