

ACCESSORIES & EQUIPMENT

Power Slide Door System (Diagnostic Codes & Circuit Tests) - Sienna

POWER SLIDE DOOR SYSTEM

DTC B2223: POWER SLIDE DOOR PULSE SENSOR MALFUNCTION ON REAR RIGHT DOOR

DESCRIPTION

- A pulse sensor is built into the slide door RH for jam and foreign object detection and for slide door position detection. The pulse sensor monitors the operating speed of the slide door while the power slide door is moving. The pulse sensor monitors where the slide door is. If the pulse signal is out of the normal range, the power slide door ECU RH will store DTC B2223.
- If DTC B2223 is stored, the power slide door system will be turned off. Thus, the slide door can be moved freely and will be switched to manual operation mode (not electrically controlled).
- In order to restore the power slide door system to normal operation mode, first repair the malfunction indicated by DTC B2223 and then manually close the slide door fully (reset operation).

DTC No.	DTC Detection Condition	Trouble Area
B2223	A pulse sensor which is built in the slide door motor unit RH (power slide door ECU RH) is malfunction.	• ECU-B fuse • Power slide door lock assembly RH (slide door lock motor RH) • Rear door wire RH • Wire harness or connector • Slide door motor unit RH (Power slide door ECU RH)

WIRING DIAGRAM

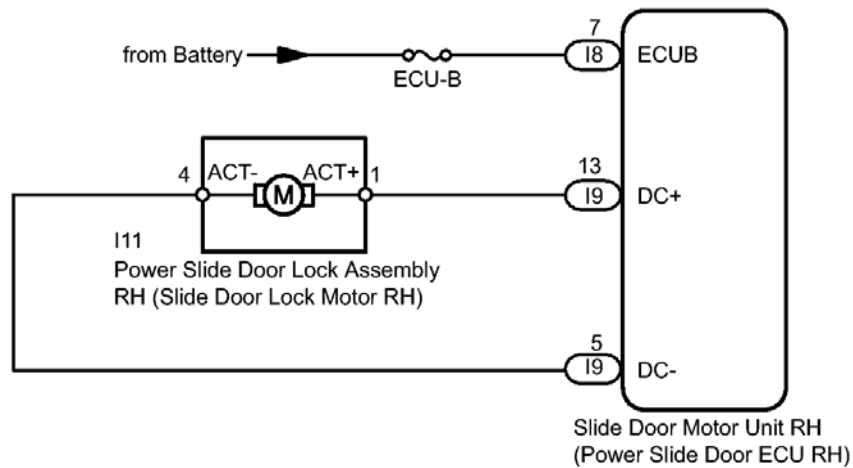


Fig. 1: Power Slide Door RH Wiring Diagram

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION PROCEDURE

NOTE: Inspect the fuses for circuits related to this system before performing the following inspection procedure.

PROCEDURE

1. **CHECK HARNESS AND CONNECTOR (POWER SLIDE DOOR ECU RH - BATTERY)**
 - a. Disconnect the I8 power slide door ECU RH connector.

*a

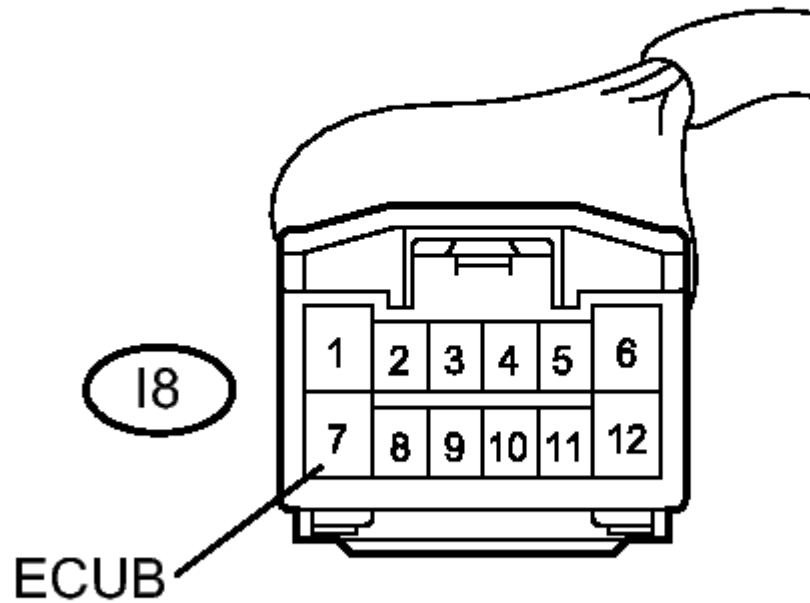


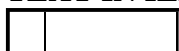
Fig. 2: Checking Harness And Connector (Power Slide Door ECU RH - Battery)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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

Standard Voltage

Tester Connection	Switch Condition	Specified Condition
I8-7 (ECUB) - Body ground	Always	11 to 14 V

TEXT IN ILLUSTRATION



*a	Front view of wire harness connector (to Power Slide Door ECU RH)
----	--

NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK: Go to next step

2. INSPECT SLIDE DOOR LOCK MOTOR RH

- a. Remove the power slide door lock assembly RH. Refer to **INSPECTION** .

*a

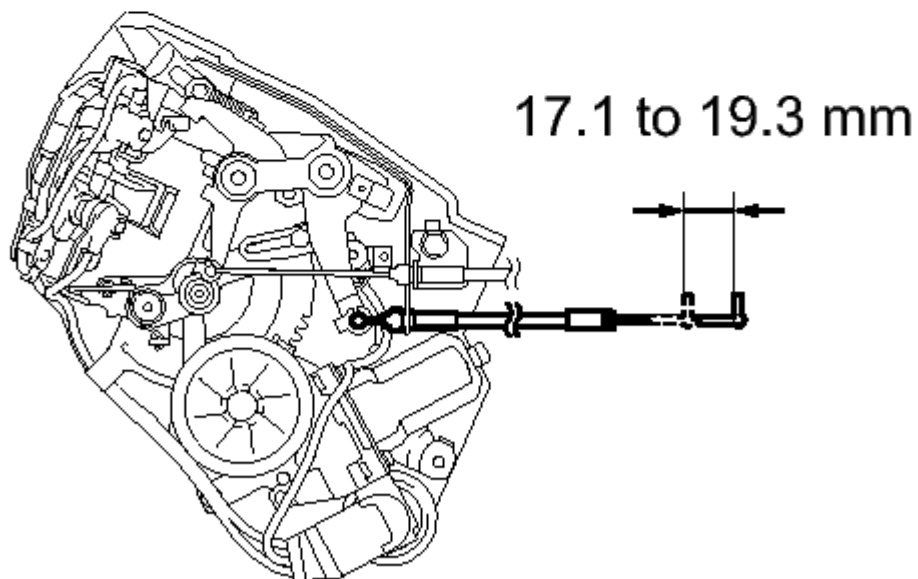
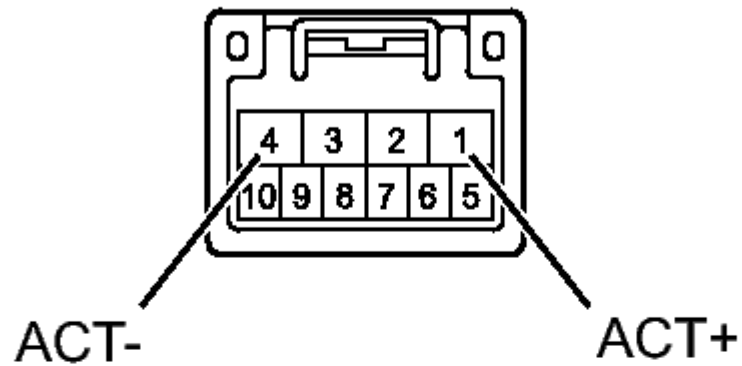


Fig. 3: Inspecting Slide Door Lock Motor Assembly RH
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- b. Apply battery voltage to the motor terminals and check the operation of the slide door lock motor assembly RH.

OK

Measurement Condition	Specified Condition
Battery positive (+) -- > 1	Lock released
Battery negative (-) -- > 4	

Standard Stroke

17.1 to 19.3 mm (0.67 to 0.75 in.)

TEXT IN ILLUSTRATION

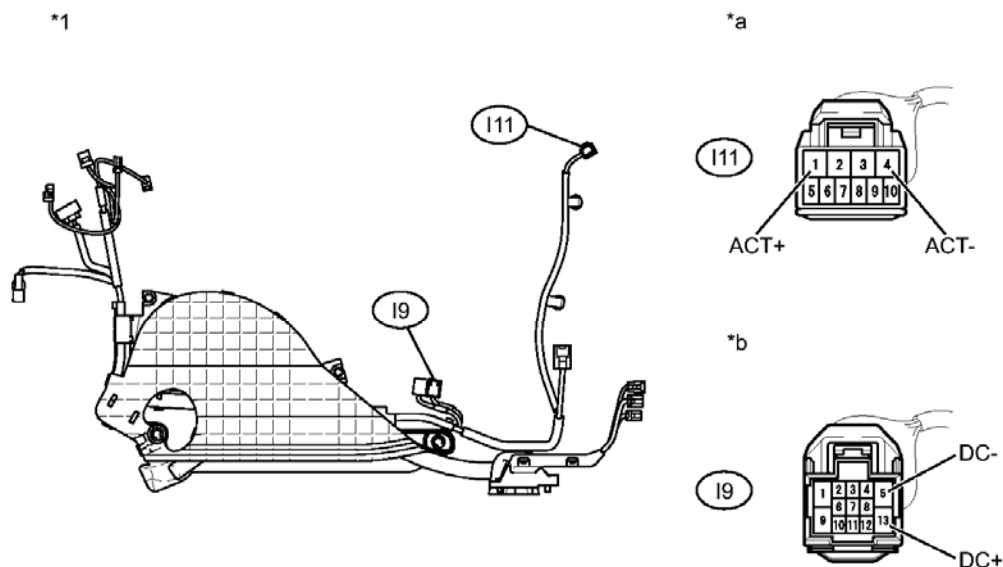
	Component without harness connected
*a	(Power Slide Door Lock Assembly RH)

NG --> See step 4

OK: Go to next step

3. CHECK REAR DOOR WIRE RH (POWER SLIDE DOOR LOCK ASSEMBLY RH - POWER SLIDE DOOR ECU RH)

- a. Disconnect the I9 power slide door ECU RH connector.
- b. Disconnect the I11 power slide door lock assembly RH connector.
- c. Measure the resistance according to the value(s) in the table below.



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Fig. 4: Checking Rear Door Wire RH (Power Slide Door Lock Assembly RH - Power Slide Door ECU RH)

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

TEXT IN ILLUSTRATION

*1	Rear Door Wire RH	-	-
*a	Front view of wire harness connector (to Power Slide Door Lock Assembly RH)	*b	Front view of wire harness connector (to Power Slide Door ECU RH)

Standard Resistance

Tester Connection	Condition	Specified Condition
I11-1		

(ACT+) - I9-13 (DC+)	Always	Below 1 ohms
I11-4 (ACT-) - I9-5 (DC-)	Always	Below 1 ohms
I11-1 (ACT+) - Body ground	Always	10 kohms or higher
I11-4 (ACT-) - Body ground	Always	10 kohms or higher

NG --> REPAIR OR REPLACE REAR DOOR WIRE RH

OK --> See step 5

4. REPLACE POWER SLIDE DOOR LOCK ASSEMBLY RH. Refer to REMOVAL

5. REPLACE SLIDE DOOR MOTOR UNIT RH. Refer to REMOVAL

DTC B2224: POWER SLIDE DOOR PULSE SENSOR MALFUNCTION ON REAR LEFT DOOR

DESCRIPTION

- A pulse sensor is built into the slide door LH for jam and foreign object detection and for slide door position detection. The pulse sensor monitors the operating speed of the slide door while the power slide door is moving. The pulse sensor monitors where the slide door is. If the pulse signal is out of the normal range, the power slide door ECU LH will store DTC B2224.
- If DTC B2224 is stored, the power slide door system will be turned off. Thus, the slide door can be moved freely and will be switched to manual operation mode (not electrically controlled).
- In order to restore the power slide door system to normal operation mode, first repair the malfunction indicated by DTC B2224 and then manually close the slide door fully (reset operation).

DTC No.	DTC Detection Condition	Trouble Area
B2224	A pulse sensor which is built in the slide door motor unit LH (power slide door ECU LH) is malfunction.	• ECU-B fuse • Power slide door lock assembly LH (slide door lock motor LH) • Rear door wire LH • Wire harness or connector • Slide door motor unit LH (Power slide door ECU LH)

WIRING DIAGRAM

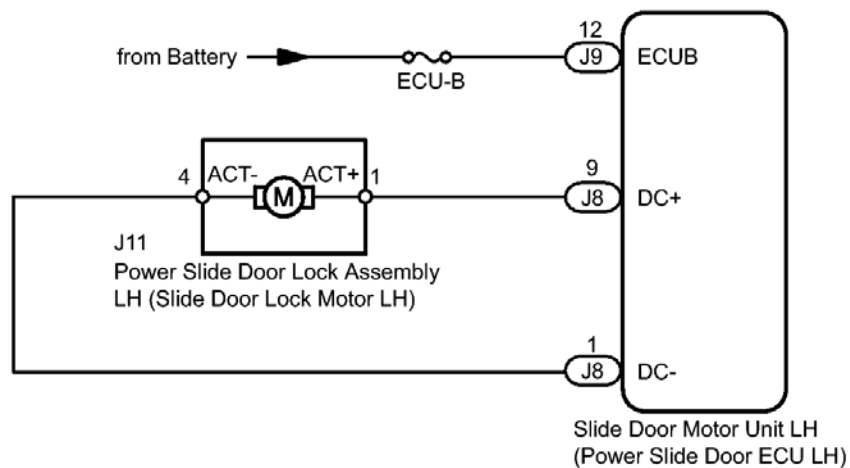


Fig. 5: Power Slide Door LH Wiring Diagram

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION PROCEDURE

NOTE: Inspect the fuses for circuits related to this system before performing the following inspection procedure.

PROCEDURE

1. **CHECK HARNESS AND CONNECTOR (POWER SLIDE DOOR ECU LH - BATTERY)**
 - a. Disconnect the J9 power slide door ECU LH connector.

*a

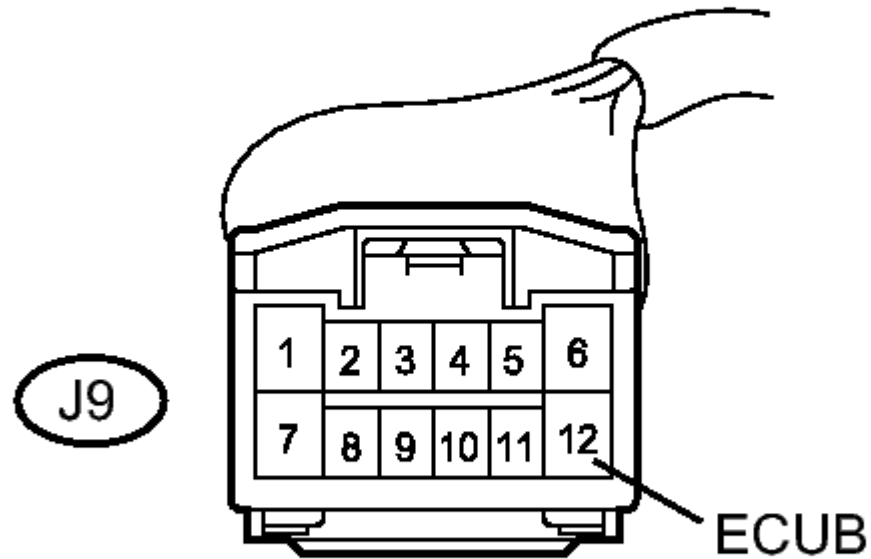


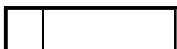
Fig. 6: Checking Harness And Connector (Power Slide Door ECU LH - Battery)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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

Standard Voltage

Tester Connection	Switch Condition	Specified Condition
J9-12 (ECUB) - Body ground	Always	11 to 14 V

TEXT IN ILLUSTRATION



	Front
	view of
	wire
	harness
*a	connector
	(to Power
	Slide
	Door
	ECU LH)

NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK: Go to next step

2. INSPECT SLIDE DOOR LOCK MOTOR ASSEMBLY LH

- a. Remove the power slide door lock assembly LH. Refer to **INSPECTION** .

*a

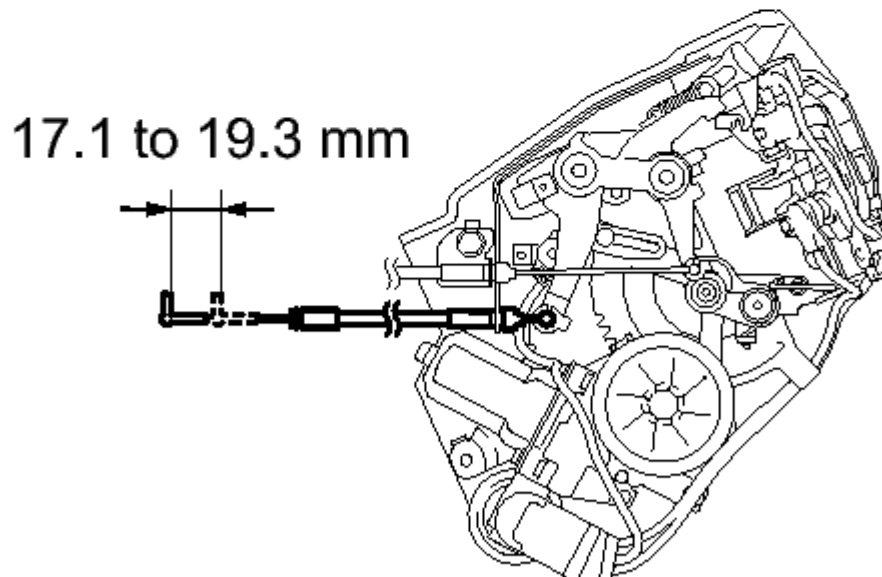
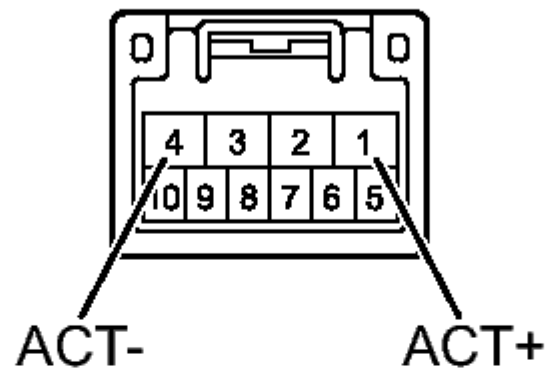


Fig. 7: Inspecting Slide Door Lock Motor LH
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- b. Apply battery voltage to the motor terminals and check the operation of the slide door lock motor LH.

OK

Measurement Condition	Specified Condition
Battery positive (+) -- > 1	Lock released
Battery negative (-) -- > 4	

Standard Stroke

17.1 to 19.3 mm (0.67 to 0.75 in.)

TEXT IN ILLUSTRATION

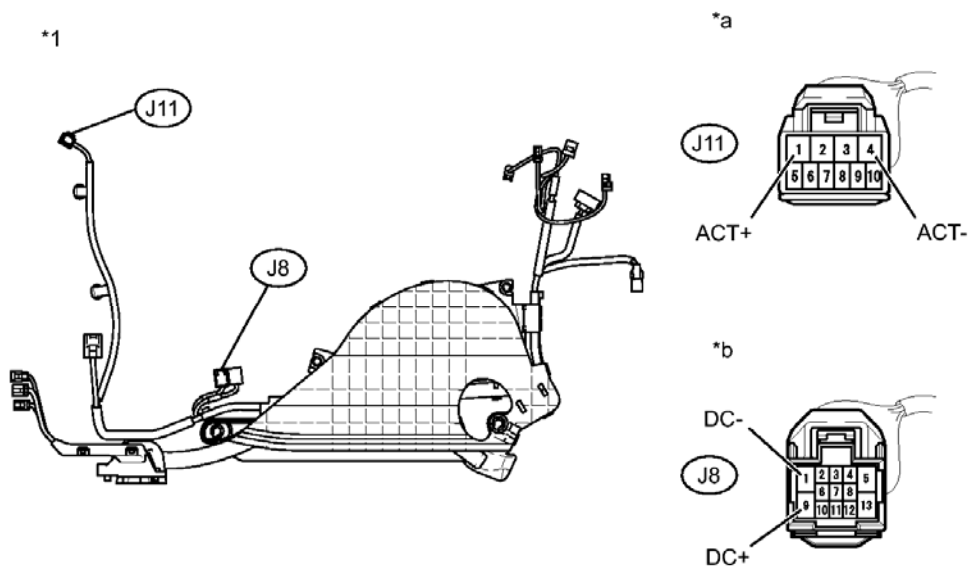
	Component without harness connected
*a	(Power Slide Door Lock Assembly LH)

NG --> See step 5

OK: Go to next step

3. CHECK REAR DOOR WIRE LH (POWER SLIDE DOOR LOCK ASSEMBLY LH - POWER SLIDE DOOR ECU LH)

- a. Disconnect the J8 power slide door ECU LH connector.
- b. Disconnect the J11 power slide door lock assembly LH connector.
- c. Measure the resistance according to the value(s) in the table below.



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Fig. 8: Checking Rear Door Wire LH (Power Slide Door Lock Assembly LH - Power Slide Door ECU LH)

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

TEXT IN ILLUSTRATION

*1	Rear Door Wire LH	-	-
*a	Front view of wire harness connector (to Power Slide Door Lock Assembly LH)	*b	Front view of wire harness connector (to Power Slide Door ECU LH)

Standard Resistance

Tester Connection	Condition	Specified Condition
J11-1		Below 1

(ACT+) - J8-9 (DC+)	Always	ohms
J11-4 (ACT-) - J8-1 (DC-)	Always	Below 1 ohms
J11-1 (ACT+) - Body ground	Always	10 kohms or higher
J11-4 (ACT-) - Body ground	Always	10 kohms or higher

NG --> **REPAIR OR REPLACE REAR DOOR WIRE LH**

OK --> **See step 4**

4. **REPLACE SLIDE DOOR MOTOR UNIT LH. Refer to REMOVAL**
5. **REPLACE POWER SLIDE DOOR LOCK ASSEMBLY LH. Refer to REMOVAL**

CIRCUIT TESTS

Slide Door Lock Motor LH Circuit

DESCRIPTION

The slide door lock motor LH unlocks the power slide door lock and unlock position switch when the power slide door is operated by the transmitter or power slide door control switch with the slide door closed.

