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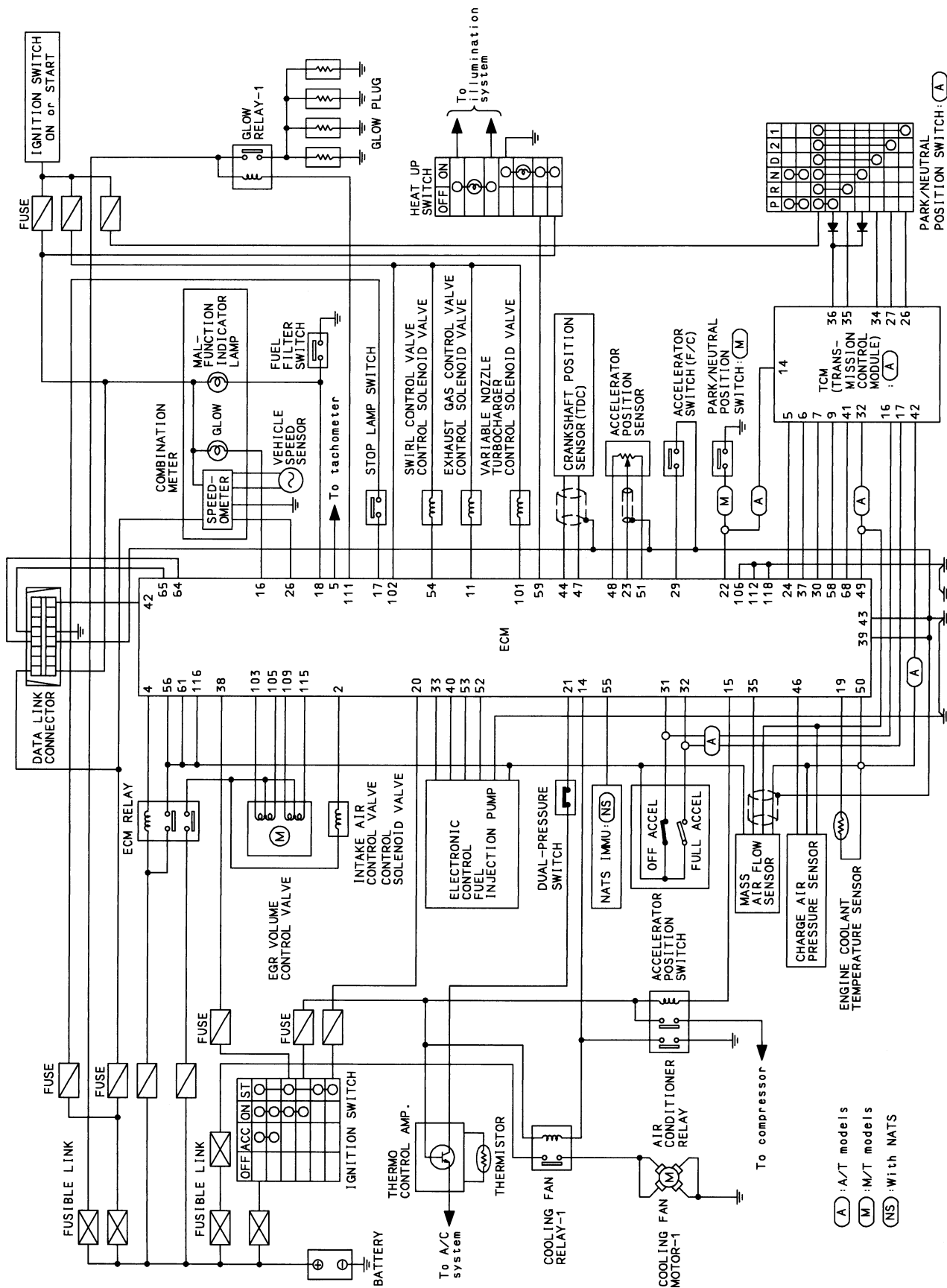
Wiring Diagram 2039

When you read wiring diagrams:

- Read GI section, “HOW TO READ WIRING DIAGRAMS”.
- See EL section, “POWER SUPPLY ROUTING” for power distribution circuit.

When you perform trouble diagnoses, read GI section, “HOW TO FOLLOW FLOW CHART IN TROUBLE DIAGNOSES” and “HOW TO PERFORM EFFICIENT DIAGNOSIS FOR AN ELECTRICAL INCIDENT”.

Circuit Diagram

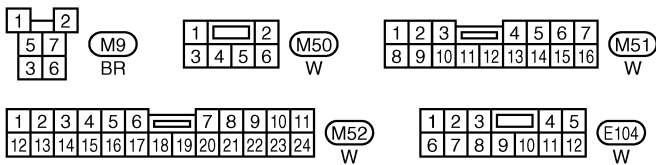
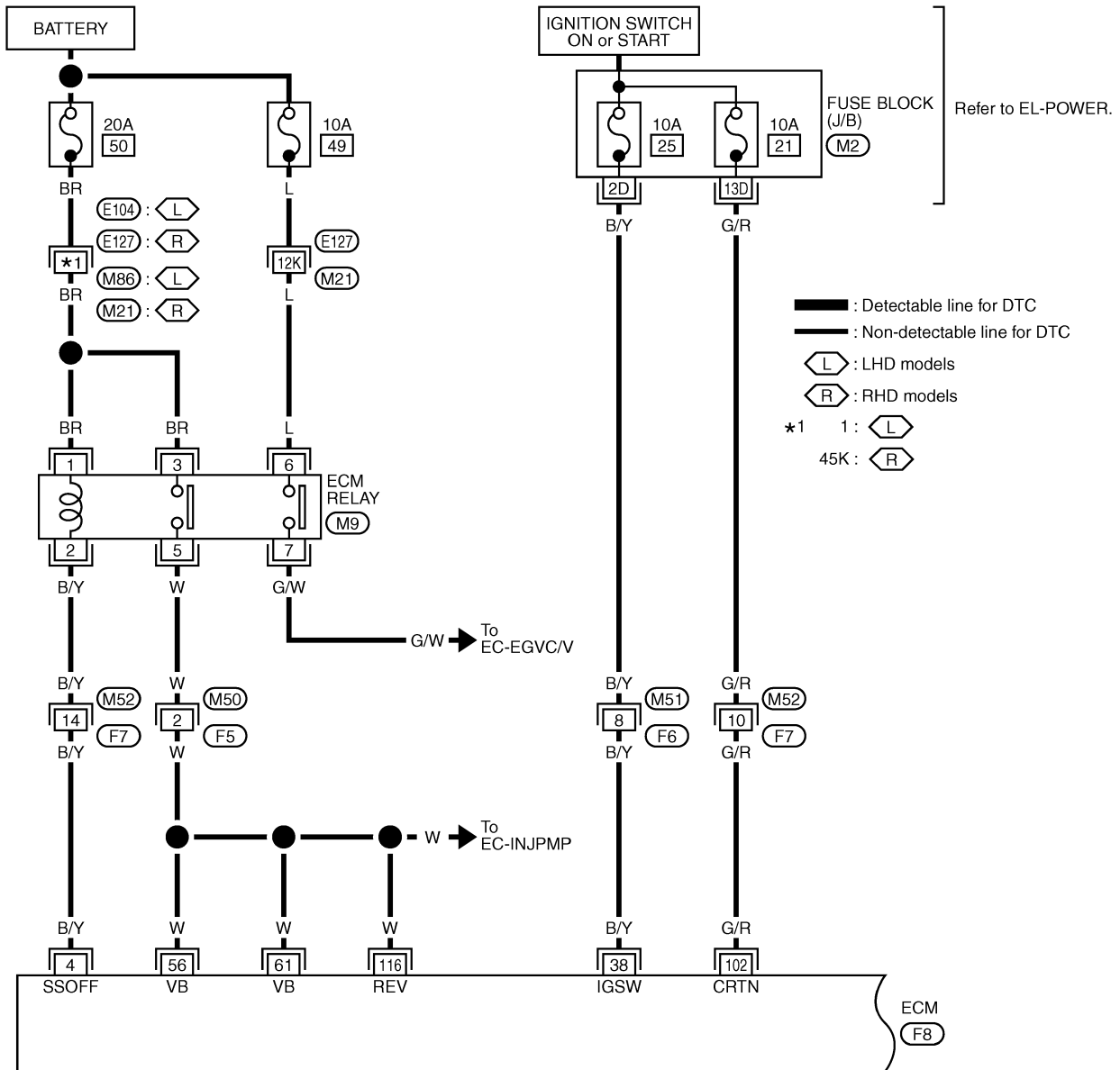


TROUBLE DIAGNOSIS FOR POWER SUPPLY

Main Power Supply and Ground Circuit

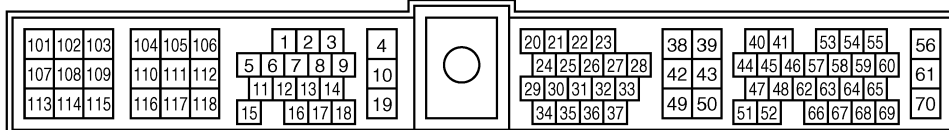
WIRING DIAGRAM

EC-MAIN-01



Refer to last page (Foldout page).

(M21), (E127)
(M2)



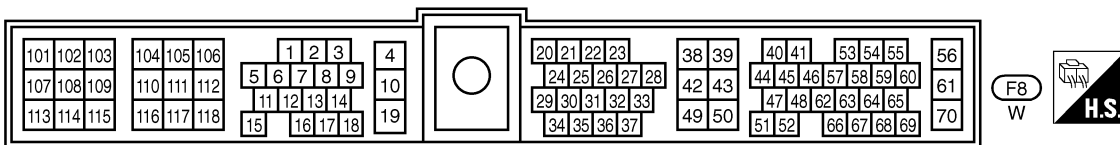
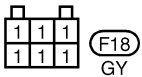
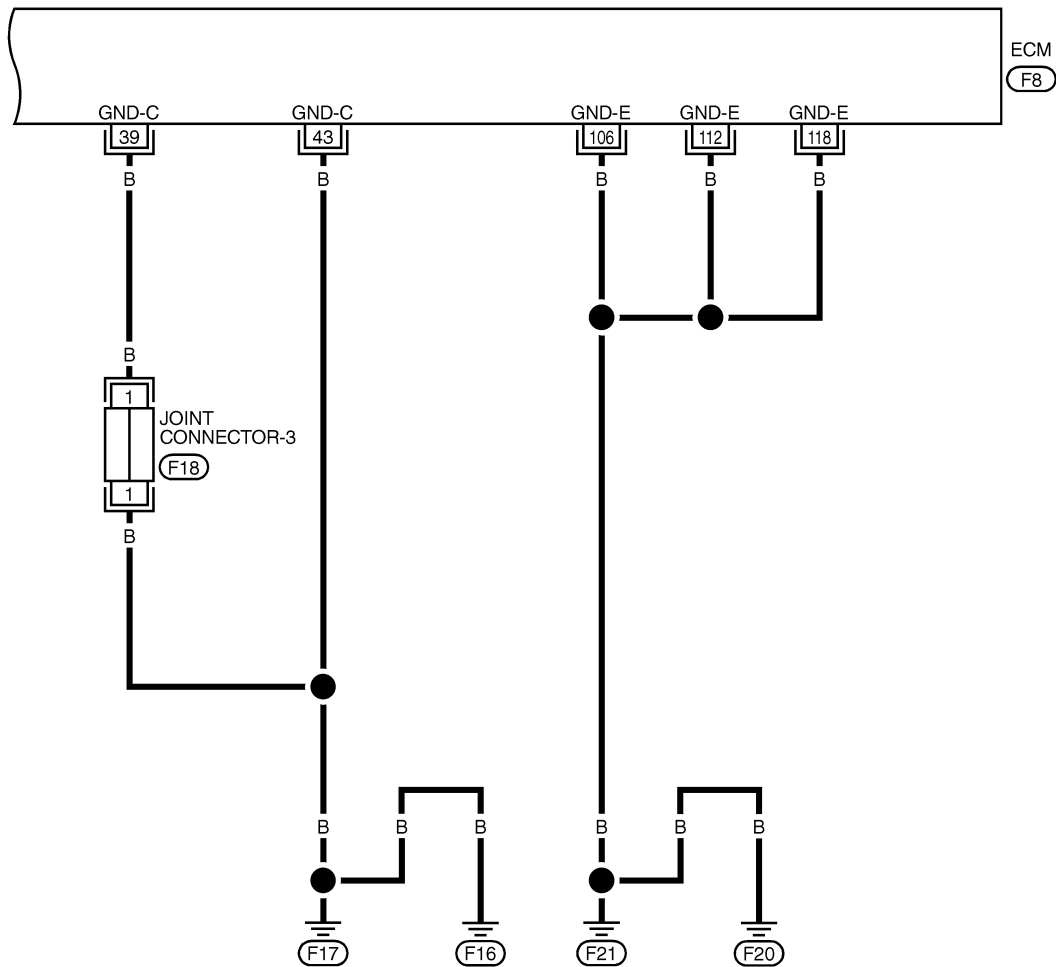
(F8) W **H.S.**

TROUBLE DIAGNOSIS FOR POWER SUPPLY

Main Power Supply and Ground Circuit (Cont'd)

EC-MAIN-02

: Detectable line for DTC
 : Non-detectable line for DTC

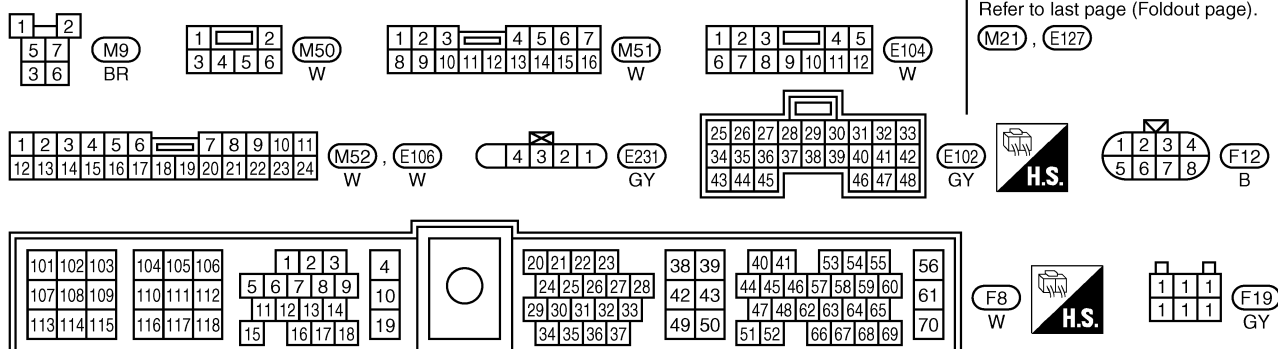
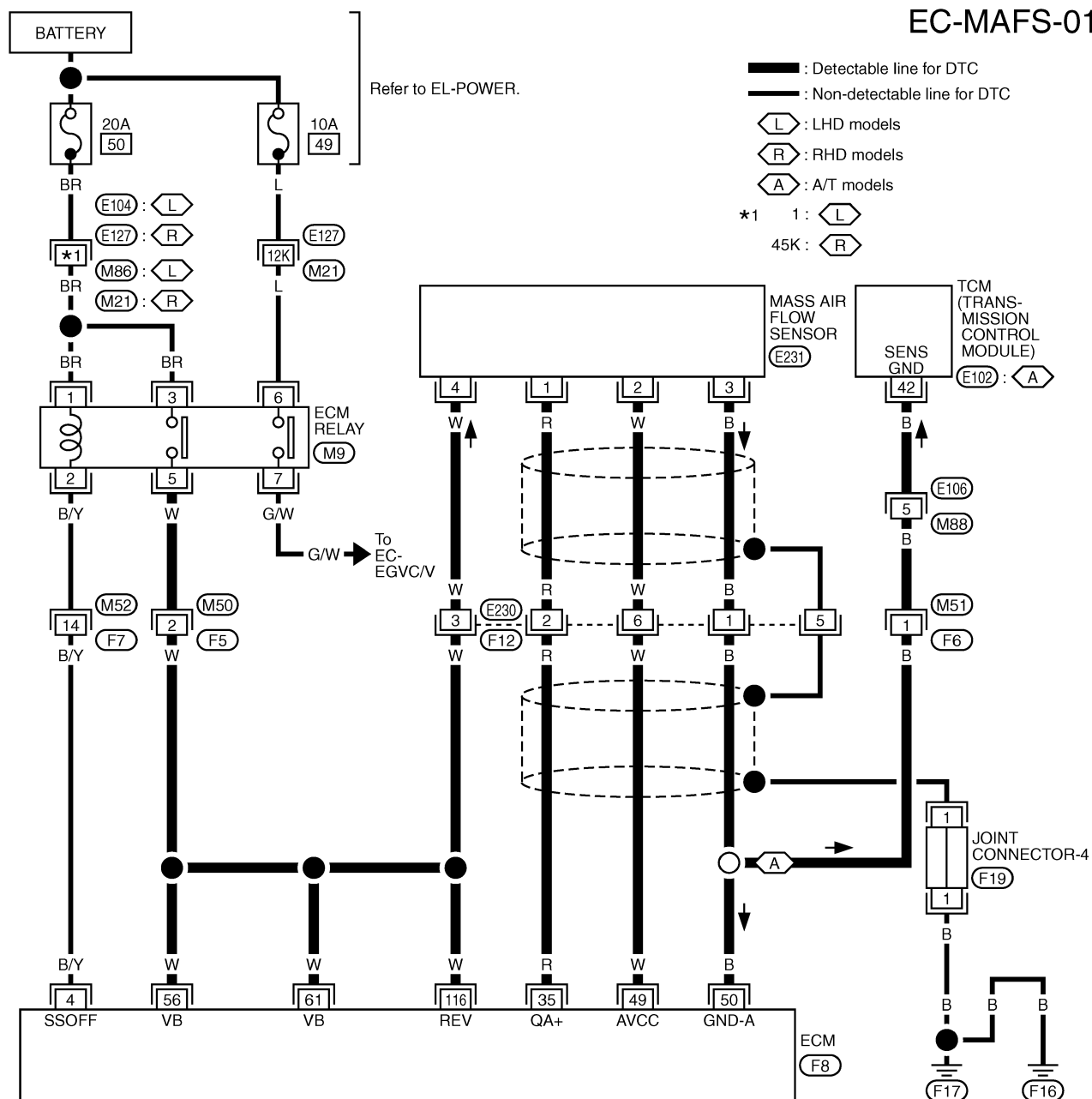


