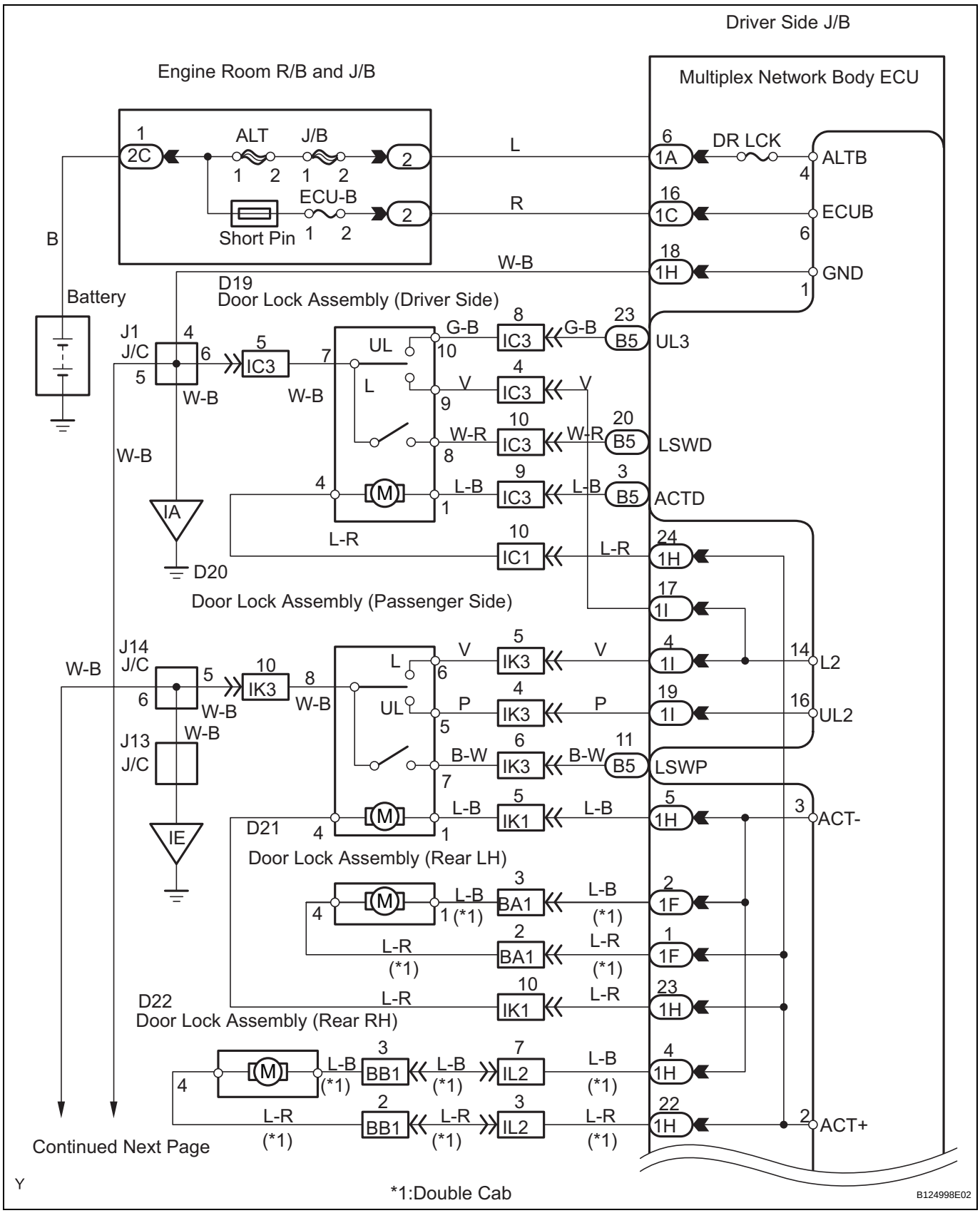
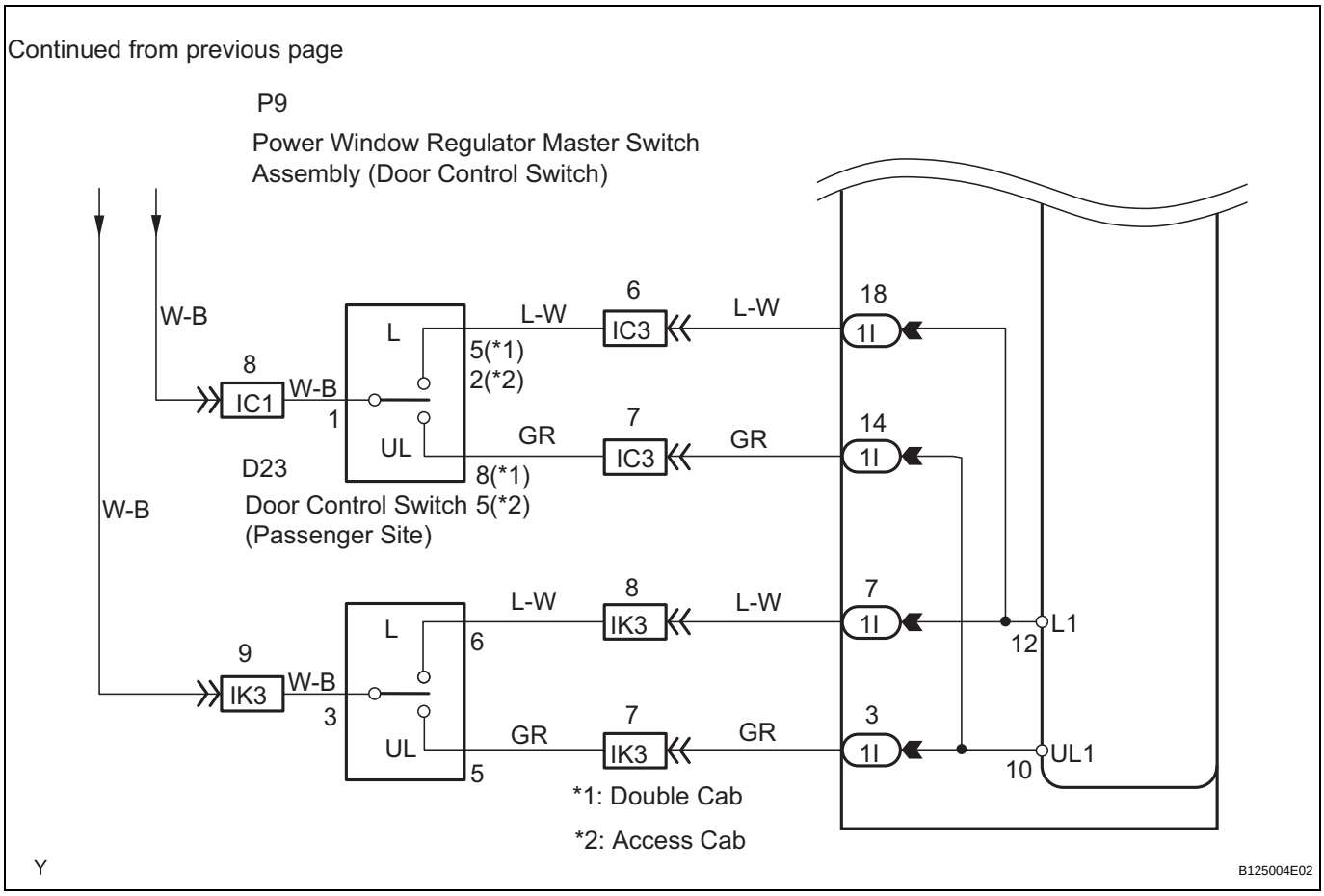
All Doors cannot be Locked / Unlocked Simultaneously

DESCRIPTION

The multiplex network body ECU activates the door lock motors with switch signals from the master switch, door control switch and driver/passenger side door key cylinder.

