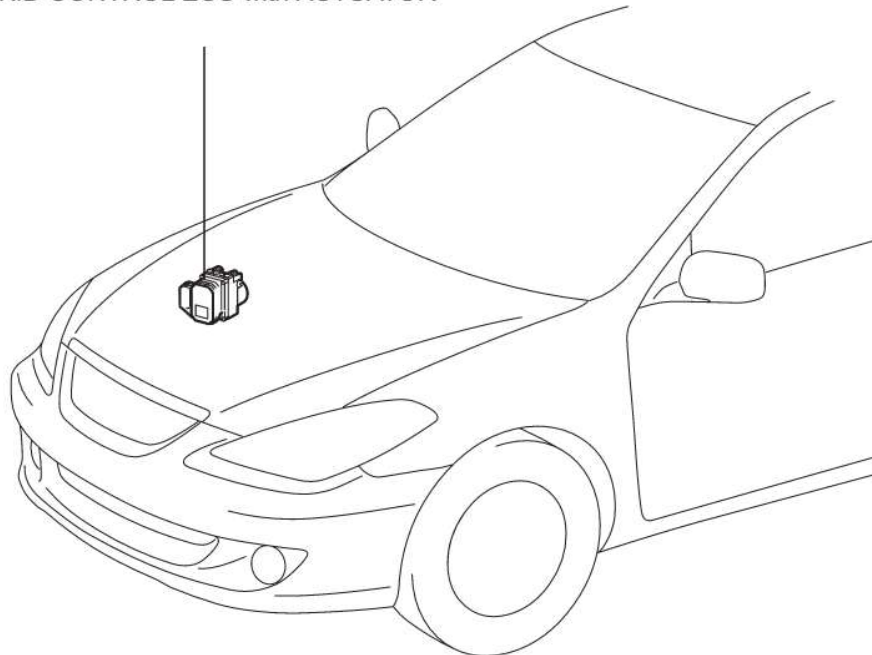
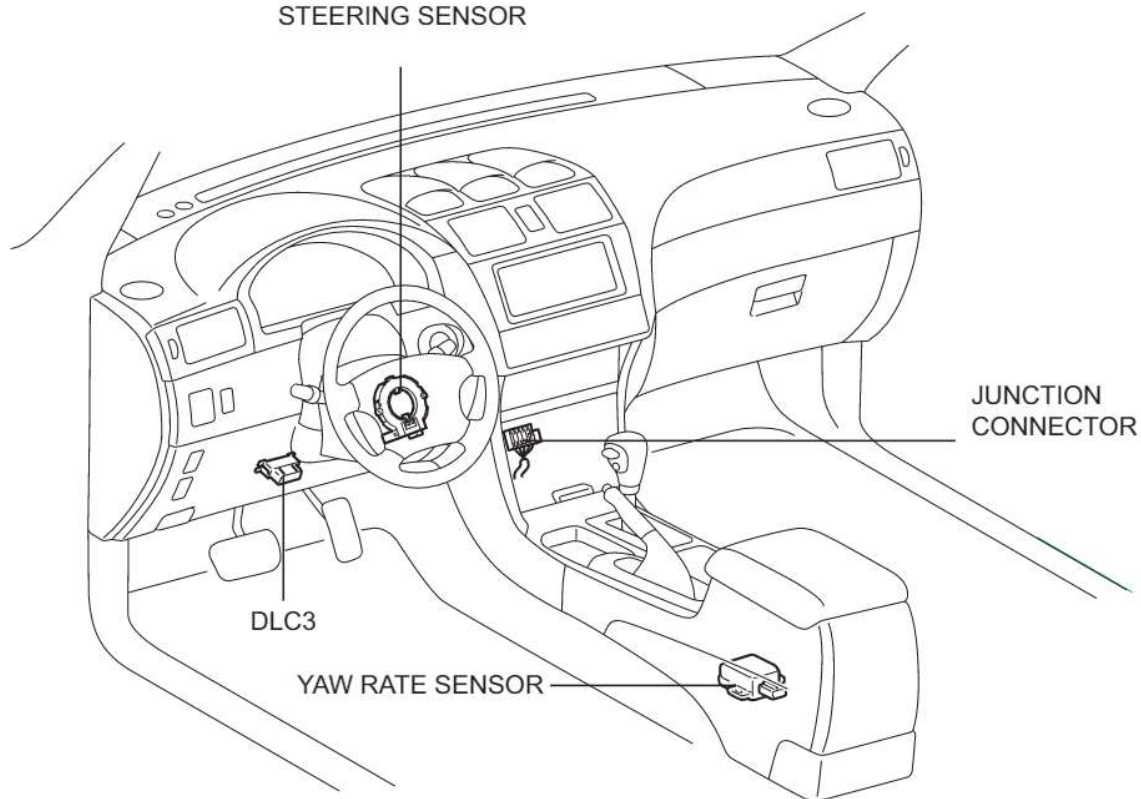


PARTS LOCATION

SKID CONTROL ECU with ACTUATOR



STEERING SENSOR



H

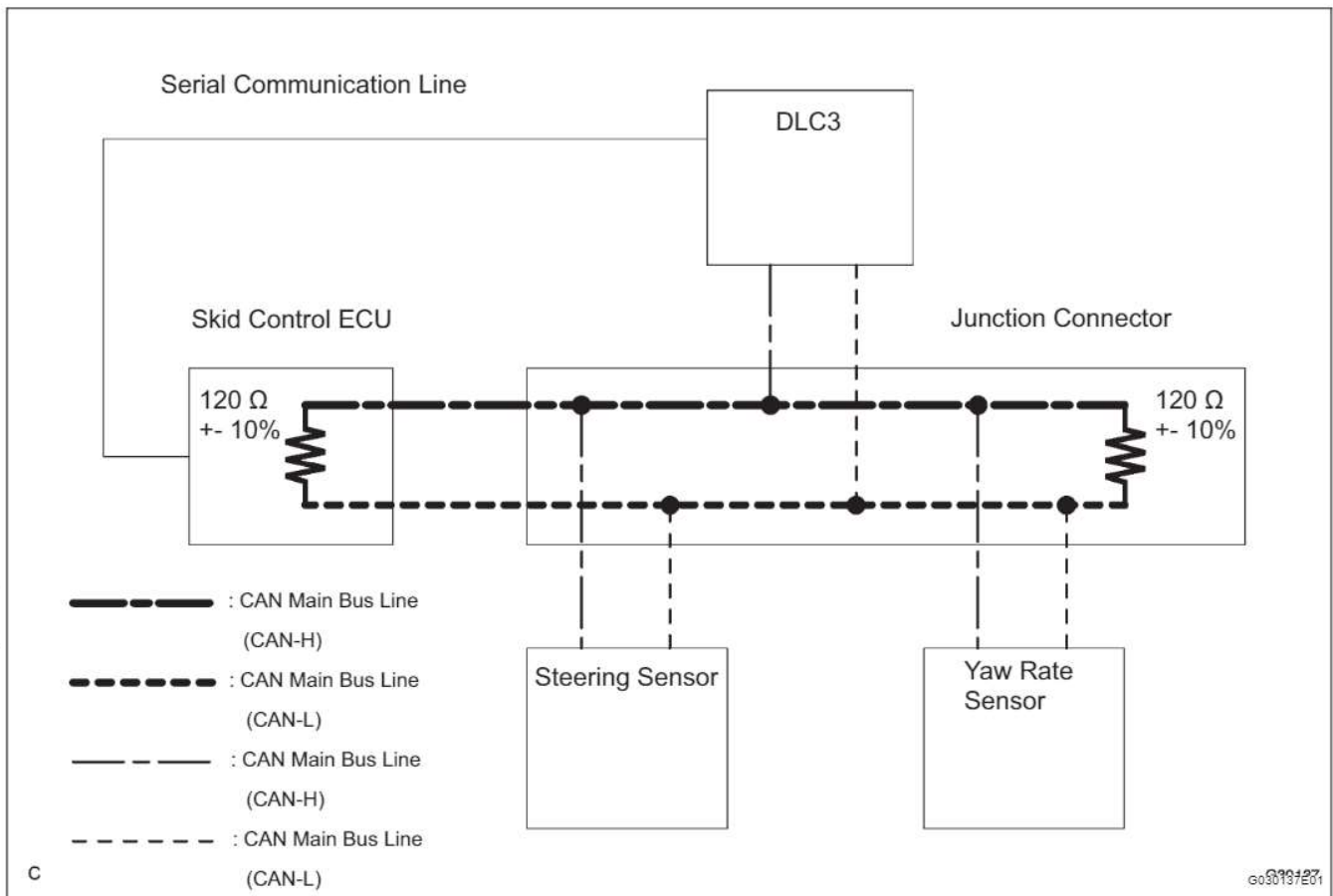
C109702E01

CA

CA-4

CAN COMMUNICATION – CAN COMMUNICATION SYSTEM

SYSTEM DIAGRAM



HINT:

The skid control ECU stores DTCs and performs DTC communication by receiving information from the steering sensor and yaw rate sensor. These sensors cannot store DTCs or perform DTC communication.

SYSTEM DESCRIPTION

1. BRIEF DESCRIPTION

- (a) The CAN (Controller Area Network) is a serial data communication system for real time application. It is a vehicle multiplex communication system which has a high communication speed (500 kbps) and the ability to detect malfunctions.
- (b) The CAN performs communication based on the differential voltage by pairing the CANH bus line and CANL bus line.
- (c) The SOLARA uses the CAN communication system for communication between the following ECU and sensors in the ABS with EBD & BA & TRAC & VSC system.
- (d) The CAN has two resistors of 120 Ω that are necessary for communication to the main bus line.

2. DEFINITION OF TERMS

- (a) Main bus line
 - (1) Main bus line is a wire harness between the two terminus circuits on the bus (communication line). This is the main bus in the CAN communication system.
- (b) Sub bus line
 - (1) Sub bus line is a wire harness which diverges from the main bus line, which is the main bus of the CAN bus, to an ECU or sensor.

3. ECU OR SENSORS WHICH COMMUNICATE THROUGH CAN COMMUNICATION SYSTEM

- (a) Skid Control ECU
- (b) Yaw Rate Sensor
- (c) Steering Sensor

4. DIAGNOSTIC CODES FOR THE CAN COMMUNICATION SYSTEM

- (a) DTCs for CAN system are as follows: U0121/94, U0123/62, U0124/95, U0126/63

5. REMARKS FOR TROUBLESHOOTING

- (a) Trouble in the CAN bus (communication line) can be checked from the DLC3 (except a wire break other than in the DLC3 sub bus line).
- (b) By using the intelligent tester, DTCs for the CAN communication system can be checked through the DTC ISO 9141K-Line.
- (c) The CAN communication system cannot detect trouble in the DLC3 sub bus line even though the DLC3 is also connected to the CAN communication system.

CA

HOW TO PROCEED WITH TROUBLESHOOTING

NOTICE:
When DTCs other than U0121/94, U0123/62, U0124/95, U0126/63 are output, inspect and repair the trouble areas indicated by the DTCs.

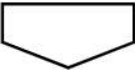
1	CHECK CAN BUS LINE
---	--------------------



2	CHECK AND CLEAR DTCs
---	----------------------

HINT:
When checking the DTCs for the skid control ECU, proceed to page [BC-82](#).

CA



3	CHECK DTC COMBINATION TABLE
---	-----------------------------



4	CIRCUIT INSPECTION
---	--------------------



5	IDENTIFICATION OF PROBLEM
---	---------------------------



6	REPAIR OR REPLACE
---	-------------------



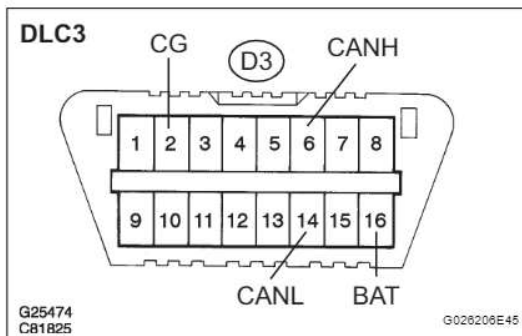
7	CONFIRMATION TEST
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END

CAN COMMUNICATION – CAN COMMUNICATION SYSTEM

CA-7



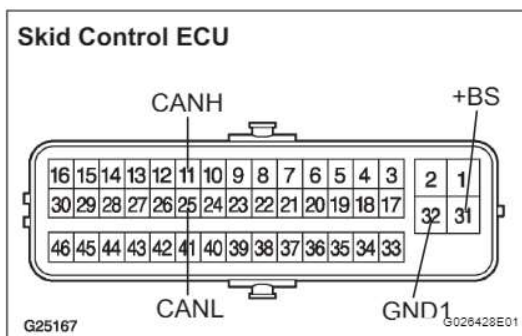
TERMINALS OF ECU

1. DLC3

- (a) Check DLC3.
- (1) Turn the ignition switch off.
 - (2) Measure the resistance according to the value(s) in the table below.

Resistance

Terminals	Check Item	Condition	Specified Condition
D3-6 (CANH) - D3-14 (CANL)	Resistance	IG switch OFF	54 to 67 Ω
D3-6 (CANH) - D3-16 (BAT)	Resistance	IG switch OFF	More than 1 M Ω
D3-14 (CANL) - D3-16 (BAT)	Resistance	IG switch OFF	More than 1 M Ω
D3-6 (CANH) - D3-4 (CG)	Resistance	IG switch OFF	More than 3 k Ω
D3-14 (CANL) - D3-4 (CG)	Resistance	IG switch OFF	More than 3 k Ω

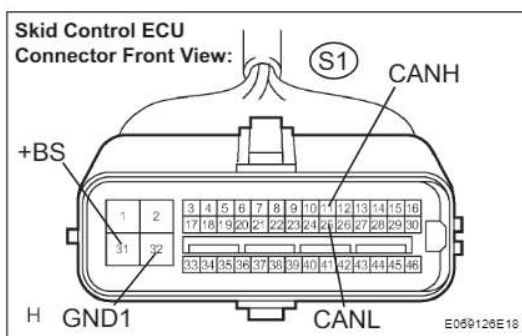


2. SKID CONTROL ECU

- (a) Check skid control ECU.
- (1) Turn the ignition switch off.
 - (2) Disconnect the connector (S1) from the skid control ECU.
 - (3) Measure the resistance according to the value(s) in the table below.

Resistance

Terminals	Check Item	Condition	Specified Condition
11 (CANH) - 25 (CANL)	Resistance	IG switch OFF	108 to 132 Ω
11 (CANH) - 32 (GND1)	Resistance	IG switch OFF	More than 3 k Ω
25 (CANL) - 32 (GND1)	Resistance	IG switch OFF	More than 3 k Ω
11 (CANH) - 31 (+BS)	Resistance	IG switch OFF	More than 1 M Ω
25 (CANL) - 31 (+BS)	Resistance	IG switch OFF	More than 1 M Ω



- (b) Check the skid control ECU harness side connector (S1).

- (1) Turn the ignition switch off.
- (2) Disconnect the connector (S1) from the skid control ECU.
- (3) Measure the resistance according to the value(s) in the table below.

