| DTC | P0778 | Pressure Control Solenoid "B" Electrical (Shift Solenoid Valve SL2) |
|---|---|---|

## DESCRIPTION

Shifting from 1st to 5th is performed in combination with "ON" and "OFF" operation of the shift solenoid valves SL1, SL2, SL3, S4 and SR which are controlled by the ECM. If an open or short circuit occurs in either of the shift solenoid valves, the ECM controls the remaining normal shift solenoid valves to allow the vehicle to be operated smoothly (Fail safe function).

| DTC No. | DTC Detection Condition | Trouble Area |
|---|---|---|
| P0778 | ECM checks for an open or short circuit in shift solenoid valves SL2 (1-trip detection logic)<br>Hybrid IC for solenoid indicates fail. | • Open or short in shift solenoid valve SL2 circuit<br>• Shift solenoid valve SL2<br>• ECM |

## MONITOR DESCRIPTION

The ECM commands gear shifts by turning the shift solenoid valves "ON/OFF". When there is an open or short circuit in any shift solenoid valve circuit, the ECM detects the problem and illuminates the MIL and stores the DTC. And the ECM performs the fail-safe function and turns the other normal shift solenoid valves "ON/OFF" (In case of an open or short circuit, the ECM stops sending current to the circuit.)
(See page AX-30).

## MONITOR STRATEGY

| | |
|---|---|
| Related DTCs | P0778: Shift solenoid valve SL2/Range check |
| Required sensors/Components | Shift solenoid valve SL2 |
| Frequency of operation | Continuous |
| Duration | 1 sec. |
| MIL operation | Immediate |
| Sequence of operation | None |

## TYPICAL ENABLING CONDITIONS

AX

| | |
|---|---|
| The monitor will run whenever this DTC is not present. | None |
| Solenoid current cut status | Not cut |
| Battery voltage | 11 V or more |
| Ignition switch | ON |
| Starter | OFF |
| CPU commanded duty ratio to SL2 | 19% or more |

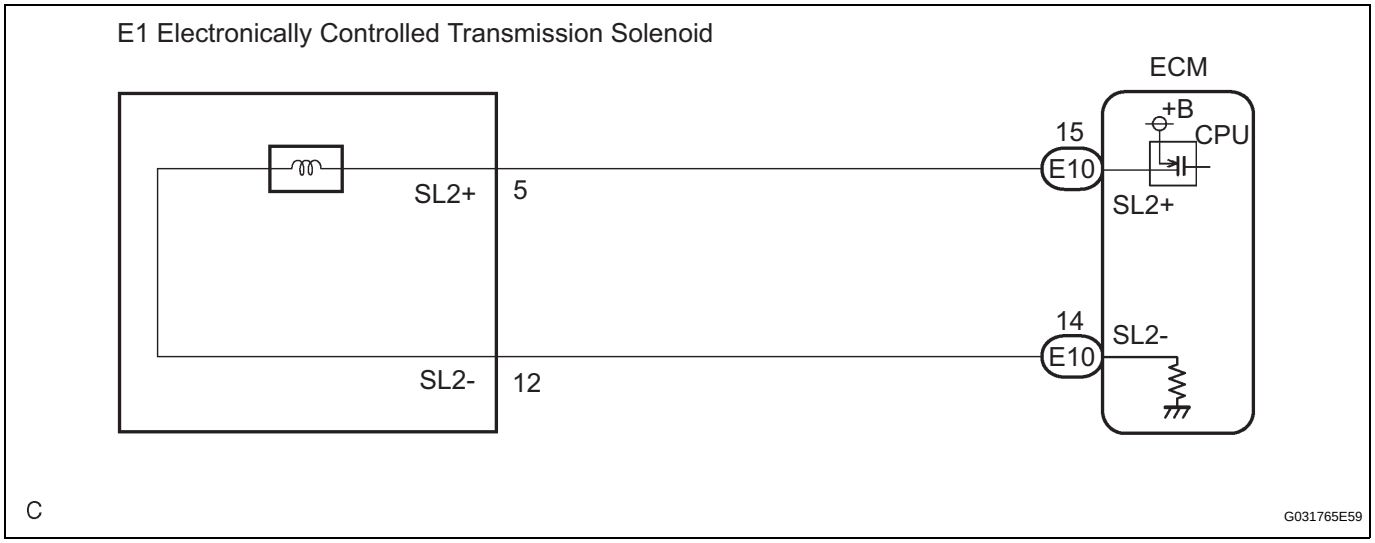
## TYPICAL MALFUNCTION THRESHOLDS

| | |
|---|---|
| Solenoid status from IC | Fail (Open or short) |

## COMPONENT OPERATING RANGE

| | |
|---|---|
| Output signal duty | Less than 100% |

## WIRING DIAGRAM

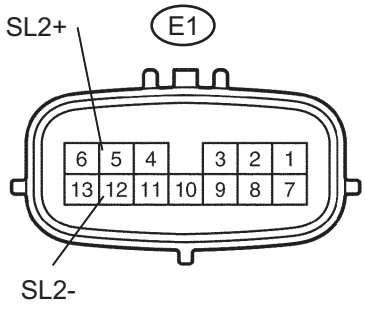



## INSPECTION PROCEDURE

| 1 | INSPECT TRANSMISSION WIRE (SL2) |
|---|---|

**Transmission Wire Side:**

**(Connector Front View):**




(a) Disconnect the transmission wire connector from the transaxle.