WIRING DIAGRAM





1	INSPECT ALL DOORS LOCK/UNLOCK OPERATION

All the doors can be locked/unlocked simultaneously using the following items:

- Door control switch on the master switch (switch operation)
- Door control switch on the front passenger side (switch operation)
- Door key cylinder linked with driver and passenger side door lock (key operation)

If all the doors cannot be locked/unlocked simultaneously, proceed to the next step according to the malfunctioning part shown in the table below.

Result:

Malfunctioning Part	Proceed to
Driver side doors	A
Passenger side doors	B
All items are malfunctioning	C

B	**Go to step 3**
C	**Go to step 14**

DL

A

2 INSPECT DRIVER SIDE DOORS LOCK/UNLOCK OPERATION

Malfunctioning Part	Proceed to
Door control switch on master switch	A
Driver side door key cylinder	B
Door control switch on master switch and driver side door key cylinder	C

A → **Go to step 4**

B → **Go to step 6**

C → **Go to step 9**

3 INSPECT PASSENGER SIDE DOORS LOCK/UNLOCK OPERATION

Malfunctioning Part	Proceed to
Door control switch on passenger side switch	A
Passenger side door key cylinder	B
Door control switch on passenger side and passenger side door key cylinder	C

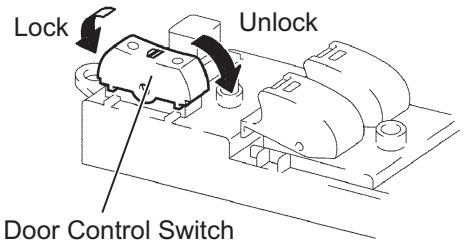
A → **Go to step 16**

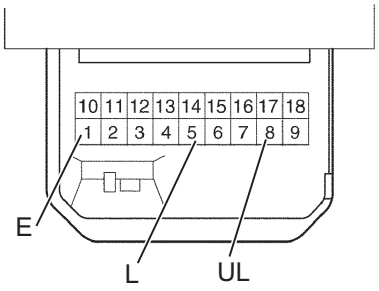
B → **Go to step 18**

C → **Go to step 21**

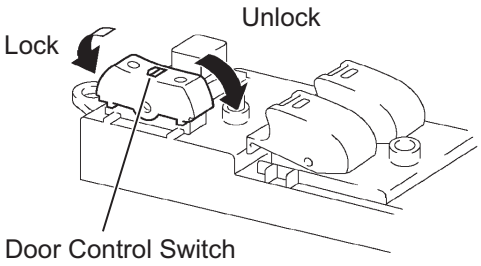
4	**INSPECT POWER WINDOW REGULATOR MASTER SWITCH ASSEMBLY (DOOR CONTROL SWITCH)**

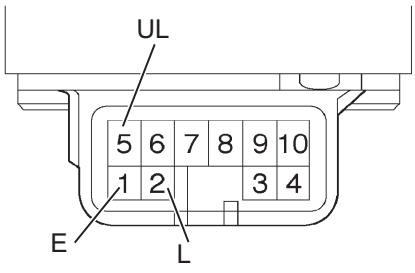
Component Side (Double Cab):





Component Side (Access Cab):





Y

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(a) Remove the power window regulator master switch assembly.

(b) Measure the resistance of the door control switch.

Standard (Double cab)

Tester Connection	Switch Condition	Specified Condition
1 (E) - 5 (L)	Lock	Below 1 Ω
1 (E) - 5 (L) 1 (E) - 8 (UL)	OFF	10 kΩ or higher
1 (E) - 8 (UL)	Unlock	Below 1 Ω

Standard (Access cab)

Tester Connection	Switch Condition	Specified Condition
1 (E) - 2 (L)	Lock	Below 1 Ω
1 (E) - 2 (L) 1 (E) - 5 (UL)	OFF	10 kΩ or higher
1 (E) - 5 (UL)	Unlock	Below 1 Ω

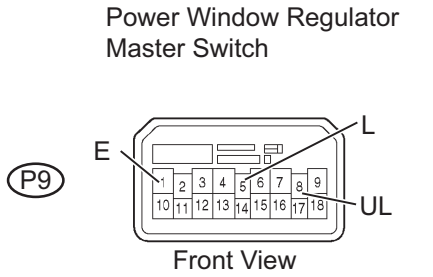
(c) Reinstall the power window regulator master switch assembly.

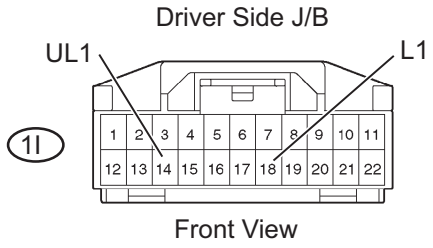
NG → **REPLACE POWER WINDOW REGULATOR MASTER SWITCH ASSEMBLY**

OK

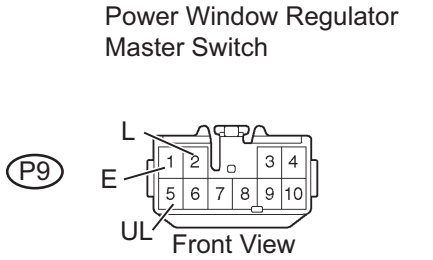
5	CHECK HARNESS AND CONNECTOR (MASTER SWITCH (SWITCH) - DRIVER SIDE J/B AND BODY GROUND)

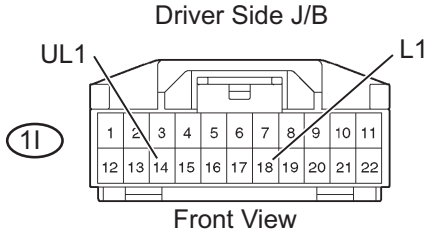
Wire Harness Side (Double Cab):





Wire Harness Side (Access Cab):





Y

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(a) Disconnect the P9 power window regulator master switch connector.
(b) Disconnect the 1I driver side J/B connector.
(c) Measure the resistance.

Standard (Double cab)

Tester Connection	Specified Condition
P9-5 (L) - 1I-18 (L1)	Below 1 Ω
P9-8 (UL) - 1I-14 (UL1)	Below 1 Ω
P9-1 (E) - Body ground	Below 1 Ω
P9-5 (L) or 1I-18 (L1) - Body ground	10 kΩ or higher
P9-8 (UL) or 1I-14 (UL1) - Body ground	10 kΩ or higher

Standard (Access cab)

Tester Connection	Specified Condition
P9-2 (L) - 1I-18 (L1)	Below 1 Ω
P9-5 (UL) - 1I-14 (UL1)	Below 1 Ω
P9-1 (E) - Body ground	Below 1 Ω
P9-2 (L) or 1I-18 (L1) - Body ground	10 kΩ or higher
P9-5 (UL) or 1I-14 (UL1) - Body ground	10 kΩ or higher

(d) Reconnect the power window regulator master switch connector.
(e) Reconnect the driver side J/B connector.