TEC097M

DTC 0102 MASS AIR FLOW SEN

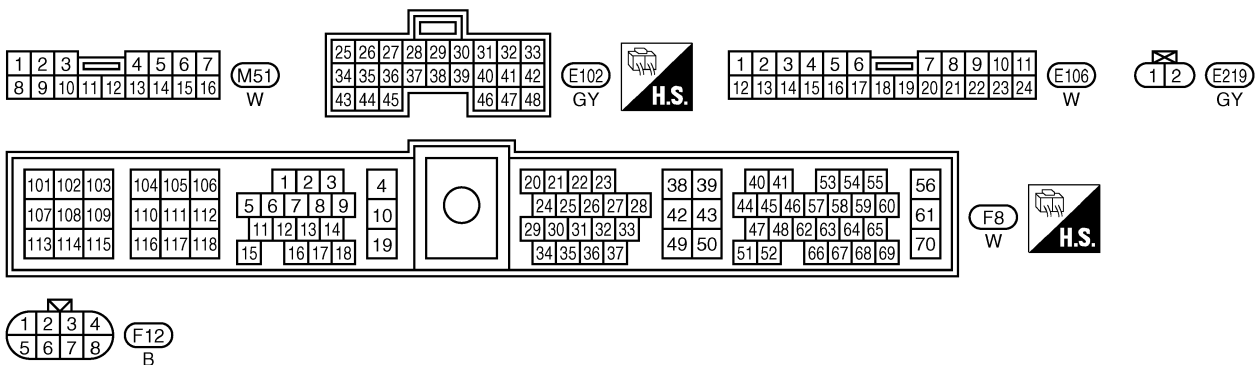
Wiring Diagram

EC-MAFS-01



EC-ECTS-01

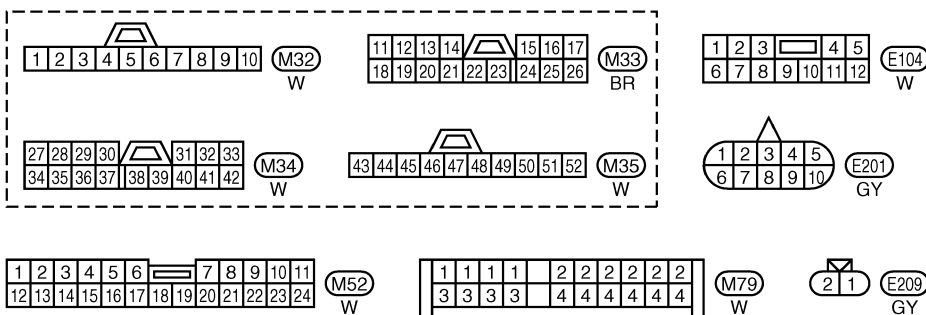
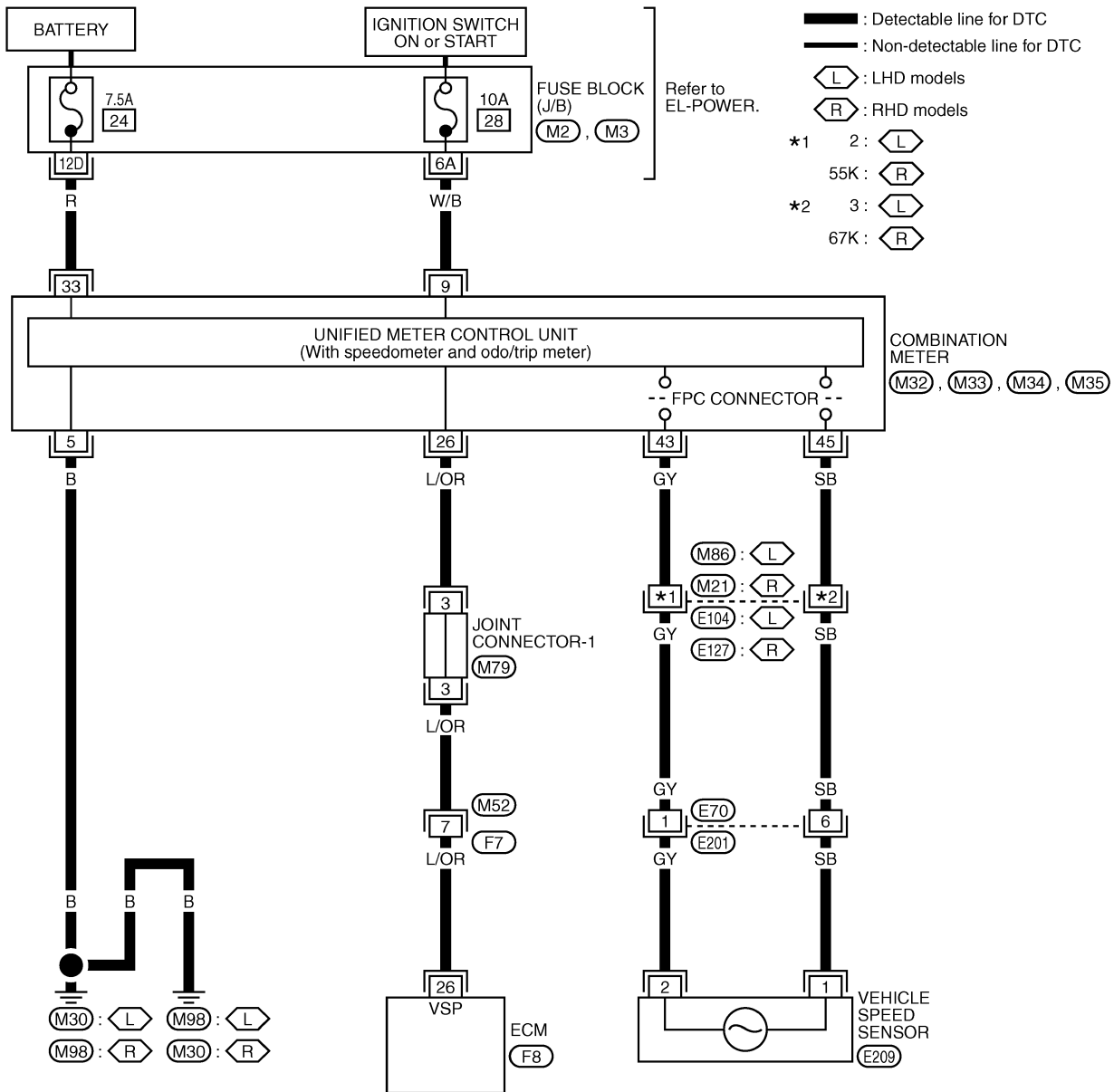
EC-ECTS-01



DTC 0104 VEHICLE SPEED SEN

Wiring Diagram

EC-VSS-01



Refer to last page (Foldout page).

(M21), (E127)

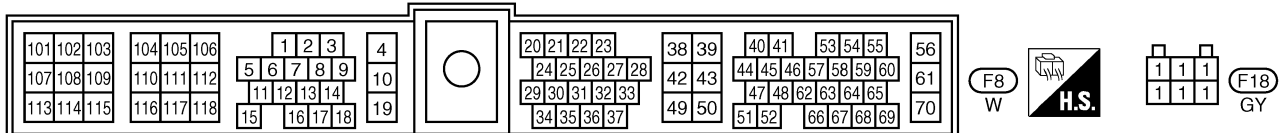
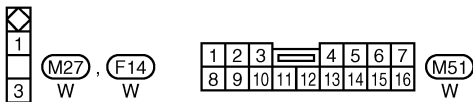
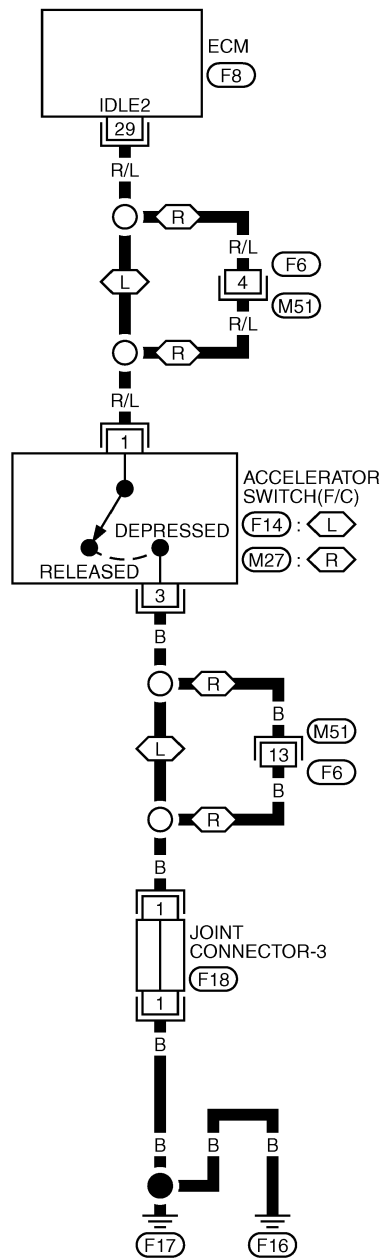
(M2)

(M3)

(F8)

EC-ACC/SW-01

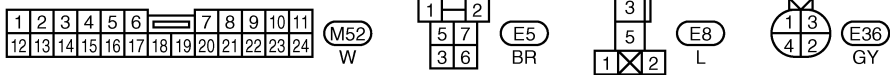
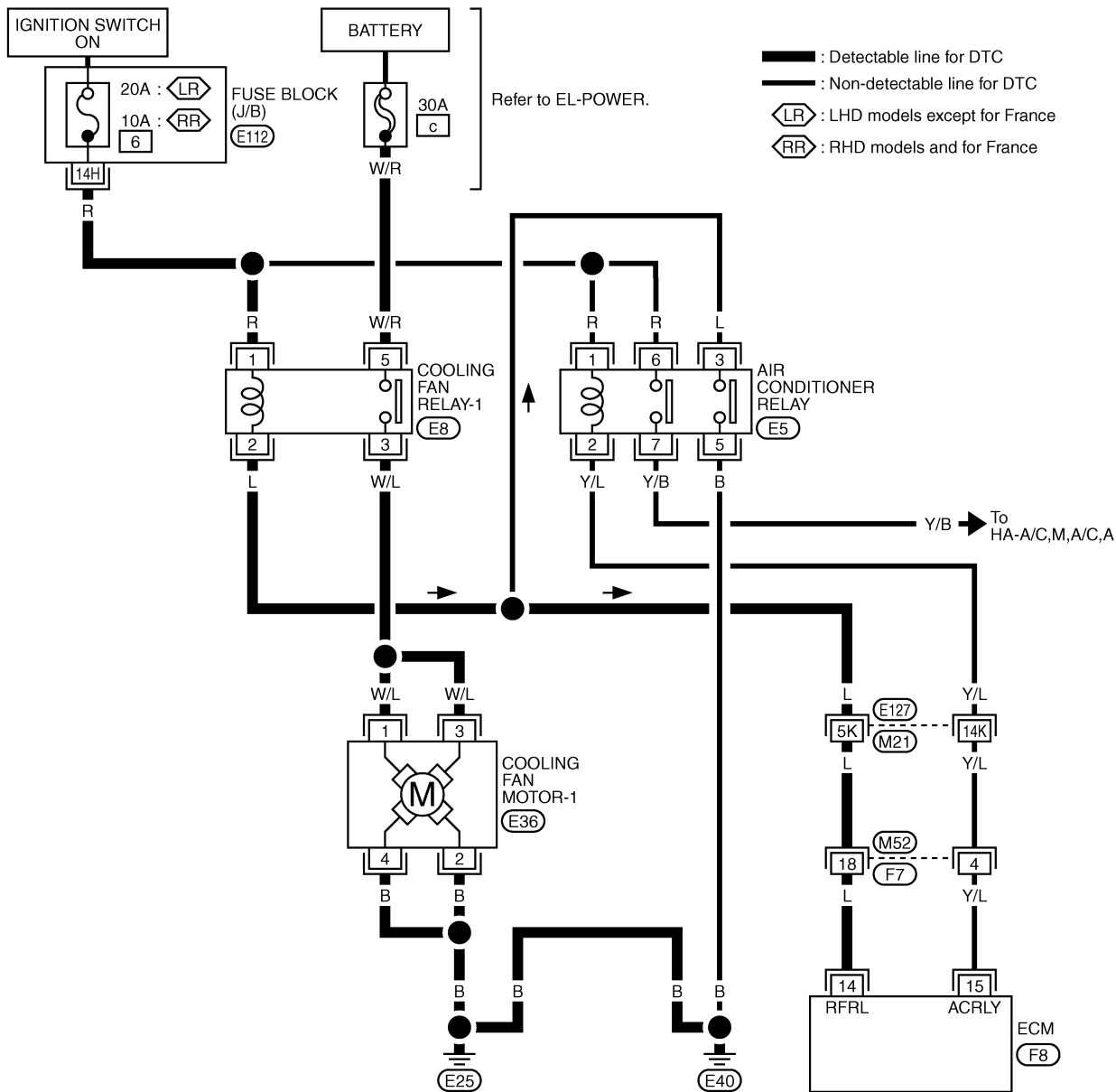
 : Detectable line for DTC
 : Non-detectable line for DTC
 : LHD models
 : RHD models



DTC 0208 OVER HEAT

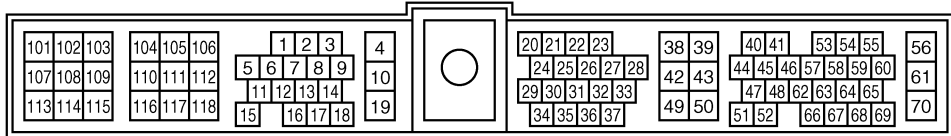
Wiring Diagram

EC-COOL/F-01



Refer to last page (Foldout page).

