

J - PIN VOLTAGE CHARTS

1996 Toyota Supra

1996 ENGINE PERFORMANCE
Toyota Pin Voltage Charts

Supra

INTRODUCTION

Pin voltage charts are supplied to reduce diagnostic time. Checking pin voltages at the ECM determines whether it's receiving and transmitting proper voltage signals. Charts may also help determine if ECM harness is shorted or opened.

NOTE: Unless stated otherwise in testing procedures, perform all voltage and resistance tests using a Digital Volt-Ohmmeter (DVOM) with a minimum 10-megohm input impedance. Voltage readings may vary slightly due to battery condition or charging rate. Perform all voltage measurements with ECM harness connector installed. Verify battery voltage is greater than 11 volts. Check resistance between each terminal of connector. Disconnect connector from ECM and test at each terminal.

ECM LOCATION

ECM LOCATION TABLE

Model	Location
Supra	..... Below Passenger's Side Of Instrument Panel, Underneath Carpet On The Floor

WIRING COLOR CODES

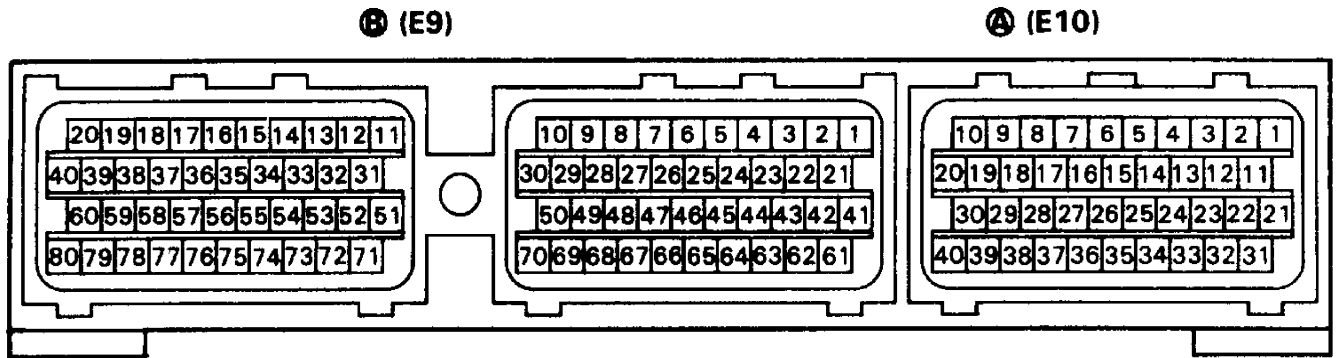
WIRING COLOR CODES TABLE (1)

Color Code	Wire Color
B	..... Black
BR	..... Brown
G	..... Green
GR	..... Grey
L	..... Blue
LG	..... Light Green
O	..... Orange
P	..... Pink
R	..... Red
V	..... Violet
W	..... White
Y	..... Yellow

(1) - Example: L-Y is a Blue wire with a Yellow tracer.

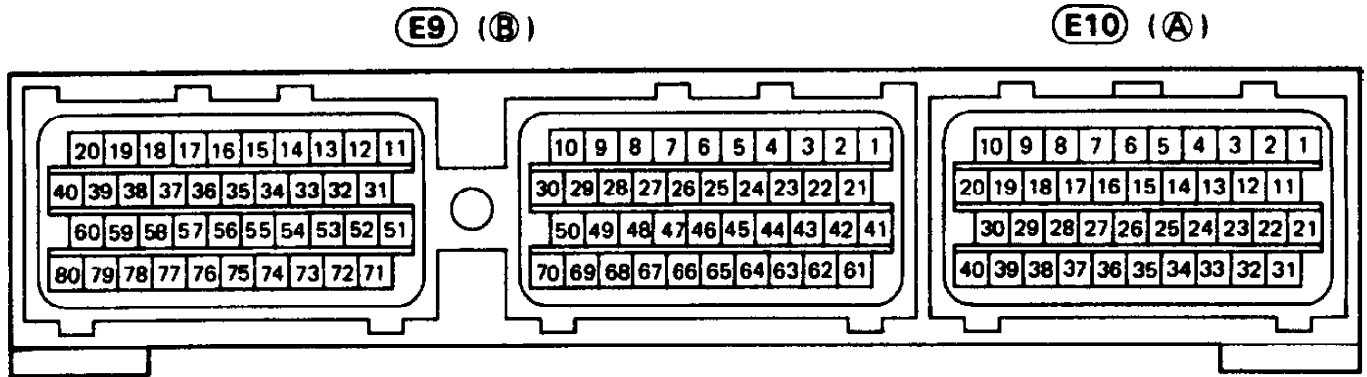
NOTE: For circuit identification, see appropriate wiring diagram in L - WIRING DIAGRAMS.