WIRING DIAGRAM

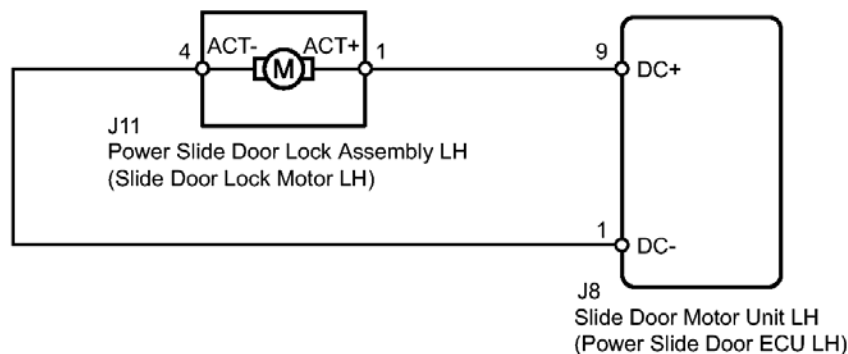


Fig. 9: Slide Door Lock Motor LH Circuit - Wiring Diagram
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION PROCEDURE

PROCEDURE

1. INSPECT SLIDE DOOR LOCK MOTOR LH

- a. Remove the power slide door lock assembly LH. Refer to **REMOVAL** .

*a

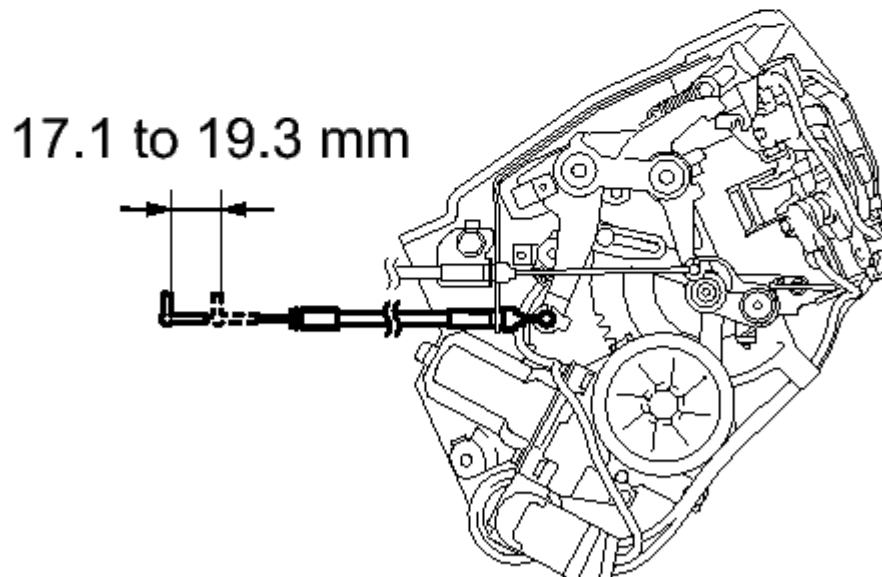
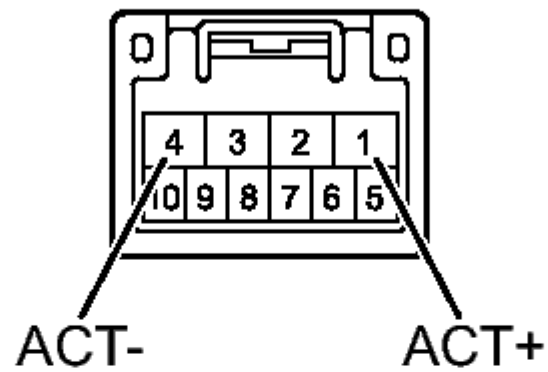


Fig. 10: Inspecting Slide Door Lock Motor LH
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- b. Apply battery voltage to the motor terminals and check the operation of the slide door lock motor LH.

OK

Measurement Condition	Specified Condition
Battery positive (+) -- > 1	Lock released
Battery negative (-) -- > 4	

Standard Stroke

17.1 to 19.3 mm (0.67 to 0.75 in.)

TEXT IN ILLUSTRATION

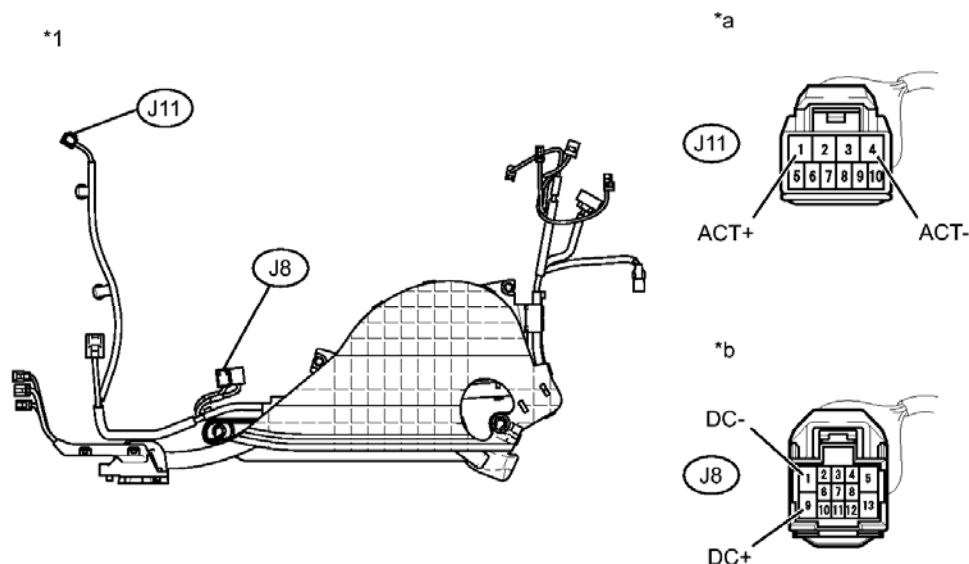
	Component without harness connected
*a	(Power Slide Door Lock Assembly LH)

NG --> See step 3

OK: Go to next step

2. CHECK REAR DOOR WIRE LH (POWER SLIDE DOOR LOCK ASSEMBLY LH - POWER SLIDE DOOR ECU LH)

- a. Disconnect the J8 power slide door ECU LH connector.
- b. Disconnect the J11 power slide door lock assembly LH connector.
- c. Measure the resistance according to the value(s) in the table below.



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Fig. 11: Checking Rear Door Wire LH (Power Slide Door Lock Assembly LH - Power Slide Door ECU LH)

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

TEXT IN ILLUSTRATION

*1	Rear Door Wire LH	-	-
*a	Front view of wire harness connector (to Power Slide Door Lock Assembly LH)	*b	Front view of wire harness connector (to Power Slide Door ECU LH)

Standard Resistance

Tester Connection	Condition	Specified Condition
J11-1		Below 1

(ACT+) - J8-9 (DC+)	Always	ohms
J11-4 (ACT-) - J8-1 (DC-)	Always	Below 1 ohms
J11-1 (ACT+) - Body ground	Always	10 kohms or higher
J11-4 (ACT-) - Body ground	Always	10 kohms or higher

NG --> See step 4

OK --> See step 5

3. **REPLACE POWER SLIDE DOOR LOCK ASSEMBLY LH. Refer to REMOVAL**
4. **REPAIR OR REPLACE REAR DOOR WIRE LH. Refer to DISASSEMBLY**
5. **PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE. Refer to PROBLEM SYMPTOMS TABLE**

Slide Door Lock Motor RH Circuit

DESCRIPTION

The slide door lock motor assembly RH unlocks the power slide door lock and unlock position switch when the power slide door is operated by the transmitter or power slide door control switch with the slide door closed.

WIRING DIAGRAM

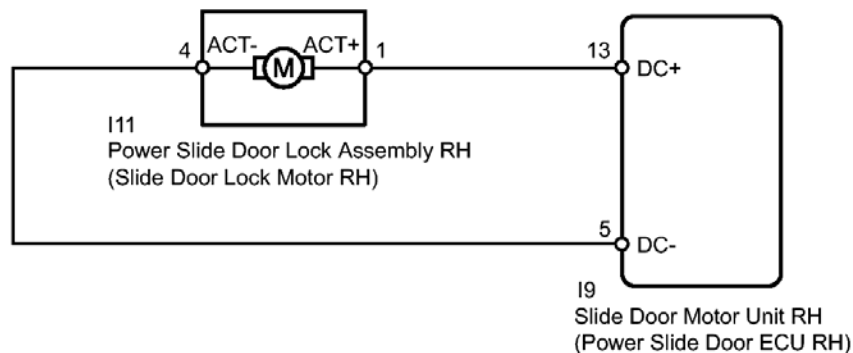


Fig. 12: Slide Door Lock Motor RH Circuit - Wiring Diagram
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION PROCEDURE

PROCEDURE

1. INSPECT SLIDE DOOR LOCK MOTOR ASSEMBLY RH

- a. Remove the power slide door lock assembly RH. Refer to **REMOVAL** .

*a

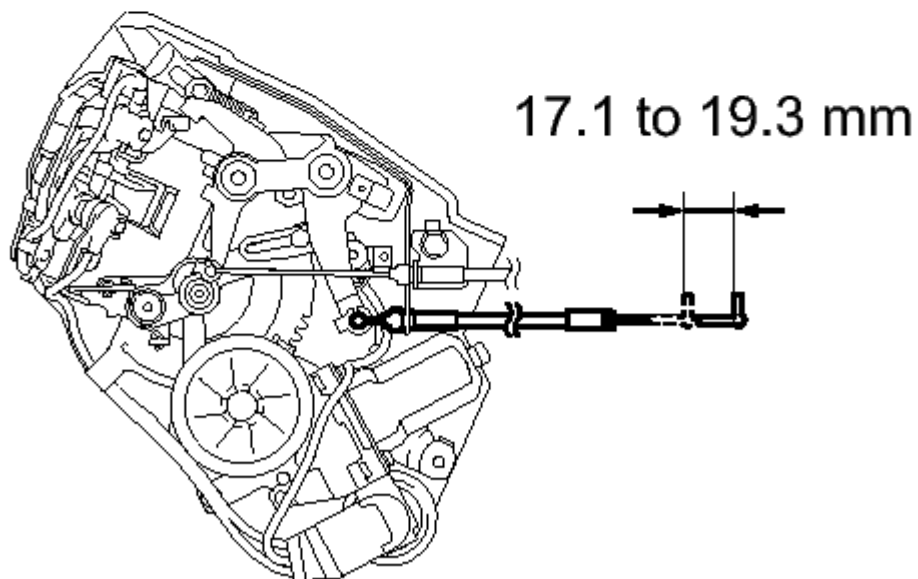
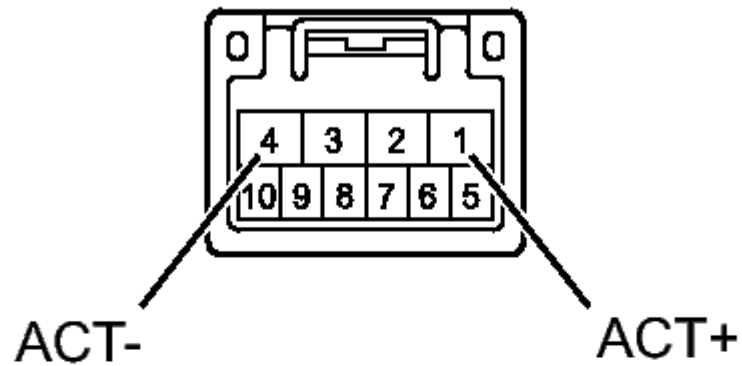


Fig. 13: Inspecting Slide Door Lock Motor Assembly RH
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- b. Apply battery voltage to the motor terminals and check the operation of the slide door lock motor assembly RH.

OK

Measurement Condition	Specified Condition
Battery positive (+) -- > 1	Lock released
Battery negative (-) -- > 4	

Standard Stroke

17.1 to 19.3 mm (0.67 to 0.75 in.)

TEXT IN ILLUSTRATION

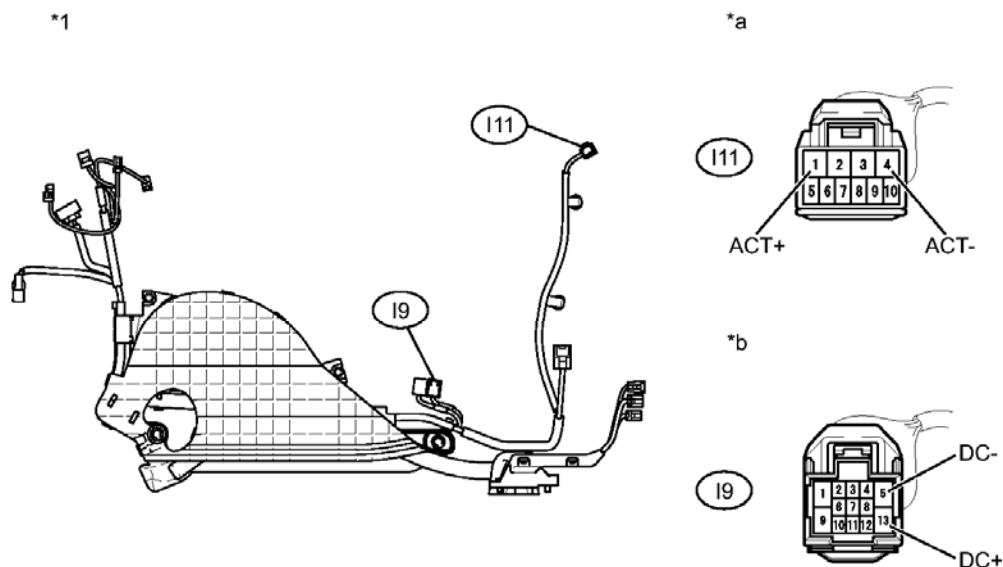
	Component without harness connected
*a	(Power Slide Door Lock Assembly RH)

NG --> See step 3

OK: Go to next step

2. CHECK REAR DOOR WIRE RH (POWER SLIDE DOOR LOCK ASSEMBLY RH - POWER SLIDE DOOR ECU RH)

- a. Disconnect the I9 power slide door ECU RH connector.
- b. Disconnect the I11 power slide door lock assembly RH connector.
- c. Measure the resistance according to the value(s) in the table below.



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Fig. 14: Checking Rear Door Wire RH (Power Slide Door Lock Assembly RH - Power Slide Door ECU RH)

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

TEXT IN ILLUSTRATION

*1	Rear Door Wire RH	-	-
*a	Front view of wire harness connector (to Power Slide Door Lock Assembly RH)	*b	Front view of wire harness connector (to Power Slide Door ECU RH)

Standard Resistance

Tester Connection	Condition	Specified Condition
I11-1		

(ACT+) - I9-13 (DC+)	Always	Below 1 ohms
I11-4 (ACT-) - I9-5 (DC-)	Always	Below 1 ohms
I11-1 (ACT+) - Body ground	Always	10 kohms or higher
I11-4 (ACT-) - Body ground	Always	10 kohms or higher

NG --> See step 4

OK --> See step 5

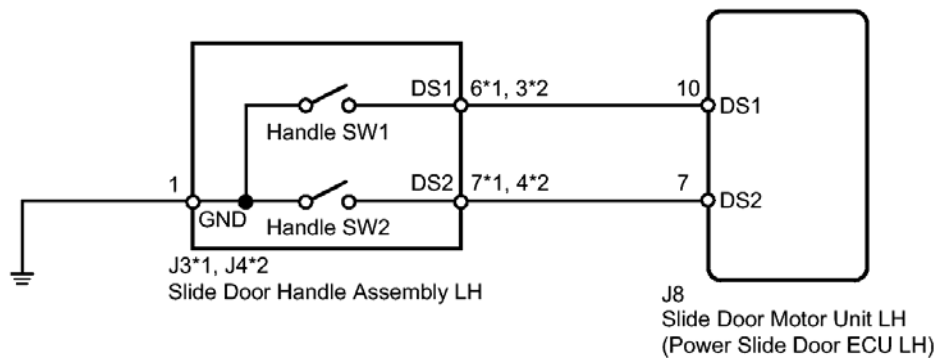
3. **REPLACE POWER SLIDE DOOR LOCK ASSEMBLY RH. Refer to REMOVAL**
4. **REPAIR OR REPLACE REAR DOOR WIRE RH. Refer to DISASSEMBLY**
5. **PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE. Refer to PROBLEM SYMPTOMS TABLE**

Slide Door Handle Switch LH Circuit

DESCRIPTION

The inside/outside handles control operation of the power slide door. Pulling either handle transmits a request signal to the power slide door ECU LH, which then commands the power slide door control motor and clutch to open or close the power slide door.

WIRING DIAGRAM



*1: w/ Smart Key System

*2: w/o Smart Key System

Fig. 15: Slide Door Handle Switch LH Circuit - Wiring Diagram
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION PROCEDURE

PROCEDURE

1. READ VALUE USING TECHSTREAM (HANDLE SWITCH)

- Connect the Techstream to the DLC3.
- Turn the ignition switch to ON.
- Turn the Techstream on.
- Enter the following menus: Body Electrical / Rear Left Door / Data List.
- Check if the door lock is functioning properly.

REAR LEFT DOOR (POWER SLIDE DOOR ECU LH)

Tester Display	Measurement Item / Range	Normal Condition	Diagnosis Note
Handle Switch1	Handle operation detect switch signal / ON or OFF	ON: Slide door inside handle pulled to closing side or outside handle pulled OFF: Slide door inside/outside handle not pulled	-

Handle Switch2	Handle operation detect switch signal / ON or OFF	ON: Slide door inside handle pulled to opening side or outside handle pulled OFF: Slide door inside/outside handle not pulled	-
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OK

When the handle switch is operating, the Techstream should display as shown in the table.

NG --> See step 2

OK --> See step 4

2. INSPECT SLIDE DOOR HANDLE ASSEMBLY LH

a. w/o Smart Key System

1. Remove the slide door handle assembly LH. Refer to **DISASSEMBLY** .
2. Measure the resistance according to the value(s) in the table below.

*a

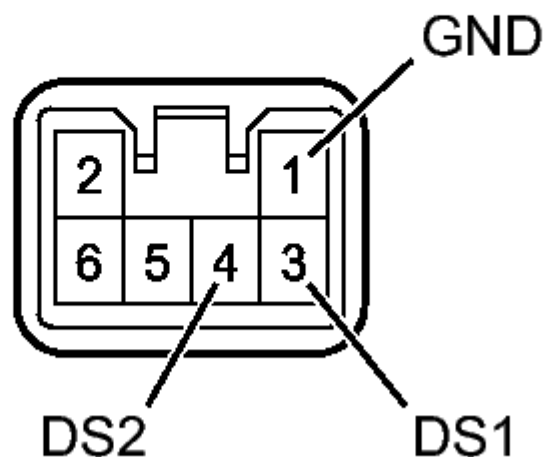


Fig. 16: Inspecting Slide Door Handle Assembly LH
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

Standard Resistance

Tester Connection	Condition	Specified Condition
3 (DS1) - 1 (GND)	Slide door inside handle pulled to closing side or outside handle pulled	Below 1 ohms
	Slide door inside/outside handle not pulled	10 kohms or higher
4 (DS2) - 1 (GND)	Slide door inside handle pulled to opening side or outside handle pulled	Below 1 ohms
	Slide door inside/outside handle not pulled	10 kohms or higher

TEXT IN ILLUSTRATION

*a	Component without harness connected (Slide Door Handle Assembly LH)
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b. w/ Smart Key System

1. Remove the slide door handle assembly LH. Refer to **DISASSEMBLY** .
2. Measure the resistance according to the value(s) in the table below.

*a

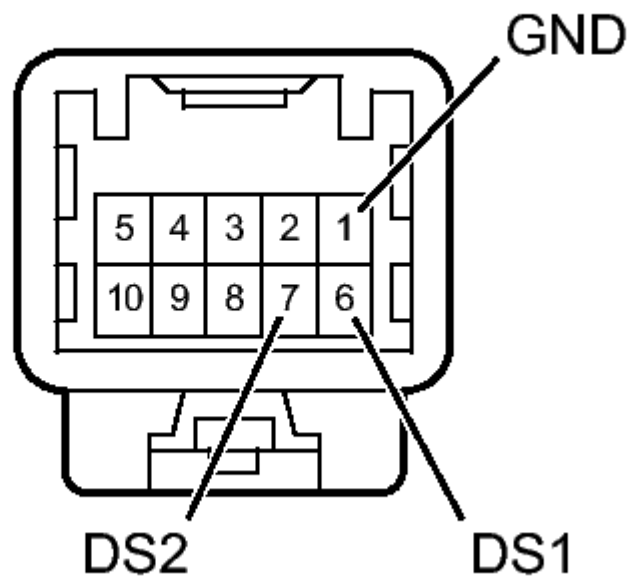


Fig. 17: Inspecting Slide Door Handle Assembly LH
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

Standard Resistance

Tester Connection	Condition	Specified Condition
6 (DS1) - 1 (GND)	Slide door inside handle pulled to closing side or outside handle pulled	Below 1 ohms
	Slide door inside/outside handle not pulled	10 kohms or higher
7 (DS2) - 1 (GND)	Slide door inside handle pulled to opening side or outside handle pulled	Below 1 ohms
	Slide door inside/outside handle not pulled	10 kohms or higher

TEXT IN ILLUSTRATION

	Component without harness connected
*a	(Slide Door Handle Assembly LH)

NG --> See step 5

OK: Go to next step

3. CHECK REAR DOOR WIRE LH (SLIDE DOOR HANDLE ASSEMBLY LH - ECU LH AND BODY GROUND)
 - a. w/o Smart Key System
 1. Disconnect the J8 power slide door ECU LH connector.
 2. Measure the resistance according to the value(s) in the table below.

