DI4TC–01

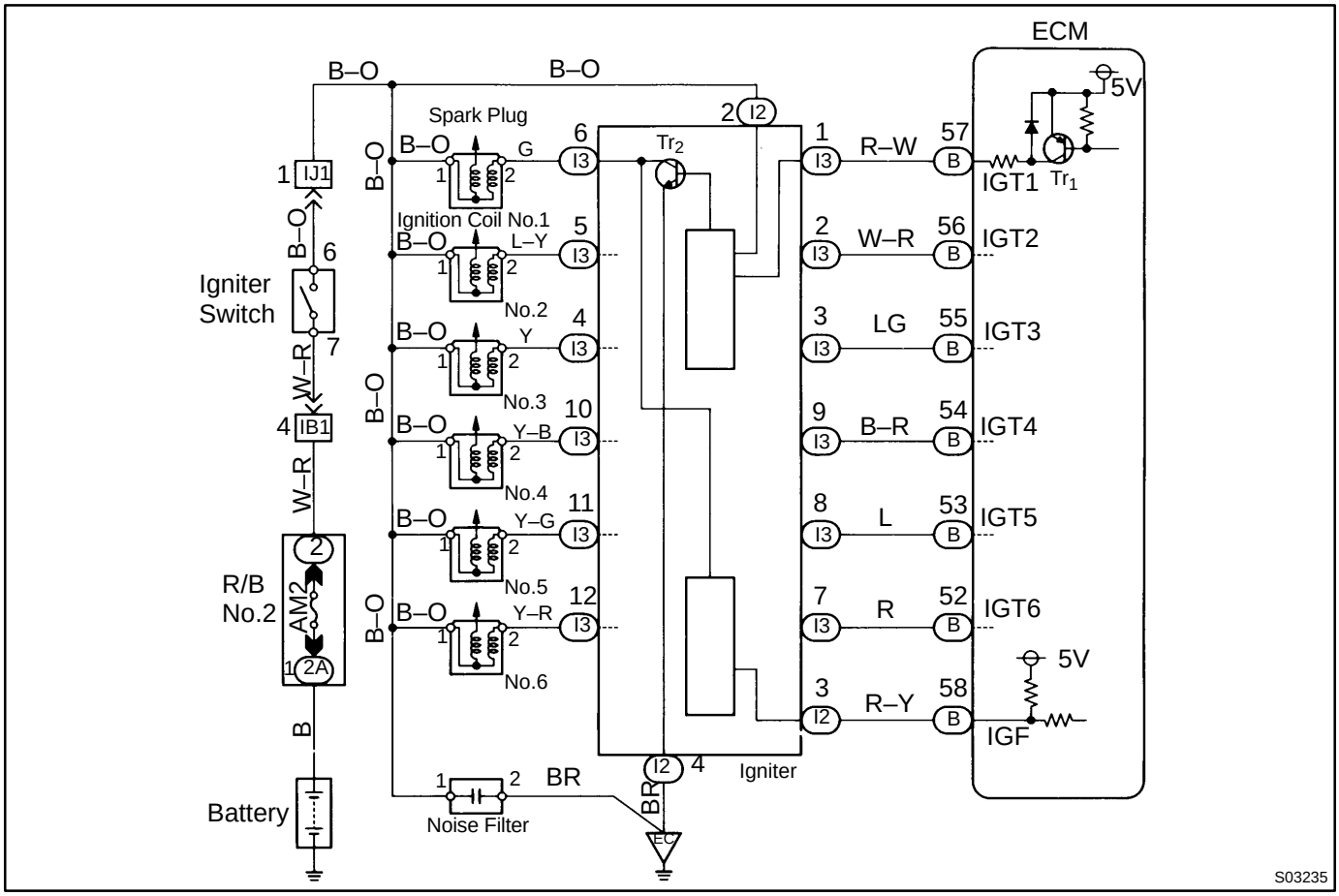
DTC	P1300	Igniter Circuit Malfunction

CIRCUIT DESCRIPTION

The ECM determines the ignition timing, turns on Tr1 at a predetermined angle (˚CA) before the desired ignition timing and outputs an ignition signal (IGT) ”1” to the igniter.
Since the width of the IGT signal is constant, the dwell angle control circuit in the igniter determines the time the control circuit starts primary current flow to the ignition coil based on the engine rpm and ignition timing one revolution ago, that is, the time the Tr2 turns on.
When it reaches the ignition timing, the ECM turns Tr1 off and outputs the IGT signal ”0”.
This turns Tr2 off, interrupting the primary current flow and generating a high voltage in the secondary coil which causes the spark plug to spark. Also, by the counter electromotive force generated when the primary current is interrupted, the igniter sends an ignition confirmation signal (IGF) to the ECM.
The ECM stops fuel injection as a fail safe function when the IGF signal is not input to the ECM.

