PROBLEM SYMPTOMS TABLE

HINT:
Inspect the fuse and relay before investigating the suspected areas shown in the table below.

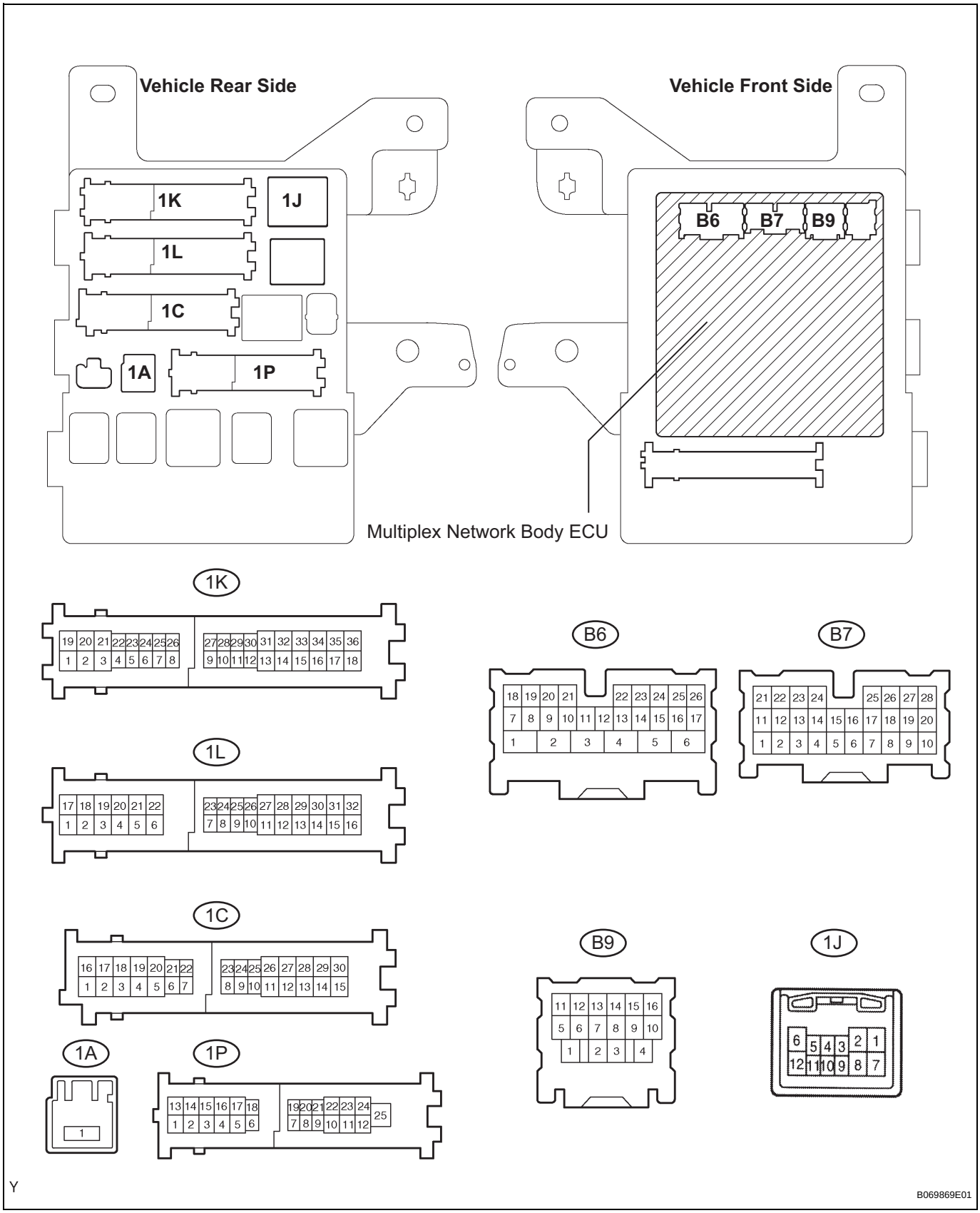
POWER DOOR LOCK CONTROL SYSTEM

Symptom	Suspected Area	See page
All doors cannot be locked/unlocked at once	1. DR/LCK fuse	DL-16
	2. ECU-B fuse	DL-16
	3. Power window regulator master switch assembly	DL-16
	4. Door control switch (Passenger side)	DL-16
	5. Front door lock assembly LH (Driver side)	DL-16
	6. Front door lock assembly RH (Passenger side)	DL-16
	7. Driver side J/B assembly (Multiplex network body ECU)	DL-16
	8. Wire harness	DL-16
Key lock-in prevention function does not work properly (Manual operation and operation interlocked with key are active)	1. Un-lock warning switch assembly	DL-27
	2. Front door courtesy light switch assembly (Driver side)	DL-27
	3. Driver side J/B assembly (Multiplex network body ECU)	DL-27
	4. Wire harness	DL-27
Only back door cannot be opened	1. Back door opener switch assembly	DL-31
	2. Back door lock w/ motor assembly	DL-31
	3. Power back door ECU	DL-31
	4. Driver side J/B assembly (Multiplex network body ECU)	DL-31
	5. Wire harness	DL-31

TERMINALS OF ECU

1. CHECK DRIVER SIDE J/B ASSEMBLY (MULTIPLEX NETWORK BODY ECU)

(a) Disconnect the 1C, 1J, 1L, 1K, 1P, B6, B7 and B9 J/B connectors.


Vehicle Rear Side
Vehicle Front Side
1K
1J
1L
1C
1A
1P
B6
B7
B9
Multiplex Network Body ECU
1K
1L
1C
1A
1P
B6
B7
B9
1J
Y
B069869E01

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

Standard

Symbols (Terminal No.)	Wiring Color	Terminal Description	Condition	Specified Condition
BECU (1L-7) - Body ground	W-L - Body ground	+B (BECU) power supply	Always	10 to 14 V
BECU (1C-24) - Body ground	W-L - Body ground	+B (BECU) power supply	Always	10 to 14 V
ALTB (1C-30) - Body ground	B - Body ground	+B (power system, generator system) power supply	Always	10 to 14 V
KSW (B6-21) - Body ground	L-B - Body ground	Key unlock warning switch input	No key in ignition key cylinder → Key inserted	10 kΩ or higher → Below 1 Ω
GND1 (1L-16) - Body ground	W-B - Body ground	Ground	Always	Below 1 Ω
GND2 (1K-17) - Body ground	W-B - Body ground	Ground	Always	Below 1 Ω
