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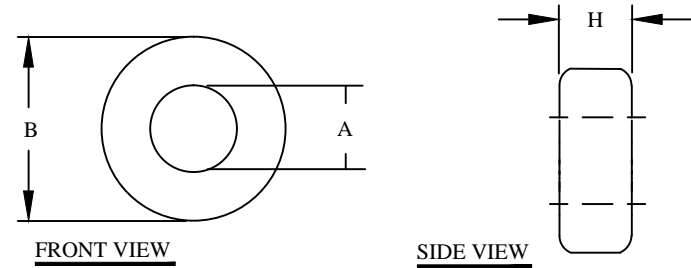
T400-52

Features

Low core loss and good results of general power conversion and line filter administration. Applicable (at ≥50kHz) for Power Factor Correction Chokes, DC Chokes and higher Et/N. Also applies for 60 Hz differential-mode EMI Line Chokes.

| Electrical Specifications | | | | |
|-----------------------------|--|---|----------|-------|
| Item | Unit/Symbol | Condition | Value | Tol. |
| A _L | nH/N ² | AC flux density of 10 gauss (1 mT) @ 10 kHz | 131.0 | ± 10% |
| L _e | cm | N/A | 25.00 | Typ. |
| A _e | cm ² | N/A | 3.460 | Typ. |
| V _e | cm ³ | N/A | 86.400 | Typ. |
| Density | g/cm ³ | N/A | 7.0 | Typ. |
| Permeability | μ ₀ | N/A | 75 | ± 10% |
| Permeability with DC BIAS | %μ ₀ , μ ₀ effective | HDC = 50 Oersted | 59, 44.3 | Typ. |
| Temp. Coef. of Permeability | +ppm/°C | N/A | 650 | Typ. |
| Coef. of Lin. Expansion | +ppm/°C | N/A | 12 | Typ. |
| Thermal Conductivity | mW/cm-°C | N/A | 34 | Typ. |

| REVISION HISTORY | | | | | | |
|------------------|-----|--------------------|-------------|--------|-----|--------|
| REV | ECN | DESCRIPTION | SIGN & DATE | | | |
| | | | BY | DATE | AP. | DATE |
| A | | Production release | EO | 3/7/13 | JL | 3/7/13 |



| Case Dimensional Tolerances | | | | |
|-----------------------------|----------|-------|--------|------|
| | in | tol. | mm | tol. |
| B (Outer Diameter) | 4.000 | 0.030 | 102.00 | 0.76 |
| A (Inner Diameter) | 2.250 | 0.030 | 57.20 | 0.76 |
| H (Height) | 0.650 | 0.030 | 16.50 | 0.76 |
| Weight | 604.80 g | | | |

$$\text{Temperature Rise } \Delta T(^{\circ}\text{C}) = \left[\frac{\text{Total Power Dissipation (milliwatts)}}{\text{Surface Area (cm}^2\text{)}} \right]^{0.833}$$

$$\text{Required turns} = \left[\frac{\text{desired L (nH)}}{A_L \left(\frac{\text{nH}}{\text{N}^2} \right)} \right]^{\frac{1}{2}}$$

$$\text{Peak AC Flux Density: } B_{pk} = \frac{E_{avg} 10^8}{4ANf}$$

$$\text{Magnetizing Force: } H = \frac{0.4\pi NI}{\ell}$$

L = inductance
nH = nanohenries
H = oersteds (Oe)
N = Number of turns
I = Current (amperes)
ℓ = Mean Magnetic Path (cm)
A = Cross-sectional area (cm²)
f = frequency (hertz)
B_{pk} = Gauss (G)

For additional detail, specifications and charts see:

http://www.bytemark.com/products/IPCores_index.html

| Core Loss in mW/cm ³ (extrapolated data from high frequency testing) | | | | | | |
|---|---------|---------|--------|--------|--------|--------|
| Frequency | 60 Hz | 1kHz | 10kHz | 50kHz | 100kHz | 500kHz |
| Condition | @ 5000G | @ 1500G | @ 500G | @ 225G | @ 140G | @ 50G |
| Value | 30 | 56 | 68 | 72 | 58 | 63 |

UNLESS OTHERWISE SPECIFIED
DIMENSIONING AND TOLERANCE PER ANSI Y14.5M
ALL DIMENSIONS ARE IN INCHES AND [MILLIMETERS].
TOLERANCE INCHES:
.XXX=±.005 .XX=±.015 $\angle = \pm 0^{\circ}30'$
TOLERANCE METRICS:
.XXX=±.127 .XX=±.38 $\angle = \pm 0^{\circ}30'$
ANGLE PROJECTION
DO NOT SCALE DRAWING

| CODE IDENT | MFG. P/N | DESCRIPTION | ITEM NO. |
|---------------|-----------|---|---|
| PARTS LIST | | | |
| AUTOCAD | X | www.coilws.com www.cwsbytemark.com | CWSBYTEMARK 353 West Grove Ave. Orange, CA. 92865 |
| SOLIDWORKS | | | |
| DRAWN | EO 3/7/13 | TITLE: Iron Powder Core Material Mix 52, Green/Blue | |
| CHECKED | JL 3/7/13 | | |
| ENGR. | JL 3/7/13 | | |
| APPR. | JL 3/7/13 | | |
| SIZE DWG. NO. | | T400-52 | REV A |
| SCALE | | N/A | SHEET 1 OF 1 |