

2002 ENGINE PERFORMANCE

Pin Voltage Charts

INTRODUCTION

Pin voltage charts are used for diagnosing intermittent symptoms and faults that are unable to be resolved during self-diagnostics. Pin voltage tests ensure the Engine Control Module (ECM) is receiving and transmitting proper voltage and other signals. Before performing pin voltage tests, ensure engine mechanical condition has been thoroughly inspected and self-diagnostics has been attempted. Technical Service Bulletins (TSBs) may also be helpful in correcting a hard to diagnose problem.

NOTE: Unless stated otherwise, perform all voltage 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. When battery is disconnected, vehicle computer and memory systems may lose memory data. Driveability problems may exist until computer systems have completed a relearn cycle.

ENGINE CONTROL MODULE LOCATION

For Engine Control Module (ECM) location, see **ECM LOCATION** table.

ECM LOCATION

Model	(1) Location
Avalon	Behind Glove Box, Near Passenger's Side Kick Panel
Camry & Camry Solara	Behind Glove Box
Celica	In Engine Compartment, Below Cover, Just In Front Of Battery, Next To Driver's Side Strut Tower
Corolla	Behind Stereo On Instrument Panel, Just In Front Of Center Console
ECHO & Highlander	Behind Glove Box
Land Cruiser	Above Glove Box, Near Passenger's Side Of Instrument Panel
MR2	On Inside Of Firewall, Directly Behind Driver's Seat & Luggage Compartment
Prius	Behind Glove Box
RAV4	Near Passenger's Side Kick Panel, Just Below Instrument Panel
Sequoia	Behind Glove Box & Heater Duct
Sienna	Passenger's Side Of Instrument Panel, Just Below Glove Box
Tacoma & 4Runner	Behind Glove Box
Tundra	Behind Glove Box & Heater Duct
(1) For illustration of ECM location, see ENGINE CONTROL MODULE under COMPUTERIZED ENGINE CONTROLS in THEORY & OPERATION article.	

NOTE: On Avalon, Camry, Camry Solara, Highlander, Land Cruiser, MR2, Prius, RAV4, Sequoia, Sienna and 4Runner, an engine immobilizer system may be used. Engine immobilizer system is a theft deterrent system which disables the engine from starting by not allowing ignition system operation and fuel injector operation unless proper ignition key is used. Models equipped with engine immobilizer system may be identified by looking at the ignition key. On models equipped with engine immobilizer system the top of the ignition key is thicker than a standard ignition key, as a transponder chip is incorporated into the top of the ignition key. For additional information on system operation and testing, see appropriate ENGINE IMMOBILIZER SYSTEMS article in ACCESSORIES & EQUIPMENT.

SERVICE PRECAUTIONS

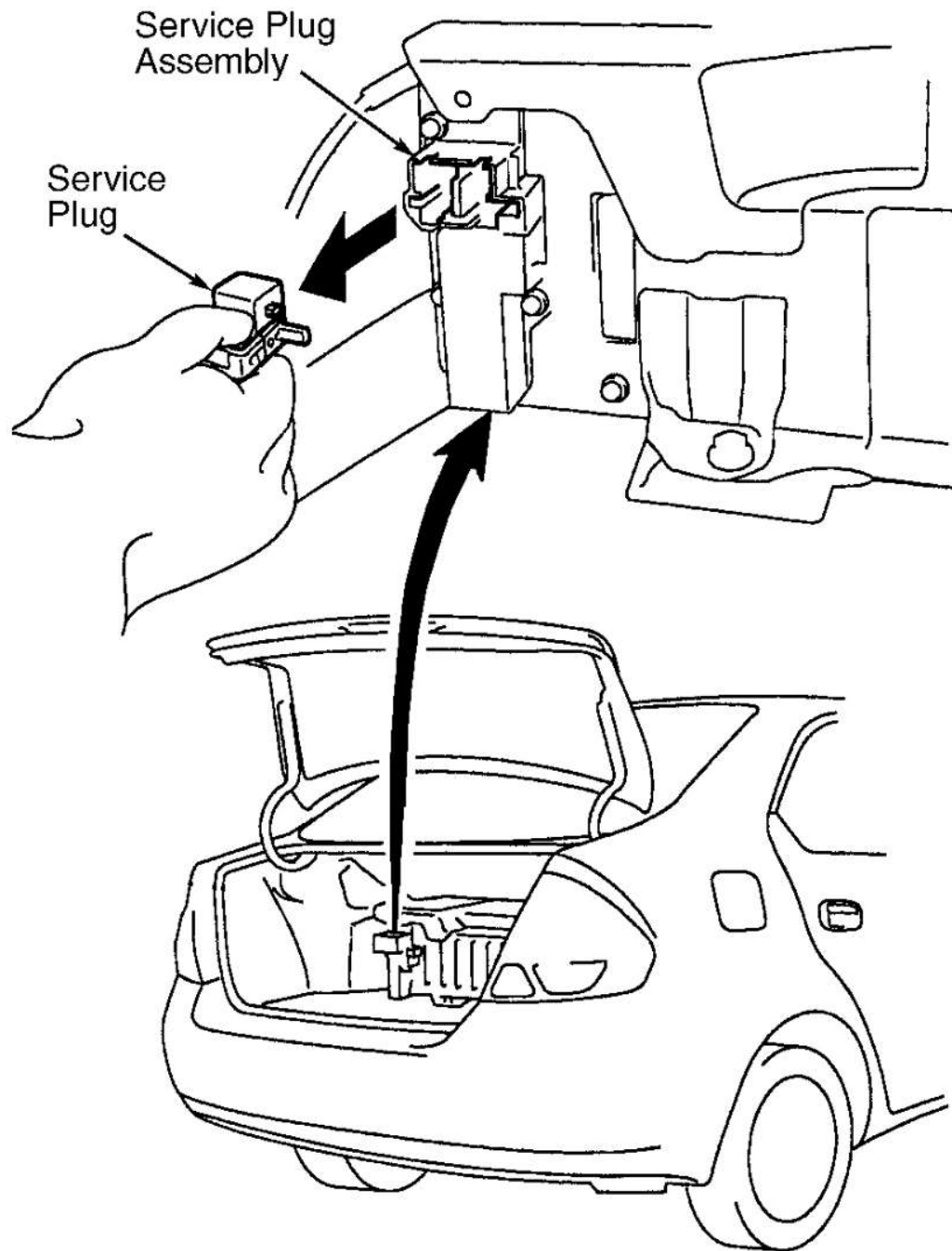
PRIUS

WARNING: When performing any inspection or service procedure on this vehicle, ensure following service precautions are followed to prevent personal injury or death due to the extremely high voltage.

The following service precautions must be followed:

- Ensure ignition is off and ignition key is removed from ignition before performing any inspection or service procedure in engine compartment, as engine may automatically start and shut off when ignition is on and READY light is illuminated. READY light is displayed just above the shift lever position indicator on instrument cluster at center of instrument panel.
- Read all service and warning labels in engine compartment before performing any procedures in engine compartment.
- All high-voltage wiring harness connectors contain Orange connectors. DO NOT touch any wiring harness that contains Orange connectors.
- High-voltage battery and other high-voltage components may be identified by HIGH VOLTAGE caution labels on them. DO NOT touch these components.
- If necessary to inspect or service high-voltage system, ensure ignition is off. Remove service plug and wait at least 5 minutes to ensure high voltage is fully discharged before touching any high-voltage wiring harness, connectors or components. Service plug is located on service plug assembly at driver's side front corner of trunk compartment, near high-voltage battery. See **Fig. 1** . Ensure service plug is stored in a location in which no one may install service plug while technician is working on the vehicle.
- If necessary to touch any high-voltage wiring harness, connectors or components, ensure service plug is removed and battery voltage or less exists at electrical connector. Use Toyota insulated gloves when touching any high-voltage wiring harness, connectors or components. Ensure insulated gloves are dry and in good condition and that no holes exist in insulated gloves. Test by applying air pressure to insulated glove before touching any high-voltage wiring harness, connectors or components.
- DO NOT wear any metal objects while working on vehicle which may accidentally drop and cause a short circuit.

- If any high-voltage wiring harness connector is disconnected, ensure terminal on wiring harness connector is wrapped with tape to prevent wiring harness connector from contacting any surface.
- If servicing high-voltage system, place sign on roof of vehicle to indicate to other technicians that high-voltage system is being serviced.



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Fig. 1: Locating Service Plug & Service Plug Assembly (Prius)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

PIN VOLTAGE CHARTS

NOTE: Pin voltage charts are charts provided from manufacturer. Manufacturer does not provide pin voltage for all circuits at Engine Control Module (ECM). For additional terminal and wire color identification at ECM, see WIRING DIAGRAMS article.

PIN VOLTAGE CHART INDEX

CAUTION: On Prius, read SERVICE PRECAUTIONS before using pin voltage chart to prevent personal injury.

For appropriate pin voltage chart figure reference, see PIN VOLTAGE CHART INDEX table.

PIN VOLTAGE CHART INDEX

Model	Figure Reference
Avalon	<u>Fig. 2 & Fig. 3</u>
Camry	
2.4L 4-Cyl.	<u>Fig. 4 & Fig. 5</u>
3.0L V6	<u>Fig. 6 -Fig. 8</u>
Camry Solara	
2.4L 4-Cyl.	<u>Fig. 9 & Fig. 10</u>
3.0L V6	<u>Fig. 11 & Fig. 12</u>
Celica	<u>Fig. 13 & Fig. 14</u>
Corolla	
With M/T Or 3-Speed A/T	<u>Fig. 15 & Fig. 16</u>
With 4-Speed A/T	<u>Fig. 17 & Fig. 18</u>
ECHO	<u>Fig. 19 & Fig. 20</u>
Highlander	
2.4L 4-Cyl.	<u>Fig. 21 & Fig. 22</u>
3.0L V6	<u>Fig. 23 & Fig. 24</u>
Land Cruiser	<u>Fig. 25 & Fig. 26</u>
MR2	<u>Fig. 27 & Fig. 28</u>
Prius ⁽¹⁾	<u>Fig. 29 & Fig. 30</u>
RAV4 ⁽²⁾	<u>Fig. 31 & Fig. 32</u>
Sequoia	<u>Fig. 33 & Fig. 34</u>
Sienna	<u>Fig. 35 & Fig. 36</u>
Tacoma	
2.4L & 2.7L 4-Cyl.	<u>Fig. 37 & Fig. 38</u>
3.4L V6	<u>Fig. 39 & Fig. 40</u>
Tundra	

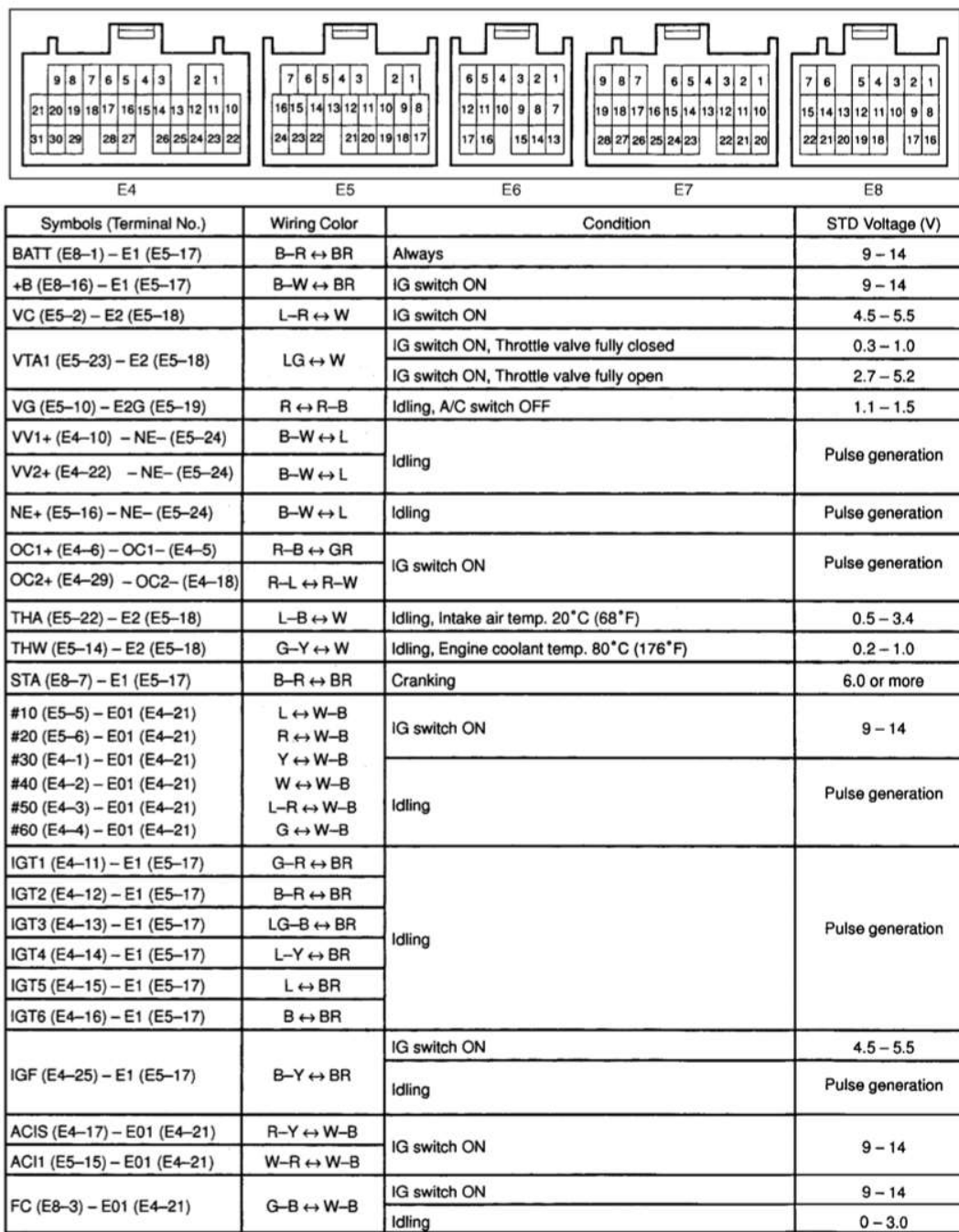
3.4L V6	Fig. 41 & Fig. 42
4.7L V8	Fig. 43 & Fig. 44
4Runner	Fig. 45 & Fig. 46
(1) Before using pin voltage charts, read SERVICE PRECAUTIONS to prevent personal injury. (2) There are 2 different wiring harnesses used in which there may be 2 different wire colors listed in pin voltage chart. For example, pin voltage chart may list a R-W (SB) wire which is a Red/White or Sky Blue wire. Some electrical connectors may have all the same colored wires. On electrical connectors with the same colored wires, the wires are numbered near each electrical connector.	

NOTE: When using pin voltage charts, it may be necessary to determine wire color by using wire color abbreviation. See **WIRE COLOR ABBREVIATIONS** table. When using pin voltage charts, the ignition switch may be referred to as IG switch.

WIRE COLOR ABBREVIATIONS ⁽¹⁾

Wire Color Abbreviation	Wire Color
B	Black
BR	Brown
G	Green
GR	Gray
L	Blue
LG	Light Green
O	Orange
P	Pink
R	Red
SB	⁽²⁾ Sky Blue
V	Violet
W	White
Y	Yellow
(1) Example: L-Y is a Blue wire with a Yellow tracer. (2) Sky Blue wire is referred to as Light Blue wire in testing procedures and wiring diagrams.	

NOTE: For wiring circuit identification, see **WIRING DIAGRAMS** article.



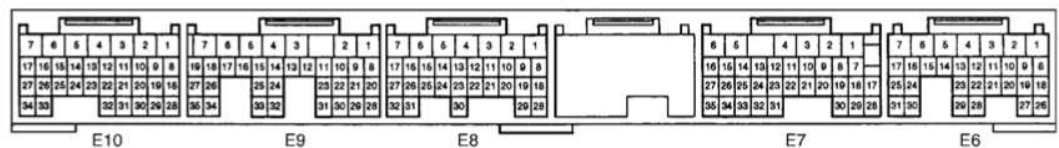
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Fig. 2: Pin Voltage Chart (Avalon - 1 Of 2)
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

Symbols (Terminal No.)	Wiring Color	Condition	STD Voltage (V)
EVP1 (E5-7) – E01 (E4-21)	B ↔ W-B	IG switch ON	9 – 14
CCV (E8-10) – E01 (E4-21)	G ↔ W-B	IG switch ON	9 – 14
RSO (E4-26) – E01 (E4-21)	G-B ↔ W-B	IG switch ON, Disconnect E 4 connector from ECM	9 – 14
OXS (E7-8) – E1 (E5-17)	B ↔ BR	Maintain engine speed at 2,500 rpm for 3 min. after warming up	Pulse generation
HTS (E7-9) – E03 (E4-30)	LG ↔ W-B	Idling	Below 3.0
		IG switch ON	9 – 14
KNKR (E4-27) – E1 (E5-17)	W ↔ BR	Idling	Pulse generation
KNKL (E4-28) – E1 (E5-17)	W ↔ BR		
NSW (E7-20) – E1 (E5-17)	B-W ↔ BR	IG switch ON, Shift position other than P, N	9 – 14
		IG switch ON, Shift position in P, N	0
TACH (E7-27) – E1 (E5-17)	B ↔ BR	Idling	Pulse generation
TBP (E7-3) – E01 (E4-21)	P-B ↔ W-B	IG switch ON, Disconnect vacuum hose from vapor pressure sensor	9 – 14
PTNK (E8-17) – E2 (E5-18)	P ↔ W	IG switch ON	2.9 – 3.7
		IG switch ON, Apply vacuum 4.0 kPa (30 mmHg, 1.18 in.Hg) to vapor pressure sensor	0.5 or less
SIL (E8-4) – E1 (E5-17)	W ↔ BR	During transmission	Pulse generation
STP (E8-15) – E1 (E5-17)	G-W ↔ BR	IG switch ON, Brake pedal depressed	7.5 – 14
		IG switch ON, Brake pedal released	Below 1.5
AFR+ (E5-11) – E1 (E5-17)	B-R ↔ BR	IG switch ON	3.0 – 3.6
AFL+ (E5-12) – E1 (E5-17)	B-W ↔ BR		
AFR- (E5-20) – E1 (E5-17)	BR ↔ BR	IG switch ON	2.7 – 3.3
AFL- (E5-21) – E1 (E5-17)	L ↔ BR		
HAFR (E5-3) – E04 (E5-1)	G ↔ W-B	Idling	Below 3.0
	B-R ↔ W-B	IG switch ON	9 – 14
KSW (E7-23) – E1 (E5-17)	R-Y ↔ BR	At time of inserting key	Below 1.5
		In condition without key inserted	4 – 5
CODE (E7-28) – E1 (E5-17)	P-G ↔ BR	At time of inserting key	Pulse generation
IGSW (E8-2) – E1 (E5-17)	B-O ↔ BR	IG switch ON	9 – 14
TXCT (E7-18) – E1 (E5-17)	L-Y ↔ BR	At time of inserting key	Pulse generation
IMLD (E8-22) – E1 (E5-17)	V-W ↔ BR	In condition without key inserted	Pulse generation
MREL (E8-8) – E1 (E5-17)	L-O ↔ BR	IG switch ON	9 – 14

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Fig. 3: Pin Voltage Chart (Avalon - 2 Of 2)
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.