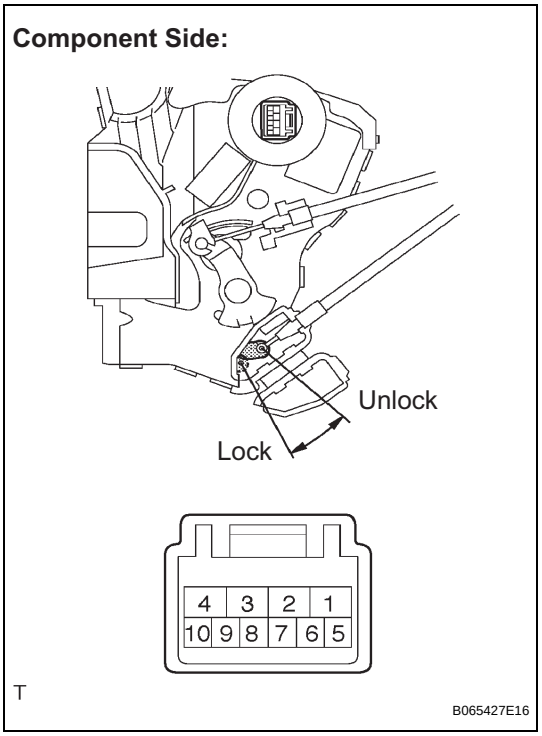
NG → **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK

REPLACE DRIVER SIDE JUNCTION BLOCK

6 INSPECT FRONT DOOR LOCK ASSEMBLY LH (DOOR LOCK MOTOR)

Component Side:



(a) Apply battery voltage to the door lock and check operation of the door lock motor.
NOTICE:
Do not apply battery voltage to any terminals except terminals 1 and 4.
OK

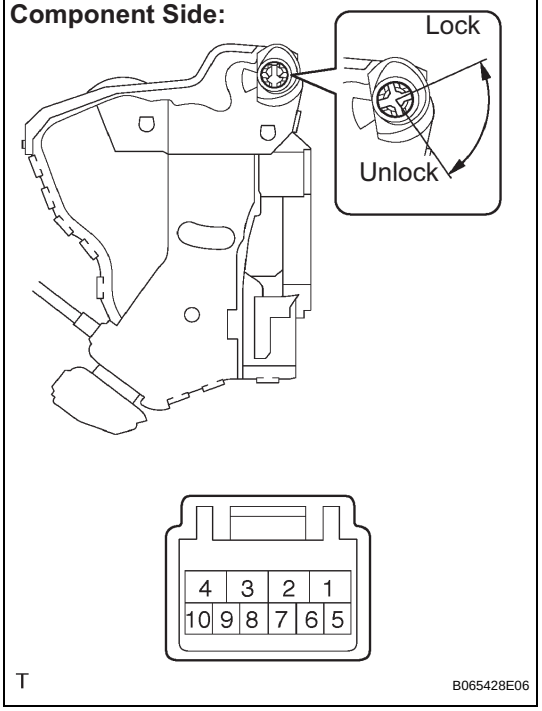
Terminal No	Specified Condition
Battery positive (+) → Terminal 4 Battery negative (-) → Terminal 1	Lock
Battery positive (+) → Terminal 1 Battery negative (-) → Terminal 4	Unlock

NG → **REPLACE FRONT DOOR LOCK ASSEMBLY LH**

OK

7 INSPECT FRONT DOOR LOCK ASSEMBLY LH (DOOR LOCK AND UNLOCK SWITCH AND POSITION SWITCH)

Component Side:



(a) Measure the resistance of the door lock and unlock switch and position switch.
Standard (Door lock and unlock switch)

Tester Connection	Door Lock Condition	Specified Condition
7 - 9	Lock	Below 1 Ω
7 - 9, 7 - 10	OFF	10 kΩ or higher
7 - 10	Unlock	Below 1 Ω

Standard (Position switch)

Tester Connection	Door Lock Condition	Specified Condition
7 - 8	Lock	10 kΩ or higher
7 - 8	Unlock	Below 1 Ω

NG → **REPLACE FRONT DOOR LOCK ASSEMBLY LH**

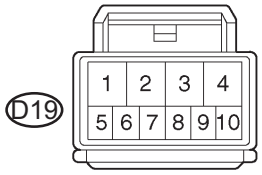
DL

OK

8	**CHECK HARNESS AND CONNECTOR (FRONT DOOR LOCK LH - ECU, DRIVER SIDE J/B AND BODY GROUND)**

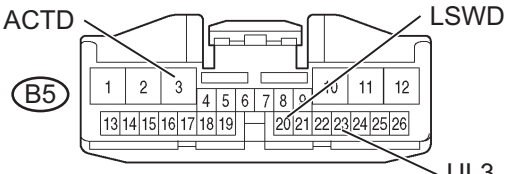
Wire Harness Side:

Front Door Lock Assembly LH



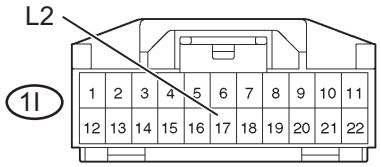
Front View

Multiplex Network Body ECU

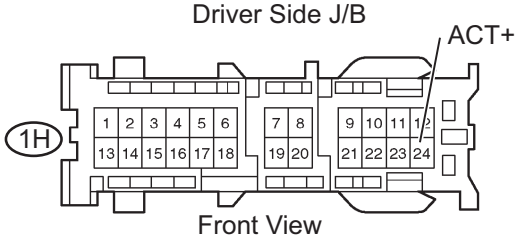


Front View

Driver Side J/B



Driver Side J/B



Front View

T

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(a) Disconnect the D19 front door lock connector.
(b) Disconnect the B5 multiplex network body ECU connector.
(c) Disconnect the 1H and 1I driver side J/B connectors.
(d) Measure the resistance.

Standard

Tester Connection	Specified Condition
D19-4 - 1H-24 (ACT+)	Below 1 Ω
D19-1 - B5-3 (ACTD)	Below 1 Ω
D19-9 - 1I-17 (L2)	Below 1 Ω
D19-10 - B5-23 (UL3)	Below 1 Ω
D19-8 - B5-20 (LSWD)	Below 1 Ω
D19-7 - Body ground	Below 1 Ω
D19-4 or 1H-24 (ACT+) - Body ground	10 kΩ or higher
D19-1 or B5-3 (ACTD) - Body ground	10 kΩ or higher
D19-9 or 1I-17 (L2) - Body ground	10 kΩ or higher
D19-10 or B5-23 (UL3) - Body ground	10 kΩ or higher
D19-8 or B5-20 (LSWD) - Body ground	10 kΩ or higher

(e) Reconnect the front door lock connector.
(f) Reconnect the multiplex network body ECU connector.
(g) Reconnect the driver side J/B connectors.

