



**Part Number: MP-401173-2**  
Revision 20160816 - Generated 2016-Aug-16



|                             |  |                        |          |
|-----------------------------|--|------------------------|----------|
| <b>OD</b>                   | (nom. - bare core)   | 101.60 mm              | 4.000 in |
|                             | (max. - after coating)   | 102.87 mm              | 4.050 in |
| <b>ID</b>                   | (nom. - bare core)   | 57.15 mm               | 2.250 in |
|                             | (min. - after coating)   | 55.75 mm               | 2.195 in |
| <b>Ht</b>                   | (nom. - bare core)   | 13.59 mm               | 0.535 in |
|                             | (max. - after coating)   | 14.86 mm               | 0.585 in |
| <b>Mass</b>                 | (approximate)  | 570 grams              |          |
| <b>Magnetic Dimensions</b>  | A <sub>e</sub> - Eff. Mag. Cross Section   | 2.97 cm <sup>2</sup>   |          |
|                             | L <sub>e</sub> - Eff. Mag. Path Length   | 24.271 cm              |          |
|                             | V <sub>e</sub> - Eff. Core Volume  | 72.1 cm <sup>3</sup>   |          |
|                             | WA - Min. Eff. Window Area   | 24.4 cm <sup>2</sup>   |          |
|                             | sa - Surface Area  | 293 cm <sup>2</sup>    |          |
|                             | mlt - mean length per turn   | 10.5 cm                |          |
| <b>Inductance</b>           | μ <sub>i</sub> (reference)   | 173                    |          |
|                             | A <sub>L</sub> value (nominal)   | 266 nH/N <sup>2</sup>  |          |
|                             | Test Winding   | N=140, #18 AWG         |          |
|                             | Frequency  | 10 kHz                 |          |
|                             | Voltage on Agilent 4284A   | 1.8 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=3.167E+10, b=1.206E+09, c=9.656E+06, d=5.636E-14                         |                        |          |
|                             | B <sub>pk</sub>  | 1000 G                 |          |
|                             | frequency  | 50 kHz                 |          |
|                             | Core Loss (nominal)  | 312 mW/cm <sup>3</sup> |          |
| Core Loss (maximum)         | 359 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=1.313E-05, c=1.935, d=0.000  |                        |          |
|                             | H <sub>DC</sub>  | 30 Oe                  |          |
|                             | Percent Initial Perm.(nom.)  | 51.4%                  |          |
| Percent Initial Perm.(min.) | 42.6%  |                        |          |
| <b>Coating/Pkg</b>          | Coating Type:  | Blue Epoxy             |          |
|                             | Voltage Breakdown (min.)   | 1000 Vrms              |          |
|                             | Limit  | 0.1 mA, 5 s            |          |
|                             | Package Quantity   | 16 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  | 44     | 56      | 70      | 88     | 110     | 138     | 172     | 215   | 268   | 335    | 417   |
|                      |                     | Rdc(Ω) | 9.5 m  | 19.2 m  | 38.1 m  | 76.2 m | 151.5 m | 302.3 m | 599.2 m | 1.2   | 2.4   | 4.7    | 9.3   |
| <b>Full Winding</b>  | Turns               | 128    | 198    | 306     | 474     | 733    | 1,135   | 1,756   | 2,719   | 4,208 | 6,512 | 10,079 |       |
|                      | Rdc(Ω)              | 27.6 m | 67.8 m | 166.6 m | 410.5 m | 1.0    | 2.5     | 6.1     | 15.1    | 37.1  | 91.3  | 224.6  |       |

