Last Modified: 12-04-2024	6.11:8.1.0	**Doc ID:** RM100000002909N
Model Year Start: 2023	**Model:** Prius Prime	**Prod Date Range:** [12/2022 -]
Title: THEFT DETERRENT / KEYLESS ENTRY: SMART KEY SYSTEM (for Start Function): B227411; ACC Circuit Short to Ground; 2023 - 2024 MY Prius Prius Prime [12/2022 -]		

DTC	**B227411**	**ACC Circuit Short to Ground**

DESCRIPTION

This DTC is stored when a malfunction in the ACC output circuit is detected. The ACC output circuit is the circuit between terminal ACCD of the certification ECU (smart key ECU assembly) and the ACC relay.

DTC NO.	DETECTION ITEM	DTC DETECTION CONDITION	TROUBLE AREA	DTC OUTPUT FROM	PRIORITY	NOTE
B227411	ACC Circuit Short to Ground	The ACC relay circuit of the certification ECU (smart key ECU assembly) is malfunctioning. (1-trip detection logic*) **HINT:** When the voltage at terminal ACCD is not at the standard, the system is determined to be malfunctioning.	• Power distribution box assembly • Certification ECU (smart key ECU assembly) • Wire harness or connector	Power Source Control	A	**DTC Output Confirmation Operation:** Wait 10 seconds after turning the ignition switch to ACC or ON, and then wait another 10 seconds after turning the ignition switch off.

*: Only detected while a malfunction is present.

Vehicle Condition and Fail-safe Function when Malfunction Detected

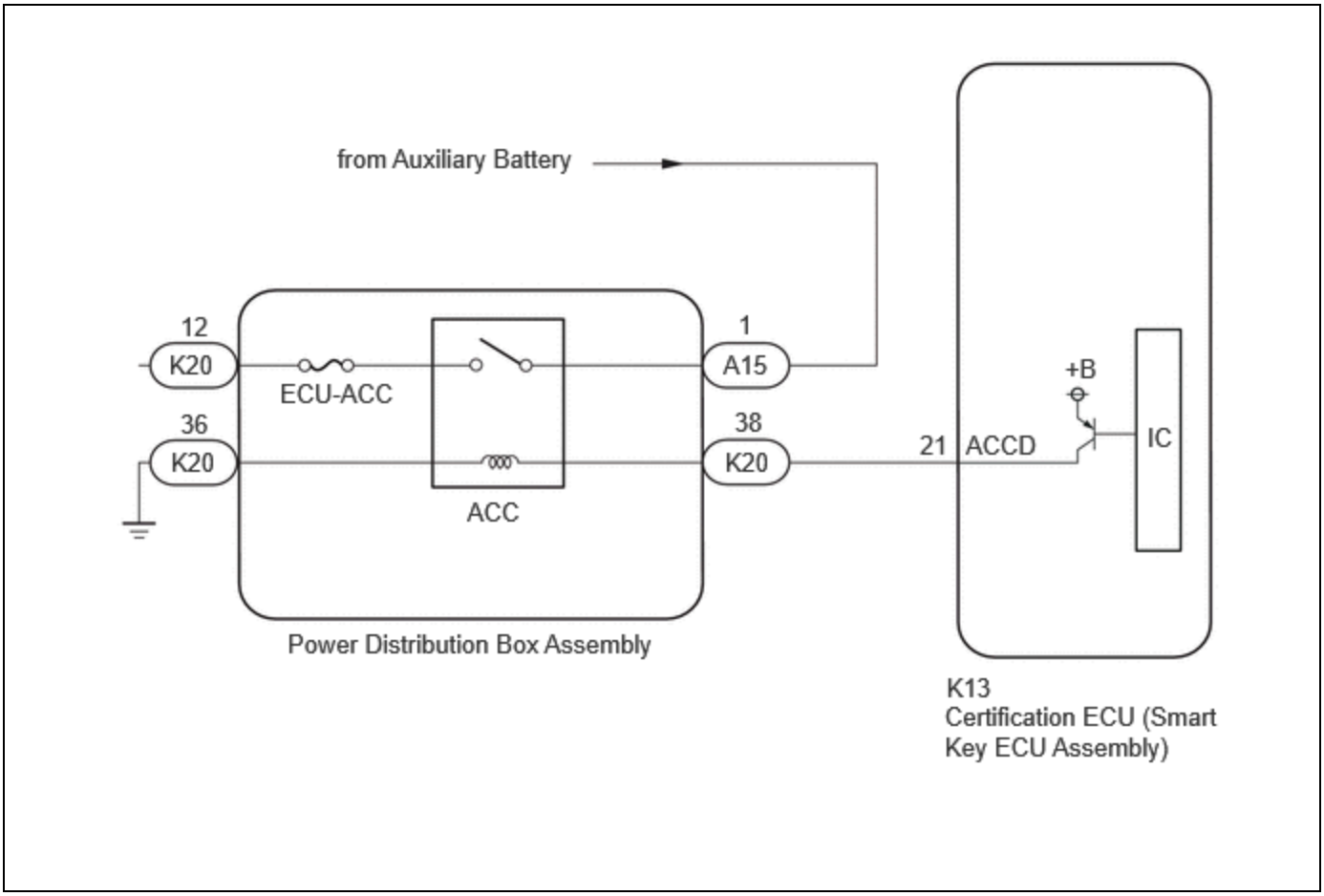
VEHICLE CONDITION WHEN MALFUNCTION DETECTED	FAIL-SAFE FUNCTION WHEN MALFUNCTION DETECTED
If there is a malfunction due to the ACC relay being stuck off, the ACC relay does not turn on even though the ignition switch is ACC. **HINT:** The ignition switch can be turned to ON and the hybrid control system can be started.	-