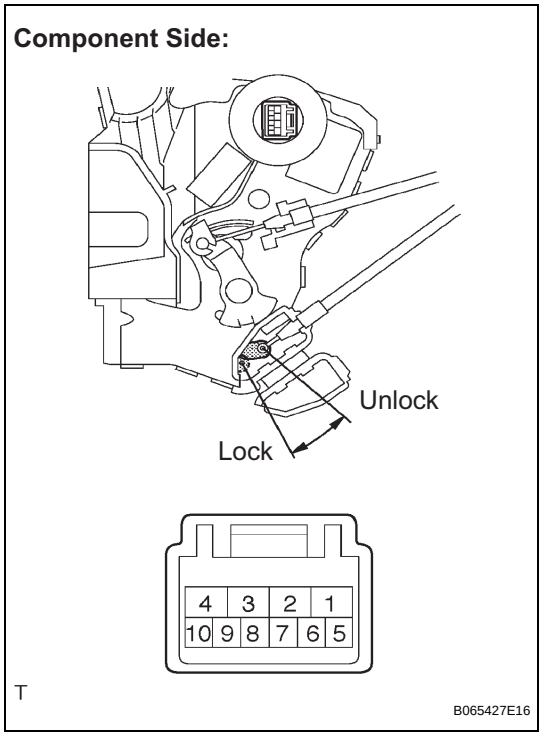
NG → **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK

REPLACE DRIVER SIDE JUNCTION BLOCK (MULTIPLEX NETWORK BODY ECU)

DL

9 INSPECT FRONT DOOR LOCK ASSEMBLY LH (DOOR LOCK MOTOR)



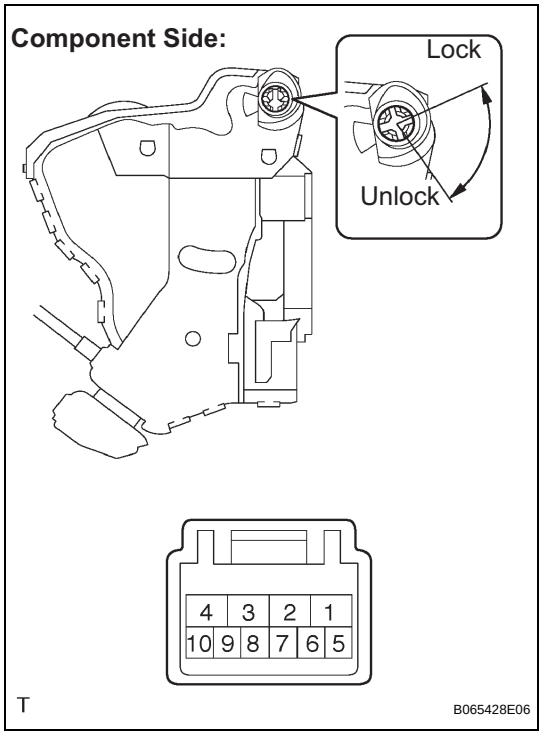
(a) Apply battery voltage to the door lock and check operation of the door lock motor.
NOTICE:
Do not apply battery voltage to any terminals except terminals 1 and 4
OK

Terminal No	Specified Condition
Battery positive (+) → Terminal 4 Battery negative (-) → Terminal 1	Lock
Battery positive (+) → Terminal 1 Battery negative (-) → Terminal 4	Unlock

NG → **REPLACE FRONT DOOR LOCK ASSEMBLY LH**

OK

10 INSPECT FRONT DOOR LOCK ASSEMBLY LH (DOOR LOCK AND UNLOCK SWITCH AND POSITION SWITCH)



(a) Measure the resistance of the door lock and unlock switch and position switch.
Standard (Door lock and unlock switch)

Tester Connection	Door Lock Condition	Specified Condition
7 - 9	Lock	Below 1 Ω
7 - 9 7 - 10	OFF	10 kΩ or higher
7 - 10	Unlock	Below 1 Ω

Standard (Position switch)

Tester Connection	Door Lock Condition	Specified Condition
7 - 8	Lock	10 kΩ or higher
7 - 8	Unlock	Below 1 Ω

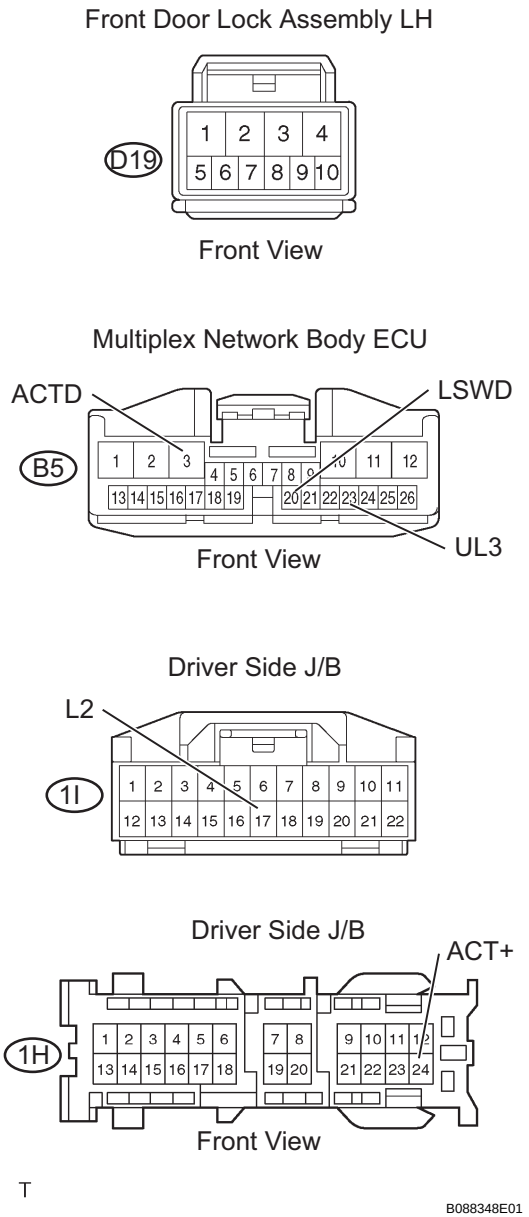
NG → **REPLACE FRONT DOOR LOCK ASSEMBLY LH**

DL

OK

11	CHECK HARNESS AND CONNECTOR (FRONT DOOR LOCK LH - ECU, DRIVER SIDE J/B AND BODY GROUND)

Wire Harness Side:



(a) Disconnect the D19 front door lock connector.
(b) Disconnect the B5 multiplex network body ECU connector.
(c) Disconnect the 1H and 1I driver side J/B connectors.
(d) Measure the resistance of the wire harness side connectors.

Standard

Tester Connection	Specified Condition
D19-4 - 1H-24 (ACT+)	Below 1 Ω
D19-1 - B5-3 (ACTD)	Below 1 Ω
D19-9 - 1I-17 (L2)	Below 1 Ω
D19-10 - B5-23 (UL3)	Below 1 Ω
D19-8 - B5-20 (LSWD)	Below 1 Ω
D19-7 - Body ground	Below 1 Ω
D19-4 or 1H-24 (ACT+) - Body ground	10 kΩ or higher
D19-1 or B5-3 (ACTD) - Body ground	10 kΩ or higher
D19-9 or 1I-17 (L2) - Body ground	10 kΩ or higher
D19-10 or B5-23 (UL3) - Body ground	10 kΩ or higher
D19-8 or B5-20 (LSWD) - Body ground	10 kΩ or higher

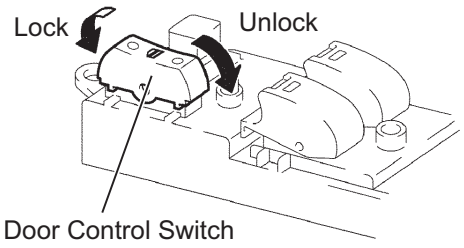
(e) Reconnect the front door lock connector.
(f) Reconnect the multiplex network body ECU connector.
(g) Reconnect the driver side J/B connectors.