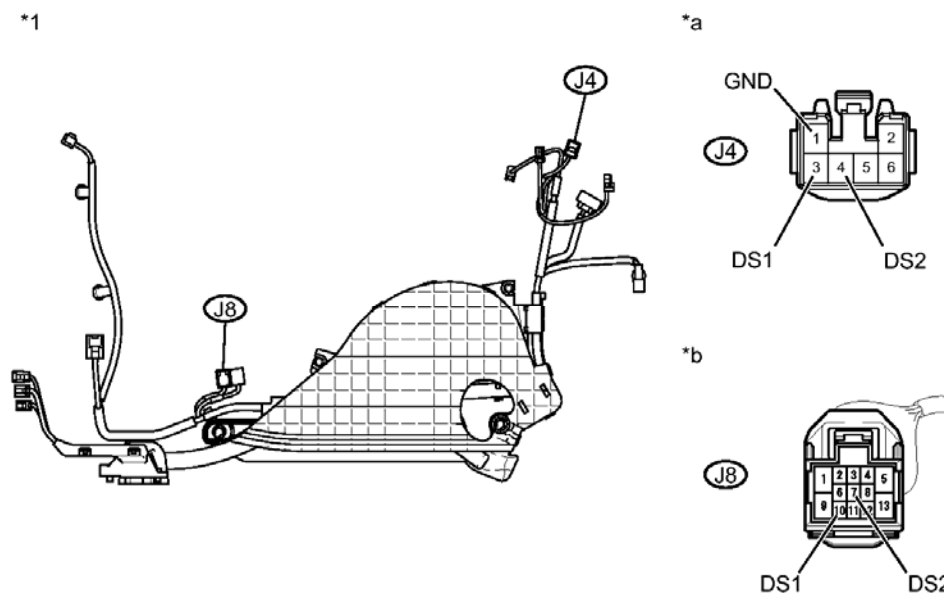


Fig. 18: Checking Rear Door Wire LH (Slide Door Handle Assembly LH - ECU LH And Body Ground)
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

TEXT IN ILLUSTRATION

*1	Rear Door Wire LH	-	-
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*a	Front view of wire harness connector (to Slide Door Handle Assembly LH)	*b	Front view of wire harness connector (to Power Slide Door ECU LH)
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Standard Resistance

Tester Connection	Condition	Specified Condition
J4-3 (DS1) - J8-10 (DS1)	Always	Below 1 ohms
J4-4 (DS2) - J8-7 (DS2)	Always	Below 1 ohms
J4-1 (GND) - Body ground	Always	Below 1 ohms
J4-3 (DS1) - Body ground	Always	10 kohms or higher
J4-4 (DS2) - Body ground	Always	10 kohms or higher

b. w/ Smart Key System

1. Disconnect the J8 power slide door ECU LH connector.
2. Measure the resistance according to the value(s) in the table below.

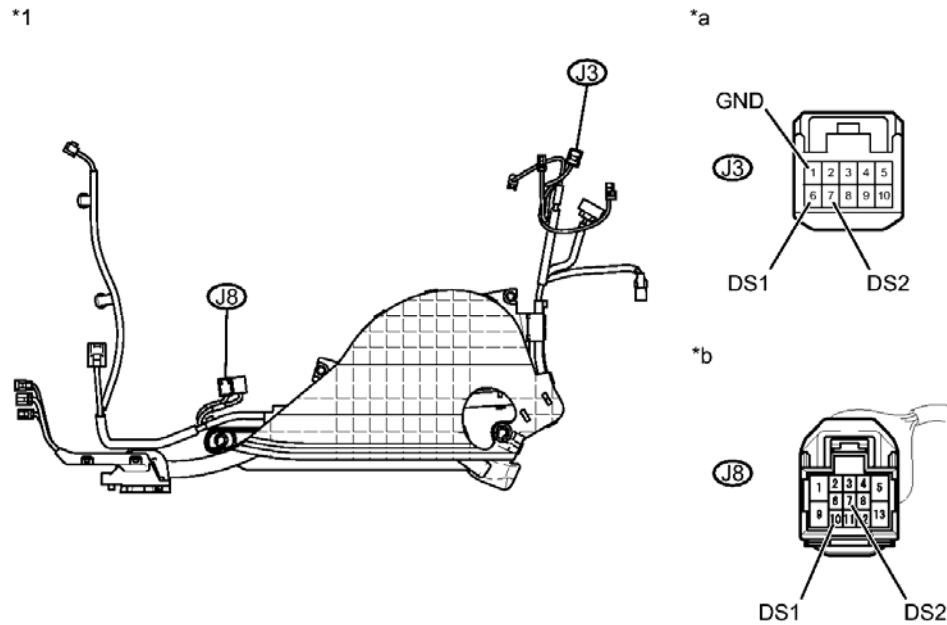


Fig. 19: Checking Rear Door Wire LH (Slide Door Handle Assembly LH - ECU LH And Body Ground)

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

TEXT IN ILLUSTRATION

*1	Rear Door Wire LH	-	-
*a	Front view of wire harness connector (to Slide Door Handle Assembly LH)	*b	Front view of wire harness connector (to Power Slide Door ECU LH)

Standard Resistance

Tester Connection	Condition	Specified Condition
J3-6 (DS1) - J8-10	Always	Below 1 ohms

(DS1)		
J3-7 (DS2) - J8-7 (DS2)	Always	Below 1 ohms
J3-1 (GND) - Body ground	Always	Below 1 ohms
J3-6 (DS1) - Body ground	Always	10 kohms or higher
J3-7 (DS2) - Body ground	Always	10 kohms or higher

NG --> See step 7

OK --> See step 6

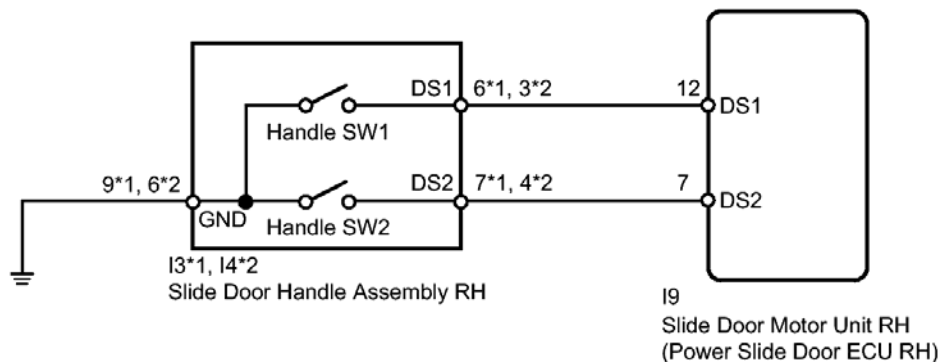
4. **PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE. Refer to PROBLEM SYMPTOMS TABLE**
5. **REPLACE SLIDE DOOR HANDLE ASSEMBLY LH. Refer to DISASSEMBLY**
6. **REPLACE SLIDE DOOR MOTOR UNIT LH. Refer to REMOVAL**
7. **REPAIR OR REPLACE REAR DOOR WIRE LH. Refer to DISASSEMBLY**

Slide Door Handle Switch RH Circuit

DESCRIPTION

The inside/outside handles control operation of the power slide door. Pulling either handle transmits a request signal to the power slide door ECU RH, which then commands the power slide door control motor and clutch to open or close the power slide door.

WIRING DIAGRAM



*1: w/ Smart Key System

*2: w/o Smart Key System

Fig. 20: Slide Door Handle Switch RH Circuit - Wiring Diagram
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION PROCEDURE

PROCEDURE

1. READ VALUE USING TECHSTREAM (HANDLE SWITCH)

- Connect the Techstream to the DLC3.
- Turn the ignition switch to ON.
- Turn the Techstream on.
- Enter the following menus: Body Electrical / Rear Right Door / Data List.
- Check if the handle switch is functioning properly.

REAR RIGHT DOOR (POWER SLIDE DOOR ECU RH)

Item	Measurement Item / Range	Normal Condition	Diagnosis Note
Handle Switch1	Handle operation detect switch signal / ON or OFF	ON: Slide door inside handle pulled to closing side or outside handle pulled OFF: Slide door inside/outside handle not pulled	-

Handle Switch2	Handle operation detect switch signal / ON or OFF	ON: Slide door inside handle pulled to opening side or outside handle pulled OFF: Slide door inside/outside handle not pulled	-
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OK

When the handle switch is operating, the Techstream should display as shown in the table.

NG --> See step 2

OK --> See step 5

2. INSPECT SLIDE DOOR HANDLE ASSEMBLY RH

a. w/o Smart Key System

1. Remove the slide door handle assembly RH. Refer to **DISASSEMBLY** .
2. Measure the resistance according to the value(s) in the table below.

*a

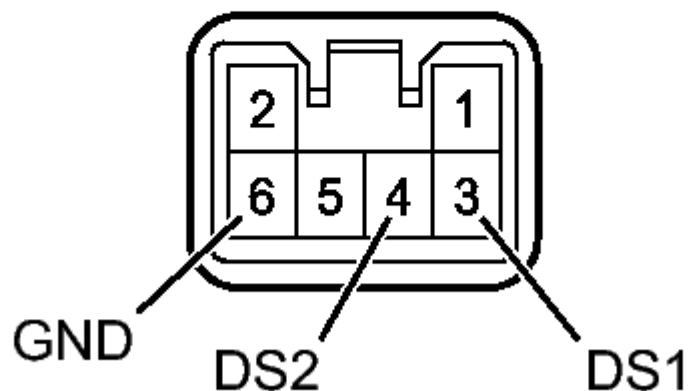


Fig. 21: Inspecting Slide Door Handle Assembly RH
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

Standard Resistance

Tester Connection	Condition	Specified Condition
3 (DS1) - 6 (GND)	Slide door inside handle pulled to closing side or outside handle pulled	Below 1 ohms
	Slide door inside/outside handle not pulled	10 kohms or higher
4 (DS2) - 6 (GND)	Slide door inside handle pulled to opening side or outside handle pulled	Below 1 ohms
	Slide door inside/outside handle not pulled	10 kohms or higher

TEXT IN ILLUSTRATION

*a	Component without harness connected (Slide Door Handle Assembly RH)
----	---

b. w/ Smart Key System

1. Remove the slide door handle assembly RH. Refer to **DISASSEMBLY** .
2. Measure the resistance according to the value(s) in the table below.

*a

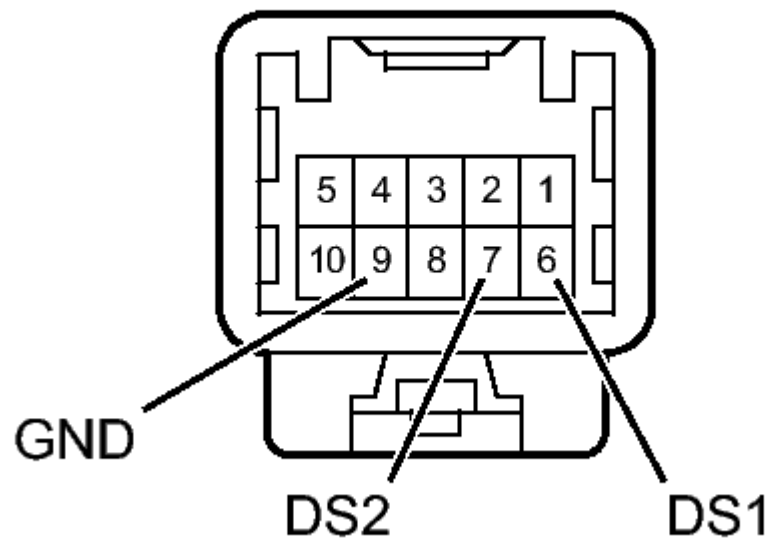


Fig. 22: Inspecting Slide Door Handle Assembly RH
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

Standard Resistance

Tester Connection	Condition	Specified Condition
6 (DS1) - 9 (GND)	Slide door inside handle pulled to closing side or outside handle pulled	Below 1 ohms
	Slide door inside/outside handle not pulled	10 kohms or higher
7 (DS2) - 9 (GND)	Slide door inside handle pulled to opening side or outside handle pulled	Below 1 ohms
	Slide door inside/outside handle not pulled	10 kohms or higher

TEXT IN ILLUSTRATION

	Component without harness connected
*a	(Slide Door Handle Assembly RH)

NG --> See step 6

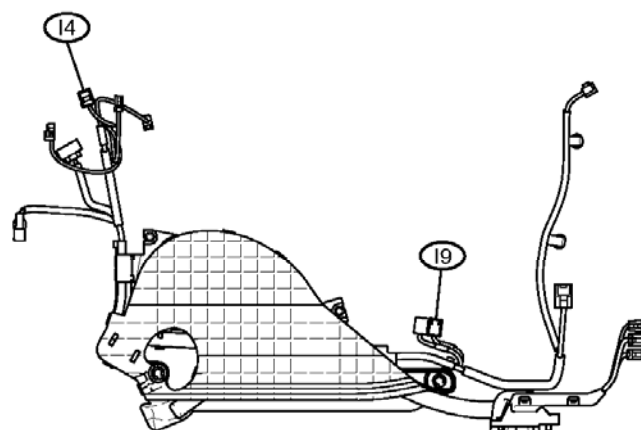
OK: Go to next step

3. CHECK REAR DOOR WIRE RH (SLIDE DOOR HANDLE ASSEMBLY RH - ECU RH AND BODY GROUND)

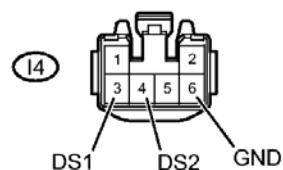
a. w/o Smart Key System

1. Disconnect the I9 power slide door ECU RH connector.
2. Measure the resistance according to the value(s) in the table below.

*1



*a



*b

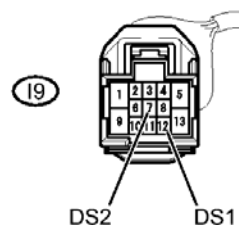


Fig. 23: Checking Rear Door Wire RH (Slide Door Handle Assembly RH - ECU RH And Body Ground)

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

TEXT IN ILLUSTRATION

*1	Rear Door Wire RH	-	-
*a	Front view of wire harness connector (to Slide Door Handle Assembly RH)	*b	Front view of wire harness connector (to Power Slide Door ECU RH)

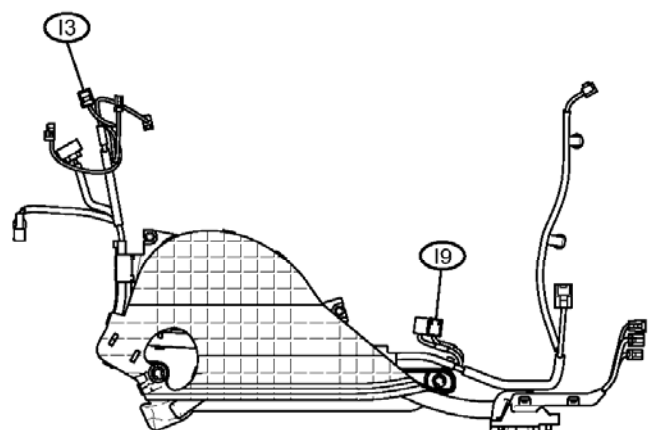
Standard Resistance

Tester Connection	Condition	Specified Condition
I4-3 (DS1) - I9-12 (DS1)	Always	Below 1 ohms
I4-4 (DS2) - I9-7 (DS2)	Always	Below 1 ohms
I4-6 (GND) - Body ground	Always	Below 1 ohms
I4-3 (DS1) - Body ground	Always	10 kohms or higher
I4-4 (DS2) - Body ground	Always	10 kohms or higher

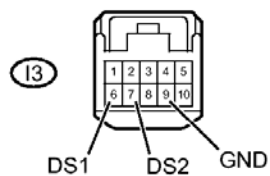
b. w/ Smart Key System

1. Disconnect the I9 power slide door ECU RH connector.
2. Measure the resistance according to the value(s) in the table below.

*1



*a



*b

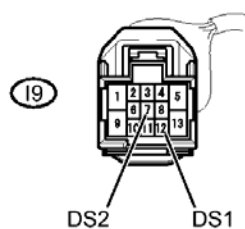


Fig. 24: Checking Rear Door Wire RH (Slide Door Handle Assembly RH - ECU RH And Body Ground)

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

TEXT IN ILLUSTRATION

*1	Rear Door Wire RH	-	-
*a	Front view of wire harness connector (to Slide Door Handle Assembly RH)	*b	Front view of wire harness connector (to Power Slide Door ECU RH)

Standard Resistance

Tester Connection	Condition	Specified Condition
I3-6 (DS1) - I9-12	Always	Below 1 ohms

(DS1)		
I3-7 (DS2) - I9-7 (DS2)	Always	Below 1 ohms
I3-9 (GND) - Body ground	Always	Below 1 ohms
I3-6 (DS1) - Body ground	Always	10 kohms or higher
I3-7 (DS2) - Body ground	Always	10 kohms or higher

NG --> See step 7

OK --> See step 4

4. **REPLACE SLIDE DOOR MOTOR UNIT RH.** Refer to REMOVAL
5. **PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE.** Refer to PROBLEM SYMPTOMS TABLE
6. **REPLACE SLIDE DOOR HANDLE ASSEMBLY RH.** Refer to DISASSEMBLY
7. **REPAIR OR REPLACE REAR DOOR WIRE RH.** Refer to DISASSEMBLY

Power Slide Door ECU LH Power Source Circuit

DESCRIPTION

This circuit provides power to operate the slide door motor unit LH (power slide door ECU LH).

WIRING DIAGRAM

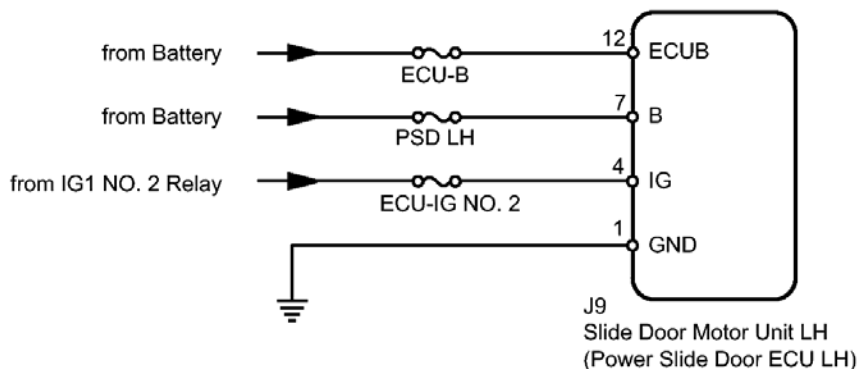


Fig. 25: Power Slide Door ECU LH Power Source Circuit - Wiring Diagram
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION PROCEDURE

NOTE: Inspect the fuses for circuits related to this system before performing the following inspection procedure.

PROCEDURE

1. **CHECK HARNESS AND CONNECTOR (ECU LH - BATTERY AND BODY GROUND)**
 - a. Disconnect the J9 power slide door ECU LH connector.

*a

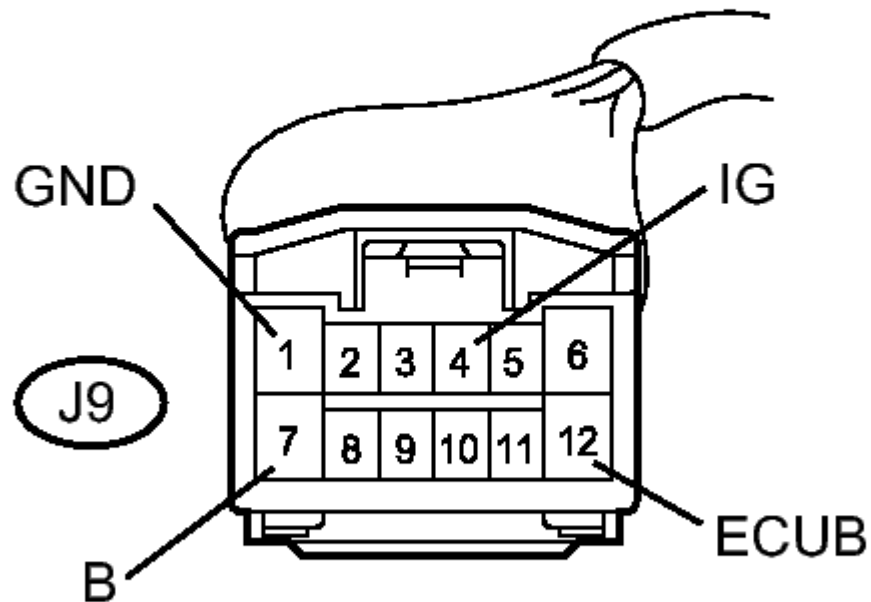


Fig. 26: Checking Harness And Connector (ECU LH - Battery And Body Ground)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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

Standard Voltage

Tester Connection	Switch Condition	Specified Condition
J9-12 (ECUB) - Body ground	Always	11 to 14 V
J9-4 (IG) - Body ground	Ignition switch ON	11 to 14 V
J9-7 (B) - Body ground	Always	11 to 14 V

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

Standard Resistance

Tester Connection	Condition	Specified Condition
J9-1 (GND) - Body ground	Always	Below 1 ohms

TEXT IN ILLUSTRATION

*a	Front view of wire harness connector (to Power Slide Door ECU LH)
----	---

NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK --> See step 2

2. PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE. Refer to PROBLEM SYMPTOMS TABLE

Power Slide Door ECU RH Power Source Circuit

DESCRIPTION

This circuit provides power to operate the slide door motor unit RH (power slide door ECU RH).

WIRING DIAGRAM

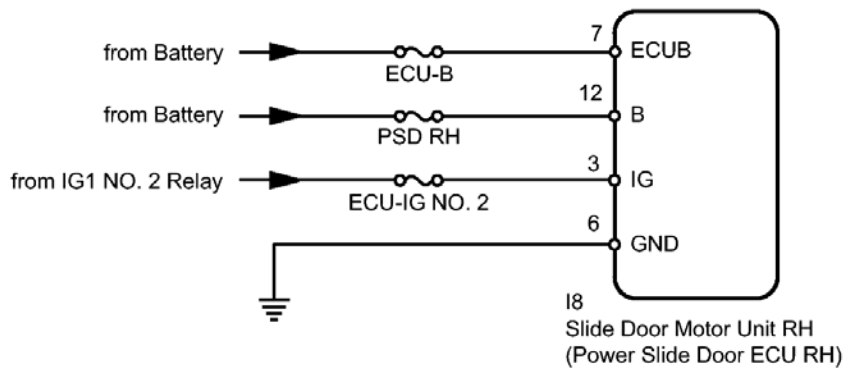


Fig. 27: Power Slide Door ECU RH Power Source Circuit Wiring Diagram
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION PROCEDURE

NOTE: Inspect the fuses for circuits related to this system before performing the following inspection procedure.

PROCEDURE

1. **CHECK HARNESS AND CONNECTOR (ECU RH - BATTERY AND BODY GROUND)**
 - a. Disconnect the I8 power slide door ECU RH connector.