Symbols (Terminal No.)	Wiring Color	Condition	STD Voltage (V)
BATT (E6-3) – E1 (E8-1)	B-Y – BR	Always	9 – 14
IGSW (E6-9) – E1 (E8-1)	B-O – BR	IG switch ON	9 – 14
+B (E6-1) – E1 (E8-1)	B-R – BR	IG switch ON	9 – 14
VC (E10-18) – E2 (E10-28)	Y – BR	IG switch ON	4.5 – 5.5
VTA (E10-21) – E2 (E10-28)	LG – BR	IG switch ON, Accelerator pedal fully closed	0.4 – 1.0
VTA (E10-21) – E2 (E10-28)	LG – BR	IG switch ON, Accelerator pedal fully open	3.2 – 4.8
VTA2 (E10-31) – E2 (E10-28)	B-R – BR	IG switch ON, Accelerator pedal fully closed	2.0 – 2.9
VTA2 (E10-31) – E2 (E10-28)	B-R – BR	IG switch ON, Accelerator pedal fully open	4.6 – 5.0
VPA (E6-22) – EPA (E6-29)	L-Y – LG	IG switch ON, Accelerator pedal fully closed	0.4 – 1.2
VPA (E6-22) – EPA (E6-29)	L-Y – LG	IG switch ON, Accelerator pedal fully open	3.0 – 4.6
VPA2 (E6-23) – EPA2 (E6-28)	W-R – LG-B	IG switch ON, Accelerator pedal fully closed	0.9 – 2.3
VPA2 (E6-23) – EPA2 (E6-28)	W-R – LG-B	IG switch ON, Accelerator pedal fully open	3.4 – 5.0
VCPA (E6-27) – EPA (E6-29)	B-R – LG	IG switch ON	4.5 – 5.5
VEP2 (E6-26) – EPA2 (E6-28)	R – LG-B	IG switch ON	4.5 – 5.5
VG (E9-24) – E2G (E9-32)	R – L-W	Idling, P or N position, A/C switch OFF	0.5 – 3.0
THA (E10-20) – E2 (E10-28)	L-B – BR	Idling, Intake air temp. 20°C (68°F)	0.5 – 3.4
THW (E10-19) – E2 (E10-28)	G-Y – BR	Idling, Coolant temp. 80°C (176°F)	0.2 – 1.0
STA (E9-9) – E1 (E8-1)	B-W – BR	Shift position in neutral, IG switch START	6.0 or more
#10 (E10-1) – E01 (E10-7)	L – W-B	IG switch ON	9 – 14
#10 (E10-1) – E01 (E10-7)	L – W-B	Idling	Pulse generation
#20 (E10-2) – E01 (E10-7)	R – W-B	IG switch ON	9 – 14
#20 (E10-2) – E01 (E10-7)	R – W-B	Idling	Pulse generation
#30 (E10-3) – E01 (E10-7)	Y – W-B	IG switch ON	9 – 14
#30 (E10-3) – E01 (E10-7)	Y – W-B	Idling	Pulse generation
#40 (E10-4) – E01 (E10-7)	W – W-B	IG switch ON	9 – 14
#40 (E10-4) – E01 (E10-7)	W – W-B	Idling	Pulse generation
IGT1 (E10-8) – E1 (E8-1)	R-W – BR	Idling	Pulse generation
IGT2 (E10-9) – E1 (E8-1)	P – BR	Idling	Pulse generation
IGT3 (E10-10) – E1 (E8-1)	LG-B – BR	Idling	Pulse generation
IGT4 (E10-11) – E1 (E8-1)	L-Y – BR	Idling	Pulse generation
IGF (E10-23) – E1 (E8-1)	W-R – BR	IG switch ON	4.5 – 5.5
IGF (E10-23) – E1 (E8-1)	W-R – BR	Idling	Pulse generation

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Fig. 4: Pin Voltage Chart (Camry 2.4L 4-Cyl. - 1 Of 2)
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

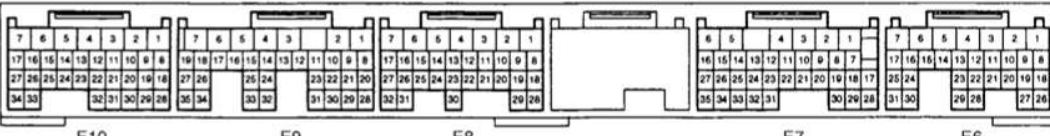
Symbols (Terminal No.)	Wiring Color	Condition	STD Voltage (V)
G22+ (E10-26) - NE- (E10-34)	B-W - G	Idling	Pulse generation
NE+ (E10-27) - NE- (E10-34)	R - G	Idling	Pulse generation
MREL (E6-8) - E1 (E8-1)	B-W - BR	IG switch ON	9 - 14
FC (E6-10) - E1 (E8-1)	G-R - BR	IG switch ON	9 - 14
STP (E7-19) - E1 (E8-1)	G-W - BR	Brake pedal is depressed	9 - 14
STP (E7-19) - E1 (E8-1)	G-W - BR	Brake pedal is released	Below 1.5
OX1B (E7-22) - E1 (E8-1)	B - BR	Maintain engine speed at 2,500 rpm for 90 sec. after warming up	Pulse generation
HT1B (E7-4) - E03 (E8-7)	L - W-B	Idling	Below 3.0
HT1B (E7-4) - E03 (E8-7)	L - W-B	IG switch ON	9 - 14
KNK1 (E9-1) - E1 (E8-1)	W - BR	Maintain engine speed at 4,000 rpm after warming up	Pulse generation
TC (E6-14) - E1 (E8-1)	P-B - BR	IG switch ON	9 - 14
W (E6-18) - E01 (E10-7)	G-R - W-B	Idling	9 - 14
W (E6-18) - E01 (E10-7)	G-R - W-B	IG switch ON	Below 3.0
OCV+ (E8-16) - OCV- (E8-15)	B-W - Y	IG switch ON	Pulse generation
EVP1 (E8-11) - E01 (E10-7)	B-R - W-B	IG switch ON	9 - 14
TBP (E6-4) - E01 (E10-7)	V - W-B	IG switch ON	3.0 - 3.6
PTNK (E6-21) - E2 (E10-28)	P - BR	IG switch ON	3.0 - 3.6
SPD (E7-17) - E01 (E10-7)	V-W - W-B	IG switch ON	4.5 - 5.5
A/C1 (E7-33) - E01 (E10-7)	*1 B - W-B *2 Y-B - W-B	Idling, Magnetic clutch is ON	below 1.0
A/C1 (E7-33) - E01 (E10-7)	*1 B - W-B *2 Y-B - W-B	Idling, Magnetic clutch is OFF	9 - 14
A/CS (E7-31) - E01 (E10-7)	*1 P-L - W-B *2 W - W-B	Idling, Magnetic clutch is ON	below 1.0
A/CS (E7-31) - E01 (E10-7)	*1 P-L - W-B *2 W - W-B	Idling, Magnetic clutch is OFF	9 - 14
M+ (E8-5) - E01 (E10-7)	B - W-B	Idling	Pulse generation
M- (E8-4) - E01 (E10-7)	W - W-B	Idling	Pulse generation

*1: Models with automatic A/C.

*2: Models with manual A/C.

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Fig. 5: Pin Voltage Chart (Camry 2.4L 4-Cyl. - 2 Of 2)
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.



Symbols (Terminal No.)	Wiring Color	Condition	STD Voltage (V)
BATT (E7-2) – E1 (E8-1)	B-Y – BR	Always	9 – 14
+BM (E7-6) – ME01 (E8-4)	L-R – W-B	Always	9 – 14
IGSW (E6-9) – E1 (E8-1)	B-O – BR	Always	9 – 14
+B (E6-1) – E1 (E8-1)	B-R – BR	IG switch ON	9 – 14
VC (E10-18) – E2 (E10-28)	Y – BR	IG switch ON	4.5 – 5.5
VTA1 (E10-21) – E2 (E10-28)	LG – BR	IG switch ON, Throttle valve fully closed	0.4 – 1.0
VTA1 (E10-21) – E2 (E10-28)	LG – BR	IG switch ON, Throttle valve fully open	3.2 – 4.8
VTA2 (E10-31) – E2 (E10-28)	B-R – BR	IG switch ON, Accelerator pedal fully closed	2.0 – 2.9
VTA2 (E10-31) – E2 (E10-28)	B-R – BR	IG switch ON, Accelerator pedal fully open	4.6 – 5.0
M+ (E8-3) – E01 (E10-7)	B – W-B	Idling	Pulse generation
M- (E8-2) – E01 (E10-7)	W – W-B		
VG (E9-24) – E2G (E9-32)	R – L-W	Idling, A/C switch OFF	1.1 – 1.5
VPA (E6-22) – EPA (E6-29)	L-Y – LG	IG switch ON, Accelerator pedal fully closed	0.5 – 1.1
VPA (E6-22) – EPA (E6-29)	L-Y – LG	IG switch ON, Accelerator pedal fully open	3.0 – 4.6
VPA2 (E6-23) – EPA2 (E6-28)	W-R – LG-B	IG switch ON, Accelerator pedal fully closed	0.9 – 2.3
VPA2 (E6-23) – EPA2 (E6-28)	W-R – LG-B	IG switch ON, Accelerator pedal fully open	3.4 – 5.0
VCPA (E6-27) – EPA (E6-29)	B-R – LG	IG switch ON	4.5 – 5.5
VCP2 (E6-26) – EPA2 (E6-28)	R – LG-B	IG switch ON	4.5 – 5.5
NE+ (E10-26) – NE- (E10-34)	R – G	Idling	Pulse generation
G22+ (E8-27) – NE- (E10-34)	B-W – G	Idling	Pulse generation
THA (E10-20) – E2 (E10-28)	L-B – BR	Idling, Intake air temp. 20°C (68°F)	0.5 – 3.4
THW (E10-19) – E2 (E10-28)	G-B – BR	Idling, Engine coolant temp. 80°C (176°F)	0.2 – 1.0
STA (E9-9) – E1 (E8-1)	B-W – BR	Cranking	6.0 or more
#10 (E10-1) – E01 (E10-7)	L – W-B	IG switch ON	9 – 14
#10 (E10-1) – E01 (E10-7)	L – W-B	Idling	Pulse generation
#20 (E10-2) – E01 (E10-7)	R – W-B	IG switch ON	9 – 14
#20 (E10-2) – E01 (E10-7)	R – W-B	Idling	Pulse generation
#30 (E10-3) – E01 (E10-7)	Y – W-B	IG switch ON	9 – 14
#30 (E10-3) – E01 (E10-7)	Y – W-B	Idling	Pulse generation
#40 (E10-4) – E01 (E10-7)	W – W-B	IG switch ON	9 – 14
#40 (E10-4) – E01 (E10-7)	W – W-B	Idling	Pulse generation
#50 (E10-5) – E01 (E10-7)	R-L – W-B	IG switch ON	9 – 14
#50 (E10-5) – E01 (E10-7)	R-L – W-B	Idling	Pulse generation
#60 (E9-5) – E01 (E10-7)	G – W-B	IG switch ON	9 – 14
#60 (E9-5) – E01 (E10-7)	G – W-B	Idling	Pulse generation
IGT1 (E10-8) – E1 (E8-1)	R-W – BR	Idling	Pulse generation
IGT2 (E10-9) – E1 (E8-1)	P – BR	Idling	Pulse generation

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Fig. 6: Pin Voltage Chart (Camry 3.0L V6 - 1 Of 3)
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

Symbols (Terminal No.)	Wiring Color	Condition	STD Voltage (V)
IGT3 (E10-10) – E1 (E8-1)	LG-B – BR	Idling	Pulse generation
IGT4 (E10-11) – E1 (E8-1)	L-Y – BR	Idling	Pulse generation
IGT5 (E10-12) – E1 (E8-1)	G-R – BR	Idling	Pulse generation
IGT6 (E10-13) – E1 (E8-1)	L – BR	Idling	Pulse generation
IGF (E10-23) – E1 (E8-1)	W-R – BR	IG switch ON	4.5 – 5.5
IGF (E10-23) – E1 (E8-1)	W-R – BR	Idling	Pulse generation
ACIS (E10-15) – E01 (E10-7)	R-Y – W-B	IG switch ON	9 – 14
AICV (E10-25) – E01 (E10-7)	W – W-B	IG switch ON	9 – 14
FC (E6-10) – E01 (E10-7)	G-R – W-B	IG switch ON	9 – 14
FC (E6-10) – E01 (E10-7)	G-R – W-B	Idling	0 – 3
EVP1 (E8-11) – E01 (E10-7)	LG – W-B	IG switch ON	9 – 14
CCV (E6-12) – E01 (E10-7)	L – W-B	IG switch ON	9 – 14
KNKR (E9-1) – E1 (E8-1)	B – BR	Idling	Pulse generation
KNKL (E9-2) – E1 (E8-1)	W – BR	Idling	Pulse generation
NSW (E9-8) – E1 (E8-1)	B-Y – BR	IG switch ON, Shift position other than P, N	9 – 14
NSW (E9-8) – E1 (E8-1)	B-Y – BR	IG switch ON, Shift position in P, N	0 – 3
TACH (E6-5) – E1 (E8-1)	B-O – BR	Idling	Pulse generation
TBP (E6-4) – E01 (E10-7)	V – W-B	IG switch ON, Disconnect vacuum hose from vapor pressure sensor	9 – 14
PTNK (E6-21) – E2 (E10-28)	P – BR	IG switch ON	2.9 – 3.7
PTNK (E6-21) – E2 (E10-28)	P – BR	IG switch ON, Apply vacuum 4.0 kPa (30 mmHg, 1.18 in.Hg) to vapor pressure sensor	0.5 or less
SIL (E6-18) – E1 (E8-1)	W – BR	During transmission	Pulse generation
STP (E7-19) – E1 (E8-1)	G-W – BR	IG switch ON, Brake pedal depressed	7.5 – 14
STP (E7-19) – E1 (E8-1)	G-W – BR	IG switch ON, Brake pedal released	0 – 1.5
AFR+ (E9-22) – E1 (E8-1)	BR – BR	IG switch ON	3.0 – 3.6
AFL+ (E9-23) – E1 (E8-1)	O – BR	IG switch ON	2.7 – 3.3
AFR- (E9-30) – E1 (E8-1)	B-R – BR	IG switch ON	3.0 – 3.6
AFL- (E9-31) – E1 (E8-1)	W – BR	IG switch ON	2.7 – 3.3
HAFR (E9-4) – E04 (E9-7)	B-W – W-B	Idling	Below 3.0
HAFL (E9-3) – E05 (E9-6)	B-R – W-B	IG switch ON	9 – 14
KSW (E7-34)*1 – E1 (E8-1)	L – BR	At time of inserting key	Below 1.5
KSW (E7-34)*1 – E1 (E8-1)	L – BR	In condition without key inserted	4 – 5
RXCK (E7-27)*1 – E1 (E8-1)	R-L – BR	At time of inserting key	Pulse generation
CODE (E7-15)*1 – E1 (E8-1)	G-W – BR	At time of inserting key	Pulse generation
TXCT (E7-26)*1 – E1 (E8-1)	L-Y – BR	At time of inserting key	Pulse generation
IMLD (E7-16)*1 – E1 (E8-1)	V – BR	In condition without key inserted	Pulse generation
MREL (E6-8) – E1 (E8-1)	B-W – BR	IG switch ON	9 – 14
EGR (E9-20) – E01 (E10-7)	Y-G – W-B	IG switch ON	9 – 14
THG (E10-29) – E1 (E8-1)	G-Y – BR	Idling, EGR gas temp. 100°C (212°F)	0.5 – 1.5

*1: Models with engine immobilizer system.

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Fig. 7: Pin Voltage Chart (Camry 3.0L V6 - 2 Of 3)
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

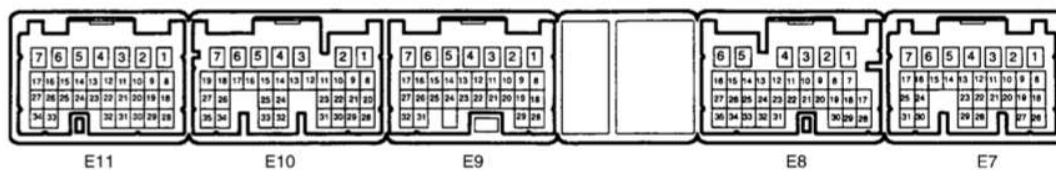
Symbols (Terminal No.)	Wiring Color	Condition	STD Voltage (V)
EGLS (E9-28) – E1 (E8-1)	W-G – BR	IG switch ON, Apply vacuum (0 kPa, 0 mmHg, 0 in.Hg) to EGR valve	0.4 – 1.6
EGLS (E9-28) – E1 (E8-1)	W-G – BR	IG switch ON, Apply vacuum (17.3 kPa, 130 mmHg, 5.12 in.Hg) to EGR valve	3.2 – 5.1
OX1B (E9-21) – E1 (E8-1)	W – BR	Maintain engine speed at 2,500 rpm for 90 sec. after warming up	Pulse generation
OX2B (E9-29) – E1 (E8-1)	B – BR	Maintain engine speed at 2,500 rpm for 90 sec. after warming up	Pulse generation
SPD (E7-17) – E1 (E8-1)	V-W – BR	IG switch ON, Rotate driving wheel slowly	0 – 5
W (E6-12) – E01 (E10-7)	G-R – W-B	IG switch ON	Below 3.0
PS (E8-10) – E1 (E8-1)	R-W – BR	IG switch ON	9 – 14
HT1B (E8-6) – E03 (E8-7) HT2B (E8-5) – E03 (E8-7)	L – W-B Y – W-B	Idling	Below 3.0
HT1B (E8-6) – E03 (E8-7) HT2B (E8-5) – E03 (E8-7)	L – W-B Y – W-B	IG switch ON	9 – 14
TC (E6-11) – E1 (E8-1)	P-B – BR	IG switch ON	9 – 14
ACMG (E7-3) – E1 (E8-1)	L-W – BR	A/C switch ON (At Idling)	Below 3.0
ACMG (E7-3) – E1 (E8-1)	L-W – BR	A/C switch OFF	9 – 14
A/CS (E7-31) – E1 (E8-1)	*1 P-L – BR *2 W – BR	IG switch ON, A/C switch ON	9 – 14
A/CI (E7-33) – E01 (E10-7)	*1 B – W-B *2 Y-B – W-B	IG switch ON, A/C switch OFF	9 – 14
ENG+ (E6-24) – ENG– (E6-30) TRC+ (E6-25) – TRC– (E6-31)	W-B G-L	Idling	Pulse generation

*1: Models with automatic A/C.

*2: Models with manual A/C.

G00094821

Fig. 8: Pin Voltage Chart (Camry 3.0L V6 - 3 Of 3)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.



Symbols (Terminal No.)	Wiring Color	Condition	STD Voltage (V)
VG (E10-24) – E2G (E10-32)	G–Y – L–W	Idling, P or N position, A/C switch OFF	0.5 – 3.0
THA (E11-20) – E2 (E11-28)	L–B – BR	Idling, Intake air temp. 20°C (68°F)	0.5 – 3.4
THW (E11-19) – E2 (E11-28)	G–Y – BR	Idling, Engine coolant temp. 80°C (176°F)	0.2 – 1.0
VTA (E11-21) – E2 (E11-28)	L – BR	IG switch ON, Accelerator pedal fully closed	0.4 – 1.0
		IG switch ON, Accelerator pedal fully open	3.2 – 4.8
VTA2 (E11-31) – E2 (E11-28)	B–R – BR	IG switch ON, Accelerator pedal fully closed	2.0 – 2.9
		IG switch ON, Accelerator pedal fully open	4.6 – 5.1
AF1A+ (E10-23) – E1 (E9-1)	O – BR	Always (IG switch ON)	*1 3.3 fixed
AF1A– (E10-31) – E1 (E9-1)	W – BR	Always (IG switch ON)	*1 3.0 fixed
OX1B (E8-22) – E1 (E9-1)	B – BR	Maintain engine speed at 2,500 rpm for 3 min. after warming up	Pulse generation
HT1B (E8-4) – E1 (E9-1)	P–B – BR	Idling	Below 3.0
HAF1A (E10-4) – E04 (E10-7)	B–R – W–B	IG switch ON	9 – 14
#10 (E11-1) – E01 (E11-7)	L – W–B	Idling	Pulse generation
#20 (E11-2) – E01 (E11-7)	R – W–B		
#30 (E11-3) – E01 (E11-7)	Y – W–B		
#40 (E11-4) – E01 (E11-7)	W – W–B		
KNK1 (E10-1) – E1 (E9-1)	W – BR	Idling	Pulse generation
G22+ (E11-26) – NE– (E11-34)	B–W – G	Idling	Pulse generation
NE+ (E11-27) – NE– (E11-34)	R – G		
VC (E11-18) – E2 (E11-28)	Y – BR	IG switch ON	4.5 – 5.5
PTNK (E7-21) – E2 (E11-28)	L–R – BR	IG switch ON, Disconnect hose from vapor pressure sensor	2.9 – 3.7
		Apply vacuum (less than 66.7 kPa (500 mmHg, 19.7 in.Hg) to vapor pressure sensor	Below 0.5
EVP1 (E9-11) – E1 (E9-1)	B–R – BR	IG switch ON	9 – 14
CCV (E9-12) – E1 (E9-1)	G – BR	IG switch ON	9 – 14
TBP (E7-4) – E1 (E9-1)	W–R – BR	IG switch ON	9 – 14
SPD (E8-17) – E1 (E9-1)	V–W – BR	IG switch ON, Rotate driving wheel slowly	Pulse generation
VPA (E7-22) – EPA (E7-28)	G–B – Y–B	IG switch ON, Accelerator pedal fully closed	0.5 – 1.1
		IG switch ON, Accelerator pedal fully open	3.0 – 4.6
VPA2 (E7-23) – EPA2 (E7-29)	GR–B – LG–B	IG switch ON, Accelerator pedal fully closed	0.9 – 2.3
		IG switch ON, Accelerator pedal fully open	3.4 – 5.0
VCPA (E7-26) – EPA (E7-28)	R–B – Y–B	IG switch ON	4.5 – 5.5
VCP2 (E7-27) – EPA2 (E7-29)	L–B – LG–B	IG switch ON	4.5 – 5.5

* 1: The ECM terminal voltage is fixed regardless of output from the sensor.