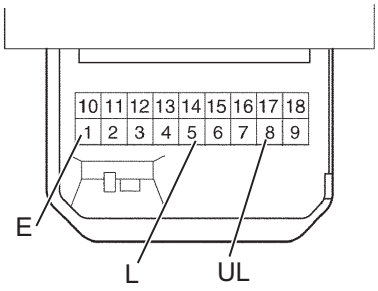
NG → **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK

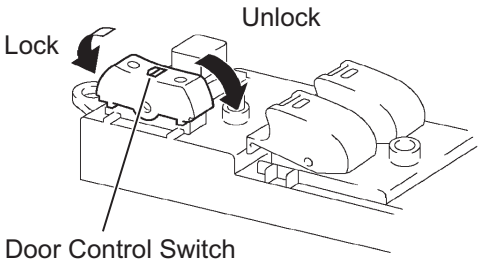
12	**INSPECT POWER WINDOW REGULATOR MASTER SWITCH ASSEMBLY (DOOR CONTROL SWITCH)**

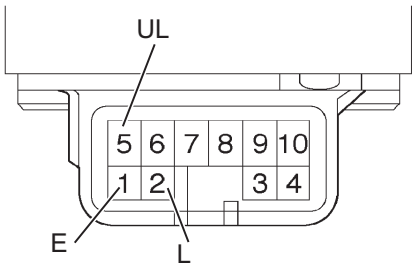
Component Side (Double Cab):





Component Side (Access Cab):





Y

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OK

(a) Remove the power window regulator master switch assembly.

(b) Measure the resistance of the door control switch.

Standard (Double cab)

Tester Connection	Switch Condition	Specified Condition
1 (E) - 5 (L)	Lock	Below 1 Ω
1 (E) - 5 (L) 1 (E) - 8 (UL)	OFF	10 kΩ or higher
1 (E) - 8 (UL)	Unlock	Below 1 Ω

Standard (Access cab)

Tester Connection	Switch Condition	Specified Condition
1 (E) - 2 (L)	Lock	Below 1 Ω
1 (E) - 2 (L) 1 (E) - 5 (UL)	OFF	10 kΩ or higher
1 (E) - 5 (UL)	Unlock	Below 1 Ω

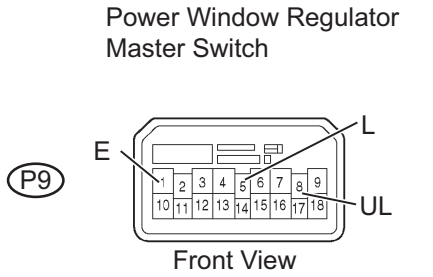
(c) Reinstall the power window regulator master switch assembly.

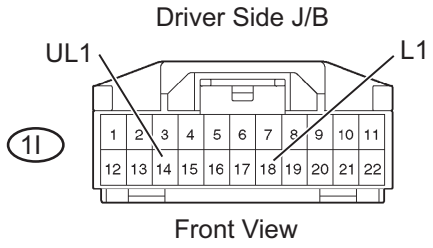
NG → **REPLACE POWER WINDOW REGULATOR MASTER SWITCH ASSEMBLY**

DL

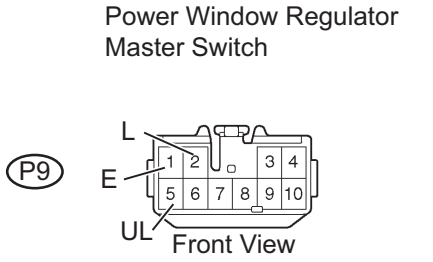
13	CHECK HARNESS AND CONNECTOR (MASTER SWITCH (SWITCH) - DRIVER SIDE J/B AND BODY GROUND)

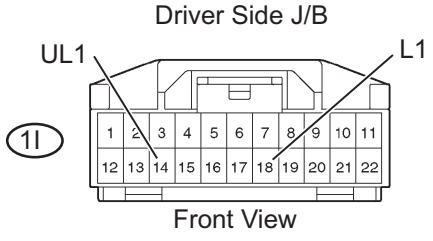
Wire Harness Side (Double Cab):





Wire Harness Side (Access Cab):





Y

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(a) Disconnect the P9 power window regulator master switch connector.
(b) Disconnect the 1I driver side J/B connector.
(c) Measure the resistance.

Standard (Double cab)

Tester Connection	Specified Condition
P9-5 (L) - 1I-18 (L1)	Below 1 Ω
P9-8 (UL) - 1I-14 (UL1)	Below 1 Ω
P9-1 (E) - Body ground	Below 1 Ω
P9-5 (L) or 1I-18 (L1) - Body ground	10 kΩ or higher
P9-8 (UL) or 1I-14 (UL1) - Body ground	10 kΩ or higher

Standard (Access cab)

Tester Connection	Specified Condition
P9-2 (L) - 1I-18 (L1)	Below 1 Ω
P9-5 (UL) - 1I-14 (UL1)	Below 1 Ω
P9-1 (E) - Body ground	Below 1 Ω
P9-2 (L) or 1I-18 (L1) - Body ground	10 kΩ or higher
P9-5 (UL) or 1I-14 (UL1) - Body ground	10 kΩ or higher

(d) Reconnect the power window regulator master switch connector.
(e) Reconnect the driver side J/B connector.

NG → **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK

REPLACE DRIVER SIDE JUNCTION BLOCK

14	INSPECT FUSE (DR LCK, J/B, ECU-B, ALT)

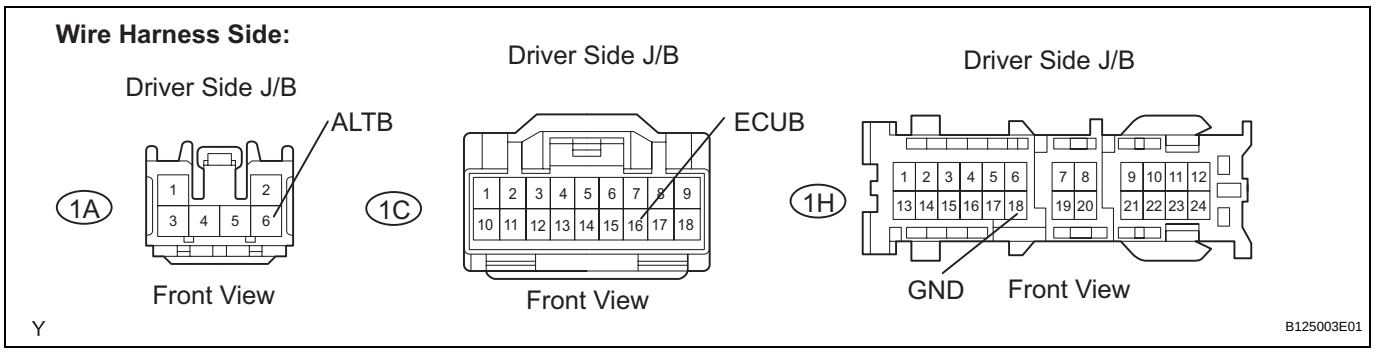
(a) Remove the DR LCK fuse from the driver side J/B.
(b) Remove the J/B, ECU-B and ALT fuses from the engine room R/B.
(c) Measure the resistance of the fuse.
Standard:
Below 1 Ω
(d) Reinstall the DR LCK fuse.
(e) Reinstall the J/B, ECU-B and ALT fuses.