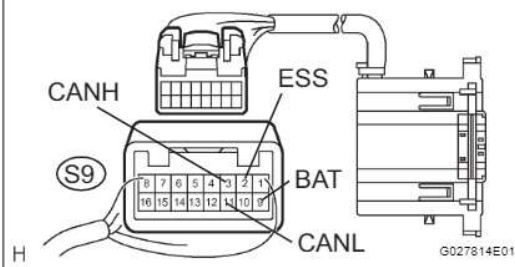
Resistance

Terminals	Wiring Color	Check Item	Condition	Specified Condition
S1-11 (CANH) - S1-25 (CANL)	B - W	Resistance	Ignition switch OFF	108 to 132 Ω
S1-11 (CANH) - S1-32 (GND1)	B - W-B	Resistance	Ignition switch OFF	More than 3 k Ω
S1-25 (CANL) - S1-32 (GND1)	W - W-B	Resistance	Ignition switch OFF	More than 3 k Ω
S1-11 (CANH) - S1-31 (+BS)	B - W	Resistance	Ignition switch OFF	More than 1 M Ω
S1-25 (CANL) - S1-31 (+BS)	W - W	Resistance	Ignition switch OFF	More than 1 M Ω

CA-8

CAN COMMUNICATION – CAN COMMUNICATION SYSTEM

Steering Sensor Wire Harness View:



3. STEERING SENSOR

- (a) Check the harness side connector (S9) of the steering sensor.
- (1) Turn the ignition switch off.
 - (2) Disconnect the connector (S9) from the steering sensor.
 - (3) Measure the resistance according to the value(s) in the table below.

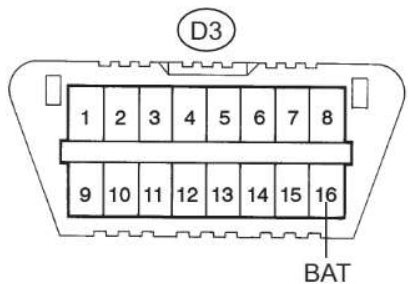
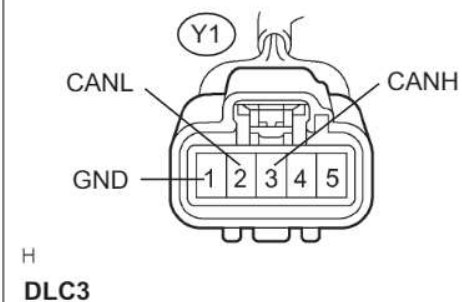
Resistance

Terminals	Wiring Color	Check Item	Condition	Specified Condition
S9-3 (CANH) - S9-11 (CANL)	B - W	Resistance	Ignition switch OFF	54 to 67 Ω
S9-3 (CANH) - S9-2 (ESS)	B - W-B ^{*1}	Resistance	Ignition switch OFF	More than 3 k Ω
S9-11 (CANL) - S9-2 (ESS)	W - W-B ^{*1}	Resistance	Ignition switch OFF	More than 3 k Ω
S9-3 (CANH) - S9-9 (BAT)	B - W-R	Resistance	Ignition switch OFF	More than 1 M Ω
S9-11 (CANL) - S9-9 (BAT)	W - W-R	Resistance	Ignition switch OFF	More than 1 M Ω

*1: 3MZ-FE

CA

Yaw Rate Sensor Connector

G26359
G26206

G028831E06

4. YAW RATE SENSOR

- (a) Check the yaw rate sensor harness side connector (Y1).
- (1) Turn the ignition switch off.
 - (2) Disconnect the connector (Y1) from the yaw rate sensor.
 - (3) Measure the resistance according to the value(s) in the table below.

Resistance

Terminals	Wiring Color	Check Item	Condition	Specified Condition
Y1-3 (CANH) - Y1-2 (CANL)	B - W	Resistance	Ignition switch OFF	54 to 67 Ω
Y1-3 (CANH) - Y1-1 (GND)	B - W-B ^{*1}	Resistance	Ignition switch OFF	More than 3 k Ω
Y1-2 (CANL) - Y1-1 (GND)	W - W-B ^{*1}	Resistance	Ignition switch OFF	More than 3 k Ω
Y1-3 (CANH) - D3-16 (BAT)	B - B	Resistance	Ignition switch OFF	More than 1 M Ω
Y1-2 (CANL) - D3-16 (BAT)	W - B	Resistance	Ignition switch OFF	More than 1 M Ω

*1: 3MZ-FE

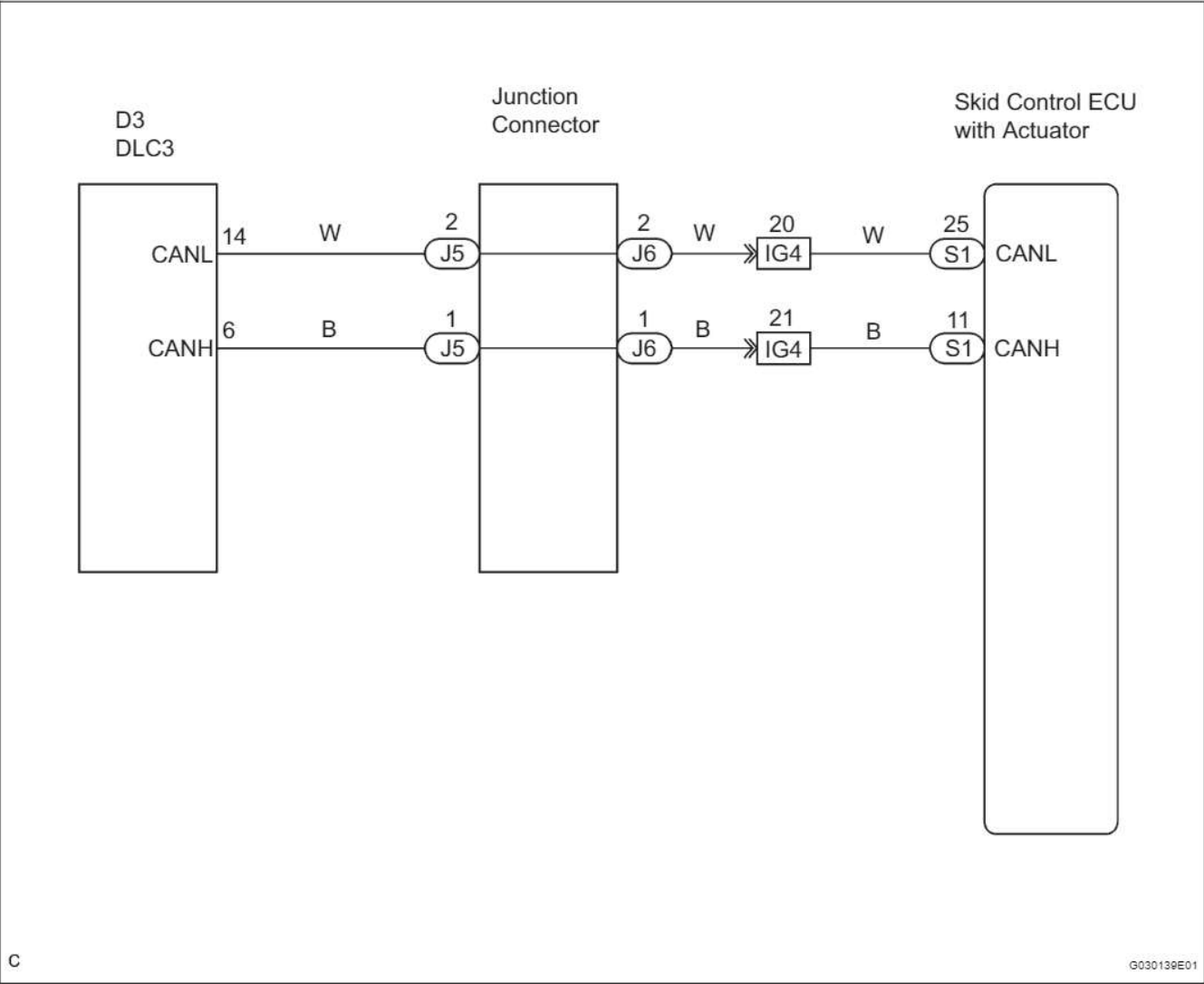
CAN Main Bus Line for Disconnection (LHD Models)

DESCRIPTION

The CAN main bus line and DLC3 sub bus line may have a disconnection when the resistance between terminals 6 (CANH) and 14 (CANL) or the DLC3 is more than 67 Ω

Symptom	Trouble Area
Resistance between terminals 6 (CANH) 14 (CANL) of DLC3 is more than 67 Ω	- CAN main bus line - Skid Control ECU - DLC3 sub bus line - Junction Connector

WIRING DIAGRAM



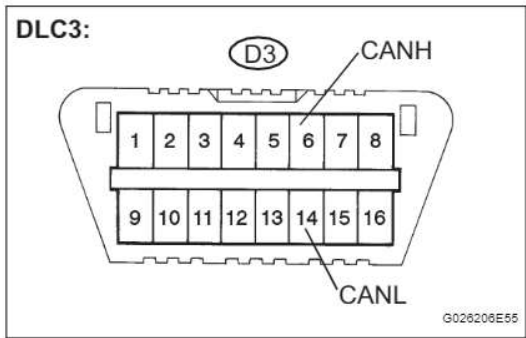
1

CHECK DLC3

(a) Turn the ignition switch to the LOCK position.

CA-38

CAN COMMUNICATION – CAN COMMUNICATION SYSTEM



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

Tester Connection	Condition	Specified Condition	Result
D3-6 (CANH) - D3-14 (CANL)	Ignition SW OFF	108 to 132 Ω	A
D3-6 (CANH) - D3-14 (CANL)	Ignition SW OFF	132 Ω or more	B

NOTICE:
When measured value is 132 Ω or more and the CAN communication system diagnostic code is output, there may be a fault besides the disconnection of DLC3 sub bus line. For that reason, troubleshooting should be performed again from "How to proceed with troubleshooting" after repairing the trouble area.

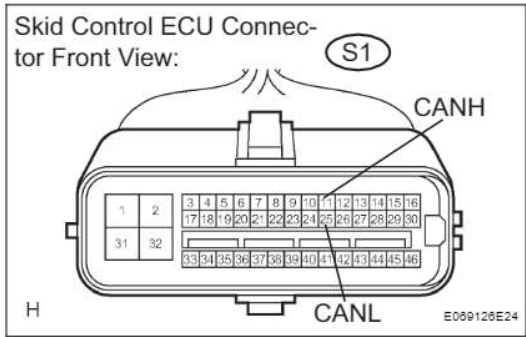
B → REPAIR OR REPLACE DLC3 SUB BUS LINE OR CONNECTOR (CAN-H, CAN-L)

CA

A

2

CHECK CAN BUS LINE FOR DISCONNECTION (SKID CONTROL ECU - JUNCTION CONNECTOR)



- (a) Disconnect the connector (S1) from the skid control ECU.
- (b) Measure the resistance according to the value(s) in the table below.
- Resistance**

Tester Connection	Condition	Specified Condition
S1-11 (CANH) - S1-25 (CANL)	Ignition SW OFF	108 to 132 Ω

OK → REPLACE SKID CONTROL ECU WITH ACTUATOR

NG

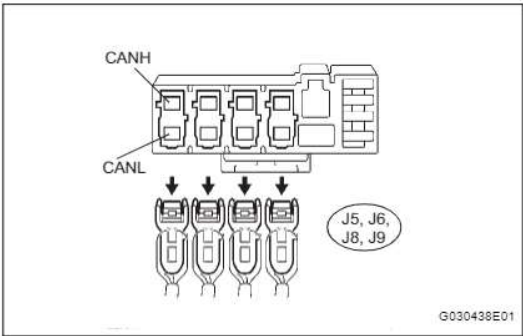
3

CHECK CAN BUS LINE FOR DISCONNECTION (JUNCTION CONNECTOR)

- (a) Disconnect all wire harness connectors (J5, J7, J8,J9) from the junction connector.

CAN COMMUNICATION – CAN COMMUNICATION SYSTEM

CA-39



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

Resistance

Tester Connection	Condition	Specified Condition
1 (CANH) - 2(CANL)	Ignition SW OFF	108 to 132 Ω

OK REPAIR OR REPLACE DLC3 SUB BUS LINE OR CONNECTOR (CAN-H, CAN-L)

NG

REPLACE JUNCTION CONNECTOR

CA

CAN COMMUNICATION SYSTEM

PRECAUTION

1. HANDLING PRECAUTIONS ON STEERING SYSTEM

- (a) Care must be taken when replacing parts. Incorrect replacement could affect the performance of the steering system and result in hazardous driving.

2. HANDLING PRECAUTIONS ON SRS AIRBAG SYSTEM

- (a) The SOLARA is equipped with an SRS (Supplemental Restraint System), such as the driver airbag and front passenger airbag. Failure to carry out service operation in the correct sequence could cause the SRS to unexpectedly deploy during servicing, possibly leading to a serious accident. Before servicing (including removal or installation of parts, inspection or replacement), be sure to read the precautionary notice for the Supplemental Restraint System (See page [RS-1](#)).

3. WIRE HARNESS REPAIR

- (a) After repairing the wire bus line with solder, wrap the repaired part with vinyl tape.

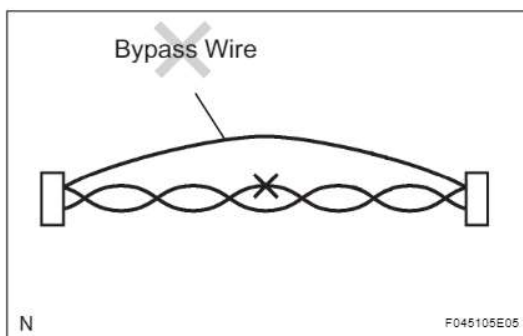
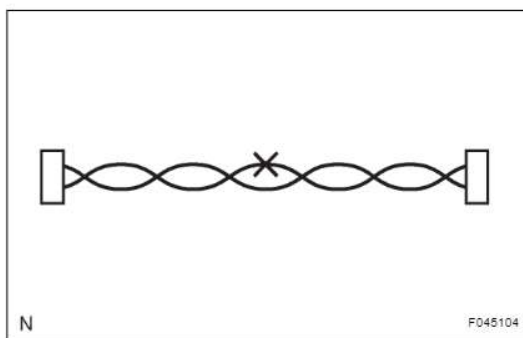
NOTICE:

- The CANL bus line and CANH bus line must be installed together all the time. When installing, make sure to twist them. CAN bus lines are likely to be influenced by noise if the bus lines are not twisted.
- The difference in length of the CANL bus line and CANH bus line should be within 100 mm (3.94 in.).
- Untwisted parts around the connectors should be within 80 mm (3.15 in.).

- (b) Do not perform bypass wiring between the connectors.

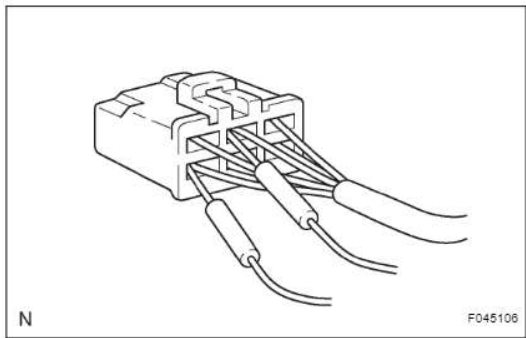
NOTICE:

If you perform bypass wiring, the characteristic of the twisted wire harness will be lost.

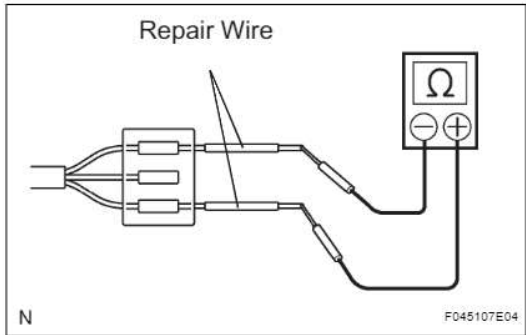


CA-2

CAN COMMUNICATION – CAN COMMUNICATION SYSTEM



4. CONNECTOR HANDLING
- (a) When inserting tester probes into a connector, insert them from the back of the connector.



- (b) If it is impossible to check resistance from the back of the connector, use a repair wire to check it.
5. When disconnecting the negative (-) battery terminal, initialize the following systems after the terminal is reconnected.

