

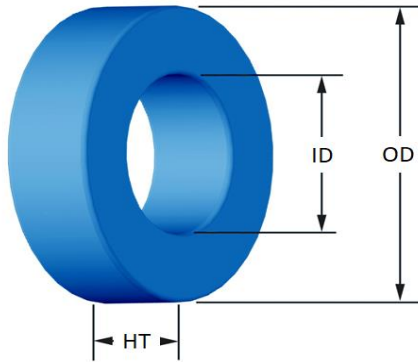


Part Number:

**MS-133040-2**

Revision:

2023-Dec-06



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

|                            |                                                                                                                                          | mm          | in                 |
|----------------------------|------------------------------------------------------------------------------------------------------------------------------------------|-------------|--------------------|
| <b>OD</b>                  | (nom. - bare core)                                                                                                                       | 33.02       | 1.300              |
|                            | (max.)                                                                                                                                   | 33.83       | 1.332              |
| <b>ID</b>                  | (nom. - bare core)                                                                                                                       | 19.94       | 0.785              |
|                            | (min.)                                                                                                                                   | 19.30       | 0.760              |
| <b>HT</b>                  | (nom. - bare core)                                                                                                                       | 14.00       | 0.551              |
|                            | (max.)                                                                                                                                   | 15.00       | 0.591              |
| <b>Mass</b>                | (approximate)                                                                                                                            | 39          | grams              |
| <b>Magnetic Dimensions</b> | $A_e$ - Eff. Mag. Cross Section                                                                                                          | 0.874       | cm <sup>2</sup>    |
|                            | $L_e$ - Eff. Mag. Path Length                                                                                                            | 8.15        | cm                 |
|                            | $V_e$ - Eff. Core Volume                                                                                                                 | 7.12        | cm <sup>3</sup>    |
|                            | $W_A$ - Min. Eff. Window Area                                                                                                            | 2.93        | cm <sup>2</sup>    |
|                            | $s_a$ - Surface Area                                                                                                                     | 44.3        | cm <sup>2</sup>    |
|                            | $mlt$ - mean length per turn                                                                                                             | 5.42        | cm                 |
| <b>Inductance</b>          | $\mu_i$ (reference)                                                                                                                      | 40          |                    |
|                            | $A_L$ value (nominal)                                                                                                                    | 53.3        | nH/N <sup>2</sup>  |
|                            | Test Winding                                                                                                                             | 70 Turns    | AWG# 22            |
|                            | Frequency                                                                                                                                | 10k         | Hz                 |
|                            | Voltage on Agilent 4284A                                                                                                                 | 0.27        | 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:                                                                          |             |                    |
|                            | $a=1.000E+06$ , $b=6.961E+08$ , $c=5.397E+06$ , $d=4.127E-14$                                                                            |             |                    |
|                            | $B_{pk}$                                                                                                                                 | 1000        | G                  |
|                            | frequency                                                                                                                                | 50 k        | Hz                 |
|                            | Core Loss (nominal)                                                                                                                      | 441         | 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:                                                                                                      |             |                    |
|                            | $a=1.000E-02$ , $b=2.655E-06$ , $c=1.703$ , $d=0.000$                                                                                    |             |                    |
|                            | $H_{dc}$                                                                                                                                 | 100         | Oe                 |
| <b>Coating/Pkg</b>         | Coating Type:                                                                                                                            | Blue Epoxy  |                    |
|                            | Voltage Breakdown (min.)                                                                                                                 | 1000 Vrms   |                    |
|                            | Limit                                                                                                                                    | 0.1 mA, 5 s |                    |
|                            | Package Quantity                                                                                                                         | 252 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  | 14    | 18    | 22     | 29     | 36     | 46      | 58      | 73      | 91      | 114     | 142   |
|               | Full Winding | Rdc(Ω) | 1.6 m | 3.2 m | 6.2 m  | 13.0 m | 25.7 m | 52.1 m  | 104.6 m | 209.3 m | 414.9 m | 826.6 m | 1.6   |
|               | Full Winding | Turns  | 15    | 24    | 37     | 57     | 88     | 136     | 211     | 326     | 504     | 780     | 1,208 |
|               |              | Rdc(Ω) | 1.7 m | 4.3 m | 10.4 m | 25.5 m | 62.7 m | 154.2 m | 380.4 m | 934.6 m | 2.3     | 5.7     | 13.9  |