NG → **REPLACE FUSE**

OK

15	CHECK HARNESS AND CONNECTOR (DRIVER SIDE J/B ASSEMBLY - BODY GROUND)

(a) Disconnect the 1A, 1C, and 1H driver side J/B connectors.
(b) Measure the voltage and resistance.



Standard

Tester Connection	Specified Condition
1A-6 (ALTB) - Body ground	10 to 14 V
1H-18 (GND) - Body ground	Below 1 Ω
1C-16 (ECUB) - Body ground	10 to 14 V

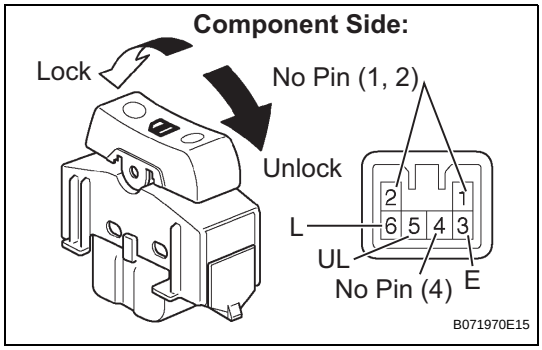
(c) Reconnect the driver side J/B connectors.

NG → **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK

REPLACE DRIVER SIDE JUNCTION BLOCK

16 INSPECT DOOR CONTROL SWITCH ASSEMBLY



(a) Remove the door control switch (passenger side).
(b) Measure the resistance of the door control switch.
Standard

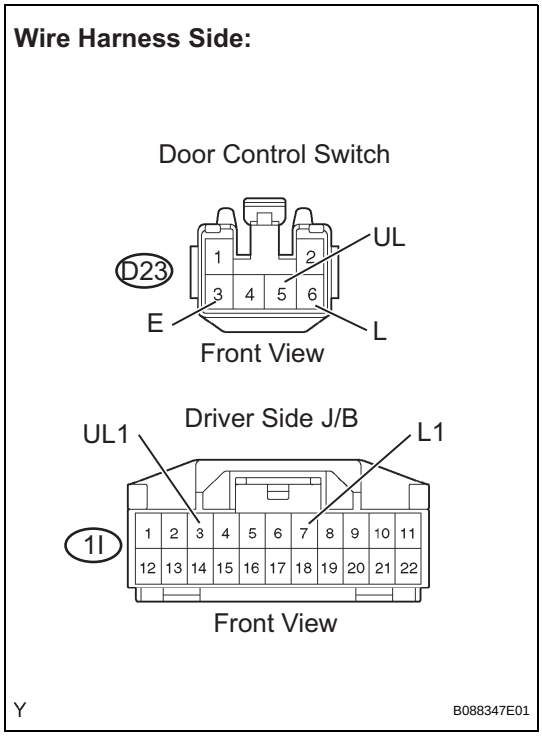
Tester Connection	Switch Condition	Specified Condition
3 (E) - 6 (L)	Lock	Below 1 Ω
3 (E) - 5 (UL) 3 (E) - 6 (L)	OFF	10 kΩ or higher
3 (E) - 5 (UL)	Unlock	Below 1 Ω

(c) Reinstall the door control switch.

NG → **REPLACE DOOR CONTROL SWITCH ASSEMBLY**

OK

17 CHECK HARNESS AND CONNECTOR (DOOR CONTROL SWITCH - DRIVER SIDE J/B AND BODY GROUND)



(a) Disconnect the D23 door control switch connector.
(b) Disconnect the 1I driver side J/B connector.
(c) Measure the resistance.
Standard

Tester Connection	Specified Condition
D23-6 (L) - 1I-7 (L1)	Below 1 Ω
D23-5 (UL) - 1I-3 (UL1)	Below 1 Ω
D23-3 (E) - Body ground	Below 1 Ω
D23-6 (L) or 1I-7 (L1) - Body ground	10 kΩ or higher
D23-5 (UL) or 1I-3 (UL1) - Body ground	10 kΩ or higher

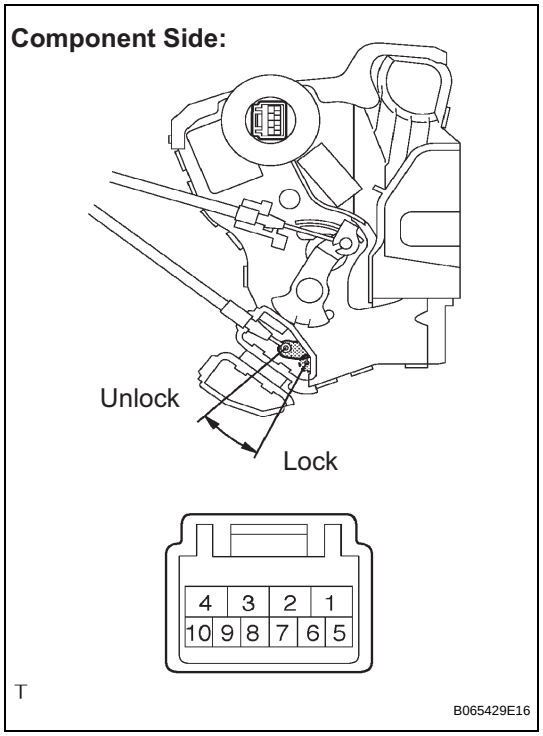
(d) Reconnect the door control switch connector.
(e) Reconnect the driver side J/B connector.

NG → **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK

REPLACE DRIVER SIDE JUNCTION BLOCK

18 INSPECT FRONT DOOR LOCK ASSEMBLY RH (DOOR LOCK MOTOR)



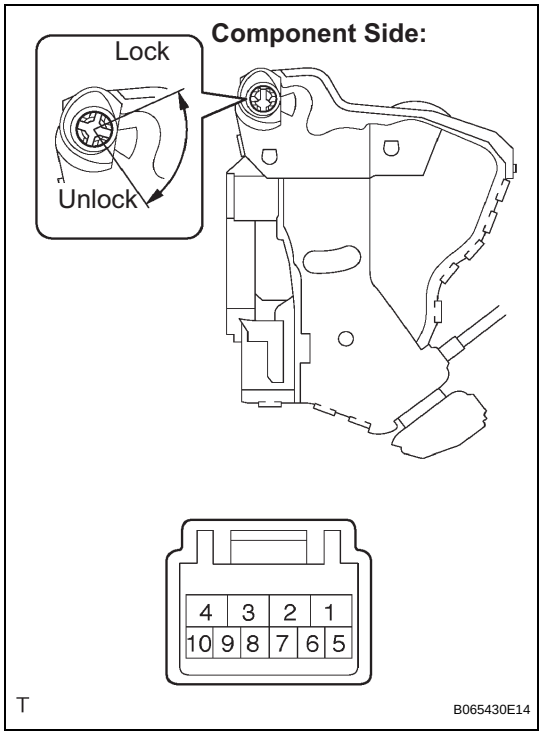
(a) Apply battery voltage to the door lock and check operation of the door lock motor.
NOTICE:
Do not apply battery voltage to any terminals except terminals 1 and 4.
OK

Terminal No	Specified Condition
Battery positive (+) → Terminal 4 Battery negative (-) → Terminal 1	Lock
Battery positive (+) → Terminal 1 Battery negative (-) → Terminal 4	Unlock

NG → **REPLACE FRONT DOOR LOCK ASSEMBLY RH**

OK

19 INSPECT FRONT DOOR LOWER FRAME BRACKET GARNISH RH (DOOR LOCK AND UNLOCK SWITCH AND POSITION SWITCH)



(a) Measure the resistance of the door lock and unlock switch and position switch.
Standard (Door lock and unlock switch)