CA

System Name	See Procedure
Power Window Control System	IN-24
Sliding Roof System	IN-24

DIAGNOSIS SYSTEM

1. DTCs COMBINATION TABLE

NOTICE:

Complete "CHECK CAN BUS LINE" (see page [CA-14](#)), to confirm that there is no disconnection in the CAN main bus lines and there is no short circuit, short to +B or short to ground in the CAN bus lines. Then perform troubleshooting according to the DTC combination table.

- (a) Confirm the trouble mode according to the combination of output DTCs.

Trouble Mode	U0121/94	U0123/62	U0124/95	U0126/63
Skid control ECU communication stop mode	○	○	○	○
Yaw rate sensor communication stop mode	-	○	○	-
Steering sensor communication stop mode	-	-	-	○

HINT:

- U0121/94, U0123/62, U0124/95 and U0126/63 are the DTCs in the CAN communication system.
- The above table shows combinations of these DTCs.
- ○ DTCs that are being output.
- - DTCs that are not being output.

- (b) Confirm the trouble mode by referring to the above table. Then check the parts to be replaced and pages to proceed to, by referring to the table below.

Output Code	Suspected Area	See procedure and parts to be replaced
Skid control ECU communication stop mode (U0121/94, U0123/62, U0124/95 and U0126/63 are output simultaneously)	Skid control ECU	Replace skid control ECU
Yaw rate sensor communication stop mode (U0123/62 and U0124/95 are output simultaneously)	• Open circuit between yaw rate sensor and junction connector • Yaw rate sensor power source/internal malfunction	CA-12
Steering sensor communication stop mode (U0126/63 only)	Steering sensor power source/internal malfunction	CA-10

CA

CA-10

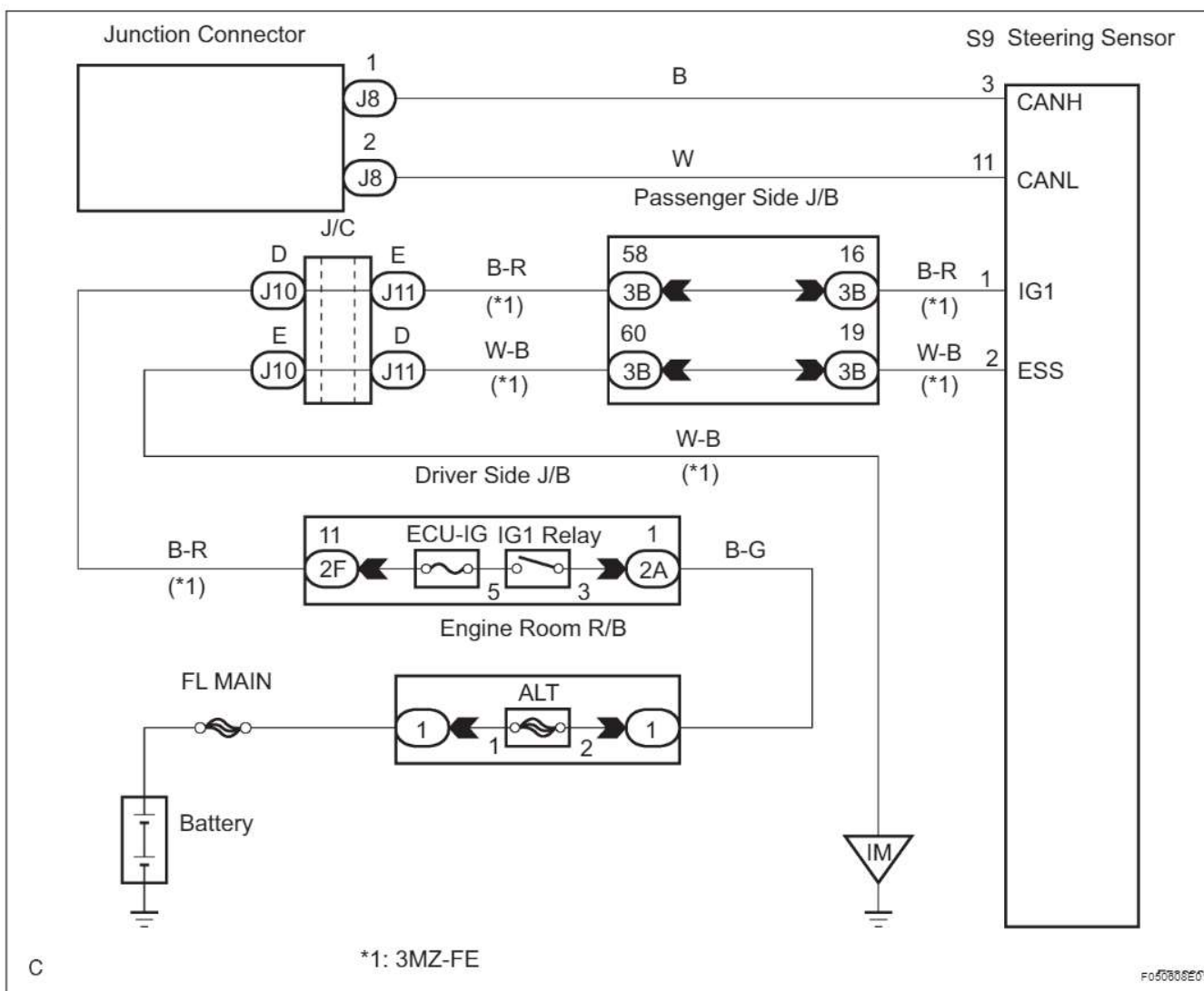
CAN COMMUNICATION – CAN COMMUNICATION SYSTEM

Steering Sensor Communication Stop Mode

DESCRIPTION

DTC No.	DTC Detecting Condition	Trouble Area
U0126/63	- When ECU terminal IG1 voltage is 9.5 V or more, data is not received from the steering sensor for more than 1 sec. - When ECU terminal IG1 voltage is 9.5 V or more, data can not be received from the steering sensor more than once within 5 sec. This situation repeatedly occurs more than 10 times.	- Steering sensor - Power source of steering sensor - Steering sensor sub bus line

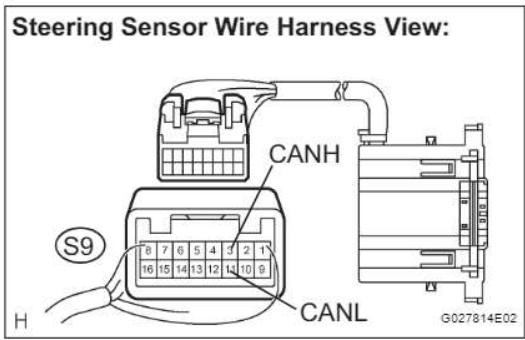
WIRING DIAGRAM



1

CHECK CAN BUS LINE FOR DISCONNECTION (STEERING ANGLE SENSOR SUB BUS LINE)

(a) Turn the ignition switch to the LOCK position.



- (b) Disconnect the steering angle sensor (S9) from the steering sensor.
- (c) Measure the resistance according to the value(s) in the table below.

Resistance

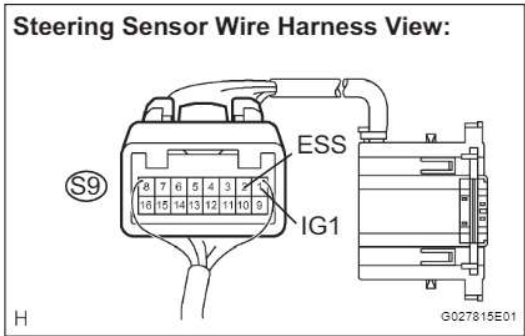
Tester Connection	Condition	Specified Condition
S9-10 (CANH) - S9-9 (CANL)	Ignition switch off	54 to 67 Ω

NG

REPAIR OR REPLACE STEERING SENSOR SUB BUS LINE OR CONNECTOR (CAN-H, CAN-L)

OK

2 CHECK WIRE HARNESS (IG, ESS)



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

Resistance

Tester Connection	Condition	Specified Condition
S9-2 (ESS) - Body ground	Always	Below 1 Ω

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

Voltage

Tester Connection	Condition	Specified Condition
S9-1 (IG) - Body ground	Ignition switch ON	10 to 14 V

NOTICE:

Perform the measurement from the back of the connector with the connector connected.

NG

REPAIR OR REPLACE WIRE HARNESS OR CONNECTOR

OK

REPLACE STEERING SENSOR

CA

CA-12

CAN COMMUNICATION – CAN COMMUNICATION SYSTEM

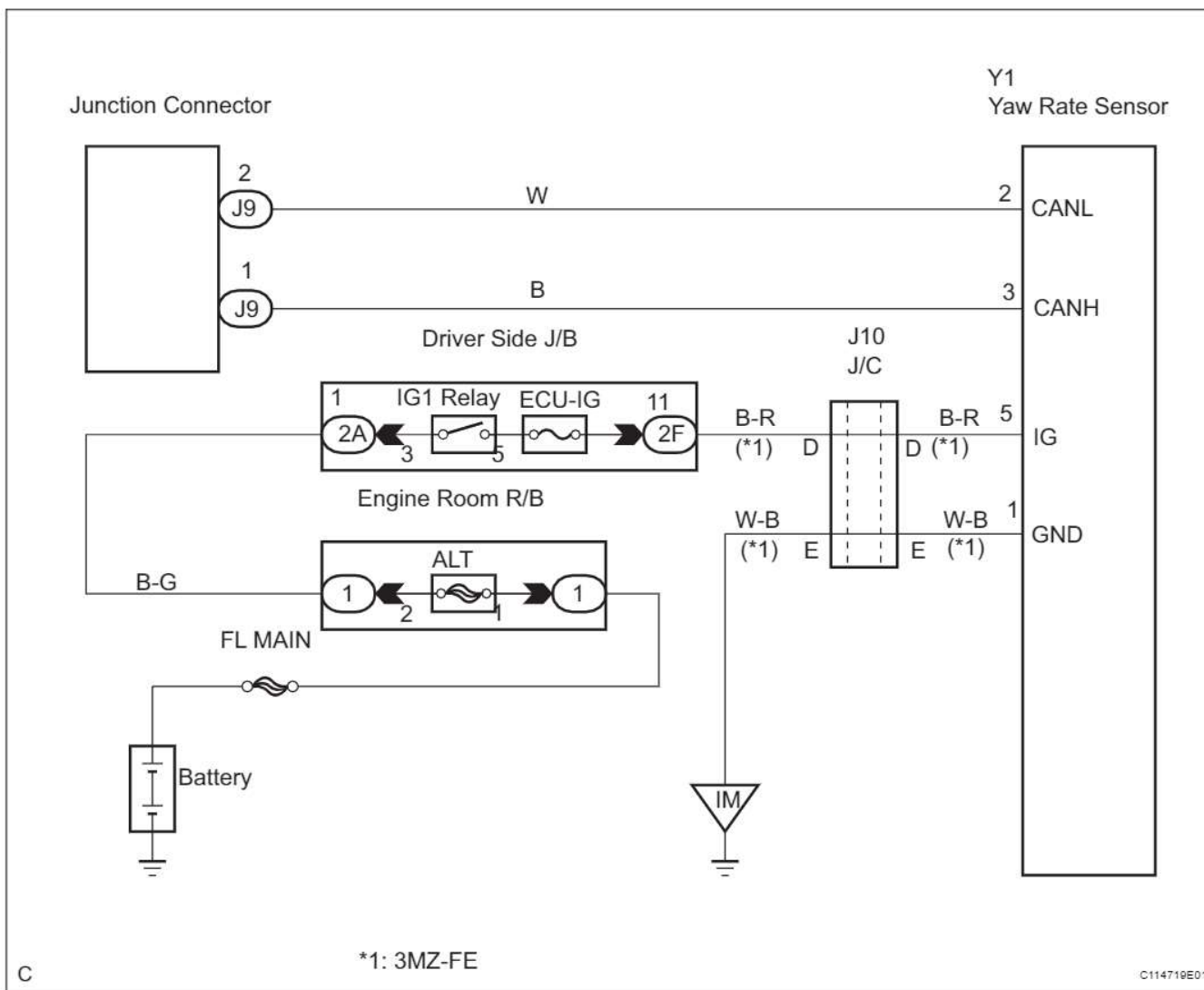
Yaw Rate Sensor Communication Stop Mode

DESCRIPTION

DTC No.	DTC Detecting Condition	Trouble Area
U0123/62	- When ECU terminal IG1 voltage is 9.5 V or more, data is not received from the yaw rate sensor for more than 1 sec. - When ECU terminal IG1 voltage is 9.5 V or more, data can not be received from the yaw rate sensor more than once within 5 sec. This situation repeatedly occurs more than 10 times.	- Yaw rate sensor - Yaw rate sensor sub bus line - Power source of yaw rate sensor
U0124/95	- When ECU terminal IG1 voltage is 9.5 V or more, data is not received from the deceleration sensor for more than 1 sec. - When ECU terminal IG1 voltage is 9.5 V or more, data can not be received from the deceleration sensor more than once within 5 sec. This situation repeatedly occurs more than 10 times.	- Yaw rate sensor - Yaw rate sensor sub bus line - Power source of yaw rate sensor

WIRING DIAGRAM

CA



1

CHECK CAN BUS LINE FOR DISCONNECTION (YAW RATE SENSOR SUB BUS LINE)

- (a) Turn the engine switch off.
- (b) Disconnect the yaw rate sensor connector (Y1).
- (c) Measure the resistance according to the value(s) in the table below.