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Fig. 9: Pin Voltage Chart (Camry Solara 2.4L 4-Cyl. - 1 Of 2)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

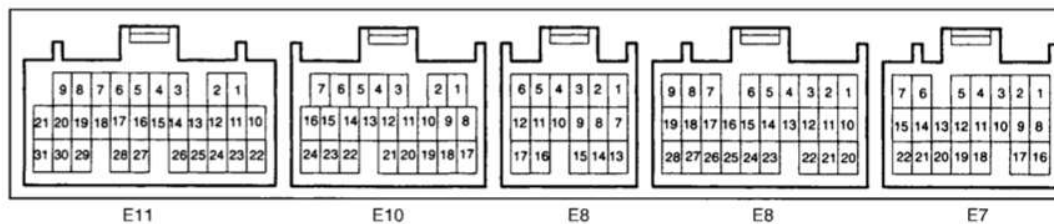
Symbols (Terminal No.)	Wiring Color	Condition	STD Voltage (V)
M+ (E9-5) – E01 (E11-7)	B – W-B	Idling	Pulse generation
M- (E9-4) – E01 (E11-7)	W – W-B		
+BM (E7-2) – E1 (E9-1)	R-L – BR	Always	9 – 14
IGT1 (E11-8) – E1 (E9-1)	R-W – BR	Idling	Pulse generation
IGT2 (E11-9) – E1 (E9-1)	P – BR		
IGT3 (E11-10) – E1 (E9-1)	LG-B – BR		
IGT4 (E11-11) – E1 (E9-1)	L-Y – BR		
IGF (E11-23) – E1 (E9-1)	W-R – BR	IG switch ON	4.5 – 5.5
		Idling	Pulse generation
OCV+ (E9-16) – OCV- (E9-15)	B-W – Y	IG switch ON	Pulse generation
STP (E8-19) – E1 (E9-1)	G-W – BR	IG switch ON, Brake pedal depressed	7.5 – 14
NSW (E10-8)*1 – E1 (E9-1)	B-W – BR	IG switch ON, Shift position in P or N position	0 – 3
BATT (E7-3) – E1 (E9-1)	B-Y – BR	Always	9 – 14
IGSW (E7-9) – E1 (E9-1)	B-R – BR	IG switch ON	9 – 14
+B (E7-1) – E1 (E9-1)	R – BR	IG switch ON	9 – 14
MREL (E7-8) – E1 (E9-1)	B-R – BR	IG switch ON	9 – 14
STA (E10-9) – E1 (E9-1)	GR – BR	Cranking	6.0 or more
FC (E7-10) – E01 (E11-7)	G-R – W-B	IG switch ON	9 – 14
LCKI (E9-23) – E1 (E9-1)	W-L – BR	A/C compressor is operating	Pulse generation
THR (E8-32) – E2 (E11-28)	L-W – BR	IG switch ON, A/C evaporator temp. 0°C (32°F)	2.2 – 2.6
		IG switch ON, A/C evaporator temp. 15°C (59°F)	1.4 – 1.8
TC (E7-14) – E1 (E9-1)	P-B – BR	IG switch ON	9 – 14
W (E7-18) – E1 (E9-1)	G-R – BR	Idling	9 – 14
		IG switch ON	Below 3.0
A/Ci (E8-33) – E1 (E9-1)	R-W – BR	A/C indicator light lights up	Below 4.0
		A/C indicator light does not light up	9 – 14
A/CS (E8-31) – E1 (E9-1)	R-B – BR	A/C switch ON	9 – 14
		A/C switch OFF	Below 1.0
ACMG (E9-2) – E01 (E11-7)	L-Y – BR	A/C magnetic clutch ON	Below 1.0
ELS (E7-12) – E1 (E9-1)	G-O – BR	Defogger switch and taillight switch OFF	Below 1.5
PS (E9-10) – E1 (E9-1)	R-W – BR	IG switch ON	9 – 14
		At idling, Turn steering wheel to lock position	Below 3.0
SIL (E7-11) – E1 (E9-1)	W – BR	During transmission	Pulse generation
TACH (E7-5) – E1 (E9-1)	B-O – BR	Idling	Pulse generation
KSW (E8-34) *2 – E1 (E9-1)	L-B – BR	At time of inserting key	Below 1.5
		In condition without key inserted	Pulse generation
RXCK (E8-27) *2 – E1 (E9-1)	R-L – BR	At time of inserting key	Pulse generation
CODE (E8-15) *2 – E1 (E9-1)	G-W – BR	At time of inserting key	Pulse generation
TXCT (E8-26) *2 – E1 (E9-1)	L-Y – BR	At time of inserting key	Pulse generation
IMLD (E8-16) *2 – E1 (E9-1)	R-Y – BR	In condition without key inserted	Pulse generation

* 1: A/T models only.

* 2: Models with engine immobilizer system.

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Fig. 10: Pin Voltage Chart (Camry Solara 2.4L 4-Cyl. - 2 Of 2)
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.



Symbols (Terminal No.)	Wiring Color	Condition	STD Voltage (V)
BATT (E7-1) – E1 (E10-17)	B-Y ↔ BR	Always	9 – 14
+B (E7-16) – E1 (E10-17)	R ↔ BR	IG switch ON	9 – 14
VC (E10-2) – E2 (E10-18)	Y ↔ BR	IG switch ON	4.5 – 5.5
VTA1 (E10-23) – E2 (E10-18)	L ↔ BR	IG switch ON, Throttle valve fully closed	0.3 – 1.0
		IG switch ON, Throttle valve fully open	3.2 – 4.9
VG (E10-10) – E2G (E10-19)	P ↔ R-B	Idling, A/C switch OFF	1.1 – 1.5
THA (E10-22) – E2 (E10-18)	L-Y ↔ BR	Idling, Intake air temp. 20°C (68°F)	0.5 – 3.4
THW (E10-4) – E2 (E10-18)	G-B ↔ BR	Idling, Engine coolant temp. 80°C (176°F)	0.2 – 1.0
STA (E7-7) – E1 (E10-17)	GR ↔ BR	Cranking	6.0 or more
#10 (E10-5) – E01 (E11-21)	L ↔ BR	IG switch ON	9 – 14
#20 (E10-6) – E01 (E11-21)	R ↔ BR		
#30 (E11-1) – E01 (E11-21)	Y ↔ BR	Idling	Pulse generation
#40 (E11-2) – E01 (E11-21)	W ↔ BR		
#50 (E11-3) – E01 (E11-21)	R-W ↔ BR		
#60 (E11-4) – E01 (E11-21)	G ↔ BR		
IGT1 (E11-11) – E1 (E10-17)	GR ↔ BR	Idling	Pulse generation
IGT2 (E11-12) – E1 (E10-17)	BR-Y ↔ BR		
IGT3 (E11-13) – E1 (E10-17)	LG-B ↔ BR		
IGF (E11-25) – E1 (E10-17)	W-R ↔ BR	IG switch ON	4.5 – 5.5
		Idling	Pulse generation
THG (E10-13) – E2 (E10-18)	G-Y ↔ BR	IG switch ON	4.5 – 5.5
G22 (E11-10) – NE- (E10-24)	B-W ↔ L	Idling	Pulse generation
NE+ (E10-16) – NE- (E10-24)	B-R ↔ L	Idling	Pulse generation
ELS (E7-19) – E1 (E10-17)	G-O ↔ BR	Taillight switch ON	7.5 – 14
		Taillight switch OFF	0 – 1.5
ELS2 (E7-18) – E1 (E10-17)	B-Y ↔ BR	Defogger switch ON	7.5 – 14
		Defogger switch OFF	0 – 1.5
EGR (E11-18) – E01 (E11-21)	Y-G ↔ BR	IG switch ON	9 – 14
ACIS (E11-17) – E01 (E11-21)	R-Y ↔ BR	IG switch ON	9 – 14
FC (E7-3) – E01 (E11-21)	G-R ↔ BR	IG switch ON	9 – 14
		Idling	0 – 3.0
CCV (E8-5) – E01 (E11-21)	L-W ↔ BR	IG switch ON	9 – 14
EVP1 (E10-7) – E01 (E11-21)	LG ↔ BR	IG switch ON	9 – 14

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Fig. 11: Pin Voltage Chart (Camry Solara 3.0L V6 - 1 Of 2)
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

Symbols (Terminal No.)	Wiring Color	Condition	STD Voltage (V)
RSC (E11-15) – E01 (E11-21) RSO (E11-16) – E01 (E11-21)	Y-B ↔ BR R-W ↔ BR	IG switch ON, Disconnect E11 connector from ECM	9 – 14
OXS (E8-8) – E1 (E10-17)	B ↔ BR	Maintain engine speed at 2,500 rpm for 3 min. after warming up	Pulse generation
HTS (E8-9) – E03 (E11-30)	P-G ↔ BR	Idling	9 – 14
		IG switch ON	Below 3.0
KNKR (E11-27) – E1 (E10-17) KNKL (E11-28) – E1 (E10-17)	W ↔ BR W ↔ BR	Idling	Pulse generation
NSW (E8-20)*1 – E1 (E10-17)	B-W ↔ BR	IG switch ON, Shift position other than P, N	9 – 14
		IG switch ON, Shift position in P, N	0 – 3.0
SPD (E8-22) – E1 (E10-17)	V-W ↔ BR	IG switch ON, Rotate driving wheel slowly	Pulse generation
W (E7-6) – E01 (E11-21)	G-R ↔ BR	IG switch ON	Below 3.0
PS (E10-9) – E1 (E10-17)	B-L ↔ BR	IG switch ON	9 – 14
ACT (E8-13) – E1 (E10-17)	LG-B ↔ BR	A/C switch OFF	Below 2.0
		A/C switch ON at idling	9 – 14
A/C (E8-25) – E1 (E10-17)	B-Y ↔ BR	A/C switch ON at idling	Below 2.0
		A/C switch OFF	9 – 14
CF (E11-29) – E1 (E10-17)	G-W ↔ BR	Electric cooling fan is operating on high speed	9 – 14
		Electric cooling fan is operating on low speed or OFF	0 – 2
TACH (E8-27) – E1 (E10-17)	B-O ↔ BR	Idling	Pulse generation
PTNK (E7-17) – E1 (E10-17)	L-R ↔ BR	IG switch ON	3.0 – 3.6
		IG switch ON, Apply vacuum 2.0 kPa (15 mmHg, 0.6 in.Hg) to vapor pressure sensor	1.3 – 2.1
SIL (E7-11) – E1 (E10-17)	W ↔ BR	During transmission	Pulse generation
STP (E7-15) – E1 (E10-17)	G-W ↔ BR	IG switch ON, Brake pedal depressed	7.5 – 14
		IG switch ON, Brake pedal released	Below 1.5
EGLS (E11-22) – E1 (E10-17)	W-G ↔ BR	IG switch ON, Apply vacuum (0 kPa, 0 mmHg, 0 in.Hg) to EGR valve	0.4 – 1.6
		IG switch ON, Apply vacuum (17.3 kPa, 130 mmHg, 5.12 in.Hg) to EGR valve	3.2 – 5.1
AFR+ (E10-11)*1 – E1 (E10-17) AFL+ (E10-12)*1 – E1 (E10-17)	BR ↔ BR L ↔ BR	IG switch ON	*2 3.3
AFR- (E10-20)*1 – E1 (E10-17) AFL- (E10-21)*1 – E1 (E10-17)	B-R ↔ BR B-W ↔ BR	IG switch ON	*2 3.0
KSW (E9-11)*3 – E1 (E10-17)	L-B ↔ BR	At time of inserting key	Below 1.5
		In condition without key inserted	4 – 5
RXCK (E9-5)*3 – E1 (E10-17)	R-L ↔ BR	At time of inserting key	Pulse generation
CODE (E9-4)*3 – E1 (E10-17)	G-W ↔ BR	At time of inserting key	Pulse generation
IGSW (E7-2) – E1 (E10-17)	B-R ↔ BR	IG switch ON	9 – 14
TXCT (E9-10)*3 – E1 (E10-17)	L-Y ↔ BR	At time of inserting key	Pulse generation
IMLD (E9-16)*3 – E1 (E10-17)	R-Y ↔ BR	In condition without key inserted	Pulse generation
MREL (E7-8) – E1 (E10-17)	B-R ↔ BR	IG switch ON	9 – 14

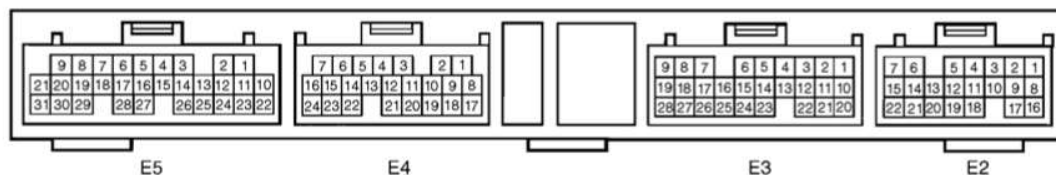
*1: A/T models only.

*2: The ECM terminal voltage is fixed regardless of output from the sensor.

*3: Models with engine immobilizer system.

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Fig. 12: Pin Voltage Chart (Camry Solara 3.0L V6 - 2 Of 2)
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.



Symbols (Terminals No.)	Wiring Color	Condition	STD Voltage (V)
BATT (E2 - 1) - E1 (E4 - 17)	W ↔ BR	Always	9 - 14
FC (E2 - 3) - E1 (E4 - 17)	G-R ↔ BR	IG switch ON	9 - 14
		Idling	0 - 0.3
PTNK (E2 - 4) - E1 (E4 - 17)	L-B ↔ BR	IG switch ON, fuel cap taken off	2.9 - 3.7
IGSW (E2 - 8) - E1 (E4 - 17)	B-O ↔ BR	IG switch ON	9 - 14
W (E2 - 15) - E1 (E4 - 17)	R-B ↔ BR	Idling	9 - 14
		IG switch ON	Below 3.0
+B (E2 - 16) - E1 (E4 - 17)	B-R ↔ BR	IG switch ON	9 - 14
STP (E3 - 6) - E1 (E4 - 17)	G-W ↔ BR	IG switch ON, brake pedal depressed	7.5 - 14
		IG switch ON, brake pedal depressed	Below 1.5
F/PS (E3 - 8) - E1 (E4 - 17)	P ↔ BR	IG switch ON	Below 1.5
VSV (E3 - 9) - E1 (E4 - 17)	R-L ↔ BR	IG switch ON	9 - 14
STA (E3 - 11) - E1 (E4 - 17)	L ↔ BR	Cranking	6.0 or more
HT1B (E3 - 16) - E03 (E2 - 7)	Y-G ↔ W-B	Idling	Below 3.0
		IG switch ON	9 - 14
MREL (E3 - 21) - E1 (E4 - 17)	L-B ↔ BR	IG switch ON	9 - 14
SPD (E3 - 22) - E1 (E4 - 17)	W-R ↔ BR	IG switch ON, rotate driving wheel slowly	Pulse generation
OX1B (E3 - 25) - E2 (E4 - 18)	W ↔ BR	Maintain engine speed at 2,500 rpm for 2 min. after warning up	Pulse generation
TACH (E3 - 27) - E1 (E4 - 17)	BR-W ↔ BR	Idling	Pulse generation
VC (E4 - 2) - E2 (E4 - 18)	R ↔ BR	IG switch ON	9 - 14
HT1A (E4 - 3) - E03 (E2 - 7)	Y-R ↔ W-B	Idling	Below 3.0
		IG switch ON	9 - 14
EVP1 (E4 - 4) - E01 (E5 - 21)	G-O ↔ W-B	IG switch ON	9 - 14
OVL+ (E4 - 7) - OVL- (E4 - 6)*1	L-W ↔ L-B	Engine speed at 6,000 rpm or more	9 - 14
VG (E4 - 11) - EVG (E4 - 1)	G-W ↔ Y-G	Idling, A/C switch OFF	1.1 - 1.5
OX1A (E4 - 12) - E2 (E4 - 18)	B ↔ BR	Maintain engine speed at 2,500 rpm for 2 min. after warning up	Pulse generation
THW (E4 - 14) - E2 (E4 - 18)	G ↔ BR	Idling, Engine coolant temp. at 80 °C (176 °F)	0.2 - 1.0
NE+ (E4 - 16) - NE- (E4 - 24)	O ↔ W	Idling	Pulse generation
OSW (E4 - 21) - E1 (E4 - 17)*1	GR ↔ BR	Idling	9 - 14
THA (E4 - 22) - E2 (E4 - 18)	L-R ↔ BR	Idling, intake air temp. 20 °C (68 °F)	0.5 - 3.4

*1: 2ZZ-GE models only.

G00013100

Fig. 13: Pin Voltage Chart (Celica - 1 Of 2)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

Symbols (Terminals No.)	Wiring Color	Condition	STD Voltage (V)
VTA (E4 - 23) - E2 (E4 - 18)	B-W ↔ BR	IG switch ON, throttle valve fully closed	0.3 - 1.0
		IG switch ON, throttle valve fully open	3.2 - 4.9
#10 (E5 - 1) - E01 (E5 - 21)	R ↔ W-B	IG switch ON	9 - 14
		Idling	Pulse generation
#20 (E5 - 2) - E01 (E5 - 21)	R-L ↔ W-B	IG switch ON	9 - 14
		Idling	Pulse generation
#30 (E5 - 3) - E01 (E5 - 21)	R-W ↔ W-B	IG switch ON	9 - 14
		Idling	Pulse generation
#40 (E5 - 4) - E01 (E5 - 21)	R-B ↔ W-B	IG switch ON	9 - 14
		Idling	Pulse generation
IGT1 (E5 - 10) - E1 (E4 - 17)	R-B ↔ BR	Idling	Pulse generation
IGT2 (E5 - 11) - E1 (E4 - 17)	R-W ↔ BR	Idling	Pulse generation
IGT3 (E5 - 12) - E1 (E4 - 17)	G-R ↔ BR	Idling	Pulse generation
IGT4 (E5 - 13) - E1 (E4 - 17)	R-Y ↔ BR	Idling	Pulse generation
CCV (E5 - 17) - E1 (E4 - 17)	V-W ↔ BR	IG switch ON	9 - 14
RSO (E5 - 18) - E01 (E5 - 21)	B-W ↔ W-B	IG switch ON, disconnect E5 connector from ECM	9 - 14
MOPS (E5 - 22) - E1 (E4 - 17)	Y-B ↔ BR	Idling	9 - 14
OCV+ (E5 - 24) - OCV- (E5 - 23)	G-O ↔ W	IG switch ON	Pulse generation
IGF (E5 - 25) - E1 (E4 - 17)	B-Y ↔ BR	IG switch ON	4.5 - 5.5
		Idling	Pulse generation
KNK1 (E5 - 27)*1 - E1 (E4 - 17)	W ↔ BR	Idling	Pulse generation
PS (E5 - 28) - E1 (E4 - 17)*1 PS (E5 - 30) - E1 (E4 - 17)*2	P ↔ BR	IG switch ON	9 - 14

*1: 1ZZ-FE models only.

*2: 2ZZ-GE models only.

