

SECTION **DEF**
DEFOGGER

A
B
C
D
E
F
G
H
I
J
K
DEF
M
N
O
P

CONTENTS

BASIC INSPECTION	3	Description	12
DIAGNOSIS AND REPAIR WORKFLOW	3	Component Function Check	12
Repair Work Flow	3	Diagnosis Procedure	12
FUNCTION DIAGNOSIS	4	Component Inspection	13
REAR WINDOW DEFOGGER SYSTEM	4	DOOR MIRROR DEFOGGER RH	15
System Diagram	4	Description	15
System Description	4	Component Function Check	15
Component Parts Location	5	Diagnosis Procedure	15
Component Description	5	Component Inspection	16
DIAGNOSIS SYSTEM (BCM)	6	ECU DIAGNOSIS	18
COMMON ITEM	6	BCM (BODY CONTROL MODULE)	18
COMMON ITEM : CONSULT-III Function (BCM -		Reference Value	18
COMMON ITEM)	6	Terminal Layout	21
REAR WINDOW DEFOGGER	6	Physical Values	21
REAR WINDOW DEFOGGER : CONSULT-III		Wiring Diagram	27
Function (BCM - REAR DEFOGGER)	7	Fail Safe	34
COMPONENT DIAGNOSIS	8	DTC Inspection Priority Chart	35
REAR WINDOW DEFOGGER SWITCH	8	DTC Index	35
Description	8	SYMPTOM DIAGNOSIS	37
Component Function Check	8	REAR WINDOW DEFOGGER AND DOOR	
Diagnosis Procedure	8	MIRROR DEFOGGER DO NOT OPERATE.	37
REAR WINDOW DEFOGGER RELAY	9	Diagnosis Procedure	37
Description	9	REAR WINDOW DEFOGGER DOES NOT	
Component Function Check	9	OPERATE BUT BOTH OF DOOR MIRROR	
Diagnosis Procedure	9	DEFOGGER OPERATE.	38
REAR WINDOW DEFOGGER POWER SUP-		Diagnosis Procedure	38
PLY AND GROUND CIRCUIT	10	BOTH DOORS MIRROR DEFOGGER DON'T	
Description	10	OPERATE BUT REAR WINDOW DEFOG-	
Component Function Check	10	GER OPERATES	39
Diagnosis Procedure	10	Diagnosis Procedure	39
Component Inspection	11	DRIVER SIDE DOOR MIRROR DEFOGGER	
DOOR MIRROR DEFOGGER LH	12	DOES NOT OPERATE.	40
		Diagnosis Procedure	40

PASSENGER SIDE DOOR MIRROR DEFOGGER DOES NOT OPERATE.	41	Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TENSIONER"	43
Diagnosis Procedure	41	Precaution Necessary for Steering Wheel Rotation After Battery Disconnect	43
REAR WINDOW DEFOGGER SWITCH DOES NOT LIGHT, BUT REAR WINDOW DEFOGGER OPERATES	42	Handling for Adhesive and Primer	44
Diagnosis Procedure	42	ON-VEHICLE REPAIR	45
PRECAUTION	43	REAR WINDOW DEFOGGER	45
PRECAUTIONS	43	Filament Check	45
		Filament Repair	45

DIAGNOSIS AND REPAIR WORKFLOW

< BASIC INSPECTION >

BASIC INSPECTION

DIAGNOSIS AND REPAIR WORKFLOW

Repair Work Flow

INFOID:000000005146816

DETAILED FLOW

1. OBTAIN INFORMATION ABOUT SYMPTOM

Interview the customer to obtain the malfunction information (conditions and environment when the malfunction occurred) as much as possible when the customer brings the vehicle in.

>> GO TO 2

2. REPRODUCE THE MALFUNCTION INFORMATION

Check the malfunction on the vehicle that the customer describes.
Inspect the relation of the symptoms and the condition when the symptoms occur.

>> GO TO 3

3. IDENTIFY THE MALFUNCTIONING SYSTEM WITH "SYMPTOM DIAGNOSIS"

Use "Symptom diagnosis" from the symptom inspection result in step 2 and then identify where to start performing the diagnosis based on possible causes and symptoms.

>> GO TO 4

4. IDENTIFY THE MALFUNCTIONING PARTS WITH "COMPONENT DIAGNOSIS"

Perform the diagnosis with "Component diagnosis" of the applicable system.

>> GO TO 5

5. REPAIR OR REPLACE THE MALFUNCTIONING PARTS

Repair or replace the specified malfunctioning parts.

>> GO TO 6

6. FINAL CHECK

Check that malfunctions are not reproduced when obtaining the malfunction information from the customer, referring to the symptom inspection result in step 2.

Are the malfunctions corrected?

YES >> Inspection End.

NO >> Refer to [GI-38. "Intermittent Incident"](#).

A
B
C
D
E
F
G
H
I
J
K
DEF
M
N
O
P

REAR WINDOW DEFOGGER SYSTEM

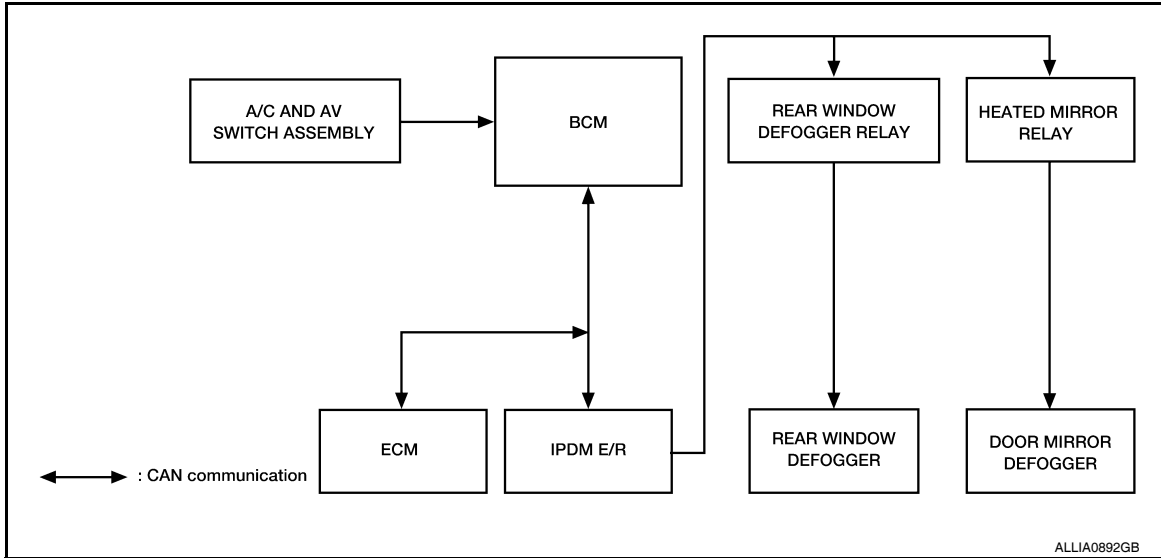
< FUNCTION DIAGNOSIS >

FUNCTION DIAGNOSIS

REAR WINDOW DEFOGGER SYSTEM

System Diagram

INFOID:000000005146817



System Description

INFOID:000000005146818

Operation Description

- When rear window defogger switch is turned ON while ignition switch is ON, the A/C and AV switch assembly (rear window defogger switch) transmits rear window defogger switch signal to BCM.
- BCM transmits rear window defogger control signal to IPDM E/R and display unit via CAN communication when rear window defogger operates.
- IPDM E/R turns rear window defogger relay and heated mirror relay ON when rear window defogger switch signal is received.
- Rear window defogger and door mirror defogger are supplied with power and operate when rear window defogger relay and heated mirror relay turn ON.
- Rear window defogger ON is displayed when signal is received.

Timer function

- BCM turns rear window defogger relay and heated mirror relay ON for approximately 15 minutes when rear window defogger switch is turned ON while ignition switch is ON. It makes rear window defogger and door mirror defogger operate.
- Timer is canceled after pressing rear window defogger switch again during timer operation. Then BCM turns rear window defogger relay and heated mirror relay OFF. The same reaction also occurs during timer operation, if the ignition switch is turned OFF.

INPUT/OUTPUT SIGNAL CHART

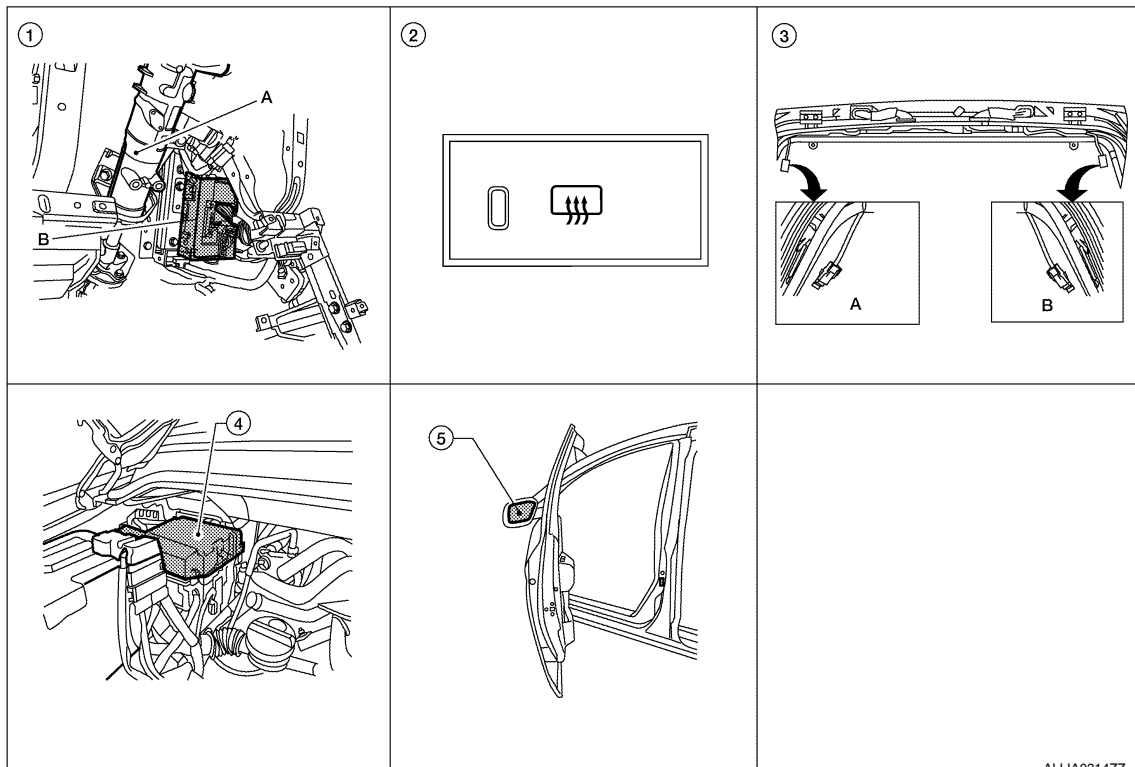
Switch	Input signal to BCM	BCM function	Actuator
Rear window defogger switch	Defogger switch signal	Rear window defogger & door mirror defogger control	Rear window defogger
Ignition switch	Ignition signal		Door mirror defogger

REAR WINDOW DEFOGGER SYSTEM

< FUNCTION DIAGNOSIS >

Component Parts Location

INFOID:000000005146819



ALLIA0314ZZ

1. A. Steering column assembly
B. BCM M18, M20 (view with instrument panel removed)
2. A/C and AV switch assembly (rear window defogger switch) M98
3. A. Rear window defogger ground connector D604
B. Rear window defogger connector D406
4. IPDM E/R E120, E122, E124
5. Door mirror (door mirror defogger) LH D4, RH D107

Component Description

INFOID:000000005146820

BCM	<ul style="list-style-type: none"> Operates the rear window defogger with the operation of rear window defogger switch. Performs the timer control of rear window defogger.
Rear window defogger relay	<ul style="list-style-type: none"> Operates the rear window defogger and the door mirror defogger with the control signal from BCM.
A/C and AV switch assembly (rear window defogger switch)	<ul style="list-style-type: none"> The rear window defogger switch is turned ON. Turns the indicator lamp ON when detecting the operation of rear window defogger.
Rear window defogger	<ul style="list-style-type: none"> Heats the heating wire with the power supply from the rear window defogger relay to prevent the rear window from fogging up.
Door mirror defogger	<ul style="list-style-type: none"> Heats the heating wire with the power supply from the heated mirror relay to prevent the door mirror from fogging up.

