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Model Year Start: 2023	Model: Prius Prime	Prod Date Range: [03/2023 -]
Title: M20A-FXS (ENGINE CONTROL): SFI SYSTEM: P05A212; Active Grille Air Shutter "A" Circuit Short to Battery; 2023 - 2024 MY Prius Prius Prime [03/2023 -]		

DTC	P05A212	Active Grille Air Shutter "A" Circuit Short to Battery
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DESCRIPTION

Refer to DTC P059A71.

Click here [INFO](#)

DTC NO.	DETECTION ITEM	DTC DETECTION CONDITION	TROUBLE AREA	MIL	DTC OUTPUT FROM	PRIORITY	NOTE
P05A212	Active Grille Air Shutter "A" Circuit Short to Battery	Short to +B in swing grille actuator assembly or grille shutter motor drive circuit for 7.86 seconds or more (1 trip detection logic).	Radiator shutter assembly	Comes on	Engine	A	SAE Code: P05A4

MONITOR DESCRIPTION

When the swing grille actuator assembly detects that there is a grille shutter circuit malfunction, a DTC request is sent to the ECM and the ECM stores a DTC.

MONITOR STRATEGY

Related DTCs	P05A4: Active grille air shutter range check (High current)
Required Sensors/Components (Main)	Swing grille actuator assembly
Required Sensors/Components (Related)	-
Frequency of Operation	Continuous
Duration	7.86 seconds
MIL Operation	Immediate
Sequence of Operation	None

TYPICAL ENABLING CONDITIONS

Monitor runs whenever the following DTCs are not stored	None
All of the following conditions are met	-
Auxiliary battery voltage	8 V or higher
Time after ignition switch off to ON	0.5 seconds or higher

Receive LIN communication signal

4.608 seconds or less

TYPICAL MALFUNCTION THRESHOLDS

Active grille air shutter control circuit current

1 A or more

CONFIRMATION DRIVING PATTERN

HINT:

- After repair has been completed, clear the DTC and then check that the vehicle has returned to normal by performing the following All Readiness check procedure.

Click here [INFO](#)

- When clearing the permanent DTCs, refer to the "CLEAR PERMANENT DTC" procedure.

Click here [INFO](#)

- Clear the DTCs (even if no DTCs are stored, perform the clear DTC procedure).
- Turn the ignition switch off and wait for at least 30 seconds.
- Turn the ignition switch to ON [A].
- Wait 10 seconds or more [B].
- Enter the following menus: Powertrain / Engine / Trouble Codes [C].
- Read the pending DTCs.

HINT:

- If a pending DTC is output, the system is malfunctioning.
- If a pending DTC is not output, perform the following procedure.

- Enter the following menus: Powertrain / Engine / Utility / All Readiness.
- Input the DTC: P05A212.
- Check the DTC judgment result.

HINT:

- If the judgment result is NORMAL, the system is normal.
- If the judgment result is ABNORMAL, the system has a malfunction.
- [A] to [C]: Normal judgment procedure.

The normal judgment procedure is used to complete DTC judgment and also used when clearing permanent DTCs.

- When clearing the permanent DTCs, do not disconnect the cable from the auxiliary battery terminal or attempt to clear the DTCs during this procedure, as doing so will clear the universal trip and normal judgment histories.

CAUTION / NOTICE / HINT

NOTICE:

- In order to ensure safety, before performing troubleshooting or removing the radiator shutter assembly, change the grille shutter control mode to maintenance mode.
- Vehicle Control History may be stored in the hybrid vehicle control ECU if the engine is malfunctioning. Certain vehicle condition information is recorded when Vehicle Control History is stored. Reading the vehicle conditions recorded in both the Freeze Frame Data and Vehicle Control History can be useful for troubleshooting.

for HEV Model: Click here [INFO](#)

for PHEV Model: Click here [INFO](#)

(Select Powertrain in Health Check and then check the time stamp data.)

- If any "Engine Malfunction" Vehicle Control History item has been stored in the hybrid vehicle control ECU, make sure to clear it. However, as all Vehicle Control History items are cleared simultaneously, if any Vehicle

Control History items other than "Engine Malfunction" are stored, make sure to perform any troubleshooting for them before clearing Vehicle Control History.

for HEV Model: [Click here](#) INFO

for PHEV Model: [Click here](#) INFO

PROCEDURE

1. READ FREEZE FRAME DATA (Battery Voltage)

(a) Using the GTS, confirm the vehicle conditions recorded in the Freeze Frame Data which were present when the DTC was stored.

HINT:

[Click here](#) INFO

FREEZE FRAME DATA ITEM	RESULT	PROCEED TO
Battery Voltage	Below 18 V	A
	18 V or higher	B

B ▶ **GO TO CHARGING SYSTEM**

A



2. PERFORM UTILITY USING GTS (SWITCH GRILLE SHUTTER CONTROL MODE)

Pre-procedure1

(a) Turn the ignition switch off and wait for 30 seconds or more.

Procedure1

(b) According to the display on the GTS, change the grille shutter control mode from normal mode to maintenance mode.

Powertrain > Engine > Utility



Post-procedure1

(c) None.

NEXT**3. PERFORM UTILITY USING GTS (GRILLE SHUTTER INITIALIZATION)**

(a) According to the display on the GTS, perform initialization (nominal torque).

Powertrain > Engine > Utility

TESTER DISPLAY
Grille Shutter Initialization

NEXT**4. CLEAR DTC**

Pre-procedure1

(a) None.

Procedure1

(b) Clear the DTCs.

Powertrain > Engine > Clear DTCs

Post-procedure1

(c) Turn the ignition switch off and wait for at least 30 seconds.

NEXT**5. CHECK DTC OUTPUT (DTC P05A212)**

Pre-procedure1

(a) Turn the ignition switch to ON and wait 10 seconds or more.

Procedure1

(b) Read the DTCs.

Powertrain > Engine > Trouble Codes

RESULT	PROCEED TO
P05A212 is not output	A
P05A212 is output	B

HINT:

Perform "Switch Grille Shutter Control Mode and Grille Shutter Initialization" after replacing the radiator shutter assembly.

Click here [INFO](#)

Post-procedure1

(c) None.

B ▶ REPLACE RADIATOR SHUTTER ASSEMBLY

A
▼

6. READ VALUE USING GTS (GRILLE SHUTTER CONTROL MODE)

Pre-procedure1

(a) According to the display on the GTS, change the grille shutter control mode from maintenance mode to normal mode.

Powertrain > Engine > Utility

TESTER DISPLAY
Switch Grille Shutter Control Mode

Procedure1

(b) Read the value displayed on the GTS.

Powertrain > Engine > Data List

TESTER DISPLAY
Grille Shutter Control Mode

Standard:

GTS DISPLAY	SPECIFIED CONDITION
Grille Shutter Control Mode	Normal

Post-procedure1

(c) None.

NEXT  **END**