L1 (1J-3) - Body ground	R-Y - Body ground	Passenger side door control switch LOCK input	Passenger door control switch OFF → LOCK	10 kΩ or higher → Below 1 Ω
UL1 (1J-4) - Body ground	G - Body ground	Passenger side door control switch UNLOCK input	Passenger door control switch OFF → UNLOCK	10 kΩ or higher → Below 1 Ω
L1 (1K-25) - Body ground	R-Y - Body ground	Passenger side door control switch LOCK input	Passenger door control switch OFF → LOCK	10 kΩ or higher → Below 1 Ω
UL1 (1K-22) - Body ground	G - Body ground	Passenger side door control switch UNLOCK input	Passenger door control switch OFF → UNLOCK	10 kΩ or higher → Below 1 Ω
L2 (1K-26) - Body ground	LG - Body ground	Driver side door key-linked LOCK input	Driver side door key cylinder OFF → LOCK	10 kΩ or higher → Below 1 Ω
L2 (1J-5) - Body ground	LG - Body ground	Passenger side door key-linked LOCK input	Passenger side door key cylinder OFF → LOCK	10 kΩ or higher → Below 1 Ω
UL3 (B9-8) - Body ground	L - Body ground	Driver side door key-linked UNLOCK input	Driver side door key cylinder OFF → UNLOCK	10 kΩ or higher → Below 1 Ω
UL2 (B7-4) - Body ground	L-Y - Body ground	Passenger side door key-linked LOCK input	Passenger side door key cylinder OFF → UNLOCK	10 kΩ or higher → Below 1 Ω
DCTY (B9-14) - Body ground	R-Y - Body ground	Driver side door courtesy switch input	Driver door CLOSED → OPEN	10 kΩ or higher → Below 1 Ω
PCTY (B7-23) - Body ground	R-Y - Body ground	Passenger side door courtesy switch input	Passenger door CLOSED → OPEN	10 kΩ or higher → Below 1 Ω
LCTY (1P-19) - Body ground	GR - Body ground	Rear left door courtesy switch input	Rear left door CLOSED → OPEN	10 kΩ or higher → Below 1 Ω
RCTY (B9-16) - Body ground	R-W - Body ground	Rear right door courtesy switch input	Rear right door CLOSED → OPEN	10 kΩ or higher → Below 1 Ω
BCTY (B7-25) - Body ground	G-W - Body ground	Back door courtesy switch input	Back door CLOSED → OPEN	10 kΩ or higher → Below 1 Ω
BDSU (B7-3)*1 - Body ground	G-B - Body ground	Back door opener switch (outside handle switch) input	Back door opener switch OFF → ON	10 kΩ or higher → Below 1 Ω