DEF

M

N

O

P

DIAGNOSIS SYSTEM (BCM)

< FUNCTION DIAGNOSIS >

DIAGNOSIS SYSTEM (BCM)

COMMON ITEM

COMMON ITEM : CONSULT-III Function (BCM - COMMON ITEM)

INFOID:000000005327521

APPLICATION ITEM

CONSULT-III performs the following functions via CAN communication with BCM.

Diagnosis mode	Function Description
WORK SUPPORT	Changes the setting for each system function.
SELF-DIAG RESULTS	Displays the diagnosis results judged by BCM. Refer to BCS-54, "DTC Index" .
CAN DIAG SUPPORT MNTR	Monitors the reception status of CAN communication viewed from BCM.
DATA MONITOR	The BCM input/output signals are displayed.
ACTIVE TEST	The signals used to activate each device are forcibly supplied from BCM.
ECU IDENTIFICATION	The BCM part number is displayed.
CONFIGURATION	<ul style="list-style-type: none"> • Enables to read and save the vehicle specification. • Enables to write the vehicle specification when replacing BCM.

SYSTEM APPLICATION

BCM can perform the following functions for each system.

NOTE:

It can perform the diagnosis modes except the following for all sub system selection items.

System	Sub system selection item	Diagnosis mode		
		WORK SUPPORT	DATA MONITOR	ACTIVE TEST
BCM	BCM	×		
Door lock	DOOR LOCK	×	×	×
Rear window defogger	REAR DEFOGGER		×	
Warning chime	BUZZER		×	×
Interior room lamp timer	INT LAMP	×	×	×
Remote keyless entry system	MULTI REMOTE ENT	×	×	
Exterior lamp	HEAD LAMP	×	×	×
Wiper and washer	WIPER	×	×	×
Turn signal and hazard warning lamps	FLASHER		×	×
Air conditioner	AIR CONDITONER		×	
Intelligent Key system	INTELLIGENT KEY		×	
Combination switch	COMB SW		×	
Immobilizer	IMMU		×	×
Interior room lamp battery saver	BATTERY SAVER	×	×	×
Back door open	TRUNK		×	×
RAP (retained accessory power)	RETAINED PWR	×	×	×
Signal buffer system	SIGNAL BUFFER		×	×
TPMS (tire pressure monitoring system)	AIR PRESSURE MONITOR	×	×	×
Vehicle security system	THEFT ALM	×	×	×
Panic alarm system	PANIC ALARM			×

REAR WINDOW DEFOGGER

DIAGNOSIS SYSTEM (BCM)

< FUNCTION DIAGNOSIS >

REAR WINDOW DEFOGGER : CONSULT-III Function (BCM - REAR DEFOGGER)

INFOID:000000005327522

DATA MONITOR

Monitor Item [Unit]	Description
IGN ON SW [ON/OFF]	Indicates condition of ignition switch in ON position
ACC ON SW [ON/OFF]	Indicates condition of ignition switch in ACC position
REAR DEF SW [ON/OFF]	Displays "Press (ON)/other (OFF)" status determined with the rear window defogger switch

ACTIVE TEST

Test Item	Description
REAR DEFOGGER	This test is able to check rear window defogger operation. Rear window defogger operates when "ON" on CONSULT-III screen is touched

A
B
C
D
E
F
G
H
I
J
K
DEF
M
N
O
P

REAR WINDOW DEFOGGER SWITCH

< COMPONENT DIAGNOSIS >

COMPONENT DIAGNOSIS

REAR WINDOW DEFOGGER SWITCH

Description

INFOID:000000005146824

- The rear window defogger is operated by turning the rear window defogger switch ON.
- Turns the indicator lamp in the rear window defogger switch ON when operating the rear window defogger.

Component Function Check

INFOID:000000005146825

1. CHECK REAR WINDOW DEFOGGER SWITCH FUNCTION

Check that the indicator lamp of rear window defogger illuminates with rear window defogger switch ON.

Is the inspection result normal?

- YES >> Rear window defogger switch function is OK.
NO >> Refer to [DEF-8, "Diagnosis Procedure"](#).

Diagnosis Procedure

INFOID:000000005146826

Regarding Wiring Diagram information, refer to [DEF-27, "Wiring Diagram"](#).

1. CHECK A/C AND AV SWITCH ASSEMBLY (REAR WINDOW DEFOGGER SWITCH) CIRCUIT

Does rear window defogger switch operate normally?

Is the inspection result normal?

- YES >> Inspection End.
NO >> GO TO 2

2. CHECK HARNESS CONTINUITY

1. Turn ignition switch OFF.
2. Disconnect BCM and A/C and AV switch assembly.
3. Check continuity between BCM connector (A) and A/C and AV switch assembly connector (B).

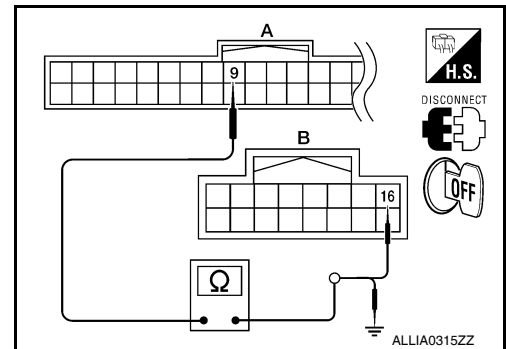
BCM connector	Terminal	A/C and AV switch assembly connector	Terminal	Continuity
M18 (A)	9	M98 (B)	16	Yes

4. Check continuity between BCM connector (A) and ground.

BCM connector	Terminal	Ground	Continuity
M18 (A)	9	Ground	No

Is the inspection result normal?

- YES >> Replace A/C and AV switch assembly. Refer to [VTL-7, "Removal and Installation"](#).
NO >> Repair or replace harness.



REAR WINDOW DEFOGGER RELAY

< COMPONENT DIAGNOSIS >

REAR WINDOW DEFOGGER RELAY

Description

INFOID:000000005146827

Power is supplied to the rear window defogger with BCM control.

Component Function Check

INFOID:000000005146828

1. CHECK REAR WINDOW DEFOGGER RELAY POWER SUPPLY CIRCUIT

Check that an operation noise of rear window defogger relay (located in IPDM E/R) can be heard when turning the rear window defogger switch ON.

Is the inspection result normal?

- YES >> Rear window defogger relay power supply circuit is OK.
- NO >> Refer to [DEF-9, "Diagnosis Procedure"](#).

Diagnosis Procedure

INFOID:000000005146829

Regarding Wiring Diagram information, refer to [DEF-27, "Wiring Diagram"](#).

1. CHECK FUSES

Check if any of the following fuses in the IPDM E/R are blown.

COMPONENT PARTS	AMPERE	FUSE NO.
IPDM E/R	15A	46
IPDM E/R	15A	47

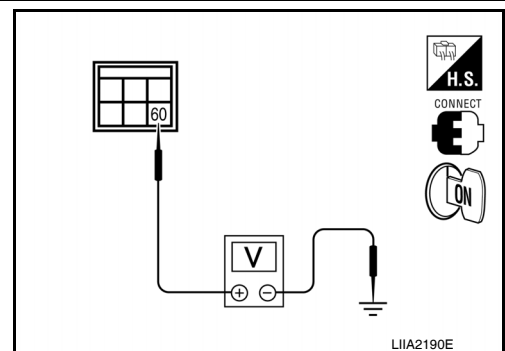
Is the inspection result normal?

- YES >> GO TO 2
- NO >> If fuse is blown, be sure to eliminate cause of malfunction before installing new fuse.

2. CHECK REAR WINDOW DEFOGGER RELAY POWER SUPPLY CIRCUIT

1. Turn ignition switch ON.
2. Check voltage between IPDM E/R connector and ground.

Terminals		Condition of rear window defogger switch	Voltage (V) (Approx.)
(+)	(-)		
IPDM E/R connector	Terminal		
E124	60	ON	Battery voltage
		OFF	0



Is the inspection result normal?

- YES >> Replace IPDM E/R. Refer to [PCS-35, "Removal and Installation of IPDM E/R"](#).
- NO >> GO TO 3

3. CHECK INTERMITTENT INCIDENT

Check intermittent incident.

Refer to [GI-38, "Intermittent Incident"](#)

Is the inspection result normal?

- YES >> Check the following.
 - Battery power supply circuit.
 - IPDM E/R.
- NO >> Repair or replace the malfunctioning parts.

REAR WINDOW DEFOGGER POWER SUPPLY AND GROUND CIRCUIT

< COMPONENT DIAGNOSIS >

REAR WINDOW DEFOGGER POWER SUPPLY AND GROUND CIRCUIT

Description

INFOID:000000005146830

Heats the heating wire with the power supply from the rear window defogger relay to prevent the rear window from fogging up.

Component Function Check

INFOID:000000005146831

1. CHECK REAR WINDOW DEFOGGER

Check that the heating wire of rear window defogger is heated when turning the rear window defogger switch ON.

Is the inspection result normal?

- YES >> Rear window defogger is OK.
- NO >> Refer to [DEF-10, "Diagnosis Procedure"](#).

Diagnosis Procedure

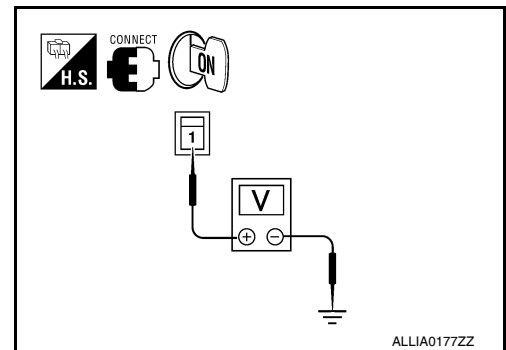
INFOID:000000005146832

Regarding Wiring Diagram information, refer to [DEF-27, "Wiring Diagram"](#).

1. CHECK POWER SUPPLY CIRCUIT

1. Turn ignition switch ON.
2. Check voltage between rear window defogger connector and ground.

Terminals		(-)	Condition of rear window defogger switch	Voltage (V) (Approx.)
(+) Rear window defogger connector				
Rear window defogger connector	Terminal			
D406	1	Ground	ON	Battery voltage
			OFF	0



ALLIA0177ZZ

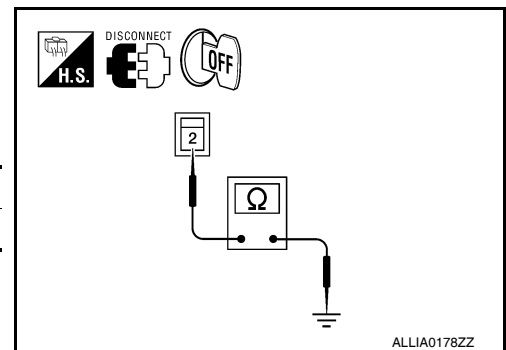
Is the inspection result normal?

- YES >> GO TO 2
- NO >> GO TO 3

2. CHECK GROUND CIRCUIT

1. Turn ignition switch OFF.
2. Disconnect rear window defogger.
3. Check continuity between rear window defogger connector and ground.