*a

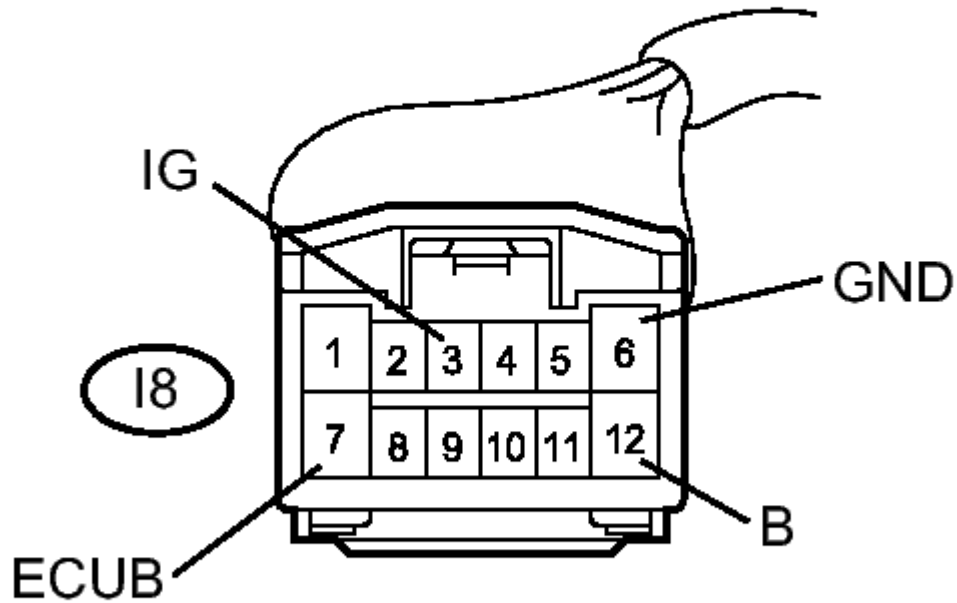


Fig. 28: Checking Harness And Connector (ECU RH - Battery And Body Ground)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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

Standard Voltage

Tester Connection	Switch Condition	Specified Condition
I8-7 (ECUB) - Body ground	Always	11 to 14 V
I8-3 (IG) - Body ground	Ignition switch ON	11 to 14 V

I8-12 (B) - Body ground	Always	11 to 14 V
-------------------------------	--------	------------

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

Standard Resistance

Tester Connection	Condition	Specified Condition
I8-6 (GND) - Body ground	Always	Below 1 ohms

TEXT IN ILLUSTRATION

*a	Front view of wire harness connector (to Power Slide Door ECU RH)
----	--

NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK --> See step 2

- 2. PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE. Refer to PROBLEM SYMPTOMS TABLE**

Power Slide Door Sensor LH Circuit

DESCRIPTION

When the power slide door sensor assembly LH (touch sensor LH) sends a jam detection signal to the slide door motor unit LH (power slide door ECU LH), the ECU stops the close operation of the power slide door.

WIRING DIAGRAM

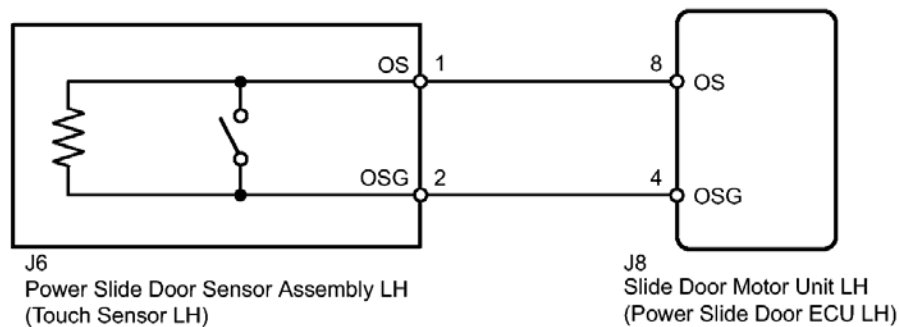


Fig. 29: Power Slide Door Sensor LH Circuit - Wiring Diagram
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION PROCEDURE

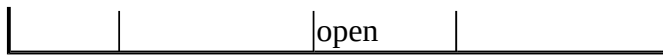
PROCEDURE

1. READ VALUE USING TECHSTREAM (PSD TOUCH SENSOR)

- Connect the Techstream to the DLC3.
- Turn the ignition switch to ON.
- Turn the Techstream on.
- Enter the following menus: Body Electrical / Rear Left Door / Data List.
- Check if the touch sensor is functioning properly.

REAR LEFT DOOR (POWER SLIDE DOOR ECU LH)

Tester Display	Measurement Item / Range	Normal Condition	Diagnosis Note
PSD Touch Sensor	Power slide door touch sensor signal / OFF, ON or Open	OFF: Power slide door touch sensor not pressed ON: Power slide door touch sensor pressed Open: Power slide door touch sensor	-



OK

When the touch sensor is operating, the Techstream should display as shown in the display.

NG --> See step 2

OK --> See step 5

2. INSPECT POWER SLIDE DOOR SENSOR ASSEMBLY LH (TOUCH SENSOR LH)

- a. Remove the power slide door sensor assembly LH (touch sensor LH). Refer to **REMOVAL** .

*a

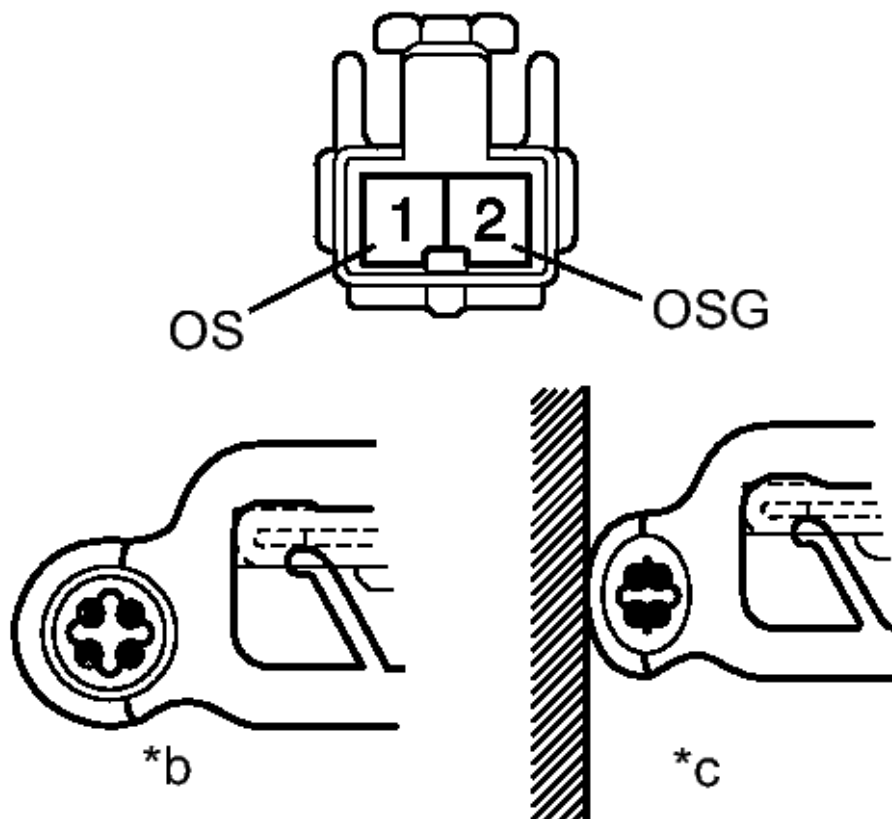


Fig. 30: Inspecting Power Slide Door Sensor Assembly LH (Touch Sensor LH)

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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

Standard Resistance

Tester Connection	Condition	Specified Condition
1 (OS) - 2 (OSG)	Pressed	Below 100 ohms
	Free	0.95 to 1.05 kohms

TEXT IN ILLUSTRATION

*a	Component without harness connected (Touch Sensor LH)
*b	Free
*c	Pressed

NG --> See step 6

OK: Go to next step

3. **CHECK REAR DOOR WIRE (TOUCH SENSOR LH - ECU LH AND BODY GROUND)**
- a. Disconnect the J8 power slide door ECU LH connector.
- b. Measure the resistance according to the value(s) in the table below.

(OSG)		
J6-1 (OS) - Body ground	Always	10 kohms or higher
J6-2 (OSG) - Body ground	Always	10 kohms or higher

NG --> See step 7

OK --> See step 4

4. **REPLACE SLIDE DOOR MOTOR UNIT LH.** Refer to REMOVAL
5. **PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE.** Refer to PROBLEM SYMPTOMS TABLE
6. **REPLACE POWER SLIDE DOOR SENSOR ASSEMBLY LH (TOUCH SENSOR LH).** Refer to REMOVAL
7. **REPAIR OR REPLACE REAR DOOR WIRE LH.** Refer to DISASSEMBLY

Power Slide Door Sensor RH Circuit

DESCRIPTION

When the power slide door sensor assembly RH (touch sensor RH) sends a jam detection signal to the slide door motor unit RH (power slide door ECU RH), the ECU stops the close operation of the power slide door.

WIRING DIAGRAM

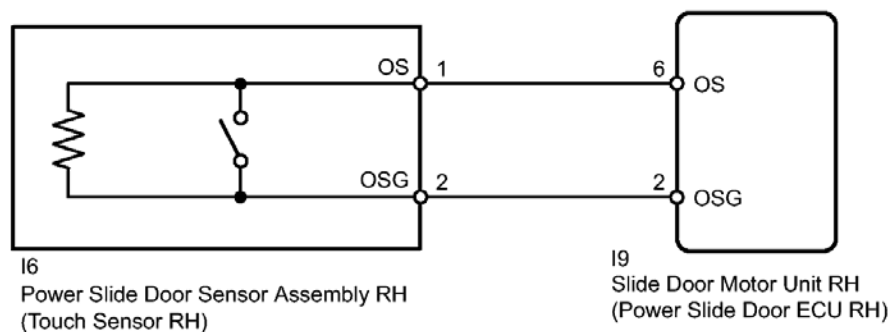


Fig. 32: Power Slide Door Sensor RH Circuit - Wiring Diagram
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION PROCEDURE

PROCEDURE

1. READ VALUE USING TECHSTREAM (PSD TOUCH SENSOR)

- Connect the Techstream to the DLC3.
- Turn the ignition switch to ON.
- Turn the Techstream on.
- Enter the following menus: Body Electrical / Rear Right Door / Data List.
- Check if the touch sensor is functioning properly.

REAR RIGHT DOOR (POWER SLIDE DOOR ECU RH)

Tester Display	Measurement Item / Range	Normal Condition	Diagnosis Note
PSD Touch Sensor	Power slide door touch sensor signal / OFF, ON or Open	OFF: Power slide door touch sensor not pressed ON: Power slide door touch sensor pressed Open: Power slide door touch sensor open	-

OK

When the touch sensor is operating, the Techstream should display as shown in the display.

NG --> See step 2

OK --> See step 5

2. INSPECT POWER SLIDE DOOR SENSOR ASSEMBLY RH (TOUCH SENSOR RH)

- Remove the power slide door sensor assembly RH (touch sensor RH). Refer to **REMOVAL** .

*a

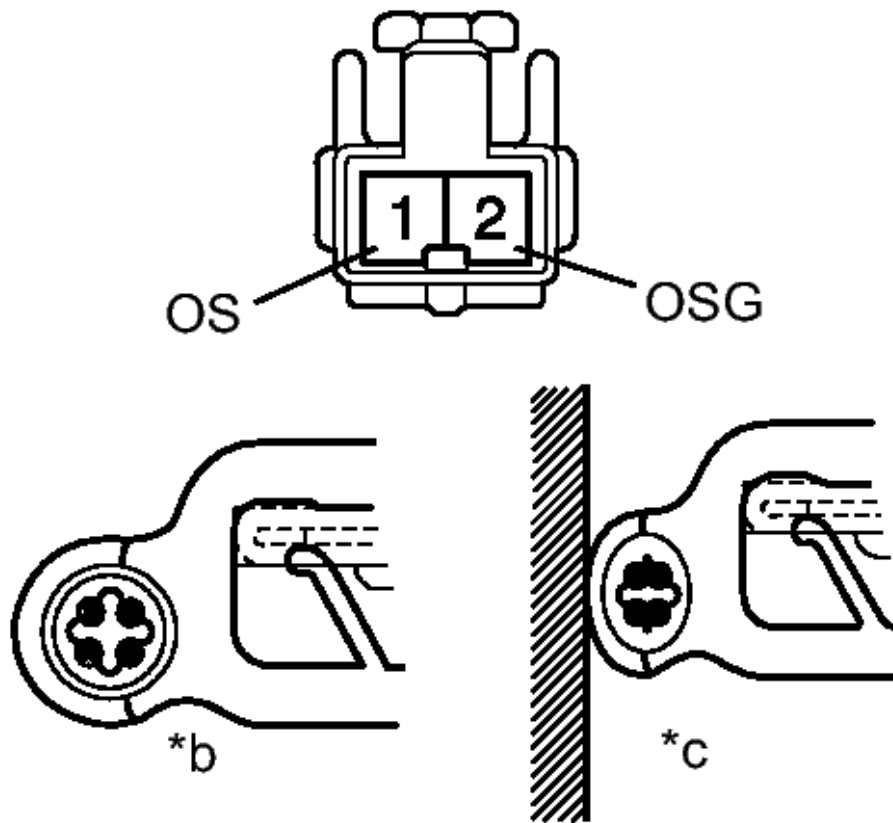


Fig. 33: Inspecting Power Slide Door Sensor Assembly RH (Touch Sensor RH)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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

Standard Resistance

Tester Connection	Condition	Specified Condition
1 (OS) - 2 (OSG)	Pressed	Below 100 ohms
	Free	0.95 to 1.05 kohms

TEXT IN ILLUSTRATION

	Component without harness
*a	connected (Touch Sensor RH)
*b	Free
*c	Pressed

NG --> See step 6

OK: Go to next step

3. CHECK REAR DOOR WIRE (TOUCH SENSOR RH - ECU RH AND BODY GROUND)

- Disconnect the I9 power slide door ECU RH connector.
- Measure the resistance according to the value(s) in the table below.

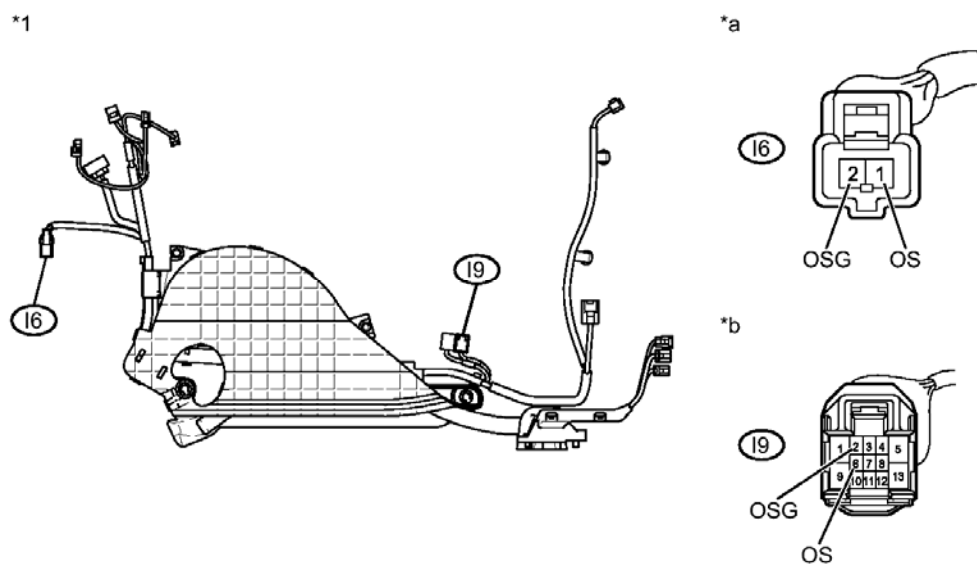


Fig. 34: Checking Rear Door Wire (Touch Sensor RH - ECU RH And Body Ground)
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

TEXT IN ILLUSTRATION

*1	Rear Door	-	-
----	-----------	---	---

	Wire RH	
*a	Front view of wire harness connector (to Touch Sensor RH)	*b Front view of wire harness connector (to Power Slide Door ECU RH)

Standard Resistance

Tester Connection	Condition	Specified Condition
I6-1 (OS) - I9-6 (OS)	Always	Below 1 ohms
I6-2 (OSG) - I9-2 (OSG)	Always	Below 1 ohms
I6-1 (OS) - Body ground	Always	10 kohms or higher
I6-2 (OSG) - Body ground	Always	10 kohms or higher

NG --> See step 7

OK --> See step 4

4. **REPLACE SLIDE DOOR MOTOR UNIT RH. Refer to REMOVAL**
5. **PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE. Refer to PROBLEM SYMPTOMS TABLE**
6. **REPLACE POWER SLIDE DOOR SENSOR ASSEMBLY RH (TOUCH SENSOR RH). Refer to REMOVAL**
7. **REPAIR OR REPLACE REAR DOOR WIRE RH. Refer to DISASSEMBLY**

Power Slide Door Control Switch Circuit

DESCRIPTION

When the main body ECU receives the on signal from the power slide door control switch, it operates the power slide door motor to "OPEN" or "CLOSE".

WIRING DIAGRAM

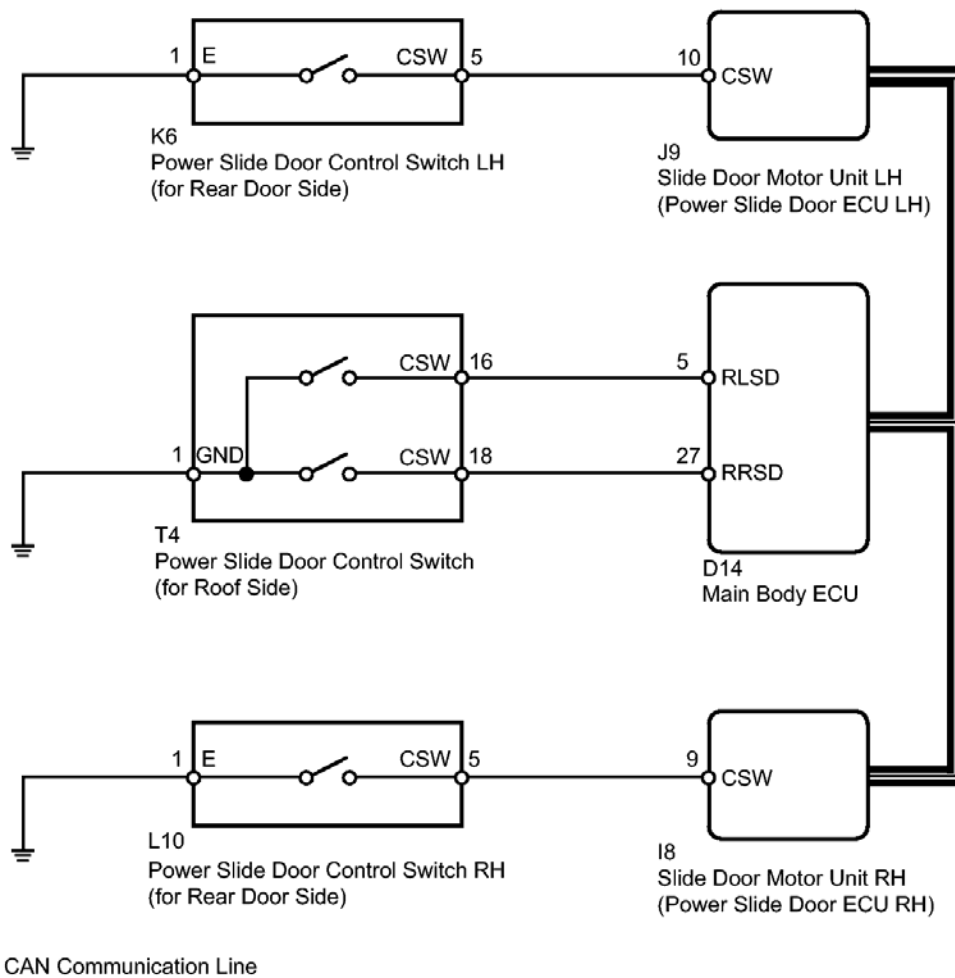


Fig. 35: Power Slide Door Control Switch Circuit - Wiring Diagram
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION PROCEDURE

PROCEDURE

1. CHECK FOR DTC (ALL)

- Connect the Techstream to the DLC3.
- Turn the ignition switch to ON.
- Turn the Techstream on.
- Check for DTCs of all systems by following the prompts on the Techstream screen.
- Check if the CAN communication system is functioning normally.

RESULT

Result	Proceed to
CAN DTCs are not output	A
CAN DTCs are output	B

B --> See step 5

A: Go to next step

2. READ VALUE USING TECHSTREAM

- Enter the following menus: Body Electrical / Main Body / Data List.
- Check if the power slide door control switch is functioning properly.

MAIN BODY (MAIN BODY ECU)

Tester Display	Measurement Item / Range	Normal Condition	Diagnosis Note
Rear Right Slide Door Switch	Power slide door control switch signal / ON or OFF	ON: Power slide door control switch (for RH) pressed OFF: Power slide door control switch (for RH) not pressed	-
Rear Left Slide	Power slide door control switch signal /	ON: Power slide door control switch (for LH) is pressed OFF:	-

Door Switch	ON or OFF	Power slide door control switch (for LH) is not pressed	
----------------	-----------	---	--

OK

When the switch is operation, the Techstream should display as shown in the display.

