



Electrical Data	****	215E	210E	
1 Nominal Voltage	V	4.5	9	Volt
2 No-Load Speed	$n_0$	8,670	9,900	rpm
3 No-Load Current	$I_0$	16.0	9.0	mA
4 Terminal Resistance	R	3.2	12.3	$\Omega$
5 Output Power	$P_{2max.}$	2.7	2.4	W
6 Stall Torque	mNm	6.8 (0.97)	6.3 (0.9)	mNm (oz-in)
7 Efficiency	$\eta_{max.}$	80	79	%
8 Max continuous speed	$n_{e max.}$	12,000	12,000	rpm
9 Max continuous torque	$M_{e max.}$	3.5 (0.44)	3.1 (0.44)	mNm (oz-in)
10 Max continuous current	$I_{e max.}$	0.73	0.37	A
11 Back-EMF Constant	$k_E$	0.51	0.90	mV/rpm
12 Torque Constant	$k_M$	4.90	8.60	mNm/A
13 Motor Regulation	$R/k^2$	130.0	170.0	$10^3/Nms$
14 Friction Torque	$T_F$	0.08 (0.02)	0.08 (0.02)	mNm (oz-in)
15 Rotor Inductance	L	0.08	0.25	mH
16 Mechanical Time Constant	$\tau_m$	3.8	4.3	ms
17 Rotor Inertia	J	0.29	0.26	g.cm <sup>2</sup>
18 Thermal Resistance (rotor/body)	$R_{th1} / R_{th2}$	10/50	10/50	$^{\circ}C/W$
19 Thermal Time Constant (rotor/stator)	$\tau_{w1}/\tau_{w2}$	6/300	6/300	$^{\circ}C/W$
20 Operating Temperature Range:	motor	-30°C to 85°C (-22°F to 185°F)		$^{\circ}C (^{\circ}F)$
	rotor	100°C (212°F)		$^{\circ}C (^{\circ}F)$
21 Shaft Load max.:		With sleeve bearings		
at 3,000 rpm (5mm from bearing)	-radial	1.5 (5.4)		N (oz)
at 3,000 rpm	-axial	150 (539.5)		N (oz)
22 Shaft play:	-radial	<0.015 (0.0006)		mm (inch)
	-axial	0.300 (0.012)		mm (inch)
23 Weight	g	15 (0.53)		g (oz)

Execution		
Gearbox	Single Shaft	MR2
R10	1003	Contact Us
R13	1002	Contact Us