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Fig. 14: Pin Voltage Chart (Celica - 2 Of 2)
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

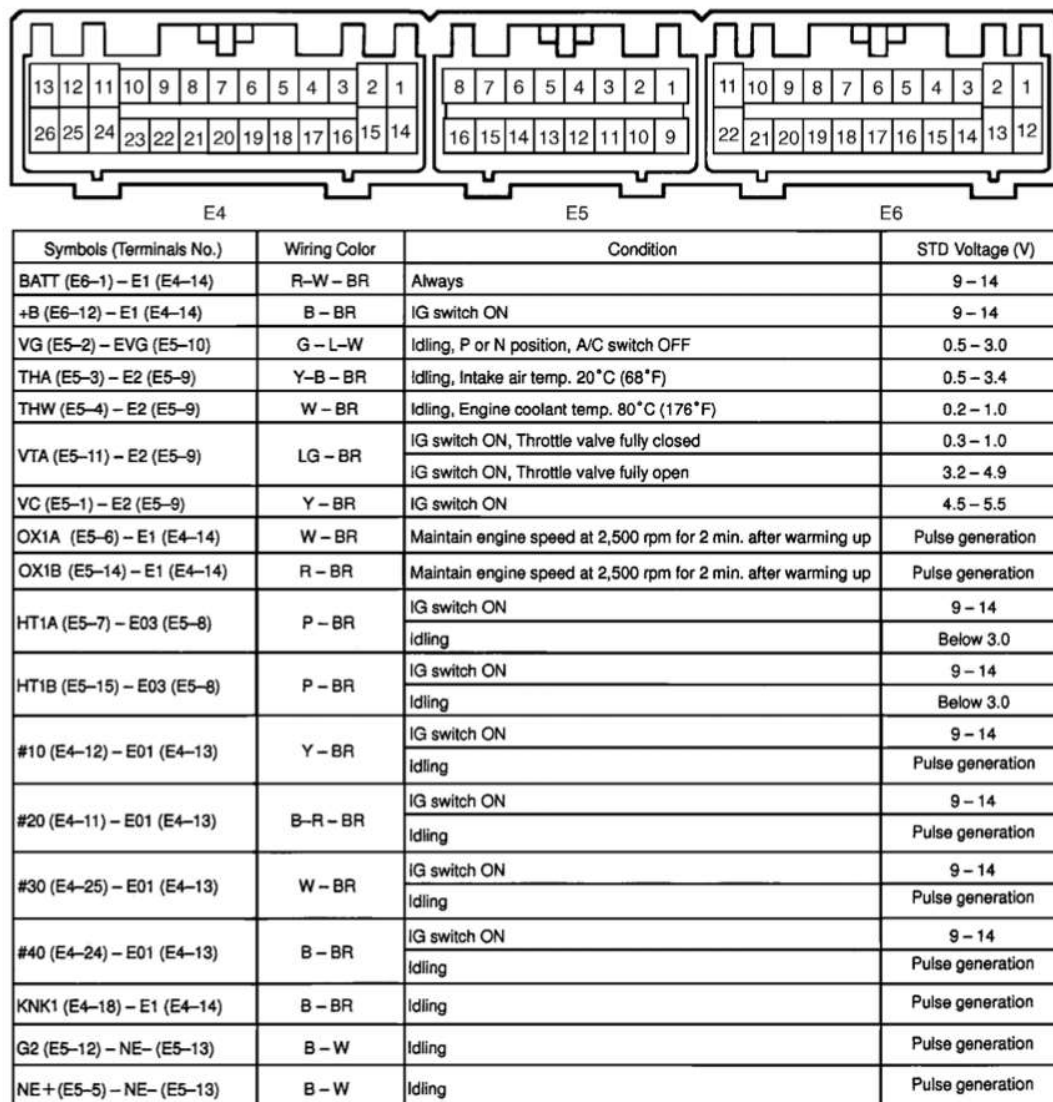


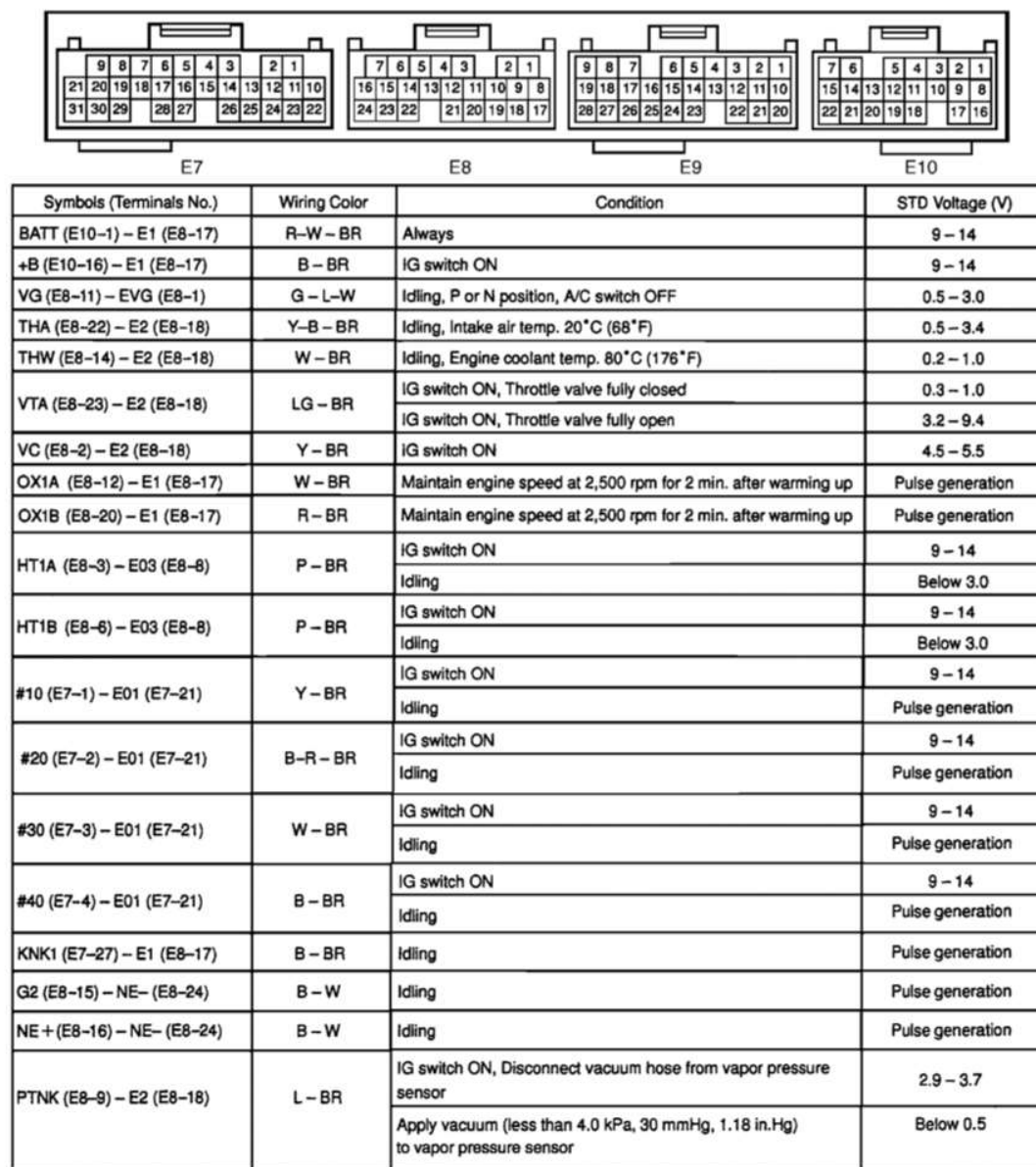
Fig. 15: Pin Voltage Chart (Corolla With M/T Or 3-Speed A/T - 1 Of 2)
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

Symbols (Terminals No.)	Wiring Color	Condition	STD Voltage (V)
PTNK (E4-17) – E2 (E5-9)	L – BR	IG switch ON, Disconnect vacuum sensor from vapor pressure sensor	2.9 – 3.7
		Apply vacuum (less than 4.0 kPa, 30 mmHg, 1.18 in.Hg) to vapor pressure sensor	Below 0.5
CCV (E4-5) – E01 (E4-13)	L – B – BR	IG switch ON	9 – 14
TBP (E4-4) – E01 (E4-13)	R – BR	IG switch ON	9 – 14
EVP1 (E4-7) – E01 (E4-13)	L – B – BR	IG switch ON	9 – 14
SPD (E6-9) – E1 (E4-14)	V – W – BR	IG switch ON, Rotate driving wheel slowly	Pulse generation
IGF (E4-3) – E1 (E4-14)	L – Y – BR	IG switch ON	4.5 – 5.5
		Idling	Pulse generation
IGT1 (E4-20) – E1 (E4-14)	R – L – BR	Idling	Pulse generation
IGT2 (E4-21) – E1 (E4-14)	Y – G – BR	Idling	Pulse generation
IGT3 (E4-22) – E1 (E4-14)	GR – BR	Idling	Pulse generation
IGT4 (E4-23) – E1 (E4-14)	W – BR	Idling	Pulse generation
OCV+ (E4-2) – OCV– (E4-1)	B – R	IG switch ON	Pulse generation
TE1 (E6-6) – E1 (E4-14)	L – W – BR	IG switch ON	9 – 14
W (E6-5) – E01 (E4-13)	R – Y – BR	IG switch ON	Below 3.0
		Idling	9 – 14
NSW (E4-19)*1 – E1 (E4-14)	B – W – BR	IG switch ON, Shift position in "P" or "N" position	Below 3.0
		IG switch ON, Shift position other than "P" or "N" position	9 – 14
STA (E6-11) – E1 (E4-14)	B – W – BR	IG switch ON	Below 6.0
FC (E6-14) – E01 (E4-13)	G – R – BR	IG switch ON	9 – 14
		Idling	0 – 3
AC (E6-10) – E1 (E4-14)	Y – R – BR	A/C switch ON (at Idling)	Below 1.5
		A/C switch OFF	7.5 – 14
ACT (E6-21) – E1 (E4-14)	R – L – BR	A/C switch ON	9 – 14
		A/C switch OFF (at Idling)	Below 1.5
ELS (E6-2) – E1 (E4-14)	B – BR	Light switch ON	9 – 14
		Light switch OFF	Below 3.0
ELS2 (E6-3) – E1 (E4-14)	G – BR	Defogger switch ON	9 – 14
		Defogger switch OFF	Below 3.0
TACH (E6-13) – E1 (E4-14)	B – BR	Idling	Pulse generation
SIL (E6-17) – E1 (E4-14)	W – BR	During transmission	Pulse generation

*1: A/T models only.

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Fig. 16: Pin Voltage Chart (Corolla With M/T Or 3-Speed A/T - 2 Of 2)
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.



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Fig. 17: Pin Voltage Chart (Corolla With 4-Speed A/T - 1 Of 2)
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

Symbols (Terminals No.)	Wiring Color	Condition	STD Voltage (V)
CCV (E7-17) – E01 (E7-21)	L-B – BR	IG switch ON	9 – 14
TBP (E7-22) – E01 (E7-21)	R – BR	IG switch ON	9 – 14
EVP1 (E8-4) – E01 (E7-21)	L-B – BR	IG switch ON	9 – 14
SPD (E9-22) – E1 (E8-17)	V-W – BR	IG switch ON, Rotate driving wheel slowly	Pulse generation
IGF (E7-25) – E1 (E8-17)	L-Y – BR	IG switch ON	9 – 14
		Idling	Pulse generation
IGT1 (E7-10) – E1 (E8-17)	R-L – BR	Idling	Pulse generation
IGT2 (E7-11) – E1 (E8-17)	Y-G – BR	Idling	Pulse generation
IGT3 (E7-12) – E1 (E8-17)	GR – BR	Idling	Pulse generation
IGT4 (E7-13) – E1 (E8-17)	W – BR	Idling	Pulse generation
OCV+ (E7-24) – OCV- (E7-23)	B – R	IG switch ON	Pulse generation
STP (E9-6) – E1 (E8-17)	G-W – BR	IG switch ON, Brake pedal depress	7.5 – 14
		IG switch ON, Brake pedal released	Below 1.5
TE1 (E9-5) – E1 (E8-17)	L-W – BR	IG switch ON	9 – 14
W (E10-15) – E01 (E7-21)	R-Y – BR	IG switch ON	Below 3.0
		Idling	9 – 14
NSW (E9-13) – E1 (E8-17)	B-W – BR	IG switch ON, Shift position in "P" or "N" position	Below 3.0
		IG switch ON, Shift position other than "P" or "N" position	9 – 14
STA (E9-11) – E1 (E8-17)	B-W – BR	IG switch ON	Below 6.0
FC (E10-3) – E01 (E7-21)	G-R – BR	IG switch ON	9 – 14
		Idling	0 – 3
AC (E10-18) – E1 (E8-17)	Y-R – BR	A/C switch ON (at idling)	Below 1.5
		A/C switch OFF	7.5 – 14
ACT (E10-12) – E1 (E8-17)	R-L – BR	A/C switch ON	9 – 14
		A/C switch OFF (at idling)	Below 1.5
ELS (E9-10) – E1 (E8-17)	B – BR	Light switch ON	9 – 14
		Light switch OFF	Below 3.0
ELS2 (E9-20) – E1 (E8-17)	G – BR	Defogger switch ON	9 – 14
		Defogger switch OFF	Below 3.0
ODMS (E9-4) – E01 (E7-21)	LG – BR	IG switch ON	9 – 14
ODLP (E9-19) – E01 (E7-21)	LG-B – BR	IG switch ON	9 – 14
TACH (E9-27) – E1 (E8-17)	B – BR	Idling	Pulse generation
SIL (E10-11) – E1 (E8-17)	W – BR	During transmission	Pulse generation

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Fig. 18: Pin Voltage Chart (Corolla With 4-Speed A/T - 2 Of 2)
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

Symbols (Terminal No.)		Wiring Color	Condition	STD Voltage (V)									
BATT (E4 - 1) - E1 (E7 - 14)		B-Y ↔ BR	Always	9 - 14									
+B (E4 - 12) - E1 (E7 - 14)		B-R ↔ BR	IG switch ON	9 - 14									
VC (E6 - 1) - E2 (E6 - 9)		R-W ↔ BR	IG switch ON	4.5 - 5.5									
VTA (E6 - 11) - E2 (E6 - 9)	Y-R ↔ BR	IG switch ON Throttle valve fully closed	0.3 - 1.0										
		IG switch ON Throttle valve fully open	3.2 - 4.9										
VG (E6 - 2) - E2 (E6 - 9)		P ↔ BR	Idling, A/C switch OFF, Shift position in N or P position	1.1 - 1.5									
THA (E6 - 3) - E2 (E6 - 9)		Y-B ↔ BR	Idling, Intake air temp. 20°C (68°F)	0.5 - 3.4									
THW (E6 - 4) - E2 (E6 - 9)		R-L ↔ BR	Idling, Engine coolant temp. 80°C (176°F)	0.2 - 1.0									
STA (E4 - 11) - E1 (E7 - 14)		B ↔ BR	Cranking	6.0 or more									
#10 (E7 - 12) - E01 (E7 - 13)	B-O ↔ BR	IG switch ON	9 - 14										
		Idling	Pulse generation										
#20 (E7 - 11) - E01 (E7 - 13)	B-Y ↔ BR	IG switch ON	9 - 14										
		Idling	Pulse generation										
#30 (E7 - 25) - E01 (E7 - 13)	B-W ↔ BR	IG switch ON	9 - 14										
		Idling	Pulse generation										
#40 (E7 - 24) - E01 (E7 - 13)	B-L ↔ BR	IG switch ON	9 - 14										
		Idling	Pulse generation										
IGT1 (E7 - 22) - E1 (E7 - 14)		G-R ↔ BR	Idling	Pulse generation									
IGT2 (E7 - 21) - E1 (E7 - 14)		G-B ↔ BR	Idling	Pulse generation									
IGT3 (E7 - 20) - E1 (E7 - 14)		G-O ↔ BR	Idling	Pulse generation									
IGT4 (E7 - 19) - E1 (E7 - 14)		G-Y ↔ BR	Idling	Pulse generation									
IGF (E7 - 3) - E1 (E7 - 14)	Y ↔ BR	IG switch ON	4.5 - 5.5										
		Idling	Pulse generation										
G2 (E7 - 18) - NE⊖ (E7 - 16)		B ↔ W	Idling	Pulse generation									

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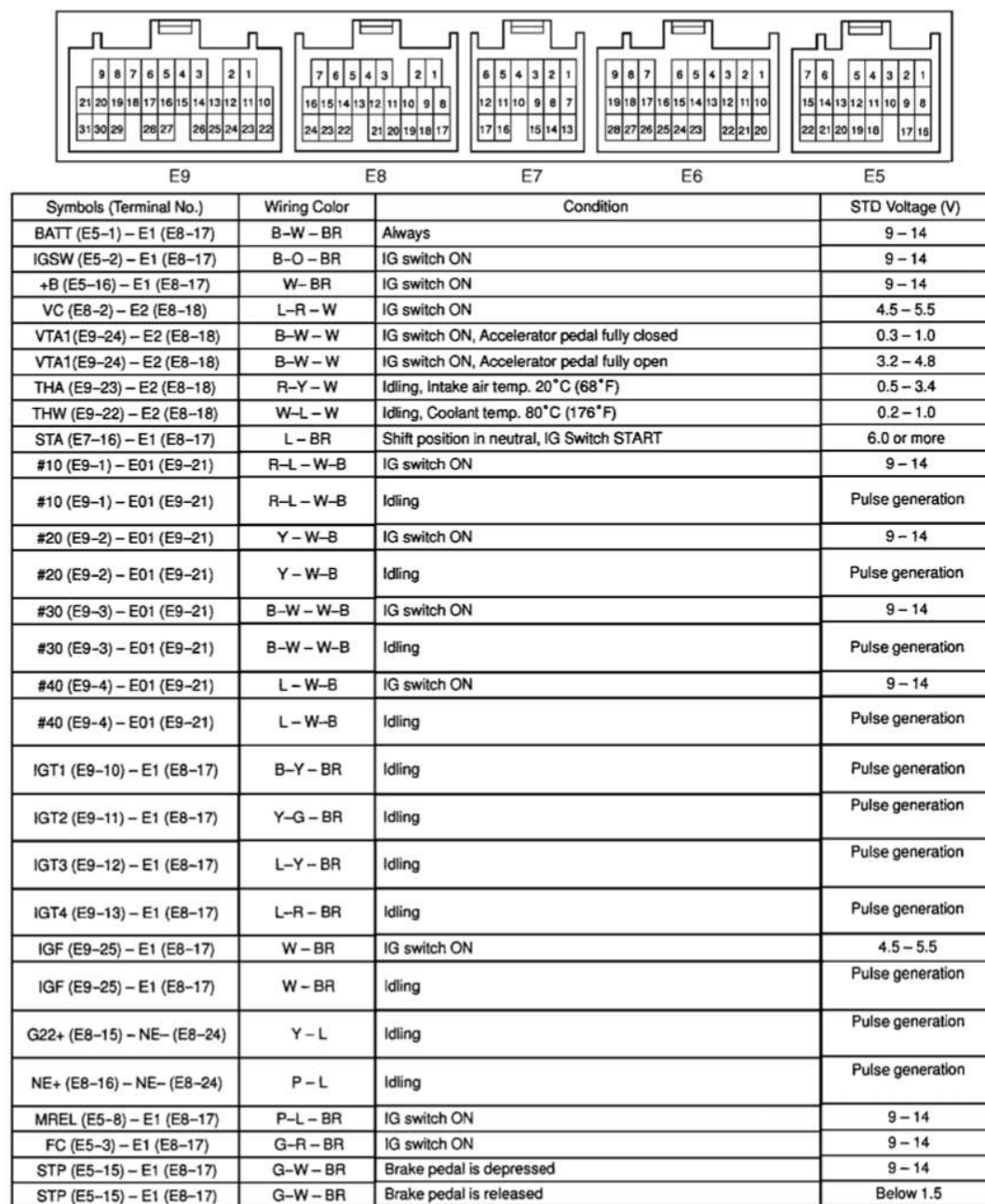
Fig. 19: Pin Voltage Chart (ECHO - 1 Of 2)
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

Symbols (Terminal No.)	Wiring Color	Condition	STD Voltage (V)
NE (E7 - 17) - NE- (E7 - 16)	O ↔ W	Idling	Pulse generation
FC (E4 - 14) - E01 (E7 - 13)	G ↔ BR	IG switch ON	9 - 14
EVP1 (E7 - 9) - E1 (E7 - 14)	W-G ↔ BR	IG switch ON	9 - 14
RSD (E7 - 2) - E1 (E7 - 14)	B-R ↔ BR	IG switch ON Disconnect ECM E7 connector	0 - 3
OX1A (E6 - 6) - E2 (E6 - 9)	R ↔ BR	Maintain engine speed at 2,500 rpm for 2 min. after warming up	Pulse generation
OX1B (E6 - 5) - E2 (E6 - 9)	B ↔ BR	Maintain engine speed at 2,500 rpm for 2 min. after warming up	Pulse generation
HT (E6 - 8) - E03 (E7 - 1)	O ↔ BR	Idling	Below 3.0
		IG switch ON	9 - 14
HT2 (E6 - 16) - E03 (E7 - 1)	W ↔ BR	Idling	Below 3.0
		IG switch ON	9 - 14
KNK1 (E6 - 13) - E2 (E6 - 9)	W ↔ BR	Idling	Pulse generation
NSW (E4 - 22)*1- E1 (E7 - 14)	B ↔ BR	IG switch ON Shift position other than P or N position	9 - 14
		IG switch ON Shift position in P or N position	0 - 3.0
SPD (E4 - 9) - E1 (E7 - 14)	V-W ↔ BR	IG switch ON Rotate driving wheel slowly	Pulse generation
W (E4 - 5) - E1 (E7 - 14)	Y-R ↔ BR	Idling	9 - 14
		IG switch ON	Below 3.0
ACT (E4 - 21) - E1 (E7 - 14)	B ↔ BR	A/C switch OFF	Below 2.0
		A/C switch ON at idle	9 - 14
AC (E4 - 10) - E1 (E7 - 14)	BW ↔ BR	A/C switch ON at idle	Below 1.5
		A/C switch OFF	7.5 - 14
STP (E7 - 6) - E1 (E7 - 14)	G-W ↔ BR	IG switch ON, Brake pedal is depressed	7.5 - 14
		IG switch ON, Brake pedal is released	Below 1.5
PSP (E6 - 12) - E2 (E6 - 9)	Y ↔ BR	PS pressure 0 kPa (0 kgf/cm ² , 0 psi)	0.5 V
		PS pressure 3,500 kPa (36 kgf/cm ² , 512 psi)	2.5 V
		PS pressure 7,000 kPa (71 kgf/cm ² , 1,010 psi)	4.5 V
CCV (E4 - 3) - E1 (E7 - 14)	L ↔ BR	IG switch ON	9 - 14
VG (E6 - 2) - EVG (E6 - 10)	P ↔ V	Idling, A/C switch OFF	1.1 - 1.5
OCV+ (E7 - 10) - OCV- (E7 - 23)	R-W ↔ R-B	IG switch ON	Pulse generation

* 1: A/T models only.

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Fig. 20: Pin Voltage Chart (ECHO - 2 Of 2)
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.



