

|            |              |                                                  |
|------------|--------------|--------------------------------------------------|
| <b>DTC</b> | <b>P0300</b> | <b>Random/Multiple Cylinder Misfire Detected</b> |
| <b>DTC</b> | <b>P0301</b> | <b>Cylinder 1 Misfire Detected</b>               |
| <b>DTC</b> | <b>P0302</b> | <b>Cylinder 2 Misfire Detected</b>               |
| <b>DTC</b> | <b>P0303</b> | <b>Cylinder 3 Misfire Detected</b>               |
| <b>DTC</b> | <b>P0304</b> | <b>Cylinder 4 Misfire Detected</b>               |
| <b>DTC</b> | <b>P0305</b> | <b>Cylinder 5 Misfire Detected</b>               |
| <b>DTC</b> | <b>P0306</b> | <b>Cylinder 6 Misfire Detected</b>               |

## CIRCUIT DESCRIPTION

Misfire: The ECM uses the crankshaft position sensor and camshaft position sensor to monitor changes in the crankshaft rotation for each cylinder.

The ECM counts the number of times the engine speed change rate indicates that misfire has occurred. And when the misfire rate equals or exceeds the count indicating that the engine condition has deteriorated, the MIL lights up.

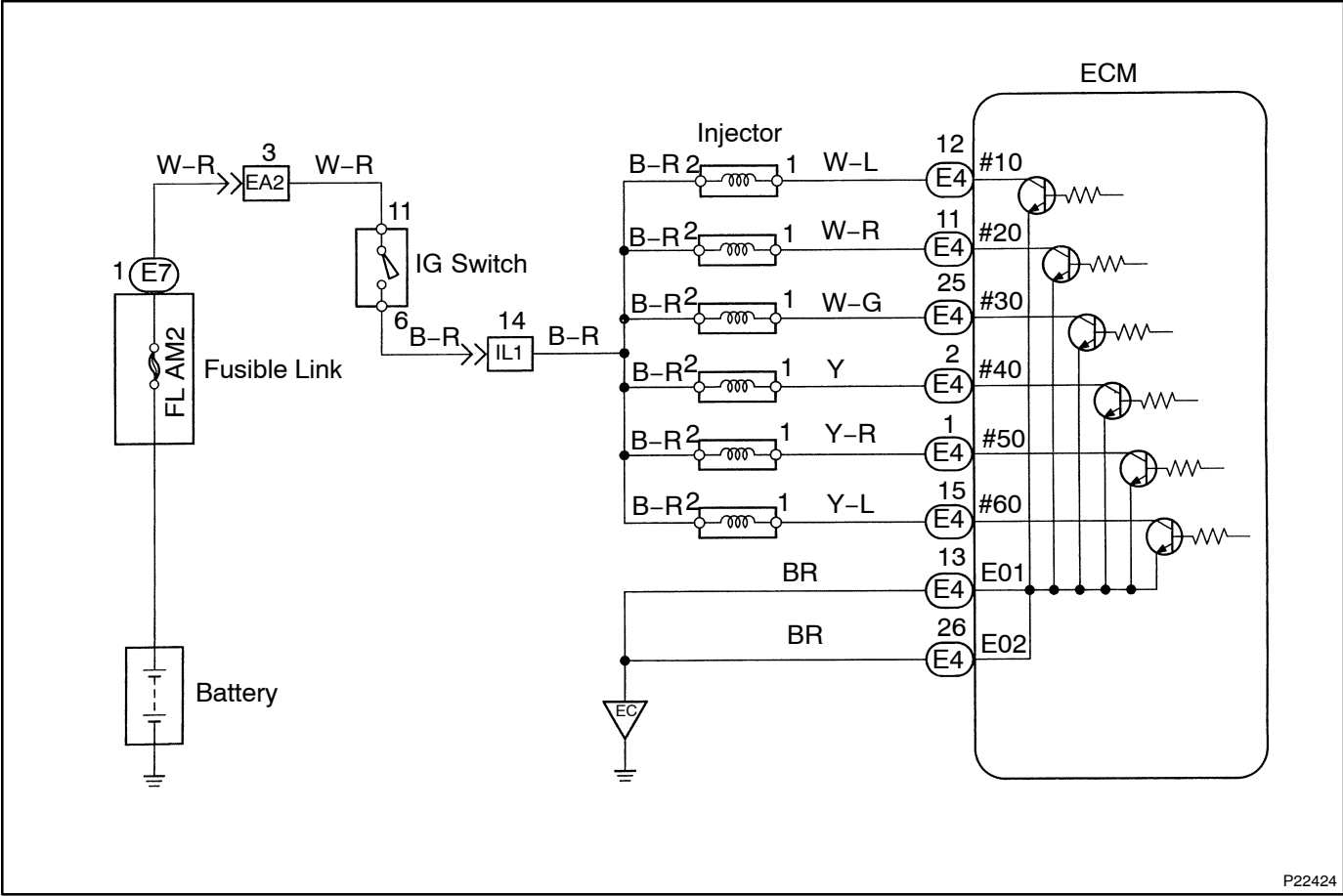
If the misfire rate is high enough and the driving conditions will cause catalyst overheating, the MIL blinks when misfiring occurs.

