

Last Modified: 12-04-2024	6.11:8.1.0	Doc ID: RM10000002923X
Model Year Start: 2023	Model: Prius Prime	Prod Date Range: [12/2022 -]
Title: DOOR / HATCH: POWER BACK DOOR SYSTEM: B222731; PBD Unit Pulse Sensor RH Circuit No Signal; 2023 - 2024 MY Prius Prime [12/2022 -]		

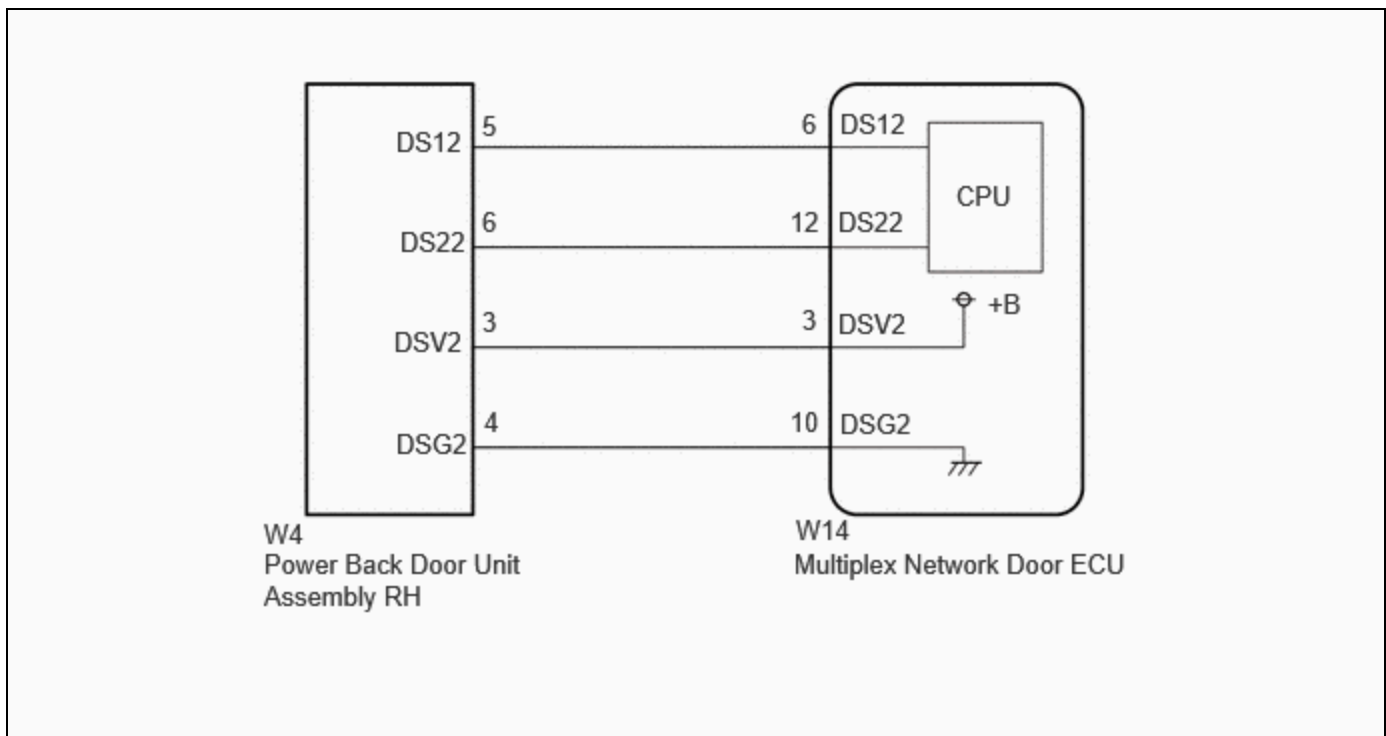
DTC	B222731	PBD Unit Pulse Sensor RH Circuit No Signal
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DESCRIPTION

This DTC is output when the multiplex network door ECU detects a power back door unit assembly RH pulse malfunction.

DTC NO.	DETECTION ITEM	DTC DETECTION CONDITION	TROUBLE AREA	DTC OUTPUT FROM	PRIORITY
B222731	PBD Unit Pulse Sensor RH Circuit No Signal	Multiplex network door ECU detects power back door unit assembly RH pulse malfunction	<ul style="list-style-type: none"> Multiplex network door ECU Power back door unit assembly RH Harness or connector 	Back Door	A

WIRING DIAGRAM



CAUTION / NOTICE / HINT

NOTICE:

If the multiplex network door ECU has been replaced, or if any of the connectors has been disconnected, initialize the power back door system.

Click here [INFO](#)

PROCEDURE**1. CLEAR DTC**

(a) Clear the DTCs.

Body Electrical > Back Door > Clear DTCs

NEXT**2. REPRODUCE DTC**

(a) Perform a power back door open or close operation.

NEXT**3. CHECK FOR DTC**

(a) Check for DTCs.

Body Electrical > Back Door > Trouble Codes

RESULT	PROCEED TO
B222731 is output	A
B222731 is not output	B

B **USE SIMULATION METHOD TO CHECK**

A



4. CHECK HARNESS AND CONNECTOR (MULTIPLEX NETWORK DOOR ECU - POWER BACK DOOR UNIT ASSEMBLY RH)

Pre-procedure1

- (a) Disconnect the W14 multiplex network door ECU connector.
- (b) Disconnect the W4 power back door unit assembly RH connector.