Rear window defogger connector	Terminal	Ground	Continuity
D604	2		Yes



ALLIA0178ZZ

Is the inspection result normal?

- YES >> GO TO 4
- NO >> Repair or replace harness.

3. CHECK HARNESS CONTINUITY

REAR WINDOW DEFOGGER POWER SUPPLY AND GROUND CIRCUIT

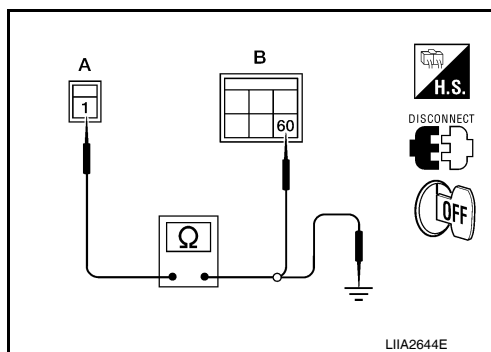
< COMPONENT DIAGNOSIS >

1. Disconnect IPDM E/R.
2. Check continuity between rear window defogger connector (A) and IPDM E/R connector (B).

Rear window defogger connector	Terminal	IPDM E/R connector	Terminal	Continuity
D406 (A)	1	E124 (B)	60	Yes

3. Check continuity between rear window defogger connector (A) and ground.

Rear window defogger connector	Terminal	Ground	Continuity
D406 (A)	1		No



Is the inspection result normal?

- YES >> GO TO 5
 NO >> Replace or repair harness.

4. CHECK FILAMENT

Check filament.

Refer to [DEF-45, "Filament Check"](#).

Is the inspection result normal?

- YES >> Refer to [GI-38, "Intermittent Incident"](#).
 NO >> Repair filament. Refer to [DEF-45, "Filament Repair"](#).

5. CHECK INTERMITTENT INCIDENT

Check intermittent incident.

Refer to [GI-38, "Intermittent Incident"](#).

Is the inspection result normal?

- YES >> Check the following.
- Battery power supply circuit.
 - IPDM E/R.
- NO >> Repair or replace the malfunctioning parts.

Component Inspection

INFOID:000000005146833

1. CHECK FILAMENT

Check the filament for damage or open circuits.

Refer to [DEF-45, "Filament Check"](#).

Is the inspection result normal?

- YES >> Inspection End.
 NO >> Repair filament. Refer to [DEF-45, "Filament Repair"](#).

A
B
C
D
E
F
G
H
I
J
K
DEF
M
N
O
P

DOOR MIRROR DEFOGGER LH

< COMPONENT DIAGNOSIS >

DOOR MIRROR DEFOGGER LH

Description

INFOID:000000005146834

Heats the heating wire with the power supply from the rear window defogger relay to prevent the door mirror from fogging up.

Component Function Check

INFOID:000000005146835

1. CHECK DOOR MIRROR DEFOGGER LH

Check that heating wire of door mirror defogger LH is heated when turning the rear window defogger switch ON.

Is the inspection result normal?

- YES >> Door mirror defogger is OK.
- NO >> Refer to [DEF-12, "Diagnosis Procedure"](#).

Diagnosis Procedure

INFOID:000000005146836

Regarding Wiring Diagram information, refer to [DEF-27, "Wiring Diagram"](#).

1. CHECK POWER SUPPLY

Check if the following fuse in the IPDM E/R is blown.

COMPONENT PARTS	AMPERE	FUSE NO.
IPDM E/R	15A	43

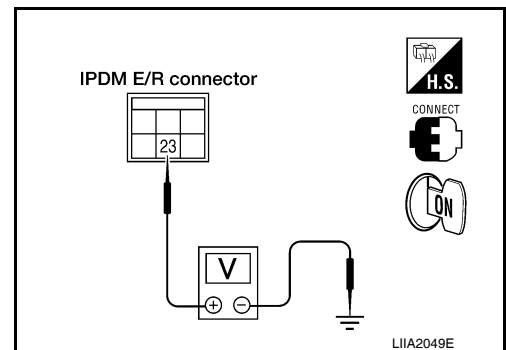
Is the inspection result normal?

- YES >> GO TO 2
- NO >> If fuse is blown, be sure to eliminate cause of malfunction before installing new fuse.

2. CHECK DOOR MIRROR DEFOGGER POWER SUPPLY CIRCUIT

Check voltage between IPDM E/R connector and ground.

Connector	Terminal		Condition	Voltage (V) (Approx.)
	(+)	(-)		
E120	23	Ground	Rear window defogger switch ON	Battery voltage
			Rear window defogger switch OFF	0



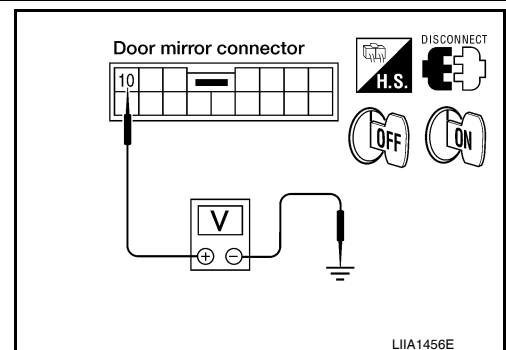
Is the inspection result normal?

- YES >> GO TO 3
- NO >> Replace IPDM E/R. Refer to [PCS-35, "Removal and Installation of IPDM E/R"](#).

3. CHECK DOOR MIRROR DEFOGGER POWER SUPPLY CIRCUIT 2

1. Turn ignition switch OFF.
2. Disconnect door mirror LH.
3. Turn ignition switch ON.
4. Check voltage between door mirror LH connector and ground.

Connector	Terminal		Condition	Voltage (V) (Approx.)
	(+)	(-)		



DOOR MIRROR DEFOGGER LH

< COMPONENT DIAGNOSIS >

D4	10	Ground	Rear window defogger switch ON	Battery voltage
			Rear window defogger switch OFF	0

Is the inspection result normal?

- YES >> GO TO 4
 NO >> Repair or replace harness.

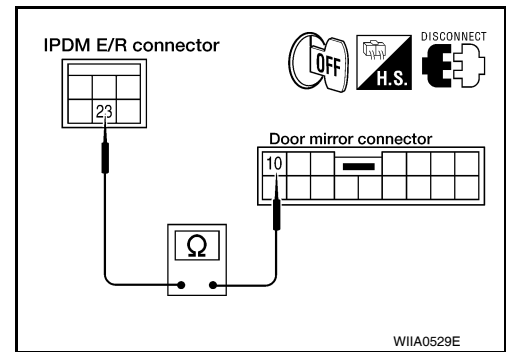
4. CHECK DOOR MIRROR DEFOGGER CIRCUIT

- Turn ignition switch OFF.
- Disconnect IPDM E/R and door mirror LH.
- Check continuity between IPDM E/R connector E120 terminal 23 and door mirror LH connector D4 terminal 10.

23 - 10 : Continuity should exist.

Is the inspection result normal?

- YES >> GO TO 5
 NO >> Repair or replace harness.



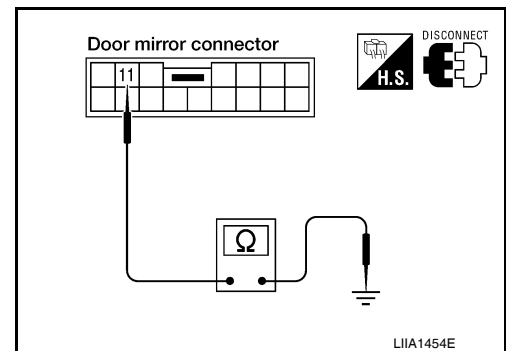
5. CHECK DOOR MIRROR DEFOGGER GROUND CIRCUIT

Check continuity between door mirror LH connector D4 terminal 11 and ground.

11 - Ground : Continuity should exist.

Is the inspection result normal?

- YES >> GO TO 6
 NO >> Repair or replace harness.



6. CHECK DOOR MIRROR DEFOGGER LH

Check door mirror defogger LH.
 Refer to [DEF-13, "Component Inspection"](#).

Is the inspection result normal?

- YES >> GO TO 7
 NO >> Replace door mirror. Refer to [MIR-17, "Door Mirror Assembly"](#).

7. CHECK INTERMITTENT INCIDENT

Check intermittent incident.
 Refer to [GI-38, "Intermittent Incident"](#).

Is the inspection result normal?

- YES >> Check the following.
- Battery power supply circuit.
 - IPDM E/R.
- NO >> Repair or replace the malfunctioning parts.

Component Inspection

INFOID:000000005146837

1. CHECK DOOR MIRROR DEFOGGER

DOOR MIRROR DEFOGGER LH

< COMPONENT DIAGNOSIS >

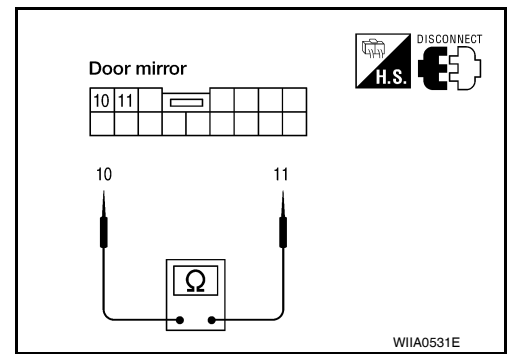
Check continuity between door mirror LH terminals 10 and 11.

10 - 11

: Continuity should exist.

Is the inspection result normal?

- YES >> Check the condition of the harness and the connector.
- NO >> Replace malfunctioning door mirror LH. Refer to [MIR-17. "Door Mirror Assembly"](#).



DOOR MIRROR DEFOGGER RH

< COMPONENT DIAGNOSIS >

DOOR MIRROR DEFOGGER RH

Description

INFOID:000000005146838

Heats the heating wire with the power supply from the rear window defogger relay to prevent the door mirror from fogging up.

Component Function Check

INFOID:000000005146839

1. CHECK DOOR MIRROR DEFOGGER RH

Check that the heating wire of door mirror defogger RH is heated when turning the rear window defogger switch ON.

Is the inspection result normal?

- YES >> Door mirror defogger RH is OK.
- NO >> Refer to [DEF-15, "Diagnosis Procedure"](#).

Diagnosis Procedure

INFOID:000000005146840

Regarding Wiring Diagram information, refer to [DEF-27, "Wiring Diagram"](#).

1. CHECK POWER SUPPLY

Check if the following fuse in the IPDM E/R is blown.

COMPONENT PARTS	AMPERE	FUSE NO.
IPDM E/R	15A	43

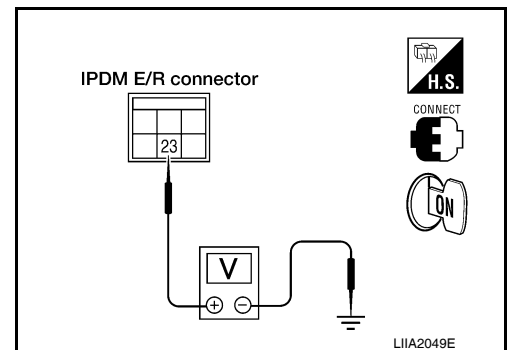
Is the inspection result normal?

- YES >> GO TO 2
- NO >> If fuse is blown, be sure to eliminate cause of malfunction before installing new fuse.

2. CHECK DOOR MIRROR DEFOGGER POWER SUPPLY CIRCUIT

Check voltage between IPDM E/R connector and ground.

