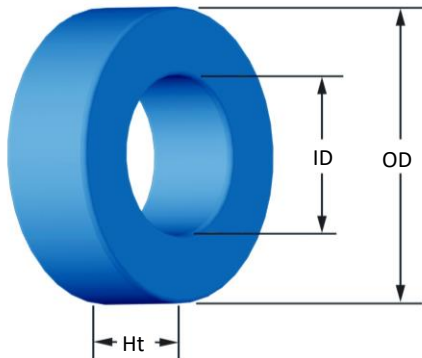




Part Number:

**MS-038014-2**

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



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

|                            |                                                                                                                                          |                        |                      |
|----------------------------|------------------------------------------------------------------------------------------------------------------------------------------|------------------------|----------------------|
| <b>OD</b>                  | (nom. - bare core)<br>(max.)                                                                                                             | 9.65 mm<br>10.29 mm    | 0.380 in<br>0.405 in |
| <b>ID</b>                  | (nom. - bare core)<br>(min.)                                                                                                             | 4.78 mm<br>4.27 mm     | 0.188 in<br>0.168 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)                                                                                                                            | 1.0 grams              |                      |
| <b>Magnetic Dimensions</b> | A <sub>e</sub> - Eff. Mag. Cross Section                                                                                                 | 0.0945 cm <sup>2</sup> |                      |
|                            | L <sub>e</sub> - Eff. Mag. Path Length                                                                                                   | 2.18 cm                |                      |
|                            | V <sub>e</sub> - Eff. Core Volume                                                                                                        | 0.206 cm <sup>3</sup>  |                      |
|                            | WA - Min. Eff. Window Area                                                                                                               | 0.143 cm <sup>2</sup>  |                      |
|                            | sa - Surface Area                                                                                                                        | 3.88 cm <sup>2</sup>   |                      |
|                            | mlt - mean length per turn                                                                                                               | 1.73 cm                |                      |
| <b>Inductance</b>          | μ <sub>i</sub> (reference)                                                                                                               | 14                     |                      |
|                            | A <sub>L</sub> value (nominal)                                                                                                           | 7 nH/N <sup>2</sup>    |                      |
|                            | Test Winding                                                                                                                             | N=45, #30 AWG          |                      |
|                            | Frequency                                                                                                                                | 10 kHz                 |                      |
|                            | Voltage on Agilent 4284A                                                                                                                 | 0.019 V                |                      |
|                            | AL tolerance                                                                                                                             | ±12%                   |                      |
| <b>Core Loss</b>           | $\text{Core Loss (mW/cm}^3\text{)} = \frac{a}{B_{pk}^3} + \frac{b}{B_{pk}^{2.3}} + \frac{c}{B_{pk}^{1.65}} + d \cdot B_{pk}^2 \cdot f^2$ |                        |                      |
|                            | where B <sub>pk</sub> expressed in gauss, f expressed in hertz, and:                                                                     |                        |                      |
|                            | a=1.000E+06, b=1.814E+08, c=3.377E+06, d=2.628E-14                                                                                       |                        |                      |
|                            | B <sub>pk</sub>                                                                                                                          | 300 G                  |                      |
|                            | frequency                                                                                                                                | 100 kHz                |                      |
|                            | Core Loss (nominal)                                                                                                                      | 180 mW/cm <sup>3</sup> |                      |
|                            | Core Loss (maximum)                                                                                                                      | 207 mW/cm <sup>3</sup> |                      |
| <b>DC Saturation</b>       | $\% \mu_i = \frac{1}{a + b \cdot H^c} + d$                                                                                               |                        |                      |
|                            | where H expressed in oersteds, and:                                                                                                      |                        |                      |
|                            | a=1.000E-02, b=9.443E-07, c=1.533, d=0.000                                                                                               |                        |                      |
|                            | H <sub>DC</sub>                                                                                                                          | 200 Oe                 |                      |
|                            | Percent Initial Perm(nom.)                                                                                                               | 75.9%                  |                      |
|                            | Percent Initial Perm(min.)                                                                                                               | 70.4%                  |                      |
| <b>Coating/Pkg</b>         | Coating Type:                                                                                                                            | Blue Epoxy             |                      |
|                            | Voltage Breakdown (min.)                                                                                                                 | 1000 Vrms              |                      |
|                            | Limit                                                                                                                                    | 0.1 mA, 5 s            |                      |
|                            | Package Quantity                                                                                                                         | 10,800 Pcs/Box         |                      |

| Winding Table | 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 |
|               | Single    | Turns  | 11    | 14     | 18     | 23     | 29      | 37      | 47      | 59      | 74    | 93    | 116   |
|               | Layer     | Rdc(Ω) | 6.3 m | 12.8 m | 26.2 m | 53.2 m | 106.8 m | 216.6 m | 437.6 m | 873.7 m | 1.7   | 3.5   | 6.9   |
| Full          | Turns     | 10     | 16    | 25     | 38     | 59     | 92      | 142     | 219     | 339     | 525   | 813   |       |
|               | Winding   | Rdc(Ω) | 5.8 m | 14.6 m | 36.4 m | 88.0 m | 217.2 m | 538.6 m | 1.3     | 3.2     | 8.0   | 19.7  | 48.4  |