PIN VOLTAGE CHARTS



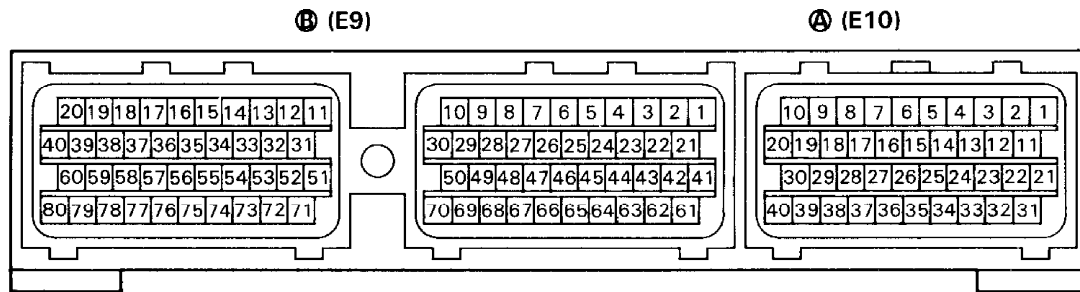
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Fig. 1: ECM Terminal ID (Non-Turbo)
 Courtesy of Toyota Motor Sales, U.S.A., Inc.



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Fig. 2: ECM Terminal ID (Turbo)
 Courtesy of Toyota Motor Sales, U.S.A., Inc.



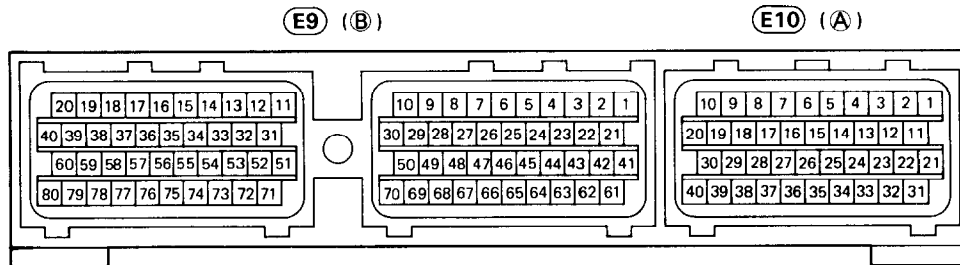
Symbols (Terminals No.)	Wiring Color	STD Voltage (V)	Condition
BATT (A33) - E1 (B69)	B-Y ↔ BR	9 ~ 14	Always
IGSW (A1) + B (A31) - E1 (B69)	B-O B-R ↔ BR	9 ~ 14	IG switch ON
VC (B41) - E2 (B65)	L-R ↔ BR-B	4.5 ~ 5.5	IG switch ON
IDL1 (B64) - E2 (B65)	R ↔ BR-B	0 ~ 3	IG switch ON and apply vacuum to the throttle opener Throttle valve fully closed
		9 ~ 14	IG switch ON Throttle valve fully opened
VTA1 (B43) - E2 (B65)	Y ↔ BR-B	0.3 ~ 0.8	IG Switch ON Throttle valve fully closed
		3.2 ~ 4.9	IG switch ON Throttle valve fully opened
VG (B66) - VG-(B30)	Y-R ↔ BR	1.1 ~ 1.5	Idling, P or N position, A/C switch OFF
THA (B45) - E2 (B65)	P-L ↔ BR-B	0.5 ~ 3.4	Idling, Intake air temp. 20°C (68°F)
THW (B44) - E2 (B65)	L-Y ↔ BR-B	0.2 ~ 1.0	Idling, Engine Coolant temp. 80°C (176°F)
THG (B46) - E2 (B65)	BR-Y ↔ BR-B	4.5 ~ 5.5	IG switch ON
STA (B77) - E1 (B69)	B ↔ BR	9 ~ 14	Cranking
#10 (B20) #20 (B19) #30 (B18) #40 (B17) #50 (B16) #60 (B15) - E01 (B80)	R-L R-Y R-G R-W R R-B ↔ BR	6.0 or more	IG switch ON
		Pulse generation	Idling
IGT (B57) - E1 (B69)	R-W ↔ BR	Pulse generation	Idling
IGF (B58) - E1 (B69)	R-Y ↔ BR	Below 2.0	IG switch ON
		Pulse generation	Idling

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Fig. 3: Pin Voltage Chart (Non-Turbo - 1 Of 2)
Courtesy of Toyota Motor Sales, U.S.A., Inc.

