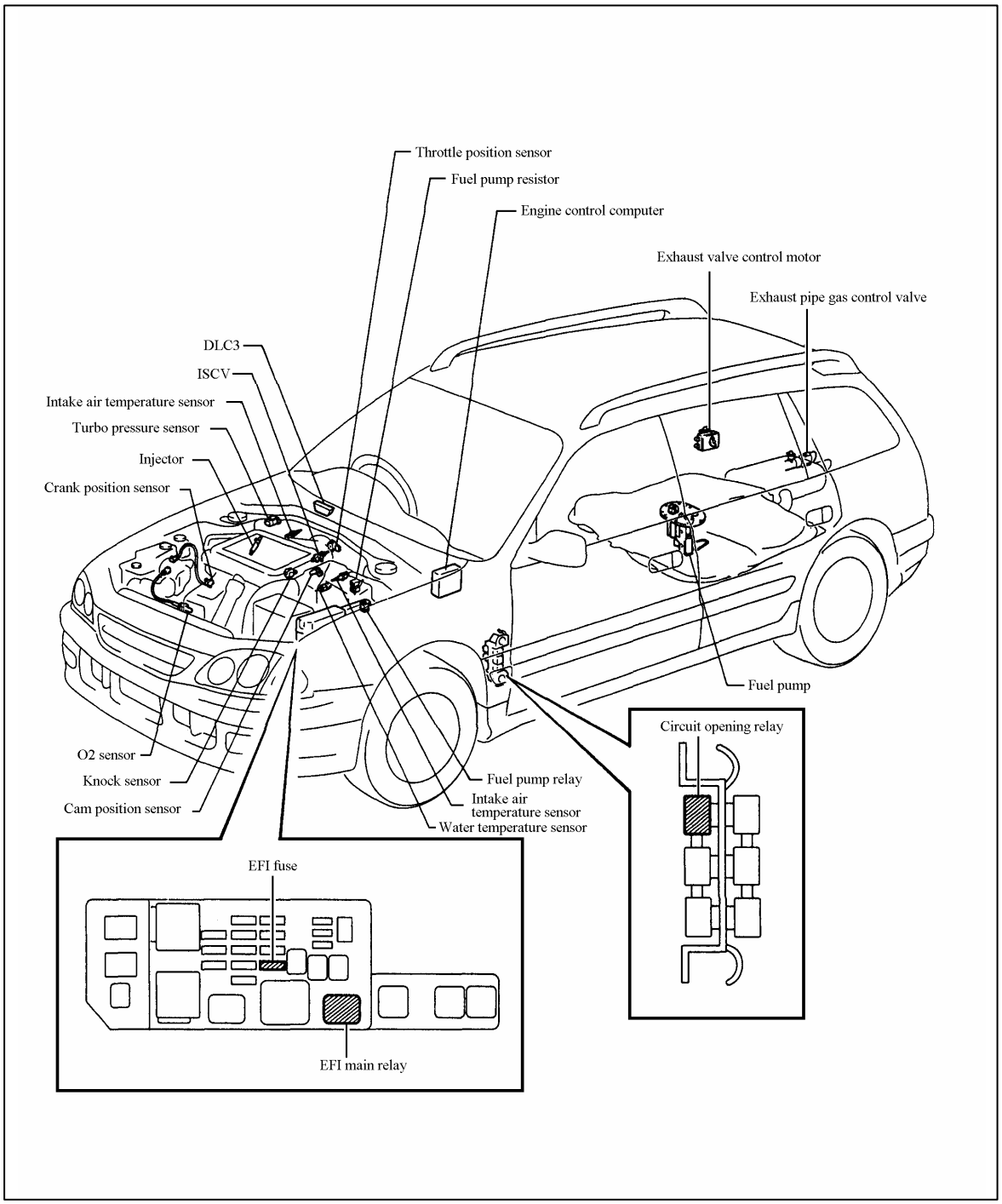
ST215G 3S-GTE - Engine Control Electrical Parts Location



ST215G 3S-GTE - Engine Control Diagnosis Trouble Codes

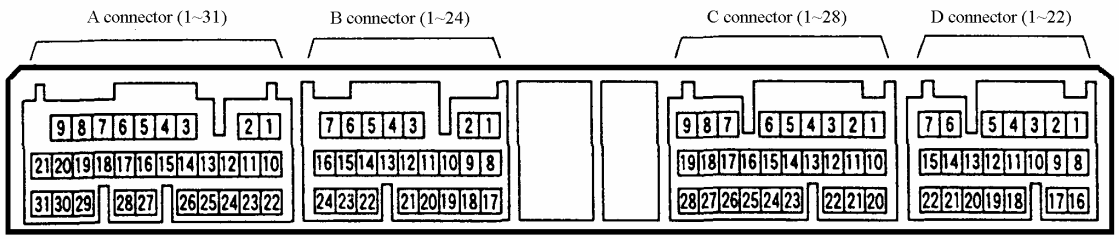
Diagnosis Codes		Item [Terminal symbol]	Condition	Lamp	Memory	Symptom	Inspection part
SAE	Check Lamp		1. Condition 2. Symptom 3. Term 4. Others				
P0340	12	Revolution signal 1 [NE+, NE-, G2+]	1. While cranking 2. No G signal input 3. 5 seconds or more	O	O	Unable to restart after stalled engine	• Cam position sensor • Wiring and connector (G2 signal) • Engine control computer
P0335	13	Revolution signal 2 [NE+, NE-]	1. Engine revolution 600rpm or less 2. No NE signal input 3. 1 second or more	O	O		• Crank position sensor • Wiring and connector (NE signal) • Engine control computer
P1335			1. Engine revolution 1500rpm or less 2. No NE signal input 3. 1 second or more	X	O		
P1301 (#1)	14	Ignition signal (#1, #4) [ION 1~4]	• After engine started • Open or short in ignitor power circuit • 1 second or more	O	O	-	• Ignitor • Wiring and connector • Engine control computer
P1316 (#4)							
P1306 (#2)	15						
P1311 (#3)							
P0130	21	O2 sensor signal [OX1]	1. After warmed up engine, engine revolution 2500rpm or more 2. O2 sensor output voltage amplitude is less than 0.3V 3. 60 seconds or more	X	O	Abnormal emission , feed back control prohibition	• O2 sensor • Engine control computer
P0135		O2 sensor heater abnormal [HT]	1. IG ON 2. Open circuit in O2 sensor heater 1 second or more			Abnormal emission while warming up engine	• O2 sensor • Wiring and connector (O2 sensor heater) Engine control computer

P0115	22	Water temperature signal [THW, E2]	1. IG ON 2. Open or short in water temperature circuit 3. 1 second or more	O	O	Hard cold start, poor drivability	• Water temperature sensor • Wiring and connector (water temperature sensor) • Engine control computer
P1115	23	Intake temperature sensor signal (surge tank side) [THA]	1. IG ON 2. Open or short in intake temperature circuit 3. 1 second or more	X	O	Poor drivability	• Intake temperature sensor • Wiring and connector (intake temperature sensor) • Engine control computer
P0110	24	Intake temperature sensor [THA, E2]					
P0171	25	Lean abnormal [OX]	1. After warmed up, engine revolution 1500rpm or more 2. O2 sensor does not output rich signal 3. 90 seconds or more 4. 2 trip	X	O	Hard start, unstable idling, poor drivability, engine stall	• Fuel system (injector, fuel pressure) • Ignition system (spark plug, ignition coil) • Intake system (vacuum sensor) • O2 sensor • Wiring and connector (O2 sensor) • Engine control computer
P0100	31	Turbo pressure sensor [PIM, VC, E2]	1. IG ON 2. Open or short in turbo pressure sensor 3. 1 second or more	O	O	Unable to restart after engine stall	• Turbo pressure sensor • Wiring and connector (turbo pressure sensor) • Engine control computer
P0505	33	ISCV signal [RSD]	1. While idling 2. Open or short in ISCV circuit 3. 10 seconds or more	O	O	Engine abnormal	• ISCV • Wiring and connector (ISCV) • Engine control computer
P1120	41	Throttle position senor signal [VTA, VC, E2]	1. IG ON 2. Open or short in throttle position sensor 3. 5 seconds or more	X	O	Shifting point abnormal, engine stall	• Throttle position sensor • Wiring and connector (throttle position sensor) • Engine control computer

P0500	42	Speed sensor [SPD]	M/T 1. After warmed up engine, while driving at 2000~5000rpm 2. No speed sensor signal input 3. 10 seconds or more A/T 1. After warmed up engine, while driving at 3000rpm or more, other than P, N range 2. No speed sensor signal input 3. 5 seconds or more	O	O	Poor shifting point (A/T)	• Speed sensor • Wiring and connector (speed sensor) • Engine control computer
P0325	52	Knock sensor signal [KNK]	1. After warmed up engine, driving at 2000~6000rpm 2. Open or short in knock sensor 3. 5 seconds or more	O	O	Deteriorate knocking level	• Knock sensor • Loosen knock sensor installation • Wiring and connector (knock sensor) • Engine control computer
P0301 P0302 P0303 P0304	93	Detection misfire [ION 1~4]	1. Ater started engine, while idling 2. Misfire (unstable idling) 3. 30 seconds or more	O	O	Engine abnormal	• Ignitor • Wiring and connector • Injector • Spark plug • Engine control computer
(P0605) *	-	ECT CPU malfunction	1. IG ON 2. ECT CPU malfunction 3. 1 second or more	O	X	Unable to shifting (manual shift only)	• Engine control computer

*: Turns check lamp ON with no diagnosis codes output

ST215G 3S-GTE - Engine Control ECU Pin Configuration



Terminal No.	Terminal Name	Terminal No.	Terminal Name	Terminal No.	Terminal Name	Terminal No.	Terminal Name	Terminal No.	Terminal Name	Terminal No.	Terminal Name
A-1	#10	A-25		B-1		C-1	(D)	C-25	AC	D-1	BATT
A-2	#20	A-26	(NC-)	B-2	VC	C-2	(R)	C-26	BPC-	D-2	
A-3	#30	A-27	KNK	B-3	HT	C-3	(2)	C-27	TACO	D-3	FC
A-4	#40	A-28	CF	B-4	PRG	C-4		C-28		D-4	
A-5	(SLT-)	A-29	(S4)	B-5		C-5	TC			D-5	(DLP)
A-6	(SLT+)	A-30		B-6	SPC	C-6	STP			D-6	W
A-7	(SL1+)	A-31	E02	B-7	FPR	C-7	(LP2B)			D-7	PSW
A-8	(SL2+)			B-8	STA	C-8	(LP1B)			D-8	
A-9	(SL1-)			B-9	ION1	C-9	(LP0B)			D-9	(SFTU)
A-10	IGT1			B-10	ION2	C-10	(OD2)			D-10	THAM
A-11	IGT2			B-11	PIM	C-11				D-11	SIL
A-12	IGT3			B-12	OX1	C-12	(L)			D-12	
A-13	IGT4			B-13	(THO)	C-13	ACT			D-13	(EFI-)
A-14	(NC+)			B-14	THW	C-14	THWO			D-14	(EFI+)
A-15	(NC-)			B-15	G2+	C-15				D-15	(NEO)
A-16	(NT+)			B-16	NE+	C-16	(SPTL)			D-16	+B
A-17				B-17	E1	C-17	BPC+			D-17	(SFTD)
A-18	RSD			B-18	E2	C-18	(SPT)			D-18	(TRC-)
A-19	(DSL)			B-19	ION3	C-19	(THOL)			D-19	ELS
A-20	(SL2-)			B-20	ION4	C-20	(NSW)			D-20	(MLP)
A-21	E01			B-21		C-21				D-21	(TRC+)
A-22	FPU			B-22	THA	C-22	SPD			D-22	(RJT)
A-23				B-23	VTA	C-23					
A-24				B-24	NE-	C-24					

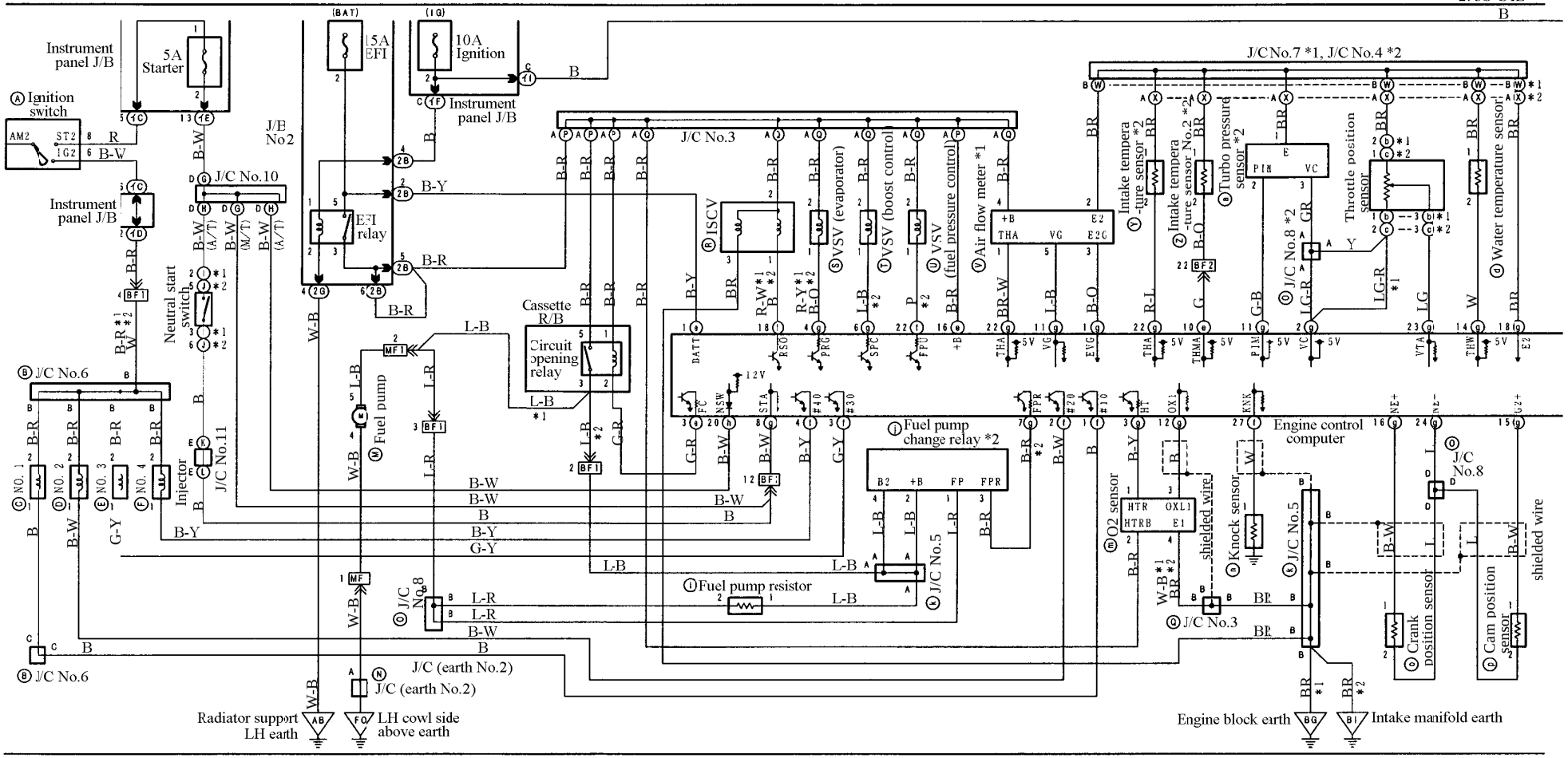
( ): A/T only

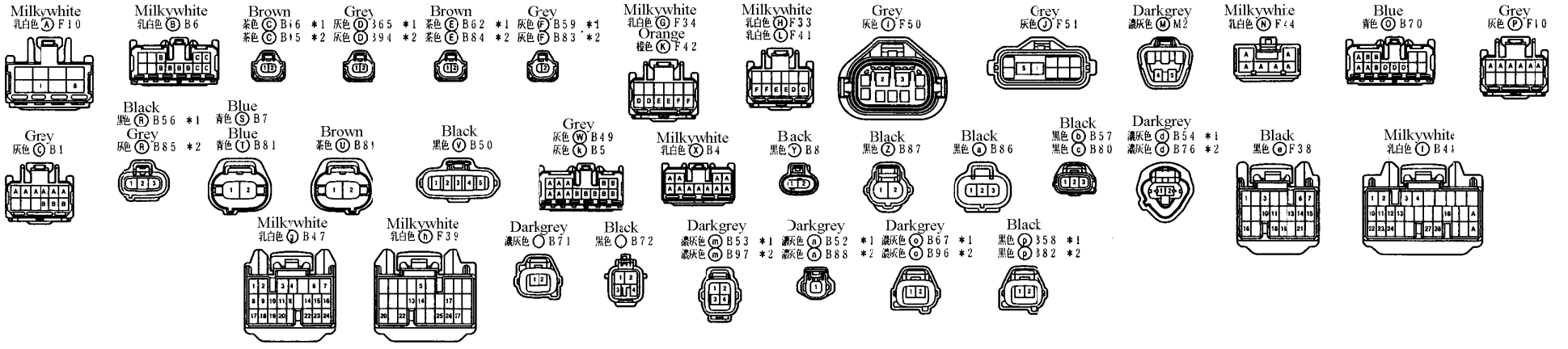
Inspection area	Terminal	Input / Output	Condition	Standard [V]
Power	BATT - E1	Input	Always	9~14
	+B - E1		Engine stopped, IG ON	9~14
	VC - E1	Output		4.5~5.5
Ignition signal	IGT1, IGT2, IGT3, IGT4 - E1	Output	After warmed up engine, while idling	Generation pulse occurs
	ION1, ION2, ION3, ION4 - E1	Input	After warmed up engine, while idling	Generation pulse occurs
Revolution signal	NE+, G2+ - NE-	Input	After warmed up, while idling	Generation pulse occurs
Injection signal	#10, #20, #30, #40 - E1	Output	After warmed up engine, while idling	Generation pulse occurs
Turbo pressure sensor	PIM - E1	Input	When apply pressure of 67kPa {500mmHg }	1.0~1.6
			Atmosphere pressure	2.0~2.6
			When apply pressure of 69kPa {0.7kgf/cm2}	3.0~3.6
			When apply pressure of 137kPa {1.4kgf/cm2}	4.0~4.6
O2 sensor	OX1 - E1	Input	After warmed up engine, maintain engine revolution at 2500rpm and hold it for 2 minutes	Generation pulse occurs
Knock sensor	KNK - E1	Input	After warmed up engine, maintain engine revolution at 4000rpm and hold it	Generation pulse occurs
Speed sensor	SPD - E1	Input	While driving vehicle at approx.20km/h	Generation pulse occurs
Water temperature sensor	THW - E1	Input	Coolant temperature 60~120°C (after warmed up engine)	0.2~1.0
Intake temperature sensor	THA - E1	Input	Intake temperature 0~80°C (after warmed up engine)	0.5~3.4
	THAM - E1		Exhaust temperature 950°C or less	0.5~4.5

Check engine warning	W - E1	Output	Disconnect water temperature sensor connector (when check engine warning lamp turns on)	0~3
			While idling (when check engine warning lamp turns off)	9~14
Neutral start switch (A/T)	NSW - E1	Input	Shift position P, N rage	0~3
			Shift position other than P, N range	9~14
Starter	STA - E1	Input	While cranking	6 or more
Throttle position sensor	VTA - E1	Input	Fully close throttle valve	0.3~0.8
			Fully open throttle valve	3.2~4.9
ISCV	RSD - E1	Output	After warmed up, while idling, A/C OFF	Generation pulse occurs
			After warmed up, while idling, A/C ON	
Electric loads	ELS - E1	Input	Headlamp or defogger or navigation ON	7.5~14
			Headlamp or defogger or navigation OFF	0~1.5
Brake signal (A/T)	STP - E1	Input	Stop lamp switch ON	7.5~14
			Stop lamp switch OFF	0~1.5
O2 sensor heater	HT - E1	Output	After warmed up engine, while idling, elapsed 5 seconds	9~14
			Engine stopped, IGON	0~3
A/C switch	AC - E1	Input	A/C ON (magnet clutch ON)	9~14
			A/C OFF	0~3
A/C cut	ACT - E1	Output	A/C ON	9~14
			On above condition, open throttle valve from fully close to fully open for 3 seconds	0~3
Canister purge VSV	PRG -E1	Output	Engine stopped, IG ON (canister purge VSV OFF)	9~14
			When compulsory drive (canister purge VSV ON)	0~3
Fuel up control VSV	FPU - E1	Output	Engine stopped, IG ON (fuel up VSV OFF)	9~14
			When compulsory drive (fuel up VSV ON)	0~3

