

<b>DTC</b>	<b>P1300</b>	<b>Igniter (Bank 1) Circuit Malfunction</b>
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<b>DTC</b>	<b>P1305</b>	<b>Igniter (Bank 2) Circuit Malfunction</b>
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## CIRCUIT DESCRIPTION

The ECM determines the ignition timing, turns on  $Tr_1$  at a predetermined angle ( $^{\circ}$ 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  $Tr_2$  turns on.

When it reaches the ignition timing, the ECM turns  $Tr_1$  off and outputs the IGT signal "0".

This turns  $Tr_2$  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.

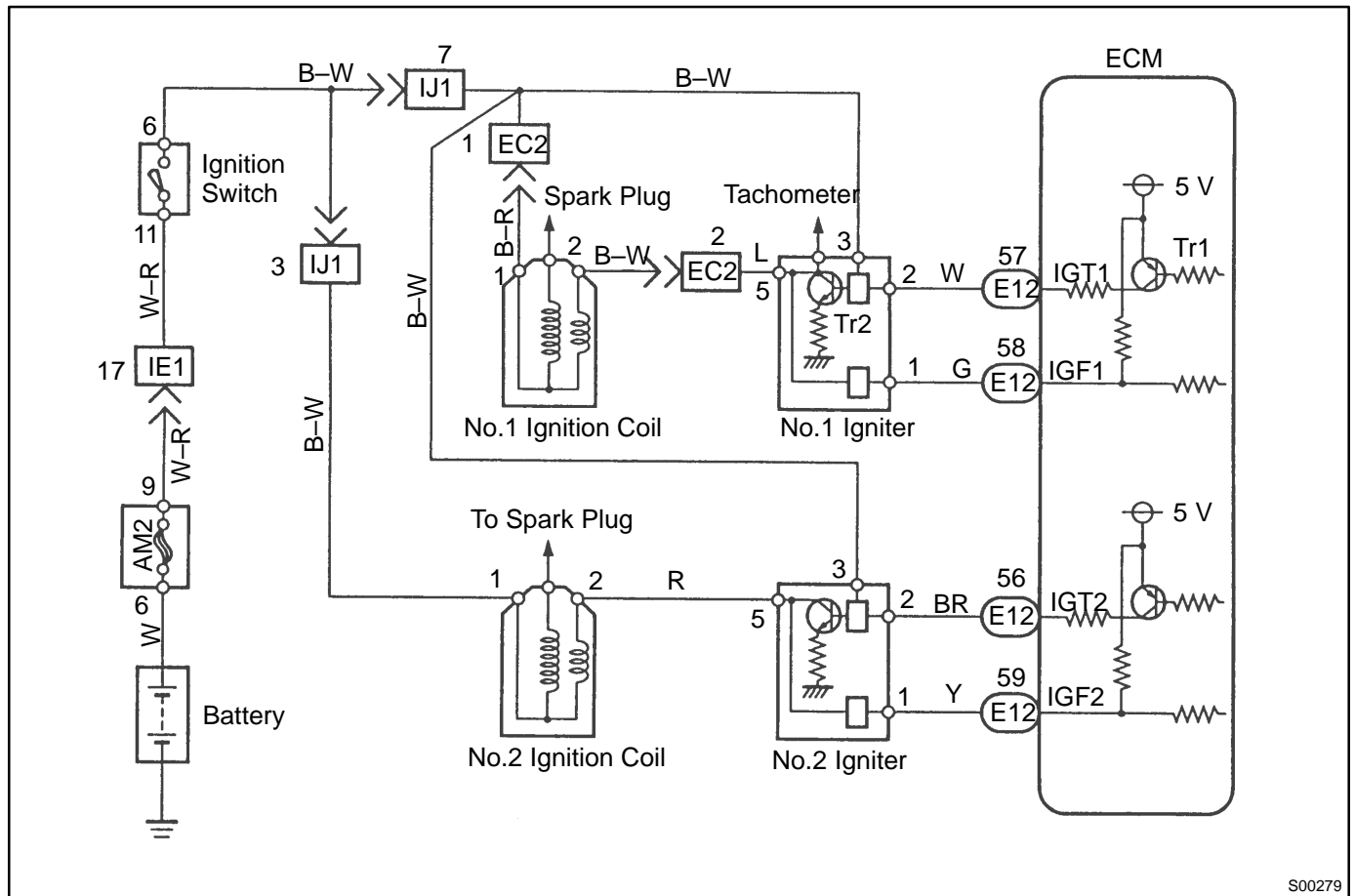
The ECM stops fuel injection as a fail safe function when the IGF signal is not input to the ECM.