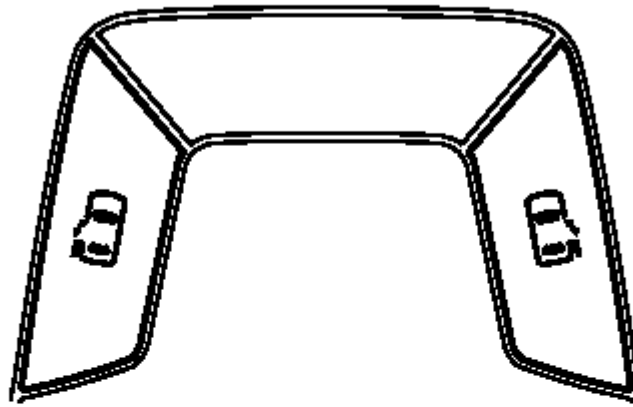
NG --> See step 3

OK --> See step 6

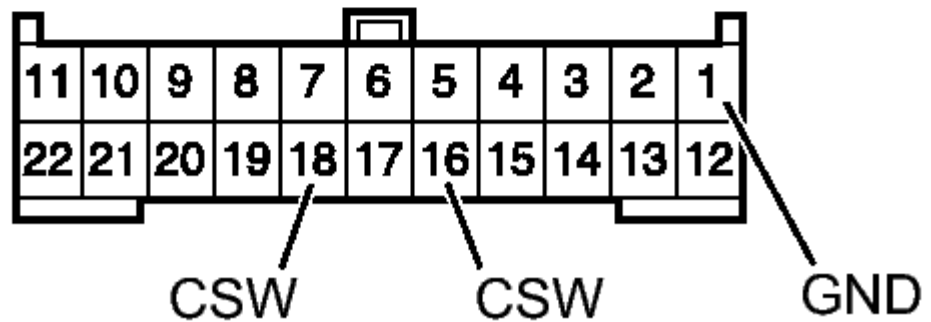
3. INSPECT POWER SLIDE DOOR CONTROL SWITCH

a. Power Slide Door Control Switch (for Roof Side)

1. Remove the power slide door control switch (for roof side). Refer to **REMOVAL** .



*a



Y

Fig. 36: Inspecting Power Slide Door Control Switch
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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

Standard Resistance

Tester Connection	Switch Condition	Specified Condition
16 (CSW) - 1 (GND)	Pushed (for LH)	Below 1 ohms
	off	10 kohms or higher
18 (CSW) -	Pushed (for RH)	Below 1 ohms

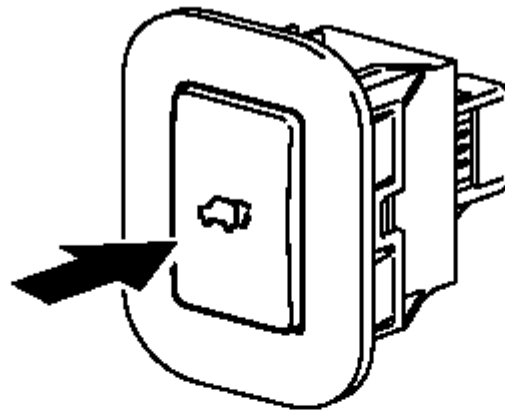
1 (GND)	off	10 kohms or higher
---------	-----	-----------------------

TEXT IN ILLUSTRATION

*a	Component without harness connected (Power Slide Door Control Switch (for Roof Side))
----	--

b. Power Slide Door Control Switch LH (for Rear Door Side)

1. Remove the power slide door control switch LH (for rear door side). Refer to **REMOVAL** .



*a

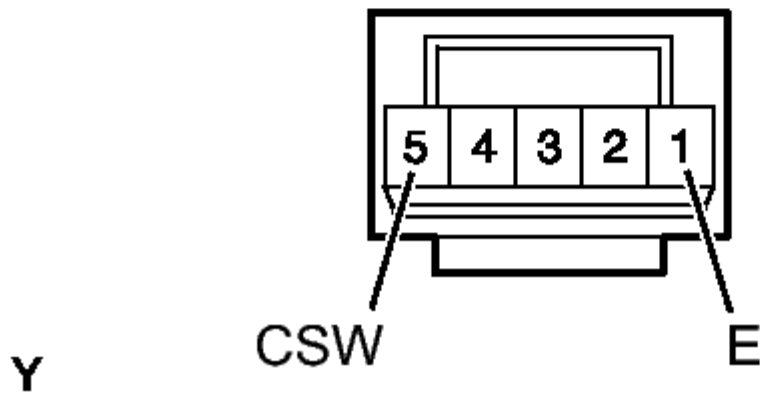


Fig. 37: Inspecting Power Slide Door Control Switch LH (For Rear Door Side)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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

Standard Resistance

Tester Connection	Switch Condition	Specified Condition
5 (CSW) - 1 (E)	Pushed	Below 1 ohms
	off	10 kohms or higher

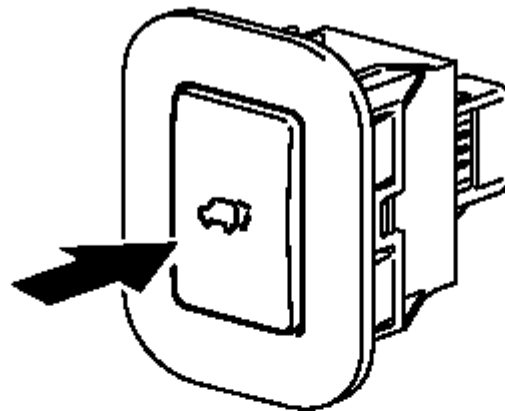
TEXT IN ILLUSTRATION

--	--

	Component without harness connected (Power Slide Door Control Switch LH (for Rear Door Side))
*a	

c. Power Slide Door Control Switch RH (for Rear Door Side)

1. Remove the power slide door control switch RH (for rear door side). Refer to **REMOVAL** .



*a

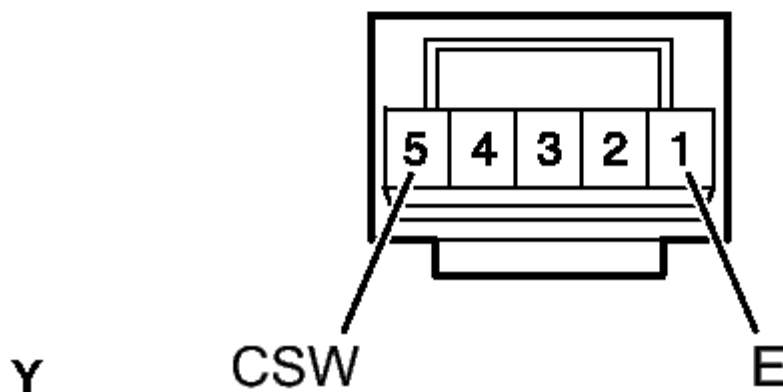


Fig. 38: Inspecting Power Slide Door Control Switch RH (For Rear Door Side)

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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

Standard Resistance

Tester Connection	Switch Condition	Specified Condition
5 (CSW) - 1 (E)	Pushed	Below 1 ohms
	off	10 kohms or higher

TEXT IN ILLUSTRATION

*a	Component without harness connected (Power Slide Door Control Switch RH (for Rear Door Side))
----	---

RESULT

Result	Proceed to
OK	A
NG (Power Slide Door Control Switch (for Roof Side))	B
NG (Power Slide Door control Switch LH (for	C

Rear Door Side))	
NG (Power Slide Door Control Switch RH (for Rear Door Side))	D

B --> See step 7

C --> See step 8

D --> See step 9

A: Go to next step

4. CHECK HARNESS AND CONNECTOR (POWER SLIDE DOOR CONTROL SWITCH - ECU AND BODY GROUND)

- Disconnect the D14 main body ECU connector.
- Disconnect the J9, I8 power slide door ECU connectors.
- Remove the power slide door control switch (for roof side). Refer to **REMOVAL** .
- Remove the power slide door control switch LH (for rear door side). Refer to **REMOVAL** .
- Remove the power slide door control switch RH (for rear door side). Refer to **REMOVAL** .
- Measure the resistance according to the value(s) in the table below.

Standard Resistance

Tester Connection	Condition	Specified Condition
T4-16 (CSW) - D14-5 (RLSD)	Always	Below 1 ohms
T4-18 (CSW) - D14-27 (RRSD)	Always	Below 1 ohms
K6-5		

(CSW) - J9-10 (CSW)	Always	Below 1 ohms
L10-5 (CSW) - I8-9 (CSW)	Always	Below 1 ohms
T4-1 (GND) - Body ground	Always	Below 1 ohms
K6-1 (E) - Body ground	Always	Below 1 ohms
L10-1 (E) - Body ground	Always	Below 1 ohms
D14-5 (RLSD) - Body ground	Always	10 kohms or higher
D14-27 (RRSD) - Body ground	Always	10 kohms or higher
K6-5 (CSW) - Body ground	Always	10 kohms or higher
L10-5 (CSW) - Body ground	Always	10 kohms or higher

NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK --> See step 10

5. **GO TO CAN COMMUNICATION SYSTEM. Refer to DIAGNOSTIC TROUBLE CODE CHART**
6. **PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE. Refer to PROBLEM SYMPTOMS TABLE**
7. **REPLACE POWER SLIDE DOOR CONTROL SWITCH (FOR ROOF SIDE). Refer to REMOVAL**
8. **REPLACE POWER SLIDE DOOR CONTROL SWITCH LH (FOR REAR DOOR SIDE). Refer to REMOVAL**
9. **REPLACE POWER SLIDE DOOR CONTROL SWITCH RH (FOR REAR DOOR SIDE). Refer to REMOVAL**

10. REPLACE MAIN BODY ECU. Refer to REMOVAL

Main Switch Circuit

DESCRIPTION

Turning the power slide door main switch off (pushed in) prohibits power slide door control system operation.

The power slide door ECU monitors if the fuel lid is open via the fuel lid courtesy switch. When the power slide door motor is operating while the fuel lid is open, the slide door will not open fully.

WIRING DIAGRAM

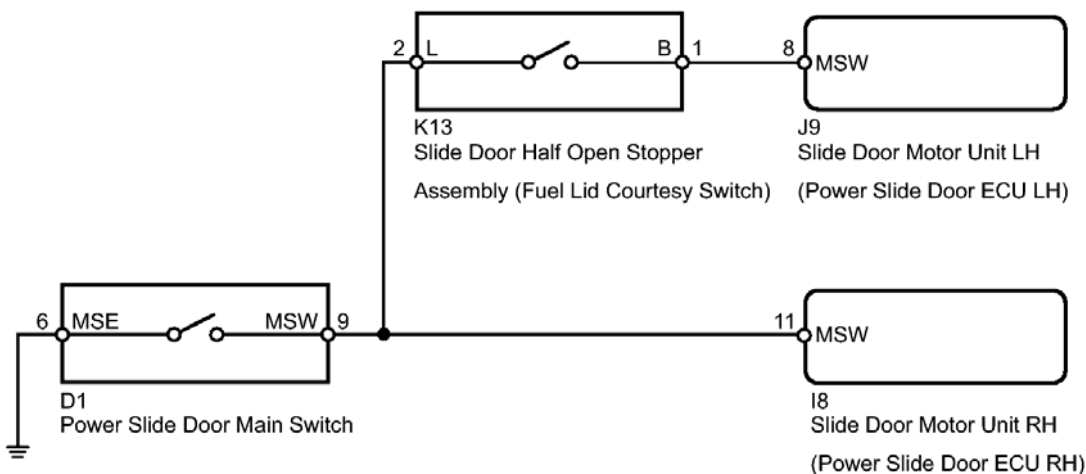


Fig. 39: Main Switch Circuit - Wiring Diagram
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

INSPECTION PROCEDURE

PROCEDURE

1. **READ VALUE USING TECHSTREAM (PSD MAIN SWITCH)**
 - a. Connect the Techstream to the DLC3.
 - b. Turn the ignition switch to ON.
 - c. Turn the Techstream on.
 - d. Enter the following menus: Body Electrical / Rear Right Door / Data List.
 - e. Check if the switch is functioning properly.

REAR RIGHT DOOR (POWER SLIDE DOOR ECU RH)

Tester Display	Measurement Item / Range	Normal Condition	Diagnosis Note
----------------	--------------------------	------------------	----------------

PSD Main Switch	Power slide door main switch signal / ON or OFF	ON: Power slide door main switch not pressed OFF: Power slide door main switch pressed	-
-----------------	---	---	---

OK

When the switch is operation, the Techstream should display as shown in the display.

NG --> See step 3

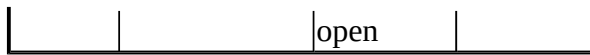
OK: Go to next step

2. READ VALUE USING TECHSTREAM (PSD MAIN SWITCH)

- Connect the Techstream to the DLC3.
- Turn the ignition switch to ON.
- Turn the Techstream on.
- Enter the following menus: Body Electrical / Rear Left Door / Data List.
- Check if the switch is functioning properly.

REAR LEFT DOOR (POWER SLIDE DOOR ECU LH)

Tester Display	Measurement Item / Range	Normal Condition	Diagnosis Note
PSD Main Switch	Power slide door main switch signal / ON or OFF	ON: Power slide door main switch not pressed and fuel lid closed OFF: Power slide door main switch pressed or fuel lid	-



OK

When the switch is operation, the Techstream should display as shown in the display.

NG --> See step 5

OK --> See step 7

3. INSPECT POWER SLIDE DOOR MAIN SWITCH

- a. Remove the power slide door main switch on the instrument panel. Refer to **REMOVAL** .

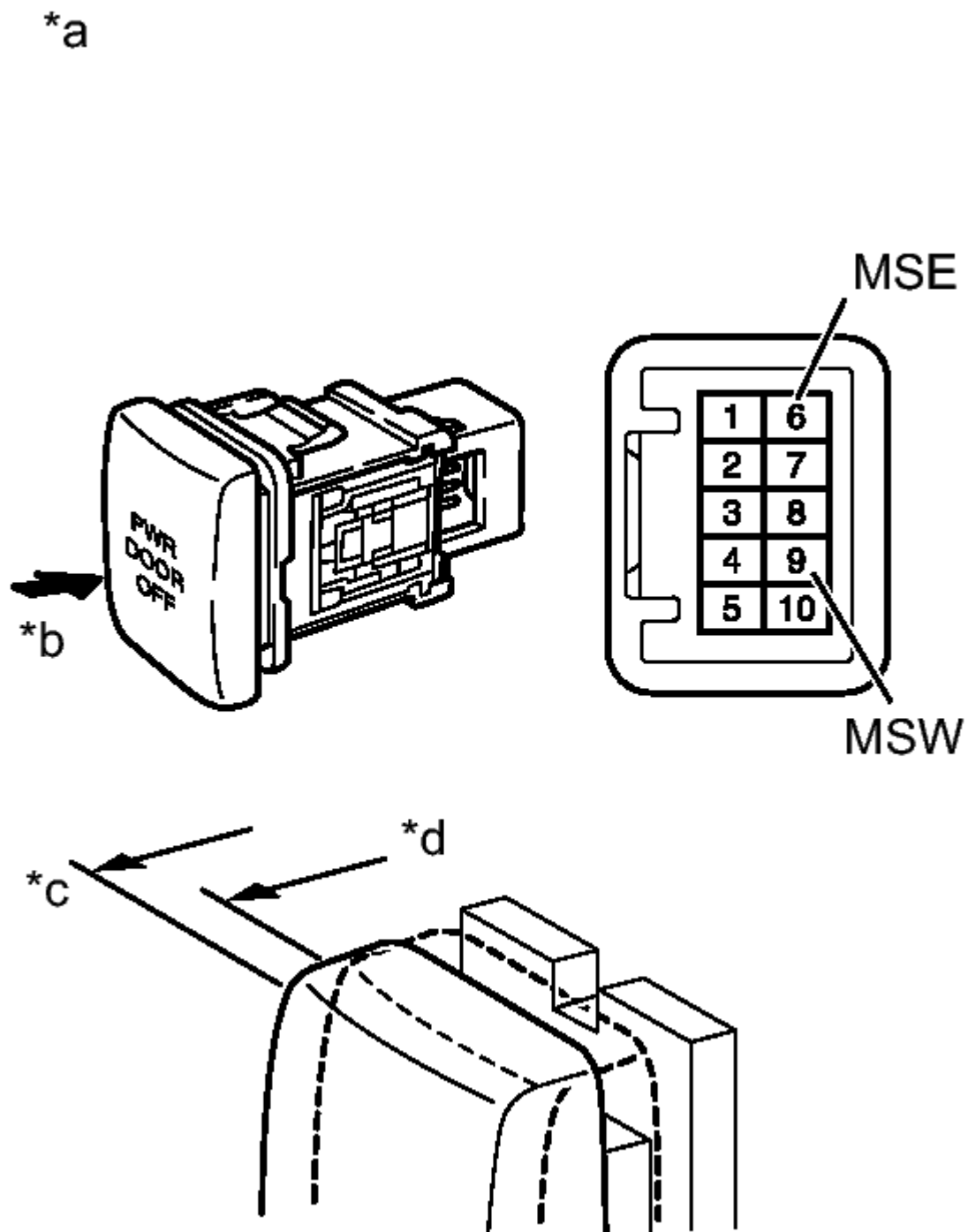


Fig. 40: Inspecting Power Slide Door Main Switch
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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

Standard Resistance

Tester Connection	Switch Condition	Specified Condition
6 (MSE) - 9 (MSW)	Free (off)	Below 1 ohms
	Pushed (on)	10 kohms or higher

TEXT IN ILLUSTRATION

*a	Component without harness connected (Power Slide Door Main Switch)
*b	Pushed
*c	Free (off)
*d	Pushed (on)

NG --> See step 8

OK: Go to next step

4. CHECK HARNESS AND CONNECTOR (MAIN SWITCH - POWER SLIDE DOOR ECU RH AND BODY GROUND)

- Remove the power slide door main switch on the instrument panel. Refer to **REMOVAL** .
- Disconnect the I8 power slide door ECU RH connector.
- Measure the resistance according to the value(s) in the table below.

Standard Resistance

Tester Connection	Condition	Specified Condition
D1-9 (MSW) - I8-11 (MSW)	Always	Below 1 ohms
D1-9 (MSW) - Body ground	Always	10 kohms or higher

D1-6 (MSE) - Body ground	Always	Below 1 ohms
-----------------------------------	--------	-----------------

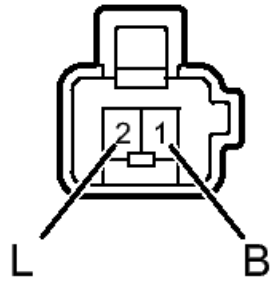
NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK --> See step 9

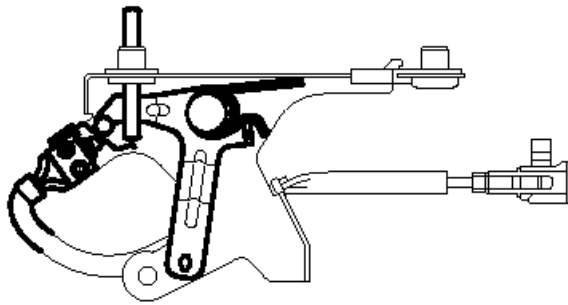
5. INSPECT SLIDE DOOR HALF OPEN STOPPER CONTROL ASSEMBLY (FUEL LID COURTESY SWITCH)

- a. Remove the slide door half open stopper control assembly (fuel lid courtesy switch). Refer to **REMOVAL** .

*a



*b



*c

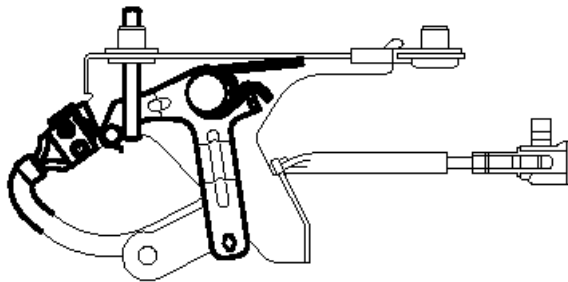


Fig. 41: Inspecting Slide Door Half Open Stopper Control Assembly (Fuel Lid Courtesy Switch)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

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

Standard Resistance

Tester Connection	Switch Condition	Specified Condition
1 (B) - 2 (L)	off (Fuel lid open)	10 kohms or higher
	on (Fuel lid closed)	Below 1 ohms

TEXT IN ILLUSTRATION

*a	Component without harness connected (Fuel Lid Courtesy Switch)
*b	Fuel lid open
*c	Fuel lid closed

NG --> See step 10

OK: Go to next step

6. CHECK HARNESS AND CONNECTOR (MAIN SWITCH - POWER SLIDE DOOR ECU LH AND BODY GROUND)

- Disconnect the J9 power slide door ECU LH connector.
- Remove the power slide door main switch. Refer to **REMOVAL** .
- Remove the slide door half open stopper. Refer to **REMOVAL** .
- Measure the resistance according to the value(s) in the table below.

Standard Resistance

Tester Connection	Condition	Specified Condition
K13-1 (B) - J9-8 (MSW)	Always	Below 1 ohms
D1-9 (MSW) - K13-2 (L)	Always	Below 1 ohms
K13-1 (B) - Body	Always	10 kohms

ground		or higher
D1-9 (MSW) - Body ground	Always	10 kohms or higher

NG --> REPAIR OR REPLACE HARNESS OR CONNECTOR

OK --> See step 11

7. **PROCEED TO NEXT SUSPECTED AREA SHOWN IN PROBLEM SYMPTOMS TABLE. Refer to PROBLEM SYMPTOMS TABLE**
8. **REPLACE POWER SLIDE DOOR MAIN SWITCH. Refer to REMOVAL**
9. **REPLACE SLIDE DOOR MOTOR UNIT RH. Refer to REMOVAL**
10. **REPLACE SLIDE DOOR HALF OPEN STOPPER CONTROL ASSEMBLY (FUEL LID COURTESY SWITCH). Refer to REMOVAL**
11. **REPLACE SLIDE DOOR MOTOR UNIT LH. Refer to REMOVAL**

ACCESSORIES & EQUIPMENT

Power Slide Door System (Diagnostics - Introduction) - Sienna

POWER SLIDE DOOR SYSTEM

PRECAUTION

PRECAUTION

1. IGNITION SWITCH EXPRESSIONS

- a. The type of ignition switch used on this model differs according to the specifications of the vehicle. The expressions listed in the table below are used in this information.

