

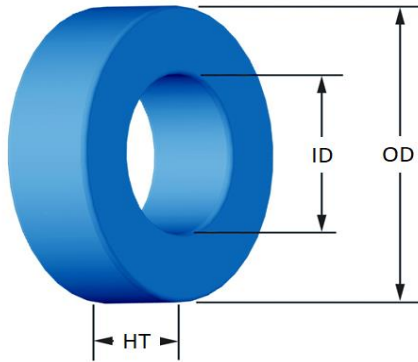


Part Number:

**MS-157160-2**

Revision:

2023-Dec-06



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

| (if coated, Max./Min. includes coating) |                                                                                                                                                                         | mm          | in                 |       |        |  |
|-----------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|--------------------|-------|--------|--|
| OD                                      | (nom. - bare core)                                                                                                                                                      | 39.88       | 1.570              |       |        |  |
|                                         | (max.)                                                                                                                                                                  | 40.69       | 1.602              |       |        |  |
| ID                                      | (nom. - bare core)                                                                                                                                                      | 24.13       | 0.950              |       |        |  |
|                                         | (min.)                                                                                                                                                                  | 23.32       | 0.918              |       |        |  |
| HT                                      | (nom. - bare core)                                                                                                                                                      | 14.48       | 0.570              |       |        |  |
|                                         | (max.)                                                                                                                                                                  | 15.37       | 0.605              |       |        |  |
| Mass                                    | (approximate)                                                                                                                                                           | 62          | grams              |       |        |  |
| Magnetic Dimensions                     | A <sub>e</sub> - Eff. Mag. Cross Section                                                                                                                                | 1.07        | cm <sup>2</sup>    |       |        |  |
|                                         | L <sub>e</sub> - Eff. Mag. Path Length                                                                                                                                  | 9.85        | cm                 |       |        |  |
|                                         | V <sub>e</sub> - Eff. Core Volume                                                                                                                                       | 10.5        | cm <sup>3</sup>    |       |        |  |
|                                         | W <sub>A</sub> - Min. Eff. Window Area                                                                                                                                  | 4.27        | cm <sup>2</sup>    |       |        |  |
|                                         | s <sub>a</sub> - Surface Area                                                                                                                                           | 60.2        | cm <sup>2</sup>    |       |        |  |
|                                         | mlt - mean length per turn                                                                                                                                              | 5.98        | cm                 |       |        |  |
| Inductance                              | μ <sub>i</sub> (reference)                                                                                                                                              | 160         |                    |       |        |  |
|                                         | A <sub>L</sub> value (nominal)                                                                                                                                          | 215         | nH/N <sup>2</sup>  |       |        |  |
|                                         | Test Winding                                                                                                                                                            | 70 Turns    | AWG# 20            |       |        |  |
|                                         | Frequency                                                                                                                                                               | 10k         | Hz                 |       |        |  |
|                                         | Voltage on Agilent 4284A                                                                                                                                                | 0.33        | V                  |       |        |  |
|                                         | AL tolerance                                                                                                                                                            | ±8%         |                    |       |        |  |
| Core Loss                               | $\text{Core Loss(mW/cm}^3\text{)} = \frac{f}{\frac{a}{Bpk^3} + \frac{b}{Bpk^{2.3}} + \frac{c}{Bpk^{1.65}}} + d \cdot Bpk^2 \cdot f^2$                                   |             |                    |       |        |  |
|                                         | where <i>B<sub>pk</sub></i> expressed in gauss, <i>f</i> expressed in hertz, and:<br><i>a</i> =1.394E+10, <i>b</i> =1.034E+09, <i>c</i> =1.244E+07, <i>d</i> =4.007E-14 |             |                    |       |        |  |
|                                         | B <sub>pk</sub>                                                                                                                                                         | 1000        | G                  |       |        |  |
|                                         | frequency                                                                                                                                                               | 50 k        | Hz                 |       |        |  |
|                                         | Core Loss (nominal)                                                                                                                                                     | 276         | mW/cm <sup>3</sup> |       |        |  |
|                                         | Core Loss (maximum)                                                                                                                                                     | 318         | mW/cm <sup>3</sup> |       |        |  |
| DC Saturation                           | $\% \mu_i \frac{1}{a + b \cdot H^c} + d$                                                                                                                                |             |                    |       |        |  |
|                                         | where H expressed in oersteds, and:<br><i>a</i> =1.000E-02, <i>b</i> =4.439E-05, <i>c</i> =1.627, <i>d</i> =0.000                                                       |             |                    |       |        |  |
|                                         | H <sub>DC</sub>                                                                                                                                                         | 40          | Oe                 |       |        |  |
|                                         | Percent Initial Perm.(nom.)                                                                                                                                             | 35.8        | %                  |       |        |  |
|                                         | Percent Initial Perm.(min.)                                                                                                                                             | 29.3        | %                  |       |        |  |
| Coating/Pkg                             | Coating Type:                                                                                                                                                           | Blue Epoxy  |                    |       |        |  |
|                                         | Voltage Breakdown (min.)                                                                                                                                                | 1000 Vrms   |                    |       |        |  |
|                                         | Limit                                                                                                                                                                   | 0.1 mA, 5 s |                    |       |        |  |
|                                         | Package Quantity                                                                                                                                                        | 180 Pcs/Box |                    |       |        |  |
| Winding Table                           | Wire Size                                                                                                                                                               | AWG         | 8                  | 10    | 12     |  |
|                                         |                                                                                                                                                                         | mm          | 3.150              | 2.500 | 2.000  |  |
|                                         | Single Layer                                                                                                                                                            | Turns       | 17                 | 22    | 28     |  |
|                                         |                                                                                                                                                                         | Rdc(Ω)      | 2.1 m              | 4.3 m | 8.7 m  |  |
|                                         | Full Winding                                                                                                                                                            | Turns       | 22                 | 35    | 54     |  |
|                                         |                                                                                                                                                                         | Rdc(Ω)      | 2.7 m              | 6.8 m | 16.8 m |  |