Boost pressure VSV	SPC - E1	Output	Engine stopped, IG ON (boost pressure VSV OFF)	9~14
			When compulsory drive (boost pressure VSV ON)	0~3
Fuel pump relay	FPR - E1	Output	While cranking or after started, within 2 seconds while idling (fuel pump relay OFF)	9~14
			After started, within 2 seconds while idling (fuel pump relay ON)	0~3
Circuit opening relay	FC - E1	Output	Engine stopped, IG ON	9~14
			After warmed up, while idling	0~3
Tachometer Output	TACO - E1	Output	After warmed up engine, while idling	Generation pulse occurs
Water temperature data	THWO - E1	Output	After warmed up engine, while idling	Generation pulse occurs
Electric fan	CF - E1	Output	Coolant temperature 90°C or less (when A/C medium switch OFF)	9~14
			Coolant temperature 105°C or more (when A/C medium switch OFF)	0~3
Diagnosis communication	SIL - E1	Output	After S2000 tester is connected to DLC3 connector, while communicating	Generation pulse occurs
Variable exhaust control motor	BPC+ - BPC-	Output	When variable motor operating	0~3
Test terminal	TC -E1	Output	Stopped engine, IG ON	9~14
			Connect TC and CG of DLC3 connector	0~3
Earth	E1, E2, E01, E02 -body earth	Earth	(Inspection of continuity)	(Always continuity)

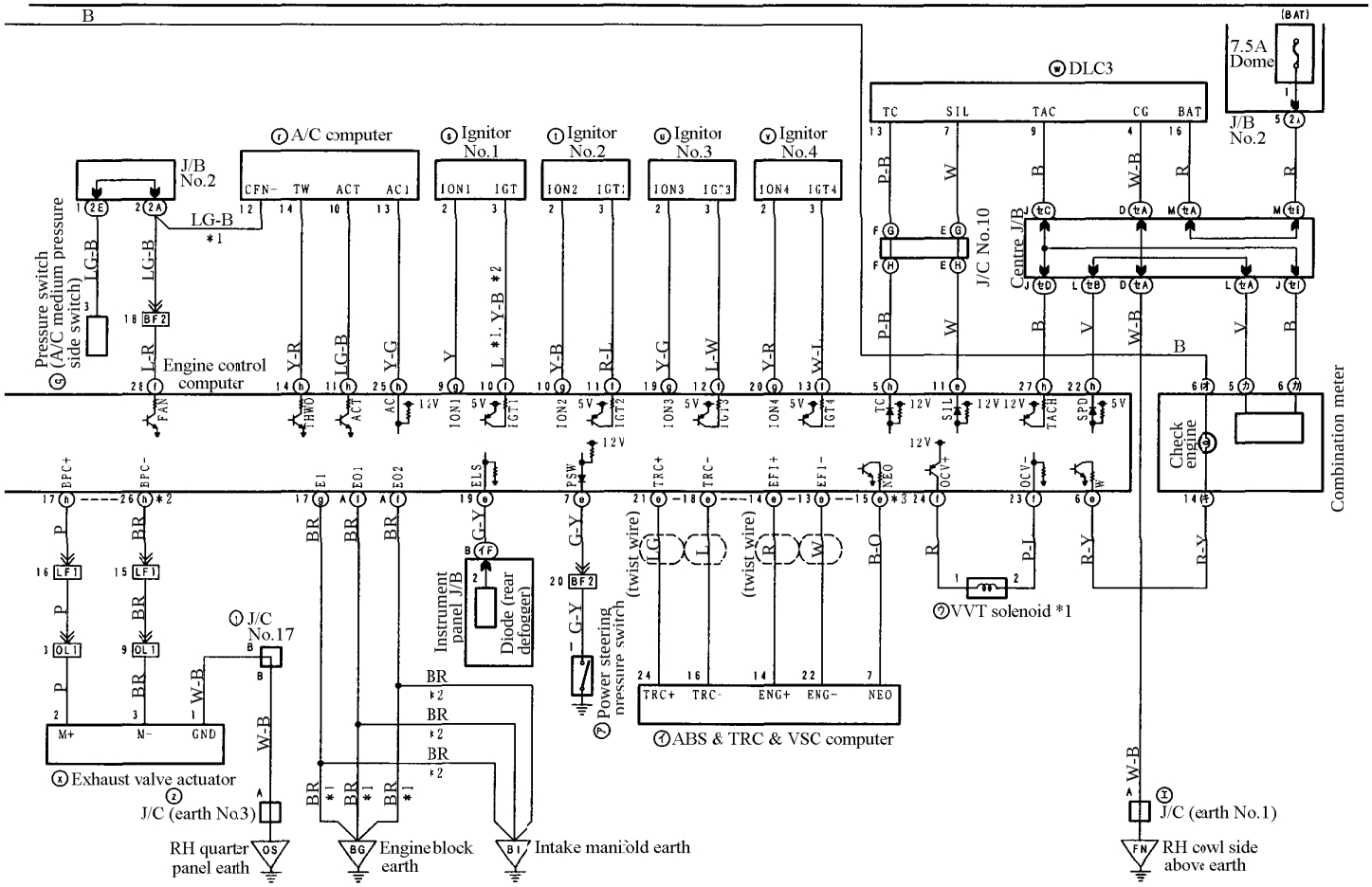
*1: 3S-GE
*2: 3S-GTE

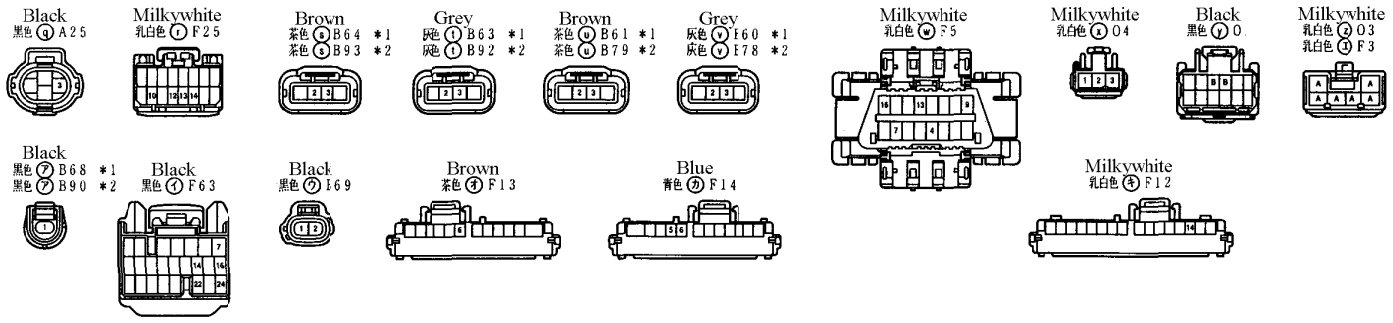




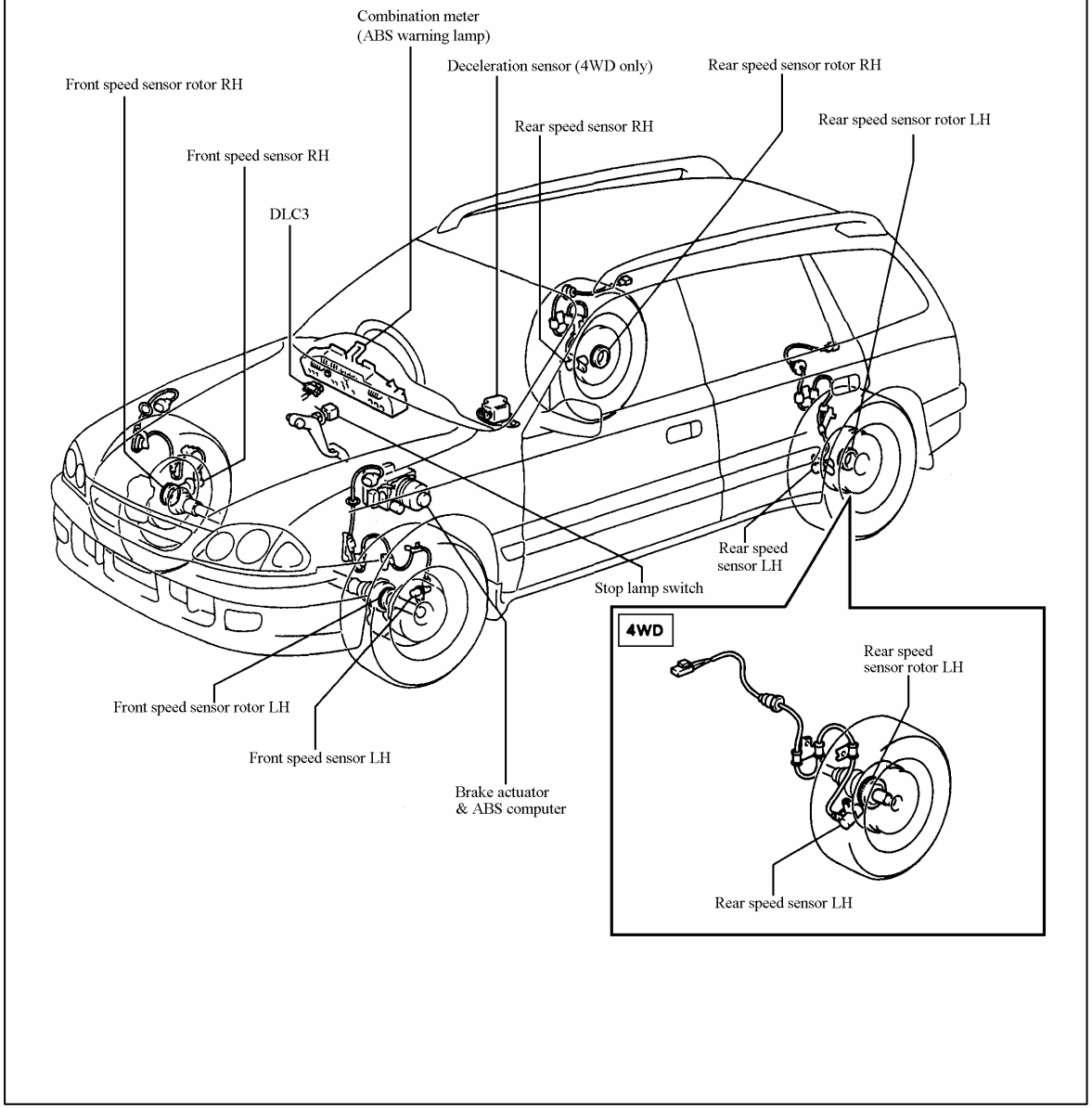
Engine control (3S-GE, 3S-GTE)

*1: 3S-GE
*2: 3S-GTE 3: 3S-GTE A/T

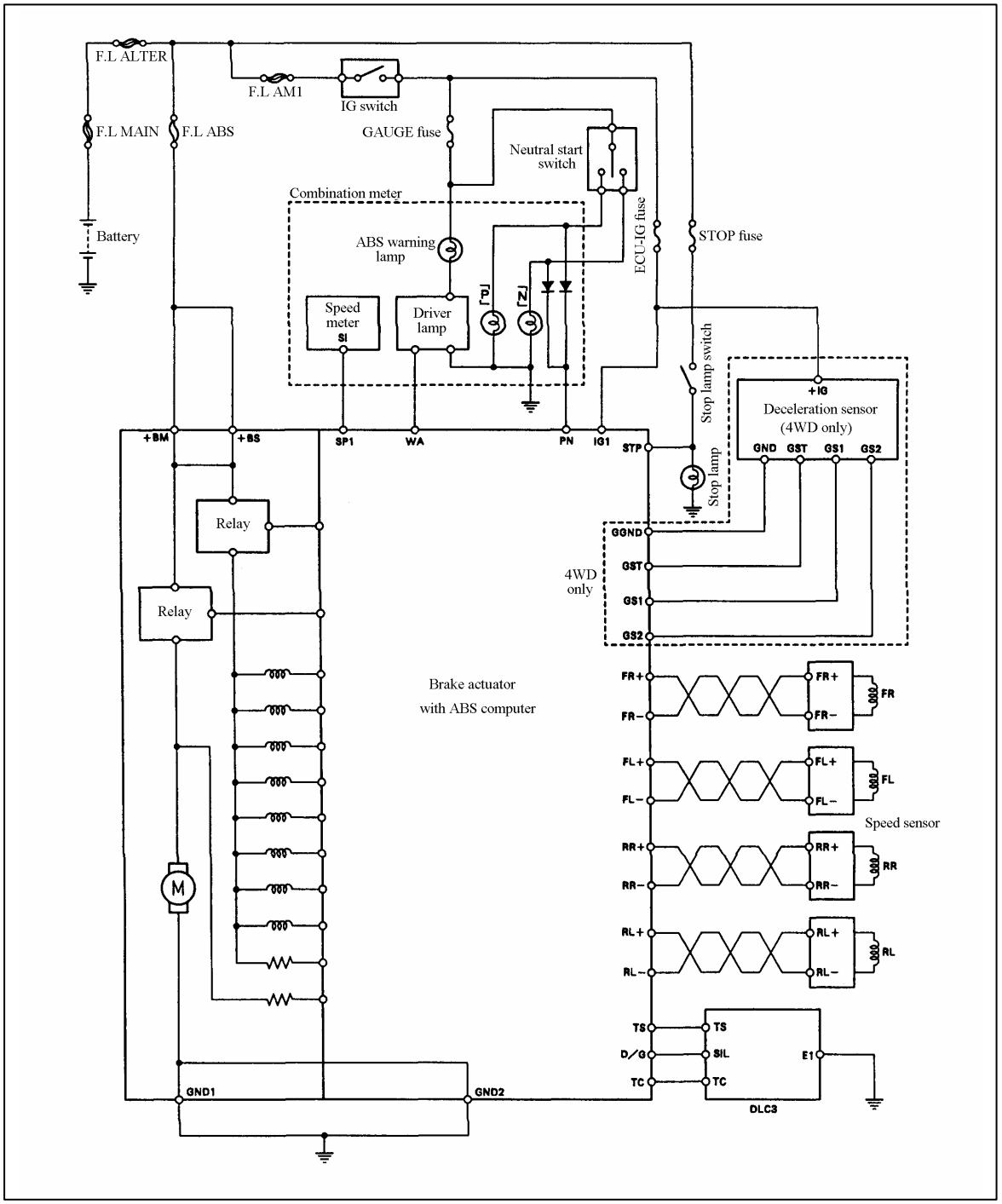


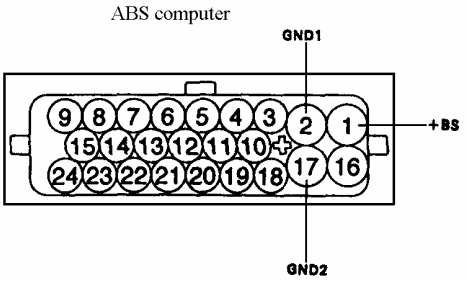
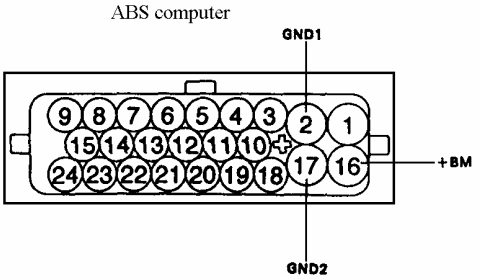


ABS Parts Location



ABS Summary Electrical Wiring Diagram

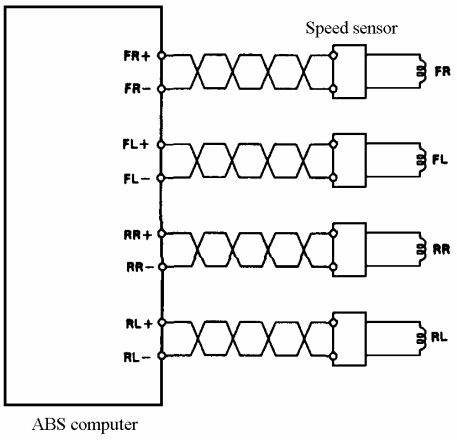


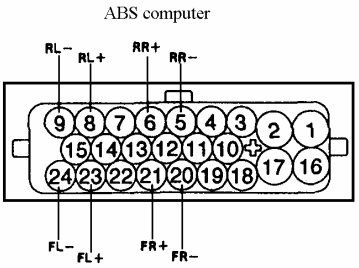
Code No.		Diagnosis item	Inspection area
Lamp	SAE	Diagnosis content 1. Diagnosis condition 2. Probable cause 3. Term	
11	C0278	Open in ABS solenoid relay 1. When solenoid relay is ON (elapsed approx.2 seconds after IG ON) 2. Open in solenoid relay 3. 0.2 seconds or more	Using diagram and check parts inspection, power voltage inspection, wiring and connector inspection. 
12	C0279	Short in ABS solenoid relay +B 1. When solenoid relay is OFF (only right after turned ignition switch ON) 2. Short in solenoid relay 3. 0.2 seconds or more	-
13	C0273	Open in motor relay 1. When motor relay is ON 2. Open in motor relay 3. 0.2 seconds or more	Using diagram and check parts inspection, power voltage inspection, wiring and connector inspection and check battery voltage (12V) is supplied to the motor. 
14	C0274	Short in motor relay +B 1. When motor relay is OFF (while ABS operating or other than initial check) 2. Short in motor relay 3. 2.5 seconds or more	-

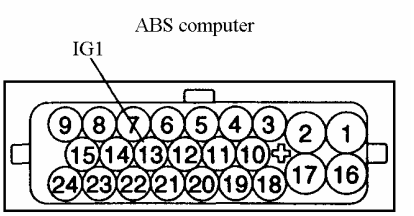
<table>
<tr><td>21</td><td>C0226</td><td>Actuator front RH solenoid malfunction [SFRR, SFRH]
1. When solenoid relay is ON
2. Open or short in solenoid
3. 0.012 seconds or more</td><td rowspan="4">Using electrical wiring diagram and check parts inspection, power voltage inspection, wiring and connector inspection.
1. Confirm battery voltage is supplied.
• Using S2000 tester and carry out “Active Test” (inspection of function)</td></tr>
<tr><td>22</td><td>C0236</td><td>Actuator front LH solenoid malfunction [SFLR, SFLH]</td></tr>
<tr><td>23</td><td>C0246</td><td>Actuator rear RH solenoid malfunction [SRRH, SRRR]</td></tr>
<tr><td>24</td><td>C0256</td><td>Actuator rear LH solenoid malfunction [SRLH, SRLR]</td></tr>
<tr><td>31</td><td>C0200</td><td>Front RH speed sensor malfunction [FR+, FR-]
1. While driving vehicle at 10km/h or more
2. No speed sensor signal input
3. 15 seconds or more

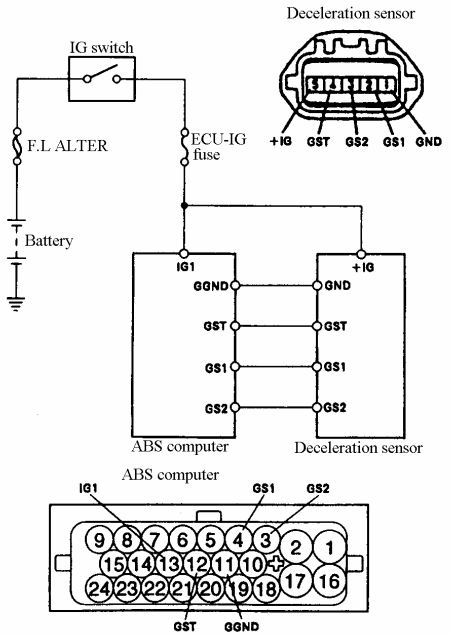
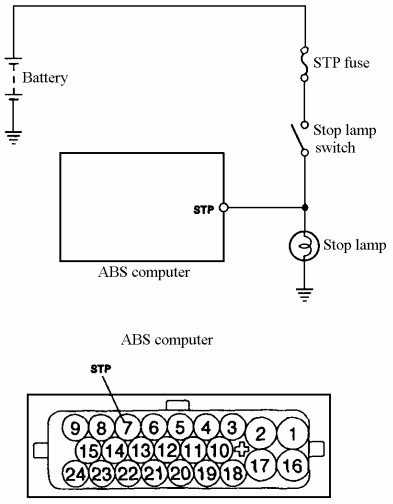
1. While driving vehicle at 15km/h or more
2. Missing pulse signal from speed sensor momentary
3. 7 times or more

1. While driving vehicle at 20km/h or more
2. Abnormal signal occurs from speed sensor continuously
3. 75 time or more for 5 seconds

1. While IG ON
2. Open in speed sensor
3. 0.6 seconds or more</td><td rowspan="4">Using diagram and check parts inspection, power voltage inspection, wiring and connector inspection.
• Inspect wiring and connector
• Using S2000 tester and calculate and check vehicle speed.
 