Expression	Ignition Switch (Position)	Engine Switch (Condition)
Ignition Switch off	LOCK	Off
Ignition Switch ON	ON	On (IG)
Ignition Switch ACC	ACC	On (ACC)
Engine Start	START	Start

PARTS LOCATION

ILLUSTRATION

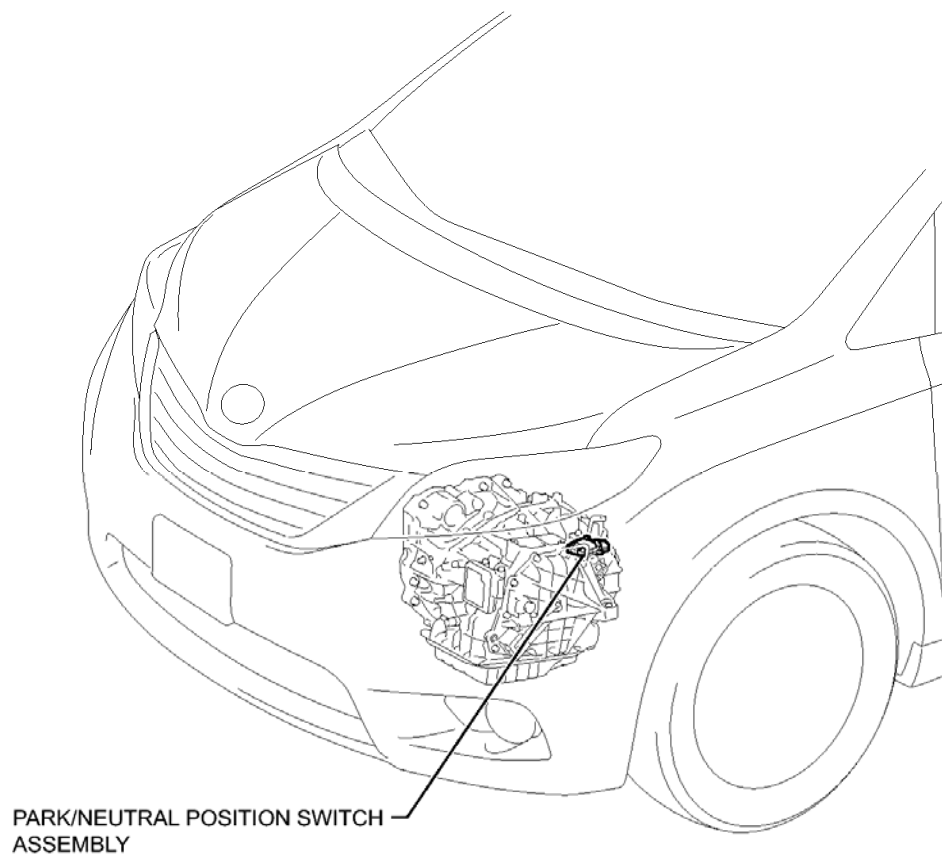


Fig. 1: Power Slide Door System Components Location (1 Of 3)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

ILLUSTRATION

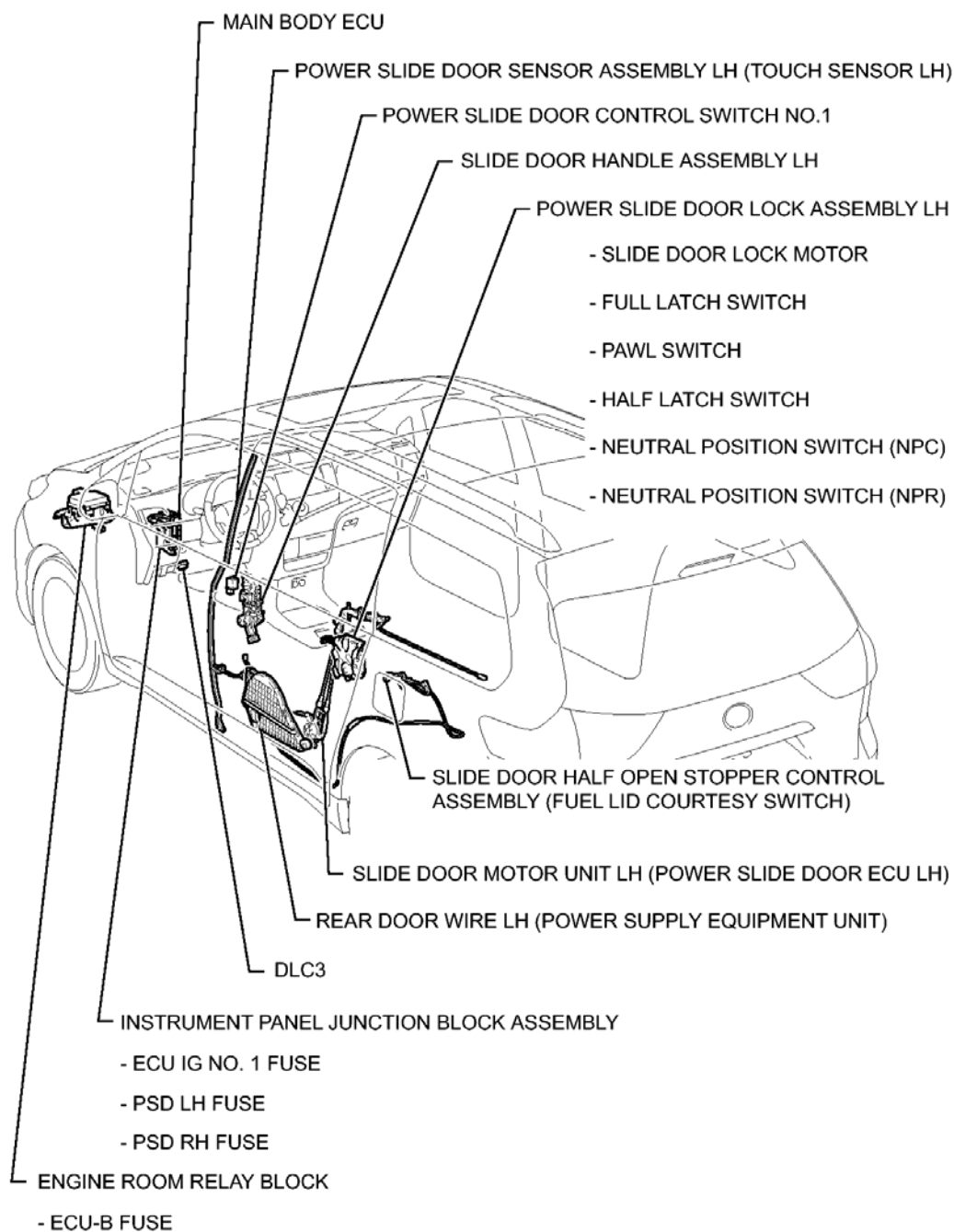
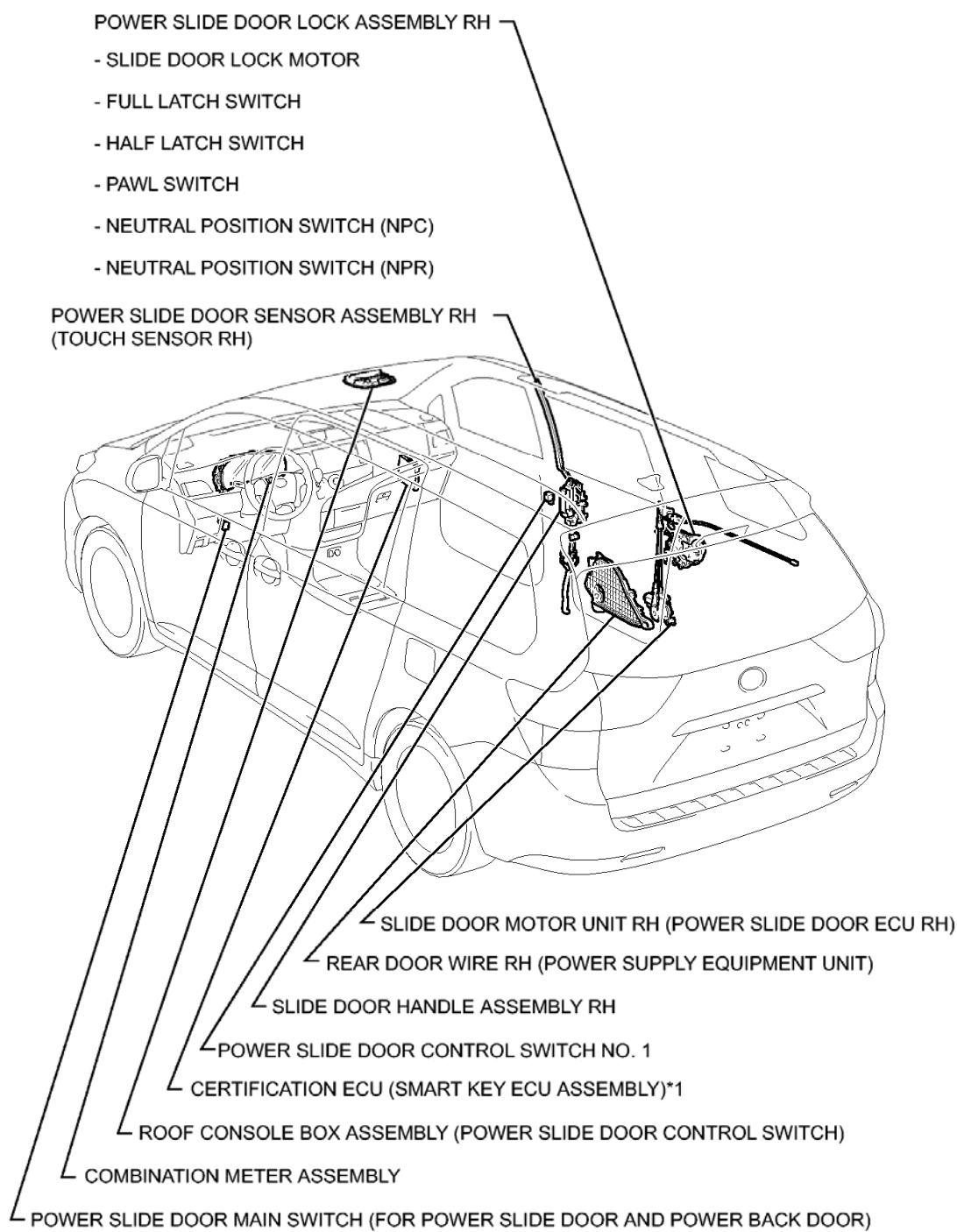


Fig. 2: Power Slide Door System Components Location (2 Of 3)
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

ILLUSTRATION



*1: w/ Smart Key System

Fig. 3: Power Slide Door System Components Location (3 Of 3)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

SYSTEM DIAGRAM

SYSTEM DIAGRAM

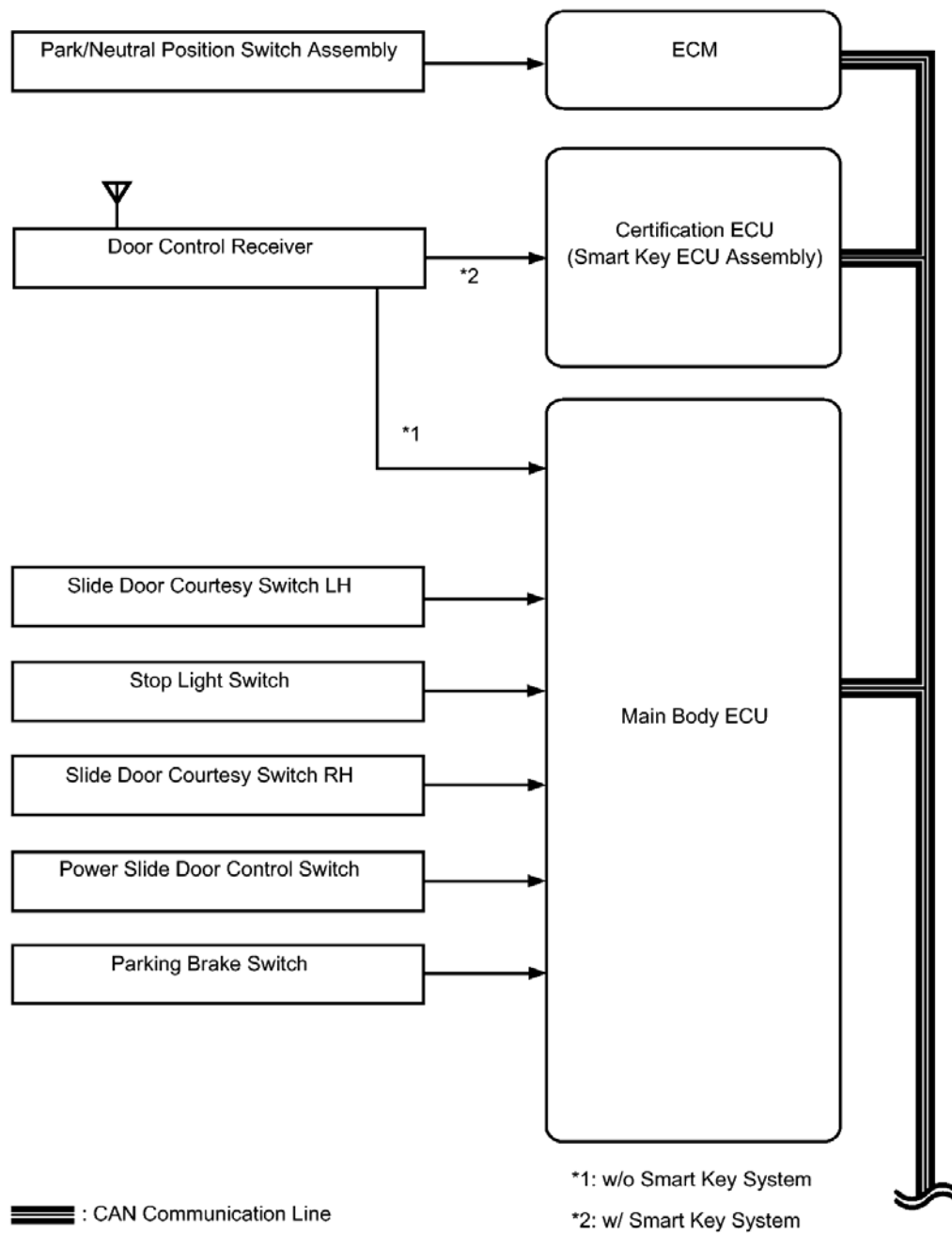


Fig. 4: Power Slide Door System Diagram (1 Of 2)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

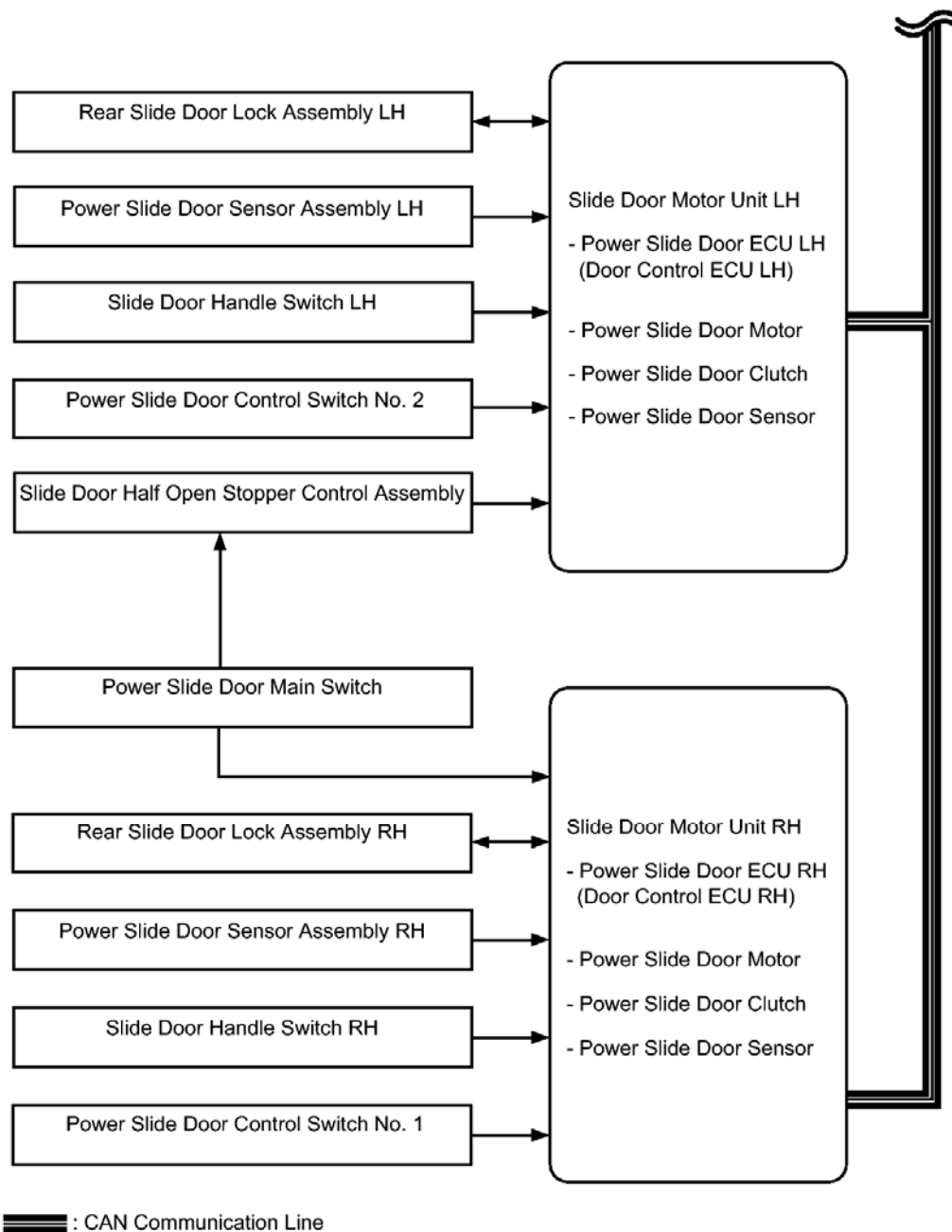


Fig. 5: Power Slide Door System Diagram (2 Of 2)
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

COMMUNICATION TABLE

Sender	Receiver	Signal	Line
Main Body ECU	Slide Door Motor Unit LH (Power Slide Door ECU LH)	Slide door open/close signal	CAN

Main Body ECU	Slide Door Motor Unit RH (Power Slide Door ECU RH)	Slide door open/close signal	CAN
ECM	Main Body ECU	Park/neutral position switch signal	CAN
Certification ECU (Smart Key ECU Assembly)	Main Body ECU	Slide door open/close signal	CAN

SYSTEM DESCRIPTION

SYSTEM DESCRIPTION

1. POWER SLIDE DOOR DESCRIPTION

- The power slide door system automatically opens and closes the right and left slide doors through the use of the power slide door control switch, the transmitter or the inside/outside door handle.
- This system is controlled by the power slide door ECU, which is built into the power slide door motor.

2. COMPONENTS

Component	Function
Slide Door Motor Unit (Power Slide Door ECU)	The power slide door ECU, which is built into the power slide door motor, receives the signals from the main body ECU and the switches. Then, this unit automatically opens or closes the slide door by actuating the power slide door motor in accordance with the operation

		request signal received from the power slide door ECU.
Slide Door Lock Remote Control Assembly	Actuates the built-in door lock control motor forward or backward to lock or unlock the slide door.	
	Power Slide Door Front Lock	Releases or engages the latch at the front side of the slide door.
	Slide Door Handle Switch	Detects the operation of the slide door handle and transmits the signal to the power slide door ECU.
	Slide Door Lock Motor	Actuates the built-in motor forward or backward to fully close the slide door lock if it is half latched (ajar), or open the lock if it is fully closed (fully latched).
	Neutral	Detects the neutral position of the active closer lever of the slide

Power Slide Door Lock Assembly	Position Switch (NPC)	door lock motor. The switch is on when the slide door lock begins to operate in the closing direction.
	Neutral Position Switch (NPR)	Detects the neutral position of the active closer lever of the slide door lock motor. The switch is on when the slide door lock begins to operate in the releasing direction.
	Full Latch Switch	Detects the fully closed position of the latch, turns on in the over latch condition.
	Half Latch Switch	Detects the ajar position of the latch, turns on in the open latch condition.
Slide Door Half Open Stopper Control Assembly		Restricts the operation of the stopper or controls of the power slide door operation while the fuel lid is

	open.
Slide Door Full Open Stop Lock Assembly	The interlock type full-open stopper prevents the slide door from closing accidentally by its own weight when the vehicle is parked on a slope.
Power Slide Door Sensor Assembly	Detects the presence of a jammed object while the slide door is moving in the closing direction.
Rear Door Wire (Power Supply Equipment Unit)	Provides continuous power to the various units in the power slide door system.
Power Slide Door Main Switch (PWR DOOR OFF Switch)	Turns the power slide door system and power back door system on/off.
Power Slide Door Control Switch	Opens and closes the slide door.
Slide Door Handle (Inside/Outside)	Transmits slide door opening and closing signals to the power slide door ECU.
	Transmits

Transmitter	slide door opening and closing signals to the wireless door control receiver.
Door Control Receiver	Receives slide door opening and closing signals from the transmitter.
Main Body ECU	Receives slide door opening and closing signals from the door control receiver and outputs them to the power slide door ECU.

3. FUNCTIONS

Function	Outline
Auto Open-and-close	Enables the slide door to open or close automatically through the operation of the following switches: • Power slide door switch • Transmitter • Inside or outside slide door

	handle
Touch Sensor Protection	If the touch sensor that is provided at the front end of the slide door becomes compressed while the slide door is moving in the closing direction, the resistance of the sensor changes. This change in resistance is output to the power slide door ECU to detect the presence of a jammed object. In addition, the power slide door ECU determines the presence of a jammed object when it detects a change in the moving speed of a slide door (by monitoring the motor speed).
Continuous Power Supply System	The adoption of the continuous power supply system for the slide door makes the junction power supply relay unnecessary, resulting in a simpler system.

HOW TO PROCEED WITH TROUBLESHOOTING

HOW TO PROCEED WITH TROUBLESHOOTING

HINT:

- Use the following procedure to troubleshoot the power slide door system.
- *: Use the Techstream.

1. VEHICLE BROUGHT TO WORKSHOP**NEXT: Go to next step****2. CUSTOMER PROBLEM ANALYSIS****HINT:**

- In troubleshooting, confirm that the problem symptoms have been accurately identified. Preconceptions should be discarded in order to make an accurate judgment. To clearly understand what the problem symptoms are, it is extremely important to ask the customer about the problem and the conditions at the time the malfunction occurred.
- Gather as much information as possible for reference. Past problems that seem unrelated may also help in some cases.
- The following 5 items are important points in the problem analysis:

What	Vehicle model, system name
When	Date, time, occurrence frequency
Where	Road conditions
Under what conditions?	Running conditions, driving conditions, weather conditions
How did it happen?	Problem symptoms

NEXT: Go to next step**3. INSPECT BATTERY VOLTAGE**

Standard voltage

11 to 14 V

If the voltage is below 11 V, recharge or replace the battery before proceeding to the next step.

NEXT: Go to next step

4. CHECK COMMUNICATION FUNCTION OF CAN COMMUNICATION SYSTEM*

- a. Use the Techstream to check if the CAN communication system is functioning normally.

RESULT

Result	Proceed to
CAN DTC is not output	A
CAN DTC is output	B

B --> GO TO CAN COMMUNICATION SYSTEM. Refer to DIAGNOSTIC TROUBLE CODE CHART

A: Go to next step

5. CHECK FOR DTC*

- a. Check for DTCs. Refer to DTC CHECK / CLEAR.
- b. Clear the DTCs. Refer to DTC CHECK / CLEAR.
- c. Recheck for DTCs. Refer to DTC CHECK / CLEAR.

