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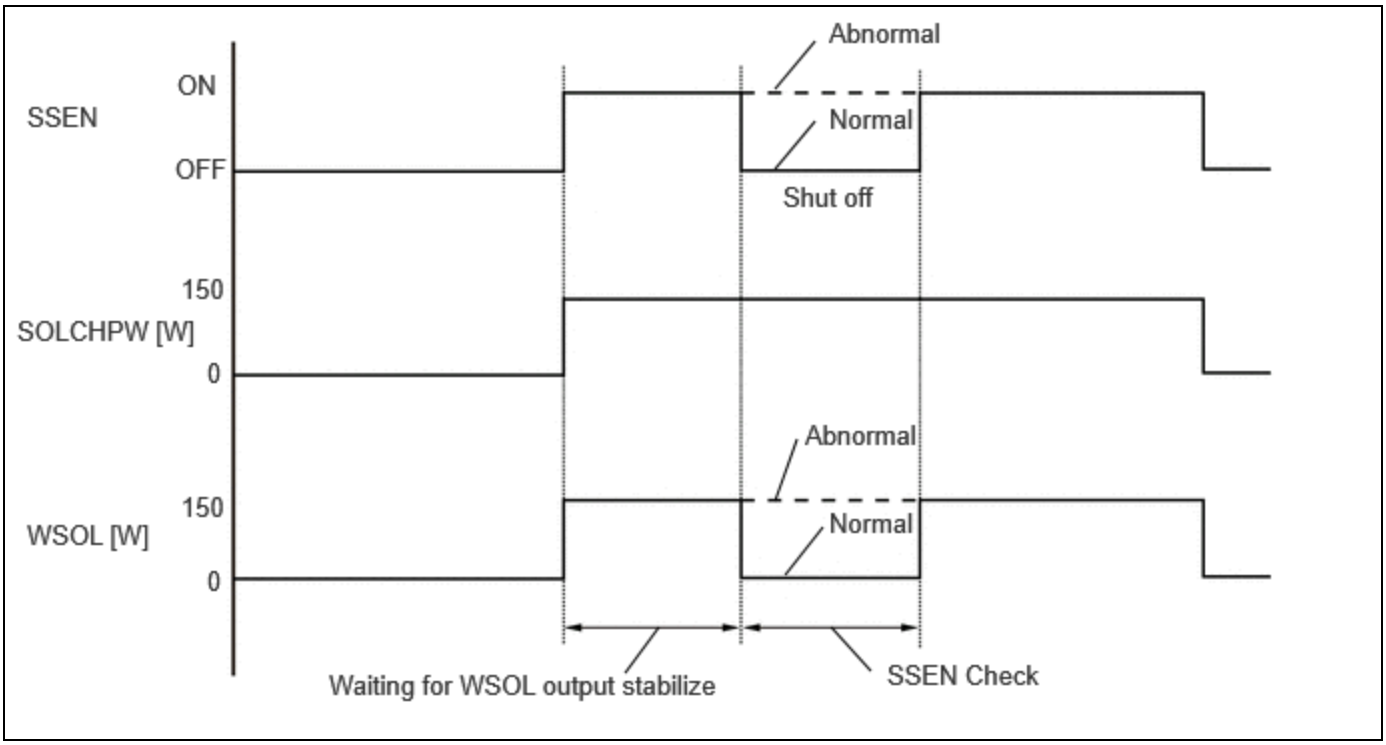
Model Year Start: 2023	**Model:** Prius Prime	**Prod Date Range:** [03/2023 -]
Title: HYBRID / BATTERY CONTROL: PLUG-IN CHARGE CONTROL SYSTEM (for PHEV Model): P1EA09E; Solar Charger Enable Circuit Stuck On; 2023 - 2024 MY Prius Prime [03/2023 -]		

DTC	**P1EA09E**	**Solar Charger Enable Circuit Stuck On**

DTC SUMMARY

MALFUNCTION DESCRIPTION

When solar charging starts, the plugin charge control ECU assembly operates the solar charge permission signal shut-off function to check the wire harnesses between the plugin charge control ECU assembly and solar energy control ECU assembly.



A solar charging shut-off signal stuck ON (SSEN function malfunction) is a malfunction in which even though SSEN is shut off, power (WSOL) is output following a solar charging power command signal (SOLCHPW signal), and proper operation of SSEN cannot be guaranteed.