HINT:

- If the result is not as specified, there may be a malfunction on the wire harness side.
- *1: w/o Power back door

(c) Reconnect the J/B and ECU connectors and measure the voltage according to the value(s) in the table below.

Standard voltage

Symbols (Terminal No.)	Wiring Color	Terminal Description	Condition	Specified Condition
IG (1A-1) - Body ground	W - Body ground	Ignition power supply	Ignition switch OFF → ON	10 to 14 V → Below 1 V
ACT+ (1K-2) - Body ground	L-R - Body ground	Door lock motor LOCK drive output (Driver door)	Door control switch (Master switch or passenger side switch) or driver side door key cylinder OFF → LOCK → OFF	Below 1 V → 10 to 14 V → Below 1 V
ACT+ (1J-1) - Body ground	L-R - Body ground	Door lock motor LOCK drive output (Passenger door)	Door control switch (Master switch or passenger side switch) or driver side door key cylinder OFF → LOCK → OFF	Below 1 V → 10 to 14 V → Below 1 V
ACT+ (1P-17) - Body ground	L-R - Body ground	Door lock motor LOCK drive output (Rear left door)	Door control switch (Master switch or passenger side switch) or driver side door key cylinder OFF → LOCK → OFF	Below 1 V → 10 to 14 V → Below 1 V
TR+ (B6-1)*1 - Body ground	L-B - Body ground	Door lock motor LOCK drive output (Back door)	Door control switch (Master switch or passenger side switch) or driver side door key cylinder OFF → LOCK → OFF	Below 1 V → 10 to 14 V → Below 1 V
ACTD (B9-4) - Body ground	W-R - Body ground	Door lock motor UNLOCK drive output (Driver door)	Door control switch (Master switch or passenger side switch) or driver side door key cylinder OFF → UNLOCK → OFF	Below 1 V → 10 to 14 V → Below 1 V
ACT- (1J-2) - Body ground	L-B - Body ground	Door lock motor UNLOCK drive output (Passenger door)	Door control switch (Master switch or passenger side switch) or driver side door key cylinder OFF → UNLOCK → OFF	Below 1 V → 10 to 14 V → Below 1 V
ACT- (1P-6) - Body ground	L-B - Body ground	Door lock motor UNLOCK drive output (Rear left door)	Door control switch (Master switch or passenger side switch) or driver side door key cylinder OFF → UNLOCK → OFF	Below 1 V → 10 to 14 V → Below 1 V

