Elec & Eltek依利安達
E & E Magnetic Products Limited

# LOW COST THT POWER INDUCTORS

## Toroid Type - Vertical Mount

- Available in vertical mount
- Characterized for general purpose use and ripple filters
- Can be used as differential mode inductors in EMI filters
- Can be used as SMPS averaging filter
- Single-layer design
- Operating temperature -40 C to +130 C
- RoHS compliant

**ELECTRICAL SPECIFICATION @ 25°C**

| Part Number | Reference Operating Values | | | | Design Control Values | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Inductance[1] Typical ( H) | IDC (A) | ETOP (V- Sec) | Energy[2] Storage ( J) | Inductance[3] No DC ( H) 20% | Inductance[4] Test Volt. (mV) | DCR[5] ( Max) | Coil Size Code | Lead Diameter (Inch) .003 |
| 831-00167F | 20 | 2.0 | 52 | 40 | 32.8 | 33 | .060 | 8 | .020 |
| 831-00168F | 25 | 2.6 | 30 | 85 | 20.7 | 22 | .043 | 1 | .020 |
| 831-00169F | 50 | 2.6 | 50 | 169 | 45.7 | 45 | .071 | 2 | .020 |
| 831-00170F | 100 | 2.6 | 90 | 338 | 94.1 | 90 | .100 | 3 | .020 |
| 831-00171F | 35 | 2.6 | 55 | 118 | 28.4 | 36 | .037 | 2 | .025 |
| 831-00172F | 70 | 3.0 | 85 | 315 | 61.0 | 73 | .052 | 3 | .025 |
| 831-00173F | 145 | 3.0 | 140 | 653 | 141.8 | 140 | .087 | 4 | .025 |
| 831-00174F | 285 | 3.0 | 300 | 1283 | 264.1 | 340 | .140 | 5 | .025 |
| 831-00175F | 450 | 3.0 | 425 | 2025 | 436.3 | 500 | .200 | 6 | .025 |
| 831-00053F | 67 | 3.6 | 130 | 434 | 90.7 | 110 | .045 | 4 | .032 |
| 831-00176F | 165 | 4.0 | 240 | 1320 | 152.0 | 260 | .070 | 5 | .032 |
| 831-00177F | 270 | 4.0 | 350 | 2160 | 263.9 | 400 | .100 | 6 | .032 |
| 831-00178F | 40 | 4.0 | 70 | 320 | 37.9 | 57 | .027 | 3 | .032 |
| 831-00179F | 22 | 5.0 | 44 | 275 | 20.3 | 37 | .020 | 7 | .032 |
| 831-00180F | 100 | 5.0 | 200 | 1250 | 90.7 | 180 | .034 | 5 | .042 |
| 831-00181F | 170 | 5.0 | 300 | 2125 | 159.7 | 310 | .050 | 6 | .042 |
| 831-00182F | 35.6 | 5.0 | 100 | 445 | 55.6 | 88 | .023 | 4 | .042 |
| 831-00183F | 95 | 7.0 | 225 | 2328 | 96.0 | 200 | .025 | 6 | .051 |
| 831-00184F | 55 | 7.0 | 150 | 1348 | 49.1 | 100 | .017 | 5 | .051 |
| 831-00185F | 55 | 10.0 | 175 | 2750 | 55.9 | 120 | .013 | 6 | .064 |

Notes:

1. Typical inductance occurs at IDC and ETOP values shown.
2. $LI^2/2$ rating is the ability of the inductor to store energy.
3. Inductance is tested at 20kHz.
4. Design control test voltage is critical, inductance increases with voltage.
5. DCR for vertical part measured close to coil.
6. The part temperature (ambient temperature + temperature rise) should not exceed the upper limit of the operating temperature under worst case operating conditions. Circuit design, component placement, PWB trace size and thickness, airflow and other cooling provisions all affect the part temperature. Part temperature should be verified in the end application.

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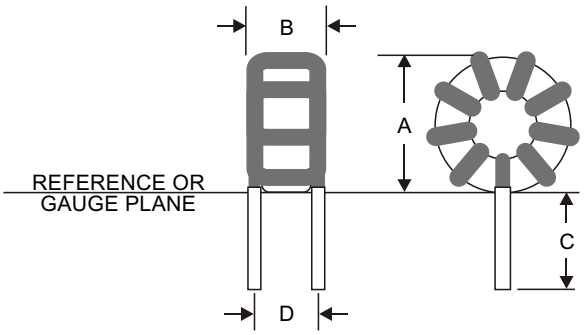
## MECHANICAL DIMENSIONS

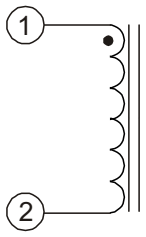
| Size Code | A (Max) | B (Max) | C (+.125/-.025) (+3.18/-0.64) | D (.020) (0.51) |
|---|---|---|---|---|
| 1 | .550<br>13.97 | .250<br>6.35 | .375<br>9.53 | .180<br>4.57 |
| 2 | .700<br>17.78 | .380<br>9.65 | .375<br>9.53 | .280<br>7.11 |
| 3 | .850<br>21.59 | .410<br>10.41 | .375<br>9.53 | .280<br>7.11 |
| 4 | 1.050<br>26.67 | .550<br>13.97 | .375<br>9.53 | .400<br>10.16 |
| 5 | 1.400<br>35.56 | .700<br>17.78 | .375<br>9.53 | .500<br>12.70 |
| 6 | 1.650<br>41.91 | .700<br>17.78 | .375<br>9.53 | .500<br>12.70 |
| 7 | .850<br>21.59 | .330<br>8.38 | .875<br>22.23 | .228<br>5.79 |
| 8 | .640<br>16.26 | .280<br>7.11 | .875<br>22.23 | .280<br>7.11 |




Notes:

7. All dimensions are specified in $\frac{\text{inches}}{\text{mm}}$ with higher precedence in inches.
8. Unless otherwise specified, all tolerances are $\pm\frac{.010}{0.25}$.

## SCHEMATICS




## FOR MORE INFORMATION, PLEASE CONTACT

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