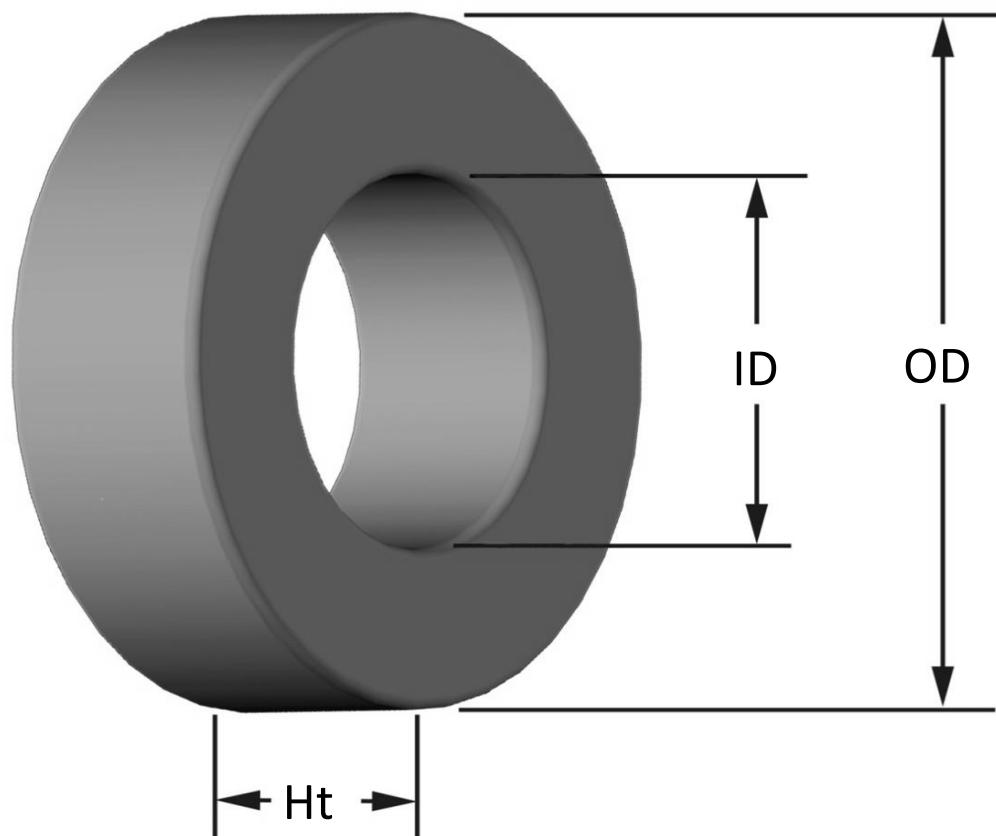


**MICROMETALS**<sup>TM</sup>  
POWDER CORE SOLUTIONS

Part Number:

**T44-0**

Revision 20190524 - Generated 2019-May-30



| <b>OD</b>                  | (nom. - bare core) 11.18 mm<br>(max. - after coating) 11.68 mm  | 0.440 in<br>0.460 in |       |        |        |         |         |         |         |       |       |       |    |    |  |    |       |       |       |       |       |       |       |       |       |       |       |                     |       |    |    |    |    |    |    |    |    |    |    |     |  |        |       |       |        |        |        |         |         |         |     |     |     |                     |       |    |    |    |    |    |    |     |     |     |     |     |  |        |       |       |        |        |         |         |         |     |     |      |      |  |
|----------------------------|---|----------------------|-------|--------|--------|---------|---------|---------|---------|-------|-------|-------|----|----|--|----|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|---------------------|-------|----|----|----|----|----|----|----|----|----|----|-----|--|--------|-------|-------|--------|--------|--------|---------|---------|---------|-----|-----|-----|---------------------|-------|----|----|----|----|----|----|-----|-----|-----|-----|-----|--|--------|-------|-------|--------|--------|---------|---------|---------|-----|-----|------|------|--|
| <b>ID</b>                  | (nom. - bare core) 5.82 mm<br>(min. - after coating) 5.31 mm  | 0.229 in<br>0.209 in |       |        |        |         |         |         |         |       |       |       |    |    |  |    |       |       |       |       |       |       |       |       |       |       |       |                     |       |    |    |    |    |    |    |    |    |    |    |     |  |        |       |       |        |        |        |         |         |         |     |     |     |                     |       |    |    |    |    |    |    |     |     |     |     |     |  |        |       |       |        |        |         |         |         |     |     |      |      |  |
| <b>Ht</b>                  | (nom. - bare core) 4.04 mm<br>(max. - after coating) 4.55 mm  | 0.159 in<br>0.179 in |       |        |        |         |         |         |         |       |       |       |    |    |  |    |       |       |       |       |       |       |       |       |       |       |       |                     |       |    |    |    |    |    |    |    |    |    |    |     |  |        |       |       |        |        |        |         |         |         |     |     |     |                     |       |    |    |    |    |    |    |     |     |     |     |     |  |        |       |       |        |        |         |         |         |     |     |      |      |  |
| <b>Mass</b>                | (approximate)   | 0.59 grams           |       |        |        |         |         |         |         |       |       |       |    |    |  |    |       |       |       |       |       |       |       |       |       |       |       |                     |       |    |    |    |    |    |    |    |    |    |    |     |  |        |       |       |        |        |        |         |         |         |     |     |     |                     |       |    |    |    |    |    |    |     |     |     |     |     |  |        |       |       |        |        |         |         |         |     |     |      |      |  |
| <b>Magnetic Dimensions</b> | A <sub>e</sub> - Eff. Mag. Cross Section 0.0990 cm <sup>2</sup><br>L <sub>e</sub> - Eff. Mag. Path Length 2.68 cm<br>V <sub>e</sub> - Eff. Core Volume 0.266 cm <sup>3</sup><br>WA - Min. Eff. Window Area 0.221 cm <sup>2</sup><br>sa - Surface Area 4.81 cm <sup>2</sup><br>mlt - mean length per turn 1.81 cm  |                      |       |        |        |         |         |         |         |       |       |       |    |    |  |    |       |       |       |       |       |       |       |       |       |       |       |                     |       |    |    |    |    |    |    |    |    |    |    |     |  |        |       |       |        |        |        |         |         |         |     |     |     |                     |       |    |    |    |    |    |    |     |     |     |     |     |  |        |       |       |        |        |         |         |         |     |     |      |      |  |
| <b>Inductance</b>          | $\mu_i$ (reference) 1<br>A <sub>L</sub> value (nominal) 0.65 nH/N <sup>2</sup><br>Test Winding N/A<br>Frequency N/A<br>Voltage on Agilent 4284A N/A<br>A <sub>L</sub> tolerance Ref Only  |                      |       |        |        |         |         |         |         |       |       |       |    |    |  |    |       |       |       |       |       |       |       |       |       |       |       |                     |       |    |    |    |    |    |    |    |    |    |    |     |  |        |       |       |        |        |        |         |         |         |     |     |     |                     |       |    |    |    |    |    |    |     |     |     |     |     |  |        |       |       |        |        |         |         |         |     |     |      |      |  |
| <b>Core Loss</b>           | Core Loss(mW/cm <sup>3</sup> )= $\frac{f}{a + \frac{b}{B_{pk}^{3}} + \frac{c}{B_{pk}^{2.3}}} + d \cdot B_{pk}^2 \cdot f^2$ where $B_{pk}$ expressed in gauss, $f$ expressed in hertz, and:<br>$a=1.00E+99, b=1.00E+99, c=1.00E+99, d=0.00E+00$<br>Bpk 140 G<br>frequency 100 kHz<br>Core Loss (nominal) 0 mW/cm <sup>3</sup><br>Core Loss (maximum) 0 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>$a=1.00E-02, b=0.00E+00, c=0.00, d=0.00$<br>H <sub>DC</sub> 200 Oe<br>Percent Initial Perm(nom.) 100.0%<br>Percent Initial Perm(min.) 100.0%  |                      |       |        |        |         |         |         |         |       |       |       |    |    |  |    |       |       |       |       |       |       |       |       |       |       |       |                     |       |    |    |    |    |    |    |    |    |    |    |     |  |        |       |       |        |        |        |         |         |         |     |     |     |                     |       |    |    |    |    |    |    |     |     |     |     |     |  |        |       |       |        |        |         |         |         |     |     |      |      |  |