M21, E127
E112

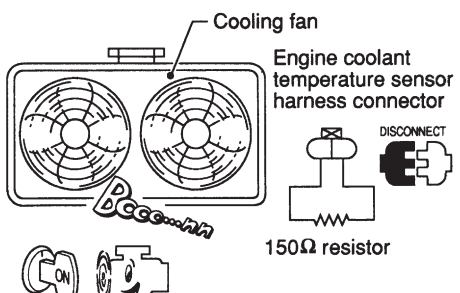


DTC 0208 OVER HEAT

Diagnostic Procedure

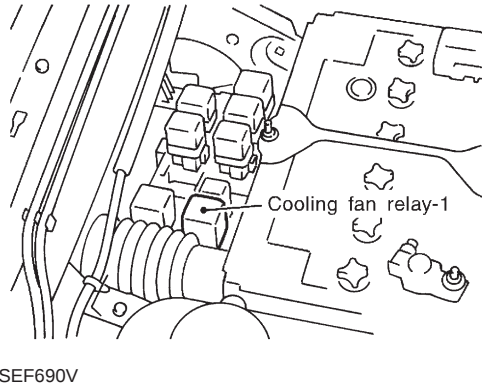
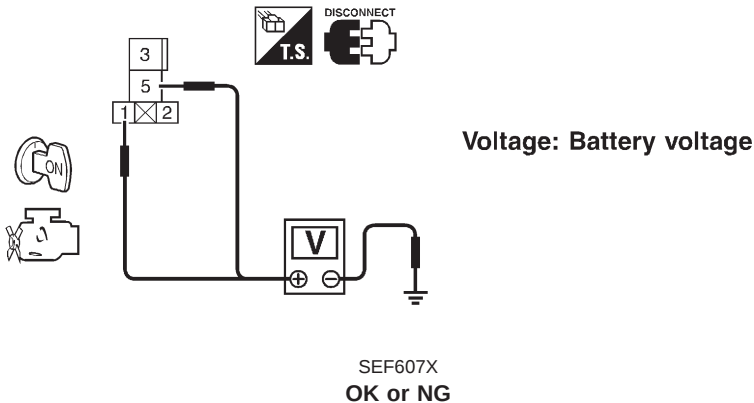
1	INSPECTION START	
Do you have CONSULT-II?		
Yes or No		
Yes	▶	GO TO 2.
No	▶	GO TO 3.

2	CHECK COOLING FAN OPERATION																					
With CONSULT-II																						
1. Turn ignition switch "ON".																						
2. Perform "COOLING FAN" in "ACTIVE TEST" mode with CONSULT-II.																						
<table><tr><th colspan="2">ACTIVE TEST</th></tr><tr><th>COOLING FAN</th><th>OFF</th></tr><tr><th colspan="2">MONITOR</th></tr><tr><th>COOLANT TEMP/S</th><th>XXX °C</th></tr><tr><td> </td><td> </td></tr><tr><td> </td><td> </td></tr><tr><td> </td><td> </td></tr><tr><td> </td><td> </td></tr><tr><td> </td><td> </td></tr><tr><td> </td><td> </td></tr></table>			ACTIVE TEST		COOLING FAN	OFF	MONITOR		COOLANT TEMP/S	XXX °C												
ACTIVE TEST																						
COOLING FAN	OFF																					
MONITOR																						
COOLANT TEMP/S	XXX °C																					
SEF646X																						
3. Make sure that cooling fan-1 operates.																						
OK or NG																						
OK	▶	GO TO 12.																				
NG	▶	GO TO 4.																				

3	CHECK COOLING FAN OPERATION	
Without CONSULT-II		
1. Turn ignition switch "OFF".		
2. Disconnect engine coolant temperature sensor harness connector.		
3. Connect 150Ω resistor to engine coolant temperature sensor harness connector.		
4. Restart engine and make sure that cooling fan operates.		
		
MEC475B		
OK or NG		
OK	▶	GO TO 12.
NG	▶	GO TO 4.

DTC 0208 OVER HEAT

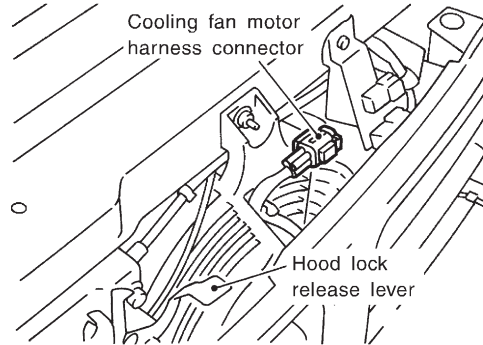
Diagnostic Procedure (Cont'd)

4	CHECK COOLING FAN POWER SUPPLY CIRCUIT
1. Turn ignition switch "OFF". 2. Disconnect cooling fan relay-1.  3. Turn ignition switch "ON". 4. Check voltage between cooling fan relay-1 terminals 1, 5 and ground with CONSULT-II or tester. 	
OK	▶ GO TO 6.
NG	▶ GO TO 5.

5	DETECT MALFUNCTIONING PART
Check the following. ● Fuse block (J/B) connector E112 ● 10A fuse or 20A fuse ● 30A fusible links ● Harness for open or short between cooling fan relay-1 and fuse ● Harness for open or short between cooling fan relay-1 and battery	
	▶ Repair open circuit or short to ground or short to power in harness or connectors.

DTC 0208 OVER HEAT

Diagnostic Procedure (Cont'd)

6	CHECK COOLING FAN GROUND CIRCUIT FOR OPEN AND SHORT	
1. Turn ignition switch "OFF". 2. Disconnect cooling fan motor-1 harness connector.		
 SEF691V		
3. Check harness continuity between cooling fan relay-1 terminal 3 and cooling fan motor-1 terminals 1, 3, cooling fan motor-1 terminals 2, 4 and body ground. Refer to Wiring Diagram. Continuity should exist. 4. Also check harness for short to ground and short to power.		
OK or NG		
OK	▶	GO TO 7.
NG	▶	Repair open circuit or short to ground or short to power in harness or connectors.

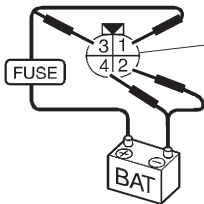
7	CHECK COOLING FAN OUTPUT SIGNAL CIRCUIT FOR OPEN AND SHORT	
1. Disconnect ECM harness connector. 2. Check harness continuity between ECM terminal 14 and cooling fan relay-1 terminal 1. Refer to Wiring Diagram. Continuity should exist. 3. Also check harness for short to ground and short to power.		
OK or NG		
OK	▶	GO TO 9.
NG	▶	GO TO 8.

8	DETECT MALFUNCTIONING PART	
Check the following. ● Harness connectors E127, M21 ● Harness connectors M52, F7 ● Harness for open or short between cooling fan relay-1 and ECM		
	▶	Repair open circuit or short to ground or short to power in harness or connectors.

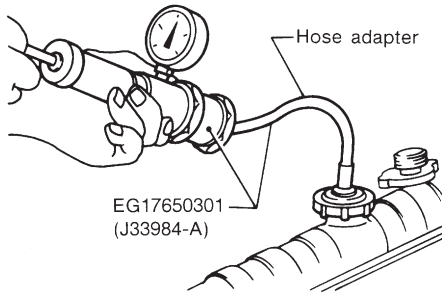
9	CHECK COOLING FAN RELAY-1	
Refer to “Component Inspection”, EC-2016.		
OK or NG		
OK	▶	GO TO 10.
NG	▶	Replace cooling fan relay.

DTC 0208 OVER HEAT

Diagnostic Procedure (Cont'd)

10	CHECK COOLING FAN MOTOR-1															
Supply battery voltage between the following terminals and check operation.																
 Cooling fan motor-1 harness connector  <table><tr><th rowspan="2"></th><th rowspan="2">Speed</th><th colspan="2">Terminals</th></tr><tr><th>(+)</th><th>(-)</th></tr><tr><td rowspan="2">Cooling fan motor-1</td><td>Low</td><td>1</td><td>4</td></tr><tr><td>High</td><td>1 , 3</td><td>2 , 4</td></tr></table>					Speed	Terminals		(+)	(-)	Cooling fan motor-1	Low	1	4	High	1 , 3	2 , 4
	Speed	Terminals														
		(+)	(-)													
Cooling fan motor-1	Low	1	4													
	High	1 , 3	2 , 4													
SEF292Z OK or NG																
OK	▶	GO TO 11.														
NG	▶	Replace cooling fan motor.														

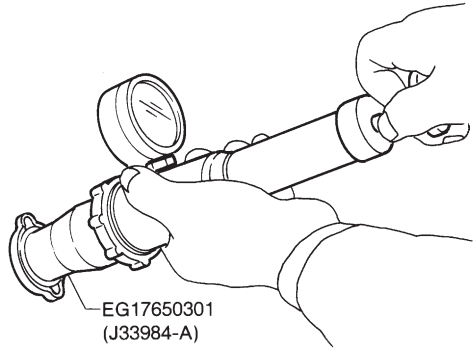
11	CHECK INTERMITTENT INCIDENT		
Perform "TROUBLE DIAGNOSIS FOR INTERMITTENT INCIDENT".			
	▶	INSPECTION END	

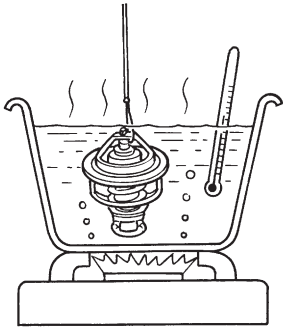
12	CHECK COOLING SYSTEM FOR LEAK		
Apply pressure to the cooling system with a tester, and check if the pressure drops. Testing pressure: 157 kPa (1.57 bar, 1.6 kg/cm ² , 23 psi) CAUTION: Higher than the specified pressure may cause radiator damage.			
 SLC754A Pressure should not drop. OK or NG			
OK	▶	GO TO 14.	
NG	▶	GO TO 13.	

13	DETECT MALFUNCTIONING PART		
Check the following for leak. ● Hose ● Radiator ● Water pump (Refer to LC section, "Water Pump".)			
	▶	Repair or replace.	

DTC 0208 OVER HEAT

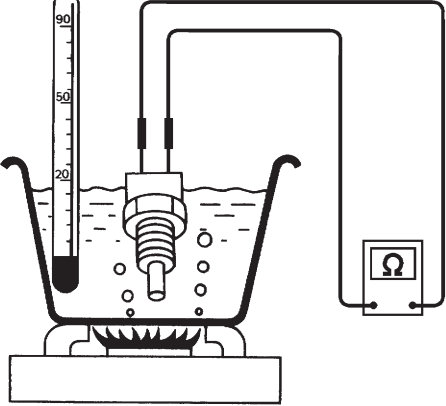
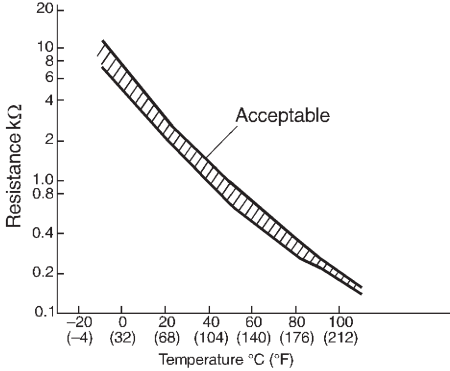
Diagnostic Procedure (Cont'd)

14	CHECK RADIATOR CAP
Apply pressure to cap with a tester and check radiator cap relief pressure.	
 EG17650301 (J33984-A) SLC755A	
Radiator cap relief pressure: 79 - 98 kPa (0.78 - 0.98 bar, 0.8 - 1.0 kg/cm ² , 11 - 14 psi)	
OK or NG	
OK	▶ GO TO 15.
NG	▶ Replace radiator cap.

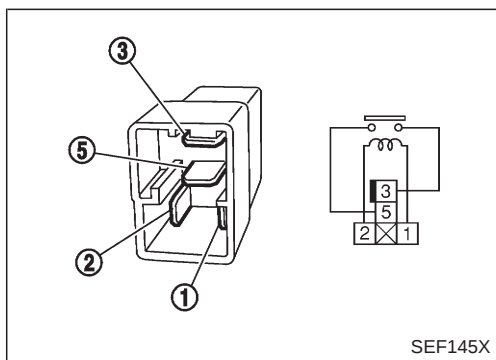
15	CHECK THERMOSTAT
1. Remove thermostat. 2. Check valve seating condition at normal room temperatures. It should seat tightly. 3. Check valve opening temperature and valve lift.	
 SLC343	
Valve opening temperature: 82°C (180°F) [standard] (Models for cold areas) 76.5°C (170°F) [standard] (Models for except cold areas)	
Valve lift: More than 10 mm/95°C (0.394 in/203°F)	
4. Check if valve is closed at 5°C (9°F) below valve opening temperature. For details, refer to LC section, "Thermostat".	
OK or NG	
OK	▶ GO TO 16.
NG	▶ Replace thermostat.

DTC 0208 OVER HEAT

Diagnostic Procedure (Cont'd)

16	CHECK ENGINE COOLANT TEMPERATURE SENSOR								
1. Remove engine coolant temperature sensor. 2. Check resistance between engine coolant temperature sensor terminals 1 and 2 as shown in the figure.									
									
<Reference data> <table border="1" style="margin: auto;"> <thead> <tr> <th>Temperature °C (°F)</th> <th>Resistance kΩ</th> </tr> </thead> <tbody> <tr> <td>20 (68)</td> <td>2.1 - 2.9</td> </tr> <tr> <td>50 (122)</td> <td>0.68 - 1.00</td> </tr> <tr> <td>90 (194)</td> <td>0.236 - 0.260</td> </tr> </tbody> </table>		Temperature °C (°F)	Resistance kΩ	20 (68)	2.1 - 2.9	50 (122)	0.68 - 1.00	90 (194)	0.236 - 0.260
Temperature °C (°F)	Resistance kΩ								
20 (68)	2.1 - 2.9								
50 (122)	0.68 - 1.00								
90 (194)	0.236 - 0.260								
									
SEF304X OK or NG									
OK	▶ GO TO 17.								
NG	▶ Replace engine coolant temperature sensor.								

17	CHECK MAIN 12 CAUSES
If the cause cannot be isolated, go to "MAIN 12 CAUSES OF OVERHEATING", EC-2017.	
▶	INSPECTION END



Component Inspection

FUEL PUMP RELAY

Check continuity between terminals 3 and 5.

Conditions	Continuity
12V direct current supply between terminals 1 and 2	Yes
No current supply	No

If NG, replace relay.

DTC 0208 OVER HEAT

Main 12 Causes of Overheating

Engine	Step	Inspection item	Equipment	Standard	Reference page
OFF	1	- Blocked radiator - Blocked condenser - Blocked radiator grille - Blocked bumper	Visual	No blocking	—
	2	Coolant mixture	Coolant tester	30 - 50% coolant mixture	See "RECOMMENDED FLUIDS AND LUBRICANTS" in MA section.
	3	Coolant level	Visual	Coolant up to MAX level in reservoir tank and radiator filler neck	See "Changing Engine Coolant", "ENGINE MAINTENANCE" in MA section.
	4	Radiator cap	Pressure tester	78 - 98 kPa (0.78 - 0.98 bar, 0.8 - 1.0 kg/cm ² , 11 - 14 psi) 59 - 98 kPa (0.59 - 0.98 bar, 0.6 - 1.0 kg/cm ² , 9 - 14 psi) (Limit)	See "System Check", "ENGINE COOLING SYSTEM" in LC section.
ON*2	5	Coolant leaks	Visual	No leaks	See "System Check", "ENGINE COOLING SYSTEM" in LC section.
ON*2	6	Thermostat	Touch the upper and lower radiator hoses	Both hoses should be hot.	See "Thermostat" and "Radiator", "ENGINE COOLING SYSTEM" in LC section.
ON*1	7	Cooling fan	Visual	Operating	See "DTC 0208 OVER HEAT".
OFF	8	Combustion gas leak	Color checker chemical tester 4 gas analyzer	Negative	—
ON*3	9	Coolant temperature gauge	Visual	Gauge less than 3/4 when driving	—
		Coolant overflow to reservoir tank	Visual	No overflow during driving and idling	See "Changing Engine Coolant", "ENGINE MAINTENANCE" in MA section.
OFF*4	10	Coolant return from reservoir tank to radiator	Visual	Should be initial level in reservoir tank	See "ENGINE MAINTENANCE" in MA section.
OFF	11	Cylinder head	Straight gauge feeler gauge	0.1 mm (0.004 in) Maximum distortion (warping)	See "Inspection", "CYLINDER HEAD" in EM section.
	12	Cylinder block and pistons	Visual	No scuffing on cylinder walls or piston	See "Inspection", "CYLINDER BLOCK" in EM section.

*1: Engine running at idle.

*2: Engine running at 3,000 rpm for 10 minutes.

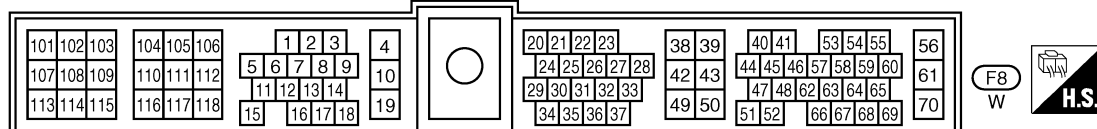
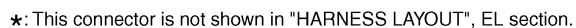
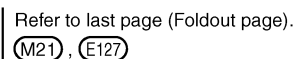
*3: Drive at 90 km/h (55 MPH) for 30 minutes and then let idle for 10 minutes.

