Otherwise, replace the MATS.

If resistance tests good, reconnect the MATS and disconnect the ECM connector A on the ECM.

Using a multimeter, recheck resistance value between terminals 7 and 21.

If resistance value is correct, try a new ECM. Refer to *ENGINE CONTROL MODULE (ECM)* in this section.

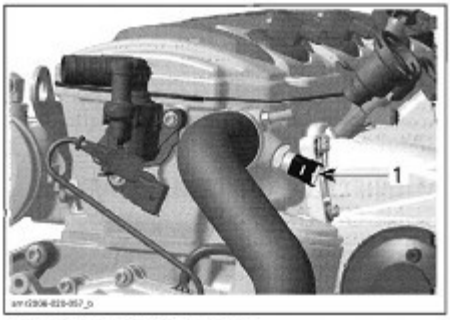
If resistance value is incorrect, repair the connectors or replace the wiring harness between ECM connector and the MATS.

Replacement

Disconnect the connector of the MATS.

Screw MATS out and install the new one. Torque to 18 N•m (159 lbf•**in**).

COOLANT TEMPERATURE SENSOR (CTS)



1. Coolant temperature sensor (CTS)

NOTE: Overheat signals will appear when coolant temperature reaches:

ENGINE	TEMPERATURE
1503 Naturally Aspirated	100°C (212°F)
Other 1503	110°C (230°F)

Resistance Test

Disconnect the connector from the CTS and check the resistance of the sensor itself.

The resistance should be between 2280 Ω and 2740 Ω at 20°C (68°F).

Otherwise, replace the CTS.

If resistance tests good, reconnect the CTS and disconnect the ECM connector A on the ECM.

Using a multimeter, recheck resistance value between terminals 11 and 27.

If resistance value is correct, try a new ECM. Refer to *ENGINE CONTROL MODULE (ECM)* in this section.

If resistance value is incorrect, repair the connectors or replace the wiring harness between ECM connector and the CTS.

Replacement

Unlock expansion separator and temporarily move away to gain access.

Remove the fuel rail cover.

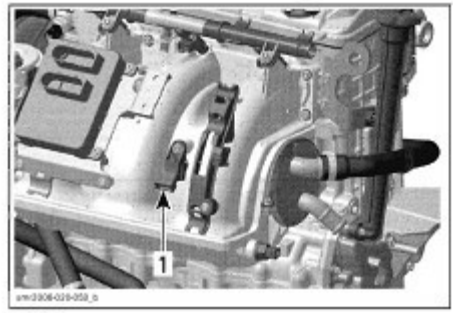
Disconnect CTS connector and remove CTS.

Install the new CTS and torque to 18 N•m (159 lbf•**in**).

Reinstall remaining removed parts.

MANIFOLD AIR PRESSURE SENSOR (MAPS)

IMPORTANT: Never mix up MAPS of naturally-aspirated and supercharged 4-TEC engines. Doing so will automatically lead to a misfunction of the ECM and will cause a bad engine calibration.



TYPICAL
1. Manifold air pressure sensor (MAPS)

NOTE: This sensor is a dual function device. When engine is started and it runs at idle speed, the sensor takes the atmospheric pressure and stores it in the ECM. Thereafter, it takes the manifold air pressure at operating RPMs.