DTC	P0335	CRANKSHAFT POSITION SENSOR ”A” CIRCUIT

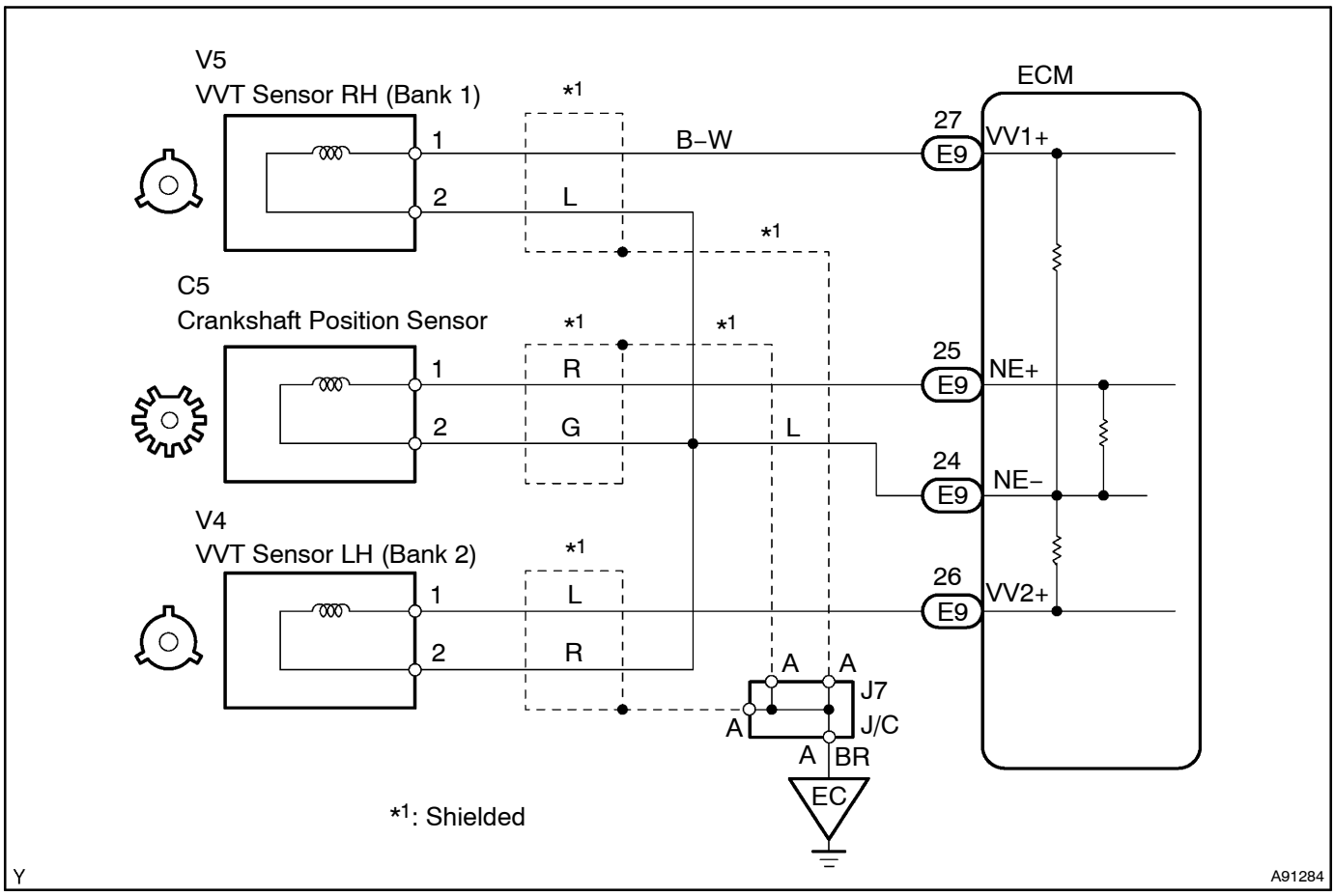
DTC	P0339	CRANKSHAFT POSITION SENSOR ”A” CIRCUIT INTERMITTENT

CIRCUIT DESCRIPTION

The crankshaft position (CKP) sensor system consists of a crankshaft position sensor plate and a pickup coil. The sensor plate has 34 teeth and is installed on the crankshaft. The pickup coil is made of an iron core and magnet. The sensor plate rotates and as each tooth passes through the pickup coil, a pulse signal is created. The pickup coil generates 34 signals for each engine revolution. Based on these signals, the ECM calculates the crankshaft position and engine RPM. Using these calculations, the fuel injection time and ignition timing are controlled.

DTC No.	DTC Detection Condition	Trouble Area
P0335	• No crankshaft position sensor signal to ECM during cranking (2 trip detection logic) • No crankshaft position sensor signal to ECM with engine speed 600 rpm or more (2 trip detection logic)	• Open or short in crankshaft position sensor circuit • Crankshaft position sensor • Crankshaft timing pulley • ECM
P0339	No crankshaft position sensor signal to ECM is input for 0.05 seconds. or more, and conditions (a), (b) and (c) are met: (a) Engine is at 1,000 rpm or more (b) STA signal is OFF (c) 3 seconds. or more have elapsed after STA signal is switched from ON to OFF	• Open or short in crankshaft position sensor circuit • Crankshaft position sensor • Crankshaft timing pulley • ECM