Resistance

Tester Connection	Condition	Specified Value
Y1-3 (CANH) - Y1-2 (CANL)	Ignition switch off	54 to 67 Ω

NG

REPAIR OR REPLACE YAW RATE SENSOR SUB BUS LINE OR CONNECTOR (CAN-H, CAN-L)

OK

2

CHECK WIRE HARNESS (IG, GND)

CA

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

Resistance

Tester Connection	Condition	Specified Value
K35-1 (GND) - Body ground	Always	Below 1 Ω

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

Voltage

Tester Connection	Condition	Specified Value
K35-5 (IG) - Body ground	Ignition switch ON	10 to 14 V

OK

REPAIR OR REPLACE HARNESS OR CONNECTOR

OK

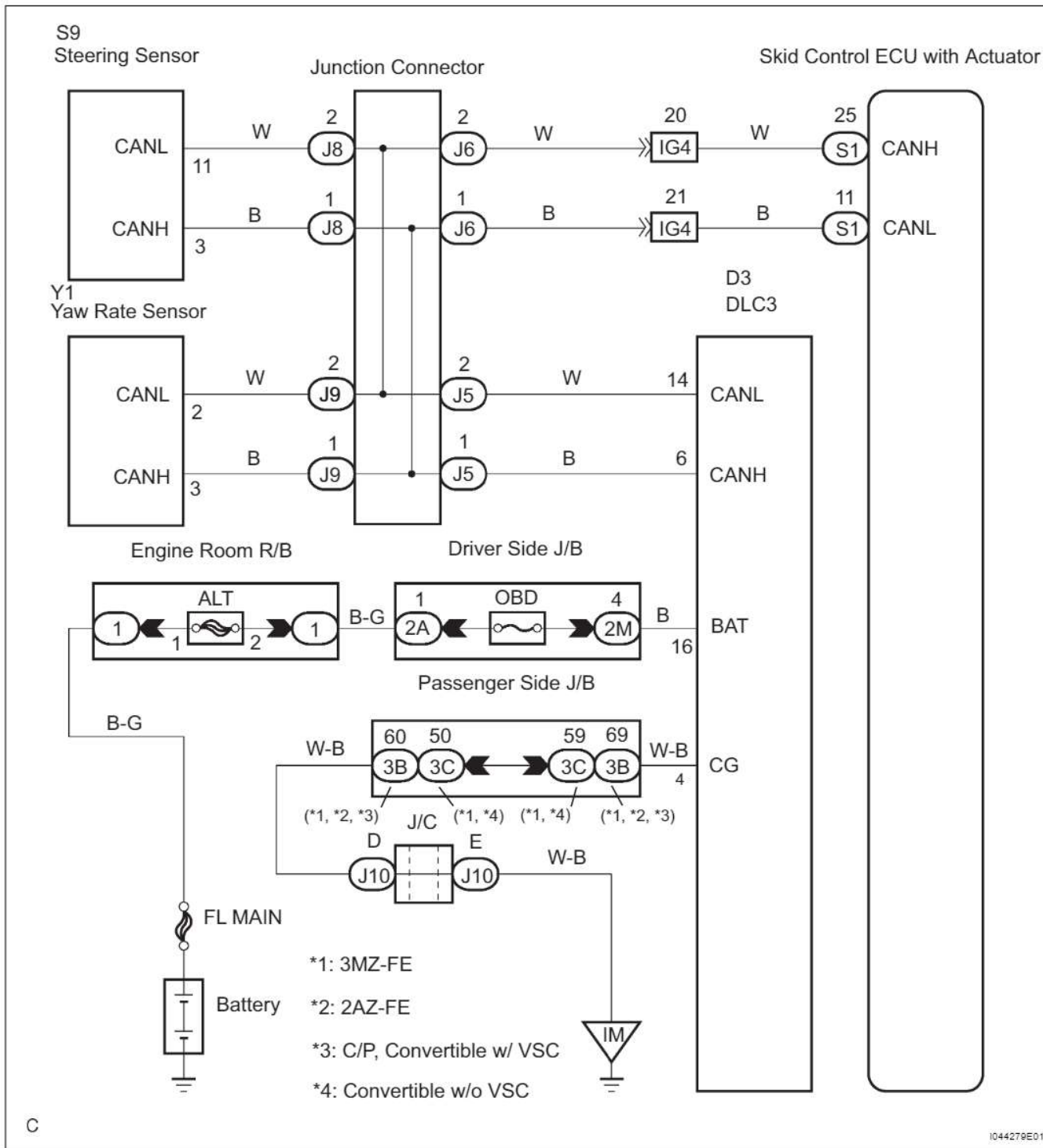
REPLACE YAW RATE SENSOR

CA-14

CAN COMMUNICATION – CAN COMMUNICATION SYSTEM

CAN Bus Line**DESCRIPTION**

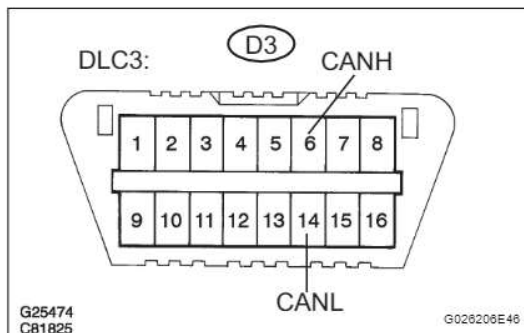
When any DTC for the CAN communication is output, first measure the resistance between the terminals of the DLC3 to specify the trouble area.

WIRING DIAGRAM

CAN COMMUNICATION – CAN COMMUNICATION SYSTEM

CA-15

1 CHECK CAN BUS LINE (MAIN BUS LINE FOR DISCONNECTION, BUS LINES FOR SHORT CIRCUIT)



- (a) Turn the engine switch off.
 (b) Measure the resistance according to the value(s) in the table below.

Resistance

Tester Connection	Condition	Specified Condition	Result
D3-6 (CANH) - D3-14 (CANL)	Ignition switch off	54 to 67 Ω	OK
D3-6 (CANH) - D3-14 (CANL)	Ignition switch off	67 Ω or more	NG-A
D3-6 (CANH) - D3-14 (CANL)	Ignition switch off	54 Ω or less	NG-B

NG-A

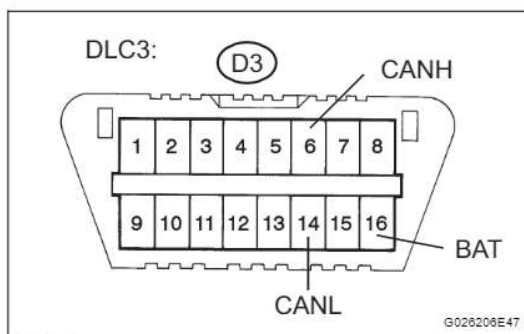
CHECK CAN BUS MAIN LINE (FOR DISCONNECTION)

NG-B

CHECK CAN BUS LINE (FOR SHORT CIRCUIT)

OK

2 CHECK CAN BUS LINE (FOR SHORT TO +B)



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

Resistance

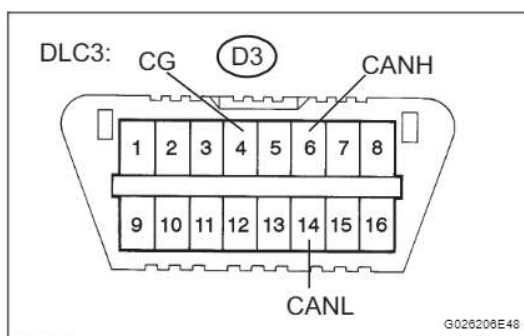
Tester Connection	Condition	Specified Condition
D3-6 (CANH) - D3-16 (BAT)	Ignition switch off	1 M Ω or more
D3-14 (CANL) - D3-16 (BAT)	Ignition switch off	1 M Ω or more

NG

CHECK CAN BUS LINE (FOR SHORT TO +B)

OK

3 CHECK CAN BUS LINE (FOR SHORT TO GND)



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

Resistance

Tester Connection	Condition	Specified Condition
D3-4 (CG) - D3-6 (CANH)	Ignition switch off	3 k Ω or more
D3-4 (CG) - D3-14 (CANL)	Ignition switch off	3 k Ω or more

NG

CHECK CAN BUS LINE (FOR SHORT TO GND)

CA-16**CAN COMMUNICATION – CAN COMMUNICATION SYSTEM**

A rectangular button with a black border and the text "OK" in the center.A rectangular box with a black border containing the text "HOW TO PROCEED WITH TROUBLESHOOTING".**CA**

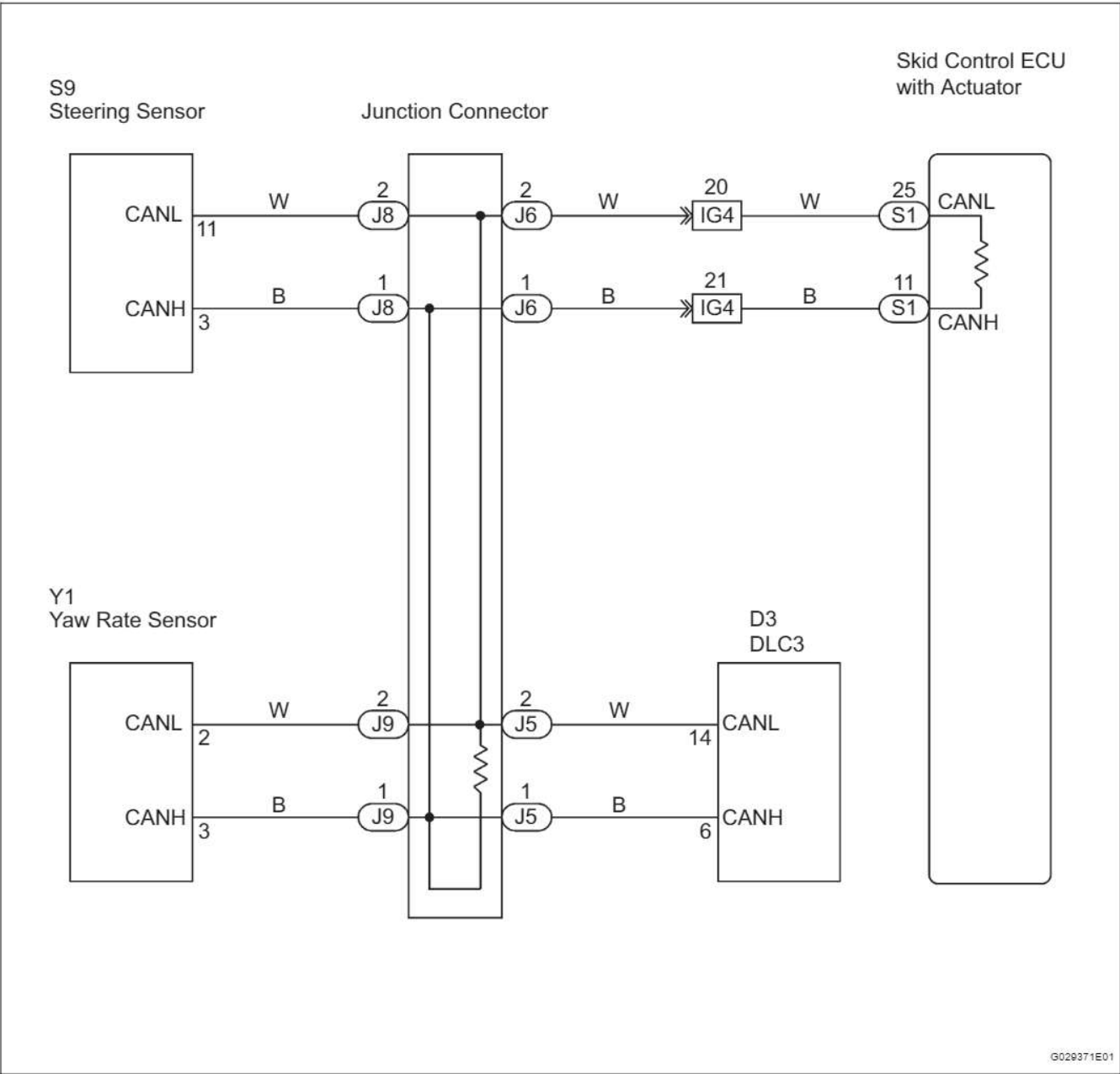
Short in CAN Bus Lines

DESCRIPTION

The CAN bus lines are considered to be shorted when the resistance between terminals 6 (CANH) and 14 (CANL) of the DLC3 is below 54 Ω.

Symptom	Trouble Area
Resistance between terminals 6 (CANH) and 14 (CANL) of DLC3 is below 54 Ω.	• Short in CAN bus lines • Skid control ECU • Steering sensor • Yaw rate sensor

WIRING DIAGRAM

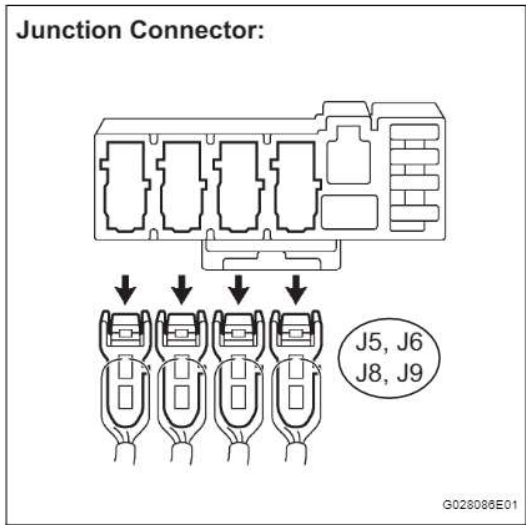


CA-18

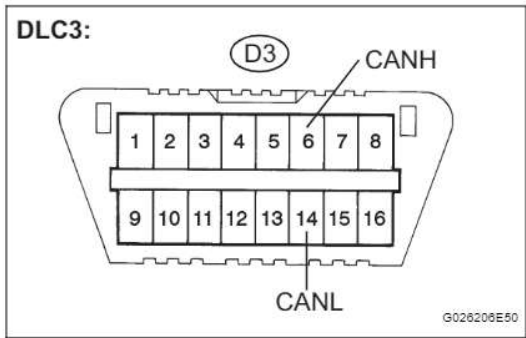
CAN COMMUNICATION – CAN COMMUNICATION SYSTEM

1

CHECK CAN BUS LINE FOR SHORT (DLC3 SUB BUS LINE)



- (a) Turn the ignition switch to the LOCK position.
(b) Disconnect all wire harness connectors (J5, J6, J8, J9) from the junction connector.



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

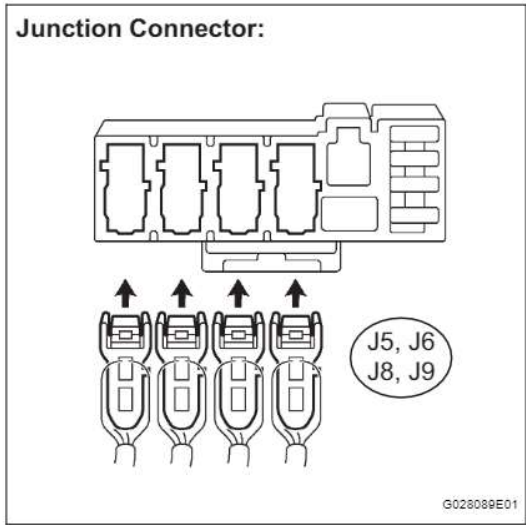
Tester Connection	Condition	Specified Condition
D3-6 (CANH) - D3-14 (CANL)	Ignition SW OFF	1 MΩ or more

NG REPAIR OR REPLACE DLC3 SUB BUS LINE OR CONNECTOR (CAN-H, CAN-L)

OK

2

CONNECTION OF CONNECTORS

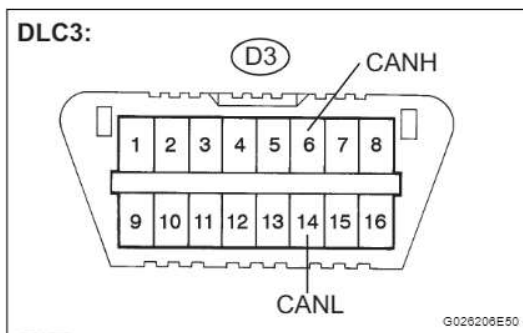


- (a) Reconnect all wire harness connectors (J5, J6, J8, J9) to the junction connector.

NEXT

CAN COMMUNICATION – CAN COMMUNICATION SYSTEM

CA-19

3 CHECK CAN BUS LINES FOR SHORT (SKID CONTROL ECU)

- Disconnect the connector (S1) from the skid control ECU.
- Measure the resistance according to the value(s) in the table below.

