

places, and with an up-to-date calibration certificate. When testing resistance always take the resistance of the DMM leads into account.

- NOTE: Check and rectify basic faults before beginning diagnostic routines involving pinpoint tests.
- NOTE: Inspect connectors for signs of water ingress, and pins for damage and/or corrosion.
- NOTE: If DTCs are recorded and, after performing the pinpoint tests, a fault is not present, an intermittent concern may be the cause. Always check for loose connections and corroded terminals.
- NOTE: For a full list of engine control module (ECM) DTCs:
REFER to: [Electronic Engine Controls](#) (303-14 Electronic Engine Controls - 2.4L Duratorq-TDCi HPCR (103kW/140PS) - Puma, Diagnosis and Testing).

DTC	Description	Possible causes	Action
P01152F	Engine coolant temperature (ECT) (cylinder head temperature (CHT)) sensor 1 circuit - signal erratic	<ul style="list-style-type: none"> • CHT sensor circuit: short circuit to power • CHT sensor circuit: short circuit to ground • CHT sensor circuit: open circuit • CHT sensor fault 	<p>Check the CHT sensor and circuit. Refer to the electrical guides. Install a new CHT sensor if necessary. REFER to: Cylinder Head Temperature (CHT) Sensor (303-14 Electronic Engine Controls - 2.4L Duratorq-TDCi HPCR (103kW/140PS) - Puma, Removal and Installation). Clear the DTCs and test for normal operation.</p>
P011516	Engine coolant temperature (ECT) (cylinder head temperature (CHT)) sensor 1 circuit - circuit voltage below threshold	<ul style="list-style-type: none"> • CHT sensor circuit: short circuit to ground • CHT sensor circuit: open circuit • CHT sensor fault 	
P011517	Engine coolant temperature (ECT) (cylinder head temperature (CHT)) sensor 1 circuit - circuit voltage above threshold	<ul style="list-style-type: none"> • CHT sensor circuit: short circuit to power • CHT sensor fault 	
P048000	Fan 1 control circuit on/off	<ul style="list-style-type: none"> • Cooling fan control circuit: short circuit to ground • Cooling fan control circuit: short circuit to power • Cooling fan control circuit: short circuit to ground 	<p>Check the cooling fan and circuits. Refer to the electrical guides. Install a new cooling fan if necessary. REFER to: Cooling Fan (303-03 Engine Cooling - 2.4L Duratorq-TDCi HPCR (103kW/140PS) - Puma, Removal and Installation). Clear the DTCs and test for normal operation.</p>