



Electrical Data	****	210E	208F	205E	
1 Nominal Voltage	V	3	6	12	Volt
2 No-Load Speed	$n_0$	7,280	9,000	8,050	rpm
3 No-Load Current	$I_0$	14.0	12.0	5.0	mA
4 Terminal Resistance	R	7.4	20.6	106.0	$\Omega$
5 Output Power	$P_{2max.}$	1.2	1.1	1.1	W
6 Stall Torque	mNm	1.54 (0.22)	1.78 (0.26)	1.54 (0.22)	mNm (oz-in)
7 Efficiency	$\eta_{max.}$	66	64	62	%
8 Max continuous speed	$n_{e max.}$	12,000	12,000	12,000	rpm
9 Max continuous torque	$M_{e max.}$	1.51 (0.21)	1.45 (0.21)	1.41 (0.2)	mNm (oz-in)
10 Max continuous current	$I_{e max.}$	0.41	0.25	0.11	A
11 Back-EMF Constant	$k_E$	0.40	0.64	1.42	mV/rpm
12 Torque Constant	$k_M$	3.80	6.10	13.60	mNm/A
13 Motor Regulation	$R/k^2$	512.0	550.0	575.0	$10^3/Nms$
14 Friction Torque	$T_F$	0.07 (0.01)	0.07 (0.01)	0.07 (0.01)	mNm (oz-in)
15 Rotor Inductance	L	0.09	0.25	0.95	mH
16 Mechanical Time Constant	$\tau_m$	9.7	12.0	9.2	ms
17 Rotor Inertia	J	0.19	0.21	0.16	$g.cm^2$
18 Thermal Resistance (rotor/body)	$R_{th1} / R_{th2}$	14/66	14/66	14/66	$^{\circ}C/W$
19 Thermal Time Constant (rotor/stator)	$\tau_{w1}/\tau_{w2}$	5/150	5/150	5/150	$^{\circ}C/W$
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	<0.03 (0.0012)			mm (inch)
	-axial	0.15 (0.0059)			mm (inch)
23 Weight	g	13.5 (0.48)			g (oz)

Execution		
Gearbox	Single Shaft	MR2
R10	Upon Request	Upon Request
R13	Upon Request	Upon Request