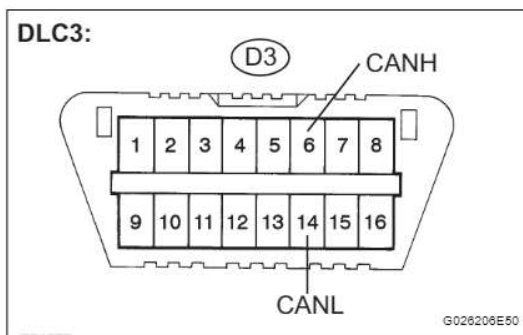
Resistance

Tester Connection	Condition	Specified Condition
D3-6 (CANH) - D3-14 (CANL)	Ignition SW OFF	3 k Ω or more

OK

REPLACE SKID CONTROL ECU WITH ACTUATOR

NG

4 CHECK CAN BUS LINES FOR SHORT (STEERING SENSOR)

- Reconnect the connector (S1) to the skid control ECU.
- Disconnect the connector (S9) from the steering sensor.
- Measure the resistance according to the value(s) in the table below.

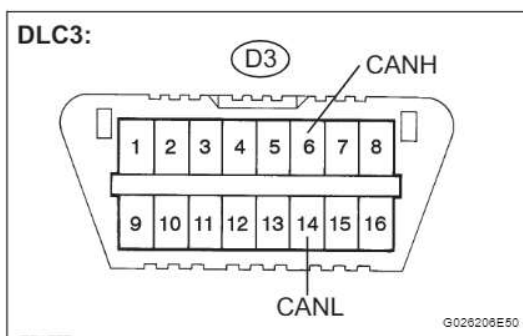
Resistance

Tester Connection	Condition	Specified Condition
D3-6 (CANH) - D3-14 (CANL)	Ignition SW OFF	3 k Ω or more

OK

REPLACE STEERING SENSOR

NG

5 CHECK CAN BUS LINES FOR SHORT (YAW RATE SENSOR)

- Reconnect the connector (S9) to the steering sensor.
- Disconnect the connector (Y1) from the yaw rate sensor.
- Measure the resistance according to the value(s) in the table below.

Resistance

Tester Connection	Condition	Specified Condition
D3-6 (CANH) - D3-14 (CANL)	Ignition SW OFF	3 k Ω or more

OK

REPLACE YAW RATE SENSOR

NG

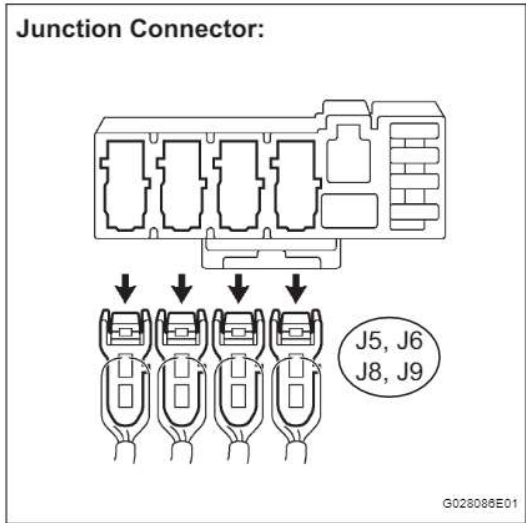
6 CHECK CAN BUS LINES FOR SHORT (CAN MAIN BUS LINE)

- Reconnect the connector (Y1) to the yaw rate sensor.

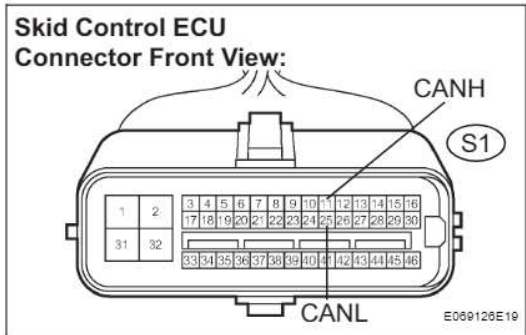
CA

CA-20

CAN COMMUNICATION – CAN COMMUNICATION SYSTEM



- (b) Disconnect all wire harness connectors (J5, J6, J8, J9) from the junction connector.
Turn the ignition switch to the LOCK position.
- (c) Disconnect the connector (S1) from the skid control ECU.



- (d) Measure the resistance according to the value(s) in the table below.
- Resistance**

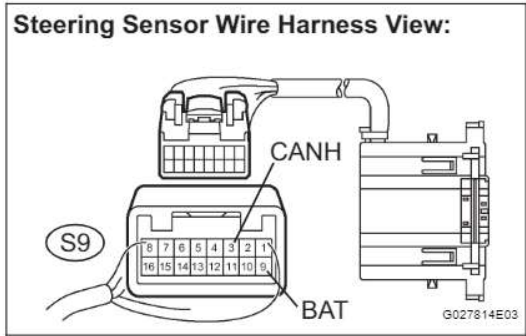
Tester Connection	Condition	Specified Condition
S1-11 (CANH) - S1-25 (CANL)	Ignition SW OFF	1 MΩ or more

NG REPAIR OR REPLACE CAN MAIN BUS LINE OR CONNECTOR

OK

7

CHECK CAN BUS LINES FOR SHORT (STEERING SENSOR SUB BUS LINE)



- (a) Disconnect the connector (S9) from the steering sensor.
- (b) Measure the resistance according to the value(s) in the table below.
- Resistance**

Tester Connection	Condition	Specified Condition
S9-3 (CANH) - S9-9 (BAT)	Ignition SW OFF	1 MΩ or more

HINT:
Check all wire harness connectors connected to the junction connector while disconnecting them.

NG REPAIR OR REPLACE STEERING SENSOR SUB BUS LINE OR CONNECTOR (CAN-H, CAN-L)

OK

REPAIR OR REPLACE YAW RATE SENSOR SUB BUS LINE OR CONNECTOR (CAN-H, CAN-L)

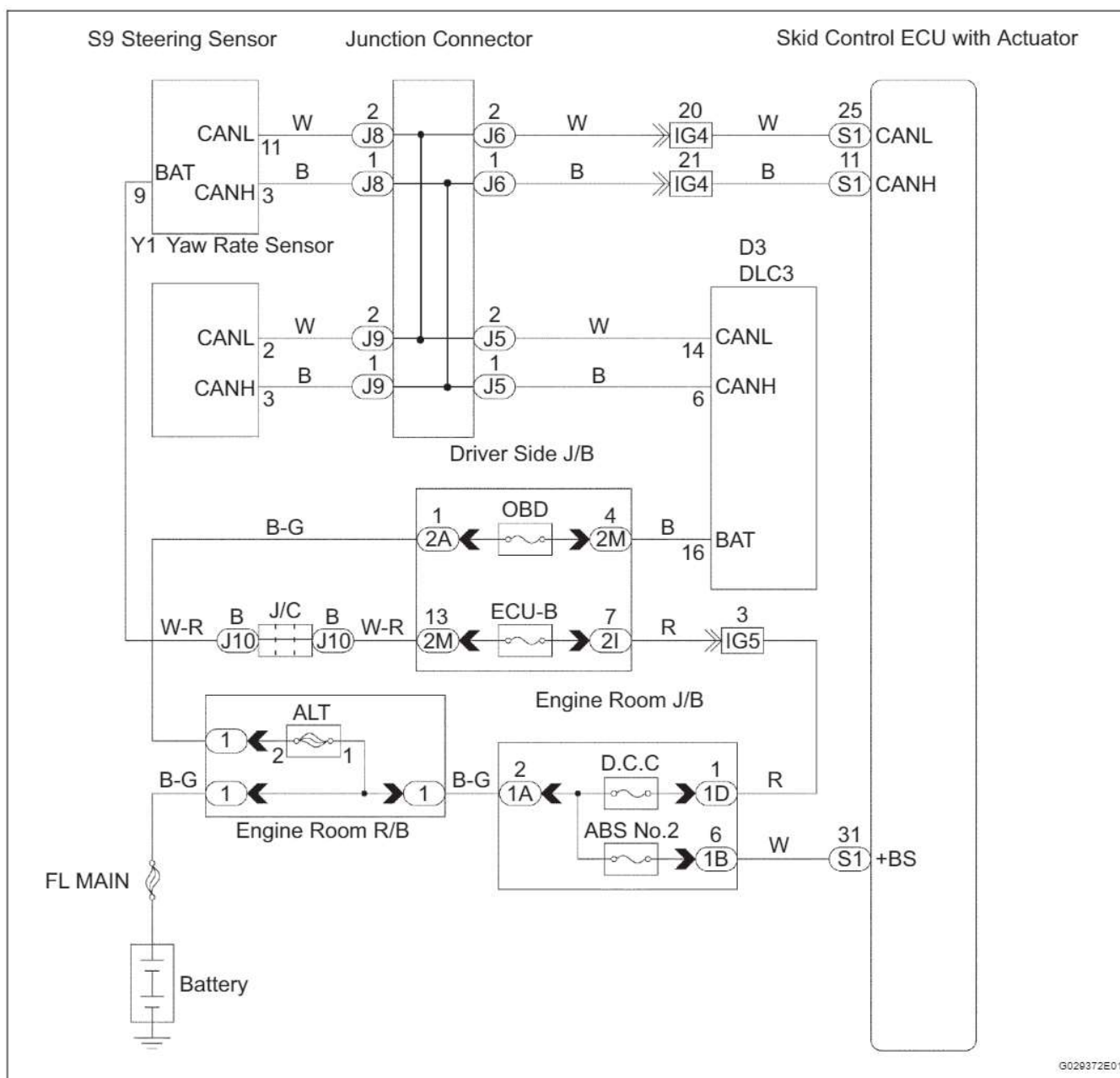
CAN COMMUNICATION – CAN COMMUNICATION SYSTEM

CA-21

Check CAN Bus Line (CAN-H) for Short to +B**DESCRIPTION**

A short to +B is suspected in the CAN bus line when there is continuity between terminals 16 (BAT) and 6 (CANH) of the DLC3.

Symptom	Trouble Area
There is continuity between terminals 16 (BAT) and 6 (CANH) of DLC3.	- Short to +B in CAN bus line (CANH) - Skid control ECU - Steering sensor - Yaw rate sensor

WIRING DIAGRAM

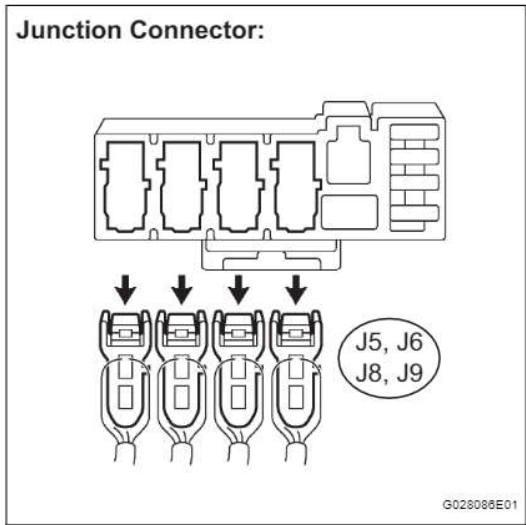
G029372E01

CA-22

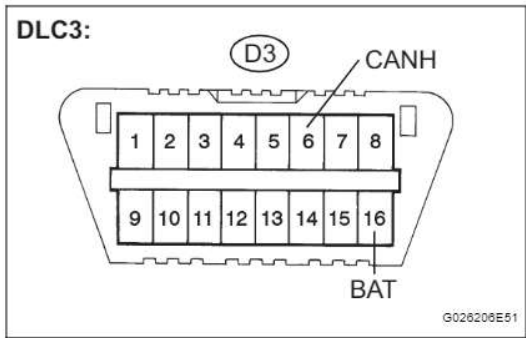
CAN COMMUNICATION – CAN COMMUNICATION SYSTEM

1

CHECK CAN BUS LINE FOR SHORT TO +B (DLC3 SUB LINE, CAN-H)



- (a) Disconnect all wire harness connectors (J5, J6, J8, J9) from the junction connector.



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

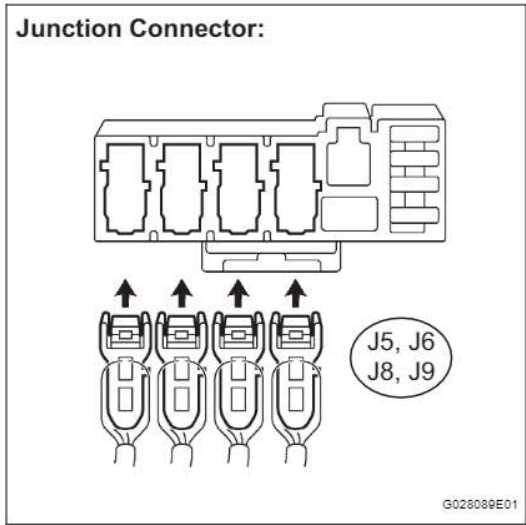
Tester Connection	Condition	Specified Condition
D3-6 (CANH) - D3-16 (BAT)	Ignition SW OFF	1 MΩ or more

NG REPAIR OR REPLACE DLC3 SUB LINE OR CONNECTOR (CAN-H)

OK

2

CONNECTION OF CONNECTORS

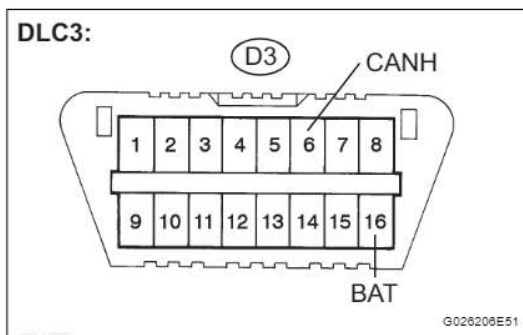


- (a) Reconnect all wire harness connectors (J5, J6, J8, J9) to the junction connector.

NEXT

CAN COMMUNICATION – CAN COMMUNICATION SYSTEM

CA-23

3 CHECK CAN BUS LINE FOR SHORT TO +B (SKID CONTROL ECU, CNA-H)

- Disconnect the connector (S1) from the skid control ECU.
- Measure the resistance according to the value(s) in the table below.

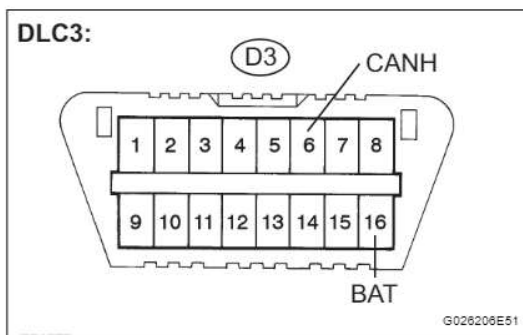
Resistance

Tester Connection	Condition	Specified Condition
D3-6 (CANH) - D3-16 (BAT)	Ignition SW OFF	1 MΩ or more

OK

REPLACE SKID CONTROL ECU WITH ACTUATOR

NG

4 CHECK CAN BUS LINE FOR SHORT TO +B (STEERING SENSOR, CAN-H)

- Reconnect the connector (S1) to the skid control ECU.
- Disconnect the connector (S9) from the steering sensor.
- Measure the resistance according to the value(s) in the table below.

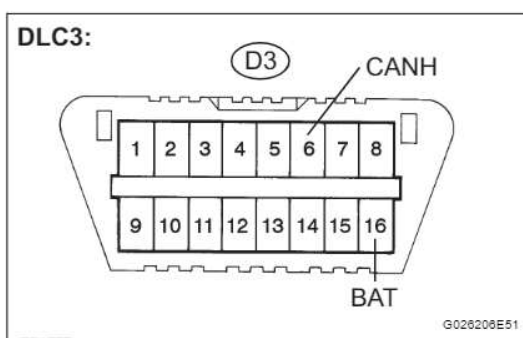
Resistance

Tester Connection	Condition	Specified Condition
D3-6 (CANH) - D3-16 (BAT)	Ignition SW OFF	1 MΩ or more

OK

REPLACE STEERING SENSOR

NG

5 CHECK CAN BUS LINE FOR SHORT TO +B (YAW RATE SENSOR, CAN-H)

- Reconnect the connector (S9) to the steering sensor.
- Disconnect the connector (Y1) from the yaw rate sensor.
- Measure the resistance according to the value(s) in the table below.