DTC No.	DTC Detecting Condition	Trouble Area
P1300	No IGF signal to ECM for 6 consecutive IGT signals during engine running	• Open or short in IGF or IGT circuit from igniter to ECM • Igniter • ECM

WIRING DIAGRAM



INSPECTION PROCEDURE

1	**Check spark plug and spark of misfiring cylinder (See page DI–204).**

NG → **Go to step 4.**

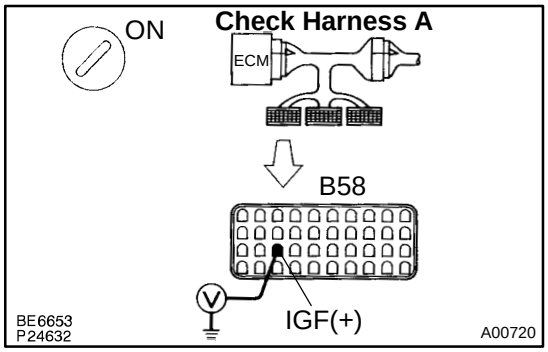
OK

2	**Check for open and short in harness and connector in IGF signal circuit between ECM and igniter (See page IN–28).**

NG → **Repair or replace harness or connector.**

OK

3	**Disconnect igniter connector and check voltage between terminal IGF of ECM connector and body ground.**



PREPARATION:

(a) Connect Check Harness A (See page DI–164).

(b) Turn ignition switch ON.

CHECK:

Measure voltage between terminal IGF of ECM connector and body ground.

OK:

Voltage: 4.5 – 5.5 V

OK → **Replace igniter.**

NG

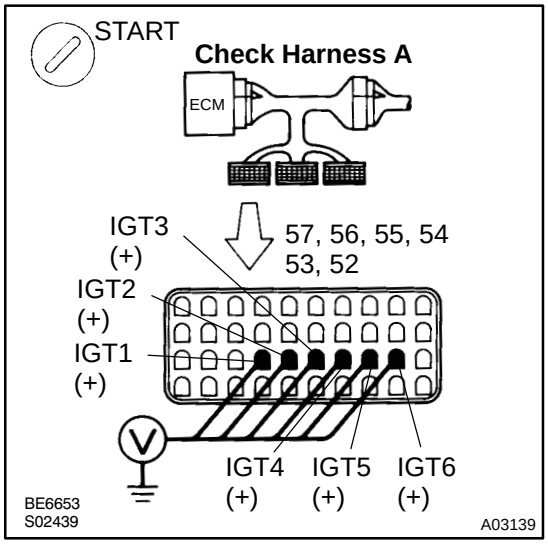
Check and replace ECM (See page IN–28).