RESULT

Result	Proceed to
DTC is not output	A
DTC is output	B

B --> GO TO DIAGNOSTIC TROUBLE CODE CHART. Refer to DIAGNOSTIC TROUBLE CODE CHART

A: Go to next step

6. PROBLEM SYMPTOMS TABLE

RESULT

Result	Proceed to
Fault is not listed in Problem Symptoms Table	A
Fault is listed in Problem Symptoms Table	B

B --> Go to step 8

A: Go to next step

7. OVERALL ANALYSIS AND TROUBLESHOOTING*

- Operation Check. Refer to **OPERATION CHECK**
- Terminals of ECU. Refer to **TERMINALS OF ECU**
- Data List / Active Test. Refer to **DATA LIST / ACTIVE TEST**

NEXT: Go to next step

8. REPAIR OR REPLACE

NEXT: Go to next step

9. CONFIRMATION TEST

NEXT --> END

OPERATION CHECK

OPERATION CHECK

NOTE: Inspection should be started after confirming that the items listed in "CUSTOMIZE PARAMETERS" for the power slide door system have defaulted to the initial settings. Refer to **CUSTOMIZE PARAMETERS.**

1. CHECK OPENING OPERATION

- Conditions necessary for the power slide door to open:
 - The power slide door main switch is in the on position.

2. The slide door is positioned between the fully closed position and the half-open position (When the slide door is fully closed, the door must be unlocked).
 3. The shift lever is in the P position when the ignition switch is ON (When the ignition switch is off, power slide door can operate in any position of the shift lever).
 4. No key is inserted into the ignition key cylinder when the transmitter is used.
 5. The fuel lid is closed.
- b. Press the power slide door control switch (for roof side).
1. Check that the power slide door opens when the switch has been pressed for more than 0.8 seconds.

HINT:

The power slide door can operate even when the child lock is on.

2. Check that the power slide door reverses operation and moves to the fully closed position when the same switch is pressed again during opening.
- c. Press the transmitter switch for the power slide door.
1. Check that the power slide door opens when the switch has been pressed for more than 0.8 seconds.

HINT:

The power slide door can operate even when the child lock is on.

2. Check that the power slide door reverses operation and moves to the fully closed position when the same switch is pressed again during opening.
- d. Press the power slide door control switch (for rear door side).
1. Check that the power slide door opens when the switch is pressed.

HINT:

The power slide door can operate only when the child lock is off.

2. Check that the power slide door reverses operation and moves to the fully closed position when the same switch is pressed again during opening.
- e. Pull the outside/inside handle for the power slide door.
1. Check that the power slide door opens when the handle is pulled.

HINT:

- For the inside handle, the power slide door can operate only when the child lock is off.
 - For the outside handle, the power slide door can operate even when the child lock is on.
2. Check that the power slide door reverses operation and moves to the fully closed position

when the same handle is pulled again during opening.

2. CHECK CLOSING OPERATION

- a. Conditions necessary for the power slide door to close:
 1. The power slide door main switch is in the on position.
 2. The slide door is positioned between the fully open position and half-open position.
 3. No key is inserted into the ignition key cylinder when the transmitter is used.
- b. Press the power slide door control switch (for roof side).
 1. Check that the power slide door closes when the switch has been pressed for more than 0.8 seconds.

HINT:

The power slide door can operate even when the child lock is on.

- c. Check that the power slide door reverses operation and moves to the fully open position when the same switch is pressed again during closing.
- d. Press the transmitter switch for the power slide door.
 1. Check that the power slide door closes when the switch has been pressed for more than 0.8 seconds.

HINT:

The power slide door can operate even when the child lock is on.

2. Check that the power slide door reverses operation and moves to the fully open position when the same switch is pressed again during closing.
- e. Press the power slide door control switch (for rear door side).
 1. Check that the power slide door closes when the switch is pressed.

HINT:

The power slide door can operate only when the child lock is off.

2. Check that the power slide door reverses operation and moves to the fully open position when the same switch is pressed again during closing.
- f. Pull the outside/inside handle for the power slide door.
 1. Check that the power slide door closes when the handle is pulled.
 2. Check that the power slide door reverses operation and moves to the fully open position when the same handle is pulled again during closing.

3. CHECK JAM PROTECTION FUNCTION

WARNING: Do not use any part of the body to check this function. Make sure that nothing becomes accidentally caught in the power slide door

during operation.

HINT:

- The power slide door motor and power slide door clutch detect changes in the operating speed of the slide door while the power slide door is moving. If a change in the operating speed is out of the normal range, it will be judged that a foreign object is jammed in the direction that the power slide door is moving.
 - When the power slide door touch sensor built into the front end of the slide door is compressed, it will be judged that a foreign object is jammed in the direction that the power slide door is moving, and the power slide door will reverse.
 - The power slide door touch sensor operates only while the slide door is closing. It does not operate while the slide door is opening.
- a. Check the jam protection function while the power slide door is closing.
 1. Fully open the slide door.
 2. Press the switch that operates the power slide door to close it.
 3. While the slide door is closing, press the touch sensor using the handle of a hammer or the equivalent.
 4. Check that the jam protection function is immediately activated and the power slide door reverses operation to the fully open position.
 - b. Check the jam protection function while the power slide door is opening.
 1. Fully close the slide door.
 2. Press the switch that operates the power slide door to open it.
 3. While the slide door is opening, hold the slide door using a tire or the equivalent so that the operating speed decreases.
 4. Check that the jam protection function is immediately activated and the power slide door reverses operation to the fully closed position.
 - c. Check the operation of the power slide door when the jam protection function is consecutively activated.

Check that the power slide door operation is cancelled and switched to the manual operation mode (not electrically controlled) when the jam protection function has been activated 2 or more consecutive times and when the 2nd or most recent activation has occurred during closing.

When jam protection is activated two times in the same direction (open or close), the slide door enters brake mode (clutch on/off) and movement of slide door is unsmooth.

HINT:

Refer to the previous 2 steps for methods to activate the jam protection function.

NOTE: To restore the power slide door system to the normal operation mode, perform either of the following: manually close the slide door fully or press the transmitter switch for the power slide door or the

power slide door control switch again.

4. CHECK FUEL LID STOPPER SYSTEM

HINT:

- The fuel lid stopper system operates against the slide door LH only, because the fuel lid is placed on the LH side of the vehicle.
- To prevent the slide door from striking against the open fuel lid, the slide door half open stopper control assembly pulls the cable to operate the open stopper.
- The fuel lid courtesy switch built into the slide door half open stopper control assembly detects that the fuel lid is open.
 - a. Check that the slide door cannot be opened when the fuel lid is open.
 - b. Check that the power slide door is switched to manual operation mode when the fuel lid is opened while the power slide door is moving.

NOTE: **To restore the power slide door system to the normal operation mode, perform either of the following: manually close the slide door fully or press the transmitter switch for the power slide door or the power slide door control switch again.**

5. SLIDE DOOR FULL OPEN STOP LOCK

- a. Check that the slide door is fixed at the fully open position by the slide door full open stop lock when fully open.

6. CHECK WARNING BUZZER

- a. Check the warning buzzer sounding function that notifies that the power slide door is open or is opening while the vehicle is moving (when the shift lever is moved into any position except the P position).
 - 1. While the slide door is open, check that the warning buzzer sounds at a cycle of 0.3 seconds if the shift lever is moved into any position except the P position with the ignition switch ON.
 - 2. Turn the ignition switch ON and move the shift lever into any position except the P position. Check that the warning buzzer sounds at a cycle of 0.3 seconds when the power slide door system is activated to open using the switches or handles.
 - 3. Check that the warning buzzer stops sounding when the slide door is fully closed or the shift lever is moved into the P position.

CUSTOMIZE PARAMETERS

CUSTOMIZE PARAMETERS

1. CUSTOMIZING FUNCTION WITH TECHSTREAM

HINT:

The following items can be customized.

NOTE:

- **When the customer requests a change in a function, first make sure that the function can be customized.**
- **Be sure to record the current settings before customizing.**
- **When troubleshooting a function, first make sure that the function is set to the default setting.**

- a. Connect the Techstream to the DLC3.
- b. Turn the ignition switch to ON.
- c. Turn the Techstream on.
- d. Enter the following menus: Body Electrical / Rear Left Door or Rear Right Door / Utility / Customize / PSD & PBD operation.
- e. Select the item and setting by referring to the table below.

PSD & PBD OPERATION

Tester Display	Default	Contents	Setting
PSD SW Operation (RR)	0.8s	Function to operate power slide door switch	0.8s or ON
PSD Buzzer (RR)	ON	Function to sound buzzer when power slide door is in operation	ON or OFF
PSD SW Operation (RL)	0.8s	Function to operate power slide door switch	0.8s or ON
PSD Buzzer (RL)	ON	Function to sound buzzer when power slide door is in operation	ON or OFF
		Function to operate wireless	

Wireless PSD SW Operation (RR)	L/OM	power slide door switch 1 Oper: Transmitter switch pressed once to operate power slide door if door is already unlocked 2 Oper: Transmitter switch pressed twice to operate power slide door if door is already unlocked long: Transmitter switch pressed for 0.8 seconds to operate power slide door if door is already unlocked 2/OM: Transmitter switch pressed twice to unlock and operate power slide door L/OM: Transmitter switch	1 Oper, 2 Oper, long, 2/OM, L/OM or OFF
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		pressed for 0.8 seconds to unlock and operate power slide door OFF: Transmitter switch operation disabled	
Outside PSD SW Operation (RR)	ON	Function to operate outside power slide door switch	ON or OFF
Wireless PSD SW		Function to operate wireless power slide door switch 1 Oper: Transmitter switch pressed once to operate power slide door if door is already unlocked 2 Oper: Transmitter switch pressed twice to operate power slide door if door is already unlocked long: Transmitter switch	1 Oper, 2 Oper, long,

Operation (RL)		pressed for 0.8 seconds to operate power slide door if door is already unlocked 2/OM: Transmitter switch pressed twice to unlock and operate power slide door L/OM: Transmitter switch pressed for 0.8 seconds to unlock and operate power slide door OFF: Transmitter switch operation disabled	2/OM, L/OM or OFF
Outside PSD SW Operation (RL)	ON	Function to operate outside power slide door switch	ON or OFF

INITIALIZATION

INITIALIZATION

1. RESET SLIDE DOOR CLOSED POSITION

- When disconnecting the cable from the negative (-) battery terminal, close the slide door fully to turn off the courtesy switch.

HINT:

If the slide door is closed when disconnecting the cable from the negative (-) battery terminal, it is not necessary to reset it.

PROBLEM SYMPTOMS TABLE

PROBLEM SYMPTOMS TABLE

HINT:

- Use the table below to help determine the cause of the problem symptoms. If multiple suspected areas are listed, the potential causes of the symptoms are listed in order of probability in the "Suspected Area" column of the table. Check each symptom by checking the suspected areas in the order they are listed. Replace parts as necessary.
- Inspect the fuses and relays related to this system before inspecting the suspected areas below.

POWER SLIDE DOOR SYSTEM

Symptom	Suspected Area	See
The power slide door LH does not operate when the power slide door switch is pressed.	Slide door lock motor LH circuit	Refer to <u>Slide Door Lock Motor LH Circuit</u>
	Power slide door sensor LH circuit	Refer to <u>Power Slide Door Sensor LH Circuit</u>
	Power slide door control switch circuit	Refer to <u>Power Slide Door Control Switch Circuit</u>
	Main switch circuit	Refer to <u>Main Switch Circuit</u>
	Power slide door ECU LH power source circuit	Refer to <u>Power Slide Door ECU LH Power Source Circuit</u>
	Main body ECU	Refer to <u>TERMINALS OF ECU</u>
	Power slide door ECU LH	Refer to <u>TERMINALS OF ECU</u>
The power slide door RH does not operate when the power slide door switch is pressed.	Slide door lock motor RH circuit	Refer to <u>Slide Door Lock Motor RH Circuit</u>
	Power slide door sensor RH circuit	Refer to <u>Power Slide Door Sensor RH Circuit</u>
	Power slide door control switch circuit	Refer to <u>Power Slide Door Control Switch Circuit</u>
	Main switch circuit	Refer to <u>Main Switch Circuit</u>
	Power slide door ECU RH power source circuit	Refer to <u>Power Slide Door ECU RH Power Source Circuit</u>
	Main body ECU	Refer to <u>TERMINALS OF ECU</u>
	Power slide door ECU RH	Refer to <u>TERMINALS OF ECU</u>
The power slide door LH does not operate when using the	Slide door handle switch LH circuit	Refer to <u>Slide Door Handle Switch LH Circuit</u>
	Main switch circuit	Refer to <u>Main Switch Circuit</u>
	Power slide door ECU	Refer to <u>Power Slide Door ECU LH Power</u>

inside/outside handle.	LH power source circuit	<u>Source Circuit</u>
	Slide door front lock assembly	Refer to <u>INSTALLATION</u>
The power slide door RH does not operate when using the inside/outside handle.	Slide door handle switch RH circuit	Refer to <u>Slide Door Handle Switch RH Circuit</u>
	Main switch circuit	Refer to <u>Main Switch Circuit</u>
	Power slide door ECU RH power source circuit	Refer to <u>Power Slide Door ECU RH Power Source Circuit</u>
	Slide door front lock assembly	Refer to <u>INSTALLATION</u>
The jam protection function does not operate during power slide door LH operation.	Power slide door sensor LH circuit	Refer to <u>Power Slide Door Sensor LH Circuit</u>
	Slide door lock motor LH circuit	Refer to <u>Slide Door Lock Motor LH Circuit</u>
The jam protection function does not operate during power slide door RH operation.	Power slide door sensor RH circuit	Refer to <u>Power Slide Door Sensor RH Circuit</u>
	Slide door lock motor RH circuit	Refer to <u>Slide Door Lock Motor RH Circuit</u>
The power slide door LH does not fully open. (During the open operation, it begins to slide back approximately 95 mm (3.74 in.) from opened position.)	Main switch circuit	Refer to <u>Main Switch Circuit</u>
	Power slide door sensor LH circuit	Refer to <u>Power Slide Door Sensor LH Circuit</u>
The power slide door RH does not fully open. (During the open operation, it begins to slide back approximately 95 mm (3.74 in.) from opened position.)	Main switch circuit	Refer to <u>Main Switch Circuit</u>
	Power slide door sensor RH circuit	Refer to <u>Power Slide Door Sensor RH Circuit</u>
The power slide door LH does not fully open. (It does not operate in the fully open position.)	Power slide door ECU LH power source circuit	Refer to <u>Power Slide Door ECU LH Power Source Circuit</u>
	Power slide door ECU LH	Refer to <u>TERMINALS OF ECU</u>
The power slide door RH does not fully open. (It does not operate in the fully open position.)	Power slide door ECU RH power source circuit	Refer to <u>Power Slide Door ECU RH Power Source Circuit</u>
	Power slide door ECU RH	Refer to <u>TERMINALS OF ECU</u>

TERMINALS OF ECU

TERMINALS OF ECU

1. CHECK MAIN BODY ECU AND INSTRUMENT PANEL JUNCTION BLOCK ASSEMBLY

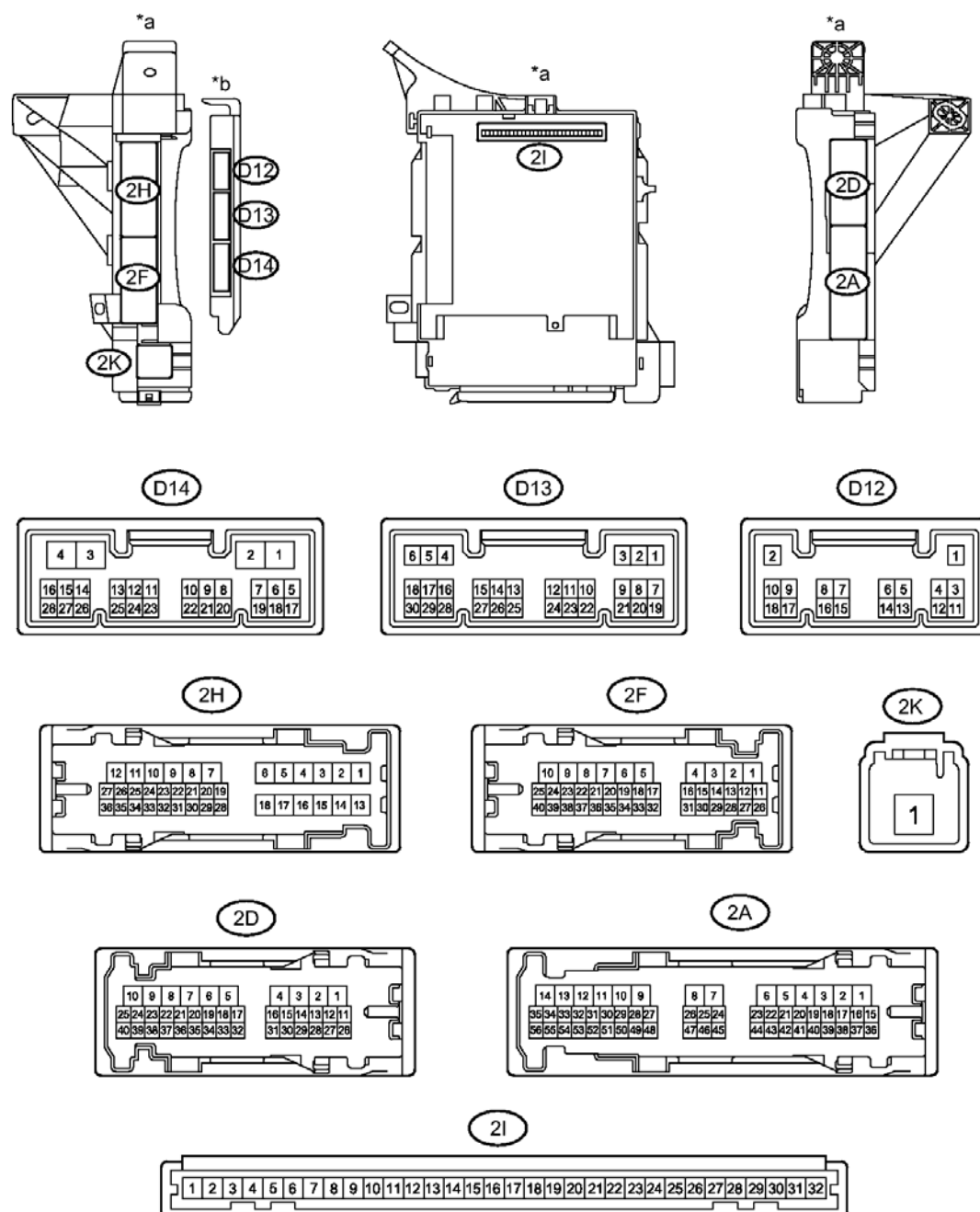


Fig. 6: Main Body ECU & Instrument Panel Junction Block Assembly Connector Terminal Identification
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

TEXT IN ILLUSTRATION

Component without harness	Component without
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*a	connected (Instrument Panel Junction Block Assembly)	*b	harness connected (Main Body ECU)
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- Disconnect the D13, D14 and main body ECU from the instrument panel junction block assembly.
- Measure the voltage and resistance according to the value(s) in the table below.

Terminal No. (Symbol)	Wiring Color	Terminal Description	Condition	Specified Condition
2I-30 (BECU) - Body ground	-	Battery power supply	Always	11 to 14 V
2I-31 (ALTB) - Body ground	-	Battery power supply	Always	11 to 14 V
2I-11 (GND1) - Body ground	-	Ground	Always	Below 1 ohms
D14-3 (GND2) - Body ground	W-B - Body ground	Ground	Always	Below 1 ohms
2I-5 (LSWL) - Body ground	-	Slide door LH lock position switch input	Slide door LH LOCK	10 kohms or higher
			Slide door LH UNLOCK	Below 1 ohms
D14-2 (LSWR) - Body ground	L - Body ground	Slide door RH lock position switch input	Slide door RH LOCK	10 kohms or higher
			Slide door RH UNLOCK	Below 1 ohms
D14-5 (RLSD) -	Y -	Power slide door control	Power slide door control switch LH off	10 kohms or higher

Body ground	Body ground	switch LH input	Power slide door control switch LH on	Below 1 ohms
D14-27 (RRSD) - Body ground	V - Body ground	Power slide door control switch RH input	Power slide door control switch RH off	10 kohms or higher
			Power slide door control switch RH on	Below 1 ohms
D14-9 (CANP) - Body ground	LG - Body ground	CAN	Always	200 ohms or higher
D14-10 (CANN) - Body ground	W - Body ground	CAN	Always	200 ohms or higher

- c. Reconnect the D13, D14 and main body ECU to the instrument panel junction block assembly.
- d. Measure the voltage according to the value(s) in the table below.

Terminal No. (Symbol)	Wiring Color	Terminal Description	Condition	Specified Condition
2H-26 (LSWL) - D14-3 (GND2)	B - W-B	Slide door LH lock position switch input	Slide door LH LOCK	Pulse generation
			Slide door LH UNLOCK	Below 1 V
D14-2 (LSWR) - D14-3 (GND2)	L - W-B	Slide door RH lock position switch input	Slide door RH LOCK	Pulse generation
			Slide door RH UNLOCK	Below 1 V
D14-5		Power slide	Power slide door control switch LH	Pulse generation (See Fig.