 
</td></tr>
<tr><td>32</td><td>C0205</td><td>Front LH speed sensor malfunction [FL+, FL-]</td></tr>
<tr><td>33</td><td>C0210</td><td>Rear RH speed sensor malfunction [RR+, RR-]</td></tr>
<tr><td>34</td><td>C0215</td><td>Rear LH speed sensor malfunction [RL+, RL-]</td></tr>
</table>

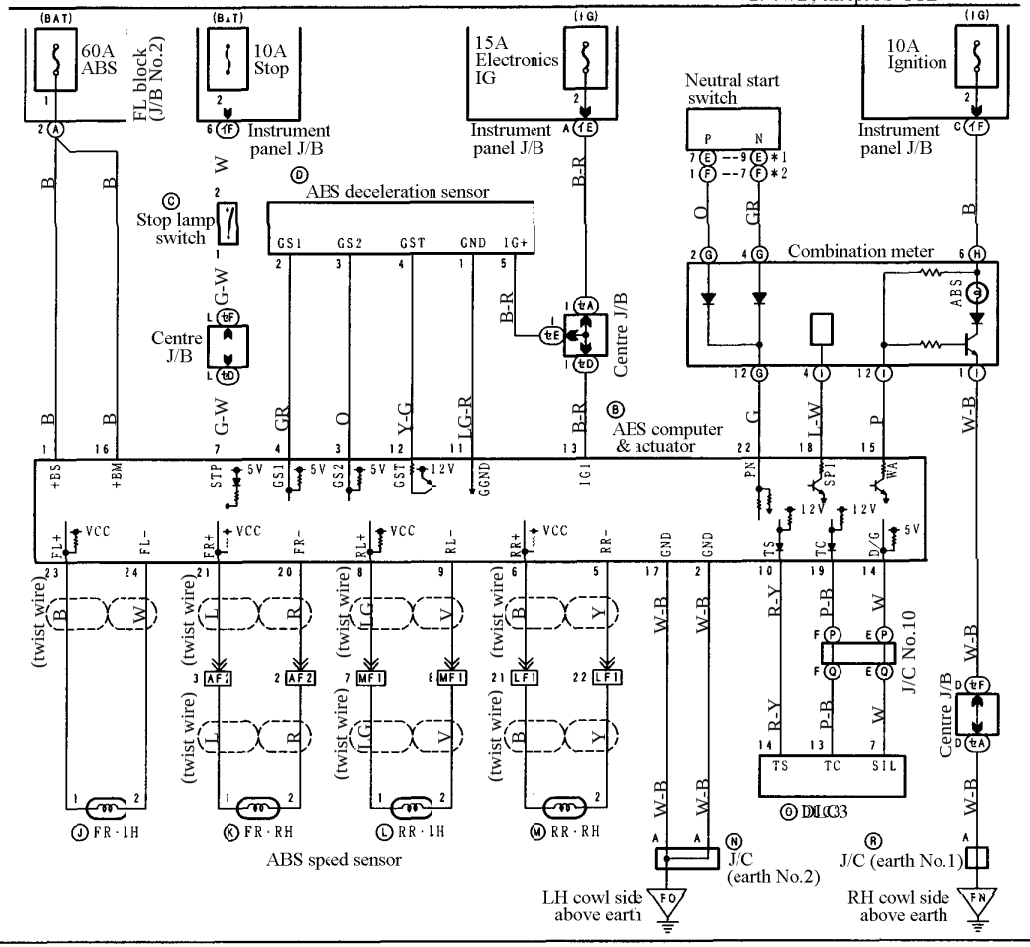
37 (2WD only)	C1237	Rear speed sensor rotor damage 1. While IG ON, no rear wheel speed input continuously 8 times or more 2. Front wheel speed – Rear wheel speed > 20km/h 3. 10 seconds or more	Check rear speed sensor rotor
41	C1241	Power voltage abnormal [IG1] 1. While driving vehicle at 3km/h or more 2. IG1 terminal voltage at computer output 9~10V or less 3. 10 seconds or more 1. While IG ON 2. IG1 terminal voltage at computer increases (16~17V) 3. 0.6 seconds or more	Using diagram and check parts inspection, power voltage inspection, wiring and connector inspection and IC regulator inspection. • Confirm battery voltage is supplied. • Using S2000 tester and read and check power voltage 
43 (4WD only)		Deceleration sensor output abnormal [GST, GS1, GS2] 1. When vehicle speed 0km/h ? 30km/h or more ? 0km/h 2. No sensor output 3. 16 times or more	• Carry out test mode inspection • Diagnose with S2000 tester

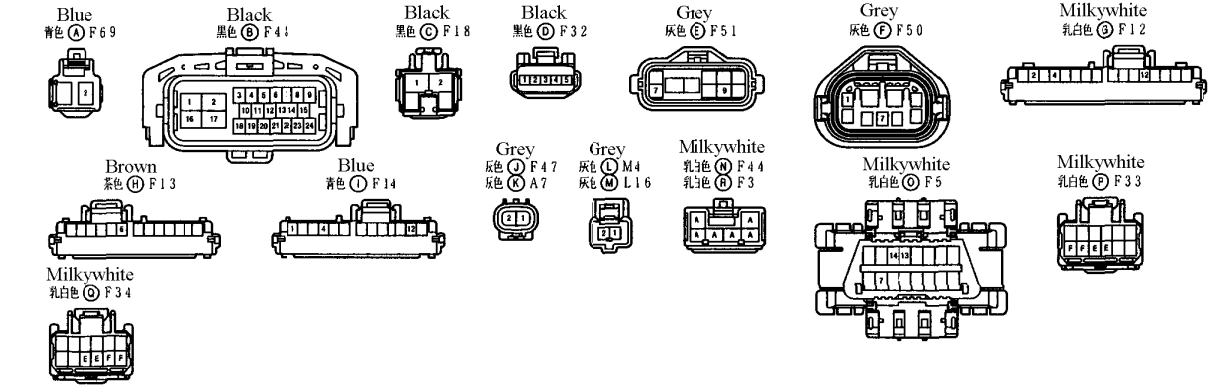
44 (4WD only)		Open or short in deceleration sensor [GST, GS1, GS2] 1. While IG ON 2. Open or short in deceleration sensor 3. 1 second or more	Using diagram and check parts inspection, power voltage inspection, wiring and connector inspection. 
49	C1249	Open stop lamp switch signal [STP] 1. While IG ON, STP OFF 2. STP terminal voltage at computer output 1.5~4V 3. 0.3 seconds or more	Using diagram and check stop lamp wire harness and stop lamp parts inspection • Using S2000 tester and check switch ON and OFF 

51	C1251	Actuator motor lock 1. While initial check (after IG ON, when exceed vehicle speed 6km/h or more initially) 2. Motor lock	Using diagram and check parts inspection, function inspection, wiring and connector. • Using S2000 tester and carry out active test (motor drive)
Always	-	Computer malfunction 2. Computer malfunction Power voltage abnormal 2. .Power voltage 16~18V or more	Refer to trouble shoot chart

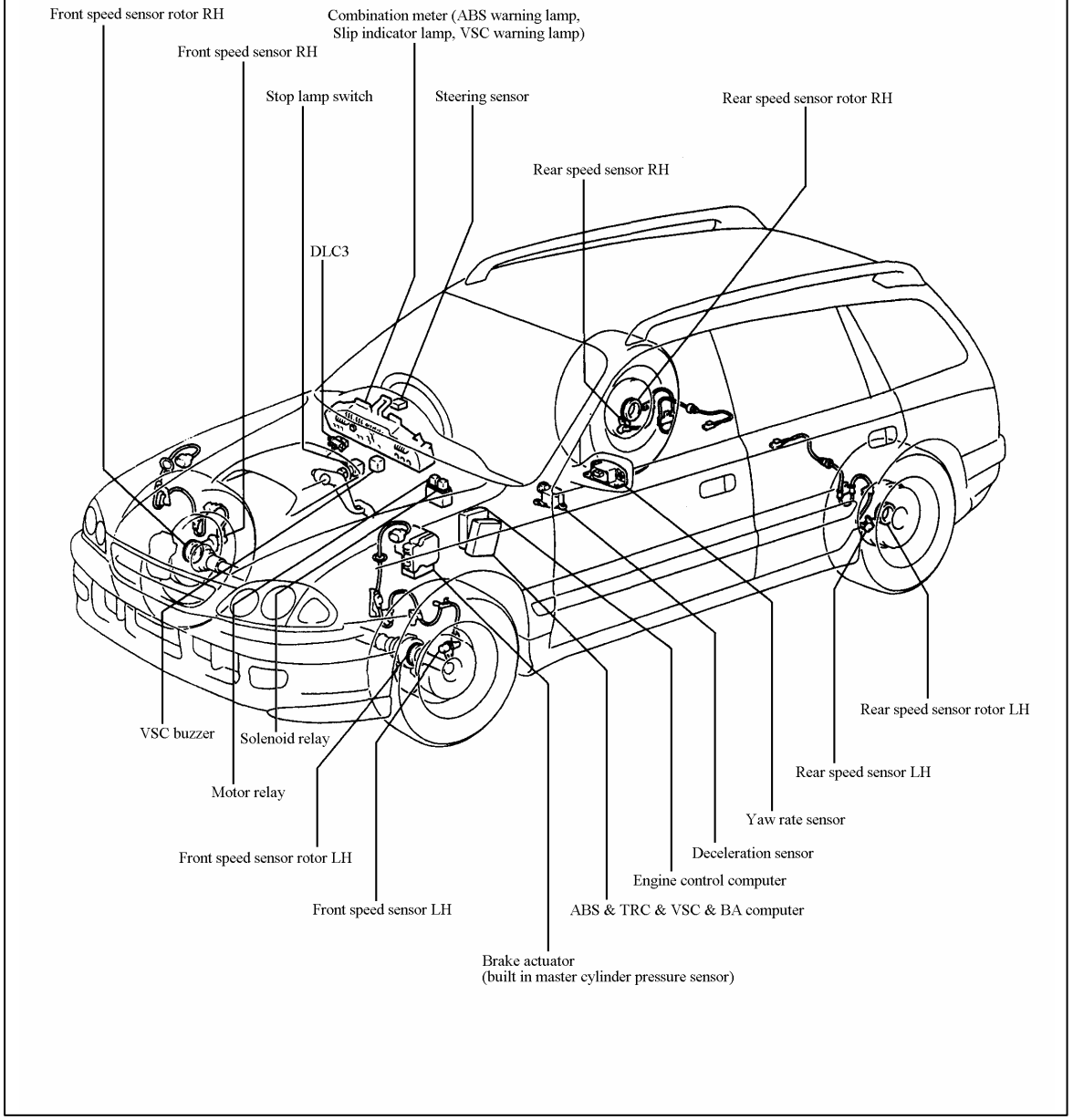
ABS

*1: 2WD, 3S-GTE M/T
*2: 4WD, except 3S-GTE

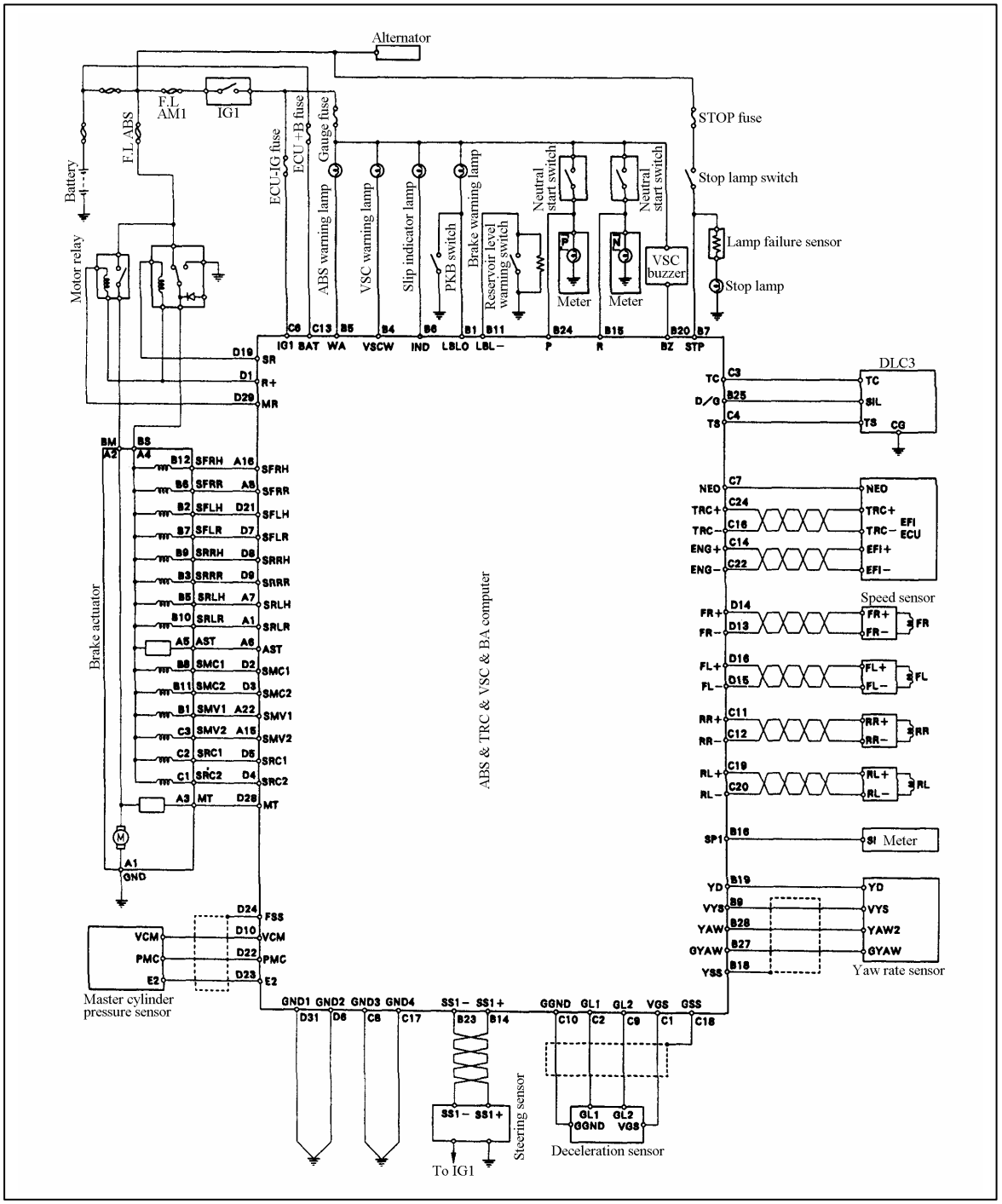




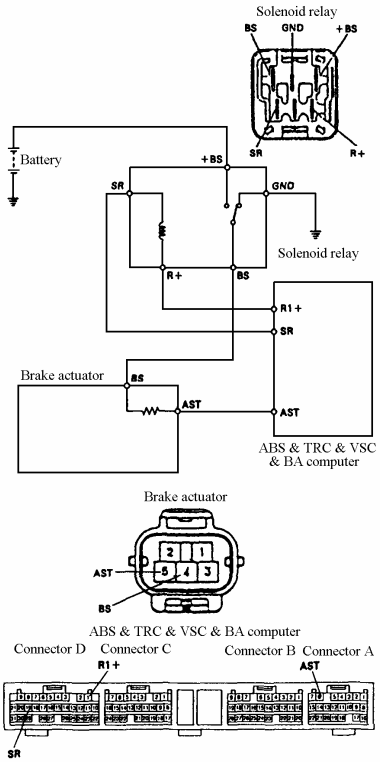
ABS, TRC, VSC & BA Parts Location

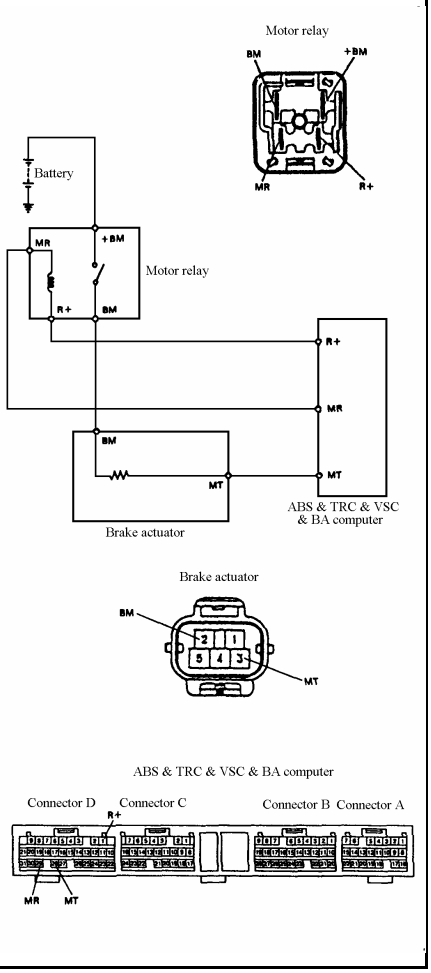


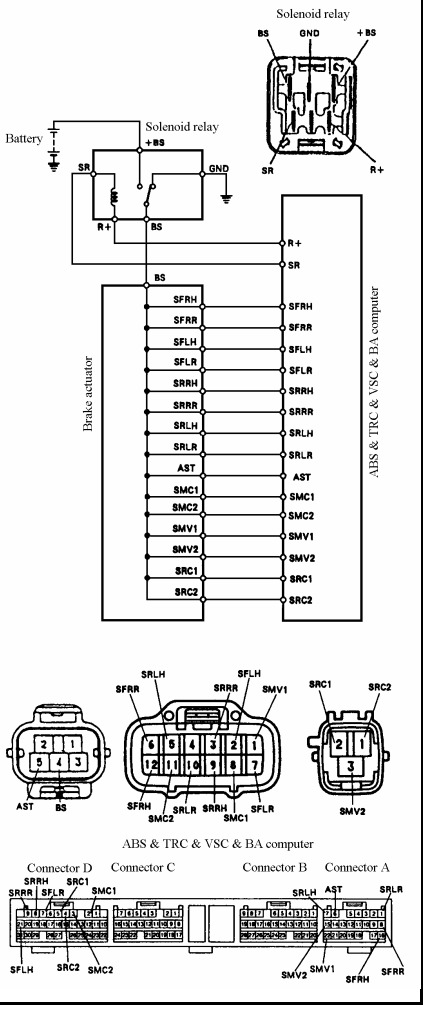
ABS & TRC & VSC & BA Summary Electrical Wiring Diagram

