

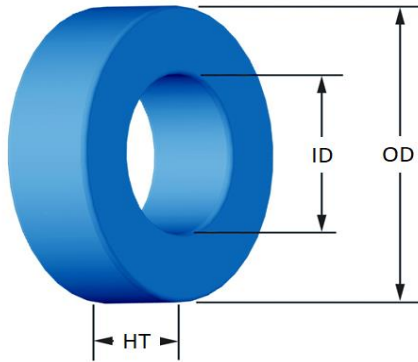


Part Number:

**MS-521014-2**

Revision:

2023-Dec-06



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

|                            |                                                                                                                                          | mm          | in                 |
|----------------------------|------------------------------------------------------------------------------------------------------------------------------------------|-------------|--------------------|
| <b>OD</b>                  | (nom. - bare core)                                                                                                                       | 132.54      | 5.218              |
|                            | (max.)                                                                                                                                   | 134.21      | 5.284              |
| <b>ID</b>                  | (nom. - bare core)                                                                                                                       | 78.59       | 3.094              |
|                            | (min.)                                                                                                                                   | 77.04       | 3.033              |
| <b>HT</b>                  | (nom. - bare core)                                                                                                                       | 25.40       | 1.000              |
|                            | (max.)                                                                                                                                   | 26.80       | 1.055              |
| <b>Mass</b>                | (approximate)                                                                                                                            | 1,070       | grams              |
| <b>Magnetic Dimensions</b> | $A_e$ - Eff. Mag. Cross Section                                                                                                          | 6.71        | cm <sup>2</sup>    |
|                            | $L_e$ - Eff. Mag. Path Length                                                                                                            | 32.429      | cm                 |
|                            | $V_e$ - Eff. Core Volume                                                                                                                 | 218         | cm <sup>3</sup>    |
|                            | $W_A$ - Min. Eff. Window Area                                                                                                            | 46.6        | cm <sup>2</sup>    |
|                            | $s_a$ - Surface Area                                                                                                                     | 540         | cm <sup>2</sup>    |
|                            | $mlt$ - mean length per turn                                                                                                             | 14.9        | cm                 |
| <b>Inductance</b>          | $\mu_i$ (reference)                                                                                                                      | 14          |                    |
|                            | $A_L$ value (nominal)                                                                                                                    | 36.4        | nH/N <sup>2</sup>  |
|                            | Test Winding                                                                                                                             | 200 Turns   | AWG# 18            |
|                            | Frequency                                                                                                                                | 10k         | Hz                 |
|                            | Voltage on Agilent 4284A                                                                                                                 | 6.0         | 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:                                                                          |             |                    |
|                            | $a=1.000E+06$ , $b=2.035E+08$ , $c=3.969E+06$ , $d=3.473E-14$                                                                            |             |                    |
|                            | $B_{pk}$                                                                                                                                 | 300         | G                  |
|                            | frequency                                                                                                                                | 100 k       | Hz                 |
|                            | Core Loss (nominal)                                                                                                                      | 168         | 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:                                                                                                      |             |                    |
|                            | $a=1.000E-02$ , $b=1.065E-06$ , $c=1.553$ , $d=0.000$                                                                                    |             |                    |
|                            | $H_{dc}$                                                                                                                                 | 200         | Oe                 |
| <b>Coating/Pkg</b>         | Coating Type:                                                                                                                            | Blue Epoxy  |                    |
|                            | Voltage Breakdown (min.)                                                                                                                 | 1000 Vrms   |                    |
|                            | Limit                                                                                                                                    | 0.1 mA, 5 s |                    |
|                            | Package Quantity                                                                                                                         | 6 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  | 62     | 78      | 98      | 123   | 154   | 192   | 239   | 298   | 372   | 463    | 577    |
|               | Full Winding | Turns  | 244    | 378     | 584     | 905   | 1,400 | 2,167 | 3,354 | 5,191 | 8,035 | 12,436 | 19,248 |
|               |              | Rdc(Ω) | 74.9 m | 184.5 m | 453.4 m | 1.1   | 2.7   | 6.8   | 16.7  | 41.0  | 100.9 | 248.5  | 611.6  |

