

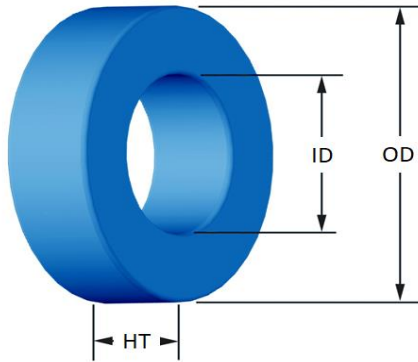


Part Number:

**MS-225147-2**

Revision:

2023-Dec-06



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

|           |                    | mm    | in    |
|-----------|--------------------|-------|-------|
| <b>OD</b> | (nom. - bare core) | 57.15 | 2.250 |
|           | (max.)             | 58.04 | 2.285 |
| <b>ID</b> | (nom. - bare core) | 35.56 | 1.400 |
|           | (min.)             | 34.75 | 1.368 |
| <b>HT</b> | (nom. - bare core) | 13.97 | 0.550 |
|           | (max.)             | 14.86 | 0.585 |

|                            |                                                                                                                                          |          |                   |
|----------------------------|------------------------------------------------------------------------------------------------------------------------------------------|----------|-------------------|
| <b>Magnetic Dimensions</b> | <b>Mass</b> (approximate)                                                                                                                | 120      | grams             |
|                            | $A_e$ - Eff. Mag. Cross Section                                                                                                          | 1.44     | cm <sup>2</sup>   |
|                            | $L_e$ - Eff. Mag. Path Length                                                                                                            | 14.296   | cm                |
|                            | $V_e$ - Eff. Core Volume                                                                                                                 | 20.7     | cm <sup>3</sup>   |
|                            | $W_A$ - Min. Eff. Window Area                                                                                                            | 9.48     | cm <sup>2</sup>   |
|                            | $s_a$ - Surface Area                                                                                                                     | 109      | cm <sup>2</sup>   |
| <b>Inductance</b>          | $m_l$ - mean length per turn                                                                                                             | 7.04     | cm                |
|                            | $\mu_i$ (reference)                                                                                                                      | 147      |                   |
|                            | $A_L$ value (nominal)                                                                                                                    | 185      | nH/N <sup>2</sup> |
|                            | Test Winding                                                                                                                             | 80 Turns | AWG# 18           |
|                            | Frequency                                                                                                                                | 10k      | Hz                |
|                            | Voltage on Agilent 4284A                                                                                                                 | 0.51     | V                 |
| <b>Core Loss</b>           | AL tolerance                                                                                                                             | ±8%      |                   |
|                            | $\text{Core Loss (mW/cm}^3\text{)} = \frac{a}{B_{pk}^3} + \frac{b}{B_{pk}^{2.3}} + \frac{c}{B_{pk}^{1.65}} + d \cdot B_{pk}^2 \cdot f^2$ |          |                   |
|                            | where $B_{pk}$ expressed in gauss, $f$ expressed in hertz, and:                                                                          |          |                   |
|                            | $a=1.394E+10, b=1.034E+09, c=1.244E+07, d=4.007E-14$                                                                                     |          |                   |
|                            | $B_{pk}$                                                                                                                                 | 1000     | G                 |
|                            | frequency                                                                                                                                | 50 k     | Hz                |

|                      |                                              |             |                    |
|----------------------|----------------------------------------------|-------------|--------------------|
| <b>DC Saturation</b> | Core Loss (nominal)                          | 276         | mW/cm <sup>3</sup> |
|                      | Core Loss (maximum)                          | 318         | mW/cm <sup>3</sup> |
|                      | $\% \mu_i = \frac{1}{a + b \cdot H^c} + d$   |             |                    |
|                      | where H expressed in oersteds, and:          |             |                    |
|                      | $a=1.000E-02, b=4.732E-05, c=1.539, d=0.000$ |             |                    |
|                      | $H_{dc}$                                     | 40          | Oe                 |
| <b>Coating/Pkg</b>   | Percent Initial Perm(nom.)                   | 42.0        | %                  |
|                      | Percent Initial Perm(min.)                   | 35.3        | %                  |
|                      | Coating Type:                                | Blue Epoxy  |                    |
|                      | Voltage Breakdown (min.)                     | 1000        | Vrms               |
| <b>Winding Table</b> | Limit                                        | 0.1 mA, 5 s |                    |
|                      | Package Quantity                             | 60 Pcs/Box  |                    |

|                  |              |       |        |        |         |         |         |         |         |         |       |       |
|------------------|--------------|-------|--------|--------|---------|---------|---------|---------|---------|---------|-------|-------|
| <b>Wire Size</b> | AWG          | 8     | 10     | 12     | 14      | 16      | 18      | 20      | 22      | 24      | 26    | 28    |
|                  | mm           | 3.150 | 2.500  | 2.000  | 1.600   | 1.250   | 1.000   | 0.800   | 0.630   | 0.500   | 0.400 | 0.315 |
|                  | Single Turns | 27    | 34     | 43     | 54      | 68      | 85      | 106     | 133     | 166     | 207   | 259   |
|                  | Rdc(Ω)       | 3.9 m | 7.8 m  | 15.7 m | 31.4 m  | 63.0 m  | 125.2 m | 248.2 m | 495.3 m | 983.2 m | 1.9   | 3.9   |
|                  | Full Turns   | 50    | 77     | 119    | 184     | 285     | 441     | 682     | 1,056   | 1,635   | 2,530 | 3,916 |
|                  | Rdc(Ω)       | 7.2 m | 17.7 m | 43.6 m | 107.1 m | 263.9 m | 649.4 m | 1.6     | 3.9     | 9.7     | 23.8  | 58.7  |

