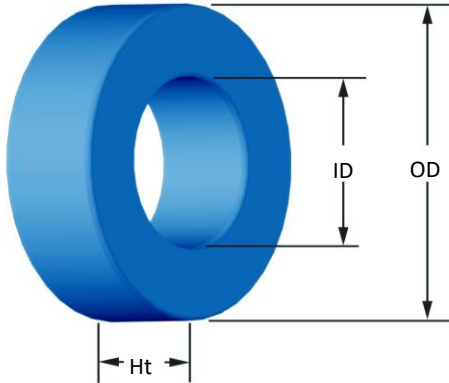




**Part Number: SH-185125-2**

Revision 20170403 - Generated 2017-Apr-03



|                            |                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                     |                      |
|----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|----------------------|
| <b>OD</b>                  | (nom. - bare core)<br>(max. - after coating)                                                                                                                                                                                                                                                                                                                | 46.74 mm<br>47.63 mm                                                                                                | 1.840 in<br>1.875 in |
| <b>ID</b>                  | (nom. - bare core)<br>(min. - after coating)                                                                                                                                                                                                                                                                                                                | 28.70 mm<br>27.89 mm                                                                                                | 1.130 in<br>1.098 in |
| <b>Ht</b>                  | (nom. - bare core)<br>(max. - after coating)                                                                                                                                                                                                                                                                                                                | 15.24 mm<br>16.13 mm                                                                                                | 0.600 in<br>0.635 in |
| <b>Mass</b>                | (approximate)                                                                                                                                                                                                                                                                                                                                               | 89 grams                                                                                                            |                      |
| <b>Magnetic Dimensions</b> | $A_e$ - Eff. Mag. Cross Section<br>$L_e$ - Eff. Mag. Path Length<br>$V_e$ - Eff. Core Volume<br>WA - Min. Eff. Window Area<br>sa - Surface Area<br>mlt - mean length per turn                                                                                                                                                                               | 1.34 cm <sup>2</sup><br>11.62 cm<br>15.6 cm <sup>3</sup><br>6.11 cm <sup>2</sup><br>79.6 cm <sup>2</sup><br>6.59 cm |                      |
| <b>Inductance</b>          | $\mu_i$ (reference)<br>$A_L$ value (nominal)<br>Test Winding<br>Frequency<br>Voltage on Agilent 4284A<br>AL tolerance                                                                                                                                                                                                                                       | 125<br>178 nH/N <sup>2</sup><br>N=80, #20 AWG<br>10 kHz<br>0.48 V<br>±8%                                            |                      |
| <b>Core Loss</b>           | Core Loss (mW/cm <sup>3</sup> ) = $\frac{f}{\frac{a}{B_{pk}^3} + \frac{b}{B_{pk}^{2.3}} + \frac{c}{B_{pk}^{1.65}}} + d \cdot B_{pk}^2 \cdot f^2$<br>where $B_{pk}$ expressed in gauss, $f$ expressed in hertz, and:<br>$a=7.985E+09$ , $b=1.378E+09$ , $c=4.041E+06$ , $d=7.891E-15$<br>$B_{pk}$<br>frequency<br>Core Loss (nominal)<br>Core Loss (maximum) | 1000 G<br>50 kHz<br>240 mW/cm <sup>3</sup><br>276 mW/cm <sup>3</sup>                                                |                      |
| <b>DC Saturation</b>       | $\% \mu_i = \frac{1}{a + b \cdot H^c} + d$<br>where H expressed in oersteds, and:<br>$a=1.000E-02$ , $b=3.265E-05$ , $c=1.587$ , $d=0.000$<br>$H_{DC}$<br>Percent Initial Perm.(nom.)<br>Percent Initial Perm.(min.)                                                                                                                                        | 40 Oe<br>46.8%<br>39.7%                                                                                             |                      |
| <b>Coating/Pkg</b>         | Coating Type:<br>Voltage Breakdown (min.)<br>Limit<br>Package Quantity                                                                                                                                                                                                                                                                                      | Blue Epoxy<br>1000 Vrms<br>0.1 mA, 5 s<br>125 Pcs/Box                                                               |                      |

|                      |                     |        |        |        |        |         |         |         |         |         |         |       |       |
|----------------------|---------------------|--------|--------|--------|--------|---------|---------|---------|---------|---------|---------|-------|-------|
| <b>Winding Table</b> | <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 |
|                      | <b>Single Layer</b> | Turns  | 21     | 27     | 34     | 43      | 54      | 68      | 85      | 106     | 133     | 166   | 207   |
|                      |                     | Rdc(Ω) | 2.8 m  | 5.8 m  | 11.7 m | 23.5 m  | 46.8 m  | 93.8 m  | 186.5 m | 369.9 m | 738.1 m | 1.5   | 2.9   |
| <b>Full Winding</b>  | Turns               | 32     | 49     | 77     | 119    | 184     | 284     | 440     | 680     | 1,053   | 1,630   | 2,523 |       |
|                      | Rdc(Ω)              | 4.3 m  | 10.6 m | 26.4 m | 64.9 m | 159.6 m | 391.8 m | 965.4 m | 2.4     | 5.8     | 14.4    | 35.4  |       |

