



Dimensions in mm.

Electrical Data	Symbol	08ECP20 8B XX		Unit
		84	160	
1 Nominal Voltage	$U_n$	6	12	Volt
2 Optimization Direction	-	Symmetrical	Symmetrical	-
3 No-Load Speed	$n_0$	22'700	24'500	rpm
4 No-Load Current, Typical	$I_0$	40	110	mA
5 Continuous Mechanical Power, Max (@25°C)	$P_{max}$	4.4	4.4	W
6 Continuous Current, Max	$I_{e,max}$	0.44	0.23	A
7 Continuous Torque, Max	$M_{e,max}$	1.07 (0.1516)	1.07 (0.1516)	mNm (oz-in)
8 Back EMF Constant	$k_E$	0.27	0.498	V/1000 rpm
9 Torque Constant	$k_M$	2.5 (0.35)	4.7 (0.666)	mNm/A (oz-in/A)
10 Motor Regulation	$R/k^2$	857.9	893.7	10 <sup>3</sup> Nms
11 Internal Resistance - Phase to Phase	$R_i$	5.23	19.75	ohms
12 Line to Line Resistance	$R_L$	5.43	19.81	ohms
13 Inductance - Phase to Phase	$L$	0.12	0.42	mH
14 Mechanical Time Constant	$T_m$	1.7	1.7	ms
15 Electrical Time Constant	$T_e$	0.023	0.023	ms

General Data			
16 Motor Speed, Max	$n_{e,max}$	60'000	rpm
17 Ambient Operating Temperature Range	-	-30 to +100 (-22 to + 212)	°C (°F)
18 Ambient Storage Temperature Range	-	-40 to 100 (-40 to +212)	°C (°F)
19 Ball Bearings Preload	-	0.4 (0.09)	N (lbs)
20 Axial Static Force w/o Shaft Support, Max	-	6.8 (1.53)	N (lbs)
21 Winding Temperature, Max	-	125 (257)	°C (°F)
22 Thermal Resistance (slotless)	$R_{th1}/R_{th2}$	13 / 65	°C/W
23 Thermal Time Constant	$T_w$	1'140	s
24 Weight	-	9 (0.32)	g (oz)
25 Rotor Inertia	$J$	0.02 (277.8)	gcm <sup>2</sup> (oz-in-sec <sup>2</sup> 10 <sup>-6</sup> )
26 Hall Sensor Electrical Phasing*	-	120	Electrical °

\* Also available without Hall sensors

Wire	Description
Gray	Phase 1 (AWG 28)
Violet	Phase 2 (AWG 28)
Blue	Phase 3 (AWG 28)
Green	V DC (+2.5 to +5.5 V) (AWG 28)
Yellow	GND (AWG 28)
Orange	Hall sensor 1 (AWG 28)
Red	Hall sensor 2 (AWG 28)
Brown	Hall sensor 3 (AWG 28)

