2GR-FE ENGINE CONTROL SYSTEM

SERVICE DATA

Mass air flow meter		
Resistance	1 (THA) - 2 (E2)	13.6 to 18.4 kΩ at -20°C (-4°F)
	1 (THA) - 2 (E2)	2.21 to 2.69 kΩ at 20°C (68°F)
	1 (THA) - 2 (E2)	0.49 to 0.67 kΩ at 60°C (140°F)
Camshaft timing oil control valve assembly		
Resistance	at 20°C (68°F)	6.9 to 7.9 Ω
Crankshaft position sensor		
	-10 to 50 °C (14 to 122 °F)	1,630 to 2,740 Ω
	50 to 100 °C (122 to 212 °F)	2,065 to 3,225 Ω
Throttle body		
Resistance	at 20°C (68°F)	
	2 (M+) - 1 (M-)	0.3 to 100 kΩ
Engine coolant temperature sensor		
Resistance	Approx. 20°C (68°F)	2.32 to 2.59 kΩ
	Approx. 80°C (176°F)	0.310 to 0.326 kΩ
Knock sensor		
Resistance	at 20°C (68°F)	120 to 280 kΩ
Circuit opening relay		
Specified condition	3 - 5	10 kΩ or higher
	3 - 5	Below 1 Ω (when battery voltage is applied to terminals 1 and 2)
EFI relay		
Specified condition	3 - 5	10 kΩ or higher
	3 - 5	Below 1 Ω (when battery voltage is applied to terminals 1 and 2)
Air fuel ratio sensor relay		
Specified condition	3 - 5	10 kΩ or higher
	3 - 5	Below 1 Ω (when battery voltage is applied to terminals 1 and 2)
Acceleration pedal rod		
Standard voltage (ACCEL POS #1)	Released	0.5 to 1.1 V
	Depressed	2.5 to 4.5 V
Standard voltage (ACCEL POS #2)	Released	1.2 to 2.0 V
	Depressed	3.4 to 5.0 V

TORQUE SPECIFICATIONS

Part Tightened	N*m	kgf*cm	ft.*lbf
Throttle body assembly x Intake air surge tank	10	102	7
Knock sensor x Cylinder block sub-assembly	20	204	15
ECM x Instrument panel reinforcement	5.5	56	49 in.*lbf
ECM x Instrument panel reinforcement (with 10 speakers system)	5.5	56	49 in.*lbf
Accelerator pedal rod assembly x Body	4.9	50	43 in.*lbf
Camshaft timing oil control valve assembly x Cylinder head cover sub-assembly	10	102	7
VVT sensor x Cylinder head cover sub-assembly	10	102	7
Crankshaft position sensor x Cylinder block sub-assembly	9.0	92	80 in.*lbf
Engine coolant temperature sensor x Cylinder head sub-assembly	20	204	15