Symbols (Terminal No.)	Wiring Color	Terminal Description	Condition	Specified Condition
LSWD (B9-7) - Body ground	BR-R - Body ground	Driver side door lock position switch	Driver side door UNLOCK → LOCK	Below 1 V → 10 to 14 V (or pulse generation)
LSWP (B7-27) - Body ground	Y - Body ground	Passenger side door lock position switch input	Passenger door UNLOCK → LOCK	Below 1 V → 10 to 14 V (or pulse generation)
LSWL (1P-5) - Body ground	L-R - Body ground	Rear left door lock position switch input	Rear left door UNLOCK → LOCK	Below 1 V → 10 to 14 V (or pulse generation)
LSWR (B7-5) - Body ground	L-R - Body ground	Rear right door lock position switch input	Rear right door UNLOCK → LOCK	Below 1 V → 10 to 14 V (or pulse generation)

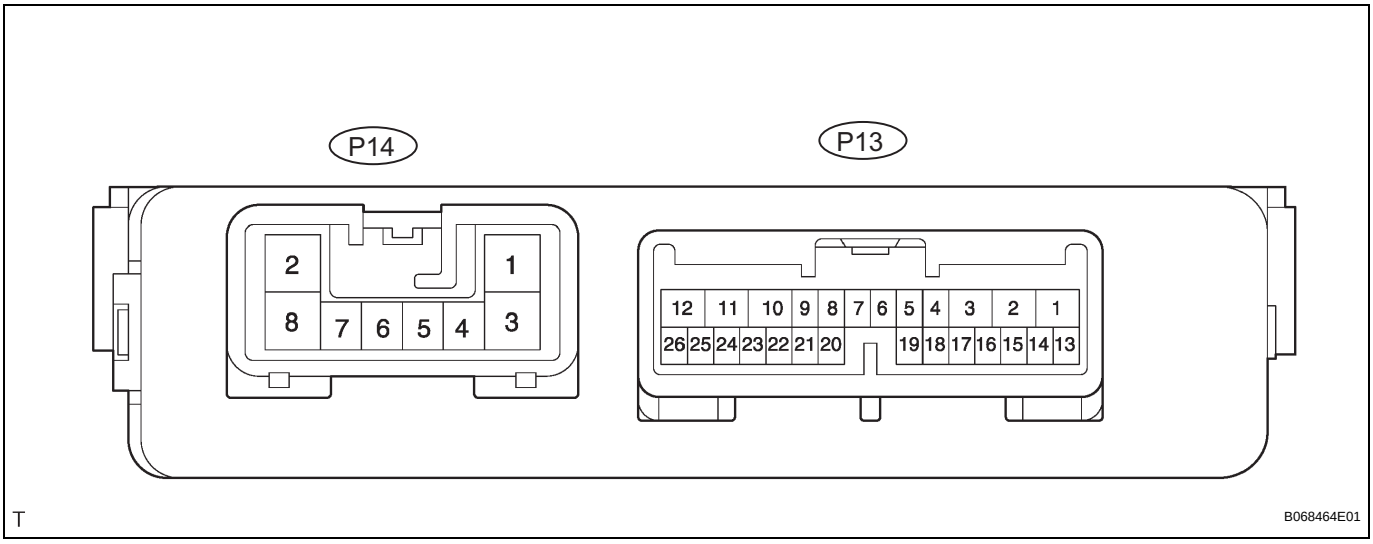
HINT:

- *1: w/o Power Back Door
- Use an oscilloscope to check the output voltages of terminals LSWD, LSWP, LSWL and LSWR.
- If the result is not as specified, the J/B (body ECU) may have a malfunction.

2. CHECK POWER BACK DOOR ECU (w/ Power back door system)

(a) Disconnect the P13 and P14 ECU connectors.

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

Standard

Symbols (Terminal No.)	Wiring Color	Terminal Description	Condition	Specified Condition
ECUB (P13-10) - Body ground	W-L - Body ground	ECU (ECUB) power supply	Always	10 to 14 V
B (P14-2) - Body ground	B-R - Body ground	+B (ECUB) power supply	Always	10 to 14 V
GND (P14-8) - Body ground	W-B - Body ground	Ground	Always	Below 1 Ω
IG (P13-9) - Body ground	B-R - Body ground	Ignition switch input	Ignition switch OFF → ON	Below 1 V → 10 to 14 V
HSW (P13-3) - Body ground	G-B - Body ground	Back door opener switch (outside handle switch) input	Back door opener switch OFF → ON	10 kΩ or higher → Below 1 Ω