Connector	Terminal		Condition	Voltage (V) (Approx.)
	(+)	(-)		
E120	23	Ground	Rear window defogger switch ON	Battery voltage
			Rear window defogger switch OFF	0



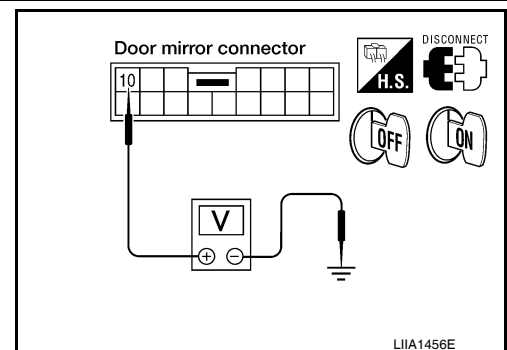
Is the inspection result normal?

- YES >> GO TO 3
- NO >> Replace IPDM E/R. Refer to [PCS-35, "Removal and Installation of IPDM E/R"](#).

3. CHECK DOOR MIRROR DEFOGGER POWER SUPPLY CIRCUIT 2

1. Turn ignition switch OFF.
2. Disconnect door mirror RH.
3. Turn ignition switch ON.
4. Check voltage between door mirror RH connector and ground.

Connector	Terminal		Condition	Voltage (V) (Approx.)
	(+)	(-)		



DOOR MIRROR DEFOGGER RH

< COMPONENT DIAGNOSIS >

D107	10	Ground	Rear window defogger switch ON	Battery voltage
			Rear window defogger switch OFF	0

Is the inspection result normal?

- YES >> GO TO 4
 NO >> Repair or replace harness.

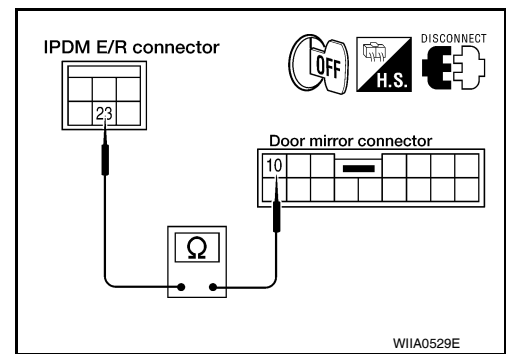
4. CHECK DOOR MIRROR DEFOGGER CIRCUIT

- Turn ignition switch OFF.
- Disconnect IPDM E/R and door mirror RH.
- Check continuity between IPDM E/R connector E120 terminal 23 and door mirror RH connector D107 terminal 10.

23 - 10 : Continuity should exist.

Is the inspection result normal?

- YES >> GO TO 5
 NO >> Repair or replace harness.



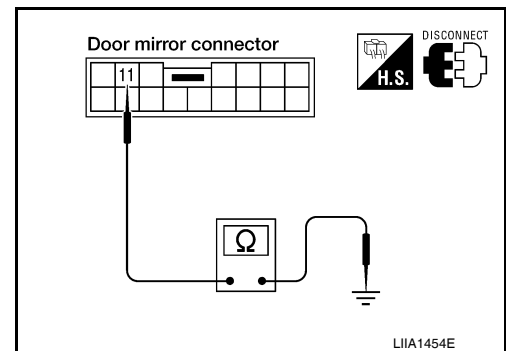
5. CHECK DOOR MIRROR DEFOGGER GROUND CIRCUIT

Check continuity between door mirror RH connector D107 terminal 11 and ground.

11 - Ground : Continuity should exist.

Is the inspection result normal?

- YES >> GO TO 6
 NO >> Repair or replace harness.



6. CHECK DOOR MIRROR DEFOGGER RH

Check door mirror defogger RH.
 Refer to [DEF-16, "Component Inspection"](#).

Is the inspection result normal?

- YES >> GO TO 7
 NO >> Replace door mirror. Refer to [MIR-17, "Door Mirror Assembly"](#).

7. CHECK INTERMITTENT INCIDENT

Check intermittent incident.
 Refer to [GI-38, "Intermittent Incident"](#).

Is the inspection result normal?

- YES >> Check the following.
- Battery power supply circuit.
 - IPDM E/R.
- NO >> Repair or replace the malfunctioning parts.

Component Inspection

INFOID:000000005146841

1. CHECK DOOR MIRROR DEFOGGER

DOOR MIRROR DEFOGGER RH

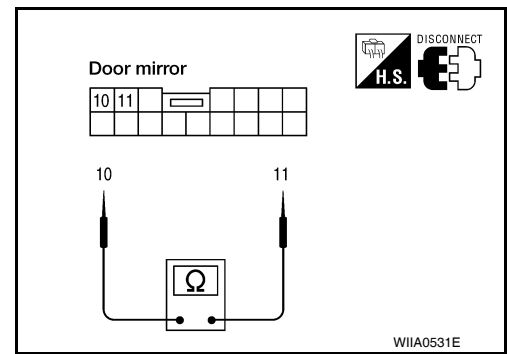
< COMPONENT DIAGNOSIS >

Check continuity between door mirror RH terminals 10 and 11.

10 - 11 : **Continuity should exist.**

Is the inspection result normal?

- YES >> Check the condition of the harness and the connector.
- NO >> Replace malfunctioning door mirror RH. Refer to [MIR-17. "Door Mirror Assembly"](#).



A
B
C
D
E
F
G
H
I
J
K
DEF
M
N
O
P

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS >

ECU DIAGNOSIS

BCM (BODY CONTROL MODULE)

Reference Value

INFOID:000000005327536

VALUES ON THE DIAGNOSIS TOOL

Monitor Item	Condition	Value/Status
AIR COND SW	A/C switch OFF	OFF
	A/C switch ON	ON
AUT LIGHT SYS	Outside of the room is dark	OFF
	Outside of the room is bright	ON
AUTO LIGHT SW	Lighting switch OFF	OFF
	Lighting switch AUTO	ON
BACK DOOR SW	Back door closed	OFF
	Back door opened	ON
CARGO LAMP SW	Cargo lamp switch OFF	OFF
	Cargo lamp switch ON	ON
CDL LOCK SW	Door lock/unlock switch does not operate	OFF
	Press door lock/unlock switch to the LOCK side	ON
CDL UNLOCK SW	Door lock/unlock switch does not operate	OFF
	Press door lock/unlock switch to the UNLOCK side	ON
DOOR SW-AS	Front door RH closed	OFF
	Front door RH opened	ON
DOOR SW-DR	Front door LH closed	OFF
	Front door LH opened	ON
DOOR SW-RL	Rear door LH closed	OFF
	Rear door LH opened	ON
DOOR SW-RR	Rear door RH closed	OFF
	Rear door RH opened	ON
ENGINE RUN	Engine stopped	OFF
	Engine running	ON
FR FOG SW	Front fog lamp switch OFF	OFF
	Front fog lamp switch ON	ON
FR WASHER SW	Front washer switch OFF	OFF
	Front washer switch ON	ON
FR WIPER LOW	Front wiper switch OFF	OFF
	Front wiper switch LO	ON
FR WIPER HI	Front wiper switch OFF	OFF
	Front wiper switch HI	ON
FR WIPER INT	Front wiper switch OFF	OFF
	Front wiper switch INT	ON
FR WIPER STOP	Any position other than front wiper stop position	OFF
	Front wiper stop position	ON
HAZARD SW	When hazard switch is not pressed	OFF
	When hazard switch is pressed	ON

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS >

Monitor Item	Condition	Value/Status	
LIGHT SW 1ST	Lighting switch OFF	OFF	A
	Lighting switch 1st	ON	
HEAD LAMP SW1	Headlamp switch OFF	OFF	B
	Headlamp switch 1st	ON	
HEAD LAMP SW2	Headlamp switch OFF	OFF	C
	Headlamp switch 1st	ON	
HI BEAM SW	High beam switch OFF	OFF	D
	High beam switch HI	ON	
IGN ON SW	Ignition switch OFF or ACC	OFF	E
	Ignition switch ON	ON	
IGN SW CAN	Ignition switch OFF or ACC	OFF	F
	Ignition switch ON	ON	
INT VOLUME	Wiper intermittent dial is in a dial position 1 - 7	1 - 7	G
I-KEY LOCK	LOCK button of Intelligent Key is not pressed	OFF	H
	LOCK button of Intelligent Key is pressed	ON	
I-KEY UNLOCK	UNLOCK button of Intelligent Key is not pressed	OFF	I
	UNLOCK button of Intelligent Key is pressed	ON	
KEY CYL LK-SW	Door key cylinder LOCK position	ON	J
	Door key cylinder other than LOCK position	OF	
KEY CYL UN-SW	Door key cylinder UNLOCK position	ON	K
	Door key cylinder other than UNLOCK position	ON	
KEY ON SW	Mechanical key is removed from key cylinder	OFF	DEF
	Mechanical key is inserted to key cylinder	ON	
OIL PRESS SW	<ul style="list-style-type: none"> • Ignition switch OFF or ACC • Engine running 	OFF	M
	Ignition switch ON	ON	
OPTICAL SENSOR	Bright outside of the vehicle	Close to 5V	N
	Dark outside of the vehicle	Close to 0V	
PASSING SW	Other than lighting switch PASS	OFF	O
	Lighting switch PASS	ON	
PUSH SW	Return to ignition switch to LOCK position	OFF	P
	Press ignition switch	ON	
REAR DEF SW	Rear window defogger switch OFF	OFF	
	Rear window defogger switch ON	ON	
RR WASHER SW	Rear washer switch OFF	OFF	
	Rear washer switch ON	ON	
RR WIPER INT	Rear wiper switch OFF	OFF	
	Rear wiper switch INT	ON	
RR WIPER ON	Rear wiper switch OFF	OFF	
	Rear wiper switch ON	ON	
RR WIPER STOP	Rear wiper stop position	OFF	
	Other than rear wiper stop position	ON	
RR WIPER STP2	Rear wiper stop position	OFF	
	Other than rear wiper stop position	ON	

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS >

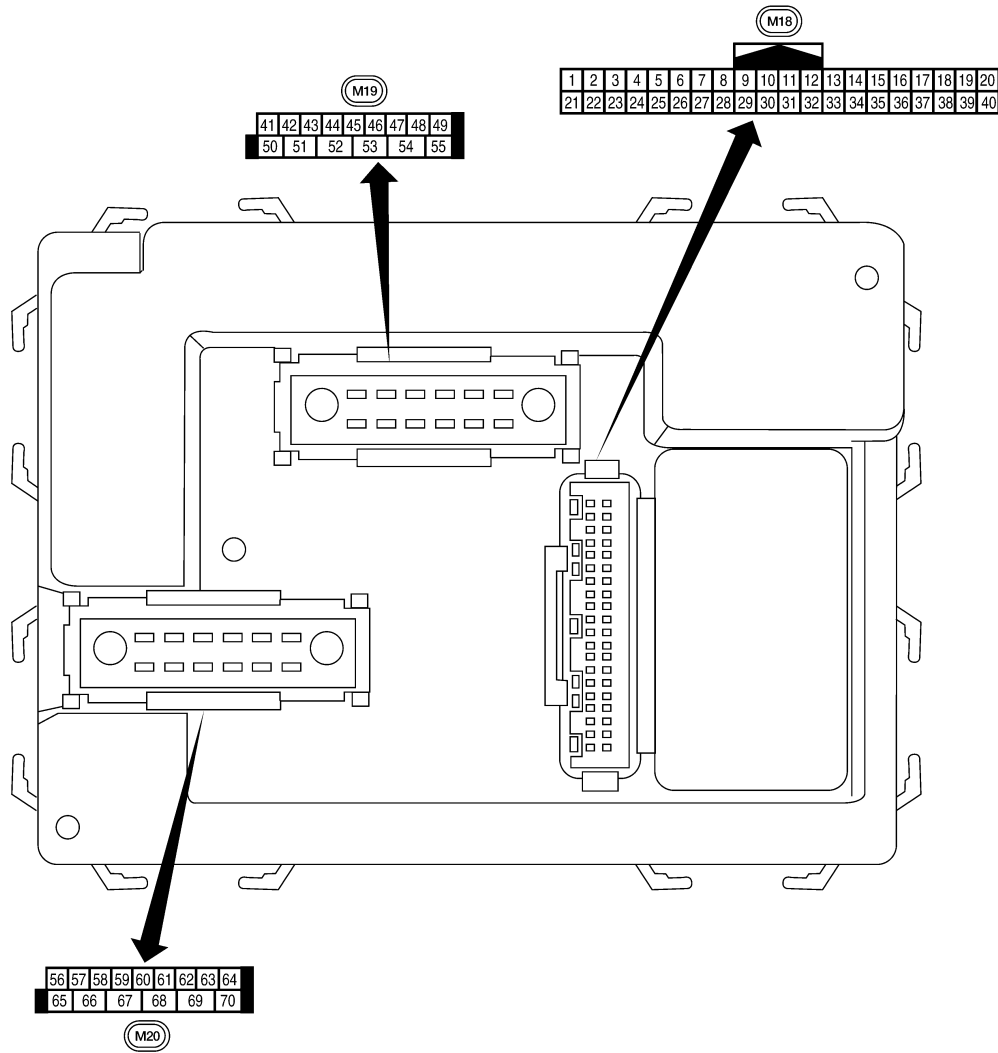
Monitor Item	Condition	Value/Status
TRNK OPNR SW	When back door opener switch is not pressed	OFF
	When back door opener switch is pressed	ON
TURN SIGNAL L	Turn signal switch OFF	OFF
	Turn signal switch LH	ON
TURN SIGNAL R	Turn signal switch OFF	OFF
	Turn signal switch RH	ON
VEHICLE SPEED	While driving	Equivalent to speedometer reading