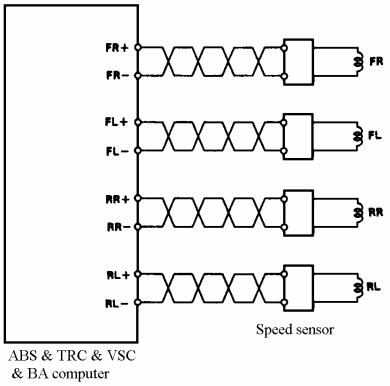
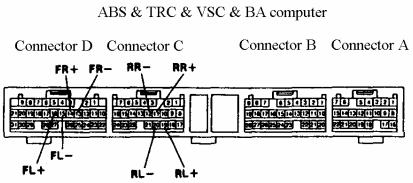


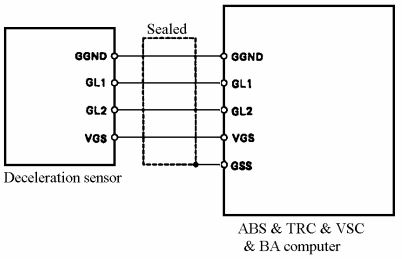
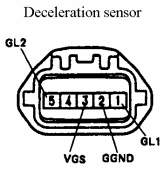
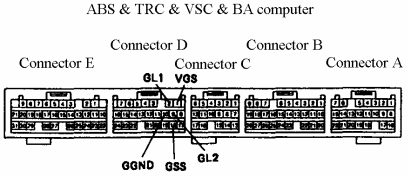
ABS DTC List

<table>
<tr><td colspan="2">Code No.</td><td>Diagnosis item</td><td rowspan="2">Inspection area</td></tr>
<tr><td>Lamp</td><td>SAE</td><td>Diagnosis content
1. Diagnosis condition
2. Probable cause
3. Term</td></tr>
<tr><td>ABS
11</td><td>C0278</td><td>Open in ABS & TRC solenoid relay
1. When SR terminal voltage at computer is 1.5V or less (when solenoid relay ON) (elapsed approx.2 seconds after IG ON)
2. AST terminal (terminal of confirmation signal of solenoid relay ON) voltage at computer is not 10~14V.
3. 0.2 seconds or more</td><td rowspan="2">Using diagram and carry out parts inspection, power voltage inspection, wiring and connector inspection.
<reference> when diagnosis codes output, there is no output from R+ terminal due to fail safe mode.
  </td></tr>
<tr><td>ABS
12</td><td>C0279</td><td>Short in ABS & TRC solenoid relay
1. When SR terminal voltage at computer is 10~14V (solenoid relay OFF) (only right after IG ON)
2. AST terminal voltage at computer is 10~14V
3. 0.2 seconds or more</td></tr>
</table>

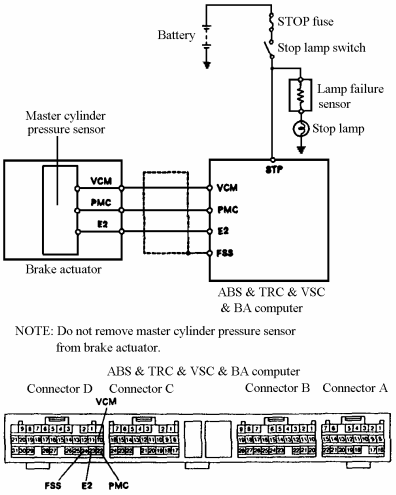
ABS 13	C0273	Open in motor relay 1. MR terminal voltage at computer is 1.5V or less (when motor relay ON) 2. MT terminal (terminal of confirmation signal of motor relay ON) voltage at computer is not 10~14V 3. 0.2 seconds or more	Using diagram and carry out parts inspection, power voltage inspection, wiring and connector inspection. <reference> when diagnosis codes output, there is no output from R+ terminal due to fail safe mode. 
ABS 14	C0274	Short in motor relay 1. MR terminal voltage at computer is 10~14V (when motor relay OFF) 2. MT terminal voltage at computer is 10~14V 3. 4 seconds or more	

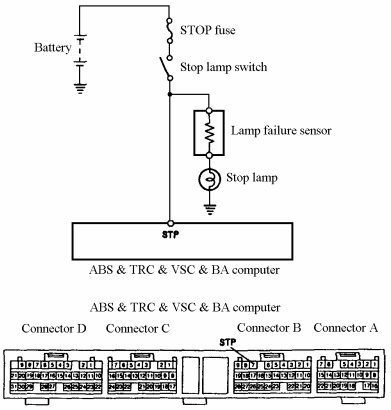
ABS 21	C0226	Actuator front RH solenoid malfunction [SFRR, SFRH] 1. When SR terminal voltage at computer is 1.5V or less (solenoid relay ON) 2. Open or short in solenoid relay 3. 0.05 seconds or more * All below diagnosis codes 22~27 are the same diagnosis procedure	Using diagram and carry out parts inspection, wiring and harness inspection.  ABS & TRC & VSC & BA computer
ABS 22	C0236	Actuator front LH solenoid malfunction [SFLR, SFLH]	
ABS 23	C0246	Actuator rear RH solenoid malfunction [SRRH, SRRR]	
ABS 24	C0256	Actuator rear LH solenoid malfunction [SRLH, SRLR]	
ABS 25	C1225	Master cylinder cut solenoid malfunction [SMC1, SMC2]	
ABS 26	C1226	Front master cylinder cut solenoid malfunction [SMV1, SMV2]	
ABS 27	C1227	Reservoir cut solenoid malfunction [SRC1, SRC2]	

ABS 31	C0200	Front RH wheel speed sensor malfunction [FR+, FR-] 1. While driving vehicle at 10km/h or more 2. No speed signal 3. 30 seconds 1. While driving vehicle at 15km/h or more 2. Missing pulse signal from speed sensor 3. 7 times or more 1. While driving vehicle at 20km/h or more 2. Occurs abnormal signal from speed sensor continuously 3. 75 times or more for 5 seconds 1. While IG ON 2. Open speed sensor 3. 0.5 seconds or more	Using diagram and carry out parts inspection, power voltage inspection and wiring and connector inspection.  
ABS 32	C0205	Front LH wheel speed sensor malfunction [FL+, FL-]	
ABS 33	C0210	Rear RH wheel speed sensor malfunction [RR+, RR-]	
ABS 34	C0215	Rear LH wheel speed sensor malfunction [RL+, RL-]	

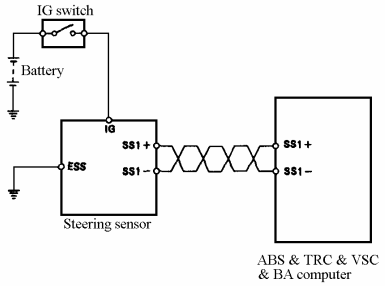
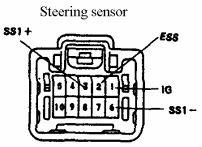
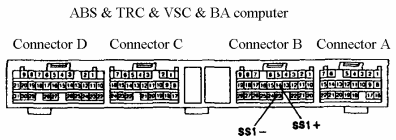
ABS 41	C1241	Power voltage abnormal 1. While driving vehicle at 3km/h or more 2. IG1 terminal voltage at computer is 9~10V or less 3. 10 seconds or more 1. Solenoid relay 2. Relay contact OFF due to IG1 terminal voltage at computer low (9~10V) 3. 0.2 seconds or more	Using diagram and carry out parts inspection, wiring and connector inspection, battery inspection and IC regulator inspection.
ABS 43	C1243	Deceleration sensor stick malfunction [GL1, Gl2] 1. When vehicle speed is reached from 30km/h to 0km/h 2. No sensor output change even never once 3. Occurs 16 times continuously after connected battery	Using diagram and carry out parts inspection, voltage inspection and wiring and connector inspection
ABS 44	C1244	Open or short in deceleration sensor [VGS, GL1, GL2, GGND] 1. While IG ON 2. When GL1 or GL2 output 0.25V or less OR 4.75V or more 3. 1.2 seconds or more 1. When vehicle speed is 0km/h 2. Large difference of output between GL1 and GL2 3. 60 seconds or more 1. While IG ON 2. VGS output 4.4V or less OR 5.6V or more 3. 1.2 seconds or more 1. While IG ON 2. Momentary missing signal from GL1 or GL2 3. 7 times or more	  

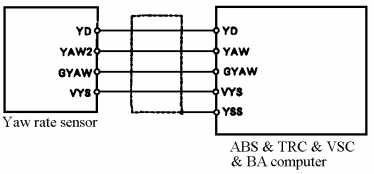
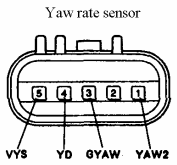
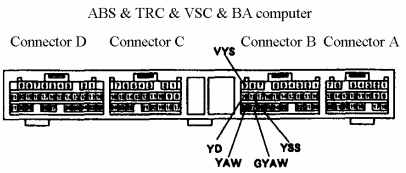
ABS 45	C1245	Deceleration sensor output abnormal [GL1, GL2] 1. When vehicle speed is 30km/h or more 2. Large difference of output between deceleration sensor output and vehicle acceleration calculated by wheel speed 3. 60 seconds or more	

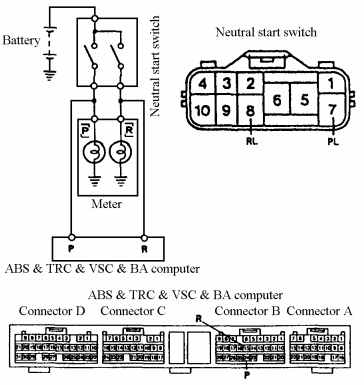
ABS 46	C1246	Open or short in master cylinder pressure sensor [VCM, PMC, E2] Master cylinder pressure sensor output abnormal 1. Always 2. When PMC terminal voltage is 0.25V or less OR 4.75V or more and VCM terminal voltage is 4.4V or less or 5.6V or more 3. 5 seconds or more 1. When vehicle speed is 10km/h 2. When PMC terminal voltage is 4.7V or more 3. 5 seconds or more 1. When vehicle speed is 7km/h or more and PMC terminal voltage is 0.86V or more 2. 2. No change 0.05V or more 3. 30 seconds or more 2. When noise occurs on PMC terminal 3. 7 times or more for 5 seconds 1. When STP OFF 2. When PMC terminal voltage is 0.86V or more OR 0.3V or less 3. 5 seconds or more 1. When IG1 terminal voltage is 9.5~17.2V 2. When VCM terminal voltage is output of 4.4~5.6V 3. 1.2 seconds or more 1. When VCM terminal voltage is 4.4~5.6V 2. When PMC terminal voltage is out of 0.14~4.85V 3. 2 seconds or more	Using diagram and carry out parts inspection, power inspection and wiring and connector inspection. 

ABS 49	C1249	Open in stop lamp switch [STP] 1. While IG ON 2. STP terminal at computer is 3~9.5V 3. 0.3 seconds or more 1. When IG1 terminal voltage at computer is 9.5~17.2V and also when ABS is not activated. 2. Open stop lamp switch momentary 3. 0.3 seconds or more	Using diagram and carry out stop lamp wiring and connector, and parts inspection. 
ABS 51	C1251	Actuator motor lock, open motor circuit 1. After electrify to motor is finished, when motor relay monitor signal is dropped suddenly. 2. Motor lock 1. MT terminal level is 4~8V when motor relay is OFF. 2. Open in Motor or between motor and MT terminal circuit. 3. 2 seconds	Using diagram and carry out parts inspection, function inspection and wiring and connector inspection.
Lamp ON	-	Computer malfunction 2. Computer malfunction Power voltage abnormal 2. Power voltage is 16~18V or more	Refer to the trouble shooing chart

VSC DTC List

Code No.		Diagnosis item	Inspection area
Lamp	SAE	Diagnosis content 4. Diagnosis condition 5. Probable cause 6. Term	
VSC 31	S1231	Steering sensor malfunction [SS1+, SS1-] 1. IG1 terminal voltage is 9.5V or more. 2. No signal receives from steering sensor. 3. 1 second or more 1. When SSC signal is ON or OFF. 2. When degree of steering sensor is changed over 360°. 1. When occurs SSC signal edge 2. Difference between the steering angle values at edge occurring in SSC signal and the values at edge occurring in SSC signal after turning the steering wheel one-turn is out of the range from 355.5° - 364.5°. 3. 10 times or more.	Using diagram and carry out parts inspection, power voltage inspection and wiring and connector inspection.   
VSC 32	S1232	Deceleration sensor stuck [GL1, GL2] 1. When vehicle speed is 5km/h or more 2. GL1 fluctuation is within 8LSB and also GL2 fluctuation is more than 24LSB. 3. 5 times or more 1. When vehicle speed is 5km/h or more. 2. GL2 fluctuation is within 8LSB and also GL1 fluctuation is more than 24 LSB. 3. 5 times or more.	Refer to deceleration sensor parts inspection

VSC 33	S1233	Open or short in yaw rate sensor [YAW, GYAW] 1. When IG1 terminal voltage is 9.5~17.2V. 2. When yaw rate sensor output voltage is not within 0.25~4.75V. 3. 1 second or more	Using diagram and carry out parts inspection, power voltage inspection and wiring and harness inspection.   
VSC 34	S1234	Yaw rate sensor signal malfunction [YAW, GYAW, YD] 1. When yaw rate sensor power voltage is 4.4~5.6V. 2. When YD signal of yaw rate sensor is ON. 3. 5 seconds or more. 1. When shift position is P range, and yaw rate sensor output voltage is not within 2.37~2.63V OR difference of yaw rate sensor zero correction voltage is 0.05V or more. 2. When vehicle speed is 15km/h or more with yaw rate sensor output continues. 3. 3 times or more.	
VSC 36	C1210	Yaw rate sensor zero point not corrected 1. When initially connecting battery leads onto battery. 2. After turn ignition switch to ON position, within 15 seconds, when move shift lever from P range to other than P range OR vehicle is shaken.	Check wiring and connector between ABS & TRC & VSC & BA computer and P range switch.

VSC 37	C1207	Open or short (fixed ON terminal) in P range Open in R range 1. When vehicle speed is 15km/h or less 2. P (R) signal circuit open is ON. 3. P rage, 5 seconds or more. R range 2 seconds or more. 1. When vehicle speed is 15km/h or more. 2. P signal is ON, when shift position information to EFI is other than P, N range. 3. 60 seconds or more.	Using diagram and carry out parts inspection, power voltage inspection and wiring and connector inspection. 
VSC 43	C1223	ABS malfunction 2. ABS warning lamp turns ON.	Confirm diagnosis trouble codes on ABS system (refer to ABS trouble shooting).
VSC 44	C1224	Engine revolution abnormal [NEO] 1. While TRC is operating. 2. When NEO terminal at ABS&TRC&VSC&BA computer is 0V or 5V (no pulse). 3. 0.2 seconds or more 1. When vehicle speed is 30km/h and communication from EFI is normal. 2. NEO signal is 0V or 5V. 3. 10 seconds or more.	Check wiring and connector between EFI ECU ~ ABS & TRC & VSC & BA ECU. Confirm diagnosis trouble codes on TCCS (refer to TCCS trouble shooting)
VSC 51	C1201	Engine abnormal 1. When engine revolution is 500rpm or more. 2. When engine abnormal signal output. 3. 5 seconds or more.	Check wiring and connector between EFI ECU ~ ABS & TRC & VSC & BA ECU. Confirm diagnosis trouble codes on TCCS (refer to TCCS trouble shooting) Check diagnosis trouble codes on ETCS

VSC 52	C1202	Open or abnormal low of oil reservoir level [LBL-] 1. While IG ON. 2. When LBL- terminal voltage at ECU is 1.5V or less (low oil level in oil reservoir) 3. 60 seconds or more 1. While IG ON. 2. When LBL- terminal voltage is 9~13V. 2 seconds or more.	Oil reservoir
VSC 53	C1203	EFI communication abnormal, TRC communication abnormal [ENG+, ENG-, TRC+, TRC-] 1. When engine revolution is 500rpm or more OR vehicle speed is 60km/h or more. 2. Communication abnormal between EFT ECU ~ ABS & TRC & VSC & BA ECU (ENG+, ENG- terminal at computer is 0V or 5V). 3. 5 seconds or more. 1. Always 2. Communication abnormal between EFT ECU ~ ABS & TRC & VSC & BA ECU (TRC+, TRC- terminal at computer is 0V or 5V). 3. 5 seconds or more.	Check wiring and connector between EFI ECU ~ ABS & TRC & VSC & BA ECU. Confirm diagnosis trouble codes on TCCS (refer to TCCS trouble shooting)
Lamp ON	-	ECU malfunction 2. ECU malfunction Open circuit between VSC warning indicator and ECU 1. While IG ON, during initial check. 2. No voltage change at VSCW terminal of ECU. 3. 5.5 seconds.	Refer to symptom trouble shooting chart.

ABS Test Mode Code List (ABS Waning Indication)

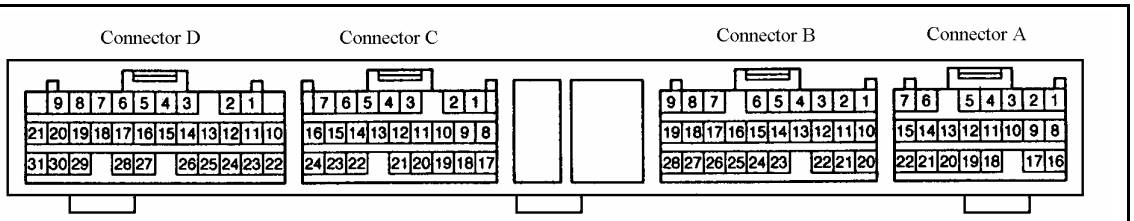
Code No.		Diagnosis item [Terminal]	Test mode code decision condition	Inspection area
Lamp	SAE			
71	C1271	Front RH speed sensor output voltage abnormal [FR+, FR-]	Drive vehicle at 0~10km/h slowly.	1. Open or short in speed sensor 2. Open or short in speed sensor wiring harness 3. Speed sensor installation fault 4. Speeds sensor rotor abnormal
72	C1272	Front LH speed sensor output abnormal [FL+, FL-]		
73	C1273	Rear RH speed sensor output abnormal [RR+, RR-]		
74	C1274	Rear LH speed sensor output abnormal [RL+, RL-]		
75	C1275	Front RH speed sensor output cycle abnormal [FR+, FR-]	Drive vehicle at more than 45km/h for 1 second or more	1. Speed sensor rotor damage. 2. Foreign objects attached onto speed sensor
76	C1276	Front LH speed sensor output cycle abnormal [FL+, FL-]		
77	C1277	Rear RH speed sensor output cycle abnormal [RR+, RR-]		
78	C1278	Rear LH speed sensor output cycle abnormal [RL+, RL-]		
79	C1279	Deceleration sensor abnormal [GL1, GL2]	Parts vehicle onto level ground for 1 second	1. Open or short in deceleration sensor. 2. Open or short in deceleration sensor wiring harness. 3. Deceleration sensor stick. 4. Deceleration sensor installation abnormal.

81	C1281	Master cylinder pressure sensor output abnormal [VMC, PMC]	• Release brake pedal for 1 second or more. • When vehicle is parked, depress brake pedal with more than 98N {10kgf} for 1 second or more. • Release brake pedal while vehicle is parked. • When vehicle is parked, depress brake once rapidly.	1. Open or short in master cylinder pressure sensor. 2. Open or short in master cylinder pressure sensor wiring harness. 3. Open or short in stop lamp switch.