Related Data List and Active Test Items

DTC NO.	DATA LIST AND ACTIVE TEST
B227411	**Power Source Control**

DTC NO.	DATA LIST AND ACTIVE TEST
	• ACC Relay Monitor

WIRING DIAGRAM



CAUTION / NOTICE / HINT

NOTICE:

- When using the GTS with the ignition switch off, perform lock and unlock operations using the door control switch of the multiplex network master switch assembly at intervals of 1.5 seconds or less until communication between the GTS and the vehicle begins, and then select the vehicle model manually.

  Then select Model Code "KEY REGIST" under manual mode and enter the following menus: Body Electrical / Smart Key(CAN). While using the GTS, periodically perform lock and unlock operations using the door control switch of the multiplex network master switch assembly at intervals of 1.5 seconds or less to maintain communication between the GTS and the vehicle.
- The smart key system (for Start Function) uses the LIN communication system and CAN communication system. Inspect the communication function by following How to Proceed with Troubleshooting. Troubleshoot the smart key system (for Start Function) after confirming that the communication systems are functioning properly.

  Click here INFO
- Inspect the fuses for circuits related to this system before performing the following procedure.
- Before replacing the certification ECU (smart key ECU assembly), refer to Registration.

  Click here INFO
- After repair, confirm that no DTCs are output by performing "DTC Output Confirmation Operation".

PROCEDURE

1.	**CHECK HARNESS AND CONNECTOR (CERTIFICATION ECU (SMART KEY ECU ASSEMBLY) - POWER DISTRIBUTION BOX ASSEMBLY - BODY GROUND)**

Pre-procedure1

(a) Disconnect the K13 certification ECU (smart key ECU assembly) connector.

(b) Disconnect the K20 power distribution box assembly connector.

Procedure1

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

Standard Resistance:

EWD INFO

Click Location & Routing(K13,K20)
Click Connector(K13)
Click Connector(K20)

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION	RESULT
K13-21 (ACCD) - K20-38	Always	Below 1 Ω	Ω
K20-36 - Body ground	Always	Below 1 Ω	Ω
K13-21 (ACCD) or K20-38 - Other terminals and body ground	Always	10 kΩ or higher	kΩ

Post-procedure1

(d) None

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

OK ▼

2.	**CHECK CERTIFICATION ECU (SMART KEY ECU ASSEMBLY)**

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

Standard Voltage:

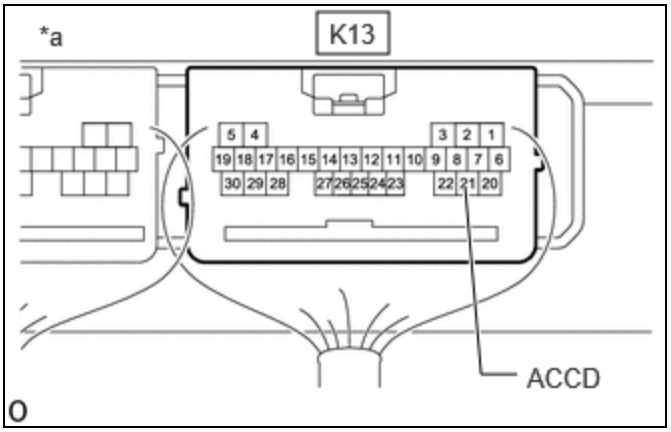
EWD INFO

Click Location & Routing(K13)
Click Connector(K13)

TESTER CONNECTION	CONDITION	SPECIFIED CONDITION	RESULT
K13-21 (ACCD) - Body ground	Ignition switch off	1 V or less	V
K13-21 (ACCD) - Body ground	Ignition switch ACC	8.5 V or higher	V

Result:

PROCEED TO
OK
NG



*a	Component with harness connected (Certification ECU (Smart Key ECU Assembly))

OK ▶ **REPLACE POWER DISTRIBUTION BOX ASSEMBLY** INFO

NG ▶ **REPLACE CERTIFICATION ECU (SMART KEY ECU ASSEMBLY)** INFO