



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 Typical No Load Current | I_0 | 40 | 110 | mA |
| 5 Max Continuous Mechanical Power (@25°C) | P_{max} | 4.4 | 4.4 | W |
| 6 Max Continuous Current | $I_{e max}$ | 0.44 | 0.23 | A |
| 7 Max Continuous Torque | $M_{e max}$ | 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 |
| 10 Motor Regulation | R/k^2 | 857.9 | 893.7 | 10 ³ /Nms |
| 11 Motor Regulation | $k/R^{1/2}$ | 1.09 (0.15) | 1.06 (0.15) | mNm/W ^{1/2} (oz-in/W ^{1/2}) |
| 12 Internal Resistance - phase to phase | R_1 | 5.23 | 19.75 | ohms |
| 13 Line to Line Resistance at Connectors | R_L | 5.43 | 19.81 | ohms |
| 14 Inductance Phase to Phase | L | 0.12 | 0.42 | mH |
| 15 Mechanical Time Constant | τ_m | 1.7 | 1.7 | ms |
| 16 Electrical Time Constant | τ_e | 0.023 | 0.023 | ms |

| General Data | | | | |
|---|-----------|--|---------------------------|---|
| 17 Maximum Motor Speed | n_{max} | | 60'000 | rpm |
| 18 Ambient Working Temperature Range | - | | -30 to +100 (-22 to +212) | °C (°F) |
| 19 Ambient Storage Temperature Range | - | | -40 to +100 (-40 to +212) | °C (°F) |
| 20 Ball Bearings Preload | - | | 0.4 (0.09) | N (lbs) |
| 21 Axial Static Force w/o Shaft Support (max) | - | | 6.8 (1.53) | N (lbs) |
| 22 Maximum Winding Temperature | - | | 125 (257) | °C (°F) |
| 23 Thermal Resistance | R_{th} | | 13 / 65 | °C/W |
| 24 Thermal Time Constant | τ_w | | 1'140 | s |
| 25 Weight | - | | 9 (0.32) | g (oz) |
| 26 Rotor Inertia | J | | 0.02 (277.8) | gcm ² (oz-in-sec ² 10 ⁻⁶) |
| 27 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) |