VSC Test Mode Code List (VSC Waning Indication)

Code No.		Diagnosis item [Terminal]	How to clear test mode code	Probable cause area
Lamp	SAE			
71	C0371	Yaw rate sensor output abnormal [YAW, GYAW, YD]	• With shift position is P range, turn ignition switch to ON position and stop for 3 seconds or more. After that, drive vehicle with D range and turn 180°±5° and stop vehicle. Again, change shift lever into P range.	1. Open or short in yaw rate sensor. 2. Open or short in yaw rate sensor wiring harness. 3. Yaw rate sensor installation fault. 4. Open or short in P range signal wiring harness.
72	C1208	Steering sensor output abnormal [SS1+, SS-]	• Turn steering wheel to fully lock position and then return it to the centre. • Turn steering wheel to 90° or more from centre and then drive vehicle 1 second or more (5km/h or more).	1. Open or short in steering sensor. 2. Open or short in steering sensor wiring harness. 3. Steering sensor installation fault.

ABS & TRC & VSC & BA ECU Pin Configuration



Connector	Terminal No.	Terminal Name	Input / Output	Item	Condition	Standard
A	1	SRLH ? GND (rear LH solenoid output)	Output	V	IG ON, after elapsed approx.1.5 seconds	10~14V *1
	6	AST ? GND (solenoid relay test input)	Input	V	IG ON, after elapsed approx.1.5 seconds	10~14V *1
	7	SRLH ? GND (rear LH prevention solenoid output)	Output	V	IG ON, after elapsed approx.1.5 seconds	10~14V *1
	8	SFRR ? GND (front RH decompression solenoid output)	Output	V	IG ON, after elapsed approx.1.5 seconds	10~14V *1
	15	SMV2 ? GND (front master cylinder cut solenoid output)	Output	V	IG ON, after elapsed approx.1.5 seconds	10~14V *1
	16	SFRH ? GND (front RH prevention solenoid output)	Output	V	IG ON, after elapsed approx.1.5 seconds	10~14V *1
	22	SMV1 ? GND (front master cylinder cut solenoid output)	Output	V	IG ON, after elapsed approx.1.5 seconds	10~14V *1
B	1	LBLO ? GND (brake fluid level warning switch signal output)	Output	V	IG ON, when reservoir level is normal	10~14V
					IG ON, when reservoir level is low	1V or less

B	4	VSCW ? GND (VSC warning lamp output)	Output	V	IG ON ? OFF	2V or less for approx.3 seconds, after that 10~14V
	5	WA ? GND (ABS warning lamp output)	Output	V	IG ON ? OFF	10~14V for approx. 3 seconds, after that 2V or less
	6	IND ? GND (slip indicator lamp output)	Output	V	IG ON ? OFF	2V or less for approx.3 seconds, after that 10~14V *1
	7	STP ? GND (stop lamp switch input)	Input	V	IG ON, when depressed brake pedal	8~14V
					IG ON, when released brake pedal	1.5V or less
	9	VYS ? GND (Yaw rate sensor power output)	Output	V	IG ON	4.75~5.25V
	11	LBL- ? GND (brake fluid level warning switch input)	Input	V	IG ON, when reservoir level is normal	4~8V
					IG ON, when reservoir level is low	1V or less
	14	SS1+ ? GND (steering sensor SS1 (+) input)	Input	V	IG ON	Approx.2.5V *2
	15	R ? GND (neutral start switch (R) input)	Input	V	IG ON, shift lever R range	8~14V
					IG ON, shift lever other than R range	1.5V or less
	16	SP1 ? GND (meter vehicle speed signal output)	Output	Oscilloscope	Drive vehicle at approx.30km/h	Generation pulse occurs

B	18	YSS ? GND (yaw rate sensor sealed GND)	Input	continuity	IG OFF	Yes continuity
	19	YD ? GND (yaw rate sensor diagnosis input	Input	V	IG ON	4.5~5.3V
	20	BZ ? GND (buzzer output while operating VSC)	Output	V	IG ON, when buzzer sound	1.5V or less
					IG ON, when buzzer not sound	10~14V
	23	SS1- ? GND (steering sensor SS1 (-) input)	Input	V	IG ON	Approx.2.5V *2
	24	P ? GND (neutral start switch (P) input)	Input	V	IG ON, shift lever P range	8~14V
					IG ON, shift lever other than P range	1.5V or less
	25	D/G ? GND (diagnosis output)	Output	Oscilloscope	IG ON, connected TC and Cg of DLC3 connector	Diagnosis codes output
				V	IG ON, open TC and Cg of DLC3 connector	10~14V
	27	GYAW ? GND (yaw rate sensor GND input)	Input	Continuity	IG OFF	Yes continuity
	28	YAW ? GND (yaw rate sensor input)	Input	V	IG ON, when vehicle is parked as not shaking	2~3V

C C	1	VGS ? GND (G sensor power output)	Output	V	IG ON	4.5~5.5V
	2	GL1 ? GND (G sensor (1) input)	Input	V	IG ON (when parked vehicle)	0.5~4.5V (normal area) 2~3V (when parked on level ground)
	3	TC ? GND (diagnosis start)	Input	V	IG ON, connected TC and Cg of DLC3 connector	1V or less
					IG ON, open TC and Cg of DLC3 connector	10~14V
	4	TS ? GND (sensor check start input)	Input	V	IG ON, connected TS and Cg of DLC3 connector	1V or less
					IG ON, open TS and Cg of DLC3 connector	10~14V
	6	IG1 ? GND (IG1 current)	Input	V	IG ON	10~14V
	7	NEO ? GND (engine revolution signal input)	Input	Oscilloscope	While idling	Generation pulse occurs
	8	GND3 ? body earth (GND)	Input	Continuity	IG OFF	Yes continuity
	9	GL2 ? GND (G sensor (2) input)	Input	V	IG ON (when vehicle is parked)	0.5~4.5V (normal area) 2~3V (when parked on level ground)
	10	GGND ? body earth (G sensor GND)	Input	Continuity	IG OFF	Yes continuity

C	11	RR+ ? GND (rear RH wheel speed sensor (+) input)	Input	Oscilloscope	Driving vehicle at approx.20km/h	Generation pulse occurs
	12	RR- ? GND (rear RH wheel speed sensor (-) input)	Input	Continuity	IG OFF	Yes continuity
	13	BAT ? GND (power for diagnosis memory)	Input	V	IG OFF	10~14V
	14	ENG+ ? GND (engine ECU communication (+) input)	Input	V	IG ON	Approx.2.5V *2
	16	TRC- ? GND (engine ECU commu nication (-) output)	Output	V	IG ON	Approx.2.5V *3
	17	GND4 ? body earth (GND)	Input	Continuity	IG OFF	Yes continuity
	18	GSS ? GND (G sensor sealed GND)	Input	Continuity	IG OFF	Yes continuity
	19	RL+ ? GND (rear LH wheel speed sensor(+) input)	Input	Oscilloscope	Driving vehicle at apprx.20km/h	Generation pulse occurs
	20	RL- ? GND (rear LH wheel speed sensor (-) input)	Input	Continuity	IG OFF	Yes continuity

C	22	ENG- ? GND (engine ECU communication (-) input)	Input	V	IG ON	Approx.2.5V *2
	24	TRC+ ? GND (engine ECU communication (+) output)	Output	V	IG ON	Approx.2.5V *3
D	1	R+ ? GND (power for relay drive)	Output	V	IG ON	10~14V
	2	SMC1 ? GND (master cylinder cut solenoid output1)	Output	V	IG ON, after elapsed approx.1.5 seconds	10~14V *1
	3	SMC2 ? GND (master cylinder cut solenoid output 2)	Output	V	IG ON, after elapsed approx.1.5 seconds	10~14V *1
	4	SRC2 ? GND (reservoir cut solenoid output 2)	Output	V	IG ON, after elapsed approx.1.5 seconds	10~14V *1
	5	SRC ? GND (reservoir cut solenoid output 1)	Output	V	IG ON, after elapsed approx.1.5 seconds	10~14V *1
	6	GND2 ? body earth (GND)	Input	Continuity	IG OFF	Yes continuity
	7	SFLR ? GND (front LH decompression solenoid output)	Output	V	IG ON, after elapsed approx.1.5 seconds	10~14V *1
	8	SRRH ? GND (rear prevention solenoid output)	Output	V	IG ON, after elapsed approx.1.5 seconds	10~14V *1
	9	SRRR ? GND (rear decompression solenoid output)	Output	V	IG ON, after elapsed approx.1.5 seconds	10~14V *1

D	10	VCM ? GND (master cylinder pressure sensor power output)	Output	V	IG ON	4.5~5.5V
	13	FR- ? GND (front RH wheel speed sensor (-) input)	Input	Continuity	IG OFF	Yes continuity
	14	FR+ ? GND (front RH wheel speed sensor (+) input)	Input	Oscilloscope	Driving vehicle at approx.20km/h	Generation pulse occurs
	15	FL- ? GND (front LH wheel speed sensor (-) input)	Input	Continuity	IG OFF	Yes continuity
	16	FL+ ? GND (front LH wheel speed sensor (+) input)	Input	Oscilloscope	Driving vehicle at approx.20km/h	Generation pulse occurs
	19	SR ? GND (solenoid relay output)	Output	V	IG ON, after elapsed approx.1.5 seconds	1.5V or less
	21	SFLH ? GND (front LH prevention solenoid output)	Output	V	IG ON, after elapsed approx.1.5 seconds	10~14V *1
	22	PMC ? GND (master cylinder pressure sensor input)	Input	V	IG ON, brake pedal OFF	1V or less
	23	E2 ? GND (ACC pressure sensor GND)	Input	Continuity	IG OFF	Yes continuity
	24	FSS ? GND (pressure sensor sealed GND)	Input	Continuity	IG OFF	Yes continuity

D	28	MT ? GND (motor monitor input)	Input	V	IG ON, after elapsed approx. 1.5 seconds	1.5V or less
	29	MR ? GND (motor relay output)	Output	V	IG ON, after elapsed approx.1.5 seconds	10~14V *1
	31	GND1 ? GND (GND)	Input	Continuity	IG ON	Yes continuity

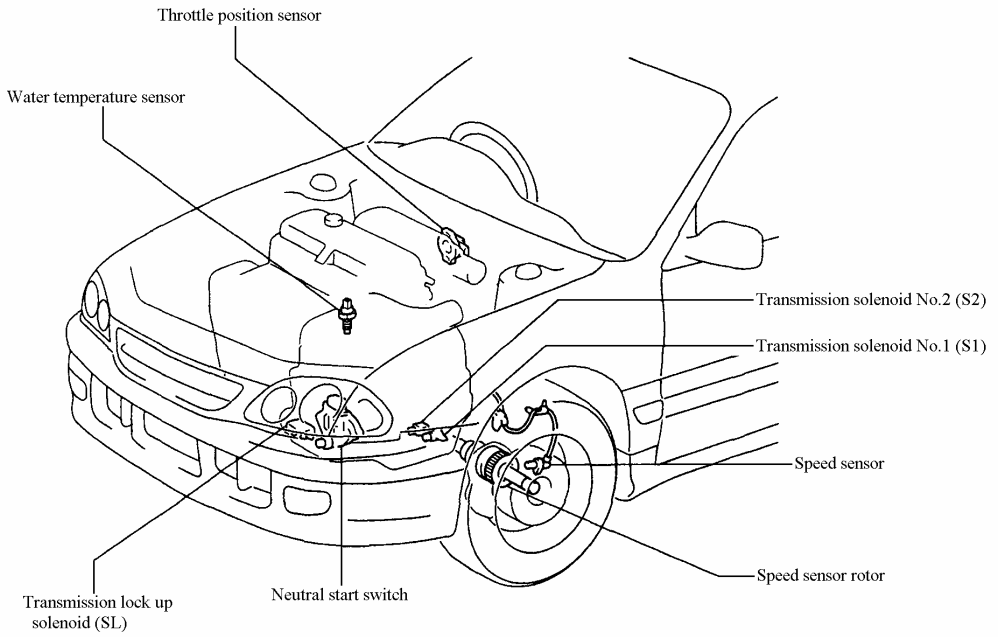
*1: No inspection required when ABS, TRC, VSC warning lamp ON (B5 terminal output 10~14V due to warning output. Other terminal output 0V caused by solenoid relay OFF due to fail safe function).

*2: When normal, output 1ms cycle and 0.5ms serial signal pulse occurs.

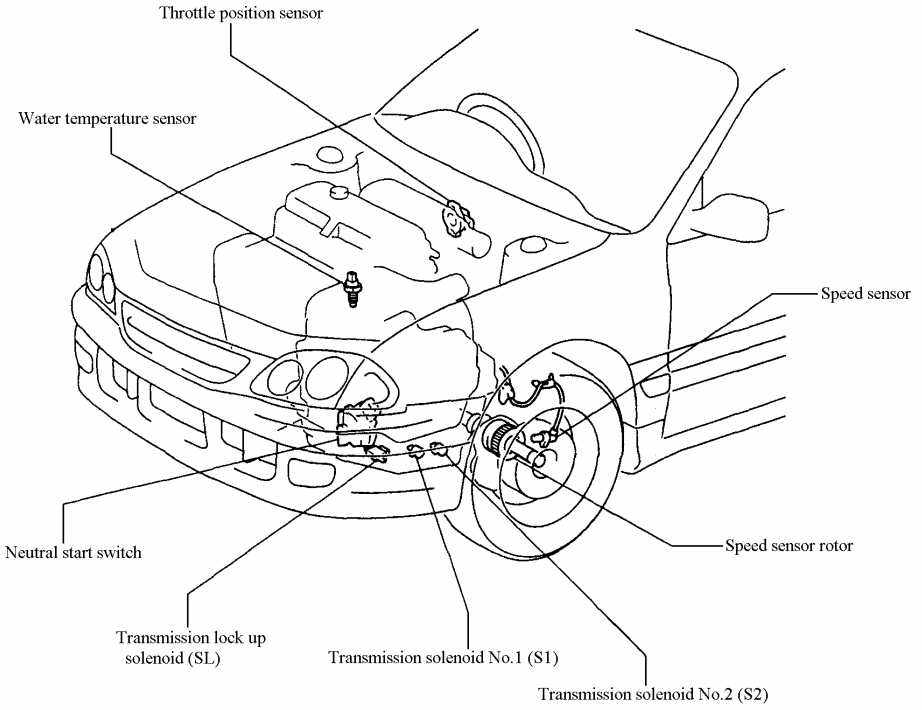
*3: When normal, output 2ms cycle and 0.5ms serial signal pulse occurs.

ECT Parts Location

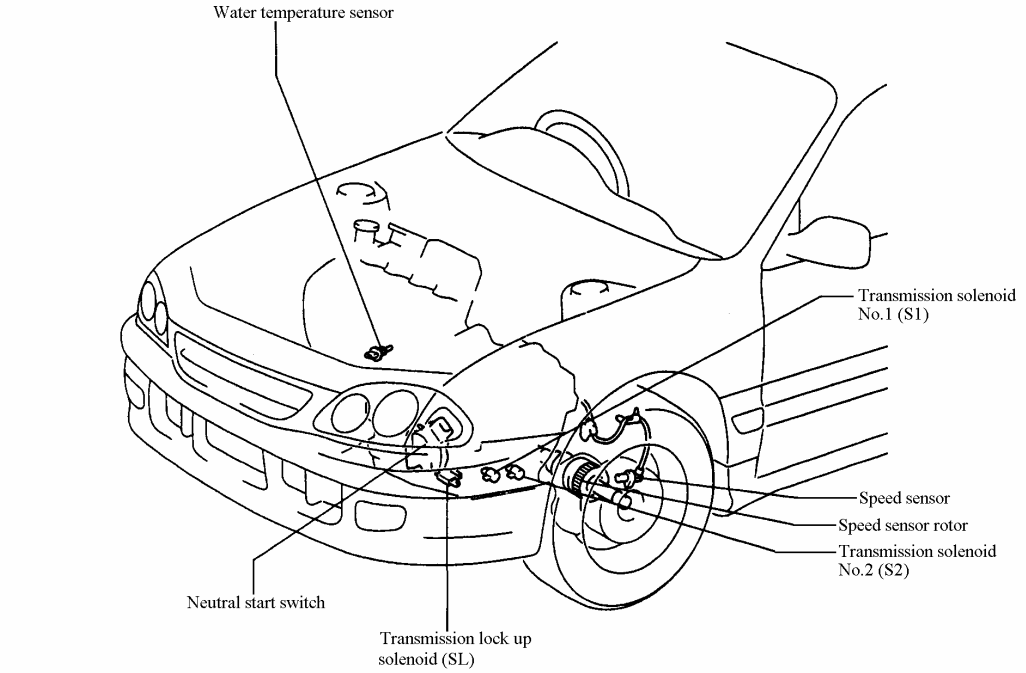
3S-FE (A247E)



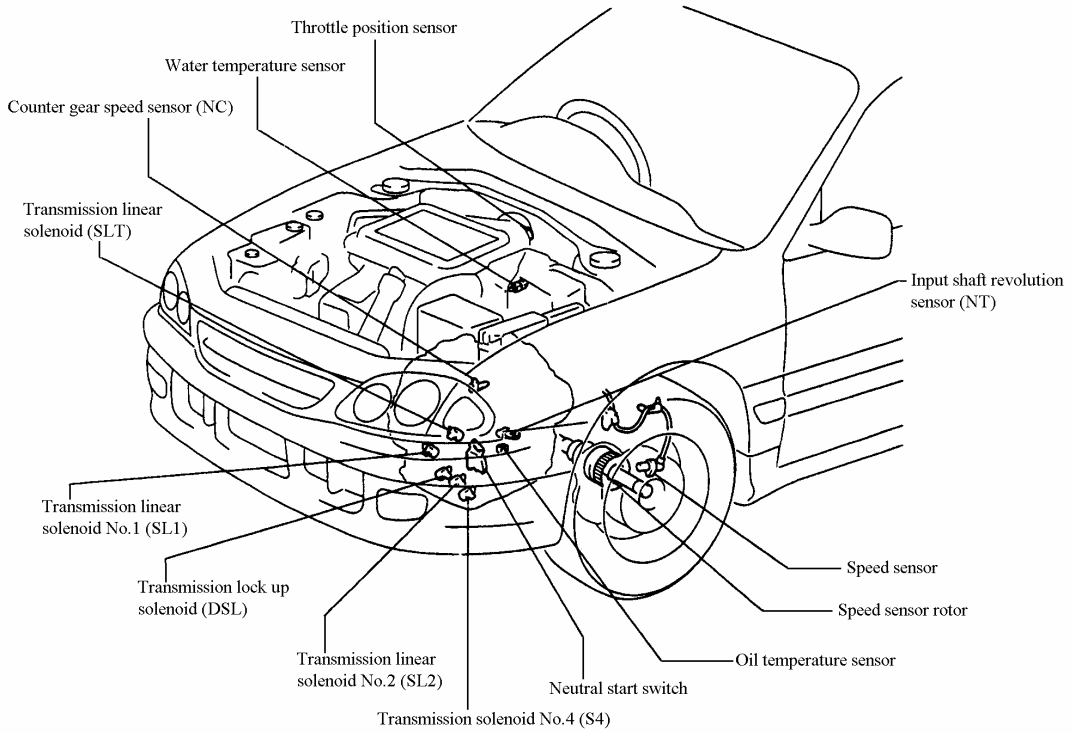
3S-FE (A243F) & 3S-GE (A243F)



3C-TE (A241F)



3S-GTE (U140F)



A24# ECT Diagnosis Trouble Codes List

Diagnosis Codes		Item [terminal symbol]	Condition	Lamp	Memory	Inspection part
SAE	Check Lamp		1. Condition 2. Symptom 3. Term 4. Others			
P0500	42	Speed sensor signal [SPD] (SP1) ( ): 3C-TE	1. Shift lever position other than P, N range, engine revolution 2000rpm or more. There is no fault on throttle position sensor 2. No speed sensor signal input 3. 1 seconds or more	O	O	• Wiring and connector (speed sensor signal) • Speed sensor • Speed meter • Engine control computer
P0710 *1	38	Oil temperature sensor signal [THO, E2]	1. When oil temperature sensor resistance is 79ohm or less OR elapsed15 minutes or more after started engine and 156k-ohm or more 3. 0.5 seconds or more	O	O	• Wiring and connector (oil temperature sensor signal) • Oil temperature sensor • Engine control computer
P0753	62	Solenoid No.1 signal [S1]	1. While driving with changing gear 2. Open or short in solenoid No.1 3. Detected 2 and memorised, more than 2 times then O/D OFF indicator lamp flashes	O	O	• Wiring and connector (solenoid No.1) • Solenoid No.1 • Engine control computer
P0758	63	Solenoid No.2 signal [S2]	1. While driving with changing gear 2. Open or short in solenoid No.2 3. Detected ‘2' and memorised, more than 2 times then O/D OFF indicator lamp flashes	O	O	• Wiring and connector (solenoid No.2) • Solenoid No.2 • Engine control computer
P0773	64	Lock up solenoid signal [SL]	1. Lock up vehicle speed area 2. Open or short in lock up solenoid 3. 1 seconds or less	X	O	• Wiring and connector (lock up solenoid) • Lock up solenoid • Engine control computer

P1705 *1	37	C2 drum speed sensor signal [NC2+, NC2-]	1. With 3rd or 4th gear, output shaft revolution is 1000rpm (vehicle speed 32km/h or more). There is no fault on speed sensor, solenoid No.1, solenoid No.2 2. Input shaft revolution 300rpm or less 3. 4 seconds or more 4. 2 trip	O	O	• Wiring and connector (NC2 sensor signal) • NC2 sensor • Automatic transaxle • Engine control computer
P1755 *1	68	Lock up linear solenoid signal [SLU+, SLU-]	1. Flex lock up vehicle speed area 2. Open or short in lock up linear solenoid 3. 1 second or more	X	O	• Wiring and connector (lock up linear solenoid) • Lock up linear solenoid • Engine control computer

*: 2 trip: condition 1, 2, 3 are stored temporary in ECU memory, after turned ignition switch from OFF to ON and then same fault codes detected again.

