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T44-8 or T44-8/90

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

Features

Low core loss and good results of linearity through high bias administration. Applicable (at \geq 50kHz) for Power Factor Correction Chokes, DC Chokes and higher Et/N.

Electrical Specifications						
Item	Unit/Symbol Condition		Value	Tol.		
A_{L}	nH/N ²	AC flux density of 10 gauss (1 mT) @10 kHz	18.0	± 10%		
Le	cm	N/A	2.68	Тур.		
Ae	cm ²	N/A	0.099	Тур.		
V _e	cm ³	N/A	0.266	Тур.		
Density	g/cm ³	N/A	6.5	Typ.		
Permeability	μ_0	N/A	35	± 10%		
Permeability with DC BIAS	%μ ₀ , μ ₀ effective	HDC = 50 Oerstesd	91, 31.9	Тур.		
Temp. Coef. of Permeability	+ppm/°C	N/A	255	Тур.		
Coef. of Lin. Expansion	+ppm/°C	N/A	10	Тур.		
Thermal Conductivity	mW/cm-°C	N/A	29	Тур.		

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

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

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

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

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	45	64	59	50	35	28	

L = inductancenH = nanohenries

H = oersteds (Oe)

N = Number of turnsI = Current (amperes)

 ℓ = Mean Magnetic Path (cm)

A = Cross-sectiona f = frequency (hert:

 $B_{pk} = Gauss(G)$

B A	-	Н
FRONT VIEW	SIDE VIEW	

Case Dimensional Tolerances						
	in	tol.	mm	tol.		
B (Outer Diameter)	0.440	0.020	11.20	0.51		
A (Inner Diameter)	0.229	0.020	5.82	0.51		
H (Height)	0.159	0.020	4.04	0.51		
Weight 1.73 g						

For additional detail, specifications and charts see:

http://www.bytemark.com/products/IPCores index.html

ic Pain (cm)								
al area (cm²)		CODE	MFG	6. P/N	DESCRIPTION		ON	ITEM NO.
rtz)		PARTS LIST						
	AUTOC	CAD	X	www.coilws.com		CWSBYTEMARK 353 West Grove Ave. Orange, C		,
	SOLID	WORKS						
UNLESS OTHERWISE SPECIFIED	s	SIGN DATE		www.cwsbytemark.com		92865		ige, Cri.
DIMENSIONING AND TOLERANCE PER ANSI Y14.5M	DRAWN	EO	3/7/13	TITLE:	Iron Powder Core Mat			Ror
ALL DIMENSIONS ARE IN INCHES AND [MILIMETERS].	CHECKED	JL	3/7/13					<i>J</i> 01
TOLERANCE INCHES: .XXX=±.005 .XX=±.015 < √=±0°: TOLERANCE METRICS:	ENGR.	JL	3/7/13	SIZE IDWG. NO.	8/90, Yellow/Red			
.XXX=±.127 .XX=±.38 <\(=±0\); ANGLE PROJECTION ⊕	APPR.	JL	3/7/13	B	T44-8 or T44-8/90			REV A
DO NOT SCALE DRAWING		Ü		SCALE	N/A		SHEET 1 O	F 1

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