

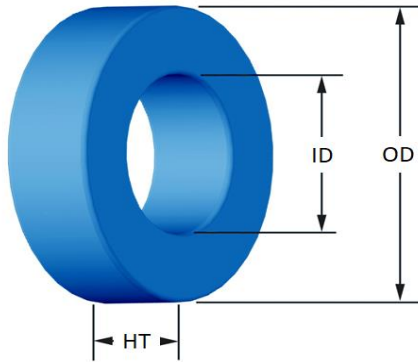


Part Number:

**MS-135125-2**

Revision:

2023-Dec-06



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

|                            |                                                                                                                                          | mm          | in                 |
|----------------------------|------------------------------------------------------------------------------------------------------------------------------------------|-------------|--------------------|
| <b>OD</b>                  | (nom. - bare core)                                                                                                                       | 34.29       | 1.350              |
|                            | (max.)                                                                                                                                   | 35.10       | 1.382              |
| <b>ID</b>                  | (nom. - bare core)                                                                                                                       | 23.37       | 0.920              |
|                            | (min.)                                                                                                                                   | 22.56       | 0.888              |
| <b>HT</b>                  | (nom. - bare core)                                                                                                                       | 8.89        | 0.350              |
|                            | (max.)                                                                                                                                   | 9.83        | 0.387              |
| <b>Mass</b>                | (approximate)                                                                                                                            | 24          | grams              |
| <b>Magnetic Dimensions</b> | $A_e$ - Eff. Mag. Cross Section                                                                                                          | 0.454       | cm <sup>2</sup>    |
|                            | $L_e$ - Eff. Mag. Path Length                                                                                                            | 8.95        | cm                 |
|                            | $V_e$ - Eff. Core Volume                                                                                                                 | 4.06        | cm <sup>3</sup>    |
|                            | $W_A$ - Min. Eff. Window Area                                                                                                            | 4.00        | cm <sup>2</sup>    |
|                            | $s_a$ - Surface Area                                                                                                                     | 41.4        | cm <sup>2</sup>    |
|                            | $mlt$ - mean length per turn                                                                                                             | 4.35        | cm                 |
| <b>Inductance</b>          | $\mu_i$ (reference)                                                                                                                      | 125         |                    |
|                            | $A_L$ value (nominal)                                                                                                                    | 79          | nH/N <sup>2</sup>  |
|                            | Test Winding                                                                                                                             | 90 Turns    | AWG# 22            |
|                            | Frequency                                                                                                                                | 10k         | Hz                 |
|                            | Voltage on Agilent 4284A                                                                                                                 | 0.18        | V                  |
|                            | AL tolerance                                                                                                                             | ±8%         |                    |
| <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 $B_{pk}$ 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                 |
|                            | Core Loss (nominal)                                                                                                                      | 276         | 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:                                                                                                      |             |                    |
|                            | $a=1.000E-02, b=7.884E-06, c=1.883, d=0.000$                                                                                             |             |                    |
|                            | $H_{dc}$                                                                                                                                 | 40          | Oe                 |
|                            | Percent Initial Perm(nom.)                                                                                                               | 55.0        | %                  |
|                            | Percent Initial Perm(min.)                                                                                                               | 46.4        | %                  |
| <b>Coating/Pkg</b>         | Coating Type:                                                                                                                            | Blue Epoxy  |                    |
|                            | Voltage Breakdown (min.)                                                                                                                 | 1000 Vrms   |                    |
|                            | Limit                                                                                                                                    | 0.1 mA, 5 s |                    |
|                            | Package Quantity                                                                                                                         | 350 Pcs/Box |                    |

| Winding Table | Wire Size    | 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 Layer | Turns  | 16    | 21    | 27     | 34     | 43     | 54      | 68      | 85      | 107     | 134     | 167   |
|               | Full Winding | Turns  | 21    | 32    | 50     | 78     | 120    | 186     | 288     | 445     | 689     | 1,066   | 1,651 |
|               |              | Rdc(Ω) | 1.4 m | 3.0 m | 6.1 m  | 12.2 m | 24.6 m | 49.1 m  | 98.4 m  | 195.6 m | 391.5 m | 779.8 m | 1.5   |
|               |              | Rdc(Ω) | 1.9 m | 4.5 m | 11.3 m | 28.1 m | 68.6 m | 169.2 m | 416.6 m | 1.0     | 2.5     | 6.2     | 15.3  |