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS >

Terminal Layout

INFOID:000000005327537



A
B
C
D
E
F
G
H
I
J
K
DEF
M
N
O
P


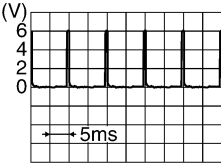

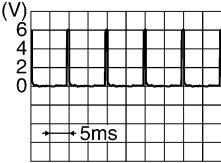
Physical Values

LIA2443E

INFOID:000000005327538

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS >

Terminal	Wire color	Signal name	Signal input/output	Measuring condition		Reference value or waveform (Approx.)
				Ignition switch	Operation or condition	
1	BR/W	Ignition keyhole illumination	Output	OFF	Door is locked (SW OFF)	Battery voltage
					Door is unlocked (SW ON)	0V
2	SB	Combination switch input 5	Input	ON	Lighting, turn, wiper OFF Wiper dial position 4	 SKIA5291E
3	G/Y	Combination switch input 4	Input	ON	Lighting, turn, wiper OFF Wiper dial position 4	 SKIA5292E
4	Y	Combination switch input 3	Input	ON	Lighting, turn, wiper OFF Wiper dial position 4	 SKIA5291E
5	G/B	Combination switch input 2	Input	ON	Lighting, turn, wiper OFF Wiper dial position 4	 SKIA5292E
6	V	Combination switch input 1				
9	GR/R	Rear window defogger switch	Input	ON	Rear window defogger switch ON	0V
					Rear window defogger switch OFF	5V
10	G	Hazard lamp flash	Input	OFF	ON (opening or closing)	0V
					OFF (other than above)	Battery voltage
11	O	Ignition switch (ACC or ON)	Input	ACC or ON	Ignition switch ACC or ON	Battery voltage
12	R/L	Front door switch RH	Input	OFF	ON (open)	0V
					OFF (closed)	Battery voltage
13	GR	Rear door switch RH	Input	OFF	ON (open)	0V
					OFF (closed)	Battery voltage
15	L/W	Tire pressure warning check connector	Input	OFF	—	5V
18	P	Remote keyless entry receiver and optical sensor (ground)	Output	OFF	—	0V

BCM (BODY CONTROL MODULE)

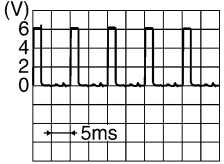
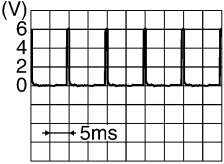
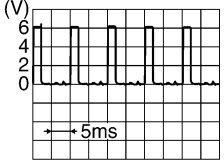
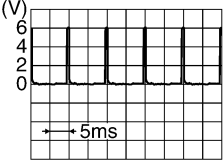
< ECU DIAGNOSIS >

Terminal	Wire color	Signal name	Signal input/output	Measuring condition		Reference value or waveform (Approx.)
				Ignition switch	Operation or condition	
19	V/W	Remote keyless entry receiver (power supply)	Output	OFF	Ignition switch OFF	<p style="text-align: right; font-size: small;">LIIA1893E</p>
20	G/W	Remote keyless entry receiver (signal)	Input	OFF	Stand-by (keyfob buttons released)	<p style="text-align: right; font-size: small;">LIIA1894E</p>
					When remote keyless entry receiver receives signal from keyfob (keyfob buttons pressed)	<p style="text-align: right; font-size: small;">LIIA1895E</p>
21	G	NATS antenna amp.	Input	OFF → ON	Ignition switch (OFF → ON)	Just after turning ignition switch ON: Pointer of tester should move for approx. 1 second, then return to battery voltage.
22	W/V	BUS	—	—	Ignition switch ON or power window timer operates	<p style="text-align: right; font-size: small;">PIIA2344E</p>
23	G/O	Security indicator lamp	Output	OFF	Goes OFF → illuminates (Every 2.4 seconds)	Battery voltage → 0V
25	BR	NATS antenna amp.	Input	OFF → ON	Ignition switch (OFF → ON)	Just after turning ignition switch ON: Pointer of tester should move for approx. 1 second, then return to battery voltage.
26	Y/L	Rear wiper auto stop switch 2	Input	ON	Rise up position (rear wiper arm on stopper)	0V
					A Position (full clockwise stop position)	0V
					Forward sweep (counterclockwise direction)	Fluctuating
					B Position (full counterclockwise stop position)	Battery voltage
					Reverse sweep (clockwise direction)	Fluctuating
27	W/R	Compressor ON signal	Input	ON	A/C switch OFF	5V
					A/C switch ON	0V

A
B
C
D
E
F
G
H
I
J
K
DEF
M
N
O
P

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS >

Terminal	Wire color	Signal name	Signal input/output	Measuring condition		Reference value or waveform (Approx.)
				Ignition switch	Operation or condition	
28	L/R	Front blower monitor	Input	ON	Front blower motor OFF	Battery voltage
					Front blower motor ON	0V
29	W/B	Hazard switch	Input	OFF	ON	0V
					OFF	5V
30	Y/BR	Glass hatch switch	Input	OFF	Glass hatch switch released	0V
					Glass hatch switch pressed	Battery
32	R/G	Combination switch output 5	Output	ON	Lighting, turn, wiper OFF Wiper dial position 4	 <p style="text-align: right; font-size: small;">SKIA5291E</p>
33	R/Y	Combination switch output 4	Output	ON	Lighting, turn, wiper OFF Wiper dial position 4	 <p style="text-align: right; font-size: small;">SKIA5292E</p>
34	L	Combination switch output 3	Output	ON	Lighting, turn, wiper OFF Wiper dial position 4	 <p style="text-align: right; font-size: small;">SKIA5291E</p>
35	O/B	Combination switch output 2	Output	ON	Lighting, turn, wiper OFF Wiper dial position 4	 <p style="text-align: right; font-size: small;">SKIA5292E</p>
36	R/W	Combination switch output 1				
37	B/R	Key switch and ignition knob switch	Input	OFF	Intelligent Key inserted	Battery voltage
					Intelligent Key inserted	0V
38	W/L	Ignition switch (ON)	Input	ON	—	Battery voltage
39	L	CAN-H	—	—	—	—
40	P	CAN-L	—	—	—	—
42	GR	Glass hatch ajar switch	Input	ON	Glass hatch open	0V
					Glass hatch closed	Battery
43	R/B	Back door latch (door ajar switch)	Input	OFF	ON (open)	0V
					OFF (closed)	Battery voltage

BCM (BODY CONTROL MODULE)

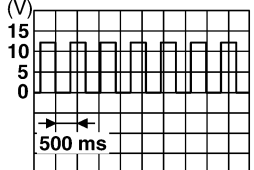
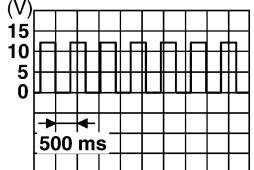
< ECU DIAGNOSIS >

Terminal	Wire color	Signal name	Signal input/output	Measuring condition		Reference value or waveform (Approx.)
				Ignition switch	Operation or condition	
44	O	Rear wiper auto stop switch 1	Input	ON	Rise up position (rear wiper arm on stopper)	0V
					A Position (full clockwise stop position)	Battery voltage
					Forward sweep (counterclockwise direction)	Fluctuating
					B Position (full counterclockwise stop position)	0V
					Reverse sweep (clockwise direction)	Fluctuating
47	SB	Front door switch LH	Input	OFF	ON (open)	0V
					OFF (closed)	Battery voltage
48	R/Y	Rear door switch LH	Input	OFF	ON (open)	0V
					OFF (closed)	Battery voltage
49	R	Cargo lamp	Output	OFF	Any door open (ON)	0V
					All doors closed (OFF)	Battery voltage
51	G/Y	Trailer turn signal (right)	Output	ON	Turn right ON	
52	G/B	Trailer turn signal (left)	Output	ON	Turn left ON	
53	L/W	Glass hatch lock actuator	Output	OFF	Glass hatch switch released	0V
					Glass hatch switch pressed	Battery voltage
54	Y	Rear wiper output circuit 2	Input	ON	Rise up position (rear wiper arm on stopper)	0V
					A Position (full clockwise stop position)	0V
					Forward sweep (counterclockwise direction)	0V
					B Position (full counterclockwise stop position)	Battery voltage
					Reverse sweep (clockwise direction)	Battery voltage
55	SB	Rear wiper output circuit 1	Output	ON	OFF	0V
					ON	Battery voltage
56	R/G	Battery saver output	Output	OFF	30 minutes after ignition switch is turned OFF	0V
				ON	—	Battery voltage
57	Y/R	Battery power supply	Input	OFF	—	Battery voltage

A
B
C
D
E
F
G
H
I
J
K
DEF
M
N
O
P

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS >

Terminal	Wire color	Signal name	Signal input/output	Measuring condition		Reference value or waveform (Approx.)
				Ignition switch	Operation or condition	
58	W/R	Optical sensor	Input	ON	When optical sensor is illuminated	3.1V or more
					When optical sensor is not illuminated	0.6V or less
59	G	Front door lock assembly LH actuator (unlock)	Output	OFF	OFF (neutral)	0V
					ON (unlock)	Battery voltage
60	G/B	Turn signal (left)	Output	ON	Turn left ON	 <p style="text-align: right; font-size: small;">SKIA3009J</p>
61	G/Y	Turn signal (right)	Output	ON	Turn right ON	 <p style="text-align: right; font-size: small;">SKIA3009J</p>
62	R/W	Step lamp LH and RH	Output	OFF	ON (any door open)	0V
					OFF (all doors closed)	Battery voltage
63	L	Interior room/map lamp	Output	OFF	Any door switch	ON (open) 0V OFF (closed) Battery voltage
65	V	All door lock actuators (lock)	Output	OFF	OFF (neutral)	0V
					ON (lock)	Battery voltage
66	G/Y	Front door lock actuator RH, rear door lock actuators LH/RH and back door lock actuator (unlock)	Output	OFF	OFF (neutral)	0V
					ON (unlock)	Battery voltage
67	B	Ground	Input	ON	—	0V
68	W/L	Power window power supply (RAP)	Output	—	Ignition switch ON	Battery voltage
					Within 45 seconds after ignition switch OFF	Battery voltage
					More than 45 seconds after ignition switch OFF	0V
					When front door LH or RH is open or power window timer operates	0V
69	W/R	Power window power supply	Output	—	—	Battery voltage
70	W/B	Battery power supply	Input	OFF	—	Battery voltage

