

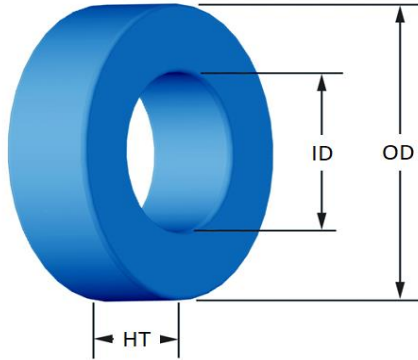


Part Number:

**MS-400075-2**

Revision:

2023-Dec-06



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

| (If coated, Max./Min. includes coating) |                                                                                                                                                                         | mm          | in                 |        |         |   |
|-----------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------|--------------------|--------|---------|---|
| OD                                      | (nom. - bare core)                                                                                                                                                      | 101.60      | 4.000              |        |         |   |
|                                         | (max.)                                                                                                                                                                  | 102.87      | 4.050              |        |         |   |
| ID                                      | (nom. - bare core)                                                                                                                                                      | 57.15       | 2.250              |        |         |   |
|                                         | (min.)                                                                                                                                                                  | 55.75       | 2.195              |        |         |   |
| HT                                      | (nom. - bare core)                                                                                                                                                      | 16.51       | 0.650              |        |         |   |
|                                         | (max.)                                                                                                                                                                  | 17.78       | 0.700              |        |         |   |
| Mass                                    | (approximate)                                                                                                                                                           | 500         | grams              |        |         |   |
| Magnetic Dimensions                     | A <sub>e</sub> - Eff. Mag. Cross Section                                                                                                                                | 3.52        | cm <sup>2</sup>    |        |         |   |
|                                         | L <sub>e</sub> - Eff. Mag. Path Length                                                                                                                                  | 24.271      | cm                 |        |         |   |
|                                         | V <sub>e</sub> - Eff. Core Volume                                                                                                                                       | 85.5        | cm <sup>3</sup>    |        |         |   |
|                                         | W <sub>A</sub> - Min. Eff. Window Area                                                                                                                                  | 24.4        | cm <sup>2</sup>    |        |         |   |
|                                         | s <sub>a</sub> - Surface Area                                                                                                                                           | 303         | cm <sup>2</sup>    |        |         |   |
|                                         | m <sub>lt</sub> - mean length per turn                                                                                                                                  | 11.1        | cm                 |        |         |   |
| Inductance                              | μ <sub>i</sub> (reference)                                                                                                                                              | 75          |                    |        |         |   |
|                                         | A <sub>L</sub> value (nominal)                                                                                                                                          | 137         | nH/N <sup>2</sup>  |        |         |   |
|                                         | Test Winding                                                                                                                                                            | 140 Turns   | AWG# 18            |        |         |   |
|                                         | Frequency                                                                                                                                                               | 10k         | Hz                 |        |         |   |
|                                         | Voltage on Agilent 4284A                                                                                                                                                | 2.2         | V                  |        |         |   |
|                                         | AL tolerance                                                                                                                                                            | ±8%         |                    |        |         |   |
| Core Loss                               | $\text{Core Loss(mW/cm}^3\text{)}=\frac{a}{B_{pk}^3}+\frac{b}{B_{pk}^{2.3}}+\frac{c}{B_{pk}^{1.65}}+d\cdot B_{pk}^2\cdot f^2$                                           |             |                    |        |         |   |
|                                         | where <i>B<sub>pk</sub></i> expressed in gauss, <i>f</i> expressed in hertz, and:<br><i>a</i> =7.890E+09, <i>b</i> =7.111E+08, <i>c</i> =8.980E+06, <i>d</i> =2.846E-14 |             |                    |        |         |   |
|                                         | B <sub>pk</sub>                                                                                                                                                         | 1000        | G                  |        |         |   |
|                                         | frequency                                                                                                                                                               | 50 k        | Hz                 |        |         |   |
|                                         | Core Loss (nominal)                                                                                                                                                     | 323         | mW/cm <sup>3</sup> |        |         |   |
|                                         | Core Loss (maximum)                                                                                                                                                     | 372         | 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> =3.414E-06, <i>c</i> =1.841, <i>d</i> =0.000                                                       |             |                    |        |         |   |
|                                         | H <sub>DC</sub>                                                                                                                                                         | 80          | Oe                 |        |         |   |
|                                         | Percent Initial Perm.(nom.)                                                                                                                                             | 47.9        | %                  |        |         |   |
|                                         | Percent Initial Perm.(min.)                                                                                                                                             | 39.6        | %                  |        |         |   |
| Coating/Pkg                             | Coating Type:                                                                                                                                                           | Blue Epoxy  |                    |        |         |   |
|                                         | Voltage Breakdown (min.)                                                                                                                                                | 1000 Vrms   |                    |        |         |   |
|                                         | Limit                                                                                                                                                                   | 0.1 mA, 5 s |                    |        |         |   |
|                                         | Package Quantity                                                                                                                                                        | 20 Pcs/Box  |                    |        |         |   |
| Winding Table                           | Wire Size                                                                                                                                                               | AWG         | 8                  | 10     | 12      |   |
|                                         |                                                                                                                                                                         | mm          | 3.150              | 2.500  | 2.000   |   |
|                                         | Single Layer                                                                                                                                                            | Turns       | 44                 | 56     | 70      |   |
|                                         |                                                                                                                                                                         | Rdc(Ω)      | 10.0 m             | 20.2 m | 40.2 m  | 8 |
|                                         | Full Winding                                                                                                                                                            | Turns       | 128                | 198    | 306     |   |
|                                         |                                                                                                                                                                         | Rdc(Ω)      | 29.1 m             | 71.6 m | 175.9 m | 4 |