4	**Check for open and short in harness and connector in IGT 1 ~ 6 signal circuit between ECM and igniter (See page IN–28).**

NG → **Repair or replace harness or connector.**

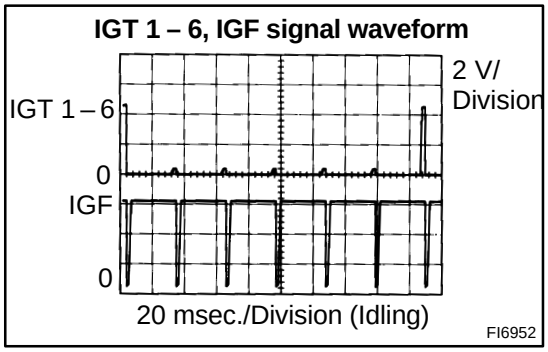
OK

5	**Check voltage between terminal IGT 1 – 6 of ECM connector and body ground.**



PREPARATION:
Connect Check Harness A (See page DI–164).
CHECK:
Measure voltage between terminal IGT 1 ~ 6 of ECM connector and body ground when engine is cranked.
OK:
Voltage: More than 0.1 V and less than 4.5 V

Reference INSPECTION USING OSCILLOSCOPE

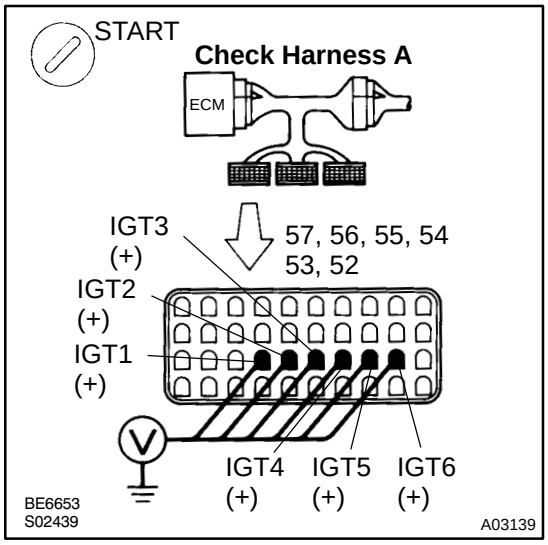


During cranking or idling, check waveforms between terminal IGT 1 – 6, IGF and E1 of ECM.
HINT:
The correct rectangular waveforms are as shown.

NG → **Check and replace ECM (See page IN–28).**

OK

6	Disconnect igniter connector and check voltage between terminal IGT 1 ~ 6 of ECM connector and body ground.



PREPARATION:

(a) Disconnect igniter connector.

(b) Connect Check Harness A (See page DI–164).

CHECK:

Measure voltage between terminal IGT 1 – 6 of ECM connector and body ground when engine is cranked.

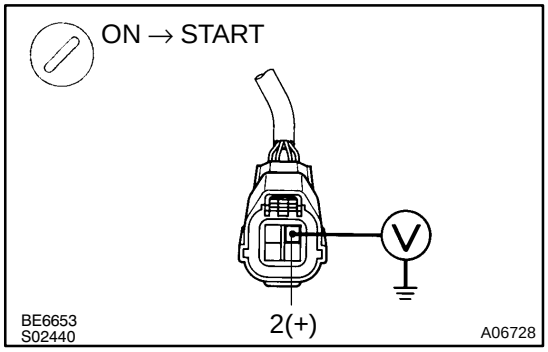
OK:

Voltage: More than 0.1 V and less than 4.5 V

NG → **Check and replace ECM (See page IN–28).**

OK

7	Check voltage between terminal 2 of igniter connector and body ground.



PREPARATION:

Disconnect igniter connector.

CHECK:

Measure voltage between terminal 2 of igniter connector and body ground, when ignition switch is turned to "ON" and "START" position.

OK:

Voltage: 9 – 14 V

NG → **Check and repair igniter power source circuit.**

OK

8	**Check for open and short in harness and connector between ignition switch and ignition coil, ignition coil and igniter (See page IN–28).**

NG → **Repair or replace harness or connector.**

OK

9	**Check ignition coil (See page IG–1).**

NG → **Replace ignition coil.**

OK

Replace igniter.