



Part Number:

**MS-132147-2**

Revision:

2023-Dec-06



(If coated, Max./Min. includes coating)

| (If coated, Max./Min. includes coating) |                                                                                                                                                                         |        | mm                 | in                |       |  |
|-----------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------|--------------------|-------------------|-------|--|
| OD                                      | (nom. - bare core)                                                                                                                                                      |        | 33.02              | 1.300             |       |  |
|                                         | (max.)                                                                                                                                                                  |        | 33.83              | 1.332             |       |  |
| ID                                      | (nom. - bare core)                                                                                                                                                      |        | 19.94              | 0.785             |       |  |
|                                         | (min.)                                                                                                                                                                  |        | 19.30              | 0.760             |       |  |
| HT                                      | (nom. - bare core)                                                                                                                                                      |        | 11.18              | 0.440             |       |  |
|                                         | (max.)                                                                                                                                                                  |        | 11.99              | 0.472             |       |  |
| Mass                                    | (approximate)                                                                                                                                                           |        | 34                 | grams             |       |  |
| Magnetic Dimensions                     | A <sub>e</sub> - Eff. Mag. Cross Section                                                                                                                                |        | 0.698              | cm <sup>2</sup>   |       |  |
|                                         | L <sub>e</sub> - Eff. Mag. Path Length                                                                                                                                  |        | 8.15               | cm                |       |  |
|                                         | V <sub>e</sub> - Eff. Core Volume                                                                                                                                       |        | 5.69               | cm <sup>3</sup>   |       |  |
|                                         | W <sub>A</sub> - Min. Eff. Window Area                                                                                                                                  |        | 2.93               | cm <sup>2</sup>   |       |  |
|                                         | s <sub>a</sub> - Surface Area                                                                                                                                           |        | 40.6               | cm <sup>2</sup>   |       |  |
|                                         | mlt - mean length per turn                                                                                                                                              |        | 4.82               | cm                |       |  |
| Inductance                              | μ <sub>i</sub> (reference)                                                                                                                                              |        | 147                |                   |       |  |
|                                         | A <sub>L</sub> value (nominal)                                                                                                                                          |        | 158                | nH/N <sup>2</sup> |       |  |
|                                         | Test Winding                                                                                                                                                            |        | 70 Turns           | AWG# 22           |       |  |
|                                         | Frequency                                                                                                                                                               |        | 10k                | Hz                |       |  |
|                                         | Voltage on Agilent 4284A                                                                                                                                                |        | 0.22               | V                 |       |  |
|                                         | AL tolerance                                                                                                                                                            |        | ±8%                |                   |       |  |
| Core Loss                               | $\text{Core Loss(mW/cm}^3\text{)}=\frac{a}{B_{pk}^3}+\frac{b}{B_{pk}^{2.3}}+\frac{c}{B_{pk}^{1.65}}+d\cdot B_{pk}^2\cdot f^2$                                           |        |                    |                   |       |  |
|                                         | where <i>B<sub>pk</sub></i> expressed in gauss, <i>f</i> expressed in hertz, and:<br><i>a</i> =1.394E+10, <i>b</i> =1.034E+09, <i>c</i> =1.244E+07, <i>d</i> =4.007E-14 |        |                    |                   |       |  |
|                                         | B <sub>pk</sub>                                                                                                                                                         | 1000   | G                  |                   |       |  |
|                                         | frequency                                                                                                                                                               | 50 k   | Hz                 |                   |       |  |
|                                         | Core Loss (nominal)                                                                                                                                                     | 276    | mW/cm <sup>3</sup> |                   |       |  |
|                                         | Core Loss (maximum)                                                                                                                                                     | 318    | mW/cm <sup>3</sup> |                   |       |  |
| DC Saturation                           | $\% \mu_i \frac{1}{a+b\cdot H^c}+d$                                                                                                                                     |        |                    |                   |       |  |
|                                         | where H expressed in oersteds, and:<br><i>a</i> =1.000E-02, <i>b</i> =4.732E-05, <i>c</i> =1.539, <i>d</i> =0.000                                                       |        |                    |                   |       |  |
|                                         | H <sub>DC</sub>                                                                                                                                                         | 40     | Oe                 |                   |       |  |
|                                         | Percent Initial Perm.(nom.)                                                                                                                                             | 42.0   | %                  |                   |       |  |
|                                         | Percent Initial Perm.(min.)                                                                                                                                             | 35.3   | %                  |                   |       |  |
| Coating/Pkg                             | Coating Type:                                                                                                                                                           |        | Blue Epoxy         |                   |       |  |
|                                         | Voltage Breakdown (min.)                                                                                                                                                |        | 1000 Vrms          |                   |       |  |
|                                         | Limit                                                                                                                                                                   |        | 0.1 mA, 5 s        |                   |       |  |
|                                         | Package Quantity                                                                                                                                                        |        | 336 Pcs/Box        |                   |       |  |
| Winding Table                           | Wire Size                                                                                                                                                               | AWG    | 8                  | 10                | 12    |  |
|                                         |                                                                                                                                                                         | mm     | 3.150              | 2.500             | 2.000 |  |
|                                         | Single Layer                                                                                                                                                            | Turns  | 14                 | 18                | 22    |  |
|                                         |                                                                                                                                                                         | Rdc(Ω) | 1.4 m              | 2.8 m             | 5.5 m |  |
|                                         | Full Winding                                                                                                                                                            | Turns  | 15                 | 24                | 37    |  |
|                                         |                                                                                                                                                                         | Rdc(Ω) | 1.5 m              | 3.8 m             | 9.3 m |  |

