

CHECK AT THE ENGINE CONTROL MODULE (ECM) <M/T> POWERTRAIN CONTROL MODULE (PCM) <A/T>

TERMINAL VOLTAGE CHECK CHART

13100920575

ECM Connector Terminal Arrangement <M/T>

1	2	3	4					5	6				7	8	41	42	43	44							45	46	47	71	72	73	74					75	76	77	
9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	48	49	50	51	52	53	54	55	56	57	58	59	78	79	80	81	82	83	84	85	86	87	88	89	90
24	25	26	27	28	29	30	31	32	33				34	35	60	61	62	63	64						65	66	67	68	91	92	93	94	95	96	97	98		99	100

7FU2462

PCM Connector Terminal Arrangement <A/T>

1	2	3	4			5	6	7	8	41	42	43			44	45	46	71	72	73	74				75	76	77	101	102	103	104				105	106	107													
9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	47	48	49	50	51	52	53	54	55	56	57	78	79	80	81	82	83	84	85	86	87	88	89	108	109	110	111	112	113	114	115	116	117	118	119	120
24	25	26	27	28	29	30	31	32	33	34	35	58	59	60	61	62	63	64	65	66	90	91	92	93	94	95	96	97	98	121	122	123	124	125	126	127	128	129	130											

7FU2459

TERMI- NAL NO. <M/T>	TERMI- NAL NO. <A/T>	CHECK ITEM	CHECK CONDITION (ENGINE CONDITION)	NORMAL CONDITION
1	1	No.1 injector	- Engine: warm, idle - Suddenly depress the accelerator pedal	From 11 - 14 V momentarily drops slightly
9	2	No.2 injector		
24	24	No.3 injector		
2	2	No.4 injector		
10	10	No.5 injector		
25	25	No.6 injector		
3	3	Heated oxygen sensor heater (front) <Federal> Left bank heated oxygen sensor heater (front) <California>	Engine: warm, idle	0 - 3 V
			Engine: 5,000 r/min	B+
4	4	Right bank heated oxygen sensor heater (front) <California>	Engine: warm, idle	0 - 3 V
			Engine: 5,000 r/min	B+
6	6	EGR solenoid	Ignition switch: "ON"	B +
			- Engine: idle - Suddenly depress the accelerator pedal.	From B + , drops momentarily
11	11	Ignition power transistor unit A	Engine: 3,000 r/min	0.3 - 3.0 V
12	12	Ignition power transistor unit B		
13	13	Ignition power transistor unit C		

TERMI- NAL NO. <M/T>	TERMI- NAL NO. <A/T>	CHECK ITEM	CHECK CONDITION (ENGINE CONDITION)	NORMAL CONDITION
14	14	Stepper motor coil <A1>	- Engine: warm, idle - Check immediately after hot restart	B + ↔ 0 - 3 V (changes repeatedly)
28	28	Stepper motor coil <A2>		
15	15	Stepper motor coil <B1>		
29	29	Stepper motor coil <B2>		
16	34	Evaporative emission purge solenoid	Ignition switch: "ON"	B+
			Engine: warm, 3,000 r/min	0 - 3 V
18	18	Condenser fan relay	Condenser fan is not running (A/C switch: OFF)	Battery positive voltage
			Condenser fan is running [A/C switch: ON, ambient temperature: 18°C (64°F) or more]	0 - 3 V
19	19	Volume air flow sensor reset signal	Engine: idle	0 - 1 V
			Engine: 3,000 r/min	6 - 9 V
20	20	Fuel pump relay module	Ignition switch: "ON"	0 - 0.5 V
			Engine: cranking	4 - 6 V
			Engine: idle, warm (two minutes after starting engine)	0.7 - 2.8 V
21	21	A/C compressor clutch relay	- Engine: idle - A/C switch: "OFF" → "ON" (A/C compressor is operating)	B + or momentarily 6 V or more → 0 - 3 V as A/C clutch cycles
22	22	Service engine soon/malfunction indicator lamp	Ignition switch: "OFF" → "ON"	0 - 3 V → 9 - 13 V (after several seconds have elapsed)
26	26	Heated oxygen sensor heater (rear) <Federal>	Engine: warm, idle	0 - 3 V
		Left bank heated oxygen sensor heater (rear) <California>	Engine: 5,000 r/min	B+
27	27	Right bank heated oxygen sensor heater (rear) <California>	Engine: warm, idle	0 - 3 V
			Engine: 5,000 r/min	B+
35	35	Evaporative emission ventilation solenoid	Ignition switch: "ON"	B+
			After the engine has warmed up, drive the vehicle at a constant speed of 88 km/h (55 mph). (OBD-II monitoring conditions)	Momentarily 0 - 3 V