Resistance

Tester Connection	Condition	Specified Condition
D3-6 (CANH) - D3-16 (BAT)	Ignition SW OFF	1 MΩ or more

OK

REPLACE YAW RATE SENSOR

NG

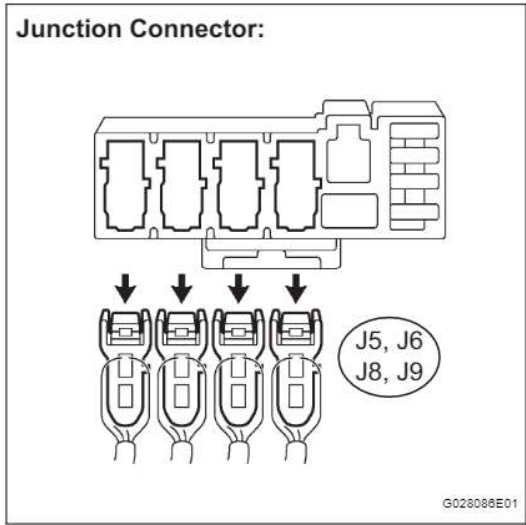
6 CHECK CAN BUS LINE FOR SHORT TO +B (CAN MAIN BUS LINE, CAN-H)

- Reconnect the connector (Y1) to the yaw rate sensor.

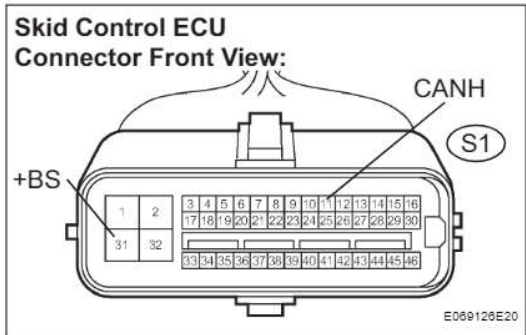
CA

CA-24

CAN COMMUNICATION – CAN COMMUNICATION SYSTEM



- (b) Disconnect all wire harness connectors (J5, J6, J8, J9) from the junction connector.
- (c) Disconnect the connector (S1) from the skid control ECU.



- (d) Measure the resistance according to the value(s) in the table below.
- Resistance**

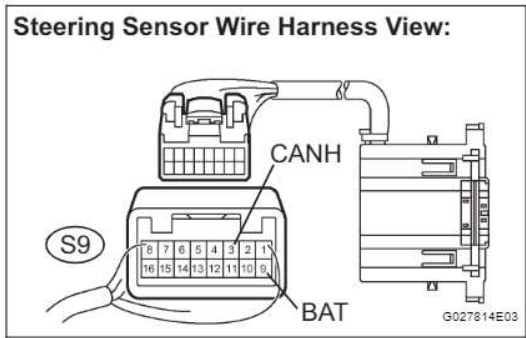
Tester Connection	Condition	Specified Condition
S1-11 (CANH) - S1-31 (+BS)	Ignition SW OFF	1 MΩ or more

NG REPAIR OR REPLACE CAN MAIN BUS LINE OR CONNECTOR (CAN-H)

OK

7

CHECK CAN BUS LINE FOR SHORT TO +B (STEERING SENSOR SUB BUS LINE, CAN-H)



- (a) Disconnect the connector (S9) from the steering sensor.
 - (b) Measure the resistance according to the value(s) in the table below.
- Resistance**

Tester Connection	Condition	Specified Condition
S9-3 (CANH) - S9-9 (BAT)	Ignition SW OFF	1 MΩ or more

HINT:
Check all wire harness connectors connected to the junction connector while disconnecting them.

NG REPAIR OR REPLACE STEERING SENSOR SUB BUS LINE OR CONNECTOR (CAN-H)

OK

REPAIR OR REPLACE YAW RATE SENSOR SUB BUS LINE OF CONNECTOR (CAN-H)

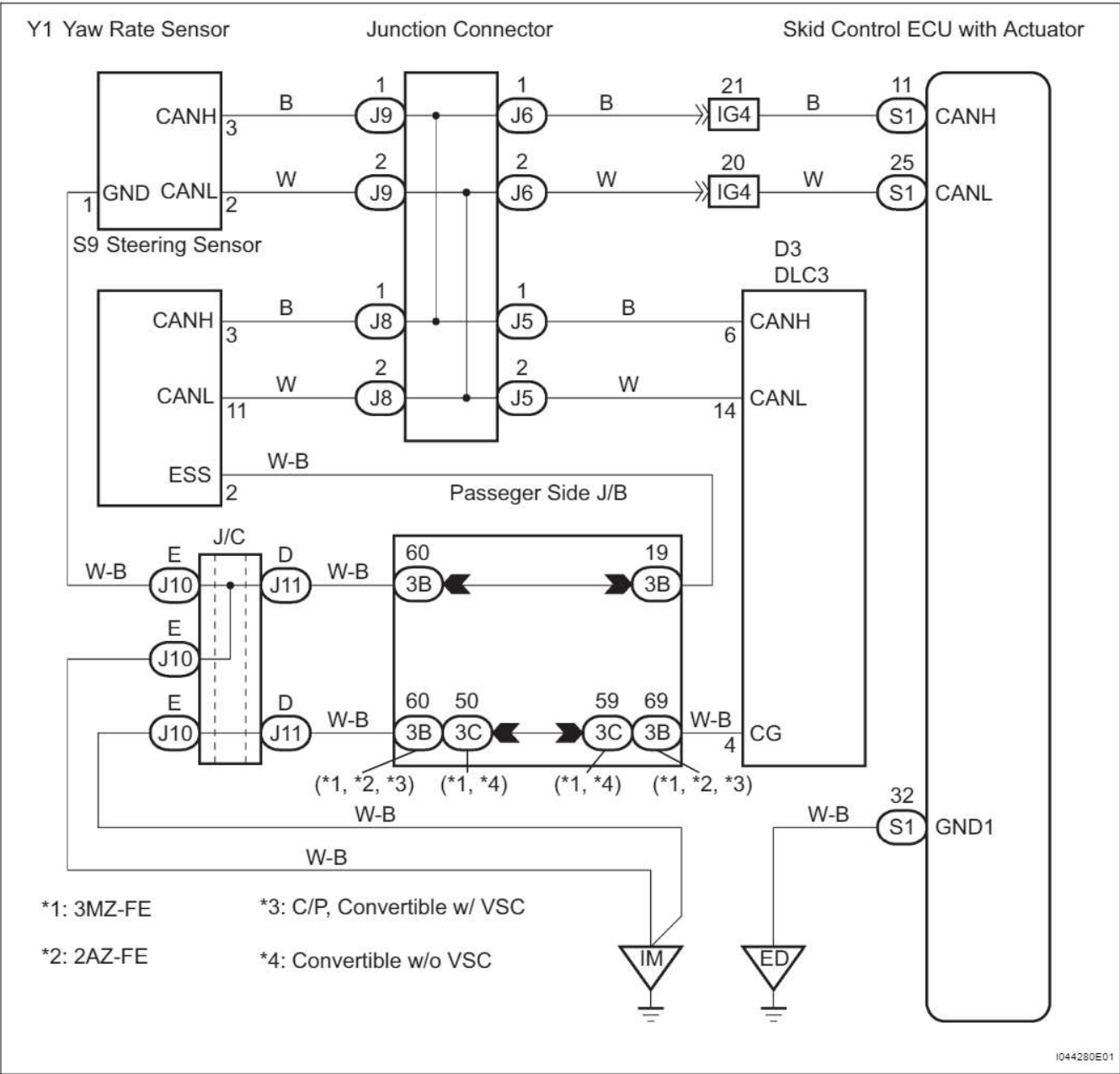
Check CAN Bus Line (CAN-H) for Short to GND

DESCRIPTION

A short to GND is suspected in the CAN bus line when there is continuity between terminals 4 (CG) and 6 (CANH) of the DLC3.

Symptom	Trouble Area
There is continuity between terminals 4 (CG) and 6 (CANH) of DLC3.	• Short to GND in CAN bus line (CANH) • Skid control ECU • Steering sensor • Yaw rate sensor

WIRING DIAGRAM



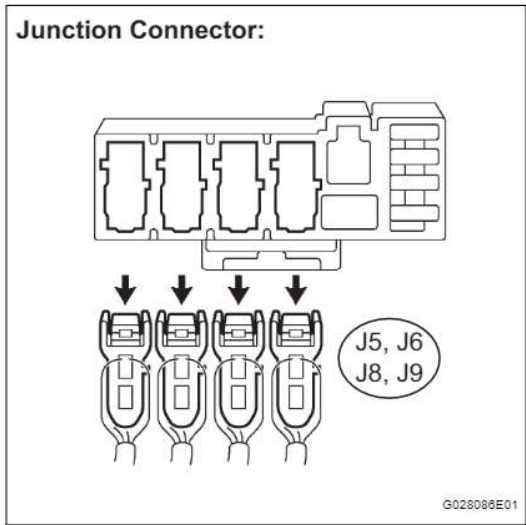
CA

CA-26

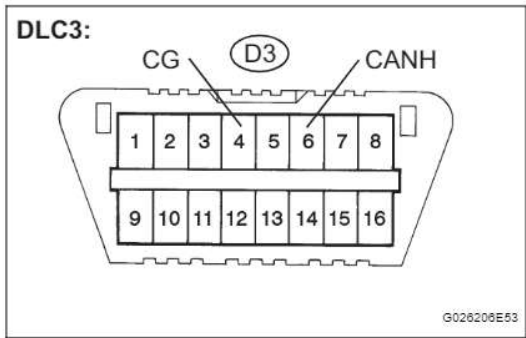
CAN COMMUNICATION – CAN COMMUNICATION SYSTEM

1

CHECK CAN BUS LINE FOR SHORT TO GND (DLC3 SUB BUS LINE, CAN-H)



- (a) Disconnect all wire harness connectors (J5, J6, J8, J9) from the junction connector.



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

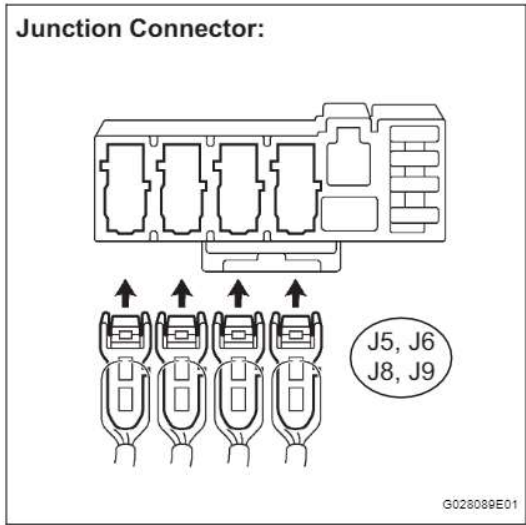
Tester Connection	Condition	Specified Condition
D3-4 (CG) - D3-6 (CANH)	Ignition SW OFF	1 MΩ or more

NG REPAIR OR REPLACE DLC3 SUB BUS LINE OR CONNECTOR (CAN-H)

OK

2

CONNECTION OF CONNECTORS

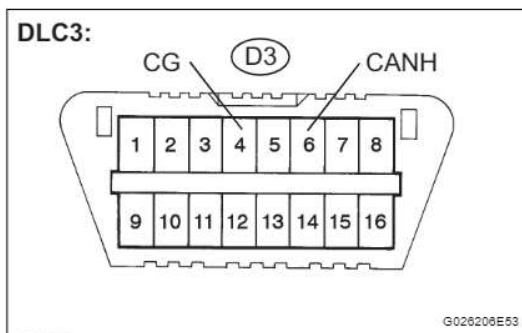


- (a) Reconnect all wire harness connectors (J5, J6, J8, J9) to the junction connector.

NEXT

CAN COMMUNICATION – CAN COMMUNICATION SYSTEM

CA-27

3 CHECK CAN BUS LINE FOR SHORT TO GND (SKID CONTROL ECU, CAN-H)

- Disconnect the connector (S1) from the skid control ECU.
- Measure the resistance according to the value(s) in the table below.

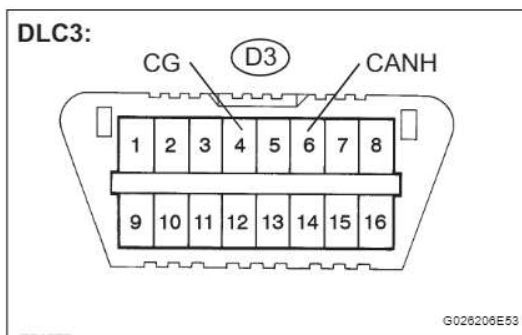
Resistance

Tester Connection	Condition	Specified Condition
D3-4 (CG) - D3-6 (CANH)	Ignition SW OFF	3 k Ω or more

OK

REPLACE SKID CONTROL ECU WITH ACTUATOR

NG

4 CHECK CAN BUS LINE FOR SHORT TO GND (STEERING SENSOR, CAN-H)

- Reconnect the connector (S1) to the skid control ECU.
- Disconnect the connector (S9) from the steering sensor.
- Measure the resistance according to the value(s) in the table below.

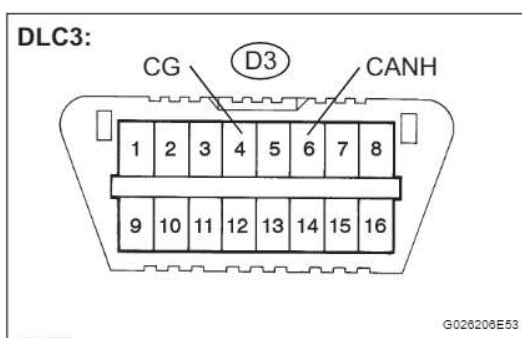
Resistance

Tester Connection	Condition	Specified Condition
D3-4 (CG) - D3-6 (CANH)	Ignition SW OFF	3 k Ω or more

OK

REPLACE STEERING SENSOR

NG

5 CHECK CAN BUS LINE FOR SHORT TO GND (YAW RATE SENSOR, CAN-H)

- Reconnect the connector (S9) to the steering sensor.
- Disconnect the connector (Y1) from the yaw rate sensor.
- Measure the resistance according to the value(s) in the table below.

Resistance

Tester Connection	Condition	Specified Condition
D3-4 (CG) - D3-6 (CANH)	Ignition SW OFF	3 k Ω or more

OK

REPLACE YAW RATE SENSOR

NG

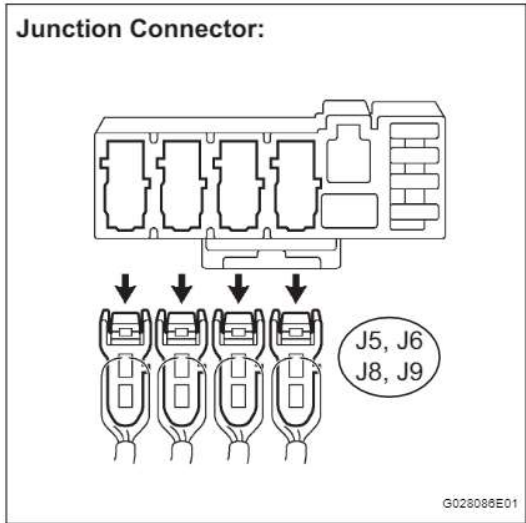
6 CHECK CAN BUS LINE FOR SHORT TO GND (CAN MAIN BUS LINE, CAN-H)

- Reconnect the connector (Y1) to the yaw rate sensor.