*1: 7A-FE only

NOTE: P0753 (62), P0758 (63), P0773 (64), P1755 (68) are parts of electrical fault, no indication with mechanical fault such as stick or port choked.

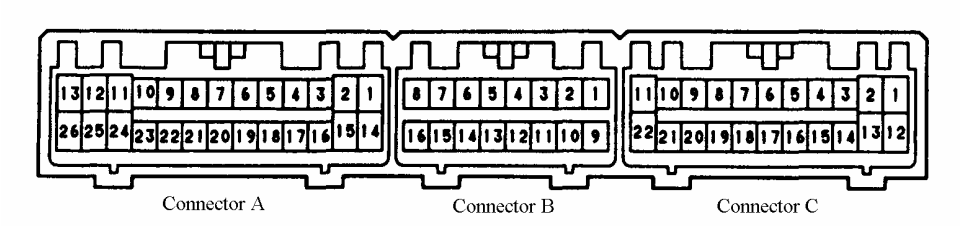
U140F Diagnosis Trouble Codes List

Diagnosis Codes		Item [terminal symbol]	Condition	Lamp	Memory	Inspection part
SAE	Check Lamp		1. Condition 2. Symptom 3. Term 4. Others			
P0500	42	Speed sensor signal [SPD]	1. Shift lever other than P, N range, while driving, there is no fault on water temperature sensor. 2. No speed sensor signal input 3. 1 second or more	O	O	• Wiring and connector (speed sensor) • Speed meter • Engine control computer
P0710	38	Oil temperature sensor signal [THO]	1. When oil temperature sensor resistance is 79ohm or less OR elapsed15 minutes or more after started engine and 156k-ohm or more 3. 0.5 seconds or more	O	O	• Wiring and connector (oil temperature sensor) • Oil temperature sensor • Engine control computer
P0753	62	Pressure control linear solenoid No.1 signal [SL1+, SL1-]	1. While driving vehicle with changing gear 2. Open or short in linear solenoid No.1 3. 1 second or more	O	O	• Wiring and connector (linear solenoid No.1) • Linear solenoid No.1 • Engine control computer
P0758	63	Pressure control linear solenoid No.2 signal [SL2+, SL2-]	1. While driving vehicle with changing gear 2. Open or short in linear solenoid No.2 3. 1 second or more	O	O	• Wiring and connector (linear solenoid No.2) • Linear solenoid No.2 • Engine control computer
P0773	64	Lock up solenoid [DSL]	1. Lock up vehicle speed area 2. Open or short in lock up solenoid 3. Detected ‘2’ twice continuously	X	O	• Wiring and connector (lock up solenoid) • Lock up solenoid • Engine control computer

P0768	65	Solenoid No.4 [S4]	1. While driving with changing gear between 3rd and 4th 2. Open or short in solenoid No.4 3. Detected '2' twice continuously	O	O	• Wiring and connector (solenoid No.4) • Solenoid No.4 • Engine control computer
P1725	37	Input shaft revolution sensor [NT+, NT-]	1. While driving with 2nd, 3rd and 4th at 50km/h or more, there is no fault on neutral start position switch & SL1, SL2 and S4 2. Turbine revolution 300rpm or less 3. 5 seconds or more	O	O	• Wiring and connector (NT sensor) • NT sensor • Engine control computer
P1730	67	Counter gear speed sensor signal [NC+, NC-]	1. Shift position other than P, N range, while driving vehicle at 50km/h 2. Counter shaft revolution 300rpm or less 3. 5 seconds or more	O	O	• Wiring and connector (NC sensor) • NC sensor • Automatic transaxle • Engine control computer
P1760	77	Line pressure control linear solenoid signal [SLT+, SLT -]	1. While engine running 2. Open or short in line oil pressure control linear solenoid 3. 1 second or more	O	O	• Wiring and connector (line oil pressure control linear solenoid) • Line oil pressure linear solenoid • Engine control computer

NOTE: P0753 (62), P0758 (63), P0773 (64), P0768 (65), P1760 (77) are parts of electrical fault, no indication with mechanical fault such as stick or port choked.

AT211G 7A-FE A245E ECT ECU Pin Configuration

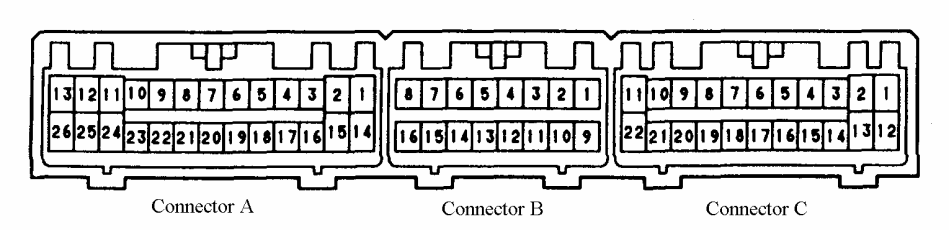


Connector	Terminal No.	Terminal Name	Input / Output	Item	Condition	Standard
A	2	S1 [E1]	Output	V	When vehicle is parked, shift lever N range	0~1.5V
					When vehicle is parked, shift lever D range	9~14V
	6 [19]	NC2+ [NC2-]	Input	Waveform	3rd or O/D with driving	Generation pulse occurs
	8	SL [E1]	Output	V	When vehicle is parked	0~1.5V
	13	E01 [body earth]	-	Continuity	Always	Yes continuity
	14	E1 [body earth]	-	Continuity	Always	Yes continuity
	15	S2 [E1]	Output	V	When vehicle is parked	0~1.5V
	23 [22]	SLU+ [SLU-]	Output	Waveform	While engine idling	Generation pulse occurs
	26	E02 [body earth]	-	Continuity	Always	Yes continuity
B	1	VC [E1]	Output	V	Engine stopped, IG ON	4.5~5.5V
	4	THW [E1]	Input	V	Coolant temperature 60~120°C	0.2~1.0V
	9	E2 [body earth]	-	Continuity	Always	Yes continuity
	10	THO [E1]	Input	V	Transaxle oil temperature 60~120°C	0.5~2.8V
C	1	BATT [E1]	Input	V	Always	9~14V
	4	STP [E1]	Input	V	Depress brake pedal (switch ON)	7.5~14V
					Release brake pedal (switch OFF)	0~1.5V
	6	R [E1]	Input	V	Shift lever R range	7.5~14V
					Shift lever other than R range	0~1.5V
	7	OD2 [E1]	Input	V	Transmission control switch ON (O/D permit)	9~14V
					Transmission control switch OFF (O/D prohibit)	0~3V

C	8	2 [E1]	Input	V	Shift lever 2 range	7.5~14V
					Shift lever other than 2 range	0~1.5V
	9	SPD [E1]	Input	Waveform	When driving vehicle at approx.20km/h	Generation pulse occurs
	12	+B [E1]	Input	V	Engine stopped, IG ON	9~14V
	18	MANU [E1]	Input	V	Pattern select switch “MANU” ON	7.5~14V
					Pattern select switch “MANU” OFF	0~1.5V
	19	PWR [E1]	Input	V	Pattern select switch “POWER” ON	7.5~14V
					Pattern select switch “POWER” OFF	0~1.5V
	20	L [E1]	Input	V	Shift lever L range	7.5~14V
					Shift lever other than L range	0~1.5V
	22	NSW [E1]	Input	V	Shift lever P, N range	0~3V
					Shift lever other than P, N range	9~14V

[ ]: Connect negative leads of electrical tester

ST210G 3S-FE A247E ECT ECU Pin Configuration

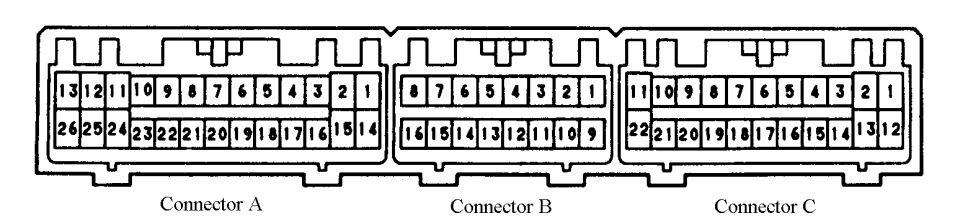


Connector	Terminal No.	Terminal Name	Input / Output	Item	Condition	Standard
A	1	NSW [E1]	Input	V	Shift lever P, N range	0~3V
					Shift lever other than P, N range	9~14V
	3	P [E1]	Input	V	Pattern select switch “POWER” ON	7.5~14V
					Pattern select switch “POWER” OFF	0~1.5V
	13	E01 [body earth]	-	Continuity	Always	Yes continuity
	14	E1 [body earth]	-	Continuity	Always	Yes continuity
	18	M [E1]	Input	V	Pattern select switch “MANU” ON	7.5~14V
					Pattern select switch “MANU” OFF	0~1.5V
	21	SL [E1]	Output	V	When vehicle is parked	0~1.5V
	22	S2 [E1]	Output	V	When vehicle is parked	0~1.5V
	23	S1 [E1]	Output	V	When vehicle is parked, shift lever N range	0~1.5V
					When vehicle is parked, shift lever D range	9~14V
	26	E02 [body earth]	-	Continuity	Always	Yes continuity
B	1	VCC [E1]	Output	V	When engine stopped, IG ON	4.5~5.5V
	4	THW [E1]	Input	V	Coolant temperature 60~120°C	0.2~1.0V
	9	E2 [body earth]	-	Continuity	Always	Yes continuity
	11	VTA [E1]	Input	V	Fully close throttle valve	0.3~0.8V
					Fully open throttle valve	3.2~4.9V
C	1	BATT [E1]	Input	V	Always	9~14V
	4	B/K [E1]	Input	V	Depress brake pedal (switch ON)	7.5~14V
					Release brake pedal (switch OFF)	0~1.5V
	9	SPD [E1]	Input	Waveform	While driving vehicle at approx.20km/h	Generation pulse occurs

C	12	+B [E1]	Input	V	Engine stopped, IG ON	9~14V
	13	R [E1]	Input	V	Shift lever R range	7.5~14V
					Shift lever other than R range	0~1.5V
	18	2 [E1]	Input	V	Shift lever 2 range	7.5~14V
					Shift lever other than 2 range	0~1.5V
	19	L [E1]	Input	V	Shift lever L range	7.5~14V
					Shift lever other than L range	0~1.5V
	22	OD2 [E1]	Input	V	Transmission control switch ON (O/D permit)	9~14V
					Transmission control switch OFF (O/D prohibit)	0~3V

[ ]: Connect negative leads of electrical tester

ST215G 3S-FE A243F ECT ECU Pin Configuration

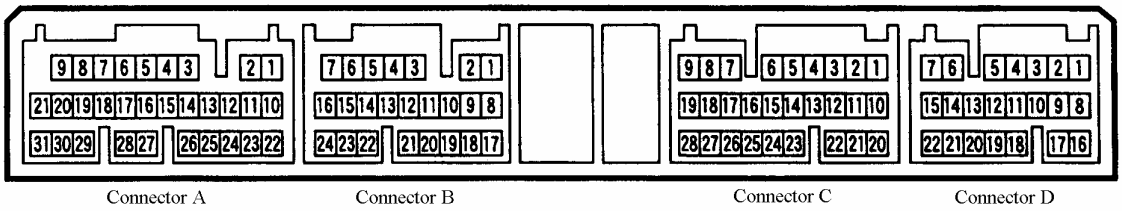


Connector	Terminal No.	Terminal Name	Input / Output	Item	Condition	Standard
A	1	NSW [E1]	Input	V	Shift lever P, N range	0~3V
					Shift lever other than P, N range	9~14V
	3	P [E1]	Input	V	Pattern select switch “POWER” ON	7.5~14V
					Pattern select switch “POWER” OFF	0~1.5V
	13	E01 [body earth]	-	Continuity	Always	Yes continuity
	14	E1 [body earth]	-	Continuity	Always	Yes continuity
	18	M [E1]	Input	V	Pattern select switch “MANU” ON	7.5~14V
					Pattern select switch “MANU” OFF	0~1.5V
	21	SL [E1]	Output	V	When vehicle is parked	0~1.5V
	22	S2 [E1]	Output	V	When vehicle is parked	0~1.5V
	23	S1 [E1]	Output	V	When vehicle is parked, shift lever N range	0~1.5V
					When vehicle is parked, shift lever D range	9~14V
	26	E02 [body earth]	-	Continuity	Always	Yes continuity
B	1	VCC [E1]	Output	V	When engine stopped, IG ON	4.5~5.5V
	4	THW [E1]	Input	V	Coolant temperature 60~120°C	0.2~1.0V
	9	E2 [body earth]	-	Continuity	Always	Yes continuity
	11	VTA [E1]	Input	V	Fully close throttle valve	0.3~0.8V
					Fully open throttle valve	3.2~4.9V
C	1	BATT [E1]	Input	V	Always	9~14V
	4	B/K [E1]	Input	V	Depress brake pedal (switch ON)	7.5~14V
					Release brake pedal (switch OFF)	0~1.5V
	9	SPD [E1]	Input	Waveform	While driving vehicle at approx.20km/h	Generation pulse occurs

C	12	+B [E1]	Input	V	Engine stopped, IG ON	9~14V
	13	R [E1]	Input	V	Shift lever R range	7.5~14V
					Shift lever other than R range	0~1.5V
	18	2 [E1]	Input	V	Shift lever 2 range	7.5~14V
					Shift lever other than 2 range	0~1.5V
	19	L [E1]	Input	V	Shift lever L range	7.5~14V
					Shift lever other than L range	0~1.5V
	22	OD2 [E1]	Input	V	Transmission control switch ON (O/D permit)	9~14V
					Transmission control switch OFF (O/D prohibit)	0~3V

[ ]: Connect negative leads of electrical tester

ST215G 3S-GE A243F ECT ECU Pin Configuration

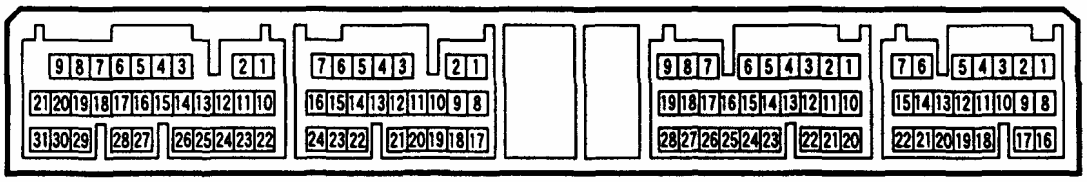


Connector	Terminal No.	Terminal Name	Input / Output	Item	Condition	Standard
A	6	SL [E2]	Output	V	Vehicle is parked	0~1.5V
	7	S1 [E1]	Output	V	Vehicle is parked, shift lever N range	0~1.5V
					Vehicle is parked, shift lever D range	9~14V
	8	S2 [E2]	Output	V	Vehicle is parked	0~1.5V
	21	E01 [body earth]	-	Continuity	Always	Yes continuity
	31	E02 [body earth]	-	Continuity	Always	Yes continuity
B	2	VC [E1]	Output	V	Engine stopped, ignition switch ON	4.5~5.5V
	13	THW [E1]	Input	V	Coolant temperature 30~120°C (after warmed up)	0.2~1.0V
	17	E1 [body earth]	-	Continuity	Always	Yes continuity
	18	E2 [body earth]	-	Continuity	Always	Yes continuity
C	2	R [E1]	Input	V	Shift lever R range	7.5~14V
					Shift lever other than R range	0~1.5V
	3	2 [E1]	Input	V	Shift lever 2 range	7.5~14V
					Shift lever other than 2 range	0~1.5V
	6	STP [E1]	Input	V	Depress brake pedal (switch ON)	7.5~14V
					Release brake pedal (switch OFF)	0~1.5V
	10	OD2 [E1]	Input	V	Transmission control switch (O/D permit)	9~14V
					Transmission control switch (O/D prohibit)	0~3V
	11	PWR [E1]	Input	V	Pattern select switch “POWER” ON	7.5~14V
					Patten select switch “POWER” OFF	0~1.5V
	12	L [E1]	Input	V	Shift lever L range	7.5~14V
					Shift lever other than L range	0~1.5V

C	20	NSW [E1]	Input	V	Shift lever P, N range	0~3V
					Shift lever other than P, N range	9~14V
	21	MNU [E1]	Input	V	Pattern select switch “MANU” ON	7.5~14V
					Pattern select switch “MANU” OFF	0~1.5V
	22	SPD [E1]	Input	Waveform	When driving vehicle at approx.20km/h	Generation pulse occurs
D	1	BATT [E1]	Input	V	Always	9~14V
	16	+B [E1]	Input	V	Engine stopped, IG ON	9~14V

[ ]: Connect negative leads of electrical tester

ST215W 3S-GTE U140F ECT ECU Pin Configuration



Connector A Connector B Connector C Connector D

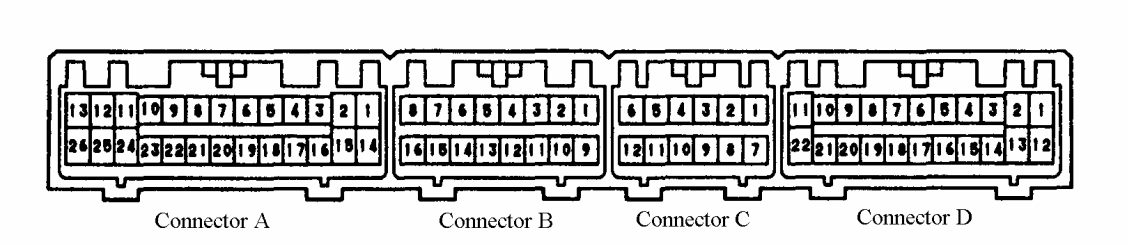
Connector	Terminal No.	Terminal Name	Input / Output	Item	Condition	Standard
A	6 [5]	SLT+ [SLT-]	Output	Waveform	While engine idling	Generation pulse occurs
	7 [9]	SL1+ [SL1-]	Output	Waveform	While engine idling	Generation pulse occurs
	8 [19]	SL2+ [SL2-]	Output	Waveform	While engine idling	Generation pulse occurs
	14 [26]	NC+ [NC-]	Input	Waveform	With 3rd gear, vehicle speed at 30km/h, when engine revolution 1400 rpm	Generation pulse occurs
	16 [15]	NT+ [NT-]	Input	Waveform	While engine idling	Generation pulse occurs
	19	DSL [E1]	Output	Waveform	When vehicle speed 50km/h, when changing gear between 3rd and 4th ar	Generation pulse occurs
	21	E01 [body earth]	-	Continuity	Always	Yes continuity
	31	E02 [body earth0	-	Continuity	Always	Yes continuity
B	2	VC [E1]	Output	V	Engine stopped, IG ON	4.5~5.5V
	13	THO [E1]	Input	V	Transaxle oil temperature 10~145°C	4~0V
	14	THW [E1]	Input	V	Coolant temperature 60~120°C	0.2~1.0V
	17	E1 [body earth]	-	Continuity	Always	Yes continuity
	18	E2 [body earth]	-	Continuity	Always	Yes continuity
	23	VTA1 [E1]	Input	V	Throttle valve fully close	0.3~0.8V
					Throttle valve fully open	3.2~4.9V
C	1	D [E1]	Input	V	Shift lever D range	7.5~14V
					Shift lever other than D range	0~1.5V