MFI <3.0L Engine/3.5L Engine> - Diagnosis

13B-369

Engine> - Diagnosis

13B-369

TERMI- NAL NO. <M/T>	TERMI- NAL NO. <A/T>	CHECK ITEM	CHECK CONDITION (ENGINE CONDITION)		NORMAL CONDITION
42	46	Sensor supplied voltage	Ignition switch: "ON"		4.5 - 5.5 V
43	45	Crankshaft position sensor	Engine: cranking		0.4 - 4.0 V
			Engine: idle		1.5 - 2.5 V
44	44	Engine coolant temperature sensor	Ignition switch: "ON"	When engine coolant temperature is 0°C (32°F)	3.2 - 3.8 V
				When engine coolant temperature is 20°C (68°F)	2.3 - 2.9 V
				When engine coolant temperature is 40°C (104°F)	1.3 - 1.9 V
				When engine coolant temperature is 80°C (176°F)	0.3 - 0.9 V
45	43	Spark check signal	Engine: 3,000 r/min		0.3 - 3.0 V
47	41	Power supply	Ignition switch: "ON"		B +
59	47				
50	56	Camshaft position sensor	Engine: cranking		0.4 - 3.0 V
			Engine: idle		0.5 - 2.0 V
51	55	Barometric pressure sensor	Ignition switch: "ON"	When altitude is 0 m (0 ft)	3.7 - 4.3 V
				When altitude is 1,200 m (3,937 ft)	3.2 - 3.8 V
54	52	Power steering pressure switch	Engine: warm, idle	When steering wheel is stationary	B +
				When steering wheel is turned	0 - 3 V
57	49	MFI relay (power supply)	Ignition switch: "OFF"		B +
			Ignition switch: "ON"		0 - 3 V
60	66	Backup power supply	Ignition switch: "OFF"		B +
61	65	Volume air flow sensor	Engine: idle		2.2 - 3.2 V
			Engine: 2,500 r/min		
62	64	Intake air temperature sensor	Ignition switch: "ON"	When intake air temperature is 0°C (32°F)	3.2 - 3.8 V
				When intake air temperature is 20°C (68°F)	2.3 - 2.9 V
				When intake air temperature is 40°C (104°F)	1.5 - 2.1 V
				When intake air temperature is 80°C (176°F)	0.4 - 1.0 V

TERMI- NAL NO. <M/T>	TERMI- NAL NO. <A/T>	CHECK ITEM	CHECK CONDITION (ENGINE CONDITION)		NORMAL CONDITION
65	61	A/C switch 2	A/C under low load [ambient temperature: 15°C (59°F) or less]		Battery positive voltage
			A/C under high load [ambient temperature: 18°C (64°F) or less]		0 - 3 V
-	59	Park/neutral position switch <A/T>	Ignition switch: "ON"	Move the selector lever to "P" or "N."	0 - 3 V
				Move the selector lever to "D", "2", "L" or "R."	8 - 14 V
68	58	Ignition switch-ST	Engine: cranking		8 V or more
71	71	Heated oxygen sensor (front) <Federal> Left bank heated oxygen sensor (front) <California>	Engine: warm, 2,500 r/min (check using a digital voltmeter)		0 ↔ 0.8 V (changes repeatedly)
72	72	Right bank heated oxygen sensor (front) <California>	Engine: warm, 2,500 r/min (check using a digital voltmeter)		0 ↔ 0.8 V (changes repeatedly)
73	73	Heated oxygen sensor (rear) <California> Left bank heated oxygen sensor (rear) <California>	- Transmission: 2nd gear <M/T>, "L" range <A/T> - Driving with the throttle widely open - Engine: 3,500 r/min or more		0.6 - 1.0 V
74	74	Right bank heated oxygen sensor (rear) <California>	- Transmission: 2nd gear <M/T>, "L" range <A/T> - Drive at wide open throttle - Engine: 3,500 r/min or more		0.6 - 1.0 V
78	78	Throttle position sensor	Ignition switch: "ON" (check for smooth voltage increase as throttle is moved from idle position to wide open throttle)	Idle	0.3 - 1.0 V <3.0L Engine> 0.535 - 0.735 V <3.5L Engine>
				Wide open throttle	4.5 - 5.5 V
79	79	Closed throttle position switch <3.0L Engine>	Ignition switch: "ON"	Set throttle valve to idle position	0 - 1 V
				Open throttle slightly	4 V or more
80	80	Vehicle speed sensor	- Ignition switch: "ON" - Move the vehicle slowly forward		0 ↔ 5 V (changes repeatedly)
83	83	A/C switch	Engine: idle	Turn the A/C switch "OFF"	0 - 3 V
				Turn the A/C switch "ON" (A/C compressor is operating)	B +

