



SERVICE BULLETIN

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POWER TRANSISTOR TESTING (ECCS)

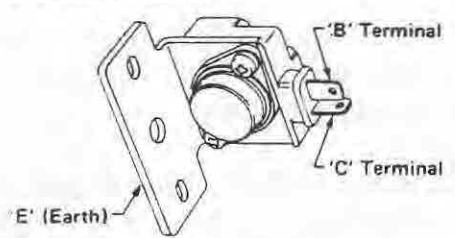
There appears to be some confusion about the proper test method for determining whether the power transistor on a VL Commodore (Nissan Skyline) is malfunctioning.

Currently, there are three different test procedures depending on the type of test equipment being used.

TEST #1 USING AN ANALOGUE OHMMETER

This procedure is taken directly from the GMH workshop manual and uses an Analogue Ohmmeter.

Check power transistor.



N.G. → Replace power transistor.

Tester	Lead to Terminal		Should read
	(+)	(-)	
Analogue Type Ohmmeter	E	C	Open Circuit
	C	E	Continuity
	C	B	Continuity
	B	C	Open Circuit
	E	B	Continuity
	B	E	Continuity

NOTE: Continuity; approximately 50% deflection of ohmmeter needle

TEST #2

USING A DIGITAL OHMMETER

Most of us no longer use an Analogue Ohmmeter but instead use a high impedance, digital ohmmeter instead. Many of these digital ohmmeters will have a separate continuity or diode test functions Use the following chart with this device.

DIGITAL OHMMETER LEADS		
+	-	RESULT
E	C	CONTINUITY
C	E	OPEN CIRCUIT
C	B	OPEN CIRCUIT
B	C	CONTINUITY
E	B	CONTINUITY
B	E	CONTINUITY

TEST #3

USING AN OSCILLOSCOPE

While the first two tests are valid "static" tests, which will show whether the power transistor is currently operational or "dead", they probably will not detect intermittent malfunctions.

To detect intermittent problems we need to check the power transistor while it is operating. This is done by looking at the input and output scope patterns while "stressing" the power transistor.

"Stressing" an engine compartment electronic device involves gently tapping on the component or heating it with hot air (low setting) to duplicate the road vibrations and high underhood temperatures which may be causing the intermittent problem.

Monitoring the input (terminal "B" at the power transistor or PIN number 5 at the ECM) or the output (terminal "C" at the power transistor or PIN number 3 at the ECM) signal while "stressing" the power transistor will indicate a fault even if it comes and goes very quickly.

The input and output patterns are similar and they may look different on various scopes, but they are generally identified by their ON/OFF signals (vertical lines) and the voltage build up from the transistor or ignition coil (slope across the top). See diagram below.