*4: After 60 minutes of cool down time.

For more information, refer to "OVERHEATING CAUSE ANALYSIS" in LC section.

EC-INJPMP-01

EC-INJPMP-01



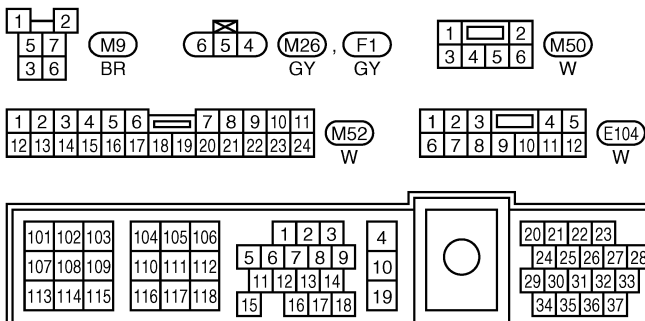
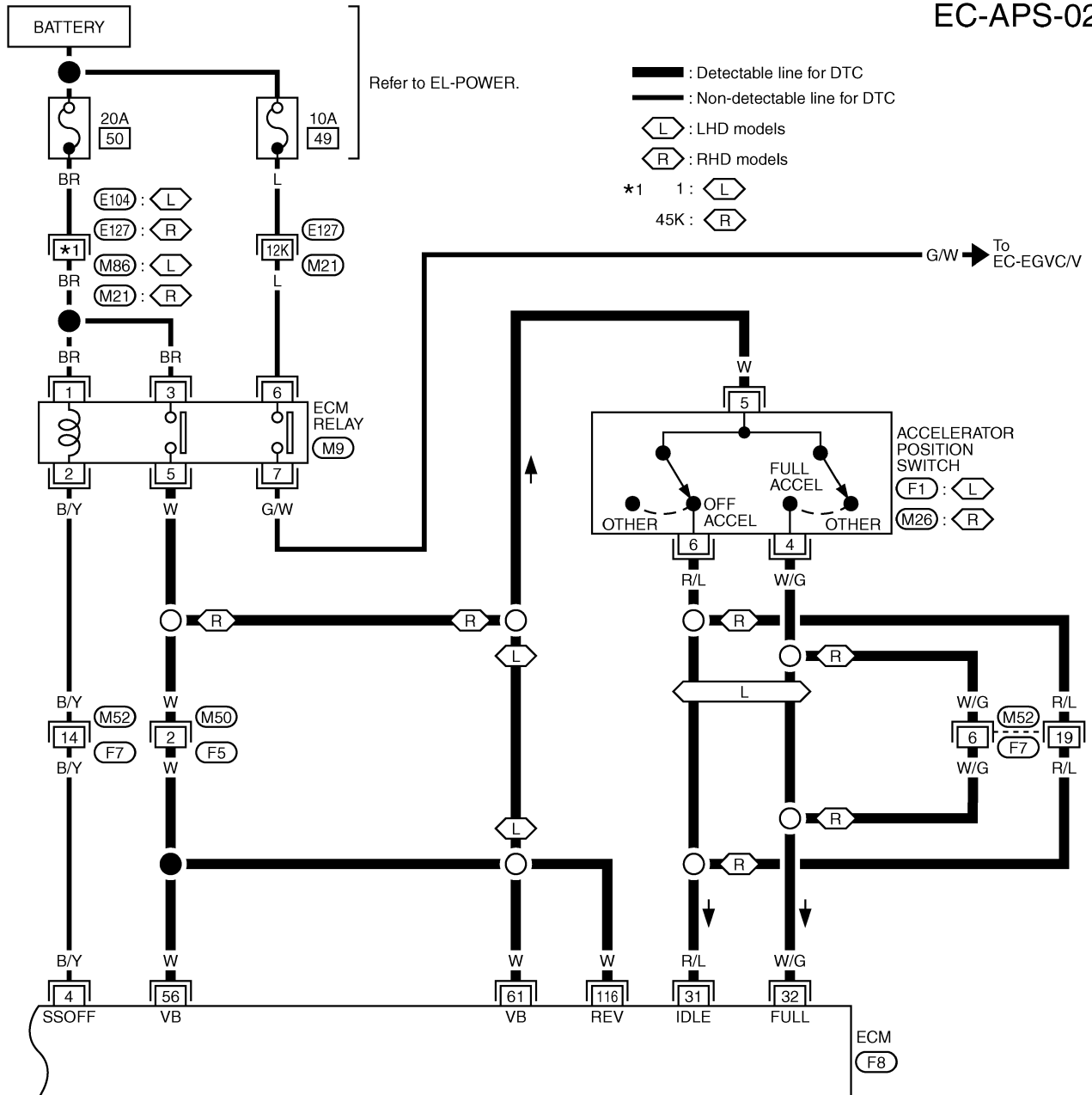
EC-APS-01

EC-APS-01



Wiring Diagram (Cont'd)

EC-APS-02



Refer to last page (Foldout page).

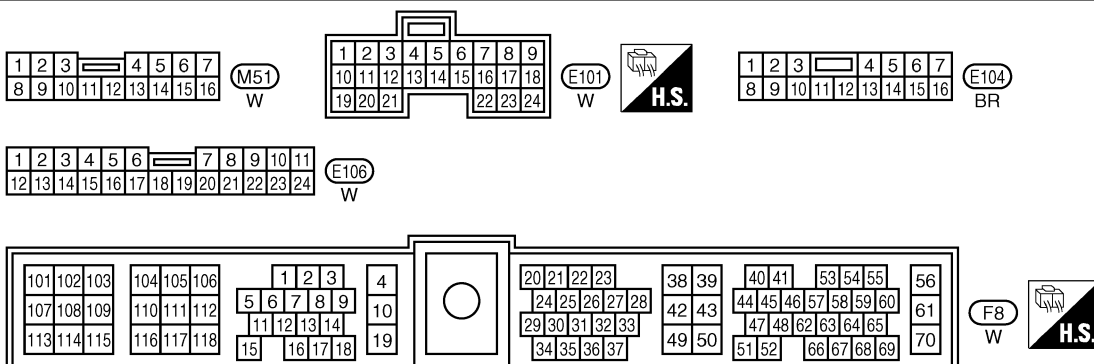
(M21), (E127)

F8
W



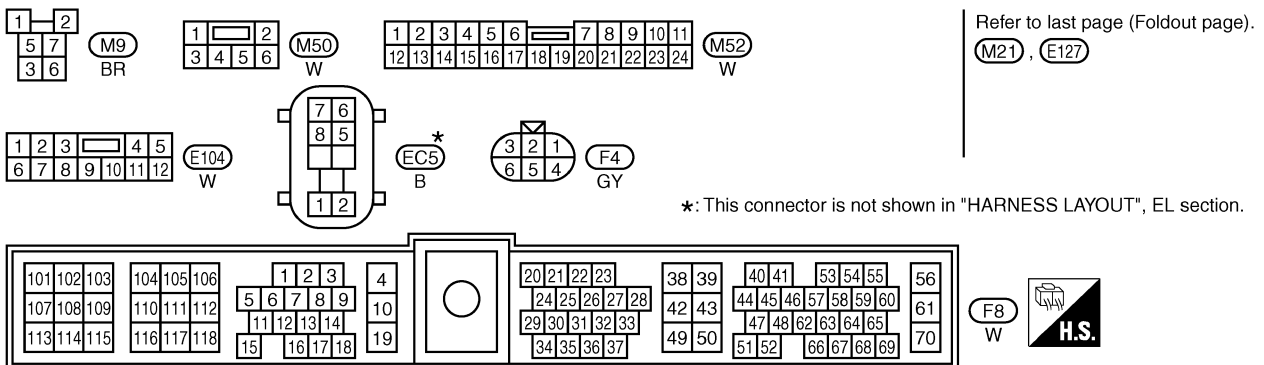
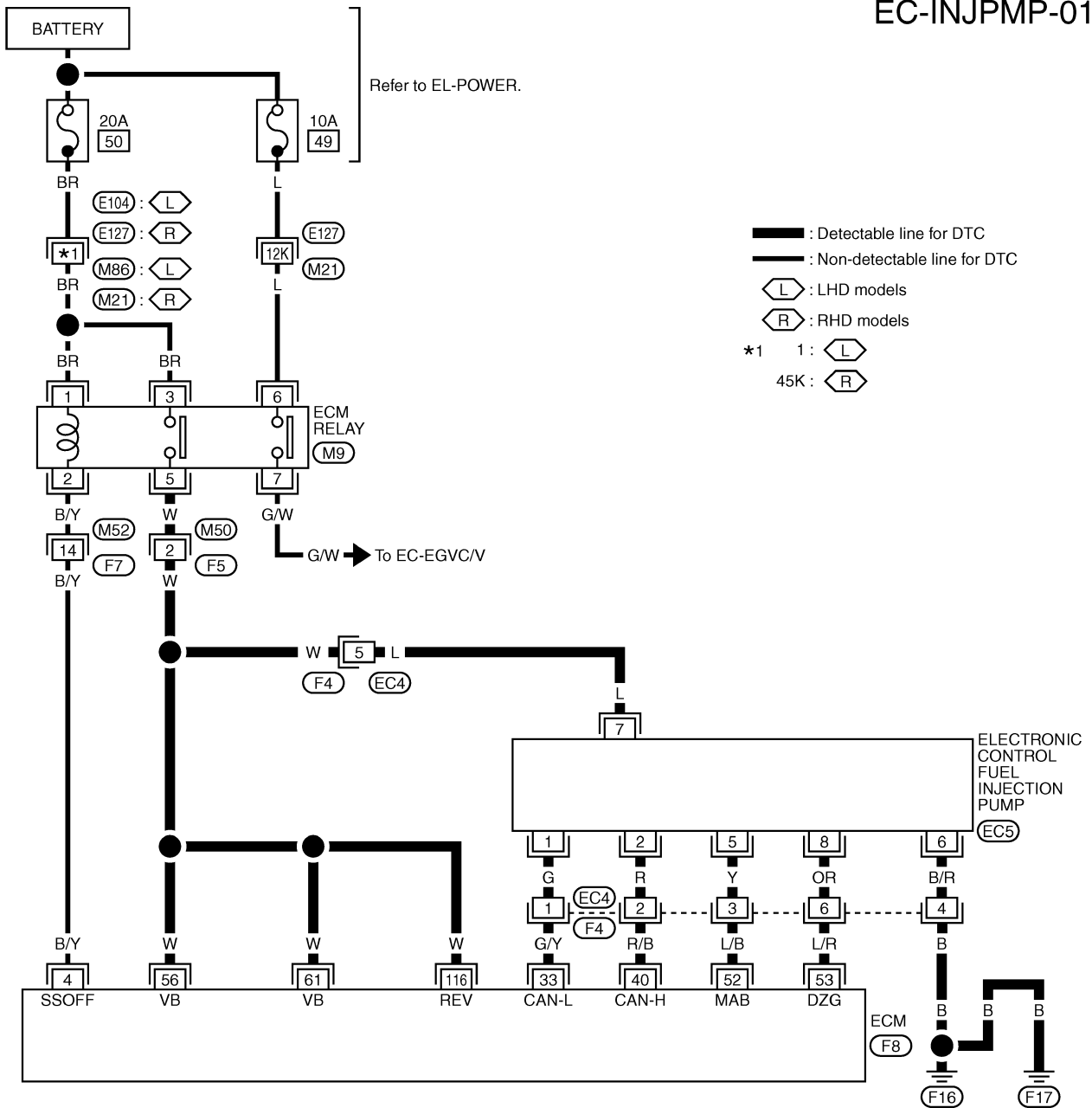
EC-AT/C-01

 : Detectable line for DTC
 : Non-detectable line for DTC
 : LHD models
 : RHD models