| <b>Coating/Pkg</b>         | Coating Type: Tan/Tan Epoxy Paint<br>Voltage Breakdown (min.) 500 Vrms, 60Hz<br>Limit 3 mA, 5 s<br>Package Quantity 10,000 Pcs/Box  |                      |       |        |        |         |         |         |         |       |       |       |    |    |  |    |       |       |       |       |       |       |       |       |       |       |       |                     |       |    |    |    |    |    |    |    |    |    |    |     |  |        |       |       |        |        |        |         |         |         |     |     |     |                     |       |    |    |    |    |    |    |     |     |     |     |     |  |        |       |       |        |        |         |         |         |     |     |      |      |  |
| <b>Winding Table</b>       | <table border="1"> <thead> <tr> <th>Wire Size</th> <th>AWG</th> <th>18</th> <th>20</th> <th>22</th> <th>24</th> <th>26</th> <th>28</th> <th>30</th> <th>32</th> <th>34</th> <th>36</th> <th>38</th> </tr> </thead> <tbody> <tr> <td></td> <td>mm</td> <td>1.000</td> <td>0.800</td> <td>0.630</td> <td>0.500</td> <td>0.400</td> <td>0.315</td> <td>0.250</td> <td>0.200</td> <td>0.160</td> <td>0.125</td> <td>0.100</td> </tr> <tr> <td><b>Single Layer</b></td> <td>Turns</td> <td>11</td> <td>14</td> <td>18</td> <td>23</td> <td>29</td> <td>37</td> <td>47</td> <td>59</td> <td>74</td> <td>93</td> <td>116</td> </tr> <tr> <td></td> <td>Rdc(Ω)</td> <td>4.2 m</td> <td>8.4 m</td> <td>17.3 m</td> <td>35.1 m</td> <td>70.3 m</td> <td>142.7 m</td> <td>288.3 m</td> <td>575.7 m</td> <td>1.1</td> <td>2.3</td> <td>4.6</td> </tr> <tr> <td><b>Full Winding</b></td> <td>Turns</td> <td>10</td> <td>16</td> <td>25</td> <td>38</td> <td>59</td> <td>91</td> <td>141</td> <td>219</td> <td>339</td> <td>524</td> <td>812</td> </tr> <tr> <td></td> <td>Rdc(Ω)</td> <td>3.8 m</td> <td>9.6 m</td> <td>24.0 m</td> <td>58.0 m</td> <td>143.1 m</td> <td>351.0 m</td> <td>865.0 m</td> <td>2.1</td> <td>5.3</td> <td>12.9</td> <td>31.9</td> </tr> </tbody> </table> | Wire Size            | AWG   | 18     | 20     | 22      | 24      | 26      | 28      | 30    | 32    | 34    | 36 | 38 |  | mm | 1.000 | 0.800 | 0.630 | 0.500 | 0.400 | 0.315 | 0.250 | 0.200 | 0.160 | 0.125 | 0.100 | <b>Single Layer</b> | Turns | 11 | 14 | 18 | 23 | 29 | 37 | 47 | 59 | 74 | 93 | 116 |  | Rdc(Ω) | 4.2 m | 8.4 m | 17.3 m | 35.1 m | 70.3 m | 142.7 m | 288.3 m | 575.7 m | 1.1 | 2.3 | 4.6 | <b>Full Winding</b> | Turns | 10 | 16 | 25 | 38 | 59 | 91 | 141 | 219 | 339 | 524 | 812 |  | Rdc(Ω) | 3.8 m | 9.6 m | 24.0 m | 58.0 m | 143.1 m | 351.0 m | 865.0 m | 2.1 | 5.3 | 12.9 | 31.9 |  |
| Wire Size                  | AWG   | 18                   | 20    | 22     | 24     | 26      | 28      | 30      | 32      | 34    | 36    | 38    |    |    |  |    |       |       |       |       |       |       |       |       |       |       |       |                     |       |    |    |    |    |    |    |    |    |    |    |     |  |        |       |       |        |        |        |         |         |         |     |     |     |                     |       |    |    |    |    |    |    |     |     |     |     |     |  |        |       |       |        |        |         |         |         |     |     |      |      |  |
|                            | mm  | 1.000                | 0.800 | 0.630  | 0.500  | 0.400   | 0.315   | 0.250   | 0.200   | 0.160 | 0.125 | 0.100 |    |    |  |    |       |       |       |       |       |       |       |       |       |       |       |                     |       |    |    |    |    |    |    |    |    |    |    |     |  |        |       |       |        |        |        |         |         |         |     |     |     |                     |       |    |    |    |    |    |    |     |     |     |     |     |  |        |       |       |        |        |         |         |         |     |     |      |      |  |
| <b>Single Layer</b>        | Turns   | 11                   | 14    | 18     | 23     | 29      | 37      | 47      | 59      | 74    | 93    | 116   |    |    |  |    |       |       |       |       |       |       |       |       |       |       |       |                     |       |    |    |    |    |    |    |    |    |    |    |     |  |        |       |       |        |        |        |         |         |         |     |     |     |                     |       |    |    |    |    |    |    |     |     |     |     |     |  |        |       |       |        |        |         |         |         |     |     |      |      |  |
|                            | Rdc(Ω)  | 4.2 m                | 8.4 m | 17.3 m | 35.1 m | 70.3 m  | 142.7 m | 288.3 m | 575.7 m | 1.1   | 2.3   | 4.6   |    |    |  |    |       |       |       |       |       |       |       |       |       |       |       |                     |       |    |    |    |    |    |    |    |    |    |    |     |  |        |       |       |        |        |        |         |         |         |     |     |     |                     |       |    |    |    |    |    |    |     |     |     |     |     |  |        |       |       |        |        |         |         |         |     |     |      |      |  |
| <b>Full Winding</b>        | Turns   | 10                   | 16    | 25     | 38     | 59      | 91      | 141     | 219     | 339   | 524   | 812   |    |    |  |    |       |       |       |       |       |       |       |       |       |       |       |                     |       |    |    |    |    |    |    |    |    |    |    |     |  |        |       |       |        |        |        |         |         |         |     |     |     |                     |       |    |    |    |    |    |    |     |     |     |     |     |  |        |       |       |        |        |         |         |         |     |     |      |      |  |
|                            | Rdc(Ω)  | 3.8 m                | 9.6 m | 24.0 m | 58.0 m | 143.1 m | 351.0 m | 865.0 m | 2.1     | 5.3   | 12.9  | 31.9  |    |    |  |    |       |       |       |       |       |       |       |       |       |       |       |                     |       |    |    |    |    |    |    |    |    |    |    |     |  |        |       |       |        |        |        |         |         |         |     |     |     |                     |       |    |    |    |    |    |    |     |     |     |     |     |  |        |       |       |        |        |         |         |         |     |     |      |      |  |