(RLSD) - D14-3 (GND2)	Y - W- B	door control switch LH input	off	<u>Z</u>)
			Power slide door control switch LH on	Below 1 V
D14-27 (RRSD) - D14-3 (GND2)	V - W- B	Power slide door control switch RH input	Power slide door control switch RH off	Pulse generation (See Fig. <u>Z</u>)
			Power slide door control switch RH on	Below 1 V

e. Waveform 1 (power slide door control switch signal)

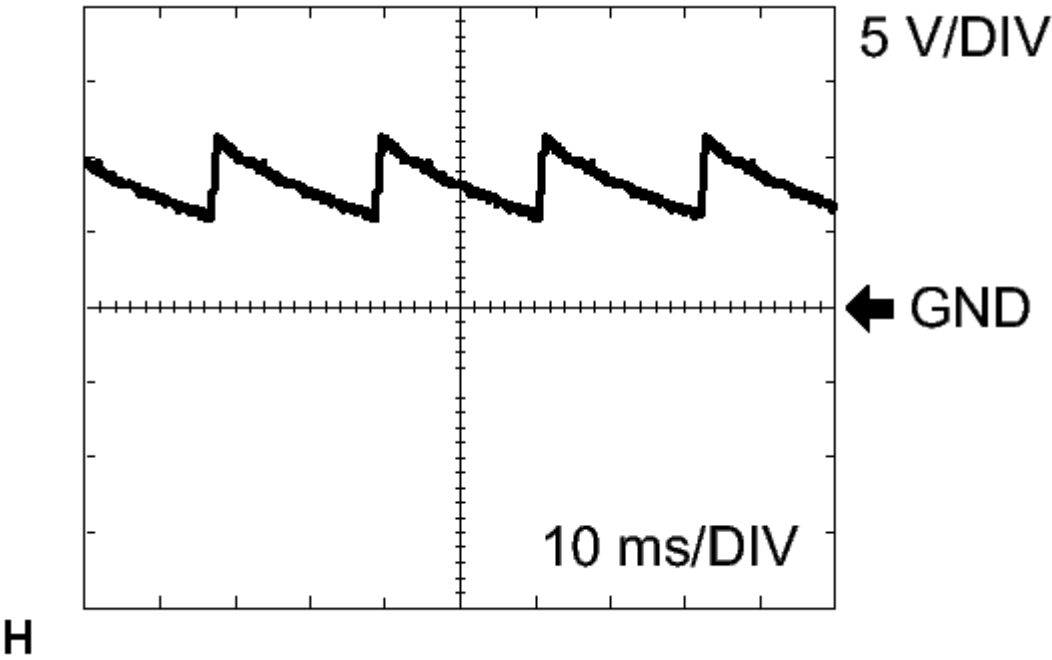
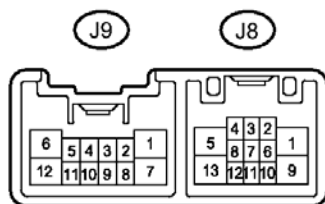


Fig. 7: Identifying Waveform 1
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

Terminal (Symbol)	D14-5 (RLSD) - D14-3 (GND2) D14-27
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	(RRSD) - D14-3 (GND2)
Tester Range	5 V/DIV, 10 ms/DIV
Condition	Power slide door control switch off

2. CHECK SLIDE DOOR MOTOR UNIT LH (POWER SLIDE DOOR ECU LH)



H

Fig. 8: Slide Door Motor Unit LH (Power Slide Door ECU LH) Connector Terminal Identification
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- Disconnect the J8 and J9 connectors from the slide door motor unit LH (power slide door ECU LH).
- Measure the voltage and resistance according to the value(s) in the table below.

Terminal No. (Symbol)	Wiring Color	Terminal Description	Condition	Specified Condition
J9-12 (ECUB) - J9-1 (GND)	SB - W-B	Power supply	Always	11 to 14 V
J9-7 (B) - J9-1 (GND)	LG - W-B	Power supply	Always	11 to 14 V
J9-4 (IG) - J9-1 (GND)	B - W-B	Power supply	Ignition switch ON	11 to 14 V
J9-1 (GND) -	W-B -			Below 1

Body ground	Body ground	Ground	Always	ohms
J9-8 (MSW) - J9-1 (GND)	P - W-B	Main switch input	Power slide door main switch off and fuel lid closed	Below 1 ohms
			Power slide door main switch on or fuel lid open	10 kohms or higher
J8-2 (POL) - J9-1 (GND)	V - W-B	PAWL switch input	Slide door fully closed --> half latched (latch pushed slightly toward full latch position)	10 kohms or higher -> Below 1 ohms --> > 10 kohms or higher
			Half latched	Below 1 ohms
			Slide door fully open --> half latched (latch pushed slightly toward full latch position)	10 kohms or higher -> Below 1 ohms --> > 10 kohms or higher
J8-5 (FUL) - J9-1 (GND)	Y - W-B	Full latch switch input	Slide door open	Below 1 ohms
			Slide door fully closed	10 kohms or higher
J8-12 (HAF) - J9-1 (GND)	GR - W-B	Half latch switch input	Slide door fully open	Below 1 ohms
			Slide door half	10 kohms or higher

			latched	
J8-7 (DS2) - J9-1 (GND)	R - W- B	Handle switch input	Handle not operated	10 kohms or higher
			Outside handle pulled or inside handle turned to close	Below 1 ohms
J8-10 (DS1) - J9-1 (GND)	W - W- B	Handle switch input	Handle not operated	10 kohms or higher
			Outside handle pulled or inside handle turned to open	Below 1 ohms
J8-8 (OS) - J8-4 (OSG)	BR - P	Touch switch input	Power slide door touch sensor pushed	Below 100 ohms
			Power slide door touch sensor not pushed	Between 950 ohms and 1050 ohms
J9-11 (MPX1) - Body ground	R - Body ground	CAN	Always	10 kohms or higher
J9-5 (MPX2) - Body ground	W - Body ground	CAN	Always	10 kohms or higher

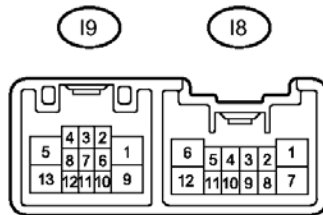
- c. Reconnect the J8 and J9 connectors to the slide door motor unit LH (power slide door ECU LH).
- d. Measure the voltage according to the value(s) in the table below.

Terminal No. (Symbol)	Wiring Color	Terminal Description	Condition	Specified Condition

J8-1 (DC-) - J9-1 (GND)	W - W- B	Door closer output (Reverse rotation)	Slide door open	Below 1 V
			Half latched	Below 1 V
			Normal rotation	Below 1 V
			Reverse rotation	11 to 14 V
			Operation finished	Below 1 V
J8-9 (DC+) - J9-1 (GND)	R - W- B	Door closer output (Normal rotation)	Slide door open	Below 1 V
			Half latched	Below 1 V
			Normal rotation	11 to 14 V
			Reverse rotation	Below 1 V
			Operation finished	Below 1 V
J8-11 (NPC) - J9-1 (GND)	G - W- B	Initial position switch input	Slide door open	Below 1 V
			Half latched	Below 1 V
			Normal rotation	Below 1 V
			Reverse rotation	Below 1 V
			Operation finished	11 to 14 V
J8-13 (NPR) - J9-1 (GND)	P - W- B	Latch release input	Slide door fully closed and power slide door control switch operated or power slide door control switch on (wireless operation)	11 to 14 V
			Slide door	Below 1

			closing	V
			Slide door fully open	Below 1 V

3. **CHECK SLIDE DOOR MOTOR UNIT RH (POWER SLIDE DOOR ECU RH) (w/ Power Slide Door RH)**



H

Fig. 9: Slide Door Motor Unit RH (Power Slide Door ECU RH) Connector Terminal Identification
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

- Disconnect the I9 and I8 connectors from the slide door motor unit RH (power slide door ECU RH).
- Measure the voltage and resistance according to the value(s) in the table below.

Terminal No. (Symbol)	Wiring Color	Terminal Description	Condition	Specified Condition
I8-7 (ECUB) - I8-6 (GND)	SB - W-B	Power supply	Always	11 to 14 V
I8-12 (B) - I8-6 (GND)	LG - W-B	Power supply	Always	11 to 14 V
I8-3 (IG) - I8-6 (GND)	B - W-B	Power supply	Ignition switch ON	11 to 14 V
I8-6 (GND) - Body ground	W-B - Body ground	Ground	Always	Below 1 ohms
I8-11 (MSW) - I8-6 (GND)	P - W-B	Main switch input	Power slide door main switch off	Below 1 ohms
			Power slide door main	10 kohms or higher

			switch on	
I9-4 (POL) - I8-6 (GND)	L - W- B	PAWL switch input	Slide door fully closed --> half latched (latch pushed slightly toward full latch position)	10 kohms or higher - -> Below 1 ohms -- > 10 kohms or higher
			Half latched	Below 1 ohms
			Slide door fully open --> half latched (latch pushed slightly toward full latch position)	10 kohms or higher - -> Below 1 ohms -- > 10 kohms or higher
I9-1 (FUL) - I8-6 (GND)	Y - W- B	Full latch switch input	Slide door open	Below 1 ohms
			Slide door fully closed	10 kohms or higher
I9-10 (HAF) - I8-6 (GND)	GR - W-B	Half latch switch input	Slide door fully open	Below 1 ohms
			Slide door half latched	10 kohms or higher
I9-7 (DS2) - I8-6 (GND)	B - W- B	Handle switch input	Handle not operated	10 kohms or higher
			Outside handle pulled or inside handle turned to close	Below 1 ohms
			Handle not	10 kohms or higher

I9-12 (DS1) - I8-6 (GND)	R - W-B	Handle switch input	operated	
			Outside handle pulled or inside handle turned to open	Below 1 ohms
I9-6 (OS) - I9-2 (OSG)	BR - G	Touch switch input	Power slide door touch sensor pushed	Below 100 ohms
			Power slide door touch sensor not pushed	Between 950 ohms and 1050 ohms
I8-8 (MPX1) - Body ground	R - Body ground	CAN	Always	200 ohms or higher
I8-2 (MPX2) - Body ground	W - Body ground	CAN	Always	200 ohms or higher

- c. Reconnect the I9 and I8 connectors to the slide door motor unit RH (power slide door ECU RH).
- d. Measure the voltage according to the value(s) in the table below.

Terminal No. (Symbol)	Wiring Color	Terminal Description	Condition	Specified Condition
I9-5 (DC-) - I8-6 (GND)	W - W-B	Door closer output (Reverse rotation)	Slide door open	Below 1 V
			Half latched	Below 1 V
			Normal rotation	Below 1 V
			Reverse rotation	11 to 14 V
			Operation finished	Below 1 V
			Slide door open	Below 1 V

I9-13 (DC+) - I8-6 (GND)	R - W- B	Door closer output (Normal rotation)	Half latched	Below 1 V
			Normal rotation	11 to 14 V
			Reverse rotation	Below 1 V
			Operation finished	Below 1 V
I9-11 (NPC) - I8-6 (GND)	P - W- B	Initial position switch input	Slide door open	Below 1 V
			Half latched	Below 1 V
			Normal rotation	Below 1 V
			Reverse rotation	Below 1 V
			Operation finished	11 to 14 V
I9-9 (NPR) - I8-6 (GND)	V - W- B	Latch release input	Slide door fully closed and power slide door control switch operated or power slide door control switch on (wireless operation)	11 to 14 V
			Slide door closing	Below 1 V
			Slide door fully open	Below 1 V

DIAGNOSIS SYSTEM

DIAGNOSIS SYSTEM

1. DESCRIPTION

The power slide door ECU controls the power slide door system functions. Power slide door system data and Diagnostic Trouble Code (DTC) can be read through the Data Link Connector 3 (DLC3). When the system seems to be malfunctioning, use the Techstream to check for malfunctions and perform repairs.

2. CHECK DLC3

- a. Check the DLC3. Refer to GENERAL INFORMATION .

3. INSPECT BATTERY VOLTAGE

- a. Measure the battery voltage.

Standard voltage

11 to 14 V

If voltage is below 11 V, recharge or replace the battery.

DTC CHECK / CLEAR

DTC CHECK / CLEAR

1. CHECK DTC

- a. Connect the Techstream to the DLC3.
- b. Turn the ignition switch to ON.
- c. Turn the Techstream on.
- d. Enter the following menus: Body Electrical / Rear Left Door or Rear Right Door / DTC.
- e. Check for DTCs and then write them down.

HINT:

Refer to the Techstream operator's manual for further details.

- f. Confirm the details of the DTCs.

2. CLEAR DTC

- a. Connect the Techstream to the DLC3.
- b. Turn the ignition switch to ON.
- c. Turn the Techstream on.
- d. Enter the following menus: Body Electrical / Rear Left Door or Rear Right Door / DTC / Clear.

HINT:

Refer to the Techstream operator's manual for further details.

- e. Clear the DTCs by following the directions on the Techstream screen.

DATA LIST / ACTIVE TEST

DATA LIST / ACTIVE TEST

1. DATA LIST

HINT:

Using the Techstream to read the Data List allows the values or states of switches, sensors, actuators and other items to be read without removing any parts. This non-intrusive inspection can be very useful because intermittent conditions or signals may be discovered before parts or wiring is disturbed. Reading the Data List information early in troubleshooting is one way to save diagnostic time.

NOTE: In the table below, the values listed under "Normal Condition" are reference values. Do not depend solely on these reference values when deciding whether a part is faulty or not.

- a. Connect the Techstream to the DLC3.
- b. Turn the ignition switch to ON.
- c. Turn the Techstream on.
- d. Enter the following menus: Body Electrical / Rear Left Door / Data List / All Data.
- e. Read the Data List according to the display on the Techstream.

REAR LEFT DOOR (POWER SLIDE DOOR ECU LH)

Tester Display	Measurement Item/Range	Normal Condition	Diagnosis Note
Pawl Switch	Power slide door lock pawl position switch signal / ON or OFF	ON: Slide door open -> half latched or slide door half latched --> fully closed OFF: Slide door fully open, closed or half latched	-
Half Switch	Power slide door lock half latch switch signal / ON or OFF	ON: Slide door open -> just before half latched OFF: Slide door half latched --> fully closed	-
		ON: Slide	

Full Switch	Power slide door lock full latch switch signal / ON or OFF	door open - -> just before fully closed OFF: Slide door fully closed	-
PSD Touch Sensor	Power slide door touch sensor signal / OFF, ON or Open	ON: Power slide door touch sensor pressed OFF: Power slide door touch sensor not pressed Open: Power slide door touch sensor open	-
Handle Switch1	Handle operation detect switch signal / ON or OFF	ON: Slide door inside handle pulled to close side or outside handle pulled OFF: Slide door inside handle pulled to open side or outside handle not pulled	-
	Handle	ON: Slide door inside handle pulled to open side or outside	

Handle Switch2	operation detect switch signal / ON or OFF	handle pulled OFF: Slide door inside handle pulled to close side or outside handle not pulled	-
PSD Main Switch	Power slide door main switch signal / ON or OFF	ON: Power slide door main switch not pressed and fuel lid closed OFF: Power slide door main switch pressed or fuel lid open	-
Power Slide Door Control Switch	Power slide door control switch / ON or OFF	ON: Power slide door control switch pushed OFF: Power slide door control switch not pushed	-
Child Protection Switch	Child protection switch / ON or OFF	ON: Child protection switch on position OFF: Child protection switch off position	-
	Status of IG /	ON: Ignition switch ON	

IG SW	ON or OFF	OFF: Ignition switch off or ACC	-
Side Lifter*1	Side lifter switch signal / ON or OFF	ON: Side lifter is not at its original position (Operation is disabled) OFF: Side lifter is at its original position (Operation is enabled)	-
Door Sensor 1	Power slide door motor pulse sensor / ON or OFF	ON and OFF displayed alternately	-
Door Sensor 2	Power slide door motor pulse sensor / ON or OFF	ON and OFF displayed alternately	-
Power Voltage	Value of power voltage / min=0 V, max=25.5 V	11 to 14 V	-
Door Position	Slide door position / 0 to 65535 Pulse	4000 Pulse: Slide door fully closed Approx. 4250 Pulse: Slide door fully open	-
	Power slide	0.0s: Power slide door control switch pressed to operate	

PSD SW Operation	door control switch operation (satellite switch) / 0.0s or 0.8s	power slide door 0.8s: Power slide door control switch pressed for 0.8 seconds to operate power slide door	-
PSD Buzz In Use	Warning buzzer volume during power slide door operation / ON or OFF	ON: Warning buzzer that notifies power slide door is operating sounds OFF: Warning buzzer that notifies power slide door is operating does not sound	-
		Function to operate wireless power slide door switch 1 Oper: Transmitter switch pressed once to operate power slide door if door is already unlocked 2 Oper: Transmitter	

Wireless PSD SW Operation	Wireless power slide door switch operation / 1 Oper, 2 Oper, long, 2/OM, L/OM or OFF	switch pressed twice to operate power slide door if door is already unlocked long: Transmitter switch pressed for 0.8 seconds to operate power slide door if door is already unlocked 2/OM: Transmitter switch pressed twice to unlock and operate power slide door L/OM: Transmitter switch pressed for 0.8 seconds to unlock and operate power slide door OFF: Transmitter switch operation disabled	-
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*1: w/ Auto Access Seat System

- f. Enter the following menus: Body Electrical / Rear Right Door / Data List / All Data.

REAR RIGHT DOOR (POWER SLIDE DOOR ECU RH)

Tester Display	Measurement Item/Range	Normal Condition	Diagnosis Note
Pawl Switch	Power slide door lock pawl position switch signal / ON or OFF	ON: Slide door open - -> half latched or slide door half latched --> fully closed OFF: Slide door fully open, closed or half latched	-
Half Switch	Power slide door lock half latch switch signal / ON or OFF	ON: Slide door open - -> just before half latched OFF: Slide door half latched --> fully closed	-
Full Switch	Power slide door lock full latch switch signal / ON or OFF	Full Switch ON: Slide door open - -> just before fully closed OFF: Slide door fully closed	-
PSD Touch	Power slide door touch sensor signal /	ON: Power slide door touch sensor pressed OFF: Power slide door touch	-

Sensor	OFF, ON or Open	sensor not pressed Open: Power slide door touch sensor open	
Handle Switch1	Handle operation detect switch signal / ON or OFF	ON: Slide door inside handle pulled to close side or outside handle pulled OFF: Slide door inside handle pulled to open side or outside handle not pulled	-
Handle Switch2	Handle operation detect switch signal / ON or OFF	ON: Slide door inside handle pulled to open side or outside handle pulled OFF: Slide door inside handle pulled to close side or outside handle not pulled	-
PSD	Power slide door main	ON: Power slide door main switch not pressed and fuel lid closed	

Main Switch	switch signal / ON or OFF	OFF: Power slide door main switch pressed or fuel lid open	-
Power Slide Door Control Switch	Power slide door control switch / ON or OFF	ON: Power slide door control switch pushed OFF: Power slide door control switch not pushed	-
Child Protection Switch	Child protection switch / ON or OFF	ON: Child protection switch on position OFF: Child protection switch off position	-
IG SW	Status of IG / ON or OFF	ON: Ignition switch ON OFF: Ignition switch off or ACC	-
Side Lifter*1	Side lifter switch signal / ON or OFF	ON: Side lifter is not at its original position (Operation is disabled) OFF: Side lifter is at its original position (Operation is enabled)	-

Door Sensor 1	Power slide door motor pulse sensor / ON or OFF	ON and OFF displayed alternately	-
Door Sensor 2	Power slide door motor pulse sensor / ON or OFF	ON and OFF displayed alternately	-
Power Voltage	Value of power voltage / min=0 V, max=25.5 V	11 to 14 V	-
Door Position	Slide door position / 0 to 65535 Pulse	4000 Pulse: Slide door fully closed Approx. 4250 Pulse: Slide door fully open	-
PSD SW Operation	Power slide door control switch operation (satellite switch) / 0.0s or 0.8s	0.0s: Power slide door control switch pressed to operate power slide door 0.8s: Power slide door control switch pressed for 0.8 seconds to operate power slide door	-
		ON: Warning buzzer that notifies power slide	

PSD Buzz In Use	Warning buzzer volume during power slide door operation / ON or OFF	door is operating sounds OFF: Warning buzzer that notifies power slide door is operating does not sound	-
Wireless PSD SW Operation	Wireless power slide door switch operation / 1 Oper, 2 Oper, long, 2/OM, L/OM or OFF	Function to operate wireless power slide door switch 1 Oper: Transmitter switch pressed once to operate power slide door if door is already unlocked 2 Oper: Transmitter switch pressed twice to operate power slide door if door is already unlocked long: Transmitter switch pressed for 0.8 seconds to operate power slide door if	-

		door is already unlocked 2/OM: Transmitter switch pressed twice to unlock and operate power slide door L/OM: Transmitter switch pressed for 0.8 seconds to unlock and operate power slide door OFF: Transmitter switch operation disabled	
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*1: w/ Auto Access Seat System

- g. Enter the following menus: Body Electrical / Main Body / Data List / All Data.

MAIN BODY (MAIN BODY ECU)

Tester Display	Measurement Item/Range	Normal Condition	Diagnosis Note
Rear Right Slide Door Switch	Power slide door control switch / ON or OFF	ON: Power slide door control switch pushed OFF: Power slide door control switch not pushed	-
		ON:	

Rear Left Slide Door Switch	Power slide door control switch / ON or OFF	Power slide door control switch pushed OFF: Power slide door control switch not pushed	-
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2. ACTIVE TEST

HINT:

Using the Techstream to perform Active Tests allows relays, VSVs, actuators and other items to be operated without removing any parts. This non-intrusive functional inspection can be very useful because intermittent operation may be discovered before parts or wiring is disturbed. Performing Active Tests early in troubleshooting is one way to save diagnostic time. Data List information can be displayed while performing Active Tests.

- Connect the Techstream to the DLC3.
- Turn the ignition switch to ON.
- Turn the Techstream on.
- Enter the following menus: Body Electrical / Rear Left Door / Active Test.
- Perform the Active Test according to the display on the Techstream.

REAR LEFT DOOR (POWER SLIDE DOOR ECU LH)

Tester Display	Test Part	Control Range	Diagnosis Note
PSD Motor	Power slide door motor	OFF / Forward / Reverse	Clutch is off while power slide door motor is operating
PSD Clutch	Power slide door control clutch	ON / OFF	Power slide door motor is off when clutch is on
PSD	Power slide door	ON /	-

Buzzer	warning buzzer	OFF	
PSD Open	Power slide door open	ON / OFF	-
PSD Open Signal	Power slide door fully opened command	ON / OFF	-

f. Enter the following menus: Body Electrical / Rear Right Door / Active Test.

REAR RIGHT DOOR (POWER SLIDE DOOR ECU RH)

Tester Display	Test Part	Control Range	Diagnosis Note
PSD Motor	Power slide door motor	OFF / Forward / Reverse	Clutch is off while power slide door motor is operating
PSD Clutch	Power slide door control clutch	ON / OFF	Power slide door motor is off when clutch is on
PSD Buzzer	Power slide door warning buzzer	ON / OFF	-
PSD Open	Power slide door open	ON / OFF	-
PSD Open Signal	Power slide door fully opened command	ON / OFF	-

DIAGNOSTIC TROUBLE CODE CHART

DIAGNOSTIC TROUBLE CODE CHART

HINT:

If a trouble code is displayed during the DTC check, inspect the trouble areas listed for that code. For details of the code, refer to the following information.

POWER SLIDE DOOR SYSTEM

DTC Code	Detection Item	Trouble Area	See
B2223	Power Slide Door Pulse Sensor Malfunction on Rear Right Door	1. ECU-B fuse 2. Power slide door lock assembly RH (slide door lock motor RH) 3. Rear door wire RH 4. Wire harness or connector 5. Slide door motor unit RH (Power slide door ECU RH)	Refer to <u>DTC B2223: Power Slide Door Pulse Sensor Malfunction on Rear Right Door</u>
B2224	Power Slide Door Pulse Sensor Malfunction on Rear Left Door	1. ECU-B fuse 2. Power slide door lock assembly LH (slide door lock motor LH) 3. Rear door wire LH 4. Wire harness or connector 5. Slide door motor unit LH (Power slide door ECU LH)	Refer to <u>DTC B2224: Power Slide Door Pulse Sensor Malfunction on Rear Left Door</u>