Last Modified: 12-04-2024	6.11:8.1.0	**Doc ID:** RM100000002AQOY
Model Year Start: 2023	**Model:** Prius Prime	**Prod Date Range:** [03/2023 -]
Title: HEATING / AIR CONDITIONING: AIR CONDITIONING SYSTEM (for PHEV Model): P1F2011; Evaporator Refrigerant Temperature Sensor Circuit Short to Ground; 2023 - 2024 MY Prius Prime [03/2023 -]		

DTC	**P1F2011**	**Evaporator Refrigerant Temperature Sensor Circuit Short to Ground**

DESCRIPTION

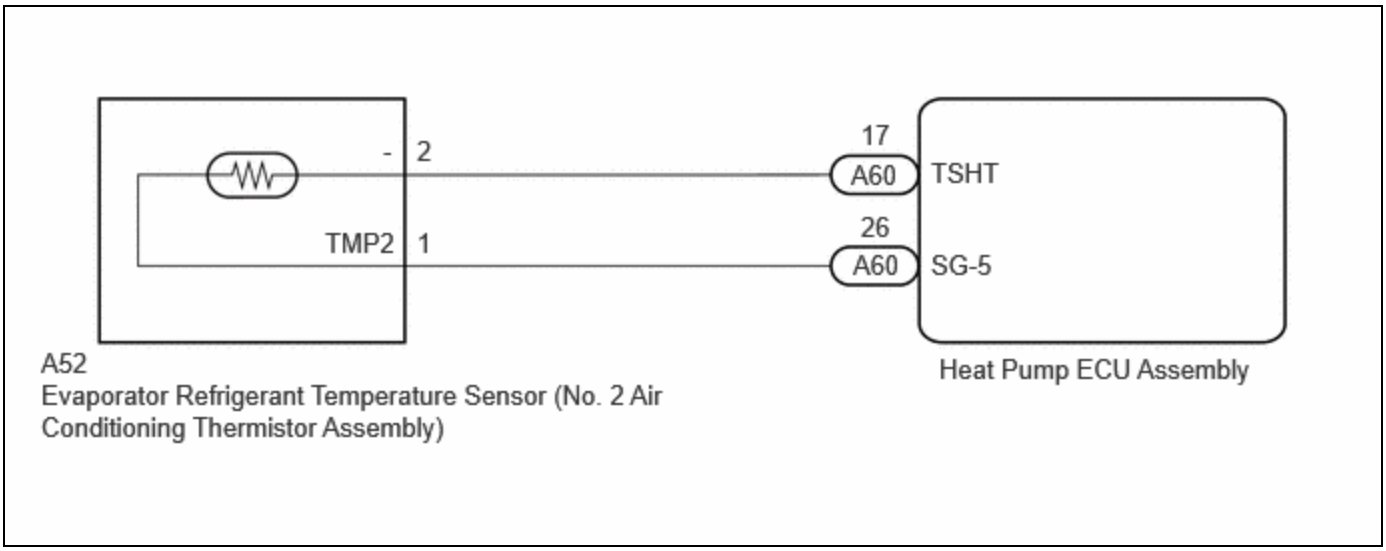
The evaporator refrigerant temperature sensor (No. 2 air conditioning thermistor assembly) is installed to the refrigerant piping after the No. 1 cooler evaporator sub-assembly, and detects the refrigerant temperature after it passes through the No. 1 cooler evaporator sub-assembly.

The resistance of the evaporator refrigerant temperature sensor (No. 2 air conditioning thermistor assembly) changes in accordance with the refrigerant gas temperature. Resistance increases as the refrigerant gas temperature drops and decreases as the temperature rises.

The heat pump ECU assembly outputs a voltage to the evaporator refrigerant temperature sensor (No. 2 air conditioning thermistor assembly) and reads voltage changes that result from the changes in the resistance of the evaporator refrigerant temperature sensor (No. 2 air conditioning thermistor assembly).

