



**Part Number: MP-184060-2**  
Revision 20160816 - Generated 2016-Aug-16



|                             |  |                        |                      |
|-----------------------------|--|------------------------|----------------------|
| <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)   | 24.13 mm<br>23.32 mm   | 0.950 in<br>0.918 in |
| <b>Ht</b>                   | (nom. - bare core)<br>(max. - after coating)   | 18.03 mm<br>18.92 mm   | 0.710 in<br>0.745 in |
| <b>Mass</b>                 | (approximate)  | 160 grams              |                      |
| <b>Magnetic Dimensions</b>  | A <sub>e</sub> - Eff. Mag. Cross Section   | 1.99 cm <sup>2</sup>   |                      |
|                             | L <sub>e</sub> - Eff. Mag. Path Length   | 10.743 cm              |                      |
|                             | V <sub>e</sub> - Eff. Core Volume  | 21.4 cm <sup>3</sup>   |                      |
|                             | WA - Min. Eff. Window Area   | 4.27 cm <sup>2</sup>   |                      |
|                             | sa - Surface Area  | 81.7 cm <sup>2</sup>   |                      |
|                             | mlt - mean length per turn   | 7.38 cm                |                      |
| <b>Inductance</b>           | μ <sub>i</sub> (reference)   | 60                     |                      |
|                             | A <sub>L</sub> value (nominal)   | 135 nH/N <sup>2</sup>  |                      |
|                             | Test Winding   | N=70, #20 AWG          |                      |
|                             | Frequency  | 10 kHz                 |                      |
|                             | Voltage on Agilent 4284A   | 0.62 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=9.919E+09, b=9.488E+08, c=4.486E+06, d=3.238E-14                         |                        |                      |
|                             | B <sub>pk</sub>  | 1000 G                 |                      |
|                             | frequency  | 50 kHz                 |                      |
|                             | Core Loss (nominal)  | 359 mW/cm <sup>3</sup> |                      |
| Core Loss (maximum)         | 413 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=1.212E-06, c=1.961, d=0.000  |                        |                      |
|                             | H <sub>DC</sub>  | 100 Oe                 |                      |
|                             | Percent Initial Perm.(nom.)  | 49.6%                  |                      |
| Percent Initial Perm.(min.) | 40.8%  |                        |                      |
| <b>Coating/Pkg</b>          | Coating Type:  | Blue Epoxy             |                      |
|                             | Voltage Breakdown (min.)   | 1000 Vrms              |                      |
|                             | Limit  | 0.1 mA, 5 s            |                      |
|                             | Package Quantity   | 100 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  | 17    | 22     | 28     | 35      | 45      | 56      | 70      | 88      | 111     | 138   | 173   |
|                      |                     | Rdc(Ω) | 2.6 m | 5.3 m  | 10.7 m | 21.4 m  | 43.7 m  | 86.5 m  | 171.9 m | 343.7 m | 689.5 m | 1.4   | 2.7   |
| <b>Full Winding</b>  | Turns               | 22     | 35    | 54     | 83     | 128     | 199     | 307     | 476     | 736     | 1,139   | 1,764 |       |
|                      | Rdc(Ω)              | 3.3 m  | 8.4 m | 20.7 m | 50.7 m | 124.3 m | 307.3 m | 753.9 m | 1.9     | 4.6     | 11.3    | 27.7  |       |