<table>
<tr><td rowspan="20">C</td><td rowspan="2">2</td><td rowspan="2">R [E1]</td><td rowspan="2">Input</td><td rowspan="2">V</td><td>Shift lever R range</td><td>7.5~14V</td></tr>
<tr><td>Shift lever other than R range</td><td>0~1.5V</td></tr>
<tr><td rowspan="2">3</td><td rowspan="2">2 [E1]</td><td rowspan="2">Input</td><td rowspan="2">V</td><td>Shift lever 2 range</td><td>7.5~14V</td></tr>
<tr><td>Shift lever other than 2 range</td><td>0~1.5V</td></tr>
<tr><td rowspan="2">5</td><td rowspan="2">TC [E1]</td><td rowspan="2">Input</td><td rowspan="2">V</td><td>Engine stopped, IG ON</td><td>9~14V</td></tr>
<tr><td>Connected TC and CG of DLC3 connector</td><td>0~3V</td></tr>
<tr><td rowspan="2">6</td><td rowspan="2">STP [E1]</td><td rowspan="2">Input</td><td rowspan="2">V</td><td>Depress brake pedal (switch ON)</td><td>7.5~14V</td></tr>
<tr><td>Release brake pedal (switch OFF)</td><td>0~1.5V</td></tr>
<tr><td rowspan="2">7
8
9</td><td rowspan="2">3LP [E1]
2LP [E1]
1LP [E1]</td><td rowspan="2">Output</td><td rowspan="2">V</td><td rowspan="2">When manual shift mode;<table><tr><td colspan="2">Gear</td><td rowspan="2">1</td><td rowspan="2">2</td><td rowspan="2">3</td><td rowspan="2">4</td></tr><tr><td>Range</td><td>Terminal</td></tr><tr><td>D Range</td><td>1LP</td><td>1</td><td>0</td><td>1</td><td>0</td></tr><tr><td>2 Range</td><td>2LP</td><td>0</td><td>1</td><td>1</td><td>0</td></tr><tr><td>3 Range</td><td>3LP</td><td>0</td><td>0</td><td>0</td><td>1</td></tr></table></td><td rowspan="2">1 = 0V
0 = Open
or 9~14V</td></tr>
<tr><td rowspan="2">10</td><td rowspan="2">OD2 [E1]</td><td rowspan="2">Input</td><td rowspan="2">V</td><td>Transmission control switch ON (P/D rmit)</td><td>9~14V</td></tr>
<tr><td>Transmission control switch OFF (O/D ohibit)</td><td>0~3V</td></tr>
<tr><td rowspan="2">12</td><td rowspan="2">L [E1]</td><td rowspan="2">Input</td><td rowspan="2">V</td><td>Shift lever L range</td><td>7.5~14V</td></tr>
<tr><td>Shift lever other than L range</td><td>0~1.5V</td></tr>
<tr><td rowspan="2">16</td><td rowspan="2">SPTL
[E1]</td><td rowspan="2">Output</td><td rowspan="2">V</td><td>When manual shift mode</td><td>0V</td></tr>
<tr><td>When other than manual shift mode</td><td>Open,
9~14V</td></tr>
<tr><td rowspan="2">18</td><td rowspan="2">SPT [E1]</td><td rowspan="2">Input</td><td rowspan="2">V</td><td>Manual shift mode ON</td><td>0~3V</td></tr>
<tr><td>Manual shift mode OFF</td><td>9~14V</td></tr>
<tr><td rowspan="2">19</td><td rowspan="2">THOL
[E1]</td><td rowspan="2">Output</td><td rowspan="2">V</td><td>Always</td><td>9~14V</td></tr>
<tr><td>When AT oil temperature is HIGH (oil mperature warning lamp ON)</td><td>0~3V</td></tr>
<tr><td rowspan="2">20</td><td rowspan="2">NSW [E1]</td><td rowspan="2">Input</td><td rowspan="2">V</td><td>Shift lever P, N range</td><td>0~3V</td></tr>
<tr><td>Shift lever other than P, N range</td><td>9~14V</td></tr>
<tr><td>22</td><td>SPD [E1]</td><td>Input</td><td>Waveform</td><td>When vehicle speed at approx.20km/h</td><td>Generation pulse occurs</td></tr>
</table>

D	4	DLP [E1]	Output	V	Shift lever D range	9~14V
					Shift lever other than D range	0~3V
	9	SFTU [E1]	Input	V	Shift switch UP ON	0~3V
					Shift switch UP OFF	9~14V
	16	SFTD [E1]	Input	V	Shift switch DOWN ON	0~3V
					Shift switch DOWN OFF	9~14V
	19	MLP [E1]	Output	V	Manual shift mode- D range / 2 range / L ng	0~3V
					Manual shift mode – other than D / 2 / L nge	9~14V

[ ]: Connect negative leads of electrical tester

CT216G 3C-TE A241F ECT ECU Pin Configuration

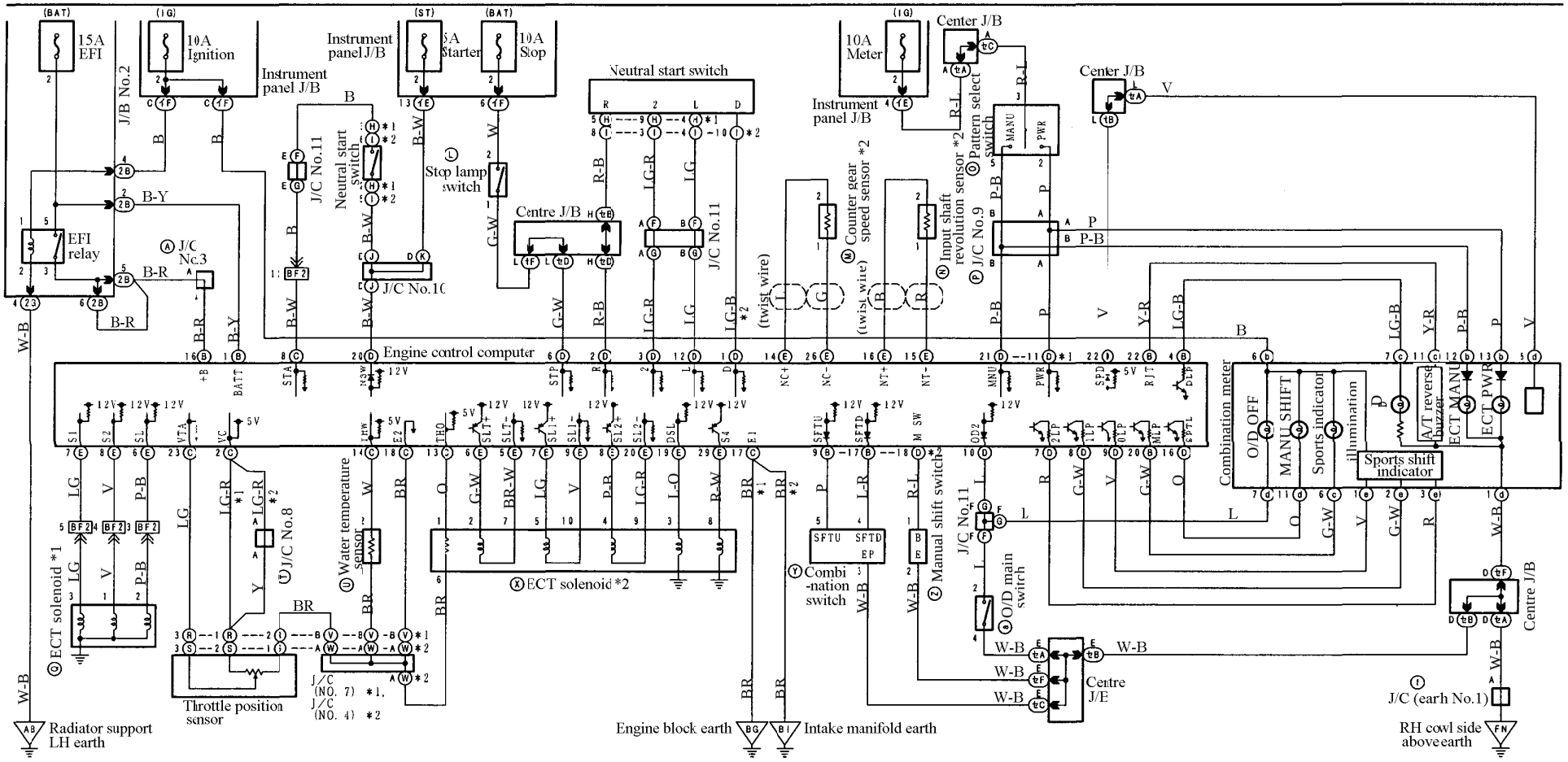


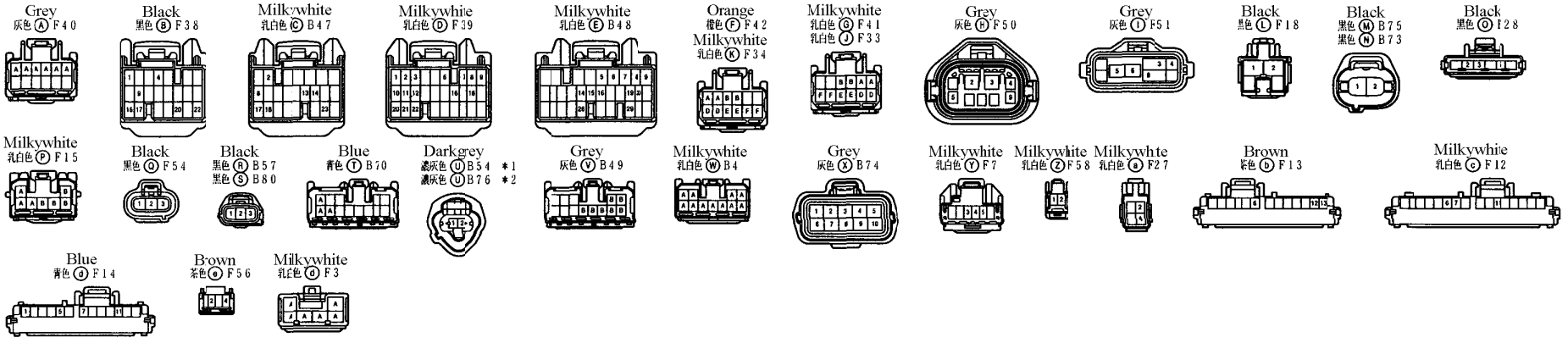
Connector	Terminal No.	Terminal Name	Input / Output	Item	Condition	Standard
A	1	S2 [E1]	Output	V	When vehicle is parked	0~1.5V
	2	S1 [E1]	Output	V	When vehicle is parked, shift lever N range	0~1.5V
					When vehicle is parked, shift lever D range	9~14V
	4	2 [E1]	Input	V	Shift lever 2 range	7.5~14V
					Shift lever other than 2 range	0~1.5V
	5	L [E1]	Input	V	Shift lever L range	7.5~14V
					Shift lever other than L range	0~1.5V
	6	R [E1]	Input	V	Shift lever R range	7.5~14V
					Shift lever other than R range	0~1.5V
	13	E01 [body earth]	-	Continuity	Always	Yes continuity
	14	E1 [body earth]	-	Continuity	Always	Yes continuity
	15	SL [E1]	Output	V	When vehicle is parked	0~1.5V
	26	E02 [body earth]	-	Continuity	Always	Yes continuity
B	1	VC [E1]	Output	V	IG ON	4.5~5.5V
	4	THW [E1]	Input	V	Coolant temperature 60~120°C (after armed up engine)	0.2~1.0V
	9	E2 [body earth]	-	Continuity	Always	Yes continuity
C	5	VA [E1]	Input	V	Accelerator pedal fully close	0.5~1.5V
					Accelerator pedal fully open	2.9~4.9V
D	1	BATT [E1]	Input	V	Always	9~14V
	9	SP1 [E1]	Input	Waveform	When vehicle speed at approx.20km/h	Generation pulse occurs

D	12	+B [E1]	Input	V	IG ON	9~14V
	16	OD2 [E1]	Input	V	Transmission control switch ON (O/D rmit)	9~14V
					Transmission control switch OFF (O/D ohibit)	0~3V
	19	STP [E1]	Input	V	Stop lamp switch ON	7.5~14V
					Stop lamp switch OFF	0~1.5V
	22	NSW [E1]	Input	V	Shift lever P, N range	0~3V
					Shift lever other than P, N range	9~14V

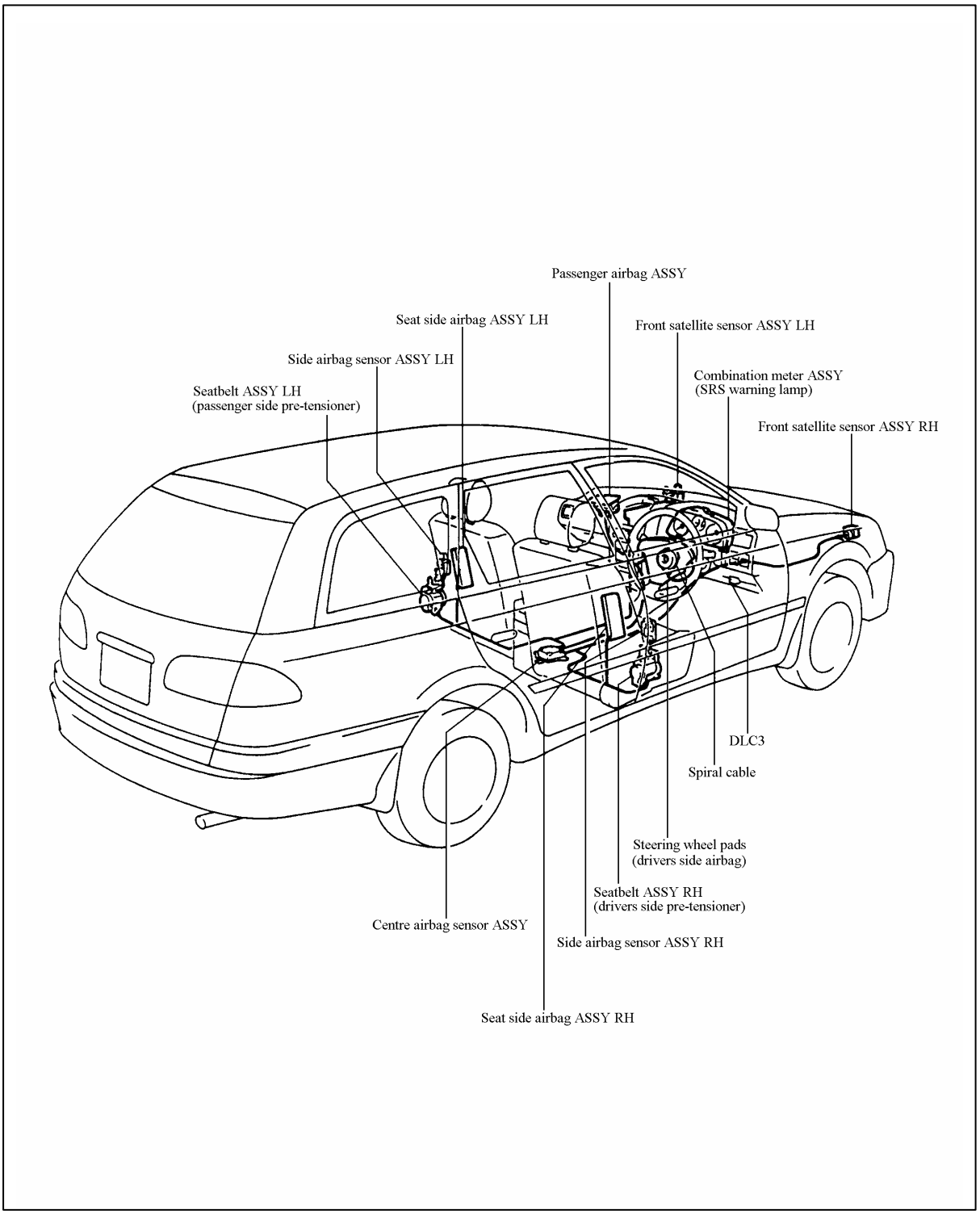
[ ]: Connect negative leads of electrical tester

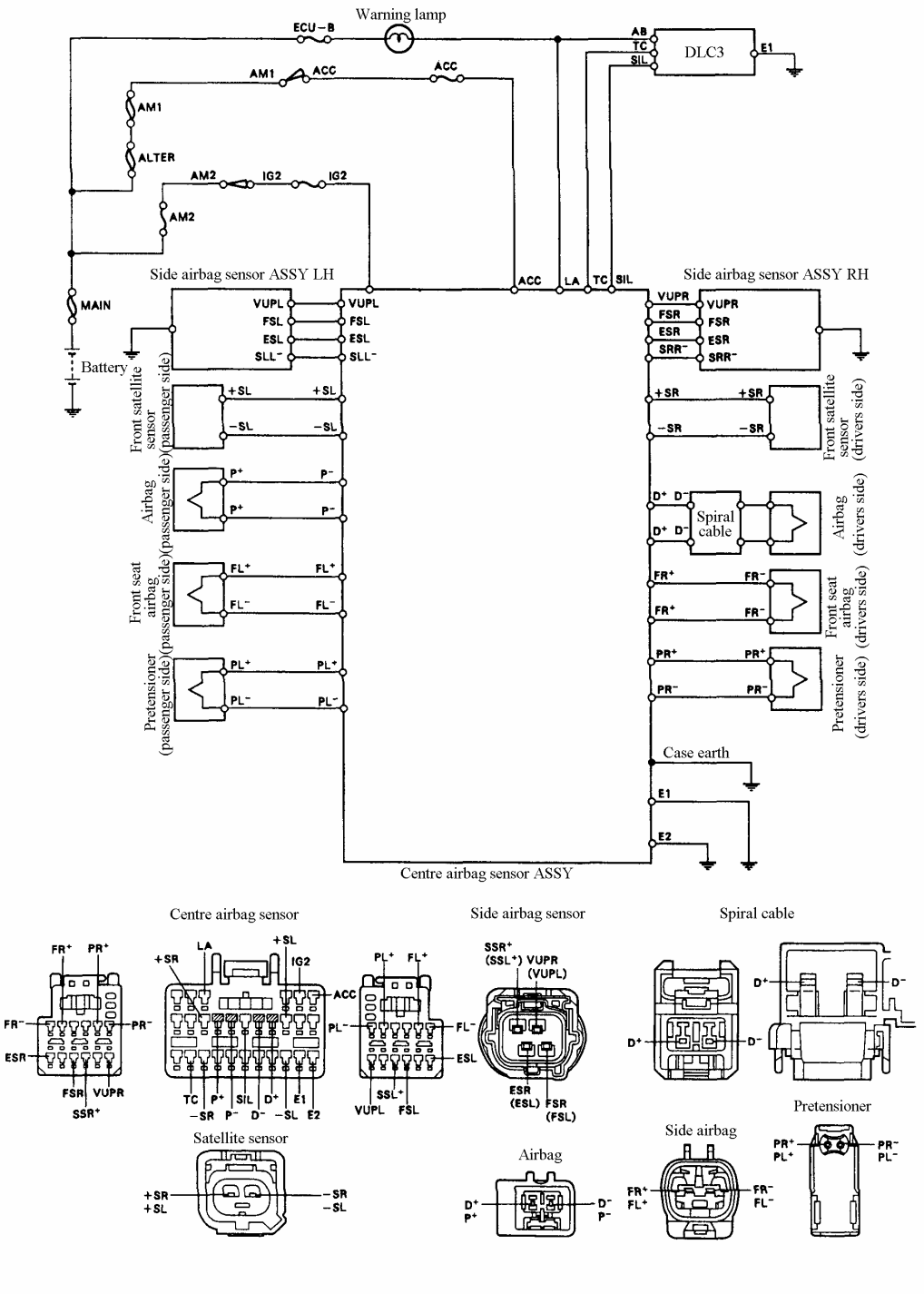
*1 : 3S-GE
*2 : 3S-GTE





SRS Airbag Parts Location




Warning lamp
ECU-B
AB
TC
SIL
DLC3
E1
AM1
ACC
ACC
AM1
ALTER
AM2
IG2
IG2
AM2
MAIN
Battery
Side airbag sensor ASSY LH
ACC
LA
TC
SIL
Side airbag sensor ASSY RH
VUPL
FSL
ESL
SLL⁻
VUPR
FSR
ESR
SRR⁻
Front satellite sensor (passenger side)
+SL
−SL
Front satellite sensor (drivers side)
+SR
−SR
Airbag (passenger side)
P⁺
P⁻
Spiral cable
D⁺ D⁻
Airbag (drivers side)
Front seat airbag (passenger side)
FL⁺
FL⁻
Front seat airbag (drivers side)
FR⁺
FR⁻
Pretensioner (passenger side)
PL⁺
PL⁻
Pretensioner (drivers side)
PR⁺
PR⁻
Case earth
E1
E2
Centre airbag sensor ASSY
Centre airbag sensor
Side airbag sensor
Spiral cable
FR⁺ PR⁺
FR⁻ PR⁻
ESR
FSR VUPR
SSR⁺
LA
+SL
+SR
IG2
ACC
TC P⁺ SIL D⁺ E1
−SR P⁻ D⁻ −SL E2
PL⁺ FL⁺
PL⁻ FL⁻
ESL
SSL⁺
VUPL FSL
SSR⁺ (SSL⁺) VUPR (VUPL)
ESR (ESL) FSR (FSL)
D⁺ D⁻
Pretensioner
Satellite sensor
+SR +SL −SR −SL
Airbag
D⁺ P⁺ D⁻ P⁻
Side airbag
FR⁺ FL⁺ FR⁻ FL⁻
PR⁺ PL⁺ PR⁻ PL⁻