Procedure1

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

Standard Resistance:



[Click Location & Routing\(W14,W4\).](#)

[Click Connector\(W14\).](#)

[Click Connector\(W4\).](#)

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION	RESULT
W14-10 (DSG2) - W4-4 (DSG2)	Always	Below 1 Ω	Ω
W14-3 (DSV2) - W4-3 (DSV2)	Always	Below 1 Ω	Ω
W14-12 (DS22) - W4-6 (DS22)	Always	Below 1 Ω	Ω
W14-6 (DS12) - W4-5 (DS12)	Always	Below 1 Ω	Ω
W14-10 (DSG2) or W4-4 (DSG2) - Body ground	Always	10 k Ω or higher	k Ω
W14-3 (DSV2) or W4-3 (DSV2) - Body ground	Always	10 k Ω or higher	k Ω
W14-12 (DS22) or W4-6 (DS22) - Body ground	Always	10 k Ω or higher	k Ω
W14-6 (DS12) or W4-5 (DS12) - Body ground	Always	10 k Ω or higher	k Ω

Post-procedure1

- (d) None

NG **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK



5. CHECK MULTIPLEX NETWORK DOOR ECU

Pre-procedure1

- (a) Disconnect the cable from the negative (-) auxiliary battery terminal.
- (b) Disconnect the W4 power back door unit assembly RH connector.

Procedure1

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

Standard Resistance:



[Click Location & Routing\(W4\)](#)

[Click Connector\(W4\)](#)

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION	RESULT
W4-4 (DSG2) - Body ground	Always	Below 1 Ω	Ω

Pre-procedure2

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

Procedure2

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

Standard Voltage:



[Click Location & Routing\(W4\)](#)

[Click Connector\(W4\)](#)

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION	RESULT
W4-5 (DS12) - Body ground	Ignition switch off	7 V or higher	V
W4-6 (DS22) - Body ground	Ignition switch off	7 V or higher	V
W4-3 (DSV2) - Body ground	Ignition switch off	7 V or higher	V

Post-procedure1

(f) None

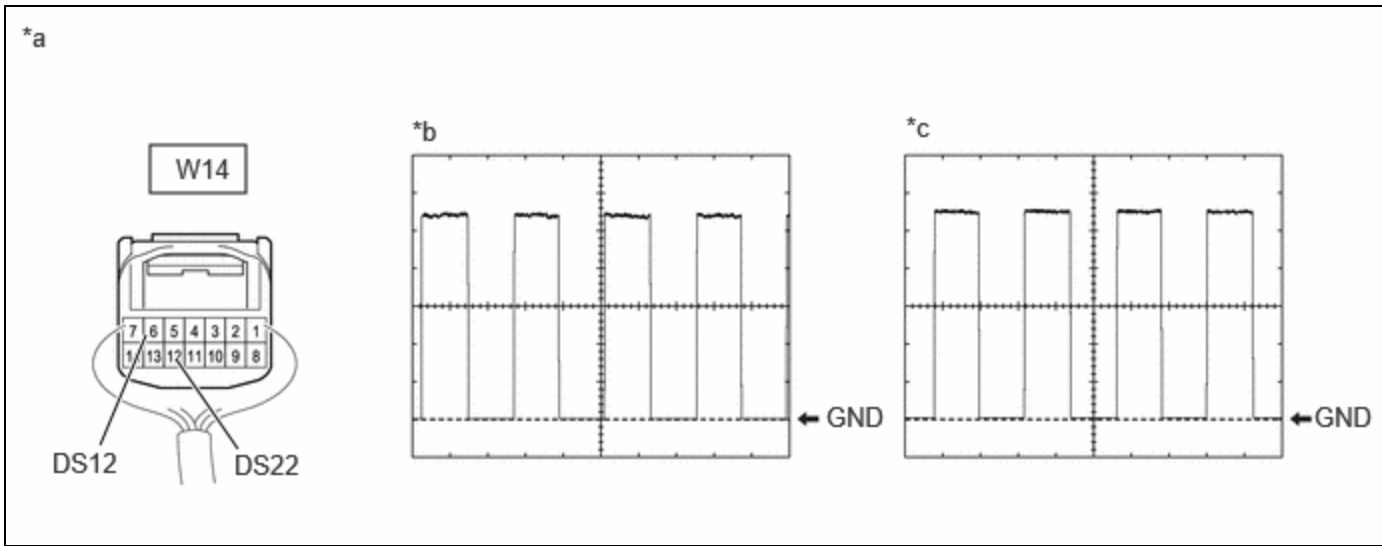
NG **REPLACE MULTIPLEX NETWORK DOOR ECU**

OK



6.	CHECK POWER BACK DOOR UNIT ASSEMBLY RH
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(a) Using an oscilloscope, check the waveform of each terminal from the rear of the multiplex network door ECU connector.



*a	Component with harness connected (Multiplex Network Door ECU)	*b	Waveform (CH1)
*c	Waveform (CH2)	-	-

Measurement Condition:

ITEM	CONDITION
Tester Connection	<ul style="list-style-type: none"> • CH1: W14-6 (DS12) - Body ground • CH2: W14-12 (DS22) - Body ground
Tool Setting	2 V/DIV., 2 ms./DIV.
Vehicle Condition	Open and close the back door by hand.

HINT:

- The period changes in accordance to the speed at which the back door is opened and closed by hand.
- The wave height changes in accordance with the auxiliary battery voltage.

OK ► REPLACE MULTIPLEX NETWORK DOOR ECU

NG ► REPLACE POWER BACK DOOR UNIT ASSEMBLY RH