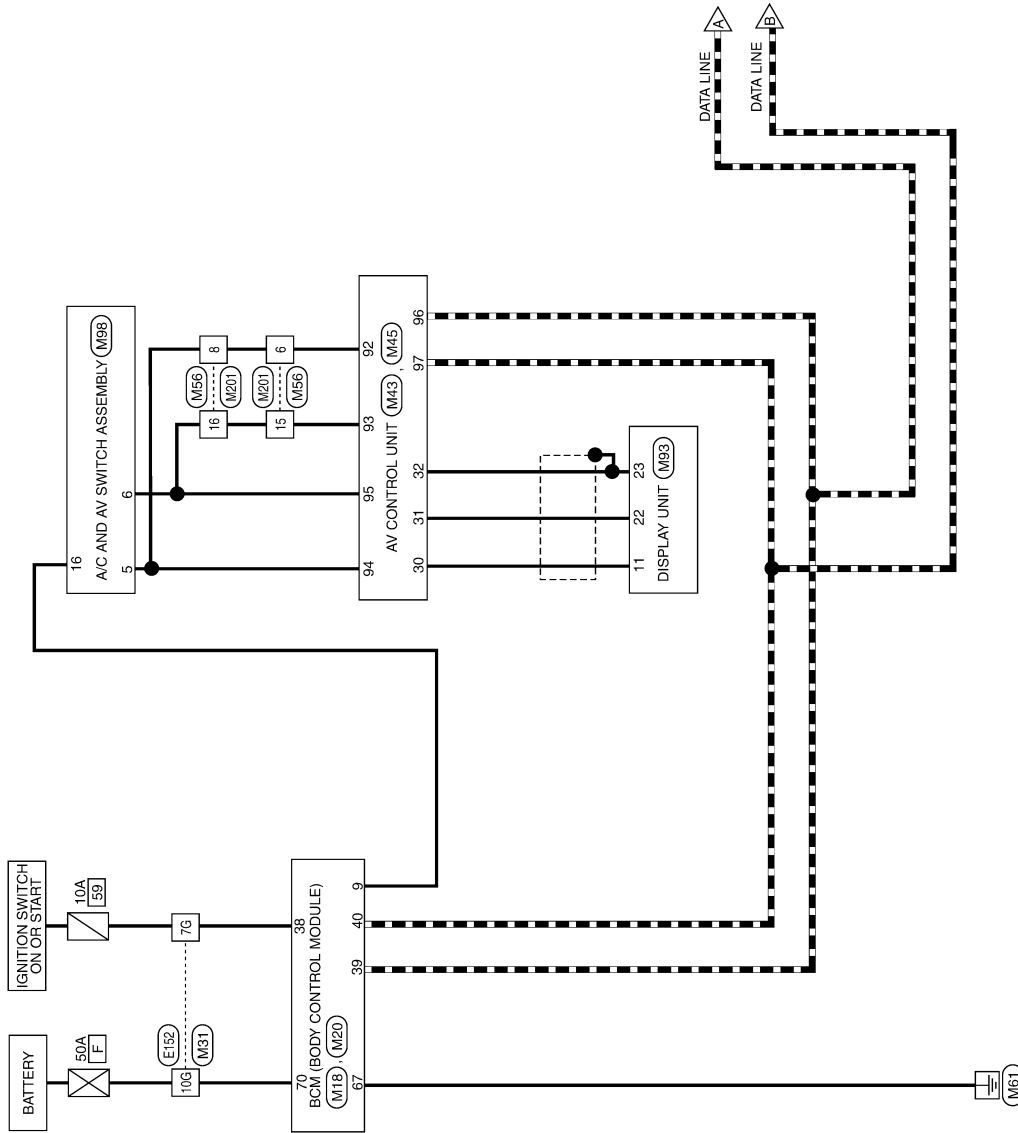
BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS >

Wiring Diagram

INFOID:000000005146845

REAR WINDOW DEFOGGER

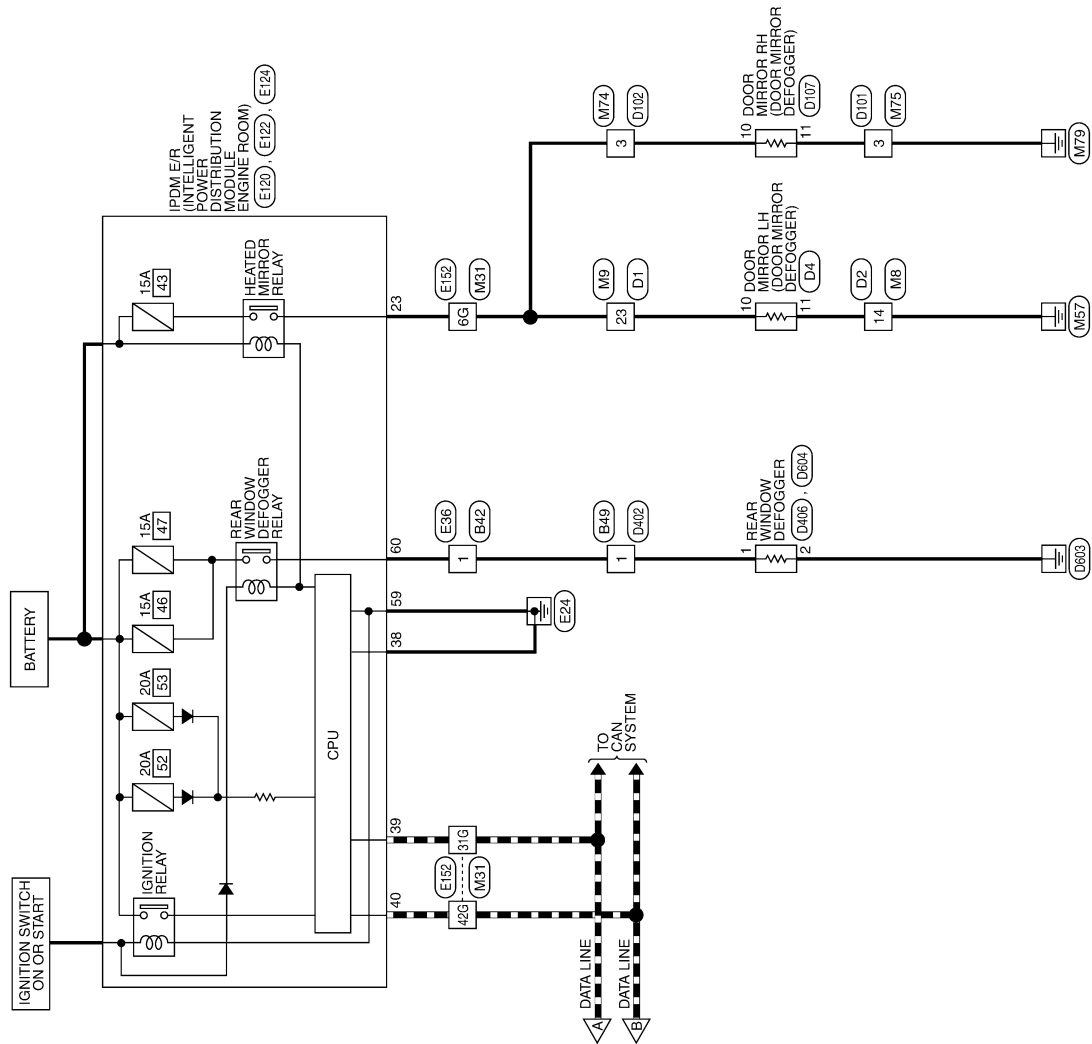


A
B
C
D
E
F
G
H
I
J
K
DEF
M
N
O
P

ABLWA0514GB

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS >



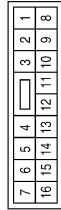
ABLWA0394GB

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS >

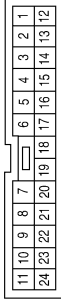
REAR WINDOW DEFOGGER CONNECTORS

Connector No.	M8
Connector Name	WIRE TO WIRE
Connector Color	WHITE



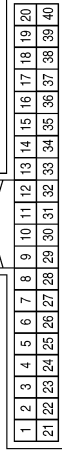
Terminal No.	Color of Wire	Signal Name
14	B	-

Connector No.	M9
Connector Name	WIRE TO WIRE
Connector Color	BROWN



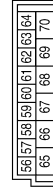
Terminal No.	Color of Wire	Signal Name
23	GR/W	-

Connector No.	M18
Connector Name	BCM (BODY CONTROL MODULE)
Connector Color	WHITE



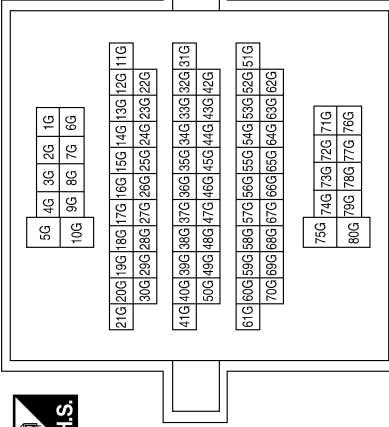
Terminal No.	Color of Wire	Signal Name
9	GR/R	REAR DEFOGGER SW
38	W/L	IGN SW
39	L	CAN-H
40	P	CAN-L

Connector No.	M20
Connector Name	BCM (BODY CONTROL MODULE)
Connector Color	BLACK



Terminal No.	Color of Wire	Signal Name
67	B	GND (POWER)
70	W/B	BAT (F/L)

Connector No.	M31
Connector Name	WIRE TO WIRE
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
6G	GR/W	-
7G	W/L	-
10G	W/B	-
31G	L	-
42G	P	-

ABLIA1306GB

A
B
C
D
E
F
G
H
I
J
K
DEF
M
N
O
P

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS >

Connector No.	M56
Connector Name	WIRE TO WIRE
Connector Color	WHITE



1	2	3	4	5	6	7		
8	9	10	11	12	13	14	15	16

Terminal No.	Color of Wire	Signal Name
6	L/W	-
8	W/L	-
15	B/P	-
16	P/B	-

Connector No.	M45
Connector Name	AV CONTROL UNIT
Connector Color	WHITE



66	68	70	72	74	76	78	80	82	84	86	88	90	92	94	96	98	100	102	104
65	67	69	71	73	75	77	79	81	83	85	87	89	91	93	95	97	99	101	103

Terminal No.	Color of Wire	Signal Name
92	L/W	M-CAN2-H
93	B/P	M-CAN2-L
94	W/L	M-CAN1-H
95	P/B	M-CAN1-L
96	L	CAN-H
97	P	CAN-L

Connector No.	M43
Connector Name	AV CONTROL UNIT
Connector Color	WHITE



22	24	26	28	30	32
21	23	25	27	29	31

Terminal No.	Color of Wire	Signal Name
30	V	IT_DISP
31	LG	DISP_IT
32	SHIELD	SHIELD

Connector No.	M93
Connector Name	DISPLAY UNIT
Connector Color	WHITE



12	11	10	9	8	7	6	5	4	3	2	1
24	23	22	21	20	19	18	17	16	15	14	13

Terminal No.	Color of Wire	Signal Name
11	V	IT-DISP
22	LG	DISP-IT
23	SHIELD	SHIELD

Connector No.	M75
Connector Name	WIRE TO WIRE
Connector Color	WHITE



4	3	2	1		
10	9	8	7	6	5

Terminal No.	Color of Wire	Signal Name
3	B	-

Connector No.	M74
Connector Name	WIRE TO WIRE
Connector Color	BROWN



9	8	7	6	5	4	3	2	1		
20	19	18	17	16	15	14	13	12	11	10

Terminal No.	Color of Wire	Signal Name
3	GR/W	-

ABLIA1581GB

BCM (BODY CONTROL MODULE)