Symbols (Terminals No.)	Wiring Color	STD Voltage (V)	Condition
G1 (B26) G2 (B25) – G⊖ (B7)	R W ↔ G	Pulse generation	Idling
NE (B27) – G⊖ (B7)	B ↔ G	Pulse generation	Idling
NE2 (B4) – NE2⊖ (B5)	B ↔ W	Pulse generation	Idling
M-REL (A24) – E1 (B69)	GR ↔ BR	9 ~ 14	IG switch ON
FPC (A22) – E1 (B69)	V-W ↔ BR	Below 1.5	IG switch ON
		Pulse generation (0 and 4.5 ~ 5.5)	Idling
DI (A21) – E1 (B69)	G ↔ BR	7.0 or more	Idling
ACIS (B39) – E01 (B80)	G-Y ↔ BR	9 ~ 14	IG switch ON
EVAP (B74) – E01 (B80)	V ↔ BR	9 ~ 14	IG switch ON
EGR (B75) – E01 (B80)	P ↔ BR	Below 2.0	Idling
		9 ~ 14	Engine speed at 3,500 rpm
ISC1 (B35) ISC2 (B34) ISC3 (B33) ISC4 (B32) – E01 (B80)	V-Y G-W G-O ↔ BR R-G	Pulse generation	Idling, When A/C Switch ON or OFF
OX1 (B48) OX2 (B47) OX3 (A30) – E1 (B69)	W R-L ↔ BR R-L	Pulse generation	Maintain engine speed at 2,500 rpm for 2 min. after warming up
HT1 (B73) HT2 (B72) HT3 (A36) – E01 (B80)	B-L B-Y ↔ BR BR-W	Below 3.0	Idling
		9 ~ 14	IG switch ON
KNK1 (B50) KNK2 (B49) – E1 (B69)	W W ↔ BR	Pulse generation	Idling
NSW (B76) – E1 (B69)	B-W ↔ BR	9 ~ 14	IG switch ON Other shift position "P" or "N" position
		0 ~ 3.0	IG switch ON Shift position in "P" or "N" position
SP1 (A2) – E1 (B69)	P ↔ BR	Pulse generation	IG switch ON Rotate driving wheel slowly
TE1 (A20) – E1 (B69)	Y-L ↔ BR	9 ~ 14	IG switch ON
W (A6) – E1 (B69)	L-B ↔ BR	9 ~ 14	Idling
		0 ~ 3.0	IG switch ON
OD1 (A12) – E1 (B69)	BR B ↔ BR	9 ~ 14	IG switch ON
AC1 (A34) – E1 (B69)	L-R ↔ BR	0 ~ 1.5	A/C switch ON (At idling)
		9 ~ 14	A/C switch OFF
ACMG (A23) – E1 (B69)	W-G ↔ BR	0 ~ 3.0	A/C switch ON (At idling)
		9 ~ 14	A/C switch OFF
FPU (B36) – E01 (B80)	W-L ↔ BR	9 ~ 14	IG switch ON
		Below 2.0	Restarting at higt engine coolant temp.
ELS (A15) – E1 (B69)	R-Y ↔ BR	7.5 ~ 14	Defogger switch and taillight switch ON
		0 ~ 1.5	Defogger switch and taillight switch OFF
SDL (A8) – E1 (B69)	G ↔ BR	Pulse generation	During transmission

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Fig. 4: Pin Voltage Chart (Non-Turbo - 2 Of 2)
Courtesy of Toyota Motor Sales, U.S.A., Inc.



