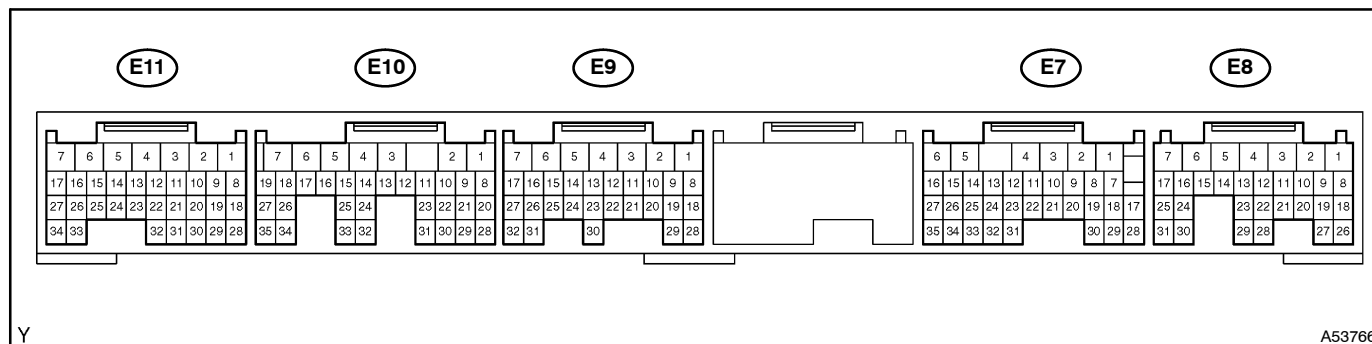


## TERMINALS OF ECM



Each ECM terminal's standard normal voltage is shown in the table below.

In the table, first follow the information under "Condition". Look under "Symbols (Terminals No.)" for the terminals to be inspected. The standard normal voltage between the terminals is shown under "STD Voltage". Use the illustration above as a reference for the ECM terminals.

| Symbols (Terminals No.)     | Wiring Color                   | Terminal Description   | Condition   | STD Voltage  |
|-----------------------------|--------------------------------|--|---|--------------|
| BATT (E8-3) – E1 (E9-1)     | B-Y – BR                       | Battery (for measuring the battery voltage and for the ECM memory)   | Always  | 9 to 14 V    |
| +BM (E7-6) – E1 (E9-1)      | B – BR (*1)<br>L – BR (*2)     | Power source of throttle motor                                       | Always  | 9 to 14 V    |
| IGSW (E8-9) – E1 (E9-1)     | B – BR (*1)<br>B-O – BR (*2)   | Ignition switch  | Ignition switch ON                                    | 9 to 14 V    |
| +B (E8-1) – E1 (E9-1)       | B-W – BR                       | Power source of ECM  | Ignition switch ON                                    | 9 to 14 V    |
| MREL (E8-8) – E1 (E9-1)     | P-B – BR                       | EFI relay  | Ignition switch ON                                    | 9 to 14 V    |
| VC (E11-18) – E2 (E11-28)   | R – BR (*1)<br>Y – BR (*2)     | Power source of sensor (a specific voltage)                          | Ignition switch ON                                    | 4.5 to 5.5 V |
| VTA1 (E11-21) – E2 (E11-28) | W-R – BR (*1)<br>L-R – BR (*2) | Throttle position sensor (for engine control)                        | Ignition switch ON, Accelerator pedal fully released  | 0.4 to 1.0 V |
| VTA1 (E11-21) – E2 (E11-28) | W-R – BR (*1)<br>L-R – BR (*2) | Throttle position sensor (for engine control)                        | Ignition switch ON, Accelerator pedal fully depressed | 3.2 to 4.8 V |
| VTA2 (E11-31) – E2 (E11-28) | O – BR                         | Throttle position sensor (for sensor malfunction detection)          | Ignition switch ON, Accelerator pedal fully released  | 2.1 to 3.1 V |
| VTA2 (E11-31) – E2 (E11-28) | O – BR                         | Throttle position sensor (for sensor malfunction detection)          | Ignition switch ON, Accelerator pedal fully depressed | 4.5 to 5.5 V |
| VPA (E8-22) – EPA (E8-28)   | B-R – BR                       | Accelerator pedal position sensor (for engine control)               | Ignition switch ON, Accelerator pedal fully released  | 0.5 to 1.1 V |
| VPA (E8-22) – EPA (E8-28)   | B-R – BR                       | Accelerator pedal position sensor (for engine control)               | Ignition switch ON, Accelerator pedal fully depressed | 2.5 to 4.6 V |
| VPA2 (E8-23) – EPA2 (E8-29) | L-W – Y                        | Accelerator pedal position sensor (for sensor malfunction detection) | Ignition switch ON, Accelerator pedal fully released  | 1.5 to 2.9 V |
| VPA2 (E8-23) – EPA2 (E8-29) | L-W – Y                        | Accelerator pedal position sensor (for sensor malfunction detection) | Ignition switch ON, Accelerator pedal fully depressed | 3.5 to 5.5 V |
| VCPA (E8-26) – EPA (E8-28)  | G-B – BR                       | Power source of accelerator pedal position sensor (for VPA)          | Ignition switch ON                                    | 4.5 to 5.5 V |
| VCP2 (E8-27) – EPA2 (E8-29) | G – Y                          | Power source of accelerator pedal position sensor (for VPA2)         | Ignition switch ON                                    | 4.5 to 5.5 V |