DTC NO.	DETECTION ITEM	DTC DETECTION CONDITION	TROUBLE AREA	MIL	MEMORY	DTC OUTPUT FROM	PRIORITY	NOTE
P1F2011	Evaporator Refrigerant Temperature Sensor Circuit Short to Ground	Diagnosis Condition: Ignition switch ON Malfunction Status: Short in evaporator refrigerant temperature sensor (No. 2 air conditioning thermistor assembly) circuit Detection Time: Continuously for 4 seconds or more	• Evaporator refrigerant temperature sensor (No. 2 air conditioning thermistor assembly) • Harness or connector • Heat pump ECU assembly	Does not come on	Memorized	Air Conditioner	A	-

WIRING DIAGRAM



PROCEDURE

1.	**CLEAR DTC**

(a) Clear the DTCs.

Body Electrical > Air Conditioner > Clear DTCs

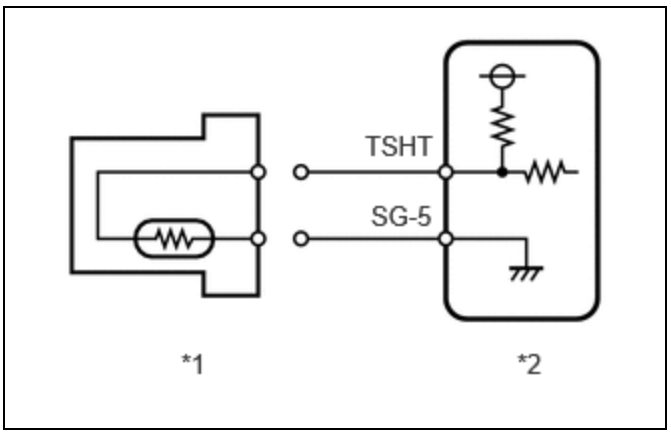
NEXT

2.	**CHECK FOR DTC**

Pre-procedure1

(a) Turn the ignition switch off.

(b) Disconnect the evaporator refrigerant temperature sensor (No. 2 air conditioning thermistor assembly) connector.



*1	Evaporator Refrigerant Temperature Sensor (No. 2 Air Conditioning Thermistor Assembly)
*2	Heat Pump ECU Assembly

(c) Turn the ignition switch to ON and wait for 4 seconds or more.

Procedure1

(d) Check for DTCs.

Body Electrical > Air Conditioner > Trouble Codes

RESULT	PROCEED TO
P1F2015 is output	A
P1F2011 is output	B

Post-procedure1

(e) None

A **REPLACE EVAPORATOR REFRIGERANT TEMPERATURE SENSOR (NO. 2 AIR CONDITIONING THERMISTOR ASSEMBLY)**

B

3.	**CHECK HARNESS AND CONNECTOR (EVAPORATOR REFRIGERANT TEMPERATURE SENSOR (NO. 2 AIR CONDITIONING THERMISTOR ASSEMBLY) - HEAT PUMP ECU ASSEMBLY)**

Pre-procedure1

(a) Disconnect the A52 evaporator refrigerant temperature sensor (No. 2 air conditioning thermistor assembly) connector.

(b) Disconnect the A60 heat pump ECU assembly connector.

Procedure1

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

Standard Resistance:

EWD INFO

Click Location & Routing(A52,A60)

Click Connector(A52)
Click Connector(A60)

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION	RESULT
A52-2 (-) or A60-17 (TSHT) - Other terminals and body ground	Always	10 kΩ or higher	kΩ
A52-1 (TMP2) or A60-26 (SG-5) - Other terminals and body ground	Always	10 kΩ or higher	kΩ

Post-procedure1

(d) None

OK ▶ **REPLACE HEAT PUMP ECU ASSEMBLY**

NG ▶ **REPAIR OR REPLACE HARNESS OR CONNECTOR**