TERMI- NAL NO. <M/T>	TERMI- NAL NO. <A/T>	CHECK ITEM	CHECK CONDITION (ENGINE CONDITION)	NORMAL CONDITION
92	91	Manifold differential pressure sensor	Engine: idle • Engine: idle • Suddenly depress the accelerator pedal.	0.8 - 2.4 V Rises from 0.8 - 2.4 V suddenly
93	92	Fuel tank differential pressure sensor	Engine: idle	1.2 - 3.8 V
99	98	Ignition switch-IG	Ignition switch: "ON"	B +

TERMINAL RESISTANCE AND CONTINUITY CHECK

ECM Harness Side Connector Terminal Arrangement <M/T>

77	76	75			74	73	72	71	47	46	45			44	43	42	41	8	7	6	5			4	3	2	1												
90	89	88	87	86	85	84	83	82	81	80	79	78	59	58	57	56	55	54	53	52	51	50	49	48	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9
100	99		98	97	96		95	94		93	92	91	68	67		66	65		64	63	62		61	60	35	34	33	32	31	30		29	28	27	26		25	24	

7FU2463

PCM Harness Side Connector Terminal Arrangement <A/T>

107	106	105			104	103	102	101	77	76	75			74	73	72	71	46	45	44			43	42	41	8	7	6	5			4	3	2	1																	
120	119	118	117	116	115	114	113	112	111	110	109	108	89	88	87	86	85	84	83	82	81	80	79	78	57	56	55	54	53	52	51	50	49	48	47	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9		
130	129		128	127	126		125	124		123	122	121	98	97		96	95		94	93	92		91	90		66	65	64		63	62	61	60		59	58		35	34		33	32	31	30		29	28	27	26		25	24

7FU2460

TERMINAL NO. <M/T>	TERMINAL NO. <A/T>	INSPECTION ITEM	NORMAL CONDITION (CHECK CONDI- TION)
1 - 47	1 - 41	No.1 injector	13 - 16 Ω [at 20°C (68°F)]
9 - 47	9 - 41	No.2 injector	
24 - 47	24 - 41	No.3 injector	
2 - 47	2 - 41	No.4 injector	
10 - 47	10 - 41	No.5 injector	
25 - 47	25 - 41	No.6 injector	
3 - 47	3 - 41	Heated oxygen sensor heater (front) <Federal>	7 - 40 Ω [at 20°C (68°F)]
		Left bank heated oxygen sensor heater (front) <California>	4.5 - 8.0 Ω [at 20°C (68°F)]
4 - 47	4 - 41	Right bank heated oxygen sensor heater (front) <California>	4.5 - 8.0 Ω [at 20°C (68°F)]
6 - 47	6 - 41	EGR solenoid	34 - 44 Ω [at 20°C (68°F)]
14 - 47	14 - 41	Stepper motor coil (A1)	28 - 33 Ω [at 20°C (68°F)]
28 - 47	28 - 41	Stepper motor coil (A2)	
15 - 47	15 - 41	Stepper motor coil (B1)	
29 - 47	29 - 41	Stepper motor coil (B2)	

TSB Revision