| Symbols (Terminals (No.))   | Wiring Color   | Terminal Description                                      | Condition  | STD Voltage                           |
|---|--|---|--|---------------------------------------|
| VG (E11-30) – EVG (E11-29)  | G – L – Y  | Mass air flow meter                                       | Idling, Shift position P or N, A/C switch OFF                                | 0.5 to 3.0 V                          |
| THA (E11-20) – E2 (E11-28)  | GR – BR  | Intake air temperature sensor                             | Idling, Intake air temperature 20°C (68°F)                                   | 0.5 to 3.4 V                          |
| THW (E11-19) – E2 (E11-28)  | B – W – BR   | Engine coolant temperature sensor                         | Idling, Engine coolant temperature 80°C (176°F)                              | 0.2 to 1.0 V                          |
| #10 (E11-1) – E01 (E11-7)<br>#20 (E11-2) – E01 (E11-7)<br>#30 (E11-3) – E01 (E11-7)<br>#40 (E11-4) – E01 (E11-7)                            | R – W – B<br>R – L – W – B<br>R – W – W – B<br>R – B – W – B         | Injector  | Ignition switch ON   | 9 to 14 V                             |
| #10 (E11-1) – E01 (E11-7)<br>#20 (E11-2) – E01 (E11-7)<br>#30 (E11-3) – E01 (E11-7)<br>#40 (E11-4) – E01 (E11-7)                            | R – W – B<br>R – L – W – B<br>R – W – W – B<br>R – B – W – B         | Injector  | Idling   | Pulse generation<br>(See page 05-107) |
| IGT1 (E11-8) – E1 (E9-1)<br>IGT2 (E11-9) – E1 (E9-1)<br>IGT3 (E11-10) – E1 (E9-1)<br>IGT4 (E11-11) – E1 (E9-1)<br>IGT4 (E11-11) – E1 (E9-1) | W – L – BR<br>G – BR<br>B – R – BR<br>B – O – BR (*1)<br>P – BR (*2) | Ignition coil with igniter (ignition signal)              | Idling   | Pulse generation<br>(See page 05-132) |
| IGF1 (E11-24) – E1 (E9-1)   | R – Y – BR   | Ignition coil with igniter (ignition confirmation signal) | Ignition switch ON   | 4.5 to 5.5 V                          |
| IGF1 (E11-24) – E1 (E9-1)   | R – Y – BR   | Ignition coil with igniter (ignition confirmation signal) | Idling   | Pulse generation<br>(See page 05-132) |
| G2+ (E9-27) – NE– (E9-24)   | L – W  | Camshaft position sensor                                  | Idling   | Pulse generation<br>(See page 05-125) |
| NE+ (E9-25) – NE– (E9-24)   | O – W  | Crankshaft position sensor                                | Idling   | Pulse generation<br>(See page 05-125) |
| FC (E8-10) – E1 (E9-1)  | R – B – BR   | Fuel pump control   | Ignition switch ON   | 9 to 14 V                             |
| M+ (E9-3) – E01 (E11-7)<br>M– (E9-2) – E01 (E11-7)  | B – W – B<br>W – W – B   | Throttle actuator   | Idling   | Pulse generation                      |
| A1A+ (E10-23) – E1 (E9-1)   | G – BR   | A/F sensor  | Always (Ignition switch ON)  | 3.3 fixed *3                          |
| A1A– (E10-31) – E1 (E9-1)   | R – BR   | A/F sensor  | Always (Ignition switch ON)  | 3.0 fixed *3                          |
| OX1B (E10-29)<br>– O1B– (E10-28)  | W – B  | Heated oxygen sensor                                      | Maintain engine speed at 2,500 rpm for 2 minutes after warming up the sensor | Pulse generation                      |
| HA1A (E10-5) – E04 (E10-7)  | L – BR   | A/F sensor heater   | Idling   | Below 3.0 V                           |
| HA1A (E10-5) – E04 (E10-7)  | L – BR   | A/F sensor heater   | Ignition switch ON   | 9 to 14 V                             |
| HT1B (E10-21) – E03 (E9-7)  | L – Y – BR   | Heated oxygen sensor heater                               | Idling   | Below 3.0 V                           |
| HT1B (E10-21) – E03 (E9-7)  | L – Y – BR   | Heated oxygen sensor heater                               | Ignition switch ON   | 9 to 14 V                             |
| KNK1 (E10-1) – EKNK (E10-2)   | W – B  | Knock sensor  | Maintain engine speed at 4,000 rpm after warming up the engine               | Pulse generation<br>(See page 05-121) |
| OC1+ (E9-16)<br>– OC1– (E9-15)  | W – G – L – O (*1)<br>L – O – W – G (*2)                             | Camshaft timing oil control valve (OCV)                   | Ignition switch ON   | Pulse generation<br>(See page 05-36)  |
| PRG (E11-34) – E01 (E11-7)  | Y – G – W – B  | EVAP VSV  | Ignition switch ON   | 9 to 14 V                             |
| PRG (E11-34) – E01 (E11-7)  | Y – G – W – B  | EVAP VSV  | Idling   | Pulse generation                      |
| STA (E11-17) – E1 (E9-1)  | GR – BR  | Starter signal  | Shift position N, Ignition switch START                                      | 6.0 V or more                         |
| ALT (E9-23) – E1 (E9-1)   | L – BR   | Alternator  | Ignition switch ON   | 9 to 14 V                             |
| STP (E7-19) – E1 (E9-1)   | G – W – BR (*1)<br>L – B – BR (*2)                                   | Stop lamp switch  | Brake pedal depressed  | 9 to 14 V                             |

