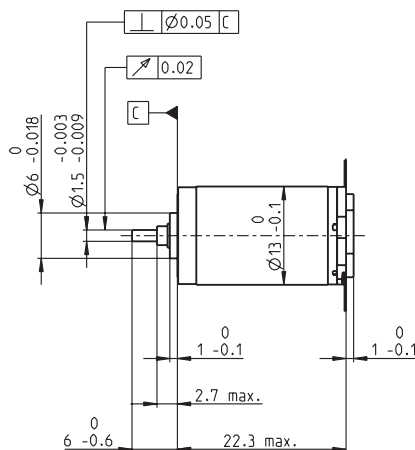
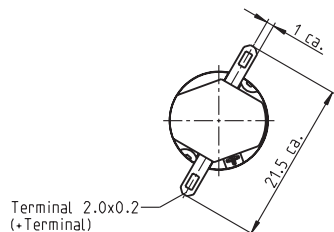


RE 13 $\varnothing 13$ mm, Graphite Brushes, 1.5 Watt



M 1:1

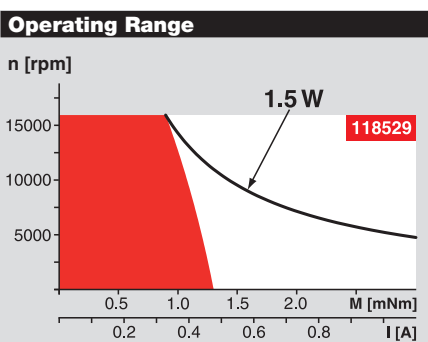
- Stock program
- Standard program
- Special program (on request)

Order Number

| | | | | | | | | | | | | | | | |
|------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Motor Data | 118521 | 118522 | 118523 | 118524 | 118525 | 118526 | 118527 | 118528 | 118529 | 118530 | 118531 | 118532 | 118533 | 118534 | 118535 |
|------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|

| Values at nominal voltage | | | | | | | | | | | | | | | | | |
|---------------------------|---|------------------|--------|--------|--------|--------|--------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 1 | Nominal voltage | V | 1.2 | 1.5 | 2.4 | 3.0 | 3.6 | 4.2 | 4.8 | 6.0 | 7.2 | 9.0 | 12.0 | 12.0 | 15.0 | 18.0 | 20.0 |
| 2 | No load speed | rpm | 12800 | 12900 | 13600 | 13200 | 13000 | 13300 | 12300 | 12700 | 12300 | 12300 | 13300 | 12400 | 13200 | 14000 | 13300 |
| 3 | No load current | mA | 472 | 388 | 257 | 196 | 158 | 139 | 110 | 92.2 | 73.5 | 59.0 | 49.1 | 44.6 | 38.8 | 35.1 | 29.6 |
| 4 | Nominal speed | rpm | 11900 | 11200 | 10300 | 8420 | 7770 | 8270 | 7180 | 7550 | 7100 | 7110 | 8150 | 7060 | 7990 | 9010 | 8150 |
| 5 | Nominal torque (max. continuous torque) | mNm | 0.205 | 0.337 | 0.724 | 1.06 | 1.24 | 1.28 | 1.30 | 1.27 | 1.29 | 1.28 | 1.23 | 1.25 | 1.23 | 1.23 | 1.22 |
| 6 | Nominal current (max. continuous current) | A | 0.720 | 0.720 | 0.720 | 0.720 | 0.66 | 0.591 | 0.486 | 0.394 | 0.321 | 0.256 | 0.202 | 0.189 | 0.160 | 0.142 | 0.121 |
| 7 | Stall torque | mNm | 3.13 | 2.85 | 3.21 | 3.17 | 3.32 | 3.61 | 3.34 | 3.35 | 3.27 | 3.24 | 3.41 | 3.13 | 3.36 | 3.65 | 3.35 |
| 8 | Starting current | A | 4.00 | 2.97 | 2.17 | 1.65 | 1.41 | 1.34 | 1.01 | 0.836 | 0.658 | 0.524 | 0.445 | 0.382 | 0.347 | 0.333 | 0.264 |
| 9 | Max. efficiency | % | 43 | 41 | 44 | 44 | 45 | 47 | 46 | 45 | 45 | 45 | 45 | 44 | 45 | 47 | 45 |
| Characteristics | | | | | | | | | | | | | | | | | |
| 10 | Terminal resistance | Ω | 0.300 | 0.504 | 1.11 | 1.81 | 2.55 | 3.14 | 4.76 | 7.18 | 10.9 | 17.2 | 27.0 | 31.4 | 43.2 | 54.0 | 75.8 |
| 11 | Terminal inductance | mH | 0.0061 | 0.0091 | 0.0216 | 0.0362 | 0.0545 | 0.0719 | 0.108 | 0.158 | 0.243 | 0.377 | 0.579 | 0.661 | 0.921 | 1.19 | 1.59 |
| 12 | Torque constant | mNm / A | 0.783 | 0.958 | 1.48 | 1.92 | 2.35 | 2.70 | 3.31 | 4.00 | 4.96 | 6.18 | 7.66 | 8.18 | 9.66 | 11.0 | 12.7 |
| 13 | Speed constant | rpm / V | 12200 | 9970 | 6450 | 4990 | 4060 | 3540 | 2890 | 2380 | 1920 | 1540 | 1250 | 1170 | 988 | 871 | 751 |
| 14 | Speed / torque gradient | rpm / mNm | 4670 | 5250 | 4820 | 4720 | 4400 | 4120 | 4150 | 4270 | 4240 | 4300 | 4390 | 4480 | 4420 | 4290 | 4480 |
| 15 | Mechanical time constant | ms | 17.4 | 15.9 | 14.5 | 14.2 | 13.9 | 13.7 | 13.6 | 13.6 | 13.6 | 13.6 | 13.7 | 13.7 | 13.7 | 13.5 | 13.7 |
| 16 | Rotor inertia | gcm ² | 0.356 | 0.290 | 0.288 | 0.287 | 0.301 | 0.317 | 0.313 | 0.305 | 0.306 | 0.303 | 0.298 | 0.292 | 0.295 | 0.302 | 0.292 |

| Specifications | | |
|--|---------------------------------------|----------------|
| Thermal data | | |
| 17 | Thermal resistance housing-ambient | 46 K / W |
| 18 | Thermal resistance winding-housing | 14 K / W |
| 19 | Thermal time constant winding | 5.35 s |
| 20 | Thermal time constant motor | 345 s |
| 21 | Ambient temperature | -20 ... +85°C |
| 22 | Max. permissible winding temperature | +125°C |
| Mechanical data (sleeve bearings) | | |
| 23 | Max. permissible speed | 16000 rpm |
| 24 | Axial play | 0.05 - 0.15 mm |
| 25 | Radial play | 0.014 mm |
| 26 | Max. axial load (dynamic) | 0.8 N |
| 27 | Max. force for press fits (static) | 15 N |
| 28 | Max. radial loading, 5 mm from flange | 1.4 N |



Comments

- Continuous operation**
In observation of above listed thermal resistance (lines 17 and 18) the maximum permissible winding temperature will be reached during continuous operation at 25°C ambient.
= Thermal limit.
- Short term operation**
The motor may be briefly overloaded (recurring).
- Assigned power rating**

| Other specifications | | |
|----------------------|-------------------------------|------|
| 29 | Number of pole pairs | 1 |
| 30 | Number of commutator segments | 7 |
| 31 | Weight of motor | 15 g |

maxon Modular System Overview on page 16 - 21

Values listed in the table are nominal.
Explanation of the figures on page 49.

Recommended Electronics:
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Notes **18**