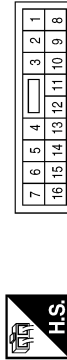
< ECU DIAGNOSIS >

Connector No.	E36
Connector Name	WIRE TO WIRE
Connector Color	WHITE



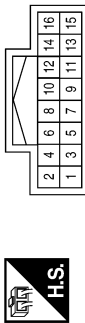
Terminal No.	Color of Wire	Signal Name
1	B	-

Connector No.	M201
Connector Name	WIRE TO WIRE
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
6	W/L	-
8	W/L	-
15	P/B	-
16	P/B	-

Connector No.	M98
Connector Name	A/C AND AV SWITCH ASSEMBLY
Connector Color	WHITE



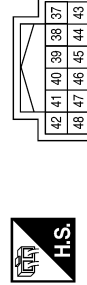
Terminal No.	Color of Wire	Signal Name
5	W/L	M-CAN1-H
6	P/B	M-CAN1-L
16	GR/R	RR DEFOG

Connector No.	E124
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Color	BLACK



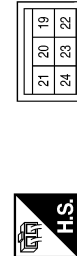
Terminal No.	Color of Wire	Signal Name
59	B	GND (POWER)
60	B/W	RR DEF

Connector No.	E122
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
38	B	GND (SIGNAL)
39	L	CAN-H
40	P	CAN-L

Connector No.	E120
Connector Name	IPDM E/R (INTELLIGENT POWER DISTRIBUTION MODULE ENGINE ROOM)
Connector Color	WHITE



Terminal No.	Color of Wire	Signal Name
23	GR/W	HEATED MIRROR

ABLIA0020GB

A
B
C
D
E
F
G
H
I
J
K
DEF
M
N
O
P

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS >

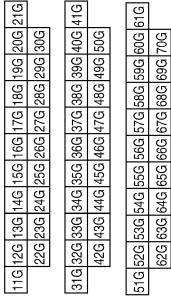
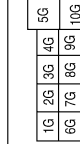
Connector No.	B42
Connector Name	WIRE TO WIRE
Connector Color	WHITE



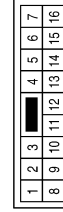
Terminal No.	Color of Wire	Signal Name
1	B	--

Terminal No.	Color of Wire	Signal Name
6G	GR/W	--
7G	LW	--
10G	W/B	--
31G	L	--
42G	P	--

Connector No.	E152
Connector Name	WIRE TO WIRE
Connector Color	WHITE



Connector No.	D2
Connector Name	WIRE TO WIRE
Connector Color	WHITE



Terminal No.	14
Color of Wire	B
Signal Name	--

Connector No.	D1
Connector Name	WIRE TO WIRE
Connector Color	BROWN



Terminal No.	23
Color of Wire	GR/W
Signal Name	--

Connector No.	B49
Connector Name	WIRE TO WIRE
Connector Color	WHITE



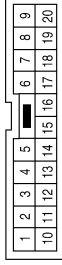
Terminal No.	1
Color of Wire	B
Signal Name	--

ABLIA0021GB

BCM (BODY CONTROL MODULE)

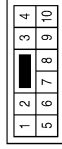
< ECU DIAGNOSIS >

Connector No.	D102
Connector Name	WIRE TO WIRE
Connector Color	BROWN



Terminal No.	3	Color of Wire	GR/W	Signal Name	-
--------------	---	---------------	------	-------------	---

Connector No.	D101
Connector Name	WIRE TO WIRE
Connector Color	WHITE



Terminal No.	3	Color of Wire	B	Signal Name	-
--------------	---	---------------	---	-------------	---

Connector No.	D4
Connector Name	DOOR MIRROR LH
Connector Color	WHITE



Terminal No.	10	Color of Wire	GR/W	Signal Name	-
	11	Color of Wire	B	Signal Name	-

Connector No.	D406
Connector Name	REAR WINDOW DEFOGGER
Connector Color	BLACK



Terminal No.	1	Color of Wire	B	Signal Name	-
--------------	---	---------------	---	-------------	---

Connector No.	D402
Connector Name	WIRE TO WIRE
Connector Color	WHITE



Terminal No.	1	Color of Wire	B	Signal Name	-
--------------	---	---------------	---	-------------	---

Connector No.	D107
Connector Name	DOOR MIRROR RH
Connector Color	WHITE



Terminal No.	10	Color of Wire	GR/W	Signal Name	-
	11	Color of Wire	B	Signal Name	-

ABLIA0022GB

A
B
C
D
E
F
G
H
I
J
K
DEF
M
N
O
P

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS >

Connector No.	D604
Connector Name	REAR WINDOW DEFOGGER
Connector Color	BLACK



Terminal No.	Color of Wire	Signal Name
2	B	-

Fail Safe

ABLIA0023GB

INFOID:000000005327539

Fail-safe index

BCM performs fail-safe control when any DTC listed below is detected.

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS >

Display contents of CONSULT	Fail-safe	Cancellation
U1000: CAN COMM CIRCUIT	Inhibit engine cranking	When the BCM re-establishes communication with the other modules.

DTC Inspection Priority Chart

INFOID:000000005327540

If some DTCs are displayed at the same time, perform inspections one by one based on the following priority chart.

Priority	DTC
1	<ul style="list-style-type: none"> U1000: CAN COMM CIRCUIT
2	<ul style="list-style-type: none"> B2190: NATS ANTENNA AMP B2191: DIFFERENCE OF KEY B2192: ID DISCORD BCM-ECM B2193: CHAIN OF BCM-ECM B2013: STRG COMM 1 B2552: INTELLIGENT KEY B2590: NATS MALFUNCTION
3	<ul style="list-style-type: none"> C1729: VHCL SPEED SIG ERR C1735: IGNITION SIGNAL
4	<ul style="list-style-type: none"> C1708: [NO DATA] FL C1709: [NO DATA] FR C1710: [NO DATA] RR C1711: [NO DATA] RL C1712: [CHECKSUM ERR] FL C1713: [CHECKSUM ERR] FR C1714: [CHECKSUM ERR] RR C1715: [CHECKSUM ERR] RL C1716: [PRESSDATA ERR] FL C1717: [PRESSDATA ERR] FR C1718: [PRESSDATA ERR] RR C1719: [PRESSDATA ERR] RL C1720: [CODE ERR] FL C1721: [CODE ERR] FR C1722: [CODE ERR] RR C1723: [CODE ERR] RL C1724: [BATT VOLT LOW] FL C1725: [BATT VOLT LOW] FR C1726: [BATT VOLT LOW] RR C1727: [BATT VOLT LOW] RL

A
B
C
D
E
F
G
H
I
J
K
DEF

DTC Index

INFOID:000000005327541

NOTE:

- Details of time display
- CRNT: Displays when there is a malfunction now or after returning to the normal condition until turning ignition switch OFF → ON again.
- 1 - 39: Displayed if any previous malfunction is present when current condition is normal. It increases like 1 → 2 → 3...38 → 39 after returning to the normal condition whenever ignition switch OFF → ON. The counter remains at 39 even if the number of cycles exceeds it. It is counted from 1 again when turning ignition switch OFF → ON after returning to the normal condition if the malfunction is detected again.

CONSULT display	Fail-safe	Intelligent Key warning lamp ON	Tire pressure monitor warning lamp ON	Reference page
No DTC is detected. further testing may be required.	—	—	—	—
U1000: CAN COMM CIRCUIT	—	—	—	BCS-32
B2190: NATS ANTENNA AMP	—	—	—	SEC-31

M
N
O
P

BCM (BODY CONTROL MODULE)

< ECU DIAGNOSIS >

CONSULT display	Fail-safe	Intelligent Key warning lamp ON	Tire pressure monitor warning lamp ON	Reference page
B2191: DIFFERENCE OF KEY	—	—	—	SEC-34
B2192: ID DISCORD BCM-ECM	—	—	—	SEC-35
B2193: CHAIN OF BCM-ECM	—	—	—	SEC-37
B2552: INTELLIGENT KEY	—	—	—	SEC-39
B2590: NATS MALFUNCTION	—	—	—	SEC-40
C1708: [NO DATA] FL	—	—	—	WT-14
C1709: [NO DATA] FR	—	—	—	WT-14
C1710: [NO DATA] RR	—	—	—	WT-14
C1711: [NO DATA] RL	—	—	—	WT-14
C1712: [CHECKSUM ERR] FL	—	—	—	WT-16
C1713: [CHECKSUM ERR] FR	—	—	—	WT-16
C1714: [CHECKSUM ERR] RR	—	—	—	WT-16
C1715: [CHECKSUM ERR] RL	—	—	—	WT-16
C1716: [PRESSDATA ERR] FL	—	—	—	WT-18
C1717: [PRESSDATA ERR] FR	—	—	—	WT-18
C1718: [PRESSDATA ERR] RR	—	—	—	WT-18
C1719: [PRESSDATA ERR] RL	—	—	—	WT-18
C1720: [CODE ERR] FL	—	—	—	WT-16
C1721: [CODE ERR] FR	—	—	—	WT-16
C1722: [CODE ERR] RR	—	—	—	WT-16
C1723: [CODE ERR] RL	—	—	—	WT-16
C1724: [BATT VOLT LOW] FL	—	—	—	WT-16
C1725: [BATT VOLT LOW] FR	—	—	—	WT-16
C1726: [BATT VOLT LOW] RR	—	—	—	WT-16
C1727: [BATT VOLT LOW] RL	—	—	—	WT-16
C1729: VHCL SPEED SIG ERR	—	—	—	WT-19
C1735: IGNITION SIGNAL	—	—	—	WT-20

REAR WINDOW DEFOGGER AND DOOR MIRROR DEFOGGER DO NOT OPERATE.

< SYMPTOM DIAGNOSIS >

SYMPTOM DIAGNOSIS

REAR WINDOW DEFOGGER AND DOOR MIRROR DEFOGGER DO NOT OPERATE.

Diagnosis Procedure

INFOID:000000005146849

1. CHECK REAR WINDOW DEFOGGER SWITCH

Check rear window defogger switch.

Refer to [DEF-10. "Component Function Check"](#).

Is the inspection result normal?

YES >> GO TO 2

NO >> Repair or replace the malfunctioning parts.

2. CHECK REAR WINDOW DEFOGGER RELAY

Check rear window defogger relay.

Refer to [DEF-9. "Component Function Check"](#).

Is the inspection result normal?

YES >> Refer to [GI-38. "Intermittent Incident"](#).

NO >> Repair or replace the malfunctioning parts.

A
B
C
D
E
F
G
H
I
J
K
DEF
M
N
O
P

REAR WINDOW DEFOGGER DOES NOT OPERATE BUT BOTH OF DOOR MIRROR DEFOGGER OPERATE.

< SYMPTOM DIAGNOSIS >

REAR WINDOW DEFOGGER DOES NOT OPERATE BUT BOTH OF DOOR MIRROR DEFOGGER OPERATE.

Diagnosis Procedure

INFOID:000000005146850

1. CHECK REAR WINDOW DEFOGGER POWER SUPPLY AND GROUND CIRCUIT

Check rear window defogger power supply and ground circuit.

Refer to [DEF-10, "Component Function Check"](#).

Is the inspection result normal?

YES >> Refer to [GI-38, "Intermittent Incident"](#).

NO >> Repair or replace the malfunctioning parts.

BOTH DOORS MIRROR DEFOGGER DON'T OPERATE BUT REAR WINDOW DEFOGGER OPERATES

< SYMPTOM DIAGNOSIS >

BOTH DOORS MIRROR DEFOGGER DON'T OPERATE BUT REAR WINDOW DEFOGGER OPERATES

Diagnosis Procedure

INFOID:000000005146851

1. CHECK INTERMITTENT INCIDENT

Check intermittent incident.

