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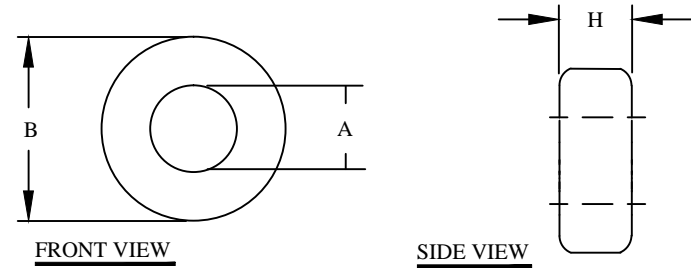
# T184-52

### 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 <sub>L</sub>	nH/N <sup>2</sup>	AC flux density of 10 gauss (1 mT) @ 10 kHz	159.0	± 10%
L <sub>e</sub>	cm	N/A	11.20	Typ.
A <sub>e</sub>	cm <sup>2</sup>	N/A	1.880	Typ.
V <sub>e</sub>	cm <sup>3</sup>	N/A	21.000	Typ.
Density	g/cm <sup>3</sup>	N/A	7.0	Typ.
Permeability	μ <sub>0</sub>	N/A	75	± 10%
Permeability with DC BIAS	%μ <sub>0</sub> , μ <sub>0</sub> 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)	1.840	0.025	46.70	0.64
A (Inner Diameter)	0.950	0.025	24.10	0.64
H (Height)	0.710	0.030	18.00	0.76
Weight	147.00 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 (cm<sup>2</sup>)
- f = frequency (hertz)
- B<sub>pk</sub> = Gauss (G)

**For additional detail, specifications and charts see:**

[http://www.bytemark.com/products/IPCores\\_index.html](http://www.bytemark.com/products/IPCores_index.html)

Core Loss in mW/cm <sup>3</sup> (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 <math>\angle</math>=±0°30'  
 TOLERANCE METRICS:  
 .XXX=±.127 .XX=±.38 <math>\angle</math>=±0°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 SIZE DWG. NO. T184-52 SCALE N/A	
CHECKED	JL 3/7/13		
ENGR.	JL 3/7/13		
APPR.	JL 3/7/13		
		REV	A
		SHEET	1 OF 1