



**Part Number: MS-014014-8**  
Revision 20160816 - Generated 2016-Aug-16



|                             |  |                        |          |
|-----------------------------|--|------------------------|----------|
| <b>OD</b>                   | (nom. - bare core)   | 3.56 mm                | 0.140 in |
|                             | (max. - after coating)   | 3.76 mm                | 0.148 in |
| <b>ID</b>                   | (nom. - bare core)   | 1.78 mm                | 0.070 in |
|                             | (min. - after coating)   | 1.52 mm                | 0.060 in |
| <b>Ht</b>                   | (nom. - bare core)   | 1.52 mm                | 0.060 in |
|                             | (max. - after coating)   | 1.73 mm                | 0.068 in |
| <b>Mass</b>                 | (approximate)  | 0.05 grams             |          |
| <b>Magnetic Dimensions</b>  | A <sub>e</sub> - Eff. Mag. Cross Section   | 0.0137 cm <sup>2</sup> |          |
|                             | L <sub>e</sub> - Eff. Mag. Path Length   | 0.817 cm               |          |
|                             | V <sub>e</sub> - Eff. Core Volume  | 0.0107 cm <sup>3</sup> |          |
|                             | WA - Min. Eff. Window Area   | 0.0182 cm <sup>2</sup> |          |
|                             | sa - Surface Area  | 0.523 cm <sup>2</sup>  |          |
|                             | mlt - mean length per turn   | 0.646 cm               |          |
| <b>Inductance</b>           | μ <sub>i</sub> (reference)   | 14                     |          |
|                             | A <sub>L</sub> value (nominal)   | 3 nH/N <sup>2</sup>    |          |
|                             | Test Winding   | N=30, #36 AWG          |          |
|                             | Frequency  | 10 kHz                 |          |
|                             | Voltage on Agilent 4284A   | 0.002 V                |          |
|                             | AL tolerance   | ±15%                   |          |
| <b>Core Loss</b>            | Core Loss(mW/cm <sup>3</sup> )= $\frac{f}{\frac{a}{B_{pk}^3} + \frac{b}{B_{pk}^{2.3}} + \frac{c}{B_{pk}^{1.65}}} + d \cdot B_{pk}^2 \cdot f^2$ |                        |          |
|                             | where B <sub>pk</sub> expressed in gauss, f expressed in hertz, and:<br>a=1.000E+09, b=4.213E+08, c=1.032E+07, d=2.297E-14                     |                        |          |
|                             | B <sub>pk</sub>  | 300 G                  |          |
|                             | frequency  | 100 kHz                |          |
|                             | Core Loss (nominal)  | 79 mW/cm <sup>3</sup>  |          |
| Core Loss (maximum)         | 90 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=5.722E-08, c=1.995, d=0.000  |                        |          |
|                             | H <sub>DC</sub>  | 200 Oe                 |          |
|                             | Percent Initial Perm.(nom.)  | 81.7%                  |          |
| Percent Initial Perm.(min.) | 75.7%  |                        |          |
| <b>Coating/Pkg</b>          | Coating Type:  | Parylene N             |          |
|                             | Voltage Breakdown (min.)   | 500 Vrms               |          |
|                             | Limit  | 0.1 mA, 5 s            |          |
|                             | Package Quantity   | 36,000 Pcs/Box         |          |

|                      |                     |        |        |         |         |         |         |         |       |       |   |   |   |
|----------------------|---------------------|--------|--------|---------|---------|---------|---------|---------|-------|-------|---|---|---|
| <b>Winding Table</b> | <b>Wire Size</b>    | AWG    | 30     | 32      | 34      | 36      | 38      | 40      | 42    | 44    | - | - | - |
|                      |                     | mm     | 0.250  | 0.200   | 0.160   | 0.125   | 0.100   | 0.080   | 0.063 | 0.050 | - | - | - |
|                      | <b>Single Layer</b> | Turns  | 11     | 15      | 19      | 25      | 31      | 40      | 50    | 63    | - | - | - |
|                      |                     | Rdc(Ω) | 24.1 m | 52.2 m  | 105.1 m | 219.9 m | 433.7 m | 890.0 m | 1.8   | 3.5   | - | - | - |
| <b>Full Winding</b>  | Turns               | 12     | 18     | 28      | 43      | 67      | 103     | 159     | 247   | -     | - | - |   |
|                      | Rdc(Ω)              | 26.2 m | 62.6 m | 154.9 m | 378.3 m | 937.3 m | 2.3     | 5.6     | 13.9  | -     | - | - |   |