WIRING DIAGRAM

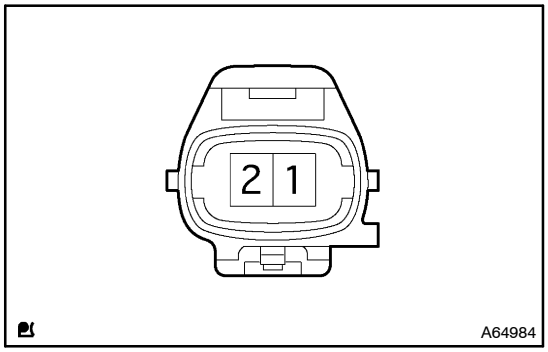


INSPECTION PROCEDURE

HINT:

- Read freeze frame data using the hand−held tester. Freeze frame data records the engine conditions when a malfunction is detected. When troubleshooting, freeze frame data can help determine if the vehicle was running or stopped, if the engine was warmed up or not, if the air−fuel ratio was lean or rich, and other data from the time the malfunction occurred.
- Read values on the hand−held tester.
  (a) Connect the hand−held tester to the DLC3.
  (b) Start the engine and push the hand−held tester main switch ON.
  (c) Select the item ”DIAGNOSIS / OBD / MOBD / DATA LIST / ALL / ENGINE SPD”.
- The engine speed can be confirmed in DATA LIST using the hand−held tester or OBD II scan tool. If there are no NE signals from the crankshaft position sensor despite the engine revolving, the engine speed will be indicated as zero. If voltage output of the crankshaft position sensor is insufficient, the engine speed will be indicated as lower than the actual rpm.

1 INSPECT CRANKSHAFT POSITION SENSOR (RESISTANCE)



(a) Disconnect the C5 sensor connector.

(b) Check the resistance of the terminals.

Standard:

Tester Connection	Condition	Specified Condition
1 – 2	Cold	1,630 to 2,740 Ω
1 – 2	Hot	2,065 to 3,225 Ω

NOTICE:

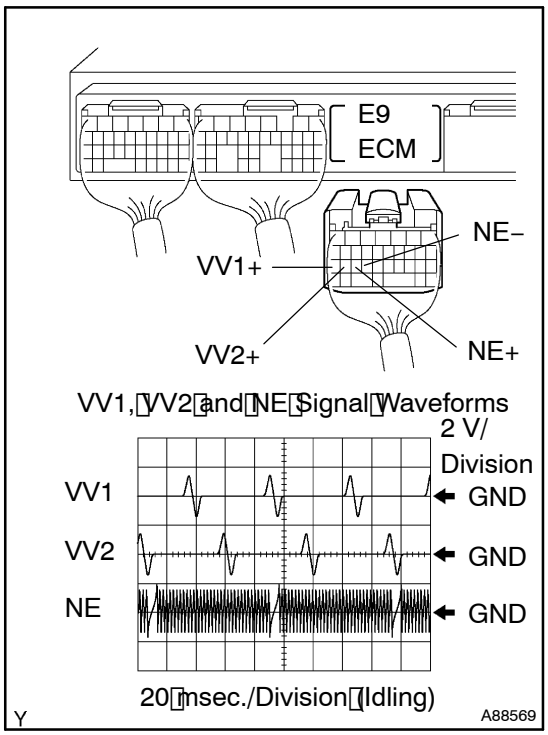
In the above section, the terms "cold" and "hot" refer to the temperature of the coils. "Cold" means approximately –10°C to 50°C (14°F to 122°F). "Hot" means approximately 50°C to 100°C (122°F to 212°F).

HINT:

Reference: Inspection using the oscilloscope.

During cranking or idling, check the waveform between the terminals of the ECM connector.

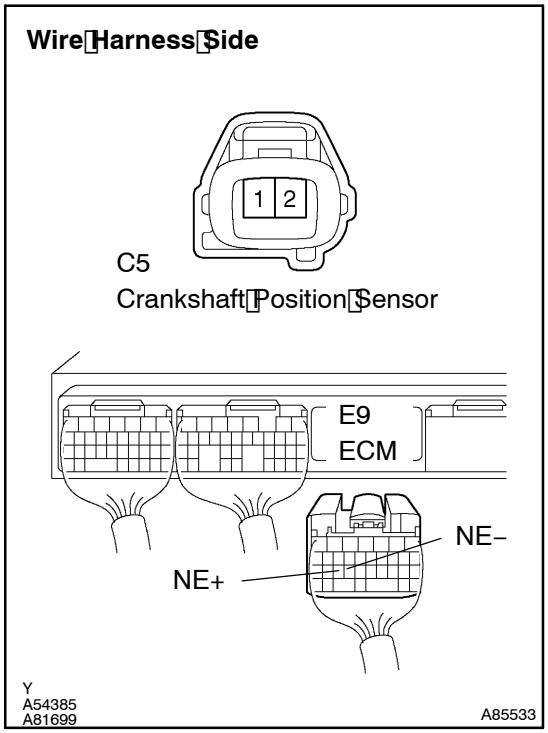
Tester Connection	Specified Condition
E9–27 (VV1+) – E9–24 (NE–) E9–26 (VV2+) – E9–24 (NE–) E9–25 (NE+) – E9–24 (NE–)	Correct waveform is as shown



NG → **REPLACE CRANKSHAFT POSITION SENSOR (See page 18–6)**

OK

2 CHECK WIRE HARNESS (CRANKSHAFT POSITION SENSOR – ECM)



(a) Disconnect the C5 sensor connector.
(b) Disconnect the E9 ECM connector.
(c) Check the resistance of the wire harness side connectors.

Standard:

Tester Connection	Specified Condition
C5–1 – E9–25 (NE+) C5–2 – E9–24 (NE–)	Below 1 Ω
C5–1 or E9–25 (NE+) – Body ground C5–2 or E9–24 (NE–) – Body ground	10 kΩ or higher

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

OK

3 CHECK SENSOR INSTALLATION (CRANKSHAFT POSITION SENSOR)

(a) Check the crankshaft position sensor installation.

OK: Sensor is installed correctly.

NG → **TIGHTEN SENSOR**

OK

4 CHECK CRANKSHAFT TIMING PULLEY

(a) Check the teeth of the crankshaft timing pulley.

OK: The pulley does not have any cracks or deformation.

NG → **REPLACE CRANKSHAFT TIMING PULLEY**

OK

REPLACE ECM (See page 10–13)