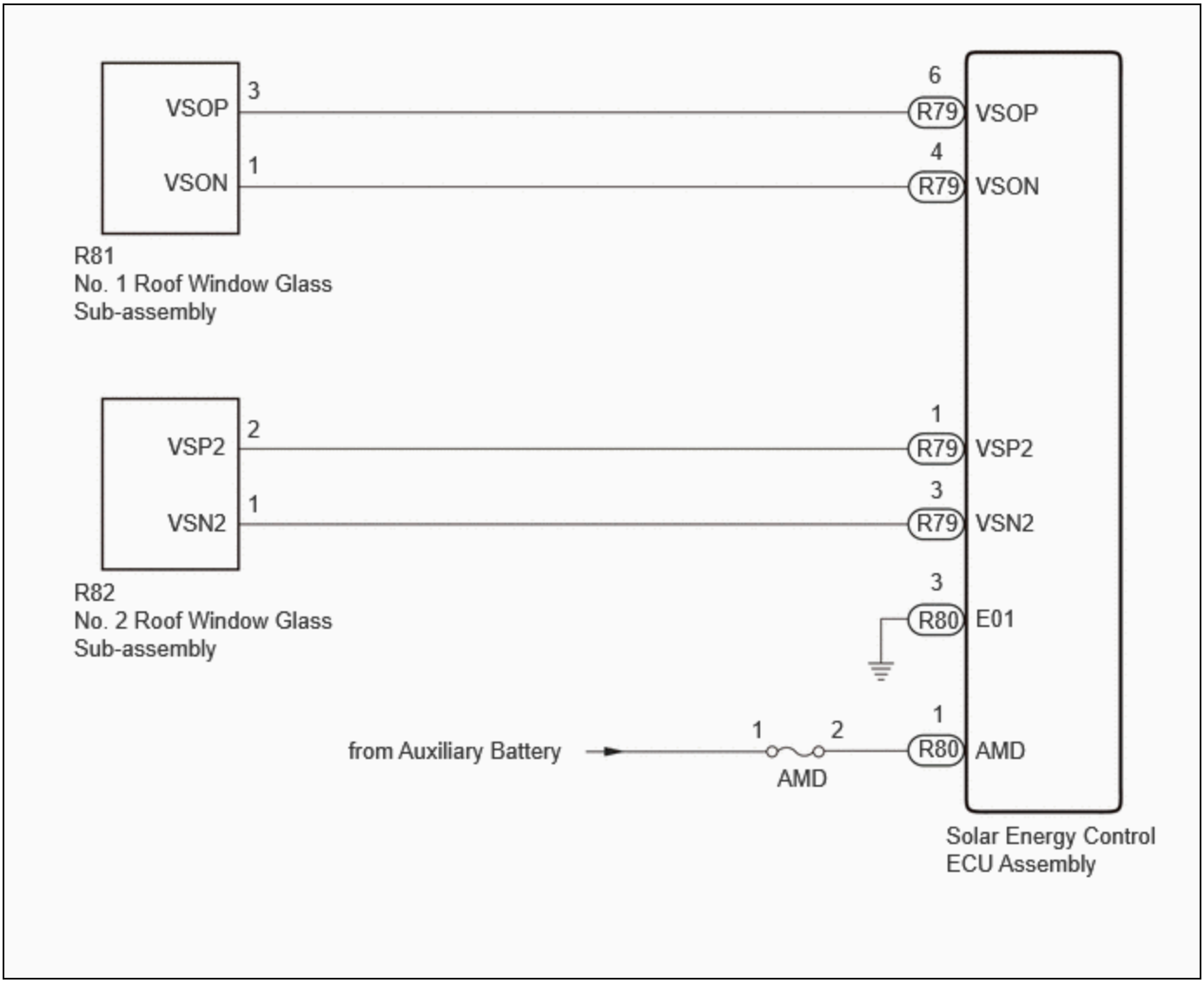
Last Modified: 12-04-2024	6.11:8.1.0	**Doc ID:** RM100000002BMEN
Model Year Start: 2023	**Model:** Prius Prime	**Prod Date Range:** [03/2023 -]
Title: M20A-FXS (BATTERY / CHARGING): SOLAR CHARGING SYSTEM: ECU Power Source Circuit; 2023 - 2024 MY Prius Prius Prime [03/2023 -]		

ECU Power Source Circuit

DESCRIPTION

The power necessary for operation of the solar energy control ECU assembly can be provided by the solar roof, solar battery or auxiliary battery.