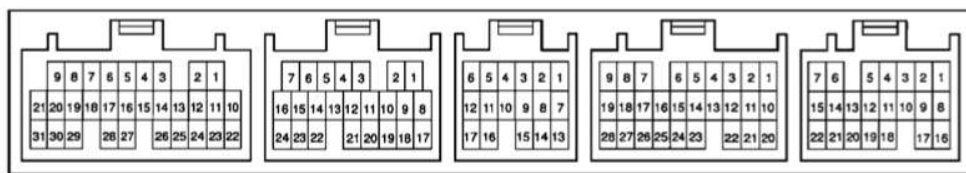
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Fig. 21: Pin Voltage Chart (Highlander 2.4L 4-Cyl. - 1 Of 2)
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

Symbols (Terminal No.)	Wiring Color	Condition	STD Voltage (V)
OX1B (E8-11) – E1 (E8-17)	B – BR	Maintain engine speed at 2,500 rpm for 90 sec. after warming up	Pulse generation
OX2B (E7-15) – E1 (E8-17)	W – BR	Maintain engine speed at 2,500 rpm for 90 sec. after warming up	Pulse generation
HT1B (E8-3) – E03 (E9-30)	R-L – W-B	Idling	Below 3.0
HT1B (E8-3) – E03 (E9-30)	R-L – W-B	IG switch ON	9 – 14
HT2B (E7-14) – E03 (E9-30)	B – W-B	Idling	Below 3.0
HT2B (E7-14) – E03 (E9-30)	B – W-B	IG switch ON	9 – 14
KNK1 (E9-27) – E1 (E8-17)	W – BR	Maintain engine speed at 4,000 rpm after warming up	Pulse generation
TC (E6-5) – E1 (E8-17)	P-B – BR	IG switch ON	9 – 14
W (E5-6) – E01 (E9-21)	L-R – W-B	Idling	9 – 14
W (E5-6) – E01 (E9-21)	L-R – W-B	IG switch ON	Below 3.0
OCV+ (E9-19) – OCV- (E9-29)	G-W – Y-R	IG switch ON	Pulse generation
EVP1 (E8-6) – E01 (E9-21)	B-R – W-B	IG switch ON	9 – 14
RSD (E9-18) – E1 (E8-17)	G-B – BR	IG switch ON	9 – 14
TBP (E6-6) – E01 (E9-21)	G-Y – W-B	IG switch ON	3.0 – 3.6
PTNK (E6-21) – E2 (E8-18)	L-B – W	IG switch ON	3.0 – 3.6
SPD (E6-22) – E01 (E9-21)	W-R – W-B	IG switch ON	9 – 14
ACMG (E5-7) – E01 (E9-21)	Y-G – W-B	Idling, Magnetic clutch is ON	Below 1.0
ACMG (E5-7) – E01 (E9-21)	Y-G – W-B	Idling, Magnetic clutch is OFF	9 – 14

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Fig. 22: Pin Voltage Chart (Highlander 2.4L 4-Cyl.- 2 Of 2)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.



Symbols (Terminal No.)	Wiring Color	Condition	STD Voltage (V)
BATT (E5-1) – E1 (E8-17)	B-W – BR	Always	9 – 14
+B (E5-16) – E1 (E8-17)	W – BR	IG switch ON	9 – 14
VC (E8-2) – E2 (E8-18)	L-R – W	IG switch ON	4.5 – 5.5
VTA1 (E8-23) – E2 (E8-18)	B-W – W	IG switch ON, Throttle valve fully closed	0.3 – 0.8
VTA1 (E8-23) – E2 (E8-18)	B-W – W	IG switch ON, Throttle valve fully open	3.2 – 4.9
VG (E8-10) – E2G (E8-19)	Y-G – R-B	Idling, A/C switch OFF	1.0 – 1.5
VV1+ (E9-10) – NE- (E8-24)	P – L	Idling	Pulse generation
VV2+ (E9-22) – NE- (E8-24)	R – L	Idling	Pulse generation
NE+ (E8-16) – NE- (E8-24)	P – L	Idling	Pulse generation
OC1+ (E9-6) – OC1- (E9-5)	W-G – G-Y	IG switch ON	Pulse generation
OC2+ (E9-29) – OC2- (E9-18)	G-W – Y-R	IG switch ON	Pulse generation
THA (E8-22) – E2 (E8-18)	R-Y – W	Idling, Intake air temp. 20°C (68°F)	0.5 – 3.4
THW (E8-14) – E2 (E8-18)	W-L – W	Idling, Engine coolant temp. 80°C (176°F)	0.2 – 1.0
STA (E5-7) – E1 (E8-17)	L – BR	Cranking	6.0 or more
#10 (E8-5) – E01 (E9-21)	R-L – W-B	IG switch ON	9 – 14
#10 (E8-5) – E01 (E9-21)	R-L – W-B	Idling	Pulse generation
#20 (E8-6) – E01 (E9-21)	Y – W-B	IG switch ON	9 – 14
#20 (E8-6) – E01 (E9-21)	Y – W-B	Idling	Pulse generation
#30 (E9-1) – E01 (E9-21)	B-W – W-B	IG switch ON	9 – 14
#30 (E9-1) – E01 (E9-21)	B-W – W-B	Idling	Pulse generation
#40 (E9-2) – E01 (E9-21)	L – W-B	IG switch ON	9 – 14
#40 (E9-2) – E01 (E9-21)	L – W-B	Idling	Pulse generation
#50 (E9-3) – E01 (E9-21)	B-R – W-B	IG switch ON	9 – 14
#50 (E9-3) – E01 (E9-21)	B-R – W-B	Idling	Pulse generation
#60 (E9-4) – E01 (E9-21)	G – W-B	IG switch ON	9 – 14
#60 (E9-4) – E01 (E9-21)	G – W-B	Idling	Pulse generation
IGT1 (E9-11) – E1 (E8-17)	B-Y – BR	Idling	Pulse generation
IGT2 (E9-12) – E1 (E8-17)	Y-G – BR	Idling	Pulse generation
IGT3 (E9-13) – E1 (E8-17)	L-Y – BR	Idling	Pulse generation
IGT4 (E9-14) – E1 (E8-17)	L-R – BR	Idling	Pulse generation
IGT5 (E9-15) – E1 (E8-17)	Y – BR	Idling	Pulse generation

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Fig. 23: Pin Voltage Chart (Highlander 3.0L V6 - 1 Of 2)

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

Symbols (Terminals No.)	Wiring Color	Condition	STD Voltage (V)
IGT6 (E9-16) – E1 (E8-17)	G-R – BR	Idling	Pulse generation
IGF (E9-25) – E1 (E8-17)	W – BR	IG switch ON	4.5 – 5.5
IGF (E9-25) – E1 (E8-17)	W – BR	Idling	Pulse generation
ACIS (E9-17) – E01 (E9-21)	R-Y – W-B	IG switch ON	9 – 14
ACI1 (E8-15) – E01 (E9-21)	W-R – W-B	IG switch ON	9 – 14
FC (E5-3) – E01 (E9-21)	G-R – W-B	IG switch ON	9 – 14
FC (E5-3) – E01 (E9-21)	G-R – W-B	Idling	0 – 3.0
EVP1 (E8-7) – E01 (E9-21)	B-R – W-B	IG switch ON	9 – 14
CCV (E5-10) – E01 (E9-21)	P – W-B	IG switch ON	9 – 14
RSO (E9-26) – E01 (E9-21)	G-B – W-B	IG switch ON, Disconnect E9 connector from ECM	9 – 14
OXS (E6-8) – E1 (E8-17)	B – BR	Maintain engine speed at 2,500 rpm for 3 min. after warming up	Pulse generation
HTS (E6-9) – E03 (E9-30)	L-R – W-B	Idling	Below 3.0
HTS (E6-9) – E03 (E9-30)	L-R – W-B	IG switch ON	9 – 14
KNKR (E9-27) – E1 (E8-17)	W – BR	Idling	Pulse generation
KNKL (E9-28) – E1 (E8-17)	B – BR	Idling	Pulse generation
NSW (E6-20) – E1 (E8-17)	L-W – BR	IG switch ON, Shift position other than P, N	9 – 14
NSW (E6-20) – E1 (E8-17)	L-W – BR	IG switch ON, Shift position in P, N	0 – 3
TACH (E6-27) – E1 (E8-17)	W-G – BR	Idling	Pulse generation
TBP (E6-3) – E01 (E9-21)	G-Y – W-B	IG switch ON, Disconnect vacuum hose from vapor pressure sensor	9 – 14
PTNK (E5-17) – E2 (E8-18)	L-B – W	IG switch ON	2.9 – 3.7
PTNK (E5-17) – E2 (E8-18)	L-B – W	IG switch ON, Apply vacuum 4.0 kPa (30 mmHg, 1.18 in.Hg) to vapor pressure sensor	0.5 or less
SIL (E5-4) – E1 (E8-17)	W – BR	During transmission	Pulse generation
STP (E5-15) – E1 (E8-17)	G-W – BR	IG switch ON, Brake pedal depressed	7.5 – 14
STP (E5-15) – E1 (E8-17)	G-W – BR	IG switch ON, Brake pedal released	0 – 1.5
AFR+ (E8-11) – E1 (E8-17)	L – BR	IG switch ON	3.0 – 3.6
AFL+ (E8-12) – E1 (E8-17)	G – BR	IG switch ON	2.7 – 3.3
AFR- (E8-20) – E1 (E8-17)	Y – BR	IG switch ON	3.0 – 3.6
AFL- (E8-21) – E1 (E8-17)	R – BR	IG switch ON	2.7 – 3.3
HAFF (E8-3) – E04 (E8-1)	B-R – W-B	Idling	Below 3.0
HAFL (E8-4) – E05 (E8-8)	B – W-B	IG switch ON	9 – 14
KSW (E6-23)*1 – E1 (E8-17)	L – BR	At time of inserting key	Below 1.5
KSW (E6-23)*1 – E1 (E8-17)	L – BR	In condition without key inserted	4 – 5
CODE (E6-28)*1 – E1 (E8-17)	GR-L – BR	At time of inserting key	Pulse generation
IGSW (E5-2) – E1 (E8-17)	B-O – BR	IG switch ON	9 – 14
TXCT (E6-18)*1 – E1 (E8-17)	GR – BR	At time of inserting key	Pulse generation
IMLD (E5-22)*1 – E1 (E8-17)	LG – BR	In condition without key inserted	Pulse generation
MREL (E5-8) – E1 (E8-17)	P-L – BR	IG switch ON	9 – 14

*1: With engine immobilizer system.

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Fig. 24: Pin Voltage Chart (Highlander 3.0L V6 - 2 Of 2)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

Symbols (Terminals No.)	Wiring Color	Condition	STD Voltage (V)
BATT (E9-1) – E1 (E6-17)	B-R ↔ BR	Always	9 – 14
+BM (E9-7) – E1 (E6-17)	Y-B ↔ BR		
IGSW (E9-9) – E1 (E6-17)	B-R ↔ BR	IG switch ON	9 – 14
+B (E9-16) – E1 (E6-17)	B-Y ↔ BR		
+B1 (E9-8) – E1 (E6-17)	B-Y ↔ BR		
MREL (E9-5) – E1 (E6-17)	B-W ↔ BR	IG switch ON	9 – 14
VC (E6-2) – E2 (E6-18)	L-R ↔ BR-W	IG switch ON	4.5 – 5.5
VG (E6-10) – EVG (E6-19)	L-Y ↔ G-W	Idling, P or N position, A/C switch OFF	0.5 – 3.0
THA (E6-22) – E2 (E6-18)	Y-B ↔ BR-W	Idling, Intake air temp. 20°C (68°F)	0.5 – 3.4
THW (E6-14) – E2 (E6-18)	G-B ↔ BR-W	Idling, Engine coolant temp. 80°C (176°F)	0.2 – 1.0
VTA (E6-13) – E2 (E6-18)	R-Y ↔ BR-W	IG switch ON, Accelerator pedal released	0.4 – 1.0
		IG switch ON, Accelerator pedal depressed	3.2 – 4.8
VTA2 (E6-20) – E2 (E6-18)	Y-B ↔ BR-W	IG switch ON, Accelerator pedal released	2.0 – 2.9
		IG switch ON, Accelerator pedal depressed	4.7 – 5.1
VPA (E6-21) – E2 (E6-18)	R ↔ BR-W	IG switch ON, Accelerator pedal released	0.3 – 0.9
		IG switch ON, Accelerator pedal depressed	3.2 – 4.8
VPA2 (E6-9) – E2 (E6-18)	R-B ↔ BR-W	IG switch ON, Accelerator pedal released	1.8 – 2.7
		IG switch ON, Accelerator pedal depressed	4.7 – 5.1
OXL1 (E6-12) – E1 (E6-17)	B ↔ BR	Maintain engine speed at 2,500 rpm for 2 minutes after warming up	Pulse generation
OXL2 (E6-16) – E1 (E6-17)	B ↔ BR		
OXR1 (E6-11) – E1 (E6-17)	W ↔ BR	Maintain engine speed at 2,500 rpm for 2 minutes after warming up	Pulse generation
OXR2 (E6-15) – E1 (E6-17)	W ↔ BR		
HTL (E6-4) – E1 (E6-17)	R ↔ BR	Idling	Below 3.0
HTL2 (E6-24) – E1 (E6-17)	L ↔ BR		
HTR (E6-3) – E1 (E6-17)	Y ↔ BR	IG switch ON	9 – 14
HTR2 (E6-23) – E1 (E6-17)	R-B ↔ BR		
#1 (E6-5) – E01 (E5-21)	Y ↔ W-B	IG switch ON	9 – 14
#2 (E6-6) – E01 (E5-21)	B ↔ W-B		
#3 (E5-1) – E01 (E5-21)	L ↔ W-B		
#4 (E5-2) – E01 (E5-21)	R ↔ W-B	Idling	Pulse generation
#5 (E5-3) – E01 (E5-21)	G ↔ W-B		
#6 (E5-4) – E01 (E5-21)	R-L ↔ W-B		
#7 (E5-5) – E01 (E5-21)	W ↔ W-B		
#8 (E5-6) – E01 (E5-21)	B-W ↔ W-B		
KNKL (E5-18) – E1 (E6-17)	B ↔ BR	Maintain engine speed at 4,000 rpm after warming up	Pulse generation
KNKR (E5-17) – E1 (E6-17)	W ↔ BR		

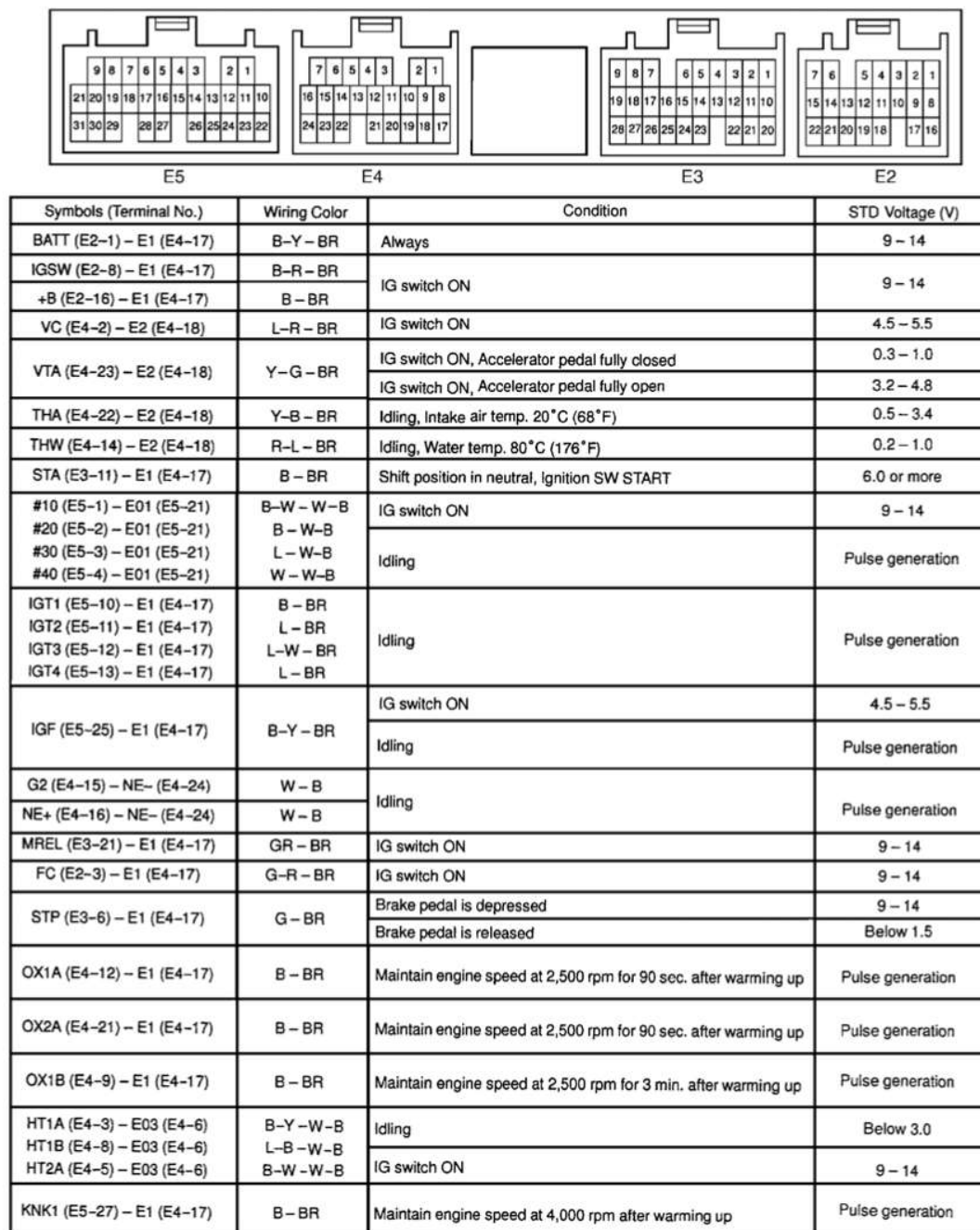
G00016301

Fig. 25: Pin Voltage Chart (Land Cruiser - 1 Of 2)
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

Symbols (Terminals No.)	Wiring Color	Condition	STD Voltage (V)
G2 (E5-10) – G– (E5-24)	R ↔ G	Idling	Pulse generation
NE+ (E5-23) – NE– (E5-22)	R ↔ G		
PRG (E6-7) – E1 (E6-17)	L-B ↔ BR	IG switch ON	9 – 14
TPC (E8-21) – E1 (E6-17)	L ↔ BR	IG switch ON	9 – 14
PTNK (E8-22) – E2 (E6-18)	L-B ↔ BR-W	Ignition switch ON	2.9 – 3.7
		Apply vacuum 3.5 kPa (26 mmHg, 1.0 in.Hg) to vapor pressure sensor	Below 0.5
SPD (E8-5) – E1 (E6-17)	V ↔ BR	IG switch ON, Rotate driving wheel slowly	Pulse generation
CL+ (E5-29) – CL– (E5-19)	G ↔ L	Idling	Pulse generation
M+ (E5-8) – E1 (E6-17)	R ↔ BR	Idling	Pulse generation
M– (E5-7) – E1 (E6-17)	W ↔ BR		
DI (E9-4) – E1 (E6-17)	G-R ↔ BR	IG switch ON	9 – 14
FPC (E9-6) – E1 (E6-17)	G-W ↔ BR	IG switch ON	0 – 3.0
IGT1 (E5-11) – E1 (E6-17)	B ↔ BR	Idling	Pulse generation
IGT2 (E5-12) – E1 (E6-17)	R ↔ BR		
IGT3 (E5-13) – E1 (E6-17)	L ↔ BR		
IGT4 (E5-14) – E1 (E6-17)	G ↔ BR		
IGT5 (E5-15) – E1 (E6-17)	Y ↔ BR		
IGT6 (E5-16) – E1 (E6-17)	B-Y ↔ BR		
IGT7 (E5-25) – E1 (E6-17)	B-L ↔ BR		
IGT8 (E5-26) – E1 (E6-17)	L-B ↔ BR		
IGF1 (E5-27) – E1 (E6-17)	B-W ↔ BR	IG switch ON	4.5 – 5.5
IGF2 (E5-28) – E1 (E6-17)	B-R ↔ BR	Idling	Pulse generation
STP (E9-15) – E1 (E6-17)	G-W ↔ BR	Brake pedal is depressed	7.5 – 14
		Brake pedal is released	Below 1.5
STA (E8-7) – E1 (E6-17)	B-R ↔ BR	Shift lever position P or N, Ignition switch START	6.0 or more
NSW (E9-2) – E1 (E6-17)	B-W ↔ BR	IG switch ON, Shift position other than P, N	9 – 14
		IG switch ON, Shift position in P, N	0 – 3.0
W (E8-23) – E1 (E6-17)	W ↔ BR	Idling	9 – 14
		IG switch ON	Below 3.0
ACT (E9-22) – E1 (E6-17)	L-B ↔ BR	A/C switch OFF	Below 3.0
		A/C switch ON at idling	9 – 14
A/C (E9-21) – E1 (E6-17)	W-G ↔ BR	A/C switch ON at idling	Below 1.5
		A/C switch OFF	7.5 – 14
SIL (E9-17) – E1 (E6-17)	V-W ↔ BR	During transmission	Pulse generation
ELS (E8-12) – E1 (E6-17)	G-W ↔ BR	Taillight switch ON, Defogger switch ON	7.5 – 14
		Taillight switch OFF, Defogger switch OFF	0 – 1.5
TACH (E8-4) – E1 (E6-17)	B ↔ BR	Idling	Pulse generation
KSW (E9-11) – E1 (E6-17)	R-B ↔ BR	At time of inserting key	Below 1.5
		In condition without key inserted	4 – 5
RXCK (E9-13) – E1 (E6-17)	V-G ↔ BR	At time of inserting key	Pulse generation
CODE (E9-14) – E1 (E6-17)	L-B ↔ BR	At time of inserting key	Pulse generation
TXCT (E9-12) – E1 (E6-17)	R-Y ↔ BR	At time of inserting key	Pulse

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Fig. 26: Pin Voltage Chart (Land Cruiser - 2 Of 2)
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.