| DTC No.                 | DTC Detection Condition                                                                                                                  | Trouble Area                                                                                                                                                                                                                                                                                                       |
|-------------------------|------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| P0300                   | Misfiring of random cylinders is detected during any particular 200 or 1,000 revolutions                                                 | <ul style="list-style-type: none"> <li>• Ignition system</li> <li>• Injector</li> <li>• Fuel line pressure</li> <li>• EGR</li> <li>• Compression pressure</li> <li>• Valve clearance not to specification</li> <li>• Valve timing</li> <li>• Mass air flow meter</li> <li>• Engine coolant temp. sensor</li> </ul> |
| P0301<br>P0302<br>P0303 | For any particular 200 revolutions of engine, misfiring is detected which can cause catalyst overheating (This causes MIL to blink)      |                                                                                                                                                                                                                                                                                                                    |
| P0304<br>P0305<br>P0306 | For any particular 1,000 revolutions of engine, misfiring is detected which causes a deterioration in emissions (2 trip detection logic) |                                                                                                                                                                                                                                                                                                                    |
|                         |                                                                                                                                          |                                                                                                                                                                                                                                                                                                                    |
|                         |                                                                                                                                          |                                                                                                                                                                                                                                                                                                                    |
|                         |                                                                                                                                          |                                                                                                                                                                                                                                                                                                                    |

### HINT:

When the 2 or more codes for a misfiring cylinder are recorded repeatedly but no random misfire code is recorded, it indicates that the misfires were detected and recorded at different times.