## DIAGNOSTICS – SFI SYSTEM (1AZ-FE)

| Symbols (Terminals No.)   | Wiring Color                     | Terminal Description                | Condition                                       | STD Voltage  |
|---------------------------|----------------------------------|-------------------------------------|---|--|
| STP (E7-19) – E1 (E9-1)   | G-W – BR (*1)<br>L-B – BR (*2)   | Stop lamp switch                    | Brake pedal released                            | Below 1.5 V  |
| ST1- (E7-12) – E1 (E9-1)  | L-O – BR (*1)<br>B-R – BR (*2)   | Stop lamp switch                    | Ignition switch ON, Brake pedal depressed       | Below 1.5 V  |
| ST1- (E7-12) – E1 (E9-1)  | L-O – BR (*1)<br>B-R – BR (*2)   | Stop lamp switch                    | Ignition switch ON, Brake pedal released        | 7.5 to 14 V  |
| W (E8-11) – E01 (E11-7)   | L-O – W-B (*1)<br>R-B – W-B (*2) | MIL                                 | Idling  | 9 to 14 V  |
| W (E8-11) – E01 (E11-7)   | L-O – W-B (*1)<br>R-B – W-B (*2) | MIL                                 | Ignition switch ON                              | Below 3.0 V  |
| ELS (E8-12) – E1 (E9-1)   | Y – BR                           | Electric load                       | Taillamp switch ON, Defogger switch ON          | 7.5 to 14 V  |
| ELS (E8-12) – E1 (E9-1)   | Y – BR                           | Electric load                       | Taillamp switch OFF, Defogger switch OFF        | 0 to 1.5 V   |
| TACH (E8-5) – E1 (E9-1)   | W-L – BR                         | Engine speed                        | Idling  | Pulse generation                                       |
| SPD (E7-17) – E01 (E11-7) | W-R – W-B                        | Speed signal from combination meter | Ignition switch ON, Rotate driving wheel slowly | Pulse generation<br>(See <a href="#">page 05-146</a> ) |
| TC (E8-20) – E1 (E9-1)    | P-B – BR                         | Terminal TC of DLC 3                | Ignition switch ON                              | 9 to 14 V  |
| SIL (E8-18) – E1 (E9-1)   | W – BR                           | Terminal SIL of DLC3                | Connect the intelligent tester II to DLC3       | Pulse generation                                       |
| PSW (E9-10) – E1 (E9-1)   | G – BR                           | Power steering oil pressure switch  | While turning the steering wheel                | Below 1.5 V  |
| F/PS (E8-14) – E1 (E9-1)  | L-O – BR                         | Airbag sensor assembly              | Ignition switch ON                              | Below 1.5 V  |

\*1: LHD

\*2: RHD

\*3: The ECM terminal voltage is fixed regardless of the output voltage from the sensor.