DI2UR–03

DTC	P1345/18	VVT Sensor Circuit Malfunction (Bank 1)

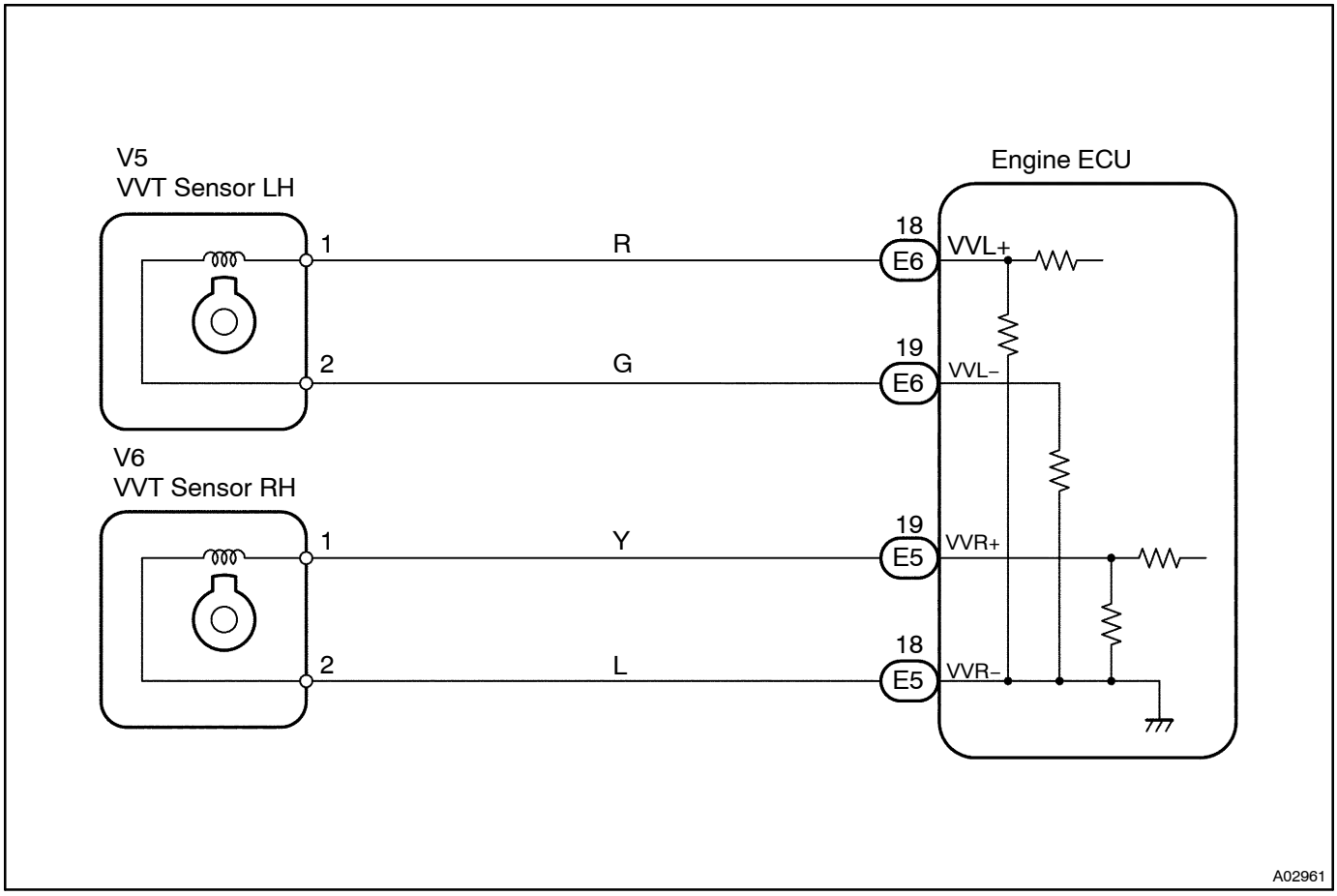
DTC	P1350/18	VVT Sensor Circuit Malfunction (Bank 2)

CIRCUIT DESCRIPTION

VVT sensor (VVL or VVR signal) consist of a signal plate and pickup coil.
The VVL or VVR signal plate has 1 tooth on its outer circumference and is mounted on the intake camshafts. When the camshafts rotate, the protrusion on the signal plate and the air gap on the pickup coil change, causing fluctuations in the magnetic field and generating an electromotive force in the pickup coil.
The actual camshaft angle is detected by the VVT sensor and it provides feedback to the engine ECU to control the intake valve timing in response to during condition.

DTC No.	DTC Detecting Condition	Trouble Area
P1345/18 P1350/18	No VVT sensor signal to engine ECU during cranking at 4 sec. or more	• Open or short in VVT sensor circuit • VVT sensor • Engine ECU
	No VVT sensor signal to engine ECU with 5 sec. or more engine speed 600 rpm or more	
	While the crankshaft rotates twice, VVT sensor signal will be input to engine ECU 5 times.	

WIRING DIAGRAM

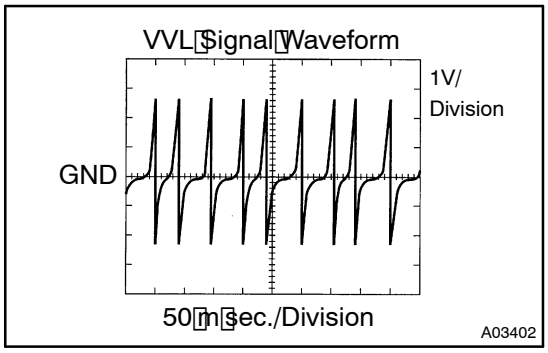


INSPECTION PROCEDURE

HINT:

- If DTC P1345/18 is displayed, check left bank VVT sensor.
- If DTC P1350/18 is displayed, check right bank VVT sensor.
- Read freeze frame data using hand–held tester. Because freeze frame records the engine conditions when the malfunction is detected, when troubleshooting it is useful for determining whether the vehicle was running or stopped, the engine warmed up or not, the air–fuel ratio lean or rich, etc. at the time of the malfunction.

1	**Check resistance of VVT sensor (See page FI–82).**



Reference: INSPECTION USING OSCILLOSCOPE

During idling, check between terminals VVL+ and VVL–, VVR+ and VVR– of the engine ECU connector.

HINT:

- The correct waveform is as shown.
- The waveform frequency is shortened as the engine speed becomes higher.

NG → **Replace VVT sensor.**

OK

2	**Check for open and short in harness and connector between engine ECU and VVT sensor (See page IN–35).**

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

OK

3	**Inspect sensor installation.**

NG → **Tighten sensor.**

OK

Check and replace engine ECU (See page IN–35).