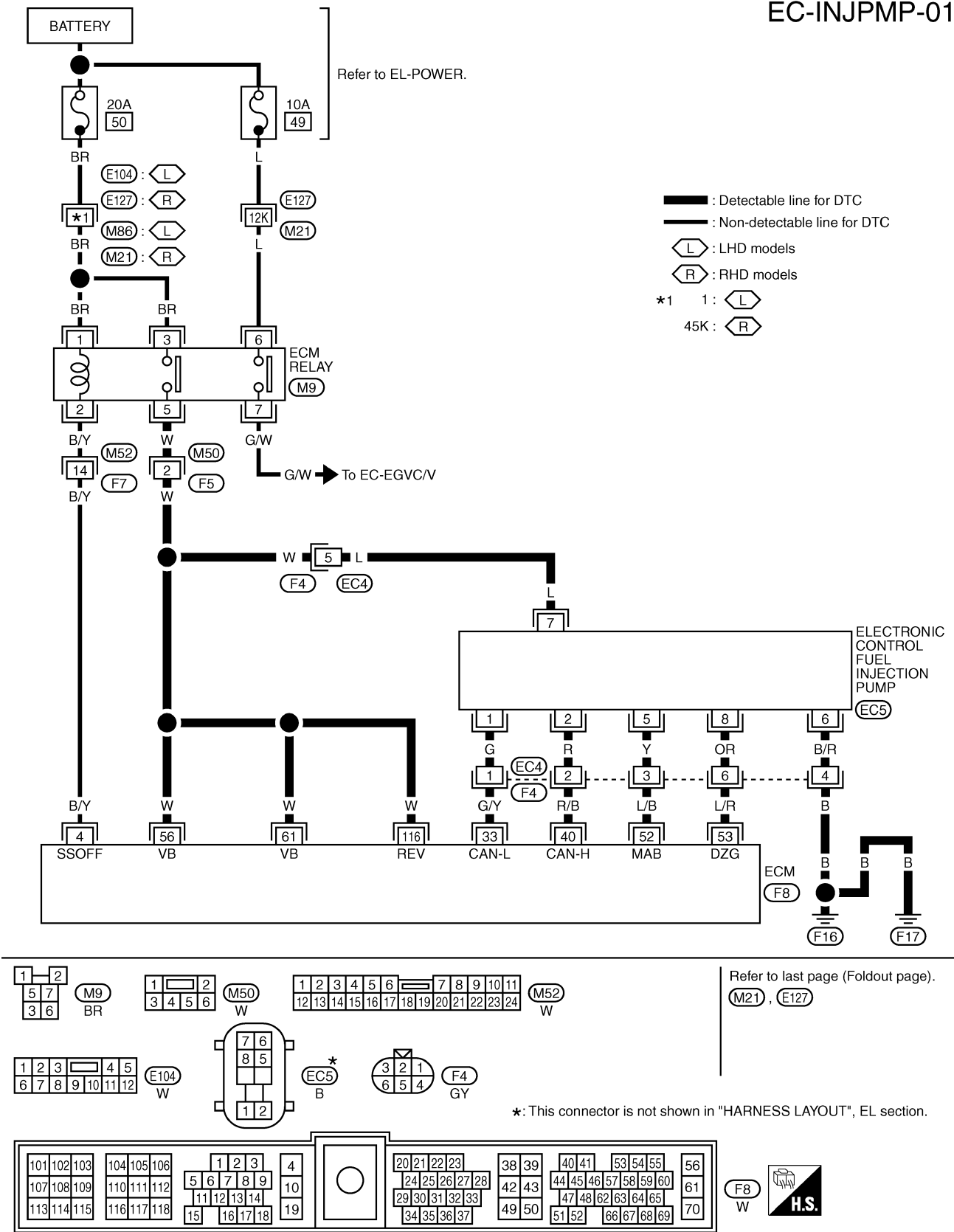
Wiring Diagram

EC-INJPMP-01



Wiring Diagram

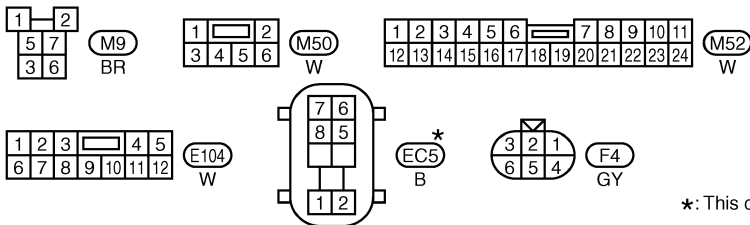
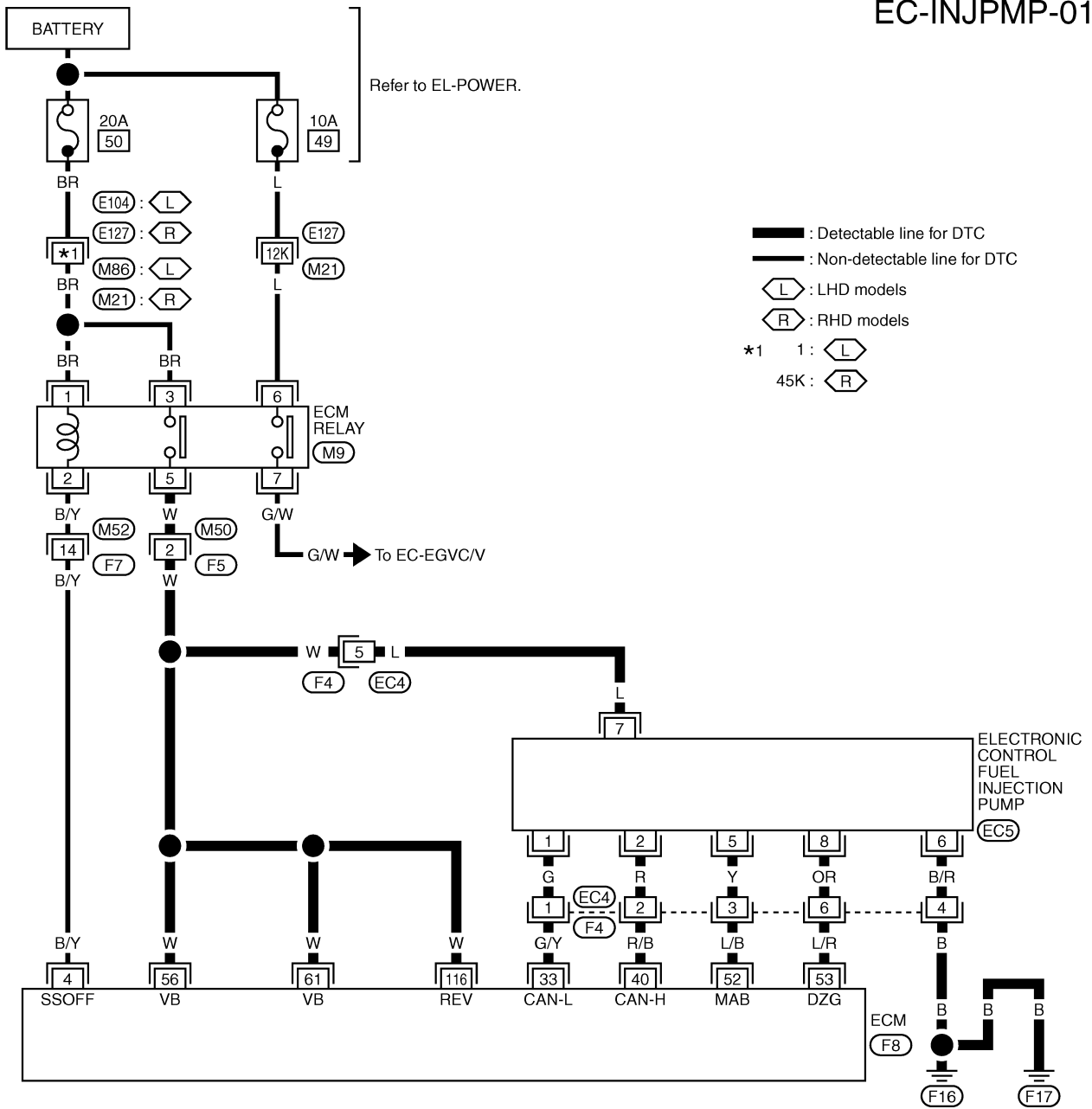
EC-INJPMP-01



DTC 0703 P3-PUMP COMM LINE

Wiring Diagram

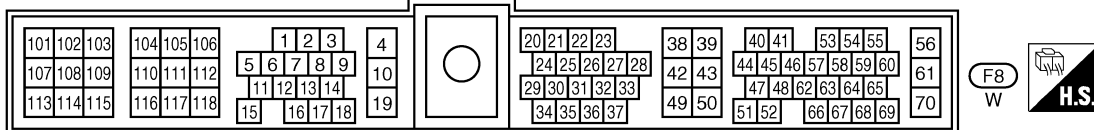
EC-INJPMP-01



Refer to last page (Foldout page).

(M21), (E127)

*: This connector is not shown in "HARNESS LAYOUT", EL section.



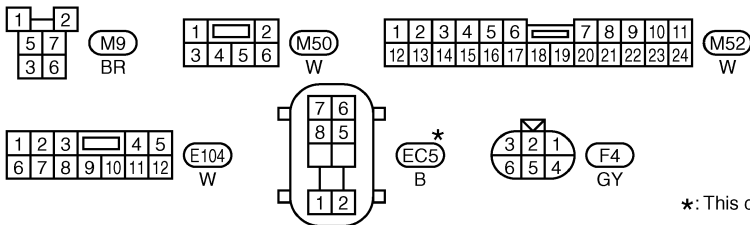
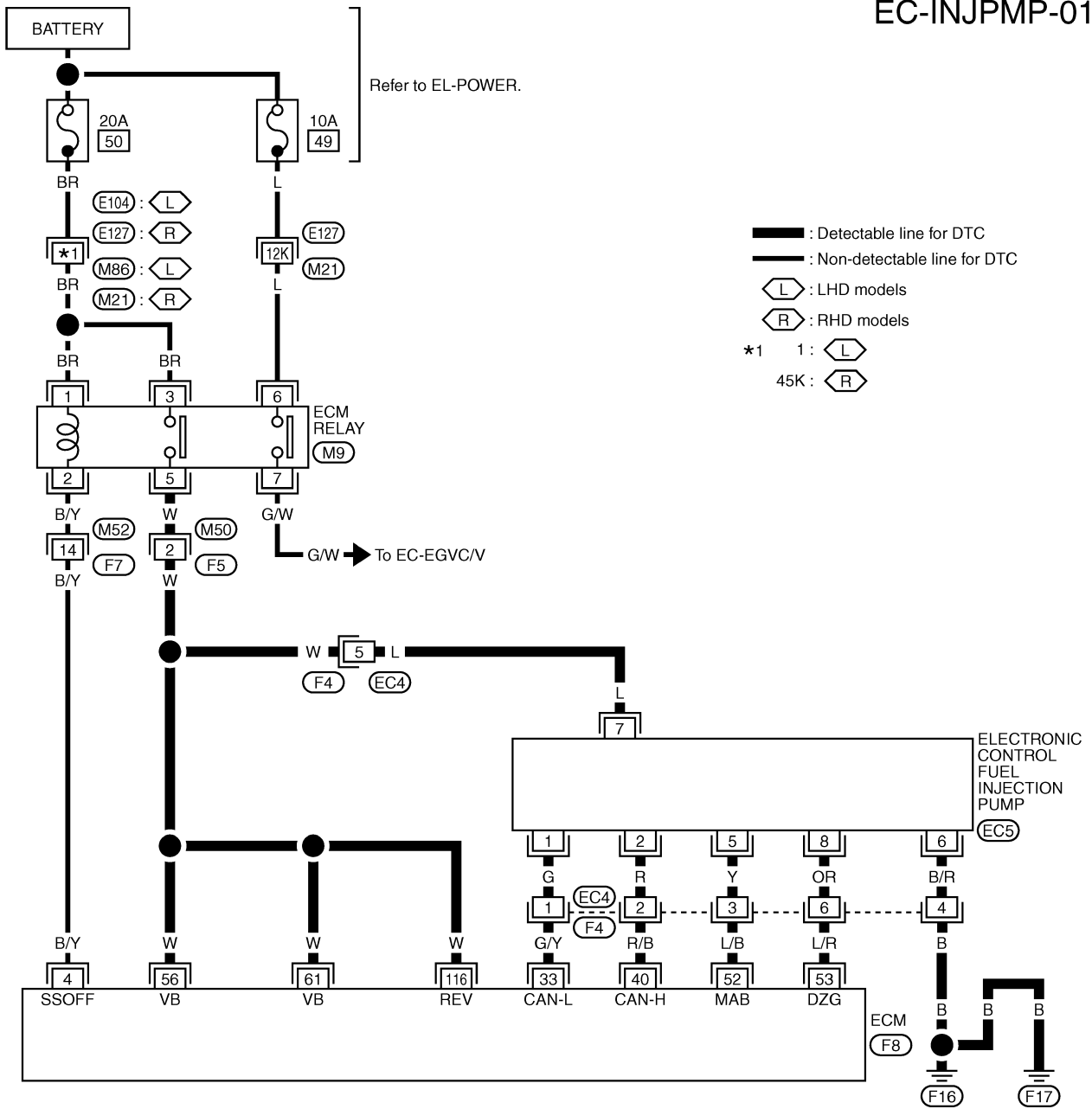
TEC187M

EC-2024

DTC 0704 P4-SPILL/V CIRC, DTC 0706 P6-SPILL VALVE

Wiring Diagram

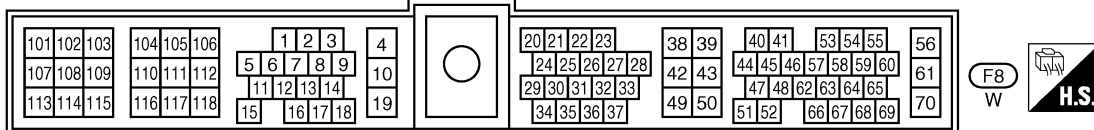
EC-INJPMP-01



Refer to last page (Foldout page).

(M21), (E127)

*: This connector is not shown in "HARNESS LAYOUT", EL section.

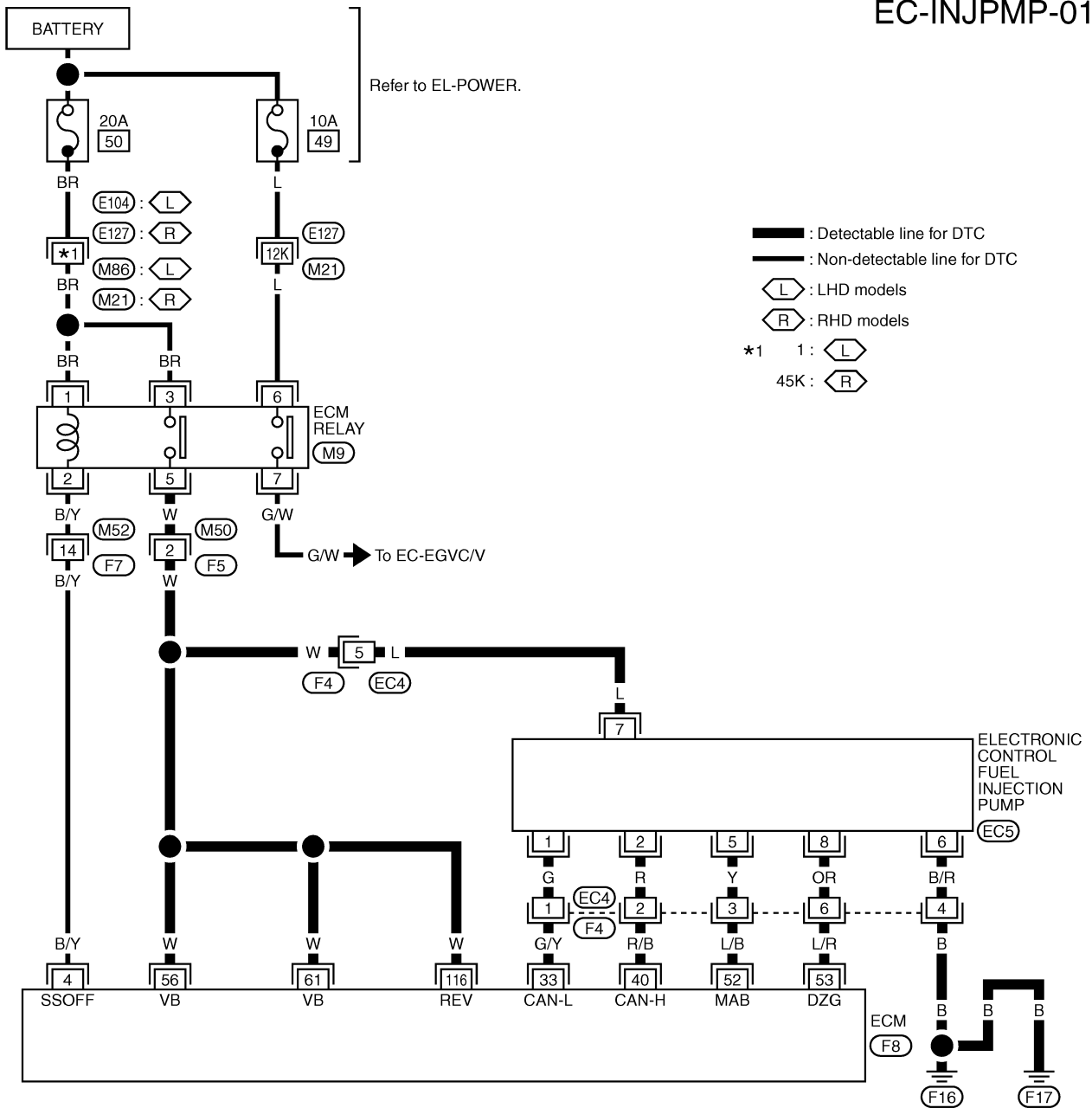


TEC187M

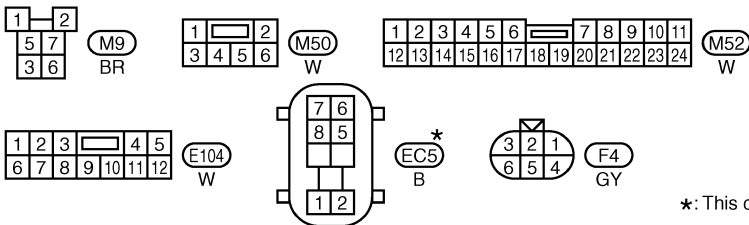
EC-2025

Wiring Diagram

EC-INJPMP-01

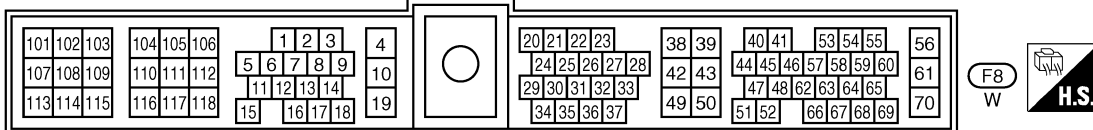


- : Detectable line for DTC
- : Non-detectable line for DTC
- (L) : LHD models
- (R) : RHD models
- *1 1 : (L)
- 45K : (R)



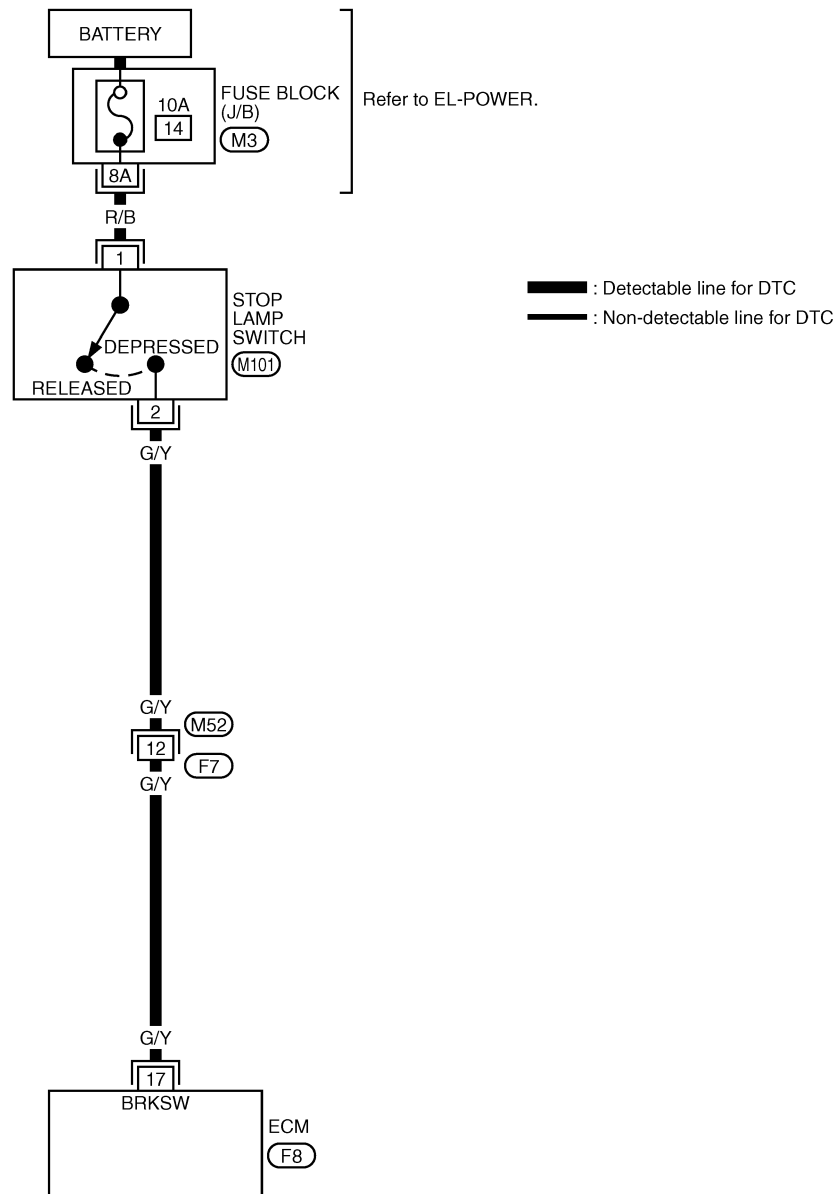
Refer to last page (Foldout page).
(M21), (E127)

*: This connector is not shown in "HARNESS LAYOUT", EL section.