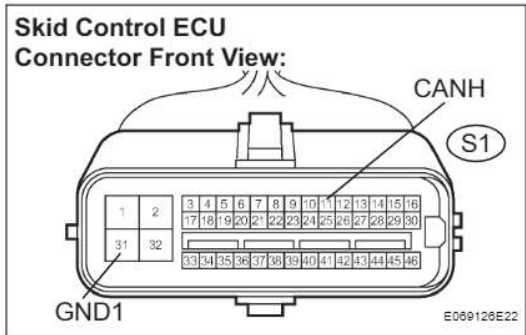
CA

CA-28

CAN COMMUNICATION – CAN COMMUNICATION SYSTEM



- (b) Disconnect all wire harness connectors (J5, J6, J8, J9) from the junction connector.
- (c) Disconnect the connector (S1) from the skid control ECU.



- (d) Measure the resistance according to the value(s) in the table below.
- Resistance**

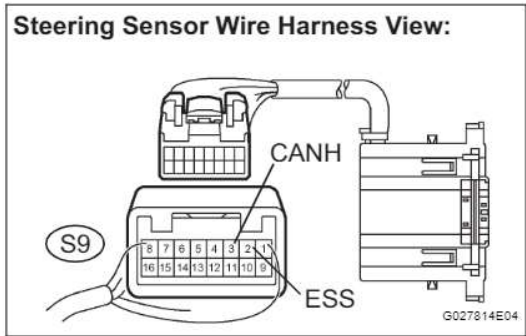
Tester Connection	Condition	Specified Condition
S1-11 (CANH) - S1-32 (GND1)	Ignition SW OFF	1 MΩ or more

NG REPAIR OR REPLACE CAN MAIN BUS LINE OR CONNECTOR (CAN-H)

OK

7

CHECK CAN BUS LINE FOR SHORT TO GND (STEERING SENSOR SUB BUS LINE, CAN-H)



- (a) Disconnect the connector (S9) from the steering sensor.
- (b) Measure the resistance according to the value(s) in the table below.
- Resistance**

Tester Connection	Condition	Specified Condition
S9-2 (ESS) S9-3 (CANH)	Ignition SW OFF	1 MΩ or more

HINT:
Check all wire harness connectors connected to the junction connector while disconnecting them.

NG REPAIR OR REPLACE STEERING SENSOR SUB BUS LINE OR CONNECTOR (CAN-H)

OK

REPAIR OR REPLACE YAW RATE SENSOR SUB BUS LINE OR CONNECTOR (CAN-H)

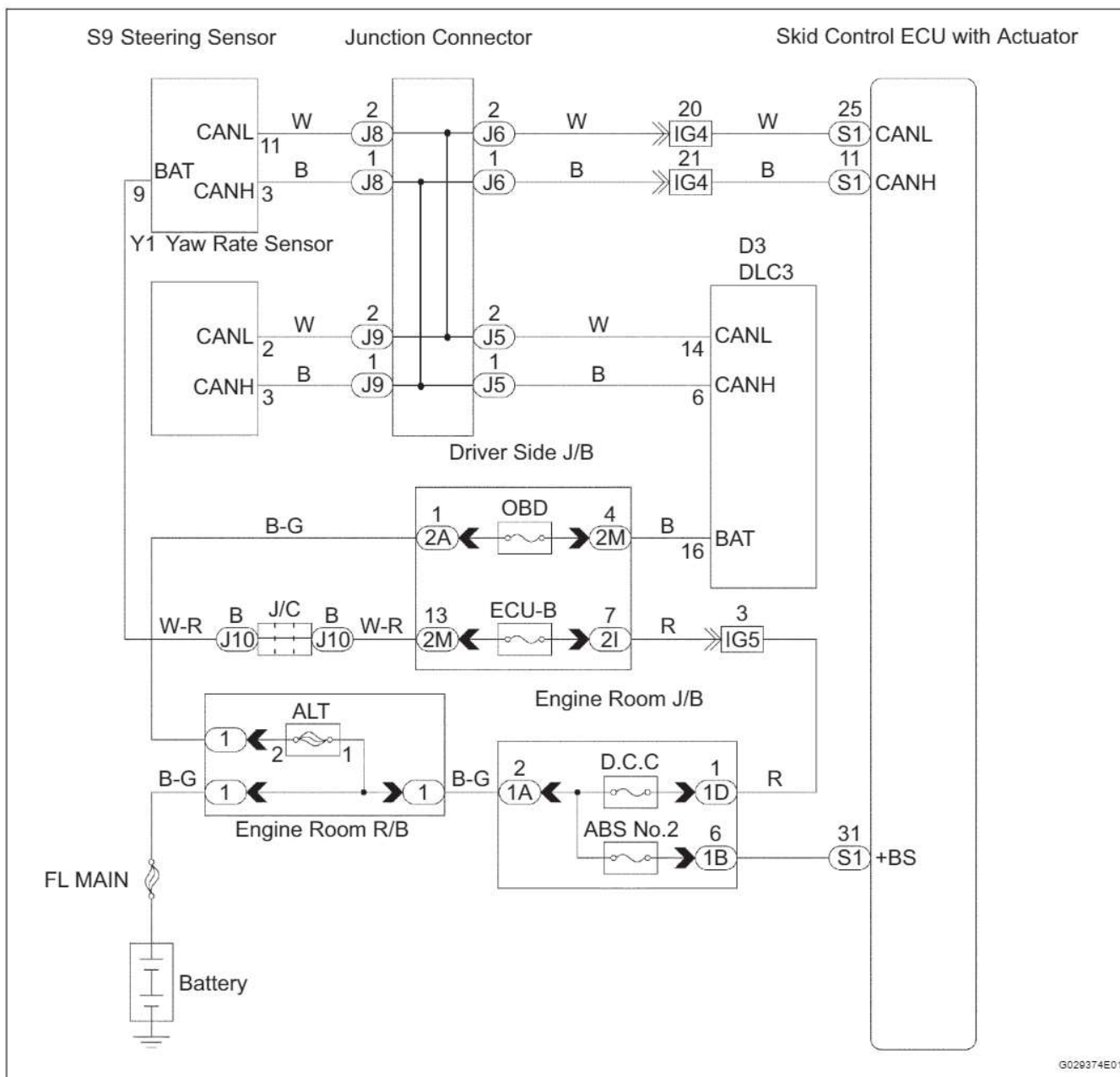
CAN COMMUNICATION – CAN COMMUNICATION SYSTEM

CA-29

Check CAN Bus Line (CAN-L) for Short to +B**DESCRIPTION**

A short to the +B is suspected in the CAN bus line when there is continuity between terminals 16 (BAT) and 14 (CANL) of the DLC3.

Symptom	Trouble Area
CAN bus line when there is continuity between terminals 16 (BAT) and 14 (CANL) of DLC3.	• Short to GND in CAN bus line (CANL) • Skid control ECU • Steering sensor • Yaw rate sensor

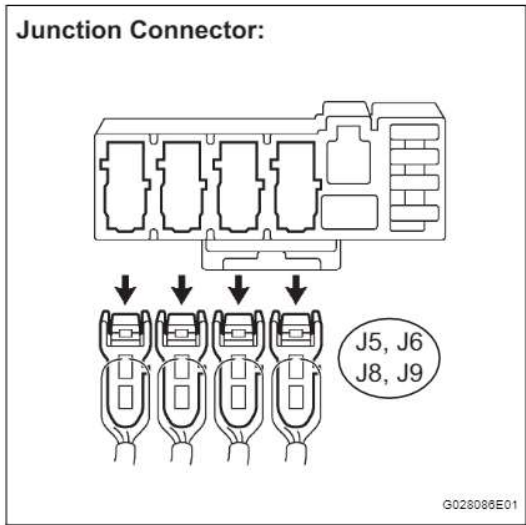
WIRING DIAGRAM

CA-30

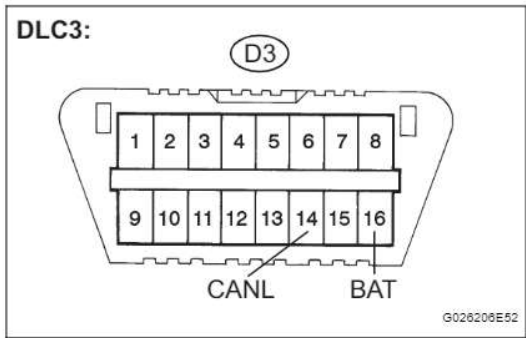
CAN COMMUNICATION – CAN COMMUNICATION SYSTEM

1

CHECK CAN BUS LINE FOR SHORT TO +B (DLC3 SUB BUS LINE, CAN-L)



- (a) Disconnect all wire harness connectors (J5, J6, J8, J9) from the junction connector.



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

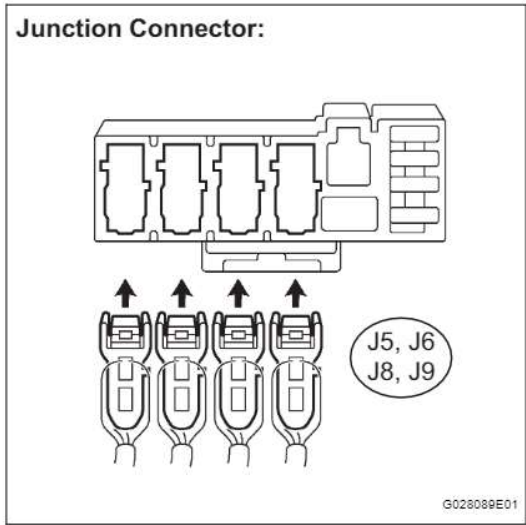
Tester Connection	Condition	Specified Condition
D3-14 (CANL) - D3-16 (BAT)	Ignition SW OFF	1 MΩ or more

NG REPAIR OR REPLACE DLC3 SUB BUS LINE OR CONNECTOR (CAN-L)

OK

2

CONNECTION OF CONNECTOR

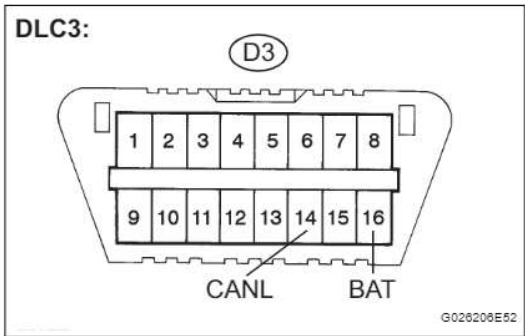


- (a) Reconnect all wire harness connectors (J5, J6, J8, J9) to the junction connector.

NEXT

3

CHECK CAN BUS LINE FOR SHORT TO +B (SKID CONTROL ECU, CAN-L)



- (a) Disconnect the connector (S1) from the skid control ECU.
- (b) Measure the resistance according to the value(s) in the table below.

Resistance

Tester Connection	Condition	Specified Condition
D3-14 (CANL) - D3-16 (BAT)	Ignition SW OFF	1 MΩ or more

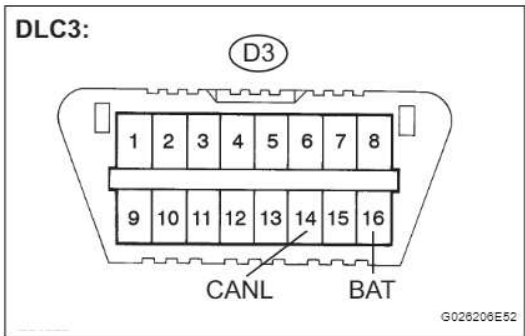
OK

REPLACE SKID CONTROL ECU WITH ACTUATOR

NG

4

CHECK CAN BUS LINE FOR SHORT TO +B (STEERING SENSOR, CAN-L)



- (a) Disconnect the connector (S1) from the skid control ECU.
- (b) Disconnect the connector (S9) from the steering sensor.
- (c) Measure the resistance according to the value(s) in the table below.

Resistance

Tester Connection	Condition	Specified Condition
D3-14 (CANL) - D3-16 (BAT)	Ignition SW OFF	1 MΩ or more

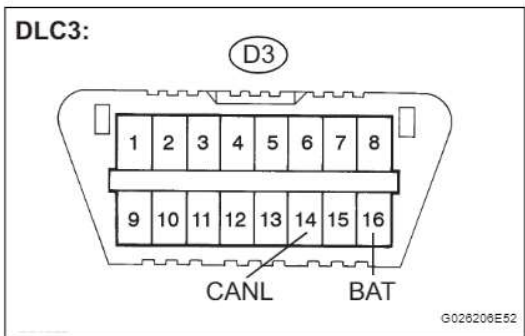
OK

REPLACE STEERING SENSOR

NG

5

CHECK CAN BUS LINE FOR SHORT TO +B (YAW RATE SENSOR, CAN-L)



- (a) Disconnect the connector (S1) from the skid control ECU.
- (b) Disconnect the connector (Y1) from the yaw rate sensor.
- (c) Measure the resistance according to the value(s) in the table below.

Resistance

Tester Connection	Condition	Specified Condition
D3-14 (CANL) - D3-16 (BAT)	Ignition SW OFF	1 MΩ or more

OK

REPLACE YAW RATE SENSOR

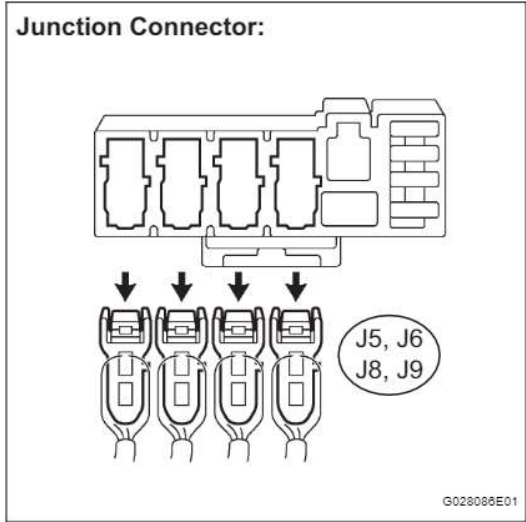
NG

CA-32

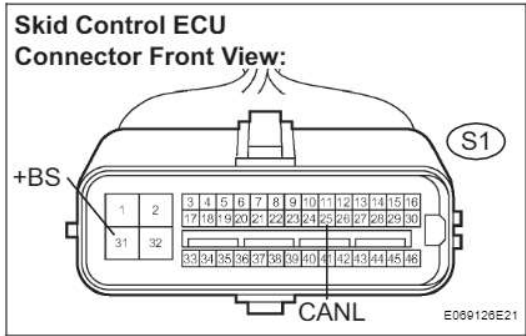
CAN COMMUNICATION – CAN COMMUNICATION SYSTEM

6

CHECK CAN BUS LINE FOR SHORT TO +B (CAN MAIN BUS LINE, CAN-L)



- (a) Reconnect the connector (Y1) to the yaw rate sensor.
- (b) Disconnect all wire harness connectors (J5, J6, J8, J9) from the junction connector.
- (c) Disconnect the connector (S1) from the skid control ECU.



