**Features**

Applies to high Q below 40 MHz, for utilization of band transformer range within 200-400 MHz

<table>
<thead>
<tr>
<th>Item</th>
<th>Unit/Symbol</th>
<th>Condition</th>
<th>Value</th>
<th>Tol.</th>
</tr>
</thead>
<tbody>
<tr>
<td>(L_e)</td>
<td>(\text{nH/N}^2)</td>
<td>Typ.</td>
<td>4.6</td>
<td>±5%</td>
</tr>
<tr>
<td>(A_e)</td>
<td>(\text{cm}^2)</td>
<td>N/A</td>
<td>2.68</td>
<td></td>
</tr>
<tr>
<td>(V_e)</td>
<td>(\text{cm}^3)</td>
<td>N/A</td>
<td>0.266</td>
<td>Typ.</td>
</tr>
<tr>
<td>Approx. Material Density</td>
<td>(\text{g/cm}^3)</td>
<td>N/A</td>
<td>5</td>
<td>Typ.</td>
</tr>
<tr>
<td>Permeability</td>
<td>(\mu_r)</td>
<td>N/A</td>
<td>9.0</td>
<td>±5%</td>
</tr>
<tr>
<td>Temperature Stability</td>
<td>(\text{ppm/}^\circ\text{C})</td>
<td>N/A</td>
<td>30</td>
<td>Typ.</td>
</tr>
</tbody>
</table>

**Electrical Specifications**

- \(L = \text{inductance in} \ \text{N}^2\text{H/m}\)
- \(nH = \text{nanohenries}\)
- \(H = \text{oersteds (Oe)}\)
- \(N = \text{Number of turns}\)
- \(I = \text{Current (amperes)}\)
- \(A = \text{Cross-sectional area (cm}^2\))
- \(f = \text{frequency (hertz)}\)
- \(B_{pk} = \text{Gauss (G)}\)

**Resonant Circuit (---) and Broadband Frequency Range (+++)**

Mix | Range (MHz) | 2-50 KHz | 50-250 MHz | 250-500 MHz | 500 KHz-2MHz | 2-10 MHz | 10-40 MHz | 40-150 MHz | 150-250 MHz | 250-500 MHz | 500 MHz to 1GHz |
---|---|---|---|---|---|---|---|---|---|---|---|
42 | 0.3-80 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
8  | 0.02-1 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
1  | 0.15-3 | ++++++ | ++++++ | ++++++ | ++++++ | ++++++ | ++++++ | ++++++ | ++++++ | ++++++ | ++++++ |
15 | 0.15-3 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
7  | 0.25-10 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
4  | 1-25   | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
6  | 3-40   | ++++++ | ++++++ | ++++++ | ++++++ | ++++++ | ++++++ | ++++++ | ++++++ | ++++++ | ++++++ |
10 | 15-100 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
17 | 20-200 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
12 | 30-250 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
0  | 50-350 | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |

**Case Dimensional Tolerances**

- **B (Outer Diameter)**: 0.440 in, 0.020 tol., 11.20 mm, 0.51 tol.
- **A (Inner Diameter)**: 0.229 in, 0.020 tol., 5.82 mm, 0.51 tol.
- **H (Height)**: 0.159 in, 0.020 tol., 4.04 mm, 0.51 tol.
- **Weight**: 1.33 g

**Temperature Rise**: \(\Delta T (^\circ\text{C}) = \frac{\text{Total Power Dissipation (milliwatts)}}{\text{Surface Area (cm}^2\)}\)

**Required turns**: \(\text{desired } L \text{ (nH) } = \frac{\text{desired } L}{A_n \times \frac{N^2}{N^2}}\)

**Peak AC Flux Density**: \(B_{pk} = \frac{E_{rms} \times 10^6}{4ANf}\)

**Magnetizing Force**: \(H = \frac{0.4n NI}{f}\)

For additional detail, specifications and charts see: [http://www.bytemark.com/products/IPCores_index.html](http://www.bytemark.com/products/IPCores_index.html)

**REV** | **ECN** | **DESCRIPTION** | **BY DATE** | **AP DATE**
---|---|---|---|---
A | | Production release | EO 3/7/13 | JL 3/7/13

**Iron Powder Core: Material Mix 7 (Carbonyl TH), White/Clear**

**Parts List**

- **Iron Powder Core: Material Mix 7**
  - **Description**: Carbonyl TH, White/Clear
  - **Part No**: T44-7