DTC No.	DTC Detecting Condition	Trouble Area
P1300	No IGF1 signal to ECM for 8 consecutive IGT1 signal	<ul style="list-style-type: none"> <li>• Open or short in IGF1 and IGT1 circuit from No.1 igniter to ECM</li> <li>• No.1 igniter</li> <li>• ECM</li> </ul>
P1305	No IGF2 signal to ECM for 8 consecutive IGT2 signal	<ul style="list-style-type: none"> <li>• Open or short in IGF2 and IGT2 circuit from No.2 igniter to ECM</li> <li>• No.2 igniter</li> <li>• ECM</li> </ul>

### HINT:

No.1 igniter is for left bank and No.2 igniter is for right bank.

## WIRING DIAGRAM



S00279

## INSPECTION PROCEDURE

## HINT:

- If DTC P1300 is displayed, check No.1 igniter circuit.
- If DTC P1305 is displayed, check No.2 igniter circuit.

1	Check for spark (See page IG-1).
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NG

Go to step 4.

OK

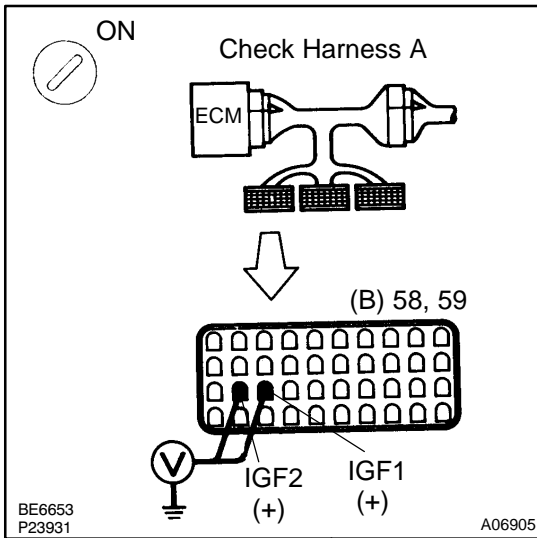
2	Check for open and short in harness and connector in IGF and IGT signal circuit between ECM and igniter (See page IN-29).
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NG

Repair or replace harness or connector.

OK

### 3 Disconnect igniter connector and check voltage between terminals IGF1, 2 of ECM and body ground.



#### PREPARATION:

- Connect the Check Harness A.
- Disconnect igniter connector.
- Turn ignition switch ON.

#### CHECK:

Measure voltage between terminals IGF1, 2 of ECM and body ground.

#### OK:

**Voltage: 4.5 – 5.5 V**

**OK**

**Replace igniter. \*1**

\*1: When DTC P1300 is displayed, replace the igniter with 5 wire harness. (Extra wire is for tachometer).

When DTC P1305 is displayed, replace the igniter with 4 wire harness.

**NG**

**Check and replace ECM (See page [IN-29](#)).**

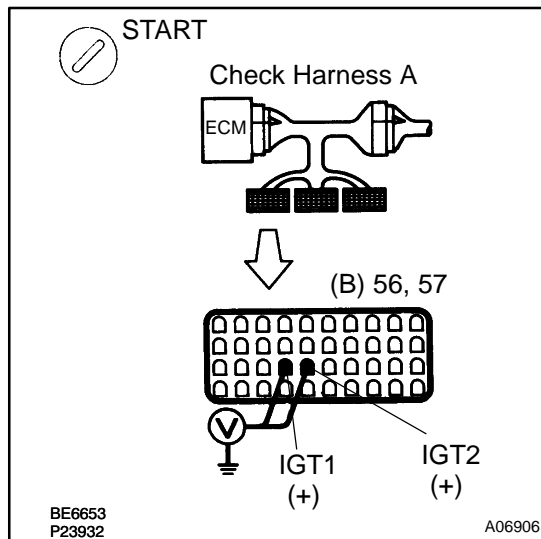
### 4 Check for open and short in harness and connector in IGT signal circuit between ECM and igniter (See page [IN-29](#)).