WIRING DIAGRAM



CAUTION / NOTICE / HINT

CAUTION:

Refer to the precautions before inspecting high voltage circuit.

Click here INFO

NOTICE:

- After the ignition switch is turned off, there may be a waiting time before disconnecting the negative (-) auxiliary battery terminal.

  Click here INFO
- When disconnecting and reconnecting the auxiliary battery

HINT:

When disconnecting and reconnecting the auxiliary battery, there is an automatic learning function that completes learning when the respective system is used.

Click here INFO

PROCEDURE

1.	**CHECK DTC OUTPUT (HEALTH CHECK)**

(a) Enter the following menus: Health Check.

(b) Check DTCs.

RESULT	PROCEED TO
DTCs are not output.	A
DTCs are output.	B

(c) Turn the ignition switch off.

B ▶ **GO TO DTC CHART**

A ▼

2.	**CHECK SOLAR ENERGY CONTROL ECU ASSEMBLY (AMD TERMINAL VOLTAGE)**

CAUTION:

Be sure to wear insulated gloves.

(a) Check that the service plug grip is not installed.

NOTICE:

After removing the service plug grip, do not turn the ignition switch to ON (READY), unless instructed by the repair manual because this may cause a malfunction.

(b) Disconnect the solar energy control ECU assembly connectors.

(c) Connect the cable to the negative (-) auxiliary battery terminal.

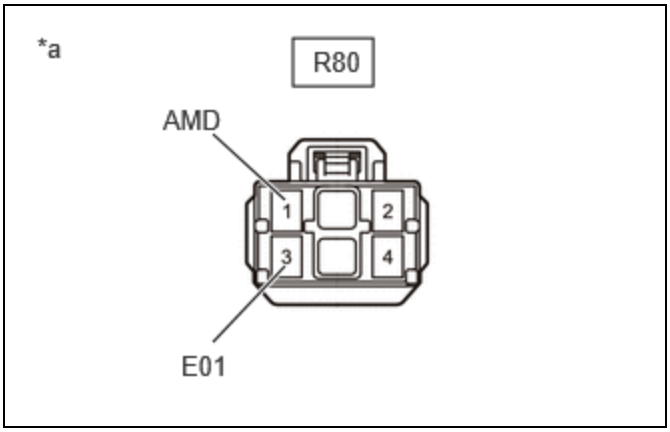
(d) Measure the voltage according to the value(s) in the table below.

Standard Voltage:

EWD INFO

Click Location & Routing(R80)
Click Connector(R80)

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
R80-1 (AMD) - R80-3 (E01)	Always	11 to 14 V



*a	Front view of wire harness connector (to Solar Energy Control ECU Assembly)

(e) Disconnect the cable from the negative (-) auxiliary battery terminal.

(f) Reconnect the solar energy control ECU assembly connectors.

NG ▶ **GO TO STEP 9**

OK ▼

3.	**CHECK SOLAR ENERGY CONTROL ECU ASSEMBLY (VSOP TERMINAL VOLTAGE)**

CAUTION:

Be sure to wear insulated gloves.

(a) Park the vehicle in an area where the solar radiation will be steady.

(b) Ensure that the following vehicle conditions are met.

Weather	Clear or mostly clear and sunny
Time	Between 11:00 and 14:00
Place	An area where sunlight strikes the solar roof directly

HINT:

- Make sure no part of the solar roof is shaded.
- If the solar roof is dirty, clean it.

(c) Disconnect the cable from the negative (-) auxiliary battery terminal.

(d) Remove the service plug grip.

Click here INFO

(e) Disconnect the solar energy control ECU assembly connectors.

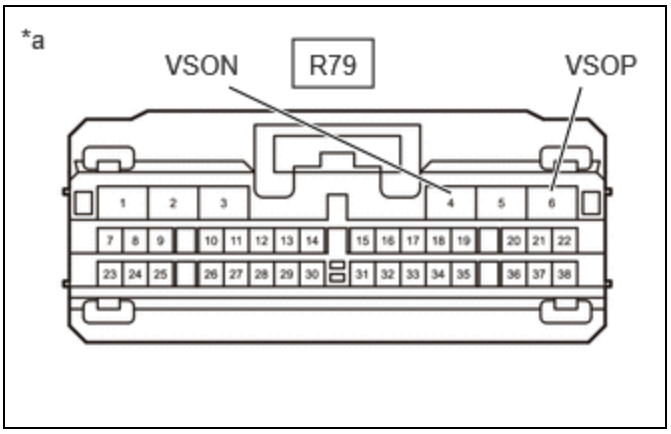
(f) Measure the voltage according to the value(s) in the table below.