Wiring Diagram

EC-BRK/SW-01



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

(M52)
W

1	2

(M101)
B

Refer to last page (Foldout page).

(M3)

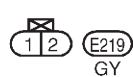
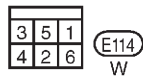
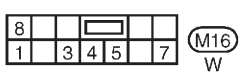
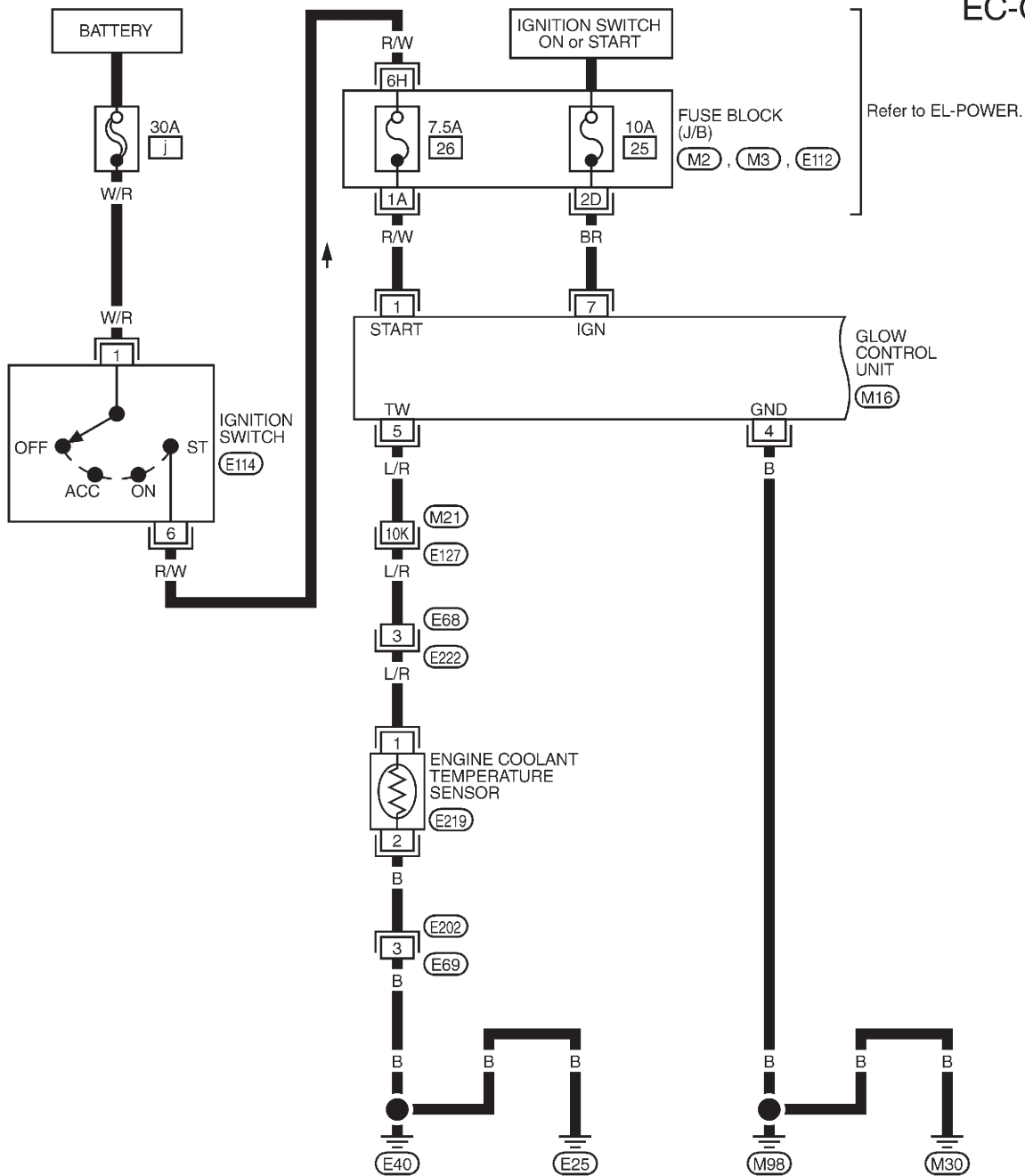
101	102	103	104	105	106	1 2 3				4		20	21	22	23	38	39	40	41	53	54	55	56				
107	108	109	110	111	112	5	6	7	8	9		10	24	25	26	27	28	42	43	44	45	46	57	58	59	60	61
113	114	115	116	117	118	11 12 13 14				19		29	30	31	32	33	47	48	62	63	64	65	66	67	68	69	70
						15	16 17 18						34	35	36	37	49	50	51	52	66 67 68 69						

(F8) W

H.S.

Wiring Diagram

EC-GLOW-01



Refer to last page (Foldout page).

(M21), (E127)

M2

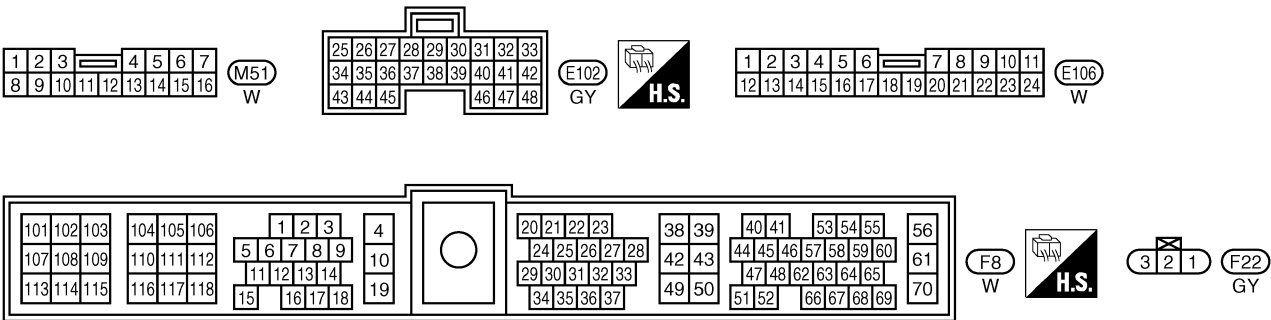
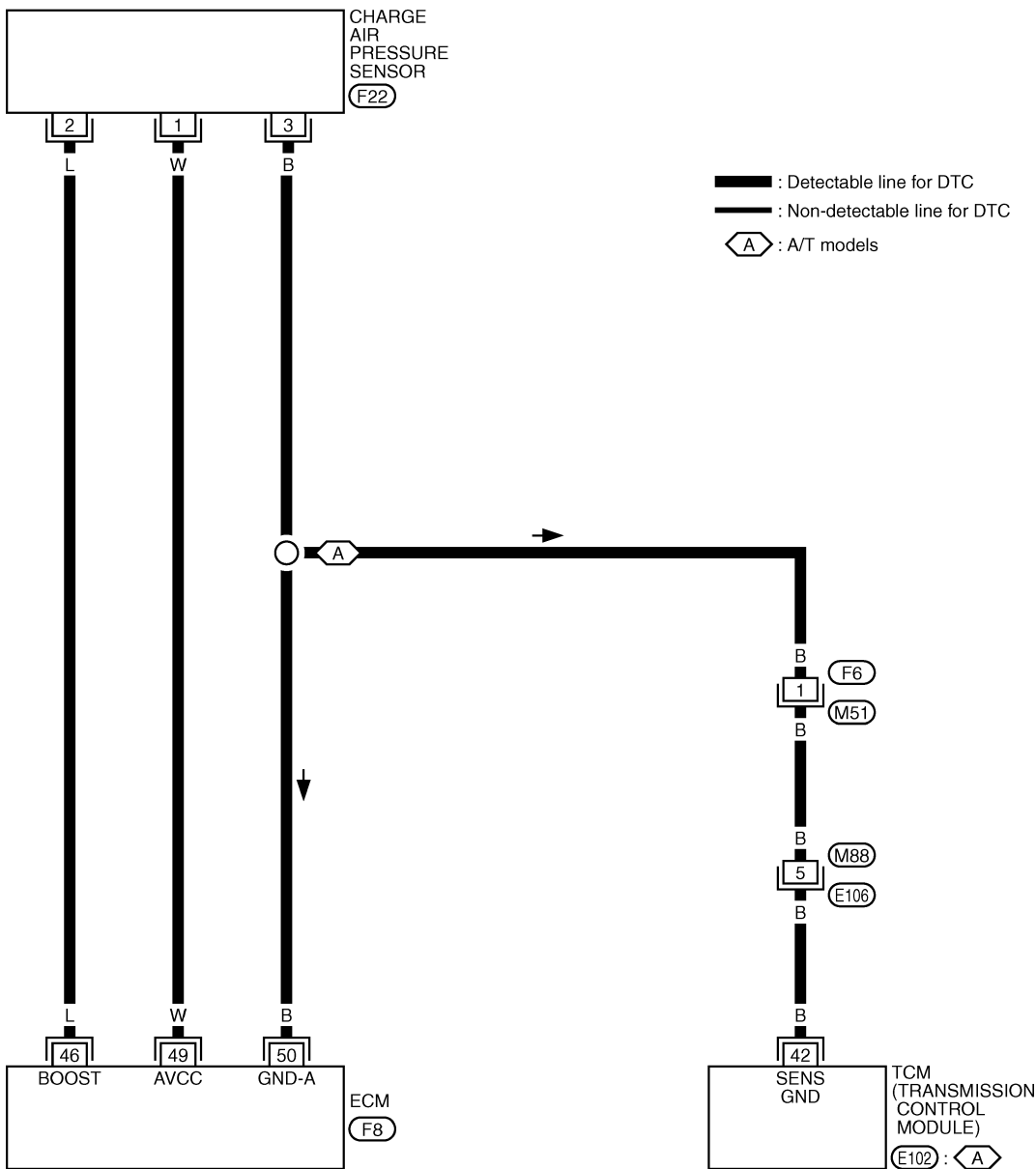
M3

E112

DTC 0905 TURBO PRESSURE

Wiring Diagram

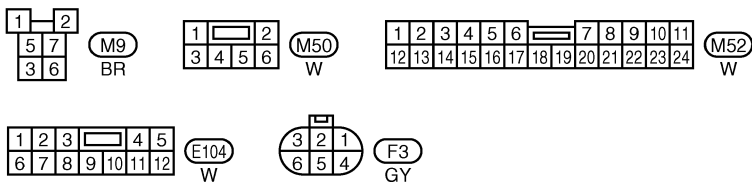
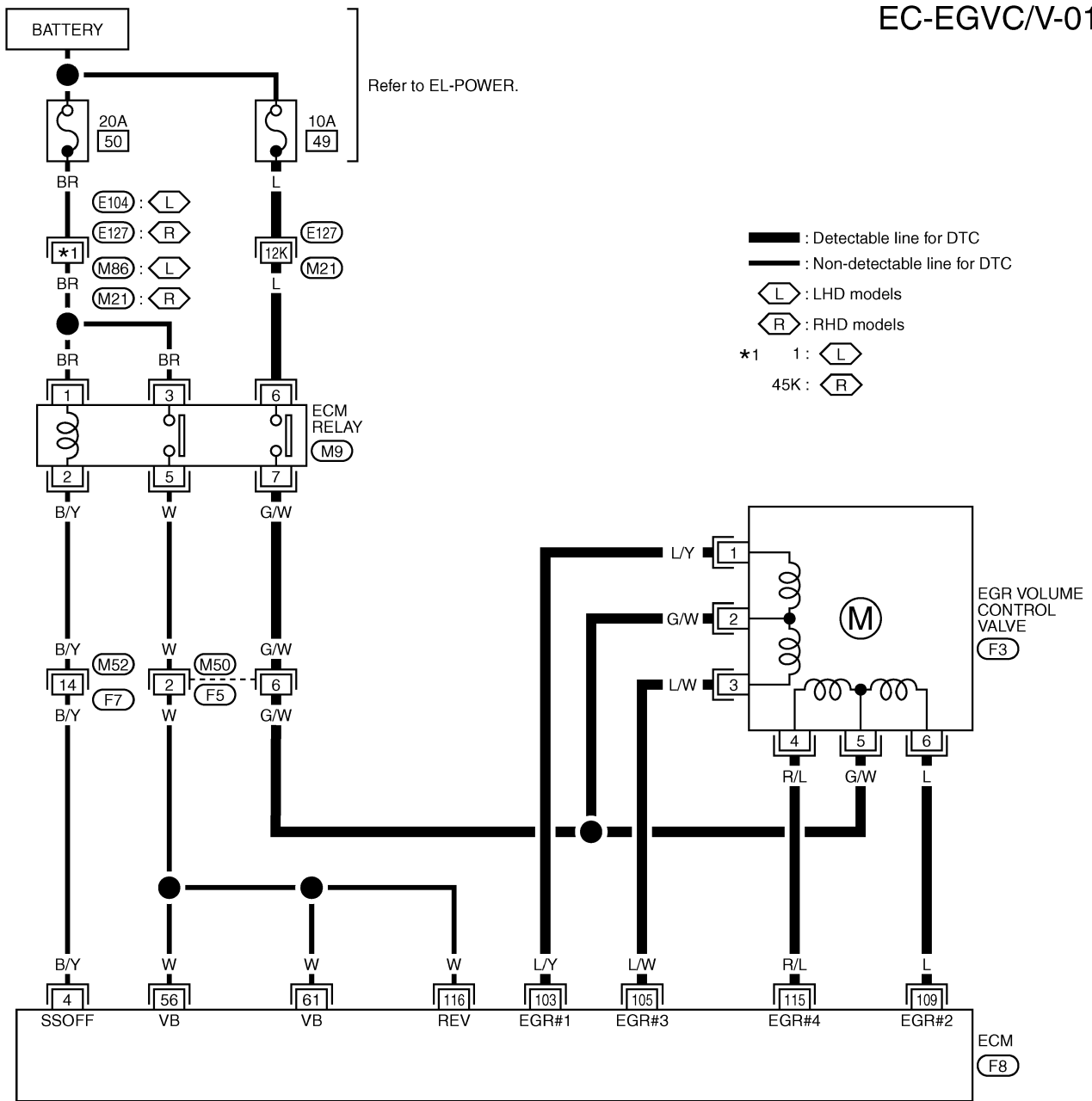
EC-BOOST-01



DTC 1003 EGR VOLUME CONT/V

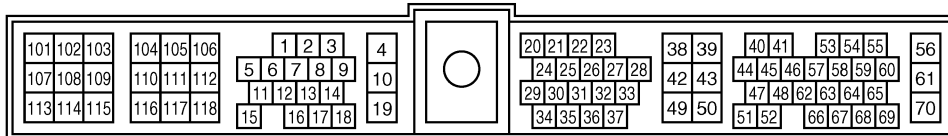
Wiring Diagram

EC-EGVC/V-01



Refer to last page (Foldout page).

