



**Part Number:** **HF-520014-2**  
Revision 20160816 - Generated 2016-Aug-16



|                             |  |                        |                      |
|-----------------------------|--|------------------------|----------------------|
| <b>OD</b>                   | (nom. - bare core)<br>(max. - after coating)   | 132.54 mm<br>134.21 mm | 5.218 in<br>5.284 in |
| <b>ID</b>                   | (nom. - bare core)<br>(min. - after coating)   | 78.59 mm<br>77.04 mm   | 3.094 in<br>3.033 in |
| <b>Ht</b>                   | (nom. - bare core)<br>(max. - after coating)   | 20.32 mm<br>21.72 mm   | 0.800 in<br>0.855 in |
| <b>Mass</b>                 | (approximate)  | 1,080 grams            |                      |
| <b>Magnetic Dimensions</b>  | A <sub>e</sub> - Eff. Mag. Cross Section   | 5.35 cm <sup>2</sup>   |                      |
|                             | L <sub>e</sub> - Eff. Mag. Path Length   | 32.429 cm              |                      |
|                             | V <sub>e</sub> - Eff. Core Volume  | 173 cm <sup>3</sup>    |                      |
|                             | WA - Min. Eff. Window Area   | 46.6 cm <sup>2</sup>   |                      |
|                             | sa - Surface Area  | 515 cm <sup>2</sup>    |                      |
|                             | mlt - mean length per turn   | 13.9 cm                |                      |
| <b>Inductance</b>           | μ <sub>i</sub> (reference)   | 14                     |                      |
|                             | A <sub>L</sub> value (nominal)   | 26 nH/N <sup>2</sup>   |                      |
|                             | Test Winding   | N=200, #18 AWG         |                      |
|                             | Frequency  | 10 kHz                 |                      |
|                             | Voltage on Agilent 4284A   | 4.7 V                  |                      |
| AL tolerance                | ±8%  |                        |                      |
| <b>Core Loss</b>            | $\text{Core Loss (mW/cm}^3\text{)} = \frac{f}{\frac{a}{B_{pk}^3} + \frac{b}{B_{pk}^{2.3}} + \frac{c}{B_{pk}^{1.65}}} + d \cdot B_{pk}^2 \cdot f^2$ |                        |                      |
|                             | where B <sub>pk</sub> expressed in gauss, f expressed in hertz, and:<br>a=2.058E+09, b=3.239E+08, c=3.003E+06, d=1.233E-13                         |                        |                      |
|                             | B <sub>pk</sub>  | 300 G                  |                      |
|                             | frequency  | 100 kHz                |                      |
|                             | Core Loss (nominal)  | 214 mW/cm <sup>3</sup> |                      |
| Core Loss (maximum)         | 246 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:<br>a=1.000E-02, b=8.808E-07, c=1.438, d=0.000  |                        |                      |
|                             | H <sub>DC</sub>  | 200 Oe                 |                      |
|                             | Percent Initial Perm.(nom.)  | 84.8%                  |                      |
| Percent Initial Perm.(min.) | 81.1%  |                        |                      |
| <b>Coating/Pkg</b>          | Coating Type:  | Blue Epoxy             |                      |
|                             | Voltage Breakdown (min.)   | 1000 Vrms              |                      |
|                             | Limit  | 0.1 mA, 5 s            |                      |
|                             | Package Quantity   | 4 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  | 62      | 78      | 98     | 123     | 154     | 192     | 239   | 298   | 372    | 463    | 577   |
|                      |                     | Rdc(Ω) | 17.7 m  | 35.5 m  | 70.9 m | 141.5 m | 281.8 m | 558.8 m | 1.1   | 2.2   | 4.4    | 8.6    | 17.1  |
| <b>Full Winding</b>  | Turns               | 244    | 378     | 584     | 905    | 1,400   | 2,167   | 3,354   | 5,191 | 8,035 | 12,436 | 19,248 |       |
|                      | Rdc(Ω)              | 69.8 m | 172.0 m | 422.6 m | 1.0    | 2.6     | 6.3     | 15.5    | 38.2  | 94.1  | 231.6  | 570.0  |       |