Standard Voltage:

EWD INFO

Click Location & Routing(R79)
Click Connector(R79)

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
R79-6 (VSOP) - R79-4 (VSON)	Ignition switch off	15 V or higher



*a	Front view of wire harness connector (to Solar Energy Control ECU Assembly)

(g) Reconnect the solar energy control ECU assembly connectors.

(h) Install the service plug grip.

(i) Connect the cable to the negative (-) auxiliary battery terminal.

NG ▶ **GO TO STEP 7**

OK ▼

4.	**CHECK SOLAR ENERGY CONTROL ECU ASSEMBLY (VSP2 TERMINAL VOLTAGE)**

CAUTION:

Be sure to wear insulated gloves.

(a) Park the vehicle in an area where the solar radiation will be steady.

(b) Ensure that the following vehicle conditions are met.

Weather	Clear or mostly clear and sunny
Time	Between 11:00 and 14:00
Place	An area where sunlight strikes the solar roof directly

HINT:

- Make sure no part of the solar roof is shaded.
- If the solar roof is dirty, clean it.

(c) Disconnect the cable from the negative (-) auxiliary battery terminal.

(d) Remove the service plug grip.

Click here INFO

(e) Disconnect the solar energy control ECU assembly connectors.

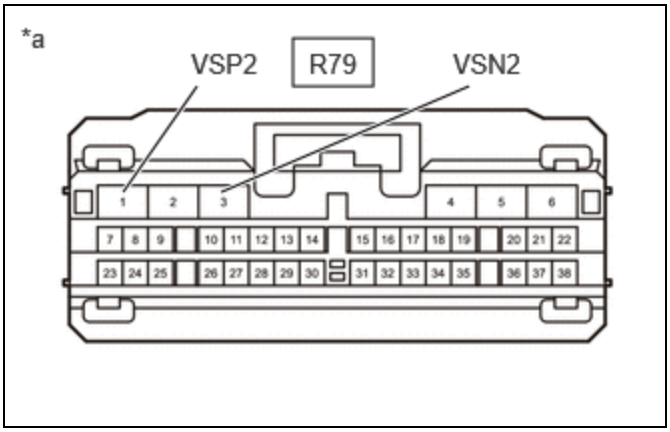
(f) Measure the voltage according to the value(s) in the table below.

Standard Voltage:

EWD INFO

Click Location & Routing(R79)
Click Connector(R79)

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
R79-1 (VSP2) - R79-3 (VSN2)	Ignition switch off	15 V or higher



*a	Front view of wire harness connector (to Solar Energy Control ECU Assembly)

(g) Reconnect the solar energy control ECU assembly connectors.

(h) Install the service plug grip.

(i) Connect the cable to the negative (-) auxiliary battery terminal.

OK ▶ **GO TO PROBLEM SYMPTOMS TABLE**

NG ▼

5.	**CHECK CONNECTOR CONNECTION CONDITION (NO. 2 ROOF WINDOW GLASS SUB-ASSEMBLY CONNECTOR)**

(a) Check the connection condition of the No. 2 roof window glass sub-assembly connector and the contact pressure of each terminal. Check the terminals for deformation, and check the connector for water ingress and foreign matter.

Click here INFO

OK:
- The connector is connected securely.
- The terminals are not deformed and are connected securely.
- No water or foreign matter in the connector.

RESULT	PROCEED TO
OK	A
NG (The connector is not connected securely.)	B
NG (The terminals are not making secure contact or are deformed, or water or foreign matter exists in the connector.)	C

B ▶ **CONNECT SECURELY**

C ▶ **REPAIR OR REPLACE HARNESS OR CONNECTOR**

A

6.	**CHECK HARNESS AND CONNECTOR (SOLAR ENERGY CONTROL ECU ASSEMBLY - NO. 2 ROOF WINDOW GLASS SUB-ASSEMBLY)**

CAUTION:

Be sure to wear insulated gloves.

(a) Disconnect the No. 2 roof window glass sub-assembly connector.

(b) Check that the service plug grip is not installed.

NOTICE:

After removing the service plug grip, do not turn the ignition switch to ON (READY), unless instructed by the repair manual because this may cause a malfunction.

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

Standard Resistance:

EWD INFO

Click Location & Routing(R79,R82)
Click Connector(R79)
Click Connector(R82)

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
R79-1 (VSP2) - R82-2 (VSP2)	Ignition switch off	Below 1 Ω
R79-3 (VSN2) - R82-1 (VSN2)	Ignition switch off	Below 1 Ω
R79-1 (VSP2) or R82-2 (VSP2) - Body ground and other terminals	Ignition switch off	10 kΩ or higher
R79-3 (VSN2) or R82-1 (VSN2) - Body ground and other terminals	Ignition switch off	10 kΩ or higher

(d) Reconnect the solar energy control ECU assembly connectors.