(M21), (E127)

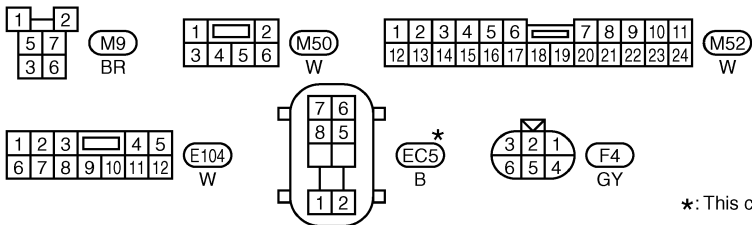
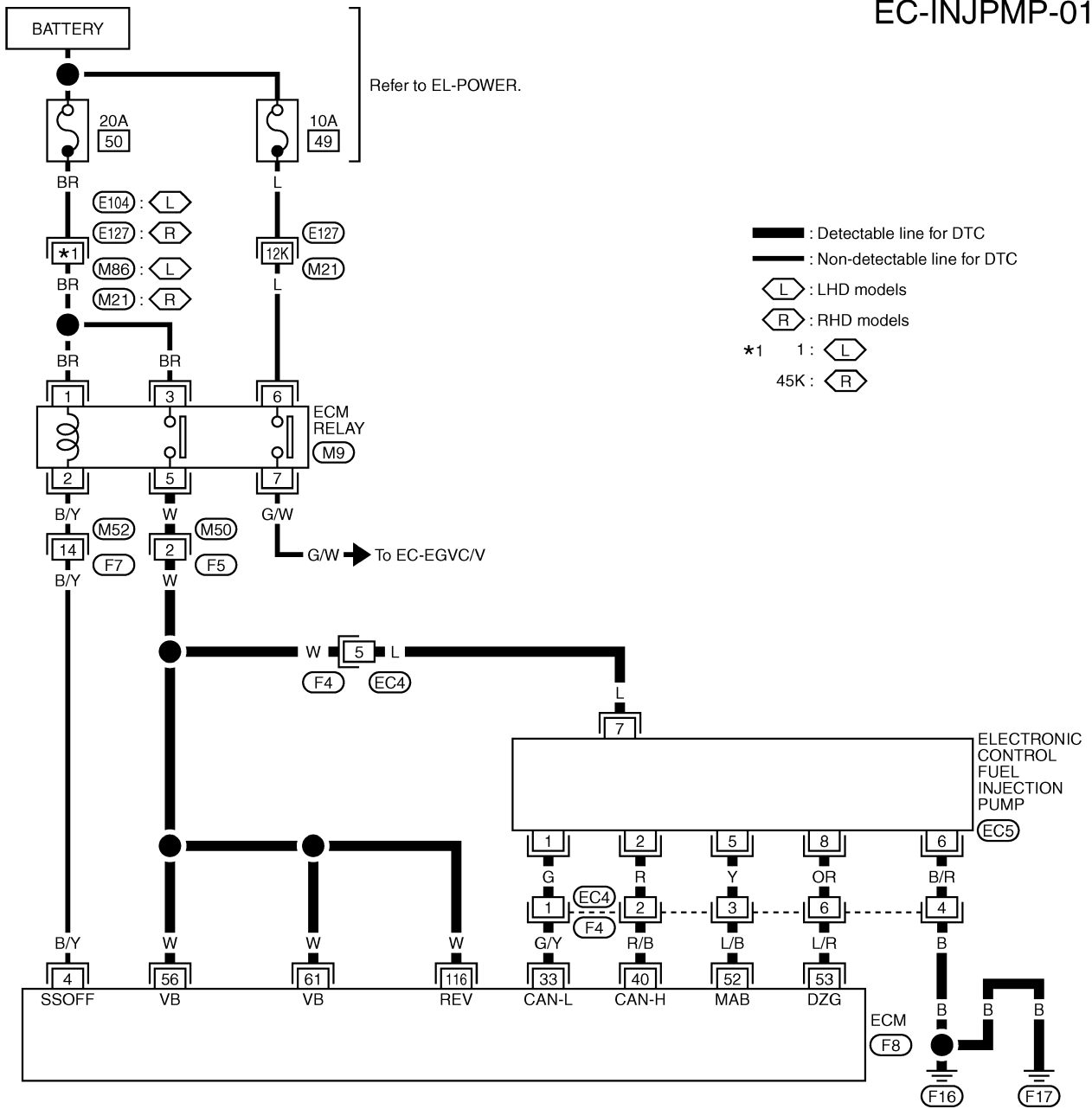


(F8) W H.S.

DTC 1004 FUEL CUT SYSTEM1

Wiring Diagram

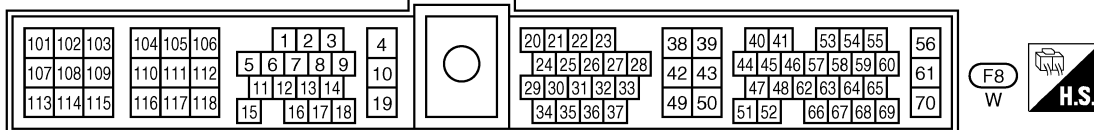
EC-INJPMP-01



Refer to last page (Foldout page).

(M21), (E127)

*: This connector is not shown in "HARNESS LAYOUT", EL section.



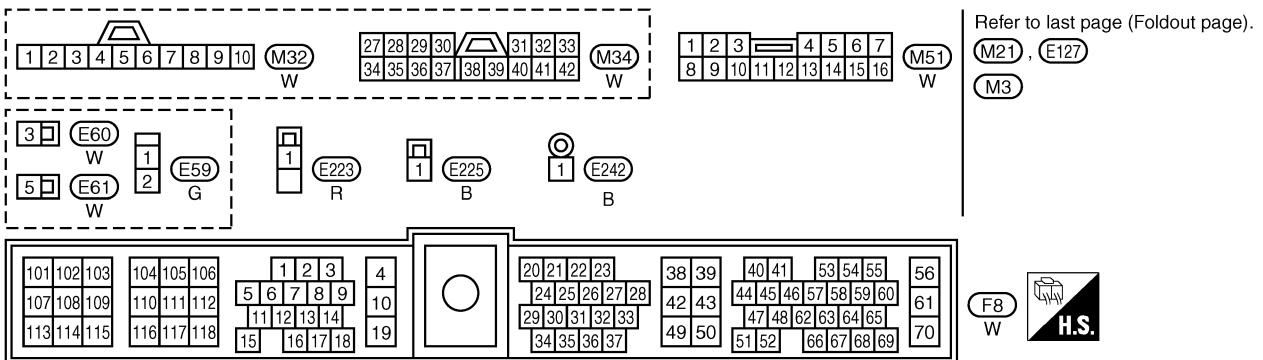
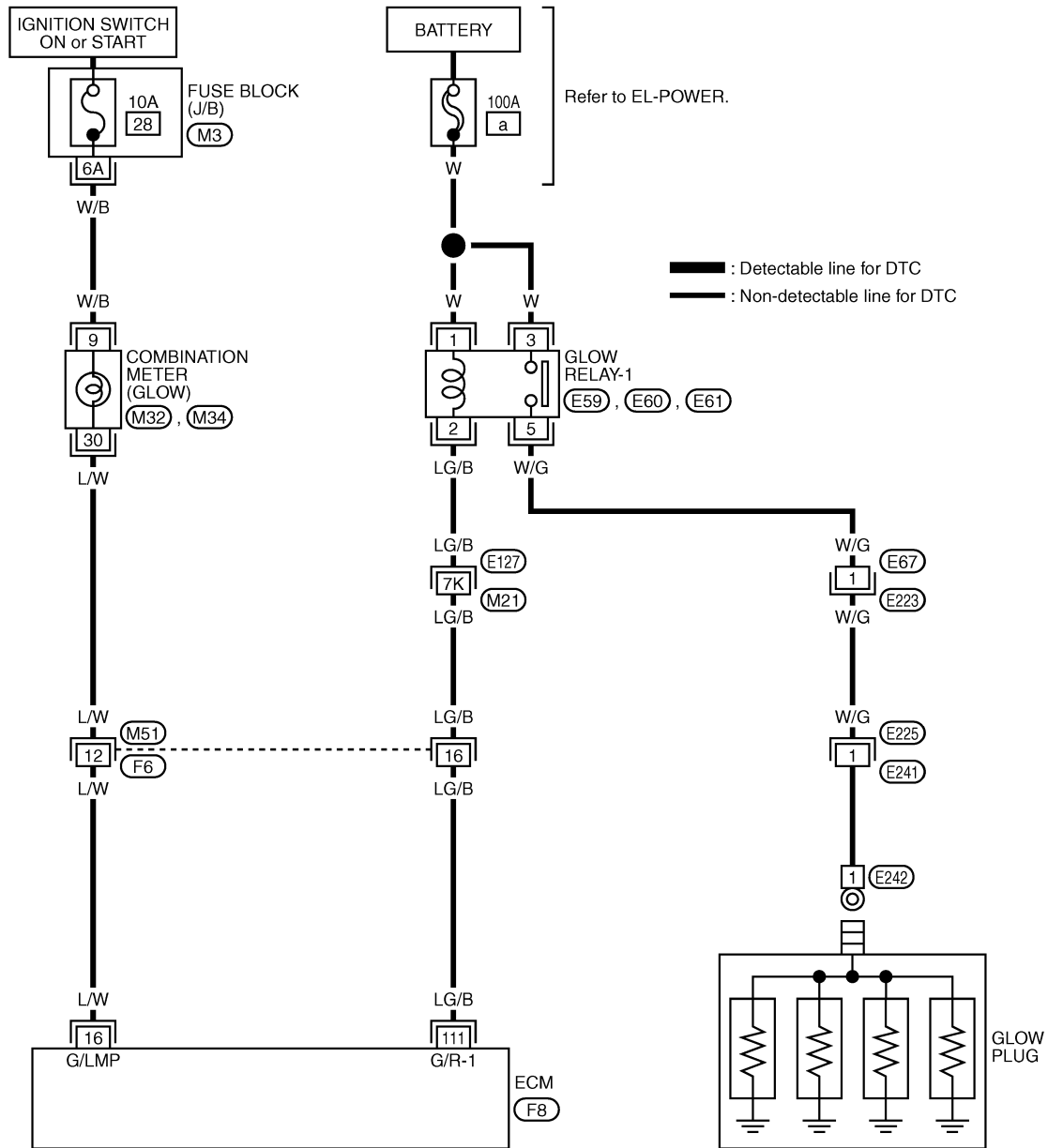
TEC187M

EC-2031

GLOW CONTROL SYSTEM

Wiring Diagram

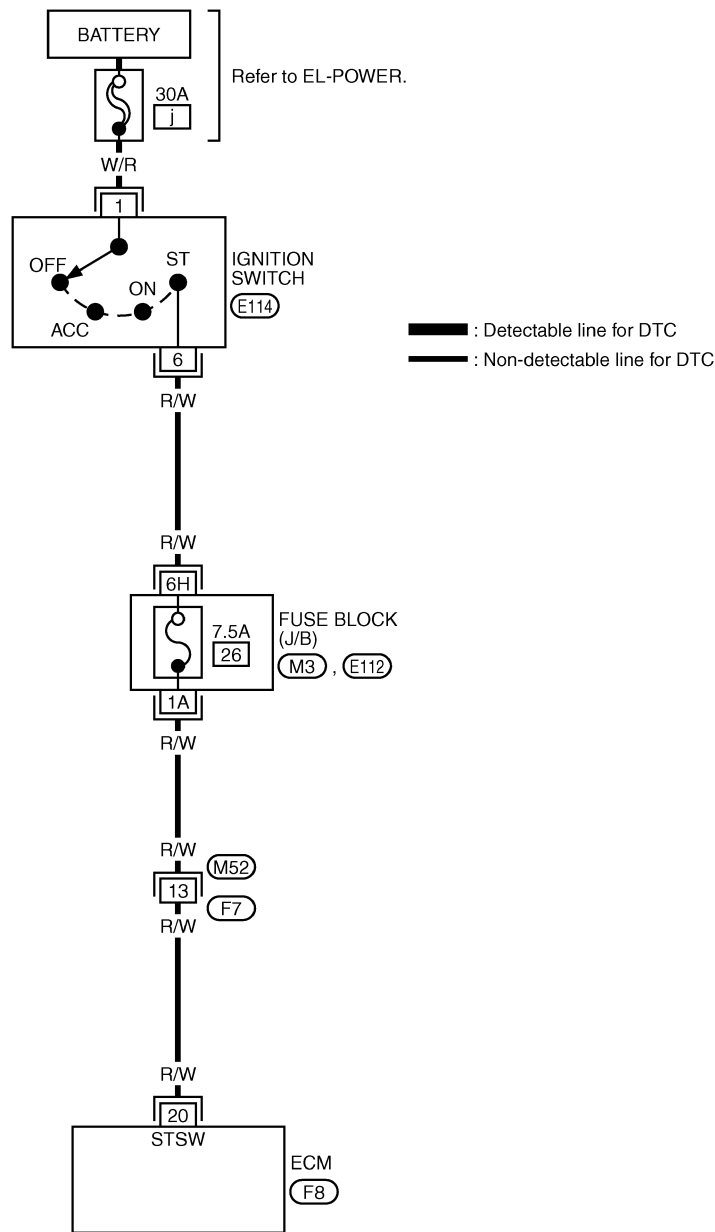
EC-GLOW-01



START SIGNAL

Wiring Diagram

EC-S/SIG-01



— : Detectable line for DTC
— : Non-detectable line for DTC

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

M52

W

3	5	1
4	2	6

E114
W

Refer to last page (Foldout page).

M3
E112

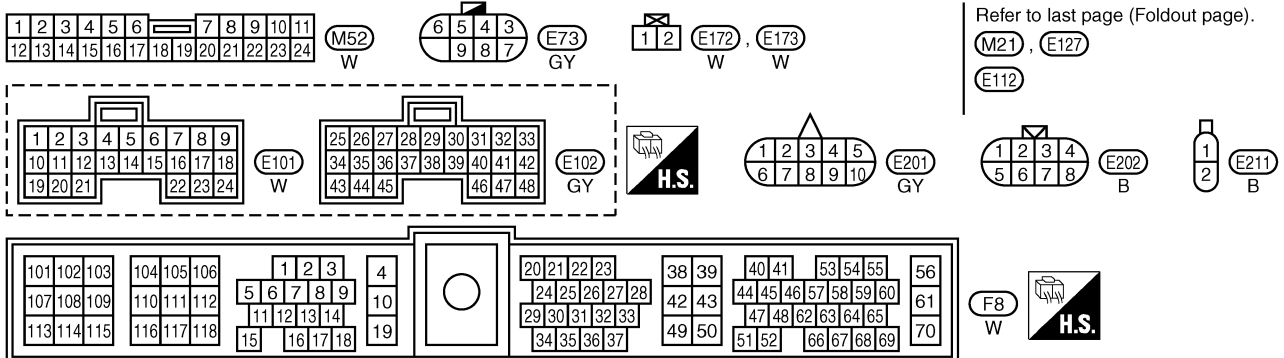
101	102	103	104	105	106						20	21	22	23	38	39	40	41	53	54	55	56									
107	108	109	110	111	112	5	6	7	8	9	4						24	25	26	27	28	42	43	44	45	46	57	58	59	60	61
113	114	115	116	117	118	11	12	13	14	10						29	30	31	32	33	47	48	62	63	64	65	70				
						15	16	17	18	19						34	35	36	37	49	50	51	52	66	67	68	69				

F8
W

H.S.