G00016303

Fig. 27: Pin Voltage Chart (MR2 - 1 Of 2)
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

Symbols (Terminal No.)	Wiring Color	Condition	STD Voltage (V)
TEI (E3-5) – E1 (E4-17)	P-B – BR	IG switch ON	9 – 14
W (E2-15) – E01 (E5-21)	Y-R – W-B	Idling	9 – 14
		IG switch ON	Below 3.0
OCV+ (E5-24) – OCV– (E5-23)	R – W	IG switch ON	Pulse generation
EVP1 (E4-4) – E01 (E5-21)	W – W-B	IG switch ON	9 – 14
RSO (E5-18)*1 – E1 (E4-17)	G – BR	IG switch ON	9 – 14
TBP (E3-23) – E01 (E5-21)	L-W – W-B	IG switch ON	3.0 – 3.6
PTNK (E2-4) – E2 (E4-18)	G-B – BR	IG switch ON	3.0 – 3.6
SPD (E3-22) – E1 (E4-17)	V-W – BR	IG switch ON	9 – 14
PRE (E3-18) – E1 (E4-17)	W-L – BR	Refrigerant pressure is between 196 kPa and 1340 kPa	9 – 14
		Refrigerant pressure is less than 196 kPa, more than 1340 kPa	–
ACMG (E2-12) – E01 (E5-21)	L – W-B	Idling, Magnetic clutch is ON	below 1.0
		Idling, Magnetic clutch is OFF	9 – 14
LCK1 (E3-28) – E1 (E4-17)	W-R – BR	Idling, A/C switch is ON	9 – 14
		Idling, A/C switch is OFF	–

*1: M/T models only.

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Fig. 28: Pin Voltage Chart (MR2 - 2 Of 2)

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

CAUTION: On Prius, read **SERVICE PRECAUTIONS** before using pin voltage chart to prevent personal injury.

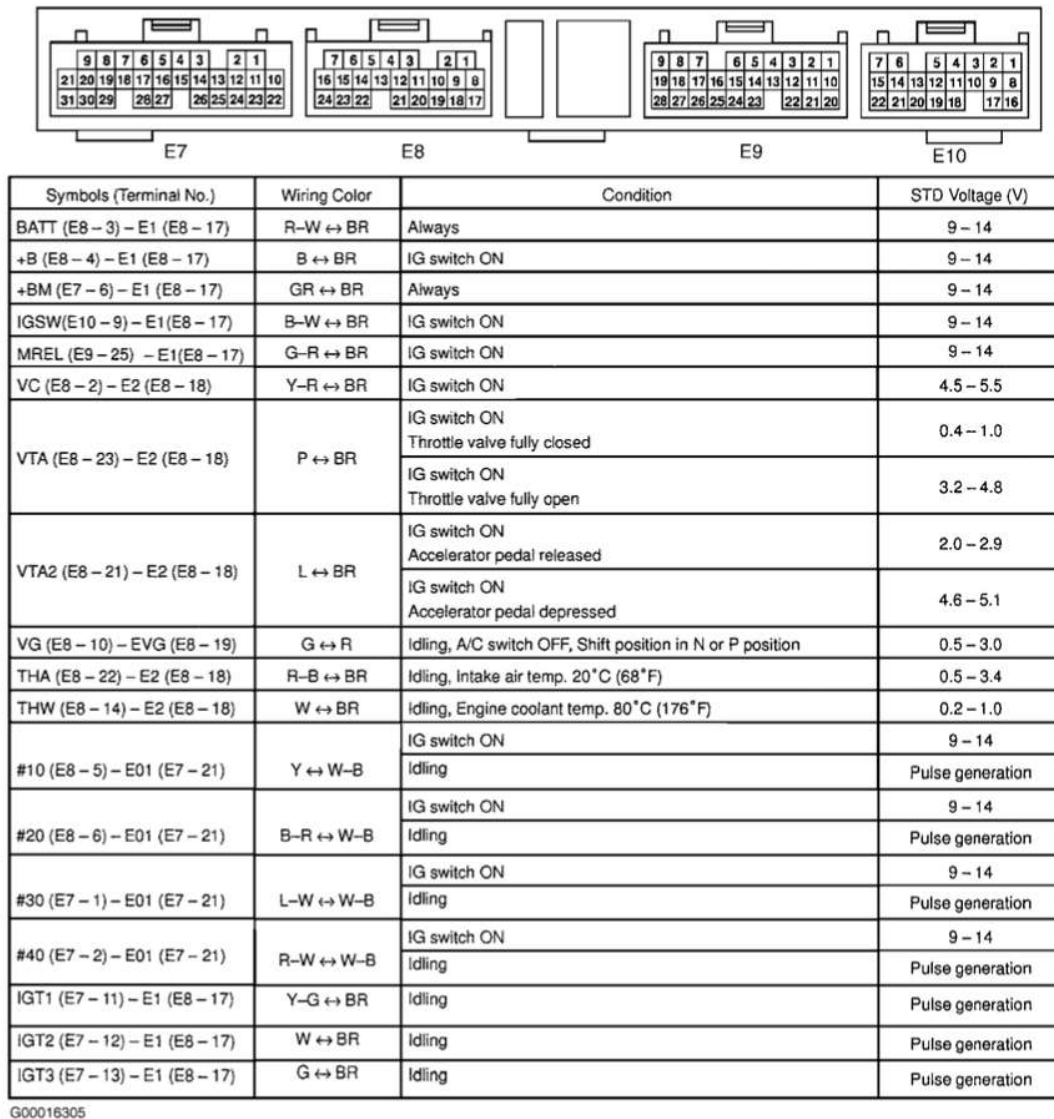
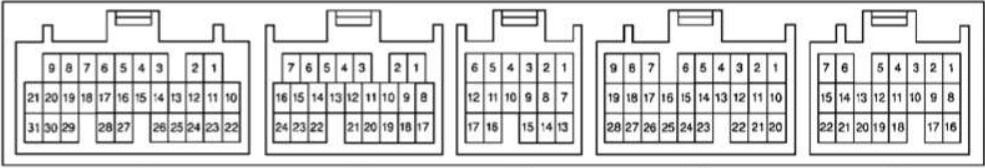


Fig. 29: Pin Voltage Chart (Prius - 1 Of 2)
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

Symbols (Terminal No.)	Wiring Color	Condition	STD Voltage (V)
IGT4 (E7 - 14) - E1 (E8 - 17)	Y ↔ BR	Idling	Pulse generation
IGF (E7 - 25) - E1 (E8 - 17)	B-R ↔ BR	IG switch ON	4.5 - 5.5
		Idling	Pulse generation
G2 (E7 - 10) - NE⊖ (E8 - 24)	R ↔ G	Idling	Pulse generation
NE+ (E8 - 16) - NE- (E8 - 24)	R ↔ G	Idling	Pulse generation
FC (E8 - 9) - E01 (E7 - 21)	G-R ↔ W-B	IG switch ON	9 - 14
EVP1 (E7 - 29) - E1 (E8 - 17)	R-L ↔ BR	IG switch ON	9 - 14
OX1A (E10 - 12) - E2 (E8 - 18)	W ↔ BR	Maintain engine speed at 2,500 rpm for 2 min. after warming up	Pulse generation
OX1B (E10 - 11) - E2 (E8 - 18)	Y ↔ BR	Maintain engine speed at 2,500 rpm for 2 min. after warming up	Pulse generation
HT1A (E10 - 1) - E1 (E8 - 17)	P-L ↔ BR	Idling	Below 3.0
		IG switch ON	9 - 14
HT1B (E10 - 7) - E1 (E8 - 17)	G-Y ↔ BR	Idling	Below 3.0
		IG switch ON	9 - 14
KNK1 (E7 - 28) - E2 (E8 - 18)	B ↔ BR	Idling	Pulse generation
SPD (E10 - 5) - E1 (E8 - 17)	V-W ↔ BR	IG switch ON	Pulse generation
		Rotate driving wheel slowly	
SPHV (E9 - 10) - E1 (E8 - 17)	O ↔ BR	IG switch ON	Pulse generation
		Rotate driving wheel slowly	
ESTP (E9 - 16) - E1 (E8 - 17)	R-Y ↔ BR	Idling	9 - 14
TAM (E9 - 23) - E2 (E8 - 18)	W-G ↔ BR	Outer air temp. -30 - 50°C	0.7 - 3.2
W (E10 - 6) - E1 (E8 - 17)	G-R ↔ BR	Idling	9 - 14
		IG switch ON	Below 3.0
ACT (E10 - 22) - E1 (E8 - 17)	P-G ↔ BR	A/C switch OFF	Below 2.0
		A/C switch ON at idling	9 - 14
OCV+ (E7 - 23) - OCV - (E7 - 24)	Y-R ↔ W-G	IG switch ON	Pulse generation
M+ (E7 - 8) - E1 (E8 - 17)	L ↔ BR	Idling	Pulse generation
M- (E7 - 7) - E1 (E8 - 17)	P ↔ BR		
TC (E9 - 6) - E1 (E8 - 17)	P-B ↔ BR	IG switch ON	9 - 14
HCC (E9 - 20) - E1 (E8 - 17)	B-W ↔ BR	IG switch ON	9 - 14
PTNK (E9 - 22) - E1 (E8 - 17)	L-R ↔ BR	IG switch ON	9 - 14
		Apply vacuum 4.0 kPa (30 mmHg, 1.2 in.Hg) to vapor pressure sensor	Below 0.5
HCLS (E9 - 14) - E1 (E8 - 17)	V-W ↔ BR	IG switch ON	3.3 - 3.9
		Apply vacuum 67 kPa (500 mmHg, 19.7 in.Hg) to vacuum sensor	1.3 - 1.9

G00016306

Fig. 30: Pin Voltage Chart (Prius - 2 Of 2)
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.



Symbols (Terminal No.)	Wiring Color *1	Condition	STD Voltage (V)
BATT (E8-1) – E1 (E5-17)	R-W(SB) – BR	Always	9 – 14
IGSW (E8-2) – E1 (E5-17)	B-O(W) – BR	IG switch ON	9 – 14
+B (E8-16) – E1 (E5-17)	B-R(LG) – BR	IG switch ON	4.5 – 5.5
VC (E5-2) – E2 (E5-18)	Y – BR	IG switch ON, Accelerator pedal fully closed	0.3 – 1.0
VTA (E4-24) – E2 (E5-18)	L-R – BR	IG switch ON, Accelerator pedal fully open	3.2 – 4.8
THA (E4-23) – E2 (E5-18)	R-W – BR	Idling, Intake air temp. 20°C (68°F)	0.5 – 3.4
THW (E4-22) – E2 (E5-18)	W – RR	Idling, Coolant temp. 80°C (176°F)	0.2 – 1.0
STA (E8-7) – E1 (E5-17)	B-R(W) – BR	Shift position in neutral, IG Switch START	6.0 or more
#10 (E4-1) – E01 (E4-21)	B-R – W-B	IG switch ON	9 – 14
#20 (E4-2) – E01 (E4-21)	B – W-B	Idling	Pulse generation
#30 (E4-3) – E01 (E4-21)	W – W-B		
#40 (E4-4) – E01 (E4-21)	R – W-B		
IGT1 (E4-10) – E1 (E5-17)	G-B – BR	Idling	Pulse generation
IGT2 (E4-11) – E1 (E5-17)	L-B – BR		
IGT3 (E4-12) – E1 (E5-17)	G – BR		
IGT4 (E4-13) – E1 (E5-17)	B – BR		
IGF (E4-25) – E1 (E5-17)	R – BR	IG switch ON	4.5 – 5.5
		Idling	Pulse generation
G22+ (E5-15) – NE- (E5-24)	Y – P	Idling	Pulse generation
NE+ (E5-16) – NE- (E5-24)	R – P		
MREL (E8-8) – E1 (E5-17)	G-W(W) – BR	IG switch ON	9 – 14
FC (E8-3) – E1 (E5-17)	G-R(W) – BR	IG switch ON	9 – 14
STP (E8-15) – E1 (E5-17)	G-W(W) – BR	Brake pedal is depressed	9 – 14
		Brake pedal is released	Below 1.5
OX1B (E5-11) – E1 (E5-17)	B – BR	Maintain engine speed at 2,500 rpm for 90 sec. after warming up	Pulse generation
OX2B (E6-15) – E1 (E5-17)	W – BR		
HT1B (E5-3) – E03 (E4-30)	R-B – W-B	Idling	Below 3.0
HT2B (E6-14) – E03 (E4-30)	R-Y – W-B	IG switch ON	9 – 14
KNK1 (E4-27) – E1 (E5-17)	W – BR	Maintain engine speed at 4,000 rpm after warming up	Pulse generation
TC (E7-5) – E1 (E5-17)	P-B(W) – BR	IG switch ON	9 – 14
W (E8-6) – E01 (E4-21)	G-R(W) – W-B	Idling	9 – 14
		IG switch ON	Below 3.0

*1: There are 2 different wiring harnesses used in which there may be 2 different wire colors listed in pin voltage chart. For example, pin voltage chart may list a R-W (SB) wire which is a Red/White or Sky Blue wire. Some electrical connectors may have all the same colored wires. On electrical connectors with the same colored wires, the wires are numbered near each electrical connector.

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Fig. 31: Pin Voltage Chart (RAV4 - 1 Of 2)
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

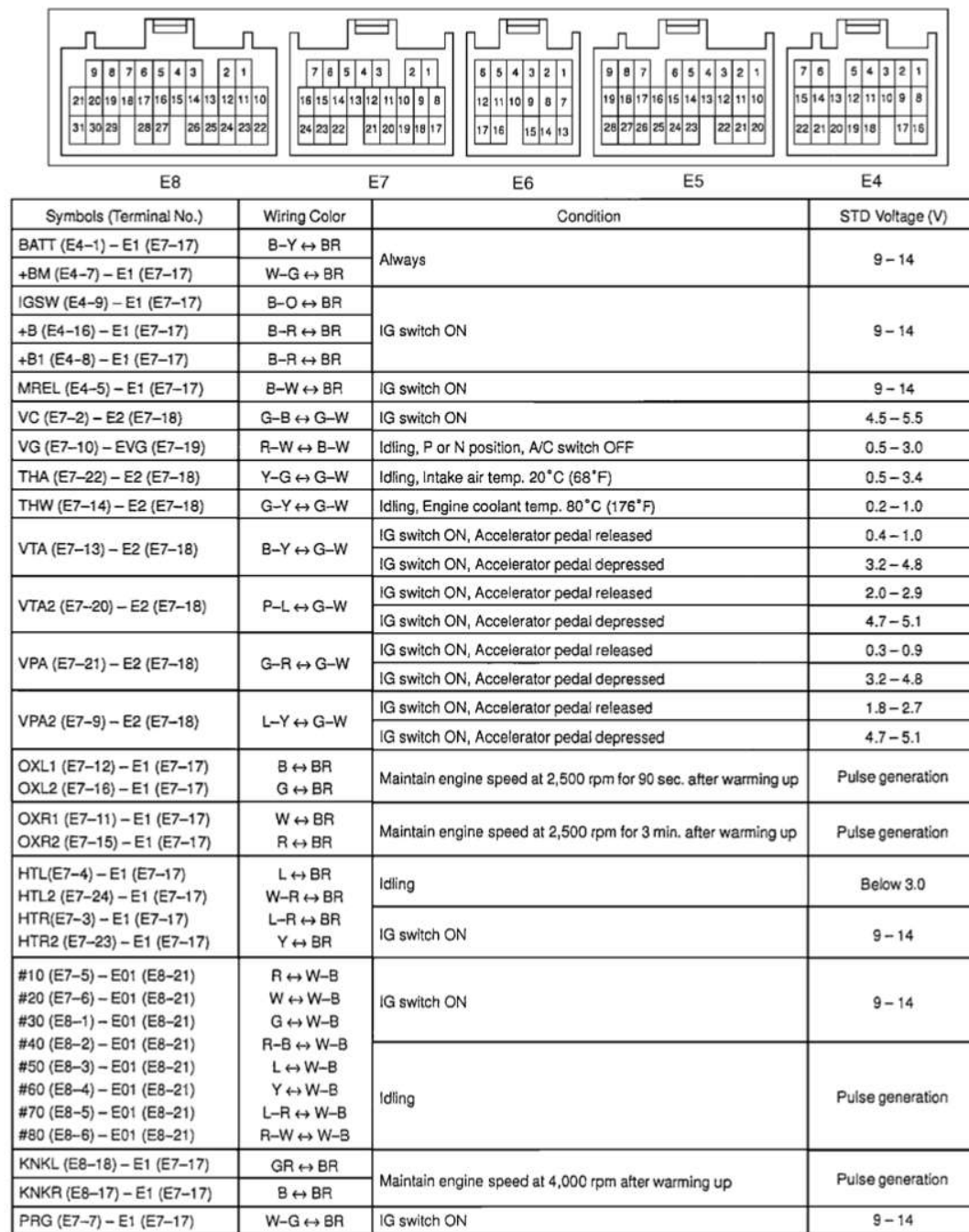
Symbols (Terminal No.)	Wiring Color *1	Condition	STD Voltage (V)
OCV+ (E4-19) – OCV- (E4-29)	W-R – W	IG switch ON	Pulse generation
EVP1 (E5-6) – E01 (E4-21)	P – W-B	IG switch ON	9 – 14
RSD (E4-18) – E1 (E5-17)	B-L – BR	IG switch ON	9 – 14
TBP (E6-3) – E01 (E4-21)	G-O – W-B	IG switch ON	3.0 – 3.6
PTNK (E7-21) – E2 (E5-18)	L-B(W) – BR	IG switch ON	3.0 – 3.6
SPD (E7-22) – E01 (E4-21)	V-W(W) – W-B	IG switch ON	9 – 14
ACMG (E7-15) – E01 (E4-21)	R-Y(W) – W-B	Idling, Magnetic clutch is ON	Below 1.0
		Idling, Magnetic clutch is OFF	9 – 14

*1: There are 2 different wiring harnesses used in which there may be 2 different wire colors listed in pin voltage chart. For example, pin voltage chart may list a R-W (SB) wire which is a Red/White or Sky Blue wire. Some electrical connectors may have all the same colored wires. On electrical connectors with the same colored wires, the wires are numbered near each electrical connector.

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Fig. 32: Pin Voltage Chart (RAV4 - 2 Of 2)

Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.



