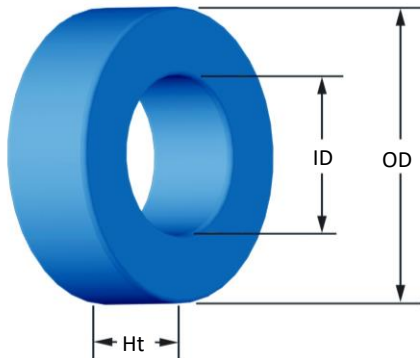




Part Number:

**MS-040040-2**

Revision 2021-Dec-01 - Generated 2021-Dec-01



(If coated, Max./Min. includes coating)

|                            |                                                                                                                                          |                                                                        |                                  |
|----------------------------|------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------|----------------------------------|
| <b>OD</b>                  | (nom. - bare core)<br>(max.)                                                                                                             | 10.16 mm<br>10.80 mm                                                   | 0.400 in<br>0.425 in             |
| <b>ID</b>                  | (nom. - bare core)<br>(min.)                                                                                                             | 5.08 mm<br>4.57 mm                                                     | 0.200 in<br>0.180 in             |
| <b>HT</b>                  | (nom. - bare core)<br>(max.)                                                                                                             | 3.96 mm<br>4.57 mm                                                     | 0.156 in<br>0.180 in             |
| <b>Mass</b>                | (approximate)                                                                                                                            | 1.3 grams                                                              |                                  |
| <b>Magnetic Dimensions</b> | A <sub>e</sub> - Eff. Mag. Cross Section                                                                                                 | 0.100 cm <sup>2</sup>                                                  |                                  |
|                            | L <sub>e</sub> - Eff. Mag. Path Length                                                                                                   | 2.38 cm                                                                |                                  |
|                            | V <sub>e</sub> - Eff. Core Volume                                                                                                        | 0.238 cm <sup>3</sup>                                                  |                                  |
|                            | WA - Min. Eff. Window Area                                                                                                               | 0.164 cm <sup>2</sup>                                                  |                                  |
|                            | sa - Surface Area                                                                                                                        | 4.20 cm <sup>2</sup>                                                   |                                  |
| <b>Inductance</b>          | μ <sub>i</sub> (reference)                                                                                                               | 40                                                                     |                                  |
|                            | A <sub>L</sub> value (nominal)                                                                                                           | 21 nH/N <sup>2</sup>                                                   |                                  |
|                            | Test Winding                                                                                                                             | N=55, #30 AWG                                                          |                                  |
|                            | Frequency                                                                                                                                | 10 kHz                                                                 |                                  |
|                            | Voltage on Agilent 4284A                                                                                                                 | 0.024 V                                                                |                                  |
| <b>Core Loss</b>           | AL tolerance                                                                                                                             | ±12%                                                                   |                                  |
|                            | $\text{Core Loss (mW/cm}^3\text{)} = \frac{a}{B_{pk}^3} + \frac{b}{B_{pk}^{2.3}} + \frac{c}{B_{pk}^{1.65}} + d \cdot B_{pk}^2 \cdot f^2$ |                                                                        |                                  |
|                            | where B <sub>pk</sub> expressed in gauss, f expressed in hertz, and:<br>a=1.000E+06, b=6.961E+08, c=5.397E+06, d=4.127E-14               |                                                                        |                                  |
|                            | B <sub>pk</sub>                                                                                                                          | 1000 G                                                                 |                                  |
|                            | frequency                                                                                                                                | 50 kHz                                                                 |                                  |
| <b>DC Saturation</b>       | Core Loss (nominal)                                                                                                                      | 441 mW/cm <sup>3</sup>                                                 |                                  |
|                            | Core Loss (maximum)                                                                                                                      | 507 mW/cm <sup>3</sup>                                                 |                                  |
|                            | $\% \mu_i = \frac{1}{a + b \cdot H^c} + d$                                                                                               |                                                                        |                                  |
|                            | where H expressed in oersteds, and:<br>a=1.000E-02, b=2.655E-06, c=1.703, d=0.000                                                        |                                                                        |                                  |
|                            | H <sub>DC</sub>                                                                                                                          | 100 Oe                                                                 |                                  |
| <b>Coating/Pkg</b>         | Percent Initial Perm(nom.)                                                                                                               | 59.6%                                                                  |                                  |
|                            | Percent Initial Perm(min.)                                                                                                               | 52.0%                                                                  |                                  |
|                            | Coating Type:                                                                                                                            | Blue Epoxy                                                             |                                  |
|                            | Voltage Breakdown (min.)                                                                                                                 | 1000 Vrms                                                              |                                  |
| <b>Winding Table</b>       | Limit                                                                                                                                    | 0.1 mA, 5 s                                                            |                                  |
|                            | Package Quantity                                                                                                                         | 9,000 Pcs/Box                                                          |                                  |
|                            | Wire Size                                                                                                                                | AWG                                                                    | 20 22 24 26 28 30 32 34 36 38 40 |
|                            | mm                                                                                                                                       | 0.800 0.630 0.500 0.400 0.315 0.250 0.200 0.160 0.125 0.100 0.080      |                                  |
| <b>Single Layer</b>        | Turns                                                                                                                                    | 12 15 19 25 32 40 50 63 80 100 125                                     |                                  |
|                            | Rdc(Ω)                                                                                                                                   | 7.0 m 14.0 m 28.2 m 59.1 m 120.3 m 239.1 m 475.2 m 952.3 m 1.9 3.8 7.6 |                                  |
| <b>Full Winding</b>        | Turns                                                                                                                                    | 12 18 28 44 68 105 162 251 389 602 931                                 |                                  |
|                            | Rdc(Ω)                                                                                                                                   | 7.0 m 16.8 m 41.6 m 104.0 m 255.5 m 627.5 m 1.5 3.8 9.4 23.0 56.6      |                                  |

