DTC P0504 BRAKE SWITCH "A"/"B" CORRELATION

CIRCUIT DESCRIPTION

In this system, the signal of the stop lamp switch is used to judge whether the acceleration system is abnormal or not.

The stop lamp switch has a duplex system (signals STP and ST1–) to memorize the abnormality when the signals of depressing and releasing the brake pedal are detected simultaneously.

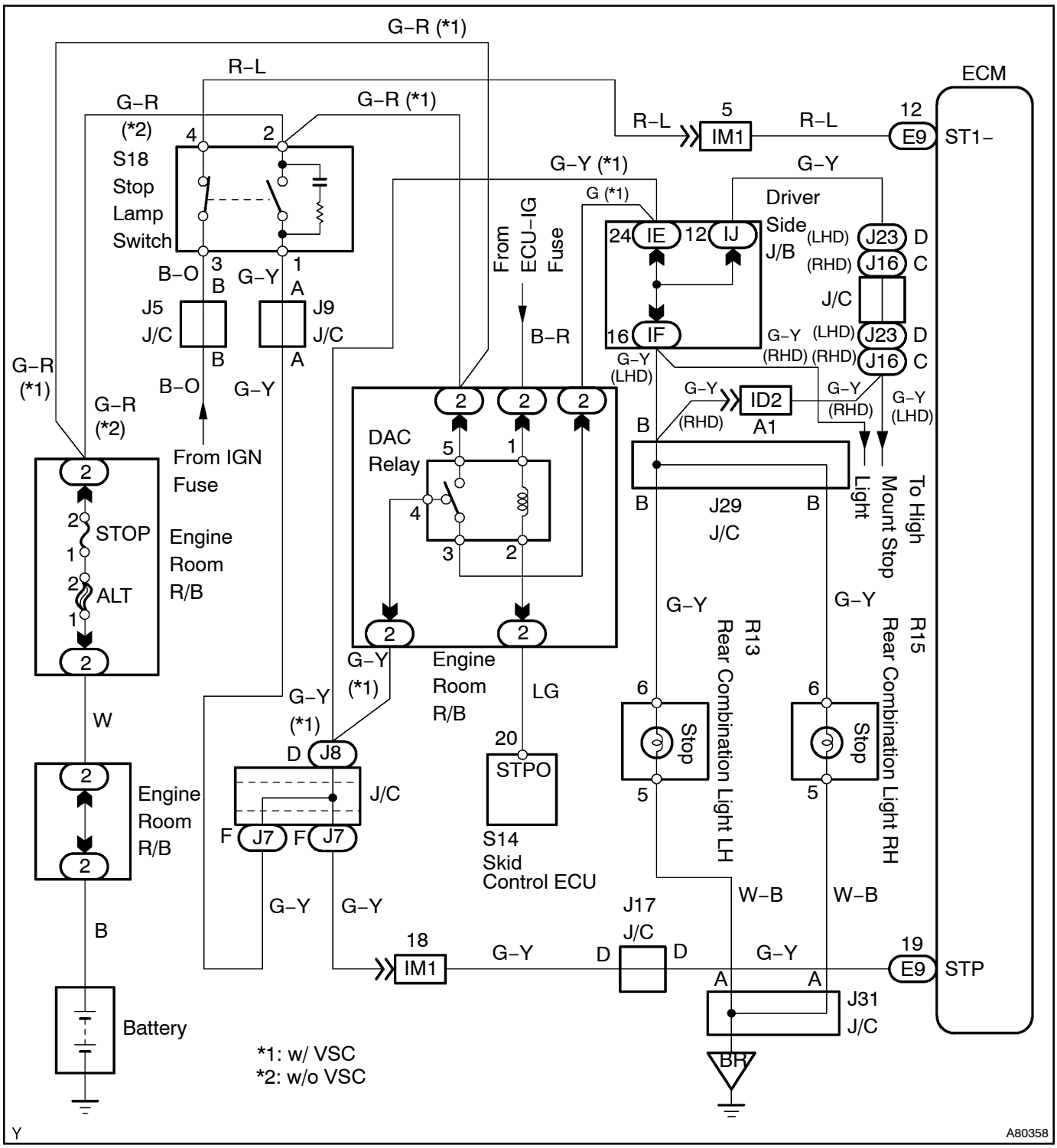
HINT:

Normal condition is as shown in the table.

Signal	Brake pedal released	In transition	Brake pedal depressed
STP	OFF	ON	ON
ST1–	ON	ON	OFF

DTC No.	DTC Detection Condition	Trouble Area
P0504	Condition (a), (b) and (c) continue for 0.5 sec. or more: (a) Ignition switch ON (b) Brake pedal released (c) STP signal is OFF when the ST1– signal is OFF	• Short in stop lamp switch signal circuit • Stop lamp switch • ECM

WIRING DIAGRAM



INSPECTION PROCEDURE

HINT:

Read freeze frame data using the hand–held tester, as freeze frame data records the engine conditions when a malfunction is detected. When troubleshooting, it is useful for determining whether the vehicle was running or stopped, the engine was warmed up or not, the air–fuel ratio was lean or rich, etc. at the time of the malfunction.