Tester Connection	Door Lock Condition	Specified Condition
6 -8	Lock	Below 1 Ω
5 - 8, 6 - 8	OFF	10 kΩ or higher
5 - 8	Unlock	Below 1 Ω

Standard (Position switch)

Tester Connection	Door Lock Condition	Specified Condition
7 - 8	Lock	10 kΩ or higher
7 - 8	Unlock	Below 1 Ω

NG → **REPLACE FRONT DOOR LOCK ASSEMBLY RH**

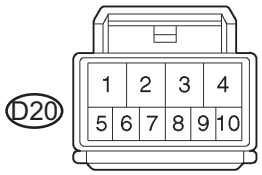
DL

OK

20	CHECK HARNESS AND CONNECTOR (FRONT DOOR LOCK RH - ECU, DRIVER SIDE J/B AND BODY GROUND)

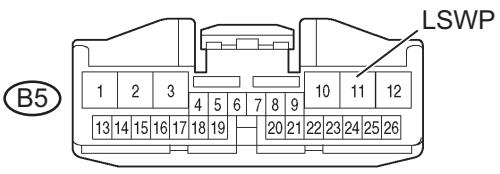
Wire Harness Side:

Front Door Lock Assembly RH



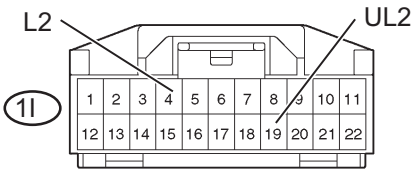
Front View

Multiplex Network Body ECU

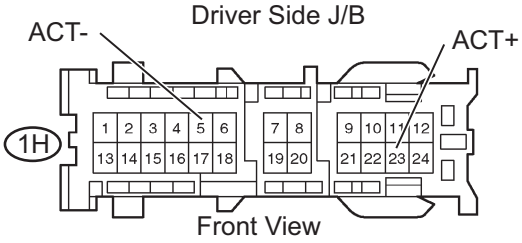


Front View

Driver Side J/B



Driver Side J/B



Front View

T

B088348E02

(a) Disconnect the D20 front door lock connector.
(b) Disconnect the B5 multiplex network body ECU connector.
(c) Disconnect the 1H and 1I driver side J/B connectors.
(d) Measure the resistance.

Standard

Tester Connection	Specified Condition
D20-4 - 1H-23 (ACT+)	Below 1 Ω
D20-1 - 1H-5 (ACT-)	Below 1 Ω
D20-6 - 1I-4 (L2)	Below 1 Ω
D20-5 - 1I-19 (UL2)	Below 1 Ω
D20-7 - B5-11 (LSWP)	Below 1 Ω
D20-8 - Body ground	Below 1 Ω
D20-4 or 1H-23 (ACT+) - Body ground	10 kΩ or higher
D20-1 or 1H-5 (ACT-) - Body ground	10 kΩ or higher
D20-6 or 1I-4 (L2) - Body ground	10 kΩ or higher
D20-5 or 1I-19 (UL2) - Body ground	10 kΩ or higher
D20-7 or B5-11 (LSWP) - Body ground	10 kΩ or higher

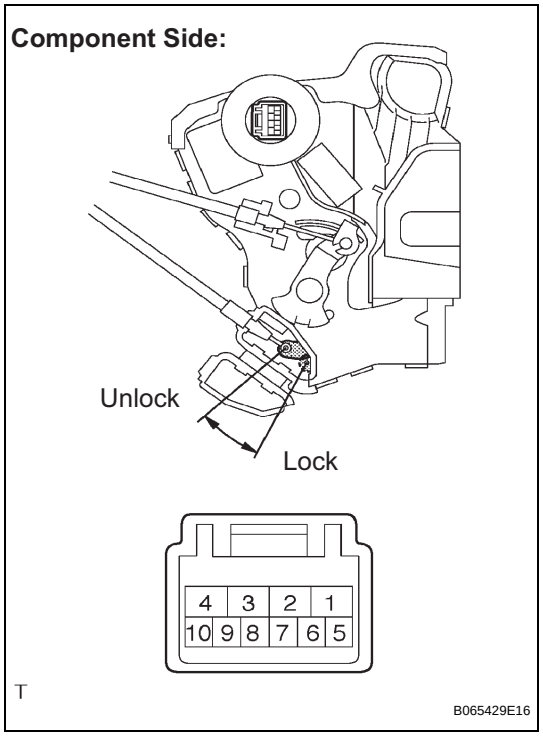
(e) Reconnect the front door lock connector.
(f) Reconnect the multiplex network body ECU connector.
(g) Reconnect the driver side J/B connectors.

NG → **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK

REPLACE DRIVER SIDE JUNCTION BLOCK (MULTIPLEX NETWORK BODY ECU)

21 INSPECT FRONT DOOR LOCK ASSEMBLY RH (DOOR LOCK MOTOR)



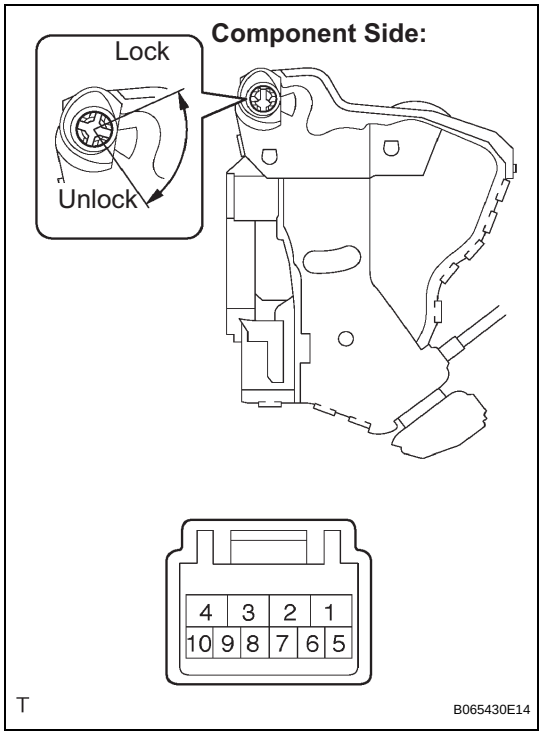
(a) Apply battery voltage to the door lock and check operation of the door lock motor.
NOTICE:
Do not apply battery voltage to any terminals except terminals 1 and 4.
OK

Terminal No	Specified Condition
Battery positive (+) → Terminal 4 Battery negative (-) → Terminal 1	Lock
Battery positive (+) → Terminal 1 Battery negative (-) → Terminal 4	Unlock

NG → **REPLACE FRONT DOOR LOCK ASSEMBLY RH**

OK

22 INSPECT FRONT DOOR LOCK ASSEMBLY RH (DOOR LOCK AND UNLOCK SWITCH AND POSITION SWITCH)



(a) Measure the resistance of the door lock and unlock switch and position switch.
Standard (Door lock and unlock switch)

Tester Connection	Door Lock Condition	Specified Condition
6 -8	Lock	Below 1 Ω
5 - 8, 6 - 8	OFF	10 kΩ or higher
5 - 8	Unlock	Below 1 Ω

Standard (Position switch)