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

Tester Connection	Condition	Specified Condition
S1-25 (CANL) - S1-31 (+BS)	Ignition SW OFF	1 MΩ or more

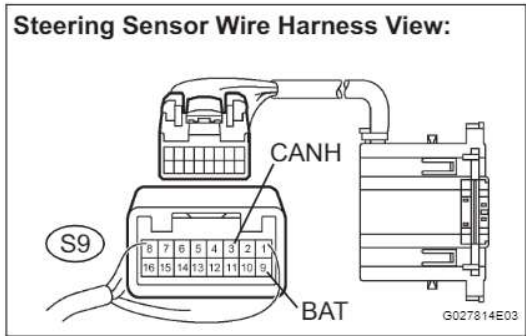
NG

REPAIR OR REPLACE CAN MAIN BUS LINE OR CONNECTOR (CAN-L)

OK

7

CHECK CAN BUS LINE FOR SHORT TO +B (STEERING SENSOR SUB BUS LINE, CAN-L)



- (a) Disconnect the connector (S9) from the steering sensor.
- (b) Measure the resistance according to the value(s) in the table below.

Resistance

Tester Connection	Condition	Specified Condition
S9-11 (CANL) - S9-9 (BAT)	Ignition SW OFF	1 MΩ or more

HINT:
Check all wire harness connectors connected to the junction connector while disconnecting them.

NG

REPAIR OR REPLACE STEERING SENSOR SUB BUS LINE OR CONNECTOR (CAN-L)

OK

REPAIR OR REPLACE YAW RATE SENSOR SUB BUS LINE OR CONNECTOR (CAN-L)

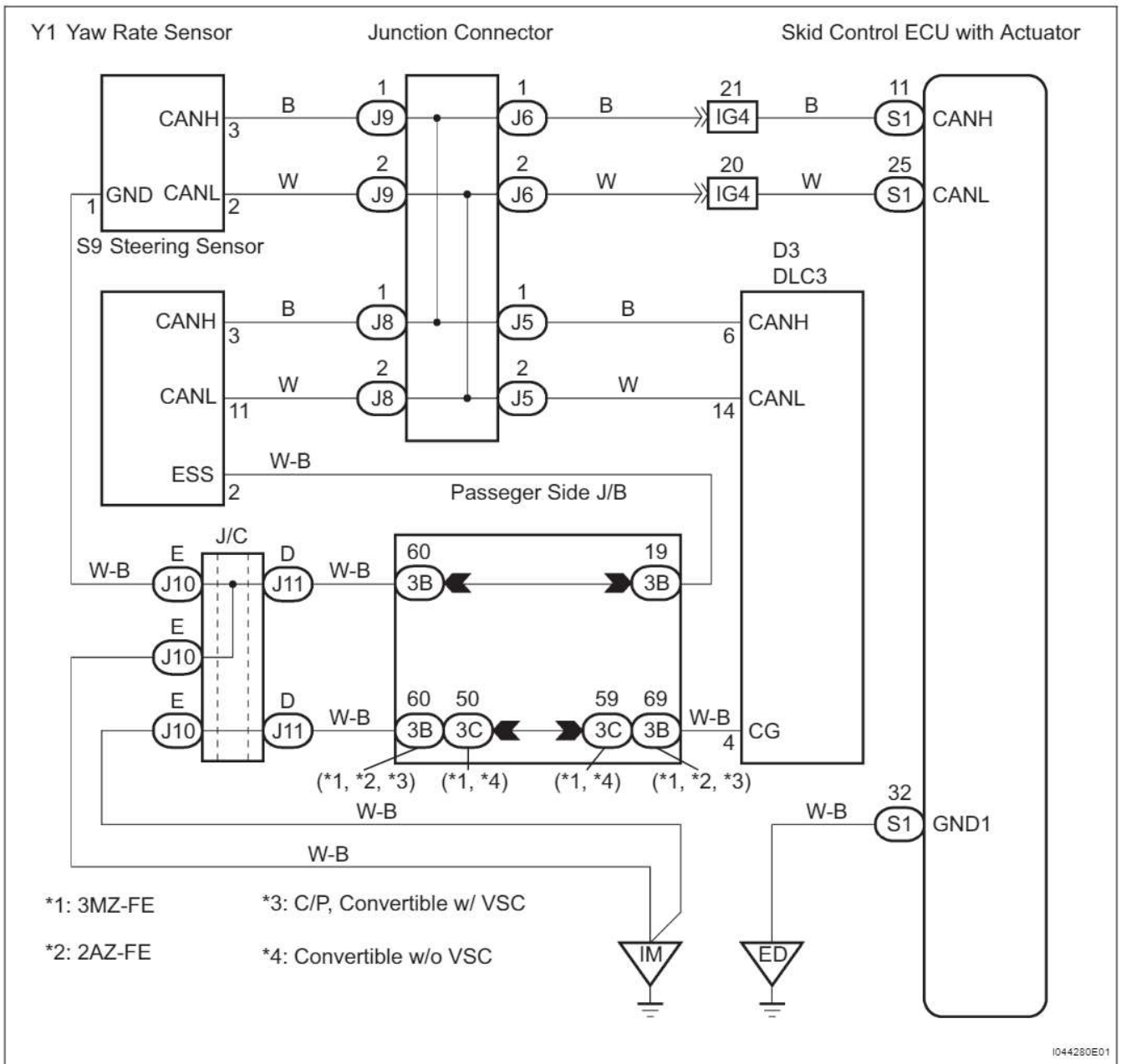
CAN COMMUNICATION – CAN COMMUNICATION SYSTEM

CA-33

Check CAN Bus Line (CAN-L) for Short to GND**DESCRIPTION**

A short to GND is suspected in the CAN bus line when there is continuity between terminals 4 (CG) and 14 (CANL) of the DLC3.

Symptom	Trouble Area
There is continuity between terminals 4 (CG) and 14 (CANL) of the DLC3.	- Short to GND in CAN bus line (CANL) - Skid control ECU - Steering sensor - Yaw rate sensor

WIRING DIAGRAM

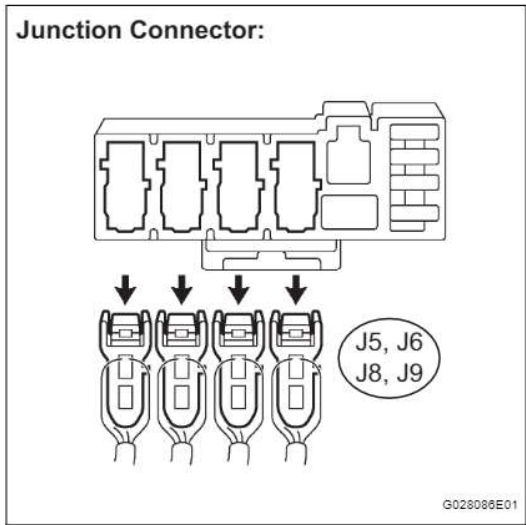
CA

CA-34

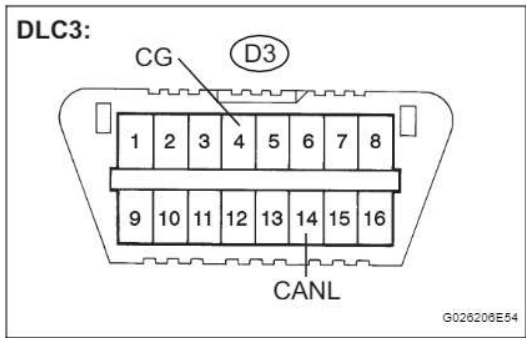
CAN COMMUNICATION – CAN COMMUNICATION SYSTEM

1

CHECK CAN BUS LINE FOR SHORT TO GND (DLC3 SUB BUS LINE, CAN-L)



(a) Disconnect all wire harness connectors (J5, J6, J8, J9) from the junction connector.



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

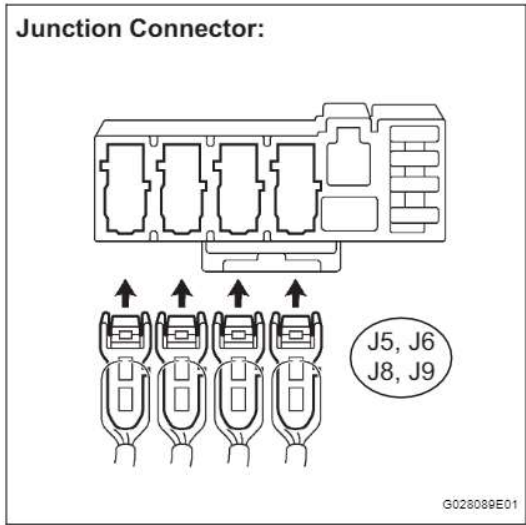
Tester Connection	Condition	Specified Condition
D3-4 (CG) - D3-14 (CANL)	Ignition SW OFF	1 MΩ or more

NG REPAIR OR REPLACE DLC3 SUB BUS LINE OR CONNECTOR (CAN-L)

OK

2

CONNECTION OF CONNECTORS

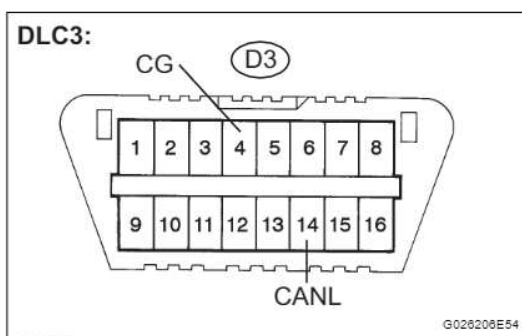


(a) Reconnect all wire harness connectors (J5, J6, J8, J9) to the junction connector.

NEXT

CAN COMMUNICATION – CAN COMMUNICATION SYSTEM

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3 CHECK CAN BUS LINE FOR SHORT TO GND (SKID CONTROL ECU, CAN-L)

- Disconnect the connector (S1) from the skid control ECU.
- Measure the resistance according to the value(s) in the table below.

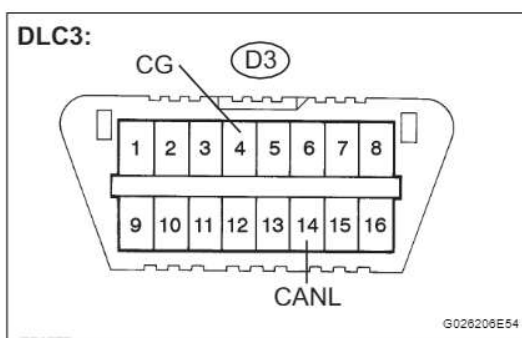
Resistance

Tester Connection	Condition	Specified Condition
D3-4 (CG) - D3-14 (CANL)	Ignition SW OFF	3 k Ω or more

OK

REPLACE SKID CONTROL ECU WITH ACTUATOR

NG

4 CHECK CAN BUS LINE FOR SHORT TO GND (STEERING SENSOR, CAN-L)

- Reconnect the connector (S1) to the skid control ECU.
- Disconnect the connector (S9) from the steering sensor.
- Measure the resistance according to the value(s) in the table below.

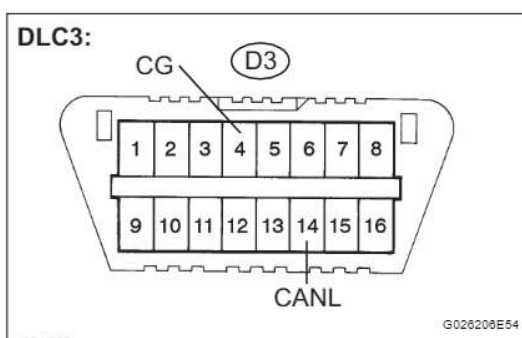
Resistance

Tester Connection	Condition	Specified Condition
D3-4 (CG) - D3-14 (CANL)	Ignition SW OFF	3 k Ω or more

OK

REPLACE STEERING SENSOR

NG

5 CHECK CAN BUS LINE FOR SHORT TO GND (YAW RATE SENSOR, CAN-L)

- Reconnect the connector (S9) to the steering sensor.
- Disconnect the connector (Y1) from the yaw rate sensor.
- Measure the resistance according to the value(s) in the table below.

Resistance

Tester Connection	Condition	Specified Condition
D3-4 (CG) - D3-14 (CANL)	Ignition SW OFF	3 k Ω or more

OK

REPLACE YAW RATE SENSOR

NG

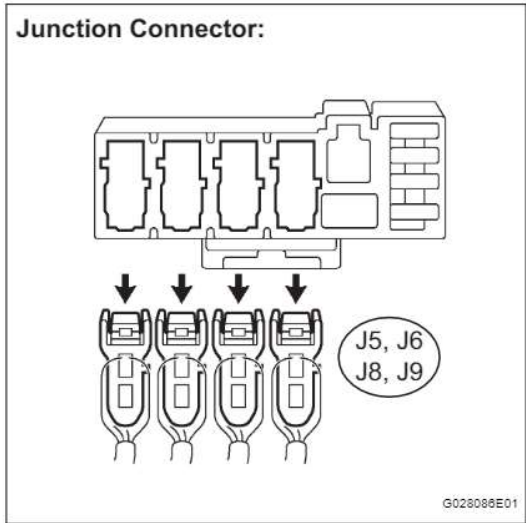
6 CHECK CAN BUS LINE FOR SHORT TO GND (CAN MAIN BUS LINE, CAN-L)

- Reconnect the connector (Y1) to the yaw rate sensor.

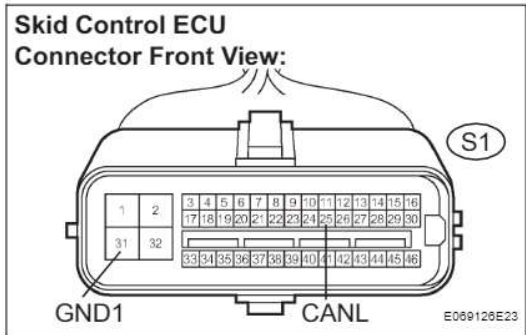
CA

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CAN COMMUNICATION – CAN COMMUNICATION SYSTEM



- (b) Disconnect all wire harness connectors (J5, J6, J8, J9) from the junction connector.
- (c) Disconnect the connector (S1) from the skid control ECU.



- (d) Measure the resistance according to the value(s) in the table below.
- Resistance**

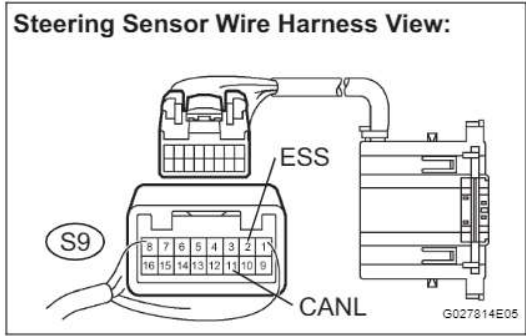
Tester Connection	Condition	Specified Condition
S1-25 (CANL) - S1-32 (GND1)	Ignition SW OFF	1 MΩ or more

NG REPAIR OR REPLACE CAN MAIN BUS LINE OR CONNECTOR (CAN-L)

OK

7

CHECK CAN BUS LINE FOR SHORT TO GND (STEERING SENSOR SUB BUS LINE, CAN-L)



- (a) Disconnect the connector (S9) from the steering sensor.
- (b) Measure the resistance according to the value(s) in the table below.
- Resistance**

Tester Connection	Condition	Specified Condition
S9-2 (ESS) - S9-11 (CANL)	Ignition SW OFF	1 MΩ or more

HINT:
Check all wire harness connectors connected to the junction connector while disconnecting them.

NG REPAIR OR REPLACE STEERING SENSOR SUB BUS LINE OR CONNECTOR (CAN-L)

OK

REPAIR OR REPLACE YAW RATE SENSOR SUB BUS LINE OR CONNECTOR (CAN-L)