(b) Measure the resistance according to the value(s) in the table below.

**Standard resistance**

| Tester Connection | Specified Condition 20°C (68°F) |
|---|---|
| 5 (SL2+) - 12 (SL2-) | 5.0 to 5.6 Ω |

(c) Measure the resistance according to the value(s) in the table below.

**OK:**

**Standard resistance (Check for short)**

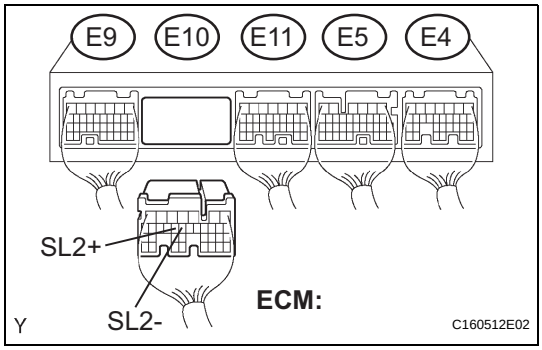
| Tester Connection | Specified Condition |
|---|---|
| 5 (SL2+) - Body ground | 10 kΩ or higher |
| 12 (SL2-) - Body ground | ↑ |

**NG** → **Go to step 3**

**OK**

AX

## 2 CHECK HARNESS AND CONNECTOR (TRANSMISSION WIRE - ECM)




(a) Connect the transmission wire connector to the transaxle.
(b) Disconnect the connector from the ECM.
(c) Measure the resistance according to the value(s) in the table below.

**Standard resistance**

| Tester Connection | Specified Condition 20°C (68°F) |
|---|---|
| E10-15 (SL2+) - E10-14 (SL2-) | 5.0 to 5.6 Ω |

(d) Measure the resistance according to the value(s) in the table below.

**OK:**

**Standard resistance (Check for short)**

| Tester Connection | Specified Condition |
|---|---|
| E10-15 (SL2+) - Body ground | 10 kΩ or higher |
| E10-14 (SL2-) - Body ground | |

NG → **REPAIR OR REPLACE HARNESS OR CONNECTOR**

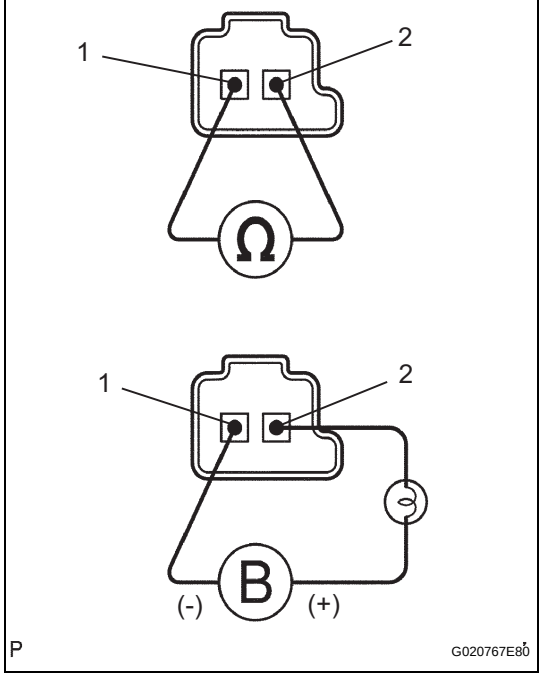
OK

**REPLACE ECM**

## 3 INSPECT SHIFT SOLENOID VALVE SL2

AX

**Shift Solenoid Valve SL2:**




(a) Remove the shift solenoid valve SL2.
(b) Measure the resistance according to the value(s) in the table below.

**Standard resistance**

| Tester Connection | Specified Condition 20°C (68°F) |
|---|---|
| 1 - 2 | 5.0 to 5.6 Ω |

(c) Connect the positive (+) lead with a 21 W bulb to terminal 2 and the negative (-) lead to terminal 1 of the solenoid valve connector, then check the movement of the valve.

**OK:**

**The solenoid makes an operating sound.**

NG → **REPLACE SHIFT SOLENOID VALVE SL2**

**OK**

**REPAIR OR REPLACE TRANSMISSION WIRE**