Refer to [GI-38. "Intermittent Incident"](#).

Is the inspection result normal?

- YES >> Check the following.
- Battery power supply circuit.
 - IPDM E/R.
- NO >> Repair or replace the malfunctioning parts.

A
B
C
D
E
F
G
H
I
J
K
DEF
M
N
O
P

DRIVER SIDE DOOR MIRROR DEFOGGER DOES NOT OPERATE.

< SYMPTOM DIAGNOSIS >

DRIVER SIDE DOOR MIRROR DEFOGGER DOES NOT OPERATE.

Diagnosis Procedure

INFOID:000000005146852

1. CHECK DOOR MIRROR DEFOGGER LH

Check door mirror defogger LH.

Refer to [DEF-12, "Component Function Check"](#).

Is the inspection result normal?

YES >> Refer to [GI-38, "Intermittent Incident"](#).

NO >> Repair or replace the malfunctioning parts.

PASSENGER SIDE DOOR MIRROR DEFOGGER DOES NOT OPERATE.

< SYMPTOM DIAGNOSIS >

PASSENGER SIDE DOOR MIRROR DEFOGGER DOES NOT OPERATE.

Diagnosis Procedure

INFOID:000000005146853

1. CHECK DOOR MIRROR DEFOGGER RH

Check door mirror defogger RH.

Refer to [DEF-15, "Component Function Check"](#).

Is the inspection result normal?

YES >> Refer to [GI-38, "Intermittent Incident"](#).

NO >> Repair or replace the malfunctioning parts.

A
B
C
D
E
F
G
H
I
J
K
DEF
M
N
O
P

REAR WINDOW DEFOGGER SWITCH DOES NOT LIGHT, BUT REAR WINDOW DEFOGGER OPERATES

< SYMPTOM DIAGNOSIS >

REAR WINDOW DEFOGGER SWITCH DOES NOT LIGHT, BUT REAR WINDOW DEFOGGER OPERATES

Diagnosis Procedure

INFOID:000000005146854

1. CHECK A/C AND AV SWITCH ASSEMBLY (REAR WINDOW DEFOGGER SWITCH)

Check that the A/C and AV switch assembly (rear window defogger switch) is operating normally.

Is the inspection result normal?

- YES >> Refer to [GI-38, "Intermittent Incident"](#).
- NO >> Refer to [DEF-8, "Diagnosis Procedure"](#).

PRECAUTIONS

< PRECAUTION >

PRECAUTION

PRECAUTIONS

Precaution for Supplemental Restraint System (SRS) "AIR BAG" and "SEAT BELT PRE-TENSIONER"

INFOID:000000005367609

The Supplemental Restraint System such as "AIR BAG" and "SEAT BELT PRE-TENSIONER", used along with a front seat belt, helps to reduce the risk or severity of injury to the driver and front passenger for certain types of collision. This system includes seat belt switch inputs and dual stage front air bag modules. The SRS system uses the seat belt switches to determine the front air bag deployment, and may only deploy one front air bag, depending on the severity of a collision and whether the front occupants are belted or unbelted. Information necessary to service the system safely is included in the SR and SB section of this Service Manual.

WARNING:

- To avoid rendering the SRS inoperative, which could increase the risk of personal injury or death in the event of a collision which would result in air bag inflation, all maintenance must be performed by an authorized NISSAN/INFINITI dealer.
- Improper maintenance, including incorrect removal and installation of the SRS, can lead to personal injury caused by unintentional activation of the system. For removal of Spiral Cable and Air Bag Module, see the SR section.
- Do not use electrical test equipment on any circuit related to the SRS unless instructed to in this Service Manual. SRS wiring harnesses can be identified by yellow and/or orange harnesses or harness connectors.

PRECAUTIONS WHEN USING POWER TOOLS (AIR OR ELECTRIC) AND HAMMERS

WARNING:

- When working near the Airbag Diagnosis Sensor Unit or other Airbag System sensors with the Ignition ON or engine running, DO NOT use air or electric power tools or strike near the sensor(s) with a hammer. Heavy vibration could activate the sensor(s) and deploy the air bag(s), possibly causing serious injury.
- When using air or electric power tools or hammers, always switch the Ignition OFF, disconnect the battery, and wait at least 3 minutes before performing any service.

Precaution Necessary for Steering Wheel Rotation After Battery Disconnect

INFOID:000000005367612

NOTE:

- This Procedure is applied only to models with Intelligent Key system and NATS (NISSAN ANTI-THEFT SYSTEM).
- Remove and install all control units after disconnecting both battery cables with the ignition knob in the "LOCK" position.
- Always use CONSULT-III to perform self-diagnosis as a part of each function inspection after finishing work. If DTC is detected, perform trouble diagnosis according to self-diagnostic results.

For models equipped with the Intelligent Key system and NATS, an electrically controlled steering lock mechanism is adopted on the key cylinder.

For this reason, if the battery is disconnected or if the battery is discharged, the steering wheel will lock and steering wheel rotation will become impossible.

If steering wheel rotation is required when battery power is interrupted, follow the procedure below before starting the repair operation.

OPERATION PROCEDURE

1. Connect both battery cables.

NOTE:

Supply power using jumper cables if battery is discharged.

2. Use the Intelligent Key or mechanical key to turn the ignition switch to the "ACC" position. At this time, the steering lock will be released.
3. Disconnect both battery cables. The steering lock will remain released and the steering wheel can be rotated.
4. Perform the necessary repair operation.

A
B
C
D
E
F
G
H
I
J
K
DEF
M
N
O
P

PRECAUTIONS

< PRECAUTION >

5. When the repair work is completed, return the ignition switch to the "LOCK" position before connecting the battery cables. (At this time, the steering lock mechanism will engage.)
6. Perform a self-diagnosis check of all control units using CONSULT-III.

Handling for Adhesive and Primer

INFOID:000000005146856

- Do not use an adhesive which is past its usable date. Shelf life of this product is limited to six months after the date of manufacture. Carefully adhere to the expiration or manufacture date printed on the box.
- Keep primers and adhesive in a cool, dry place. Ideally, they should be stored in a refrigerator.
- Open the seal of the primer and adhesive just before application. Discard the remainder.
- Before application, be sure to shake the primer container to stir the contents. If any floating material is found, do not use it.
- If any primer or adhesive contacts the skin, wipe it off with gasoline or equivalent and wash the skin with soap.
- When using primer and adhesive, always observe the precautions in the instruction manual.

REAR WINDOW DEFOGGER

< ON-VEHICLE REPAIR >

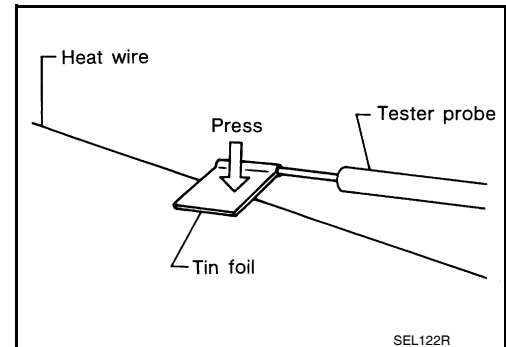
ON-VEHICLE REPAIR

REAR WINDOW DEFOGGER

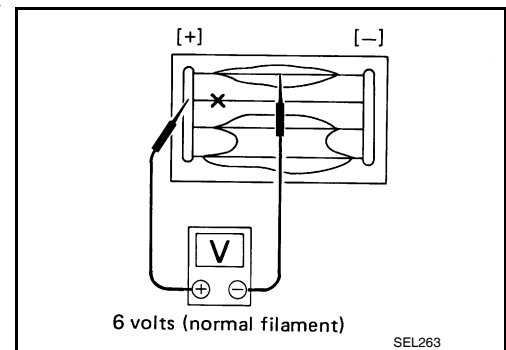
Filament Check

INFOID:000000005146857

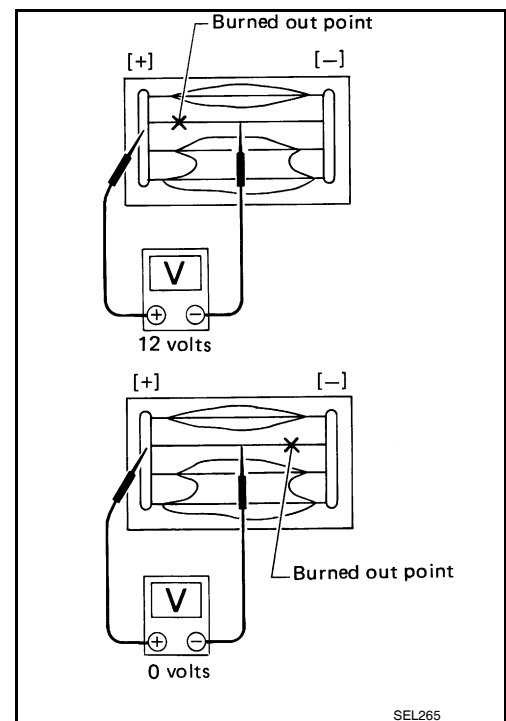
1. When measuring voltage, wrap tin foil around the top of the negative probe. Then press the foil against the wire with your finger.



2. Attach probe circuit tester (in Volt range) to middle portion of each filament.



3. If a filament is burned out, circuit tester registers 0 or battery voltage.
4. To locate burned out point, move probe to left and right along filament. Test needle will swing abruptly when probe passes the point.



Filament Repair

INFOID:000000005146858

REPAIR EQUIPMENT

- Conductive silver composition (DuPont No. 4817 or equivalent)
- Ruler 30 cm (11.8 in) long

A
B
C
D
E
F
G
H
I
J
K
DEF
M
N
O
P

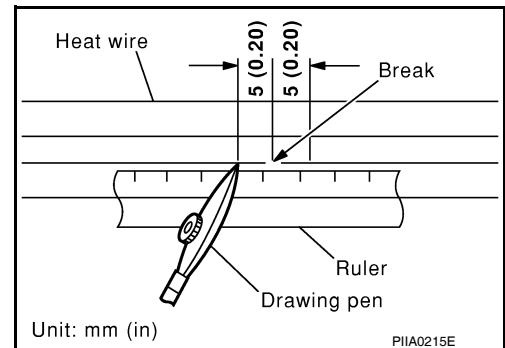
REAR WINDOW DEFOGGER

< ON-VEHICLE REPAIR >

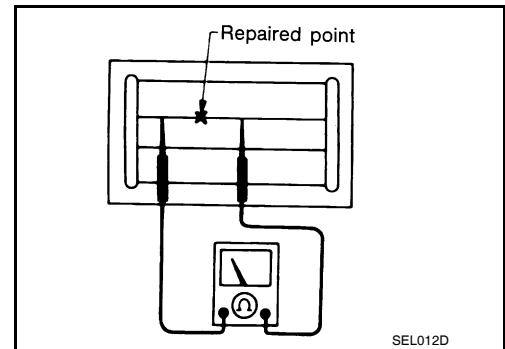
- Drawing pen
- Heat gun
- Alcohol
- Cloth

REPAIRING PROCEDURE

1. Wipe broken heat wire and its surrounding area clean with a cloth dampened in alcohol.
2. Apply a small amount of conductive silver composition to tip of drawing pen. Shake silver composition container before use.
3. Place ruler on glass along broken line. Deposit conductive silver composition on break with drawing pen. Slightly overlap existing heat wire on both sides [preferably 5 mm (0.20 in)] of the break.



4. After repair has been completed, check repaired wire for continuity. This check should be conducted 10 minutes after silver composition is deposited. Do not touch repaired area while test is being conducted.



5. Apply a constant stream of hot air directly to the repaired area for approximately 20 minutes with a heat gun. A minimum distance of 3 cm (1.2 in) should be kept between repaired area and hot air outlet. If a heat gun is not available, let the repaired area dry for 24 hours.