(e) Reconnect the No. 2 roof window glass sub-assembly connector.

OK ▶ **REPLACE NO. 2 ROOF WINDOW GLASS SUB-ASSEMBLY**

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

7.	**CHECK CONNECTOR CONNECTION CONDITION (NO. 1 ROOF WINDOW GLASS SUB-ASSEMBLY CONNECTOR)**

(a) Check the connection condition of the No. 1 roof window glass sub-assembly connector and the contact pressure of each terminal. Check the terminals for deformation, and check the connector for water ingress and foreign matter.

Click here INFO

OK:
- The connector is connected securely.
- The terminals are not deformed and are connected securely.
- No water or foreign matter in the connector.

RESULT	PROCEED TO
OK	A
NG (The connector is not connected securely.)	B
NG (The terminals are not making secure contact or are deformed, or water or foreign matter exists in the connector.)	C

B ▶ **CONNECT SECURELY**

C ▶ **REPAIR OR REPLACE HARNESS OR CONNECTOR**

A ▼

8.	**CHECK HARNESS AND CONNECTOR (SOLAR ENERGY CONTROL ECU ASSEMBLY - NO. 1 ROOF WINDOW GLASS SUB-ASSEMBLY)**

CAUTION:

Be sure to wear insulated gloves.

(a) Disconnect the No. 1 roof window glass sub-assembly connector.

(b) Check that the service plug grip is not installed.

NOTICE:

After removing the service plug grip, do not turn the ignition switch to ON (READY), unless instructed by the repair manual because this may cause a malfunction.

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

Standard Resistance:

EWD INFO

Click Location & Routing(R79,R81)
Click Connector(R79)
Click Connector(R81)

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
R79-6 (VSOP) - R81-3 (VSOP)	Ignition switch off	Below 1 Ω
R79-4 (VSON) - R81-1 (VSON)	Ignition switch off	Below 1 Ω
R79-6 (VSOP) or R81-3 (VSOP) - Body ground and other terminals	Ignition switch off	10 kΩ or higher
R79-4 (VSON) or R81-1 (VSON) - Body ground and other terminals	Ignition switch off	10 kΩ or higher

(d) Reconnect the solar energy control ECU assembly connectors.

(e) Reconnect the No. 1 roof window glass sub-assembly connector.

OK ▶ **REPLACE NO. 1 ROOF WINDOW GLASS SUB-ASSEMBLY**

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

9.	**CHECK FUSE (AMD)**

(a) Remove the AMD fuse from the No. 1 engine room relay block and No. 1 junction block assembly.

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

Standard Resistance:

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
AMD fuse terminals	Always	Below 1 Ω

(c) Install the AMD fuse.

OK ▶ **REPAIR OR REPLACE HARNESS OR CONNECTOR (AMD FUSE HOLDER - SOLAR ENERGY CONTROL ECU ASSEMBLY)**

NG
▼

10.	**CHECK HARNESS AND CONNECTOR (SOLAR ENERGY CONTROL ECU ASSEMBLY - NO. 1 ENGINE ROOM RELAY BLOCK AND NO. 1 JUNCTION BLOCK ASSEMBLY)**

CAUTION:

Be sure to wear insulated gloves.

(a) Check that the service plug grip is not installed.

NOTICE:

After removing the service plug grip, do not turn the ignition switch to ON (READY), unless instructed by the repair manual because this may cause a malfunction.

(b) Disconnect the plugin charge control ECU assembly connector.

(c) Disconnect the solar energy control ECU assembly connectors.

(d) Remove the AMD fuse from the No. 1 engine room relay block and No. 1 junction block assembly

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

Standard Resistance:

EWD INFO

Click Location & Routing(R80)
Click Connector(R80)

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION
R80-1 (AMD) or Holder 2 (AMD fuse) - Body ground and other terminals	Ignition switch off	10 kΩ or higher

(f) Install the AMD fuse.

(g) Reconnect the solar energy control ECU assembly connectors.

(h) Reconnect the plugin charge control ECU assembly connector.

OK ▶ **REPLACE FUSE (AMD)**

NG ▼

11.	**REPAIR OR REPLACE HARNESS OR CONNECTOR**

NEXT ▶ **REPLACE FUSE (AMD)**