EC-PNP/SW-01

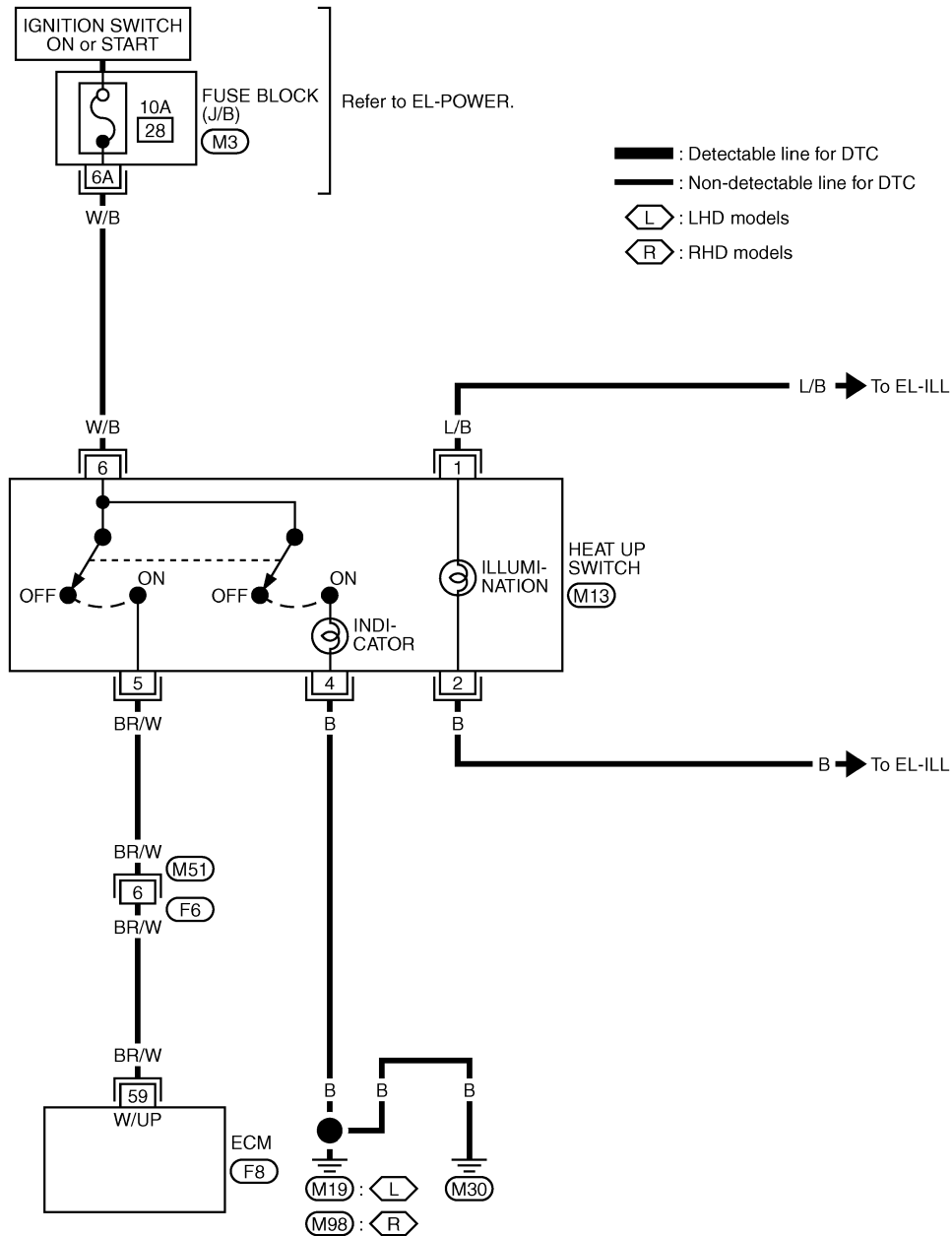
 : Detectable line for DTC
 : Non-detectable line for DTC
 : A/T models
 : M/T models



HEAT UP SWITCH

Wiring Diagram

EC-HEATUP-01



1	5
2	6

M13
W

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

M51
W

Refer to last page (Foldout page).

M3

101	102	103	104	105	106	1 2 3					4		20	21	22	23	38	39	40	41	53	54	55	56					
107	108	109	110	111	112	5	6	7	8	9	10		24	25	26	27	28	42	43	44	45	46	57	58	59	60	61		
113	114	115	116	117	118	11	12	13	14	15	16		17	18	29	30	31	32	33	47	48	62	63	64	65	66	67	68	69

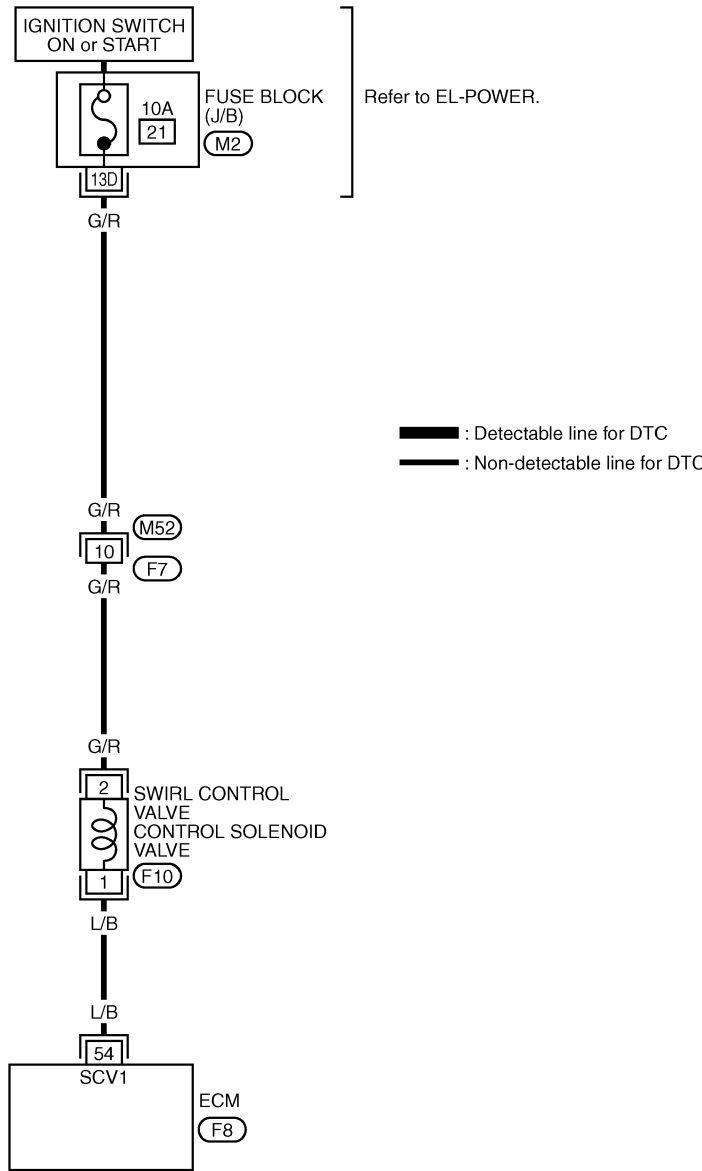
F8
W



SWIRL CONTROL VALVE CONTROL SOLENOID VALVE

Wiring Diagram

EC-SWL/V-01



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

M52

W

Refer to last page (Foldout page).

M2

101	102	103	104	105	106		1	2	3		4		20	21	22	23	38	39		40	41	53	54	55		56	
107	108	109	110	111	112	5	6	7	8	9		10		24	25	26	27	28	42	43	44	45	46	57	58	59	60
113	114	115	116	117	118		11	12	13	14			29	30	31	32	33		47	48	62	63	64	65		61	
						15		16	17	18	19		34	35	36	37		49	50	51	52	66	67	68	69	70	

F8

W

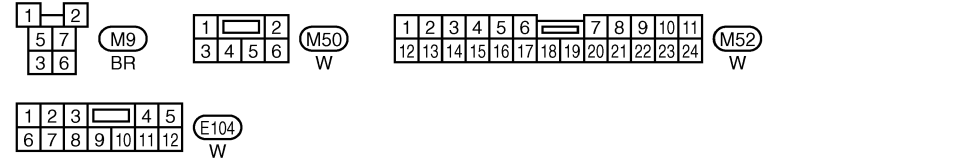
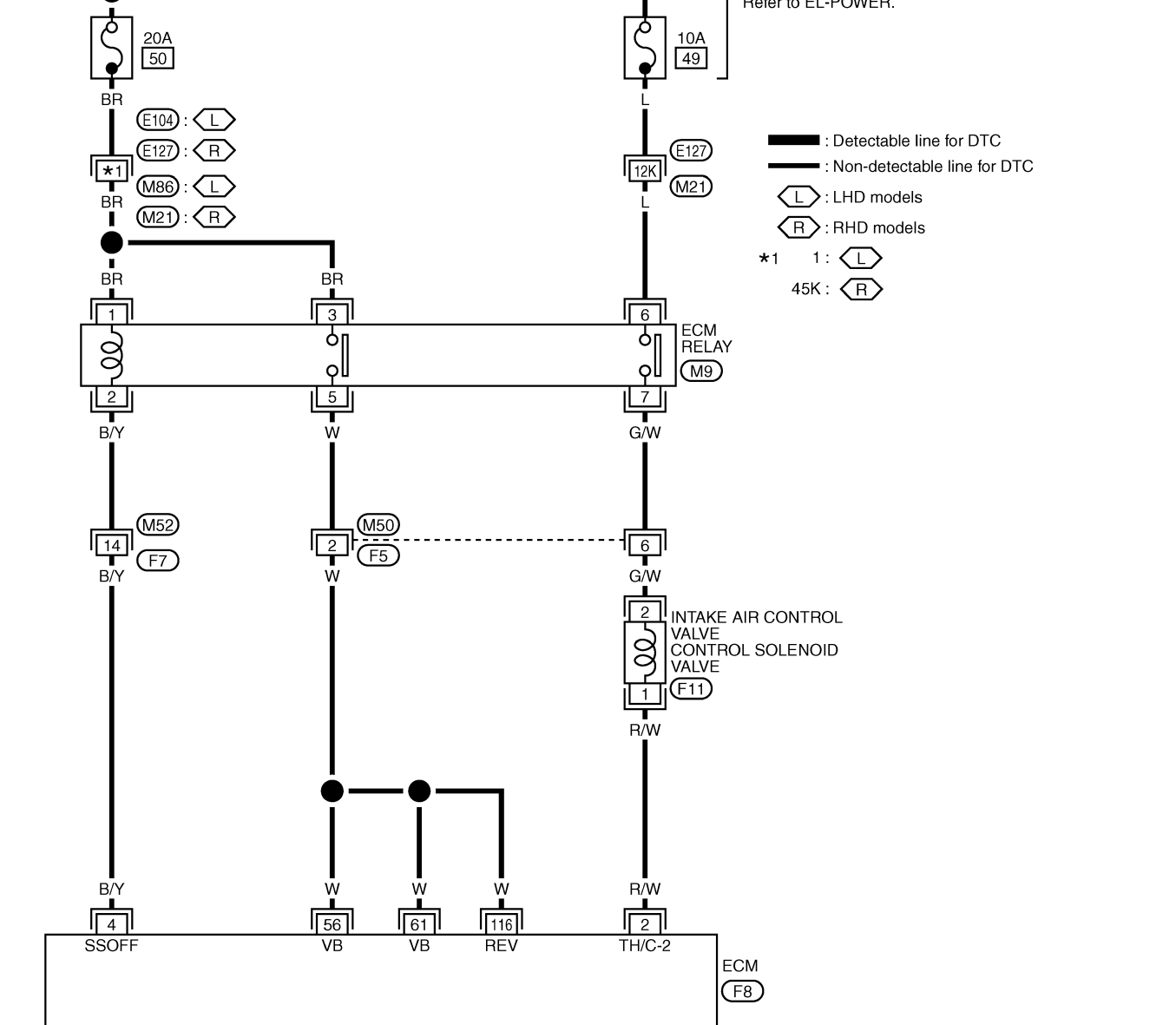


2 1

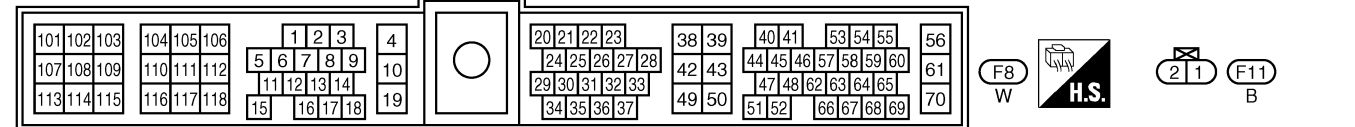
F10

BR

BATTERY 7 EC-INT/V-01



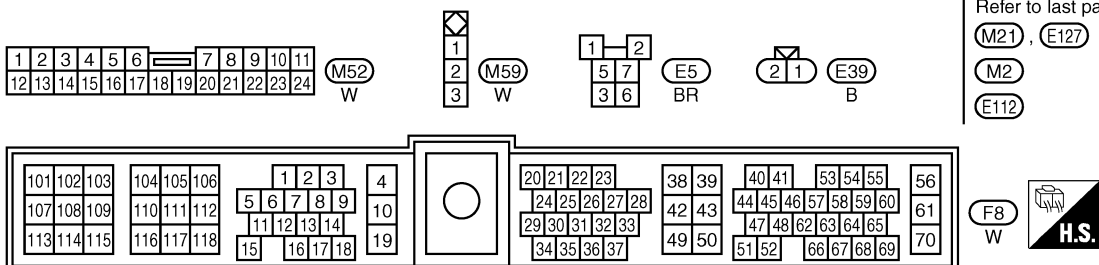
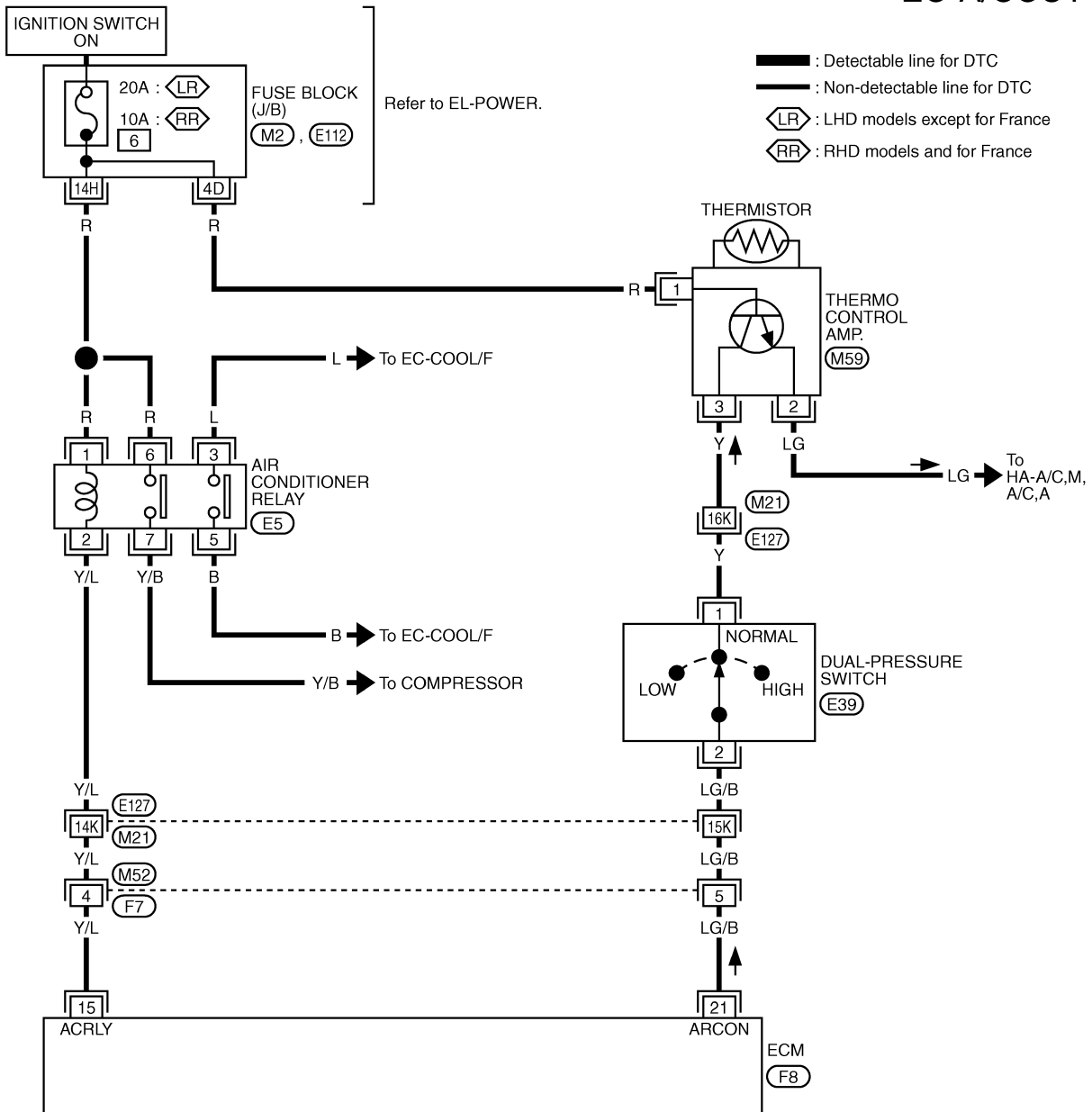
(M21), (E127)



AIR CONDITIONER CONTROL

Wiring Diagram

EC-A/CCUT-01



MI (MIL) & DATA LINK CONNECTORS

Wiring Diagram

EC-MIL/DL-01