Symbols (Terminals No.)	STD Voltage (V)	Condition
BATT (A33) — E1 (B69)	9 ~ 14	Always
IGSW (A1) + B (A31) — E1 (B69)	9 ~ 14	IG switch ON
VCC (B41) — E2 (B65)	4.5 ~ 5.5	IG switch ON
IDL1 (B64) — E2 (B65)	0 ~ 3.0	IG switch ON and apply vacuum to the throttle opener Throttle valve fully closed
	9 ~ 14	IG switch ON Throttle valve fully opened
IDL2 (B63) — E2 (B65)	0 ~ 3.0	IG switch ON Sub-throttle valve fully closed
	9 ~ 14	IG switch ON Sub-throttle valve fully open
VTA1 (B43) VTA2 (B42) — E2 (B65)	0.3 ~ 0.8	IG switch ON Main or sub-throttle valve fully closed
	3.2 ~ 4.9	IG switch ON Main or sub-throttle valve fully open
THA (B45) — E2 (B65)	0.5 ~ 3.4	Idling, Intake air temp. 0°C (32°F) to 80°C (176°F)
THW (B44) — E2 (B65)	0.2 ~ 1.0	Idling, Engine coolant temp. 60°C (140°F) to 120°C (248°F)
STA (B77) — E1 (B69)	6.0 or more	Cranking
# 10 (B20), # 20 (B19) # 30 (B18), # 40 (B17) — E01 (B80) # 50 (B16), # 60 (B15)	9 ~ 14	IG switch ON
	Pulse generation	Idling
IGT1 (B57), IGT2 (B56) IGT3 (B55), IGT4 (B54) — E1 (B69) IGT5 (B53), IGT6 (B52)	9 ~ 14	IG switch ON
	Pulse generation	Idling
IGF (B58) — E1 (B69)	4.5 ~ 5.5	IG switch ON
	Pulse generation	Idling
G1 (B26) — G1 ⊖ (B6) G2 (B25) — G2 ⊖ (B5) NE (B27) — NE ⊖ (B7)	Pulse generation	Idling
M-REL (A24) — E1 (B69)	9 ~ 14	IG switch ON
FPC (A22) — E1 (B69)	Below 1.5	IG switch ON
	Pulse generation (4.5 ~ 5.5)	Idling
DI (A21) — E1 (B69)	7.0 or more	Idling
EVAP (B74) — E01 (B80)	9 ~ 14	IG switch ON

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Fig. 5: Pin Voltage Chart (Turbo - 1 Of 2)
Courtesy of Toyota Motor Sales, U.S.A., Inc.

Symbols (Terminals No.)	STD Voltage (V)	Condition
EGR (B75) – E01 (B80)	Below 2.0	Idling
	9 ~ 14	Engine speed at 3,500 rpm
VG (B66) – E21 (B28)	0.7 ~ 1.7	Idling
ISC1 (B35), ISC2 (B34) ISC3 (B33), ISC4 (B32) – E01 (B80)	Pulse generation	Idling, when A/C switch ON or OFF
VF1 (B29) – E1 (B69)	1.8 ~ 3.2	Maintain engine speed at 2,500 rpm for 2 minutes after warming up then return to idling
OX1 (B48), OX2 (B47) – E1 (B69)	Pulse generation	Maintain engine speed at 2,500 rpm for 2 minutes after warming up
HT1 (B71), HT2 (B72) – E01 (B80)	Below 3.0	Idling
	9 ~ 14	IG switch ON
KNK1 (B50), KNK2 (B49) – E1 (B69)	Pulse generation	Idling
NSW (B76) – E1 (B69)	9 ~ 14	IG switch ON Other shift position in "P", "N" position
	0 ~ 3.0	IG switch ON Shift position in "P", "N" position
SP1 (A2) – E1 (B69)	Pulse generation	IG switch ON Rotate driving wheel slowly
TE1 (A20) – E1 (B69)	9 ~ 14	IG switch ON
TE2 (A19) – E1 (B69)	9 ~ 14	IG switch ON
W (A6) – E1 (B69)	9 ~ 14	Idling
	0 ~ 3.0	IG switch ON
OD1 (A12) – E1 (B69)	9 ~ 14	IG switch ON
A/C (A34) – E1 (B69)	7.5 ~ 14	A/C switch OFF
	0 ~ 1.5	A/C switch ON (At idling)
ACMG (A23) – E1 (B69)	0 ~ 3.0	A/C switch ON (At idling)
	9 ~ 14	A/C switch OFF
FPU (B73) – E01 (B80)	9 ~ 14	IG switch ON
	Below 2.0	Restarting at high engine coolant temp.
ELS (A15) – E1 (B69)	7.5 ~ 14	Defogger switch and taillight switch ON
	0 ~ 1.5	Defogger switch and taillight switch OFF
VSV1 (B40) – E1 (B69)	Below 3.0	Immediately after racing.
	9 ~ 14	Idling
VSV2 (B39) – E1 (B69)	Below 3.0	For 2 sec. after IG switch ON to OFF
	9 ~ 14	Idling
VSV3 (B38) – E1 (B69)	9 ~ 14	Idling
PMC (B60) – E1 (B69)	Below 3.0	Idling (for M/T)
		Idling and shift position "P", "N" position (for A/T)
PM1 (B62) – E2 (A65)	9 ~ 14	Idling and other shift position "P", "N" position (for A/T)
	2.3 ~ 3.0	IG switch ON
PM1 (B62) – E2 (A65)	1.8 ~ 2.4	IG switch ON and apply vacuum 26.7 kPa (200 mmHg, 7.9 in.Hg)

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Fig. 6: Pin Voltage Chart (Turbo - 2 Of 2)
Courtesy of Toyota Motor Sales, U.S.A., Inc.