**NG**

**Repair or replace harness or connector.**

**OK**

# 5 Check voltage between terminals IGT1, 2 of ECM connector and body ground.



## PREPARATION:

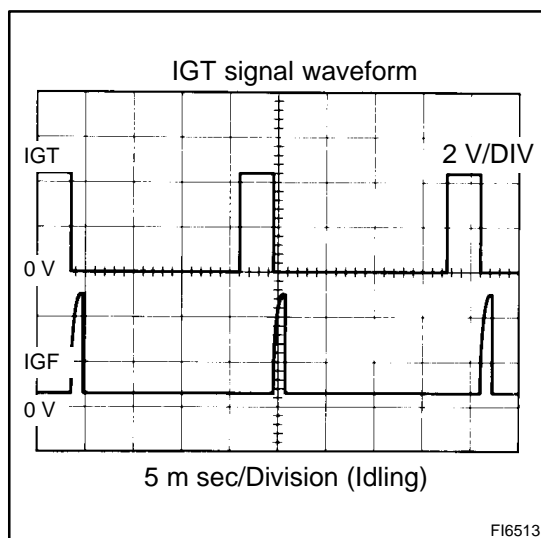
Connect the Check Harness A.

## CHECK:

Measure voltage between terminals IGT1, 2 of ECM 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 waveform between terminals IGT1, IGT2 and E1 of ECM.

## HINT:

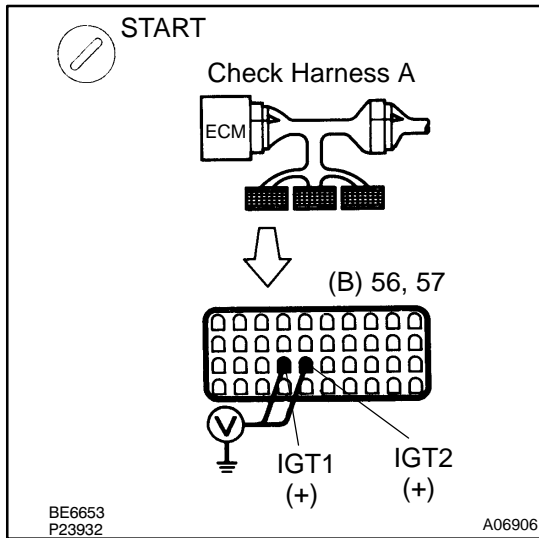
The correct waveform appears as shown in the illustration on the left, with rectangle waves.

**NG**

**Check and replace ECM (See page [IN-29](#)).**

**OK**

## 6 Disconnect igniter connector and check voltage between terminals IGT1, 2 of ECM connector and body ground.



### PREPARATION:

- (a) Connect the Check Harness A.
- (b) Disconnect igniter connector.

### CHECK:

Measure voltage between terminals IGT1, 2 of ECM and body ground when engine is cranked.

### OK:

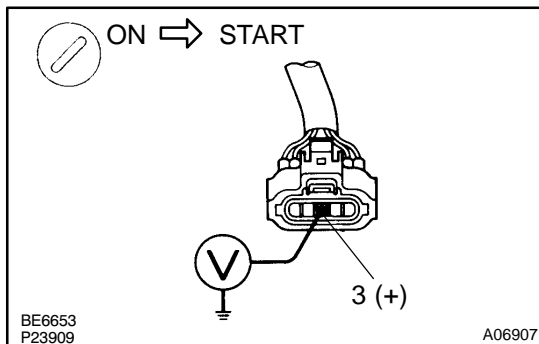
**Voltage: More than 0.1 V and less than 4.5 V**

NG

Check and replace ECM (See page [IN-29](#)).

OK

## 7 Check voltage between terminal 3 of No.1, No.2 igniter connectors and body ground.



### PREPARATION:

Disconnect igniter connector.

### CHECK:

Measure voltage between terminal 3 of No.1, No.2 igniter connectors 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 <a href="#">IN-29</a> ).
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**NG**

Repair or replace harness or connector.

**OK**

9	Check ignition coil (See page <a href="#">IG-1</a> ).
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**NG**

Replace ignition coil.

**OK****Replace igniter. \*1**

\*1: When DTC P1300 is displayed, replace the igniter with 5 wire harness. (Extra wire is for tachometer).  
When DTC P1305 is displayed, replace the igniter with 4 wire harness.