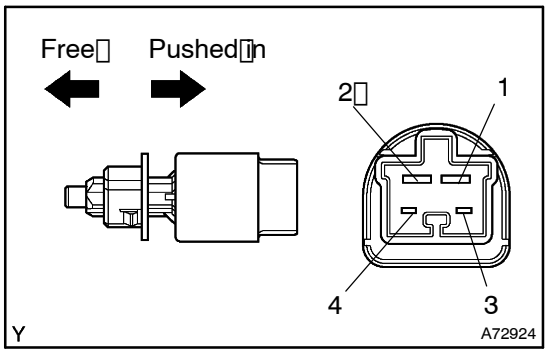
1 CHECK OPERATION OF STOP LIGHT

(a) Check if the stop lights go on and off normally when the brake pedal is depressed and released.

NG → **REPAIR OR REPLACE STOP LAMP SWITCH CIRCUIT**

OK

2 INSPECT STOP LAMP SWITCH ASSY



(a) Check for continuity between each pair of terminals.

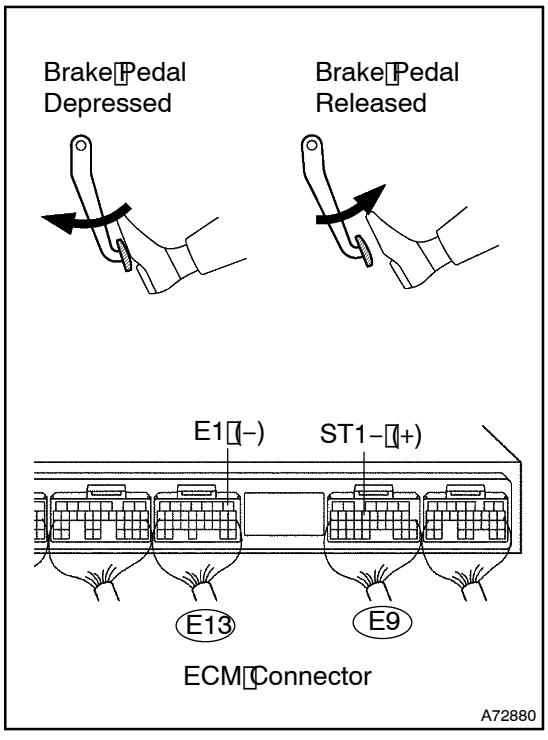
Standard:

Switch position	Terminal No.	Specified condition
Switch pin free	1 – 2	Continuity
	3 – 4	No continuity
Switch pin pushed in	1 – 2	No continuity
	3 – 4	Continuity

NG → **REPLACE STOP LAMP SWITCH ASSY**

OK

3 READ VALUE OF HAND–HELD TESTER (STP SIGNAL AND ST1– VOLTAGE)



(a) Turn the ignition switch ON.

(b) Select the item "DIAGNOSIS / OBD/MOBD / DATA LIST / ALL / STOP LIGHT SW" and read its value displayed on the hand–held tester.

Standard:

Brake Pedal	Specified condition
Depressed	STP Signal ON
Released	STP Signal OFF

(c) Measure the voltage between the terminals of the E9 and E13 ECM connectors.

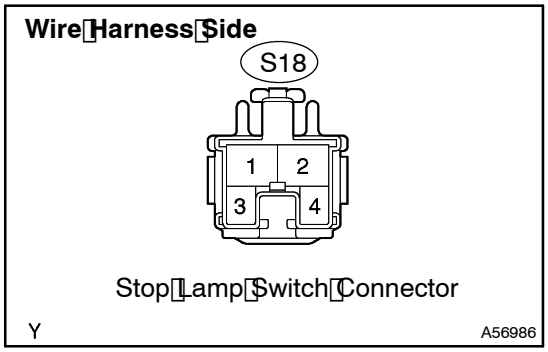
Standard:

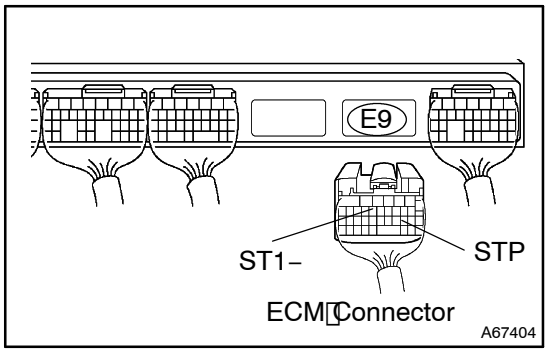
Symbols (Terminal No.)	Brake pedal	Specified condition
ST1– (E9–12) – E1 (E13–1)	Depressed	Below 1.5 V
	Released	7.5 to 14 V

OK → **CHECK FOR INTERMITTENT PROBLEMS (See page 05–7)**

NG

4	CHECK HARNESS AND CONNECTOR (STOP LAMP SWITCH – ECM)





(a) Disconnect the stop lamp switch connector.

(b) Disconnect the E9 ECM connector.

(c) Check for continuity between the wire harness side connectors.

Standard (Check for open):

Symbols (Terminal No.)	Specified condition
Stop lamp switch (S18–1) – STP (E9–19)	Continuity
Stop lamp switch (S18–4) – ST1– (E9–12)	

Standard (Check for short):

Symbols (Terminal No.)	Specified condition
Stop lamp switch (S18–1) or STP (E9–19) – Body ground	No continuity
Stop lamp switch (S18–4) or ST1– (E9–12) – Body ground	

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

OK →

CHECK AND REPLACE ECM (See page 01–35)