WIRING DIAGRAM



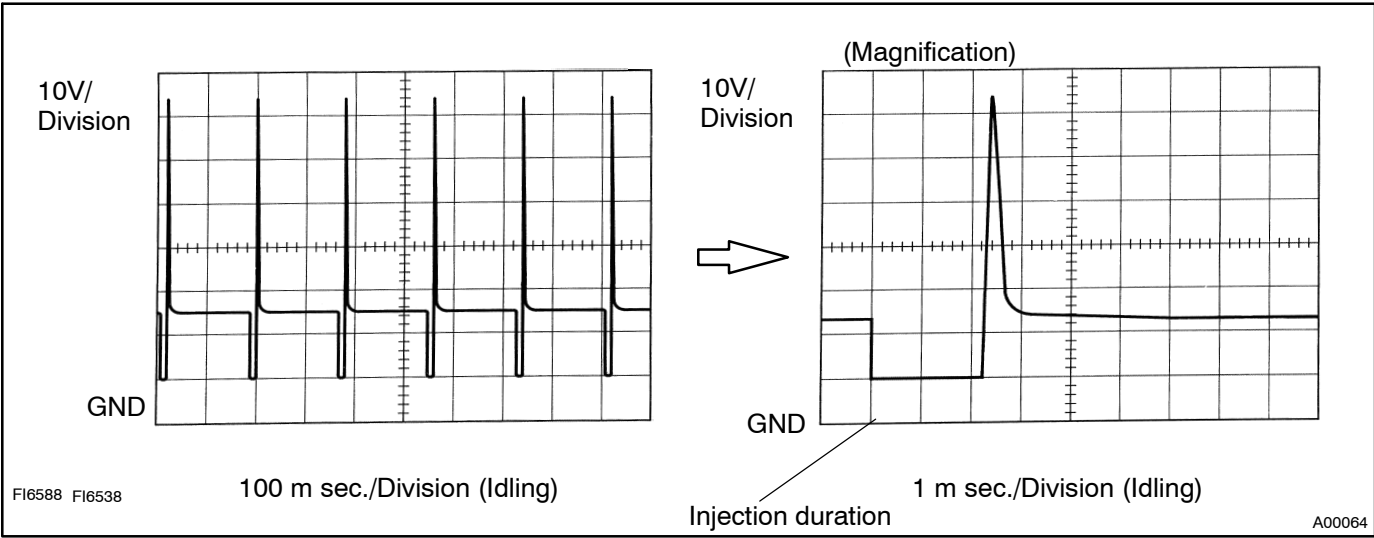
P22424

Reference INSPECTION USING OSCILLOSCOPE  
INJECTOR SIGNAL WAVEFORM

With the engine idling, measure the voltage between terminals #10 - #60 and E01 of ECM.

HINT:

The correct waveform is as shown.



FI6588 FI6538

A00064

**INSPECTION PROCEDURE**

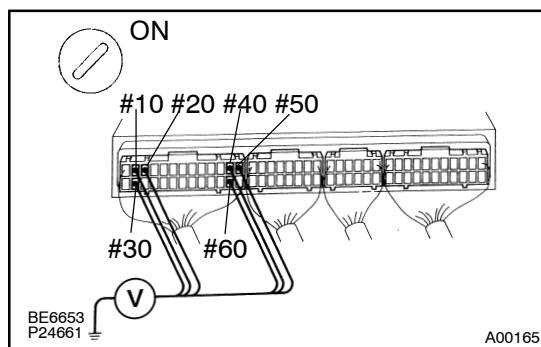
- 1** Check spark plug and spark of misfiring cylinder (See page [IG-1](#)).

**NG**

Replace or check ignition system (See page [IG-1](#)).

**OK**

- 2** Check voltage of ECM terminal for injector of failed cylinder.

**PREPARATION:**

- (a) Remove the instrument panel speaker No.1 panel (See page [SF-63](#)).
- (b) Turn the ignition switch ON.

**CHECK:**

Measure the voltage between applicable terminal of ECM connector and body ground.

**OK:**

**Voltage: 9 - 14 V**

**OK**

Go to step 4.

**NG**

- 3** Check of injector of misfiring cylinder (See page [SF-20](#)).

**NG**

Replace injector.

**OK**

Check for open and short in harness and connector between injector and ECM (See page [IN-27](#)).

**4** Check fuel pressure (See page [SF-17](#)).

NG

Check and repair fuel pump, pressure regulator, fuel pipe line and filter (See page [SF-6](#)).

OK

**5** Check injector injection (See page [SF-20](#)).

NG

Replace injector.

OK

**6** Check EGR system (See page [EC-10](#)).

NG

Repair EGR system.

OK

**7** Check mass air flow meter and engine coolant temp. sensor (See page [SF-34](#), [SF-58](#)).

NG

Repair or replace.

OK

Check compression pressure (See page [EM-3](#)), valve clearance (See page [EM-4](#)) and valve timing (See page [EM-21](#)).