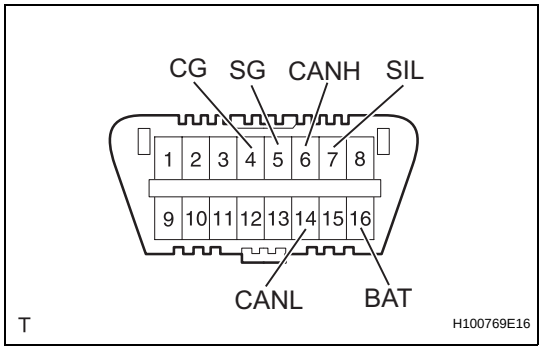
HINT:
If the result is not as specified, there may be a malfunction on the wire harness side.

(c) Reconnect the ECU connectors and measure the voltage according to the value(s) in the table below.

Standard voltage

Symbols (Terminal No.)	Wiring Color	Terminal Description	Condition	Specified Condition
CTYO (P14-4) - Body ground	G-W - Body ground	Back door courtesy switch output	Back door CLOSED → OPEN	10 to 14 V → Below 1 V
FUL (P13-8) - Body ground	B-W - Body ground	Back door lock full-latch switch input	Back door CLOSED → OPEN	10 to 14 V → Below 1 V

HINT:
If the result is not as specified, the ECU may have a malfunction.



DIAGNOSIS SYSTEM

1. CHECK DLC3

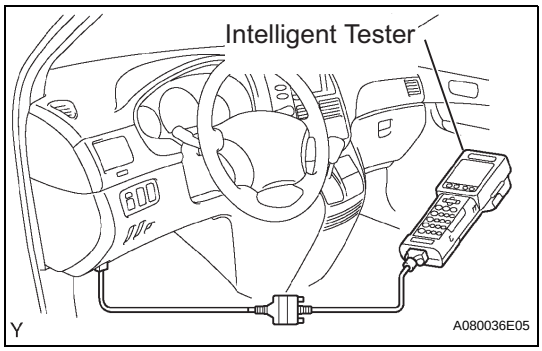
(a) The vehicle's ECU uses ISO 15765-4 for communication protocol. The terminal arrangement of the DLC3 complies with SAE J1962 and matches the ISO 15765-4 format.

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Symbols (Terminal No.)	Terminal Description	Condition	Specified Condition
SIL (7) - SG (5)	Bus "+" line	During transmission	Pulse generation
CG (4) - Body ground	Chassis ground	Always	Below 1 Ω
SG (5) - Body ground	Signal ground	Always	Below 1 Ω
BAT (16) - Body ground	Battery positive	Always	10 to 14 V
CANH (6) - CANL (14)	CAN bus line	Ignition switch OFF*	54 to 69 Ω
CANH (6) - CG (4)	HIGH-level CAN bus line	Ignition switch OFF*	200 Ω or higher
CANL (14) - CG (4)	LOW-level CAN bus line	Ignition switch OFF*	200 Ω or higher
CANH (6) - BAT (16)	HIGH-level CAN bus line	Ignition switch OFF*	6 kΩ or higher
CANL (14) - BAT (16)	LOW-level CAN bus line	Ignition switch OFF*	6 kΩ or higher

NOTICE:
***: Before measuring the resistance, leave the vehicle as is for at least 1 minute and do not operate the ignition switch, any other switches or the doors.**

If the result is not as specified, the DLC3 may have a malfunction. Repair or replace the harness and connector.



(b) Connect the cable of the intelligent tester to the DLC3, turn the ignition switch to the ON position and attempt to use the intelligent tester. If the screen displays a communication error message, a problem exists in the vehicle side of the tester side.
HINT:
- If communication is normal when the tool is connected to another vehicle, inspect the DLC3 on the original vehicle.
- If communication is still impossible when the tool is connected to another vehicle, the problem is probably in the tool itself. Consult the Service Department listed in the tool's instruction manual.