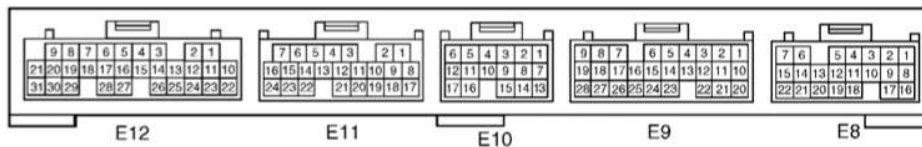
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Fig. 33: Pin Voltage Chart (Sequoia - 1 Of 2)
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

Symbols (Terminal No.)	Wiring Color	Condition	STD Voltage (V)
G2 (E8-10) – G– (E8-24)	Y ↔ L	Idling	Pulse generation
NE+ (E8-23) – NE– (E8-22)	G ↔ R		
CCV (E5-20) – E1 (E7-17)	W–L ↔ BR	IG switch ON	9 – 14
TBP (E5-21) – E1 (E7-17)	P–L ↔ BR	IG Switch ON, Disconnect vacuum hose from VSV for pressure switching valve	9 – 14
PTNK (E5-22) – E2 (E7-18)	R–G ↔ G–W	Ignition switch ON	2.9 – 3.7
		Apply vacuum 4.0 kPa (30 mmHg, 1.18 in.Hg)	Below 0.5
SPD (E5-5) – E1 (E7-17)	G–O ↔ BR	IG switch ON, Rotate driving wheel slowly	Pulse generation
CL+ (E8-29) – CL– (E8-19)	L–B ↔ L–W	Idling	Pulse generation
M+ (E8-8) – E1 (E7-17)	V ↔ BR	Idling	Pulse generation
M– (E8-7) – E1 (E7-17)	P ↔ BR		
FPR (E4-4) – E1 (E7-17)	V ↔ BR	IG switch ON	0 – 3.0
FC (E4-6) – E1 (E7-17)	G–O ↔ BR	IG switch ON	9 – 14
IGT1 (E8-11) – E1 (E7-17)	B–L ↔ BR	Idling	Pulse generation
IGT2 (E8-12) – E1 (E7-17)	LG–B ↔ BR		
IGT3 (E8-13) – E1 (E7-17)	G–B ↔ BR		
IGT4 (E8-14) – E1 (E7-17)	R–W ↔ BR		
IGT5 (E8-15) – E1 (E7-17)	G–W ↔ BR		
IGT6 (E8-16) – E1 (E7-17)	P–L ↔ BR		
IGT7 (E8-25) – E1 (E7-17)	G–R ↔ BR		
IGT8 (E8-26) – E1 (E7-17)	LG ↔ BR		
IGF1 (E8-27) – E1 (E7-17)	B–R ↔ BR	IG switch ON	4.5 – 5.5
IGF2 (E8-28) – E1 (E7-17)	B–W ↔ BR	Idling	Pulse generation
STP (E4-15) – E1 (E7-17)	G–Y ↔ BR	Brake pedal is depressed	7.5 – 14
		Brake pedal is released	Below 1.5
STA (E5-7) – E1 (E7-17)	B ↔ BR	Shift lever position P or N, Ignition switch START	6.0 or more
NSW (E4-2) – E1 (E7-17)	P ↔ BR	IG switch ON, Shift position other than P, N	9 – 14
		IG switch ON, Shift position in P, N	0 – 3.0
W (E5-23) – E1 (E7-17)	V–W ↔ BR	Idling	9 – 14
		IG switch ON	Below 3.0
ACT (E4-22) – E1 (E7-17)	LG–B ↔ BR	A/C switch OFF	Below 3.0
		A/C switch ON at idling	9 – 14
AC1 (E4-21) – E1 (E7-17)	P–L ↔ BR	A/C switch ON at idling	Below 3.0
		A/C switch OFF	7.5 – 14
SIL (E4-17) – E1 (E7-17)	G–R ↔ BR	During transmission	Pulse generation
ELS (E5-12) – E1 (E7-17)	G–Y ↔ BR	Taillight switch ON, Defogger switch ON	7.5 – 14
		Taillight switch OFF, Defogger switch OFF	0 – 1.5
TACH (E5-4) – E1 (E7-17)	Y–G ↔ BR	Idling	Pulse generation
KSW (E4-11) – E1 (E7-17)	Y ↔ BR	At time of inserting key	Below 1.5
		In condition without key inserted	4 – 5
RXCK (E4-13) – E1 (E7-17)	LG ↔ BR	At time of inserting key	Pulse generation
CODE (E4-14) – E1 (E7-17)	R–Y ↔ BR	At time of inserting key	Pulse generation
TXCT (E4-12) – E1 (E7-17)	Y–G ↔ BR	At time of inserting key	Pulse

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Fig. 34: Pin Voltage Chart (Sequoia - 2 Of 2)
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.



Symbols (Terminal No.)	Wiring Color	Condition	STD Voltage (V)
BATT (E8-1) – E1 (E11-17)	R-B ↔ BR	Always	9 – 14
+B (E8-16) – E1 (E11-17)	B-R ↔ BR	IG switch ON	9 – 14
VC (E11-2) – E2 (E11-18)	Y ↔ W	IG switch ON	4.5 – 5.5
VTA1 (E11-23) – E2 (E11-18)	L-W ↔ W	IG switch ON, Throttle valve fully closed	0.3 – 1.0
		IG switch ON, Throttle valve fully open	2.7 – 5.2
VG (E11-10) – E2G (E11-19)	P ↔ R-B	Idling, A/C switch OFF	1.1 – 1.5
VV1+ (E12-10) – NE- (E11-24)	B ↔ W	Idling	Pulse generation
VV2+ (E12-22) – NE- (E11-24)	O ↔ W		
NE+ (E11-16) – NE- (E11-24)	B-W ↔ W	Idling	Pulse generation
OC1+ (E12-6) – OC1- (E12-5)	R-B ↔ L-B	IG switch ON	Pulse generation
OC2+ (E12-29) – OC2- (E12-18)	R ↔ B-W		
THA (E11-22) – E2 (E11-18)	L-Y ↔ W	Idling, Intake air temp. 20°C (68°F)	0.5 – 3.4
THW (E11-14) – E2 (E11-18)	G-B ↔ W	Idling, Engine coolant temp. 80°C (176°F)	0.2 – 1.0
STA (E8-7) – E1 (E11-17)	GR ↔ BR	Cranking	6.0 or more
#10 (E11-5) – E01 (E12-21)	W ↔ W-B	IG switch ON	9 – 14
#20 (E11-6) – E01 (E12-21)	B ↔ W-B		
#30 (E12-1) – E01 (E12-21)	B ↔ W-B	Idling	Pulse generation
#40 (E12-2) – E01 (E12-21)	L ↔ W-B		
#50 (E12-3) – E01 (E12-21)	R ↔ W-B		
#60 (E12-4) – E01 (E12-21)	G ↔ W-B		
IGT1 (E12-11) – E1 (E11-17)	L-R ↔ BR	Idling	Pulse generation
IGT2 (E12-12) – E1 (E11-17)	G-R ↔ BR		
IGT3 (E12-13) – E1 (E11-17)	W-R ↔ BR		
IGT4 (E12-14) – E1 (E11-17)	B-R ↔ BR		
IGT5 (E12-15) – E1 (E11-17)	L-W ↔ BR		
IGT6 (E12-16) – E1 (E11-17)	G-B ↔ BR		
IGF (E12-25) – E1 (E11-17)	B ↔ BR	IG switch ON	4.5 – 5.5
		Idling	Pulse generation
ACIS (E12-17) – E01 (E12-21)	R-Y ↔ W-B	IG switch ON	9 – 14
FC (E8-3) – E01 (E12-21)	LG-R ↔ W-B	IG switch ON	9 – 14
		Idling	0 – 3.0
RSO (E12-26) – E01 (E12-21)	R-W ↔ W-B	IG switch ON, Disconnect E12 connector from ECM	9 – 14

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Fig. 35: Pin Voltage Chart (Sienna - 1 Of 2)
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

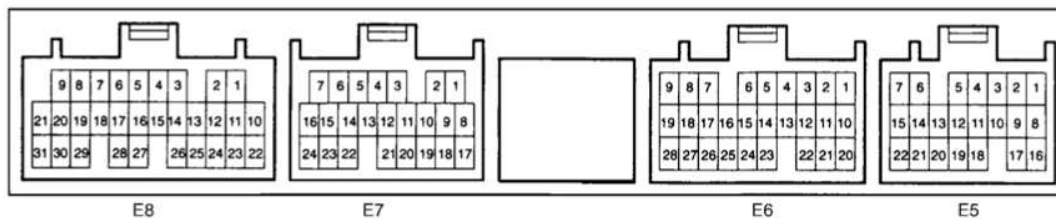
Symbols (Terminal No.)	Wiring Color	Condition	STD Voltage (V)
OXS (E9-8) – E1 (E11-17)	W ↔ BR	Maintain engine speed at 2,500 rpm for 3 min. after warming up	Pulse generation
HTS (E9-9) – E03 (E12-30)	L-W ↔ W-B	Idling	Below 3.0
		IG switch ON	9 – 14
KNKR (E12-27) – E1 (E11-17)	W ↔ BR	Idling	Pulse generation
KNKL (E12-28) – E1 (E11-17)	W ↔ BR		
NSW (E9-20) – E1 (E11-17)	B-W ↔ BR	IG switch ON, Shift position other than P, N	9 – 14
		IG switch ON, Shift position in P, N	0 – 3.0
SPD (E9-22) – E1 (E11-17)	V-Y ↔ BR	IG switch ON, Rotate driving wheel slowly	0 – 5
TC (E9-5) – E1 (E11-17)	P-B ↔ BR	IG switch ON	9 – 14
W (E8-6) – E1 (E11-17)	B-L ↔ BR	IG switch ON	Below 3.0
EVP1 (E11-7) – E01 (E12-21)	LG ↔ W-B	IG switch ON	9 – 14
CCV (E8-10) – E01 (E12-21)	BR-R *1	IG switch ON	9 – 14
	BR-B *2 ↔ W-B		
PS (E11-9) – E1 (E11-17)	B-L ↔ BR	IG switch ON	9 – 14
CF (E9-26) – E1 (E11-17)	G-W ↔ BR	Electric cooling fan is operating on high speed	9 – 14
		Electric cooling fan is operating on low speed or OFF	0 – 2
TACH (E9-27) – E1 (E11-17)	LG-B ↔ BR	Idling	Pulse generation
TBP (E9-3) – E01 (E12-21)	W-R ↔ W-B	IG switch ON, Disconnect vacuum hose from VSV for pressure switching valve	9 – 14
PTNK (E8-17) – E1 (E11-17)	L-R ↔ BR	IG switch ON	2.9 – 3.7
		IG switch ON, Apply vacuum 4.0 kPa (30 mmHg, 1.18 in.Hg)	0.5 or less
SIL (E8-4) – E1 (E11-17)	R ↔ BR	During transmission	Pulse generation
STP (E8-15) – E1 (E11-17)	G-W ↔ BR	IG switch ON, Brake pedal depressed	7.5 – 14
		IG switch ON, Brake pedal released	Below 1.5
AFR+ (E11-11) – E1 (E11-17)	BR ↔ BR	IG switch ON	3.0 – 3.6
AFL+ (E11-12) – E1 (E11-17)	L ↔ BR		
AFR- (E11-20) – E1 (E11-17)	B-R ↔ BR	IG switch ON	2.7 – 3.3
AFL- (E11-21) – E1 (E11-17)	B-W ↔ BR		
HAFL (E11-4) – E05 (E11-8)	L ↔ W-B	IG switch ON	9 – 14
HAFL (E11-4) – E05 (E11-8)	L ↔ W-B	IG switch ON	9 – 14
KSW (E9-23) – E1 (E11-17)	L-B ↔ BR	At time of inserting key	Below 1.5
		In condition without key inserted	4 – 5
RXCK (E9-19) – E1 (E11-17)	BR-R ↔ BR	At time of inserting key	Pulse generation
CODE (E9-28) – E1 (E11-17)	BR-W ↔ BR	At the time of inserting the key	Pulse generation
IGSW (E8-2) – E1 (E11-17)	B-O ↔ BR	IG switch ON	9 – 14
TXCT (E9-18) – E1 (E11-17)	BR-Y ↔ BR	At time of inserting key	Pulse generation
IMLD (E8-22) – E1 (E11-17)	R-W ↔ BR	In condition without key inserted	Pulse generation
MREL (E8-8) – E1 (E11-17)	Y-G ↔ BR	IG switch ON	9 – 14

* 1: Without vehicle speed control.

* 2: With vehicle speed control.

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Fig. 36: Pin Voltage Chart (Sienna - 2 Of 2)
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.



Symbols (Terminal No.)	Wiring Color	Condition	STD Voltage (V)
VG (E7-14) – E2G (E7-22)	GR – B-W	Idling, A/C switch OFF, Shift position in N or P	1.1 – 1.5
THA (E7-21) – E2 (E7-18)	Y-G – L-B	Idling, Intake air temp. 20°C (68°F)	0.5 – 3.4
THW (E7-12) – E2 (E7-18)	G-R – L-B	Idling, Engine coolant temp. 80°C (176°F)	0.2 – 1.0
VC (E7-2) – E2 (E7-18)	G-Y – L-B	IG switch ON	4.5 – 5.5
VTA (E7-9) – E2 (E7-18)	Y – L-B	IG switch ON, Throttle valve fully closed	0.3 – 1.0
		IG switch ON, Throttle valve fully open	3.2 – 4.9
AF+ (E7-11) – E1 (E7-17)	V – BR	Always (IG switch ON)	*13.3 fixed
AF- (E7-20) – E1 (E7-17)	P – BR	Always (IG switch ON)	*13.0 fixed
OX1B (E7-10) – E1 (E7-17)	B – BR	Maintain engine speed at 2,500 rpm for 3 min. after warming up	Pulse generation
HAFL (E7-4) – E03 (E8-5)	W – W-B	Idling	Below 3.0
HT1B (E7-3) – E03 (E8-5)	R-W – W-B	IG switch ON	9 – 14
#10 (E8-1) – E01 (E8-21)	W-R – W-B	IG switch ON	9 – 14
#20 (E8-2) – E01 (E8-21)	W – W-B	Idling	Pulse generation
#30 (E8-3) – E01 (E8-21)	R – W-B		
#40 (E8-4) – E01 (E8-21)	R-L – W-B		
KNK1 (E8-28) – E1 (E7-17)	B – BR	Idling	Pulse generation
G2 (E7-15) – NE- (E7-24)	R – G	Idling	Pulse generation
NE+ (E7-16) – NE- (E7-24)	L – G	Idling	Pulse generation
EGR (E7-5)*2 – E01 (E8-21)	R-B – W-B	IG switch ON	0 – 3
THG (E7-19)*2 – E2 (E7-18)	P-L – L-B	IG switch ON	4.5 – 5.5
PTNK (E6-8) – E2 (E7-18)	R-Y – L-B	IG switch ON, Remove fuel tank cap	3.3
EVP1 (E7-6) – E01 (E8-21)	W-G – W-B	IG switch ON	9 – 14
CCV (E7-1) – E01 (E8-21)	R-L – W-B	IG switch ON	9 – 14
TBP (E7-7) – E01 (E8-21)	G-B – W-B	IG switch ON	9 – 14
SP1 (E5-21) – E1 (E7-17)	G-O – BR	IG switch ON, Rotate driving wheel slowly	Pulse generation
RSD (E8-15) – E1 (E7-17)	B-R – BR	IG switch ON, Disconnect E8 connector from ECM	Below 3.0
IGT1 (E8-11) – E1 (E7-17)	B-L – BR	Idling	Pulse generation
IGT2 (E8-12) – E1 (E7-17)	L – BR		
IGT3 (E8-13) – E1 (E7-17)	L-R – BR		
IGT4 (E8-14) – E1 (E7-17)	L-Y – BR		

*1: The ECM terminal voltage is fixed regardless of the output voltage from the sensor.

*2: 2.7L 3RZ-FE models only.

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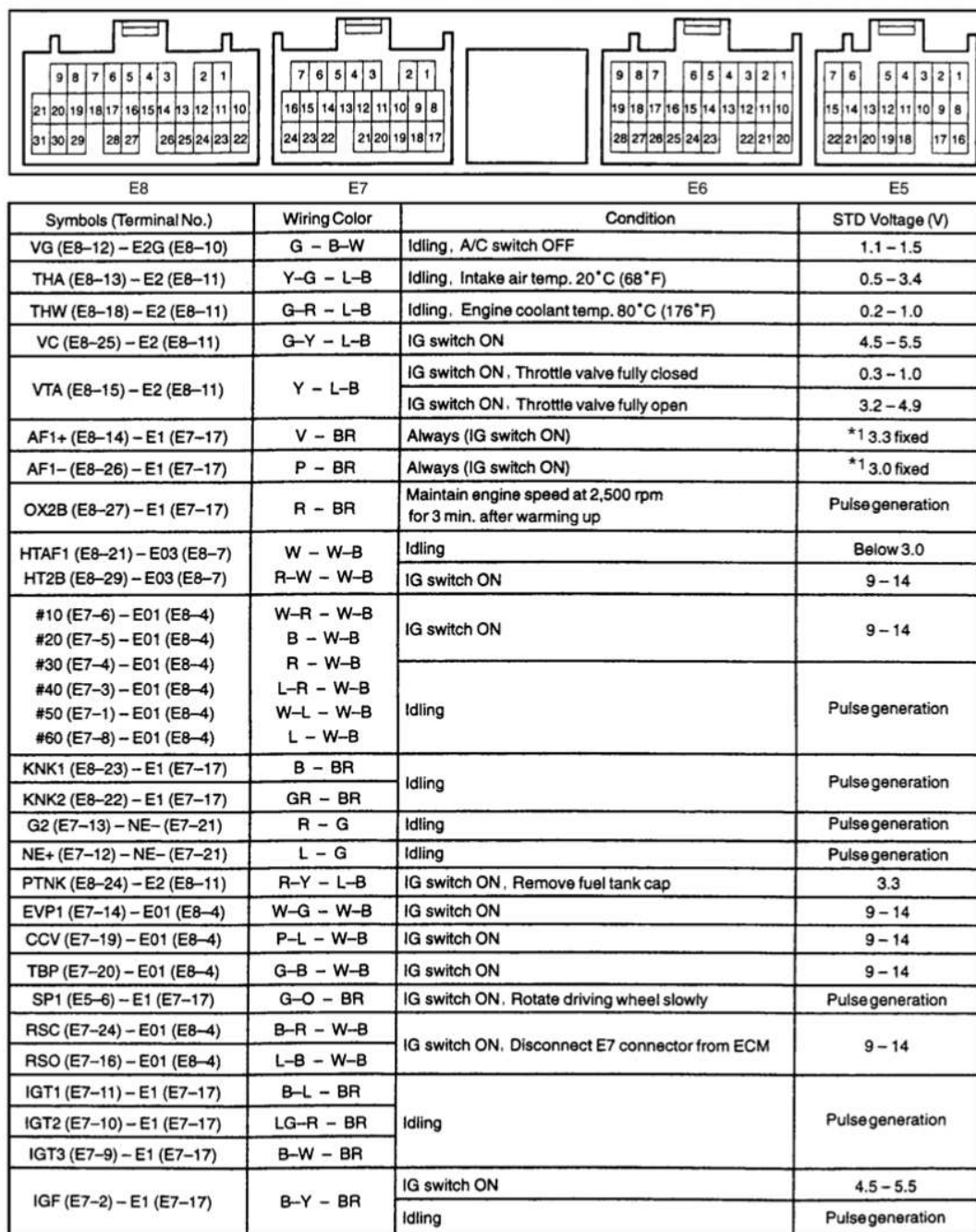
Fig. 37: Pin Voltage Chart (Tacoma 2.4L & 2.7L 4-Cyl. - 1 Of 2)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

Symbols (Terminal No.)	Wiring Color	Condition	STD Voltage (V)
IGF (E8-10) – E1 (E7-17)	B-Y – BR	IG switch ON, Disconnect ignition coil connector	4.5 – 5.5
		Idling	Pulse generation
STP (E5-15) *1 – E1 (E7-17)	G-W – BR	IG switch ON, Brake pedal depressed	7.5 – 14
		IG switch ON, Brake pedal released	Below 1.5
BATT (E5-1) – E1 (E7-17)	B-Y – BR	Always	9 – 14
NSW (E5-22) *1 – E1 (E7-17)	B-Y – BR	IG switch ON, Shift position in P or N	0 – 3.0
STA (E5-7) – E1 (E7-17)	B-W – BR	Cranking	6.0 or more
+B (E5-16) – E1 (E7-17)	W-R – BR	IG switch ON	9 – 14
FC (E6-6) – E01 (E8-21)	W-L – W – B	IG switch ON	9 – 14
TC (E6-7) – E1 (E7-17)	Y-B – BR	IG switch ON	9 – 14
W (E5-6) – E1 (E7-17)	V-R – BR	Idling	9 – 14
		IG switch ON	Below 3.0
ELS (E5-20) – E1 (E7-17)	G-R – BR	Defogger switch and taillight switch OFF	Below 1.5
PSW (E6-28) – E1 (E7-17)	Y – BR	IG switch ON	9 – 14
		At idling, Turn steering wheel to lock position	Below 3.0
SIL (E5-12) – E1 (E7-17)	W – BR	During transmission	Pulse generation

*1: A/T models only.

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Fig. 38: Pin Voltage Chart (Tacoma 2.4L & 2.7L 4-Cyl. - 2 Of 2)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.



*1: The ECM terminal voltage is fixed regardless of the output voltage from the sensor.

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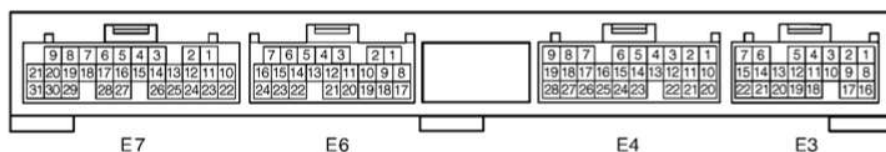
Fig. 39: Pin Voltage Chart (Tacoma 3.4L V6 - 1 Of 2)
Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

Symbols (Terminal No.)	Wiring Color	Condition	STD Voltage (V)
STP (E5-20) – E1 (E7-17)	G-W – BR	IG switch ON, Brake pedal depressed	7.5 – 14
		IG switch ON, Brake pedal released	Below 1.5
BATT (E5-16) – E1 (E7-17)	B-Y – BR	Always	9 – 14
NSW (E6-3)*1 – E1 (E7-17)	B-Y – BR	IG switch ON, Shift position other than P, N	9 – 14
		IG switch ON, Shift position in P, N	0 – 3.0
STA (E5-7) – E1 (E7-17)	G – BR	Cranking	6.0 or more
+B (E5-2) – E1 (E7-17)	W-R – BR	IG switch ON	9 – 14
IGSW (E5-15) – E1 (E7-17)	B-W – BR	IG switch ON	9 – 14
MREL (E5-4) – E1 (E7-17)	B-O – BR	IG switch ON	9 – 14
FC (E5-22) – E01 (E8-4)	W-L – W-B	IG switch ON	9 – 14
W (E5-2) – E1 (E7-17)	V-R – BR	IG switch ON	Below 3.0
PSW (E7-18) – E1 (E7-17)	B – BR	IG switch ON	9 – 14
ACT (E5-3) – E1 (E7-17)	L-B – BR	A/C switch OFF	Below 2.0
		A/C switch ON, Idling	9 – 14
AC1 (E5-9) – E1 (E7-17)	L-Y – BR	A/C switch ON, Idling	Below 2.0
		A/C switch OFF	9 – 14
SIL (E5-14) – E1 (E7-17)	W – BR	During transmission	Pulse generation

*1: A/T models only.