The cause of this malfunction may be one of the following:

Plugin charge control ECU assembly malfunction

- Plugin charge control ECU assembly internal malfunction

Solar energy control ECU assembly malfunction

- Solar energy control ECU assembly internal malfunction
- Solar energy control ECU assembly internal output voltage sensor malfunction
- Solar energy control ECU assembly internal output current sensor malfunction

Wire harness between the plugin charge control ECU assembly and solar energy control ECU assembly

- The connectors are not connected properly
- Foreign matter or water on the connector terminals
- Open or short in wire harness

Communication Error

- Communication malfunction between the plugin charge control ECU assembly and solar energy control ECU assembly

DESCRIPTION

The plugin charge control ECU assembly performs a function check to check for an abnormal solar charging start permission signal (SSEN signal). If it detects an abnormal signal, it will store a DTC.

DTC NO.	DETECTION ITEM	DTC DETECTION CONDITION	TROUBLE AREA	MIL	WARNING INDICATE	DTC OUTPUT FROM	PRIORITY	NOTE
P1EA09E	Solar Charger Enable Circuit Stuck On	Charging power is output event though solar charging start permission signal (SSEN signal) is not output (1 trip detection logic)	• Plugin charge control ECU assembly • Solar energy control ECU assembly • Wire harness or connector	Does not come on	Solar Charging Warning Light: Comes on	Plug-in Control	B	SAE Code: P1EA3

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

1. Connect the GTS to the DLC3.
2. Turn the ignition switch to ON and turn the GTS on.
3. Clear the DTCs (even if no DTCs are stored, perform the clear DTC procedure).
4. Turn the ignition switch off and wait for 2 minutes or more.
5. Confirm to start solar charging and wait for 2 minutes or more.
6. Enter the following menus: Powertrain / Plug-in Control / Utility / All Readiness.
7. Check the DTC judgment result.

HINT:

- If the judgment result shows NORMAL, the system is normal.
- If the judgment result shows ABNORMAL, the system has a malfunction.
- If the judgment result shows INCOMPLETE or N/A, perform driving pattern again.

PROCEDURE

1.	CHECK DTC OUTPUT (PLUG-IN CONTROL AND SOLAR CHARGING CONTROL)

Pre-procedure1

(a) Enter the following menus:

Powertrain > Plug-in Control > Trouble Codes
Powertrain > Solar Charging Control > Trouble Codes

Procedure1

(b) Check for DTCs.

RESULT	PROCEED TO
P1EA09E only is output, or DTCs except the ones in the table below are also output.	A
DTCs of Plug-in Charge Control System in the tables below are output.	B
DTCs of Solar Charging System in the tables below are output.	C

MALFUNCTION CONTENT	SYSTEM	RELEVANT DTC	
Microcomputer malfunction	Plug-in Charge Control System	P06881F	DC Quick Charging Control Module Power Relay Sense Circuit Intermittent
	Solar Charging System	P1EDB49	Solar Charger Control Module A/D Processing Internal Electronic Failure
Communication system malfunction	Plug-in Charge Control System	U113A87	Lost Communication with Solar Charging Control Module Missing Message
	Solar Charging System	U115087	Lost Communication with Hybrid Powertrain Control Module (Hybrid/EV Battery Local Bus) Missing Message
		U115387	Lost Communication with Battery Charger Control Module "A" (ch2) Missing Message
		U117B87	Lost Communication with Hybrid/EV Battery Energy Control Module "A" (ch2) Missing Message
Sensor and actuator circuit malfunction	Solar Charging System	P19A012	Solar Charger DC/DC Converter Current Sensor Circuit Short to Battery
		P19A014	Solar Charger DC/DC Converter Current Sensor Circuit Short to Ground or Open
		P19A962	Solar Charger DC/DC Converter Output Voltage / Auxiliary Battery DC/DC Converter Input Voltage Signal Compare Failure
System malfunction	Solar Charging System	P196762	Solar Charger DC/DC Converter "A" Output Power Signal Compare Failure

HINT:

- P1EA09E may be output as a result of the malfunction indicated by the DTCs above.

a. The chart above is listed in inspection order of priority.
b. Check DTCs that are output at the same time by following the listed order. (The main cause of the malfunction can be determined without performing unnecessary inspections.)

Post-procedure1

(c) Turn the ignition switch off.

A	▶	**REPLACE SOLAR ENERGY CONTROL ECU ASSEMBLY**
B	▶	**GO TO DTC CHART (PLUG-IN CHARGE CONTROL SYSTEM)**
C	▶	**GO TO DTC CHART (SOLAR CHARGING SYSTEM)**