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T106-40

Features

Good results of general power conversion and line filter administration.
 Applicable (at <50kHz) for Power Factor Correction Chokes, DC Chokes and lower Et/N.
 Also applies for 60 Hz differential-mode EMI Line Chokes, and light dimmer chokes.

Electrical Specifications

Item	Unit/Symbol	Condition	Value	Tol.
A _L	nH/N ²	AC flux density of 10 gauss (1 mT) @ 10 kHz	81.0	± 10%
L _e	cm	N/A	6.49	Typ.
A _e	cm ²	N/A	0.659	Typ.
V _e	cm ³	N/A	4.280	Typ.
Density	g/cm ³	N/A	6.9	Typ.
Permeability	μ ₀	N/A	60	± 10%
Permeability with DC BIAS	%μ ₀ , μ ₀ effective	HDC = 50 Oersted	62, 37.2	Typ.
Temp. Coef. of Permeability	+ppm/°C	N/A	950	Typ.
Coef. of Lin. Expansion	+ppm/°C	N/A	11	Typ.
Thermal Conductivity	mW/cm-°C	N/A	36	Typ.

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

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

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

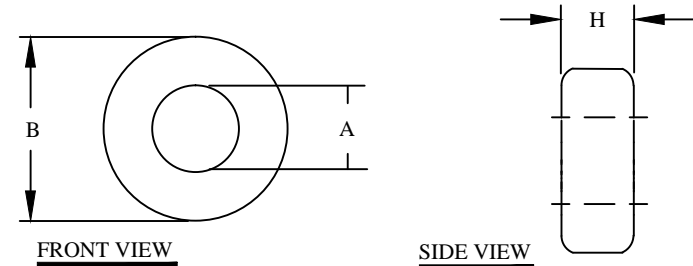
$$\text{Magnetizing Force: } H = \frac{0.4\pi NI}{\ell}$$

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)

Core Loss in mW/cm³ (extrapolated data from high frequency testing)

Frequency	60 Hz	1kHz	10kHz	50kHz	100kHz	500kHz
Condition	@ 5000G	@ 1500G	@ 500G	@ 225G	@ 140G	@ 50G
Value	29	62	93	130	127	223

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)	1.060	0.020	26.90	0.51
A (Inner Diameter)	0.570	0.020	14.50	0.51
H (Height)	0.437	0.025	11.10	0.64
Weight	29.53 g			

For additional detail, specifications and charts see:

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

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 40, Green/Yellow SIZE DWG. NO. T106-40 SCALE N/A	
CHECKED	JL 3/7/13		
ENGR.	JL 3/7/13		
APPR.	JL 3/7/13		
		REV	A
		SHEET	1 OF 1

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