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Fig. 40: Pin Voltage Chart (Tacoma 3.4L V6 - 2 Of 2)
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.



Symbols (Terminal No.)	Wiring Color	Condition	STD Voltage (V)
BATT (E3-1) – E1 (E6-17)	B-R ↔ BR	Always	9 – 14
+B (E3-16) – E1 (E6-17)	W-L ↔ BR	IG switch ON	9 – 14
VC (E6-2) – E2 (E6-18)	G-B ↔ G-W	IG switch ON	4.5 – 5.5
VTA (E6-23) – E2 (E6-18)	B-Y ↔ G-W	IG switch ON, Throttle valve fully closed	0.3 – 1.0
		IG switch ON, Throttle valve fully open	2.7 – 5.2
VG (E6-10) – E2 (E6-18)	R-W ↔ G-W	Idling, A/C switch OFF	1.1 – 1.5
THA (E6-22) – E2 (E6-18)	Y-G ↔ G-W	Idling, Intake air temp. 20°C (68°F)	0.5 – 3.4
THW (E6-14) – E2 (E6-18)	G ↔ G-W	Idling, Engine coolant temp. 80°C (176°F)	0.2 – 1.0
STA (E3-7) – E1 (E6-17)	B ↔ BR	Cranking	6.0 or more
#10 (E6-5) – E01 (E7-21)	R ↔ W-B	IG switch ON	9 – 14
		Idling	Pulse generation
#20 (E6-6) – E01 (E7-21)	W ↔ W-B	IG switch ON	9 – 14
		Idling	Pulse generation
#30 (E7-1) – E01 (E7-21)	G ↔ W-B	IG switch ON	9 – 14
		Idling	Pulse generation
#40 (E7-2) – E01 (E7-21)	R-B ↔ W-B	IG switch ON	9 – 14
		Idling	Pulse generation
#50 (E7-3) – E01 (E7-21)	L ↔ W-B	IG switch ON	9 – 14
		Idling	Pulse generation
#60 (E7-4) – E01 (E7-21)	Y ↔ W-B	IG switch ON	9 – 14
		Idling	Pulse generation
IGT1 (E7-11) – E1 (E6-17)	B-L ↔ BR	Idling	Pulse generation
IGT2 (E7-12) – E1 (E6-17)	R-L ↔ BR	Idling	Pulse generation
IGT3 (E7-13) – E1 (E6-17)	LG ↔ BR	Idling	Pulse generation
IGF (E7-25) – E1 (E6-17)	B-Y ↔ BR	IG switch ON	4.5 – 5.5
		Idling	Pulse generation

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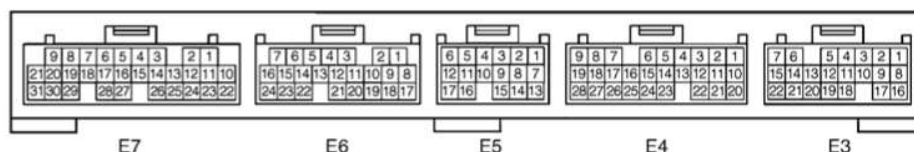
Fig. 41: Pin Voltage Chart (Tundra 3.4L V6 - 1 Of 2)
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

Symbols (Terminals No.)	Wiring Color	Condition	STD Voltage (V)
G2 (E7-10) – NE- (E6-24)	L ↔ P	Idling	Pulse generation
NE+ (E6-16) – NE- (E6-24)	V ↔ P	Idling	Pulse generation
FC (E3-3) – E1 (E6-17)	Y ↔ BR	IG switch ON	9 – 14
		Idling	0 – 3.0
EVP1 (E6-7) – E1 (E6-17)	W-G ↔ BR	IG switch ON	9 – 14
RSC (E7-15) – E1 (E6-17)	B-R ↔ BR	IG switch ON, Disconnect E7 from ECM connector	9 – 14
RSO (E7-16) – E1 (E6-17)	R-W ↔ BR		
AF1+ (E6-12) – E1 (E6-17)	G ↔ BR	IG switch ON	3.3
AF1- (E6-21) – E1 (E6-17)	R ↔ BR	IG switch ON	3.0
HTAF1 (E6-4) – E05 (E6-8)	Y ↔ W-B	Idling	Below 3.0
		IG switch ON	9 – 14
OXS (E4-8) – E1 (E6-17)	R ↔ BR	Maintain engine speed at 2,500 rpm for 2 min. after warming up	Pulse generation
HTS (E4-9) – E03 (E7-30)	R-W ↔ W-B	Idling	Below 3.0
		IG switch ON	9 – 14
KNK1 (E7-27) – E1 (E6-17)	B ↔ BR	Idling	Pulse generation
KNK2 (E7-28) – E1 (E6-17)	GR ↔ BR	Idling	Pulse generation
NSW (E4-20)*1 – E1 (E6-17)	P ↔ BR	IG switch ON, Shift position other than P, N	9 – 14
		IG switch ON, Shift position in P or N	0 – 3.0
SP1 (E4-22) – E1 (E6-17)	G-O ↔ BR	IG switch ON, Rotate driving wheel slowly	Pulse generation
TC (E7-6) – E1 (E6-17)	W-G ↔ BR	IG switch ON	9 – 14
W (E3-6) – E1 (E6-17)	V-G ↔ BR	Idling	9 – 14
		IG switch ON	Below 3.0
PSW (E6-9) – E1 (E6-17)	Y-R ↔ BR	IG switch ON	9 – 14
ACT (E4-13) – E1 (E6-17)	L-B ↔ BR	A/C switch OFF	9 – 14
		A/C switch ON at idling	5 or more
AC1 (E4-25) – E1 (E6-17)	L-Y ↔ BR	A/C switch ON at idling	Below 2.0
		A/C switch OFF	9 – 14
TPC (E3-9) – E1 (E6-17)	GR-R ↔ BR	IG switch ON, Disconnect vacuum hose from vapor pressure sensor	9 – 14
PTNK (E3-17) – E1 (E6-17)	R-G ↔ BR	IG switch ON	3.0 – 3.6
SIL (E3-11) – E1 (E6-17)	W ↔ BR	During transmission	Pulse generation
STP (E3-15) – E1 (E6-17)	G-W ↔ BR	IG switch ON, Brake pedal is depressed	7.5 – 14
		IG switch ON, Brake pedal is released	Below 1.5

*1: A/T models only.

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Fig. 42: Pin Voltage Chart (Tundra 3.4L V6 - 2 Of 2)
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.



Symbols (Terminals No.)	Wiring Color	Condition	STD Voltage (V)
BATT (E3-1) – E1 (E6-17)	B-R ↔ BR	Always	9 – 14
+BM (E3-7) – E1 (E6-17)	W-G ↔ BR		
IGSW (E3-9) – E1 (E6-17)	B-O ↔ BR	IG switch ON	9 – 14
+B (E3-16) – E1 (E6-17)	W-L ↔ BR		
+B1 (E3-8) – E1 (E6-17)	W-L ↔ BR		
MREL (E3-5) – E1 (E6-17)	B-Y ↔ BR	IG switch ON	9 – 14
VC (E6-2) – E2 (E6-18)	G-B ↔ G-W	IG switch ON	4.5 – 5.5
VG (E6-10) – EVG (E6-19)	R-W ↔ B-W	Idling, P or N position, A/C switch OFF	0.5 – 3.0
THA (E6-22) – E2 (E6-18)	Y-G ↔ G-W	Idling, Intake air temp. 20°C (68°F)	0.5 – 3.4
THW (E6-14) – E2 (E6-18)	G ↔ G-W	Idling, Engine coolant temp. 80°C (176°F)	0.2 – 1.0
VTA (E6-13) – E2 (E6-18)	B-Y ↔ G-W	IG switch ON, Accelerator pedal released	0.4 – 1.0
		IG switch ON, Accelerator pedal depressed	3.2 – 4.8
VTA2 (E6-20) – E2 (E6-18)	P-L ↔ G-W	IG switch ON, Accelerator pedal released	2.0 – 2.9
		IG switch ON, Accelerator pedal depressed	4.7 – 5.1
VPA (E6-21) – E2 (E6-18)	G-R ↔ G-W	IG switch ON, Accelerator pedal released	0.3 – 0.9
		IG switch ON, Accelerator pedal depressed	3.2 – 4.8
VPA2 (E6-9) – E2 (E6-18)	L ↔ G-W	IG switch ON, Accelerator pedal released	1.8 – 2.7
		IG switch ON, Accelerator pedal depressed	4.7 – 5.1
OXL1 (E6-12) – E1 (E6-17)	B ↔ BR	Maintain engine speed at 2,500 rpm for 2 minutes after warming up	Pulse generation
OXL2 (E6-16) – E1 (E6-17)	B ↔ BR		
OXR1 (E6-11) – E1 (E6-17)	W ↔ BR		
OXR2 (E6-15) – E1 (E6-17)	W ↔ BR		
HTL1 (E6-4) – E1 (E6-17)	G-Y ↔ BR	Idling	Below 3.0
HTL2 (E6-24) – E1 (E6-17)	R-Y ↔ BR		
HTR1 (E6-3) – E1 (E6-17)	Y ↔ BR	IG switch ON	9 – 14
HTR2 (E6-23) – E1 (E6-17)	Y ↔ BR		
#1 (E6-5) – E01 (E7-21)	R ↔ W-B	IG switch ON	9 – 14
#2 (E6-6) – E01 (E7-21)	W ↔ W-B		
#3 (E7-1) – E01 (E7-21)	G ↔ W-B		
#4 (E7-2) – E01 (E7-21)	R-B ↔ W-B	Idling	Pulse generation
#5 (E7-3) – E01 (E7-21)	L ↔ W-B		
#6 (E7-4) – E01 (E7-21)	Y ↔ W-B		
#7 (E7-5) – E01 (E7-21)	L-R ↔ W-B		
#8 (E7-6) – E01 (E7-21)	R-W ↔ W-B		
KNKL (E7-18) – E1 (E6-17)	GR ↔ BR	Maintain engine speed at 4,000 rpm after warming up	Pulse generation
KNKR (E7-17) – E1 (E6-17)	B ↔ BR		

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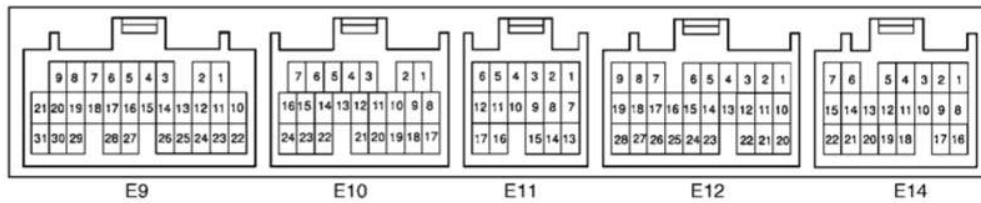
Fig. 43: Pin Voltage Chart (Tundra 4.7L V8 - 1 Of 2)
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

Symbols (Terminal No.)	Wiring Color	Condition	STD Voltage (V)
G2 (E7-10) – G- (E7-24)	Y ↔ L	Idling	Pulse generation
NE+ (E7-23) – NE- (E7-22)	G ↔ R		
PRG (E6-7) – E1 (E6-17)	W-G ↔ BR	IG switch ON	9 – 14
TPC (E4-21) – E1 (E6-17)	GR-R ↔ BR	IG switch ON	9 – 14
PTNK (E4-22) – E2 (E6-18)	R-G ↔ G-W	Ignition switch ON	2.9 – 3.7
		Apply vacuum 4.0 kPa (26 mmHg, 1.0 in.Hg) to vapor pressure sensor	Below 0.5
SPD (E4-5) – E1 (E6-17)	G-O ↔ BR	IG switch ON, Rotate driving wheel slowly	Pulse generation
CL+ (E7-29) – CL- (E7-19)	L-B ↔ L-W	Idling	Pulse generation
M+ (E7-8) – E1 (E6-17)	R ↔ BR	Idling	Pulse generation
M- (E7-7) – E1 (E6-17)	W ↔ BR		
FPR (E3-4) – E1 (E6-17)	B-L ↔ BR	IG switch ON	0 – 3.0
FC (E3-6) – E1 (E6-17)	Y ↔ BR	IG switch ON	9 – 14
IGT1 (E7-11) – E1 (E6-17)	B-L ↔ BR	Idling	Pulse generation
IGT2 (E7-12) – E1 (E6-17)	LG-B ↔ BR		
IGT3 (E7-13) – E1 (E6-17)	B-Y ↔ BR		
IGT4 (E7-14) – E1 (E6-17)	R-W ↔ BR		
IGT5 (E7-15) – E1 (E6-17)	G-W ↔ BR		
IGT6 (E7-16) – E1 (E6-17)	P-L ↔ BR		
IGT7 (E7-25) – E1 (E6-17)	P ↔ BR		
IGT8 (E7-26) – E1 (E6-17)	LG ↔ BR		
IGF1 (E7-27) – E1 (E6-17)	B-R ↔ BR	IG switch ON	4.5 – 5.5
IGF2 (E7-28) – E1 (E6-17)	B-W ↔ BR	Idling	Pulse generation
STP (E3-15) – E1 (E6-17)	G-W ↔ BR	Brake pedal is depressed	7.5 – 14
		Brake pedal is released	Below 1.5
STA (E4-7) – E1 (E6-17)	B ↔ BR	Shift lever position P or N, Ignition switch START	6.0 or more
NSW (E3-2)*1 – E1 (E6-17)	P ↔ BR	IG switch ON, Shift position other than P, N	9 – 14
		IG switch ON, Shift position in P, N	0 – 3.0
W (E4-23) – E1 (E6-17)	V-G ↔ BR	Idling	9 – 14
		IG switch ON	Below 3.0
ACT (E3-22) – E1 (E6-17)	L-B ↔ BR	A/C switch OFF	Below 3.0
		A/C switch ON at idling	9 – 14
ACI (E3-21) – E1 (E6-17)	L-Y ↔ BR	A/C switch ON at idling	Below 1.5
		A/C switch OFF	7.5 – 14
ST1 – (E3-10) – E1 (E6-17)	L-B ↔ BR	IG switch ON, Brake pedal is depressed	Below 1.5
		IG switch ON, Brake pedal is released	7.5 – 14
SIL (E3-17) – E1 (E6-17)	W ↔ BR	During transmission	Pulse generation
ELS (E4-12) – E1 (E6-17)	G-Y ↔ BR	Taillight switch ON, Defogger switch ON	7.5 – 14
		Taillight switch OFF, Defogger switch OFF	0 – 1.5
TACH (E4-4) – E1 (E6-17)	L-W ↔ BR	Idling	Pulse generation

*1: A/T models only.

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Fig. 44: Pin Voltage Chart (Tundra 4.7L V8 - 2 Of 2)
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.



Symbols (Terminal No.)	Wiring Color	Condition	STD Voltage (V)
BATT (E14-16) – E1 (E10-17)	L-R ↔ BR	Always	9 – 14
+B (E14-1) – E1 (E10-17)	W-L ↔ BR	IG switch ON	9 – 14
VC (E9-25) – E2 (E9-11)	G-B ↔ L-B	IG switch ON	4.5 – 5.5
VTA (E9-15) – E2 (E9-11)	B-Y ↔ L-B	IG switch ON, Throttle valve fully closed	0.3 – 1.0
		IG switch ON, Throttle valve fully open	2.7 – 5.2
VTA2 (E11-4) – E2 (E9-11)	G-Y ↔ L-B	IG switch ON, Throttle valve fully closed	0.3 – 1.0
		IG switch ON, Throttle valve fully open	2.7 – 5.2
VG (E9-12) – E2G (E9-10)	R-W ↔ B-W	Idling, A/C switch OFF	1.1 – 1.5
NE+ (E10-12) – NE- (E10-21)	L ↔ G	Idling	Pulse generation
G2 (E10-13) – NE- (E10-21)	R ↔ G	Idling	Pulse generation
THA (E9-13) – E2 (E9-11)	Y-G ↔ L-B	Idling, Intake air temp. 20°C (68°F)	0.5 – 3.4
THW (E9-18) – E2 (E9-11)	G ↔ L-B	Idling, Engine coolant temp. 80°C (176°F)	0.2 – 1.0
STA (E14-7) – E1 (E10-17)	B-W ↔ BR	Cranking	6.0 or more
#10 (E10-6) – E01 (E9-4)	R ↔ W-B	IG switch ON	9 – 14
#20 (E10-5) – E01 (E9-4)	W ↔ W-B		
#30 (E10-4) – E01 (E9-4)	G ↔ W-B		
#40 (E10-3) – E01 (E9-4)	R-B ↔ W-B	Idling	Pulse generation
#50 (E10-1) – E01 (E9-4)	L ↔ W-B		
#60 (E10-8) – E01 (E9-4)	Y ↔ W-B		
IGT1 (E10-11) – E1 (E10-17)	B-L ↔ BR	Idling	Pulse generation
IGT2 (E10-10) – E1 (E10-17)	L-Y ↔ BR		
IGT3 (E10-9) – E1 (E10-17)	G-W ↔ BR		
IGF (E10-2) – E1 (E10-17)	B-Y ↔ BR	IG switch ON	4.5 – 5.5
		Idling	Pulse generation
FC (E14-22) – E01 (E9-4)	G-Y ↔ W-B	IG switch ON	9 – 14
		Idling	0 – 3.0
EVP1 (E10-14) – E01 (E9-4)	W-G ↔ W-B	IG switch ON	9 – 14
CCV (E10-19) – E01 (E9-4)	L-B ↔ W-B	IG switch ON	9 – 14
OX2B (E9-27) – E1 (E10-17)	B ↔ BR	Maintain engine speed at 2,500 rpm for 3 min. after warming up	Pulse generation
HT2B (E9-29) – E03 (E9-7)	G-Y ↔ W-B	Idling	Below 3.0
		IG switch ON	9 – 14
KNK1 (E9-23) – E1 (E10-17)	B ↔ BR	Idling	Pulse generation
KNK1 (E9-23) – E1 (E10-17)	GR ↔ BR		

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Fig. 45: Pin Voltage Chart (4Runner - 1 Of 2)
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.

Symbols (Terminal No.)	Wiring Color	Condition	STD Voltage (V)
NSW (E12-3) – E1 (E10-17)	B ↔ BR	IG switch ON, Shift position other than P, N	9 – 14
		IG switch ON, Shift position in P, N	0
TBP (E10-20) – E01 (E9-4)	R–Y ↔ W–B	IG switch ON,	9 – 14
PTNK (E9-24) – E2 (E9-11)	Y ↔ L–B	IG switch ON	2.9 – 3.7
		IG switch ON, Apply vacuum 4.0 kPa (30 mmHg, 1.18 in.Hg)	0.5 or less
SIL (E14-14) – E1 (E10-17)	W ↔ BR	During transmission	Pulse generation
STP (E14-20) – E1 (E10-17)	G–W ↔ BR	IG switch ON, Brake pedal depressed	7.5 – 14
		IG switch ON, Brake pedal released	Below 1.5
AF1+ (E9-14) – E1 (E10-17)	W ↔ BR	IG switch ON	3.0 – 3.6
AF1– (E9-26) – E1 (E10-17)	B ↔ BR	IG switch ON	2.7 – 3.3
HTAF (E9-21) – E04 (E9-8)	L ↔ W–B	Idling	Below 3.0
		IG switch ON	9 – 14
KSW (E14-11)*1– E1 (E10-17)	Y–R ↔ BR	At time of inserting key	Below 1.5
		In condition without key inserted	4 – 5
CODE (E14-5)*1– E1 (E10-17)	GR–R ↔ BR	At time of inserting key	Pulse generation
IGSW (E14-15) – E1 (E10-17)	B–L ↔ BR	IG switch ON	9 – 14
TXCT (E14-19)*1– E1 (E10-17)	P–B ↔ BR	At time of inserting key	Pulse generation
IMLD (E14-12)*1– E1 (E10-17)	L ↔ BR	In condition without key inserted	Pulse generation
MREL (E14-4) – E1 (E10-17)	GR–B ↔ BR	IG switch ON	9 – 14

*1: With engine immobilizer system.

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Fig. 46: Pin Voltage Chart (4Runner - 2 Of 2)
 Courtesy of TOYOTA MOTOR SALES, U.S.A., INC.