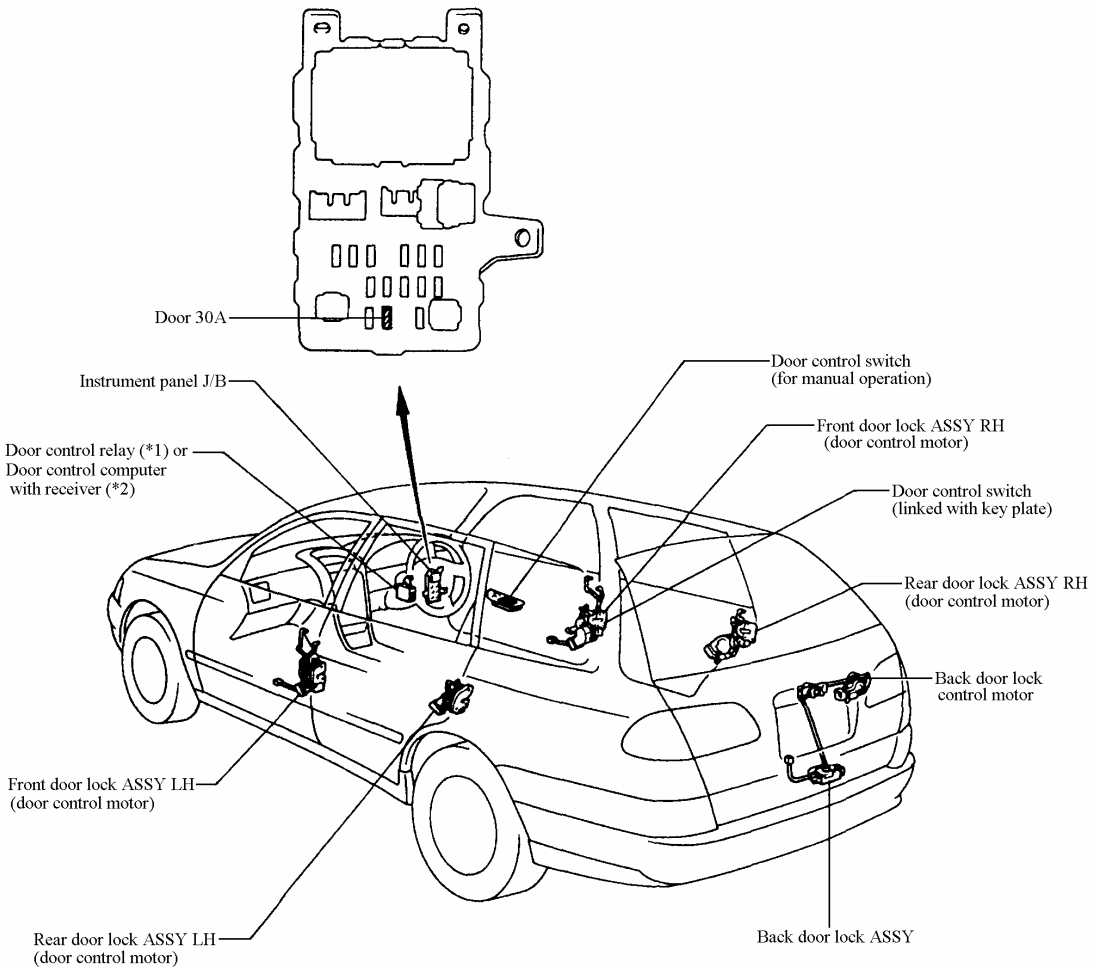
SRS Airbag Diagnosis Trouble Codes List

Warning lamp code		S200 reading code		Condition
Drivers side	Passengers side	Drivers side	Passengers side	
11		B0102		• Short circuit between centre airbag sensor ASSY and airbag (drivers side) wiring harness. • Short circuit between centre airbag sensor ASSY and airbag (passengers side) wiring harness. • Safing sensor in centre airbag sensor ASSY is always ON.
12		B0103		• Short to the power between centre airbag sensor ASSY and airbag (drivers side) wiring harness. • Short to the ground between centre airbag sensor ASSY and airbag (passengers side) wiring harness.
13	-	B0100	-	• Short circuit in squib circuit of airbag (drives side). • Short circuit between centre airbag sensor ASSY and airbag (drivers side) wiring harness.
14	-	B0101	-	• Open circuit in squib circuit of airbag (drives side). • Open circuit between centre airbag sensor ASSY and airbag (drivers side) wiring harness.
15	-	B1156	-	• Open circuit between centre airbag sensor ASSY and satellite sensor ASSY (drivers side) wiring harness • Short to the power between centre airbag sensor ASSY and satellite sensor ASSY wiring harness. • Centre airbag sensor ASSY internal fault.
		B1157	-	• Short circuit between centre airbag sensor ASSY and satellite sensor ASSY (drivers side) wiring harness. • Short circuit in satellite sensor ASSY (drivers side). • Centre airbag sensor ASSY internal fault.

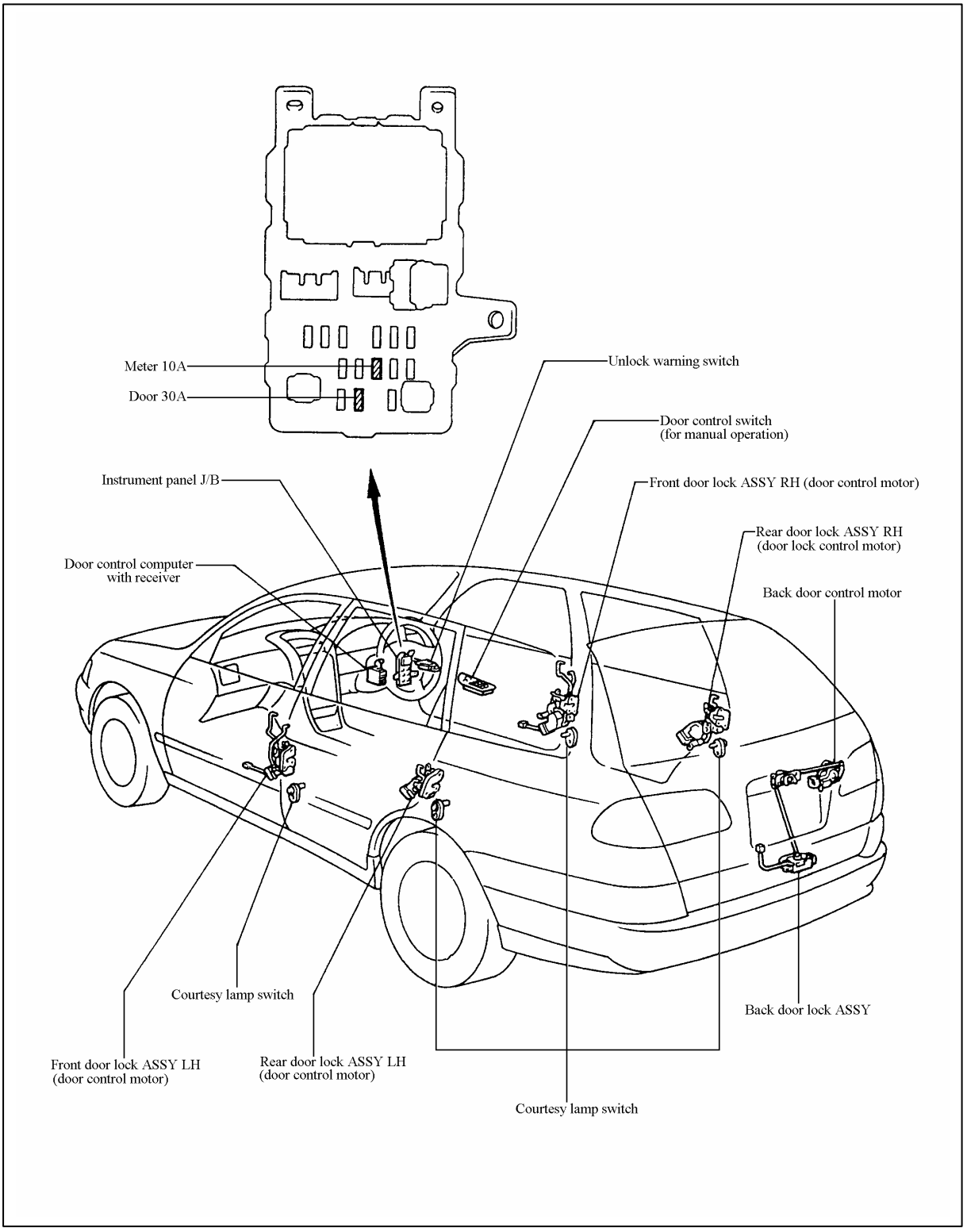
-	16	-	B1158	• Open circuit between centre airbag sensor ASSY and satellite sensor ASSY (passengers side) wiring harness. • Short to the power between centre airbag sensor ASSY and satellite sensor ASSY (passengers side) wiring harness. • Centre airbag sensor ASSY internal fault.
		-	B1159	• Short circuit between centre airbag sensor ASSY and satellite sensor ASSY (passengers side) wiring harness. • Short circuit in satellite sensor ASSY (passengers side). • Centre airbag sensor ASSY internal fault.
31		B1100		• Centre airbag sensor ASSY internal fault.
32	33	B1140	B1141	• Side airbag sensor ASSY internal fault.
41	45	B0112	B0117	• Short to the earth between centre airbag sensor ASSY and front side airbag wiring harness. • Safing sensor in centre airbag sensor ASSY is always ON.
42	46	B0113	B0118	• Short to the power between centre airbag sensor ASSY and front side airbag wiring harness.
43	47	B0110	B0115	• Short circuit in squib of front side airbag. • Short circuit between centre airbag sensor ASSY and front side airbag wiring harness.
44	48	B0111	B0116	• Open circuit in squib of front side airbag. • Open circuit between centre airbag sensor ASSY and front side airbag wiring harness.
-	53	-	B0105	• Short circuit in squib of airbag (passengers side) • Short circuit between centre airbag sensor ASSY and airbag (passengers side) wiring harness.
-	54	-	B0106	• Open circuit in squib of airbag (passengers side) • Open circuit between centre airbag sensor ASSY and airbag (passengers side) wiring harness.

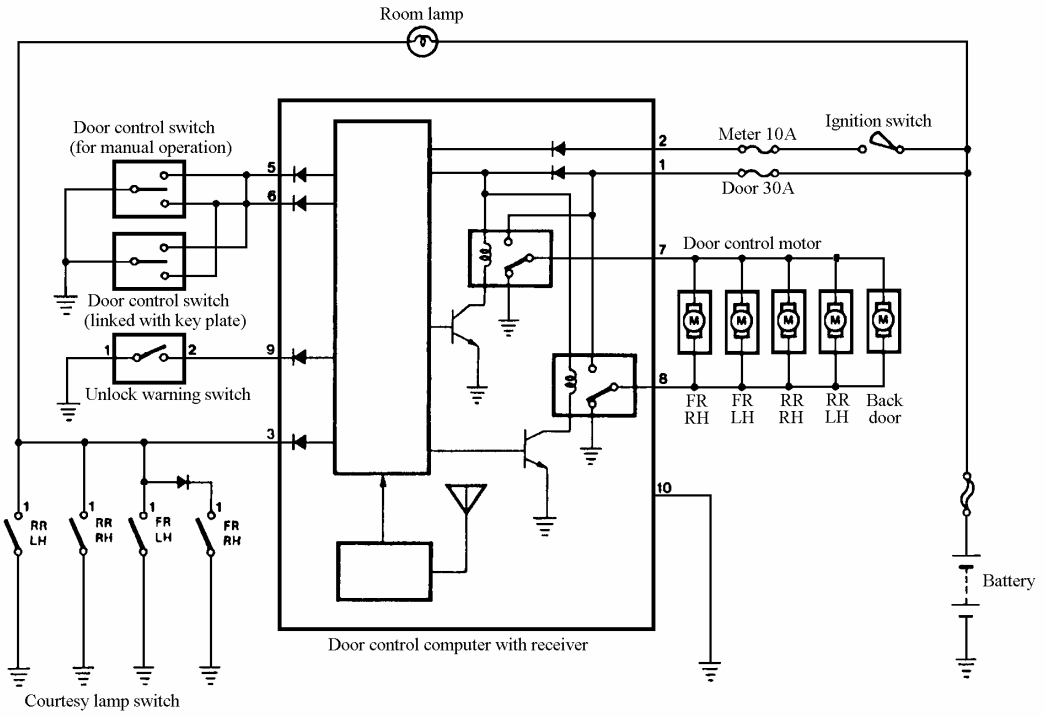
61	B0137			• Short to the earth between centre airbag sensor ASSY and drivers side or passengers side pre-tensioner ASSY wiring harness.
62	B0133			• Short to the power between centre airbag sensor ASSY and pre-tensioner ASSY wiring harness. • Short to the power between centre airbag sensor ASSY and airbag wiring harness. • Short to the power between centre airbag sensor ASSY and side airbag wiring harness.
63	73	B0130	B0135	• Short circuit in squib of pre-tensioner ASSY. • Short circuit between centre airbag sensor ASSY and pre-tensioner wiring harness wiring harness.
64	74	B0131	B0136	• Open circuit in squib of pre-tensioner ASSY. • Open circuit between centre airbag sensor ASSY and pre-tensioner wiring harness.

Electric Door Lock Control Parts Location

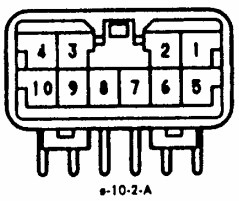


Wireless Remote Door Lock Control Parts Location



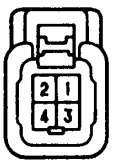


Door control computer with receiver



e-10-2-A

Unlock warning switch

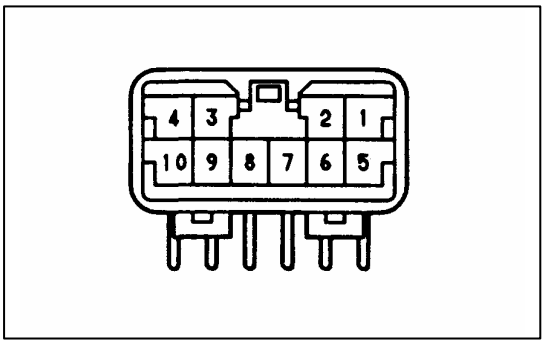


AE-4-2

Courtesy lamp switch

e-1-2

Electric Door Lock Control ECU Output Voltage



Parts inspection

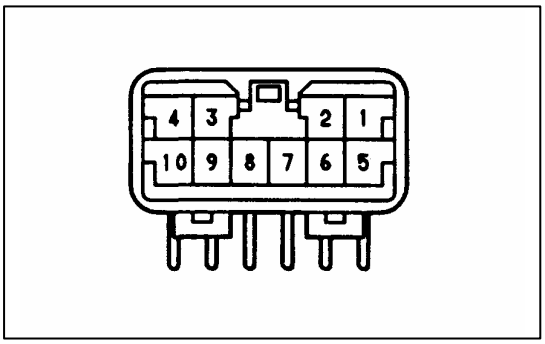
Door control or Door control computer with receiver

- Using electrical tester with mini test leads, inspect voltage and continuity on the following terminals.
- Carry out “Disconnected connector” first.

Connector Condition	Terminal Number Tester + ? Tester -	Item	Inspection Condition	Standard	Probable Cause Area
Disconnected Connector	1 ? body earth	V	Always	10~14V	Vehicle side
	5 ? body earth	Continuity	Door control switch (manual operation) OFF - LOCK	No continuity - Yes continuity	
			Using key plate, door key cylinder LOCK and hold - Other than that	Yes continuity - No continuity	
	6 ? body earth	Continuity	Door control switch (manual operation) OFF - Unlock	No continuity - Yes continuity	
			Using key plate, door key cylinder UNLOCK and hold - Other than that	Yes continuity - No continuity	
	7 ? 8	Continuity	Always	Yes continuity	
	10 ? body earth	Continuity	Always	Yes continuity	
Connected Connector	7 ? body earth	V *1	Door control switch (manual operation) OFF - LOCK	0V - 10~14V - 0V	Control relay or control computer
	8 ? body earth	V *1	Door control switch (manual operation) OFF - UNLOCK	0V - 10~14V - 0V	

*1: Use bar graph indication to check output voltage.

Wireless Remote Control ECU (Electric Door Lock ECU) Output Voltage



Parts inspection

Door control or Door control computer with receiver

- Using electrical tester with mini test leads, inspect voltage and continuity on the following terminals.
- Carry out “Disconnected connector” first.

Connector Condition	Terminal Number Tester + ? Tester -	Item	Inspection Condition	Standard	Probable Cause Area
Disconnected Connector	2 ? body earth	V	Ignition switch OFF - ON	0V - 10~14V	Vehicle side
	3 ? body earth	V	All door are closed - Open any door	0V - 10~14V	
	9 ? body earth	V	Insert key plate into ignition key cylinder - Remove it	10V or more - 0V	
Connected Connector	7 ? body earth	V *1	Depress LOCK switch on transmitter (for approx. 1 second) OFF - ON	0V - 10~14V - 0V	Receiver or transmitter
	8 ? body earth	V *1	Depress UNLOCK switch on transmitter (for approx. 1 second) OFF - ON	0V - 10~14V - 0V	

*1: Use bar graph indication to check output voltage.