

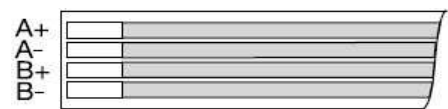
P010 064

| Electrical Data                                  | P010 064 020 02                  | P010 064 003 02       |                                     |
|--|----------------------------------|-----------------------|-------------------------------------|
| 1 Resistance per Phase, typ                      | 19.0                             | 3.0                   | Ohms                                |
| 2 Inductance per Phase, typ                      | 13.7                             | 1.8                   | mH                                  |
| 3 Nominal Phase Current (2 ph. On)               | 0.15                             | 0.37                  | A                                   |
| 4 Nominal Phase Current (1 ph. On)               | 0.21                             | 0.52                  | A                                   |
| 5 Back EMF amplitude                             | 2.20                             | 0.94                  | V/kstep/s                           |
| <b>Coil independent parameters</b>               |                                  |                       |                                     |
| 6 Holding Torque, nominal current                | 1.8 (0.25)                       | 1.8 (0.25)            | mNm (oz-in)                         |
| 7 Holding Torque, 1.5x nominal current (1)       | 2.5 (0.35)                       | 2.5 (0.35)            | mNm (oz-in)                         |
| 8 Detent Torque                                  | 0.04 (0.06)                      | 0.04 (0.06)           | mNm (oz-in)                         |
| 9 Rotor Inertia                                  | 0.070                            | 0.070                 | kgm <sup>2</sup> x 10 <sup>-7</sup> |
| 10 Step Angle                                    | 15                               | 15                    | Degree                              |
| 11 Absolute accuracy 2 ph. On, Full step mode    | +/- 5%                           | +/- 5%                | % Full Step                         |
| 12 Steps Per Revolution                          | 24                               | 24                    |                                     |
| 13 Ambient Temperature Range (operating)         | -20 to 50 (-4 to 122)            | -20 to 50 (-4 to 122) | °C (°F)                             |
| 14 Maximum Coil Temperature                      | 130 (266)                        | 130 (266)             | °C (°F)                             |
| 15 Thermal Resistance Coil-ambient (2)           | 100                              | 100                   | °C/W                                |
| 16 Natural Resonance Frequency (nominal current) | 200                              | 200                   | Hz                                  |
| 17 Electrical Time Constant                      | 0.60                             | 0.60                  | ms                                  |
| 18 Angular Acceleration (nominal current)        | 260,000                          | 260,000               | rad/s <sup>2</sup>                  |
| 19 Bearing Type                                  | Ball                             | Ball                  |                                     |
| 20 Dielectric Withstanding Voltage               | 500 VRMS for 5 seconds (30 @ 2N) |                       | VAC                                 |
| 21 Radial Shaft Play                             | 30 @ 2N                          |                       | µm                                  |
| 22 Axial Shaft Play                              | 40 @ 2N                          |                       | µm                                  |
| 23 Maximum Radial Shaft Load                     | 2.5 (9)                          |                       | N (oz)                              |
| 24 Maximum Axial Shaft Load (3)                  | 2.5 (9)                          |                       | N (oz)                              |
| 25 Weight  | 9 (0.32)                         |                       | g (oz)                              |
| 26 Power Rate (nominal current)                  | 0.5                              |                       | kW/s                                |

(1) Measured with 1 phase ON. The max coil temperature must be respected

(2) Motor unmounted

(3) Shaft must be supported when press-fitting a pulley or



Kapton Circuit Reinforcement for connector ZIF ZMP step 1 mm