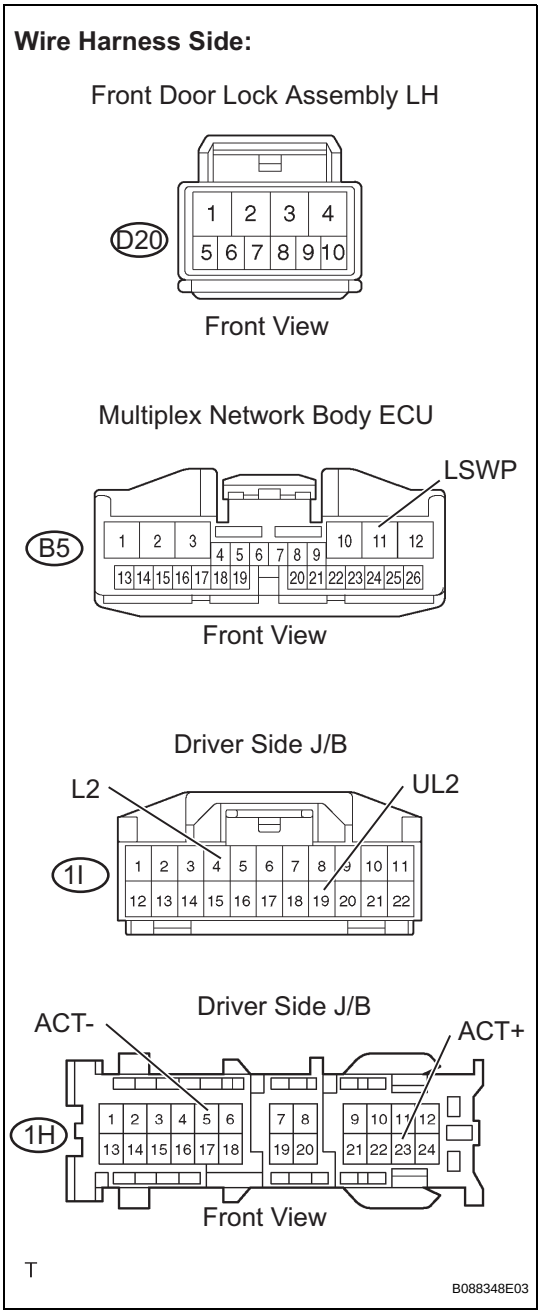
Tester Connection	Door Lock Condition	Specified Condition
7 - 8	Lock	10 kΩ or higher
7 - 8	Unlock	Below 1 Ω

NG → **REPLACE FRONT DOOR LOCK ASSEMBLY RH**

DL

OK

23	CHECK HARNESS AND CONNECTOR (FRONT DOOR LOCK RH - ECU, DRIVER SIDE J/B AND BODY GROUND)



(a) Disconnect the D20 front door lock connector.
(b) Disconnect the B5 multiplex network body ECU connector.
(c) Disconnect the 1H and 1I driver side J/B connectors.
(d) Measure the resistance.

Standard

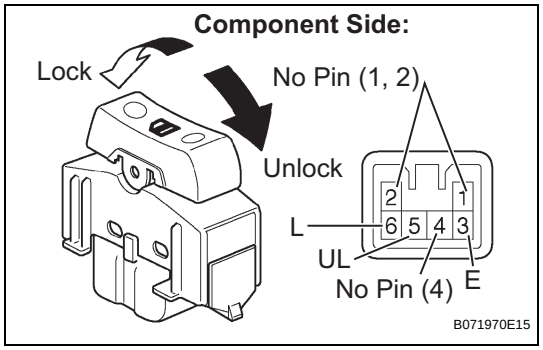
Tester Connection	Specified Condition
D20-4 - 1H-23 (ACT+)	Below 1 Ω
D20-1 - 1H-5 (ACT-)	Below 1 Ω
D20-6 - 1I-4 (L2)	Below 1 Ω
D20-5 - 1I-19 (UL2)	Below 1 Ω
D20-7 - B5-11 (LSWP)	Below 1 Ω
D20-8 - Body ground	Below 1 Ω
D20-4 or 1H-23 (ACT+) - Body ground	10 kΩ or higher
D20-1 or 1H-5 (ACT-) - Body ground	10 kΩ or higher
D20-6 or 1I-4 (L2) - Body ground	10 kΩ or higher
D20-5 or 1I-19 (UL2) - Body ground	10 kΩ or higher
D20-7 or B5-11 (LSWP) - Body ground	10 kΩ or higher

(e) Reconnect the front door lock connector.
(f) Reconnect the multiplex network body ECU connector.
(g) Reconnect the driver side J/B connectors.

NG → **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK

24 INSPECT DOOR CONTROL SWITCH ASSEMBLY



(a) Remove the door control switch (passenger side).
(b) Measure the resistance of the door control switch.
Standard

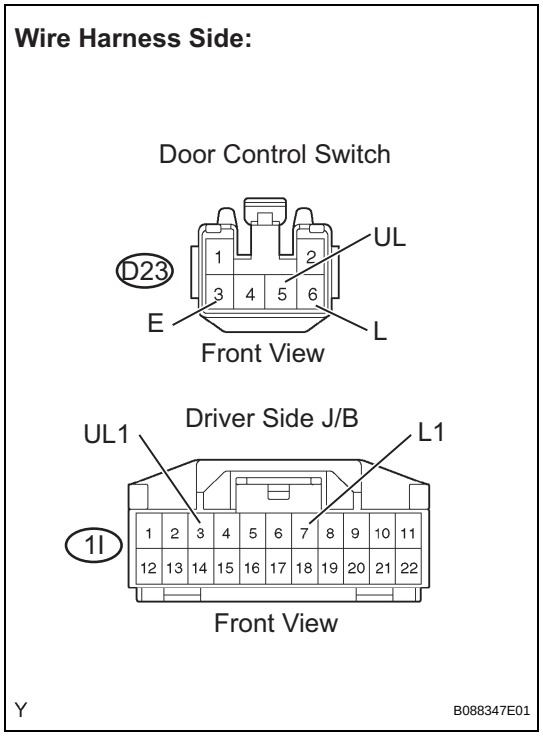
Tester Connection	Switch Condition	Specified Condition
3 (E) - 6 (L)	Lock	Below 1 Ω
3 (E) - 5 (UL) 3 (E) - 6 (L)	OFF	10 kΩ or higher
3 (E) - 5 (UL)	Unlock	Below 1 Ω

(c) Reinstall the door control switch.

NG → **REPLACE DOOR CONTROL SWITCH ASSEMBLY**

OK

25 CHECK HARNESS AND CONNECTOR (DOOR CONTROL SWITCH - DRIVER SIDE J/B AND BODY GROUND)



(a) Disconnect the D23 door control switch connector.
(b) Disconnect the 1I driver side J/B connector.
(c) Measure the resistance.
Standard

Tester Connection	Specified Condition
D23-6 (L) - 1I-7 (L1)	Below 1 Ω
D23-5 (UL) - 1I-3 (UL1)	Below 1 Ω
D23-3 (E) - Body ground	Below 1 Ω
D23-6 (L) or 1I-7 (L1) - Body ground	10 kΩ or higher
D23-5 (UL) or 1I-3 (UL1) - Body ground	10 kΩ or higher

(d) Reconnect the door control switch connector.
(e) Reconnect the driver side J/B connector.

NG → **REPAIR OR REPLACE HARNESS OR CONNECTOR**

OK

REPLACE DRIVER SIDE JUNCTION BLOCK