T60-18

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

SIDE VIEW

Features

Low core loss with linearity and good results through high permeability at lower cost. Applicable (at ≥50kHz) for Power Factor Correction Chokes, DC Chokes and higher Et/N.

Electrical Specifications								
Item	Unit/Symbol	Value	Tol.					
A_L	nH/N ²	AC flux density of 10 gauss (1 mT) @10 kHz	34.5	± 10%				
Le	cm	N/A	3.74	Тур.				
Ae	cm ²	N/A	0.187	Тур.				
Ve	cm ³	N/A	0.699	Тур.				
Density	g/cm ³	N/A	6.6	Тур.				
Permeability	μ_0	N/A	55	± 10%				
Permeability with DC BIAS %μ ₀ , μ ₀ effective		HDC = 50 Oerstesd	74, 40.7	Тур.				
Temp. Coef. of Permeability +ppm/°C		N/A	385	Тур.				
Coef. of Lin. Expansion	+ppm/°C	N/A	11	Тур.				
Thermal Conductivity mW/cm		N/A	21	Тур.				

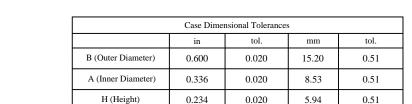
$$Temperature \ Rise: \Delta T(^{\circ}C) = \left[\frac{Total \ Power \ Dissipation \ (milliwatts)}{Surface \ Area \ (cm^{2})}\right]^{0.833}$$

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:
$$H = \frac{0.4\pi\,N\,I}{\ell}$$

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	48	72	70	63	46	37		



FRONT VIEW

Weight 4.61 g

For additional detail, specifications and charts see:

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

A = Cross-sectional area (cm ²)			CODE IDENT	MFG	5. P/N		DESCRIPT	ION	ITEM NO.	
f = frequency (hertz) B _{nk} = Gauss (G)			PARTS LIST							
D _{pk} – Gauss (G)		AUTOCAD X			CW	SBYTEMARK				
		SOLID	WORKS		」 www.coiiws.com _{353 W}		353 West (st Grove Ave. Orange, CA		
	UNLESS OTHERWISE SPECIFIED	s	IGN	DATE	www.cwsby	/temark.com	333 West	92865		
	DIMENSIONING AND TOLERANCE PER ANSI Y14.5M	DRAWN	ЕО	3/7/13	TITLE:	Powder Co	re Mat	erial Miv	rial Mix 18	
	ALL DIMENSIONS ARE IN INCHES AND [MILIMETERS].	CHECKED	JL	3/7/13	110111	ron Powder Core Material Mix 1 Green/Red			,	
	TOLERANCE INCHES: .XXX=±.005 .XX=±.015 < √=±0'30' TOLERANCE METRICS:	ENGR.	JL	3/7/13	SIZE IDWG. NO.	- On	<u> </u>	DEL.		
		APPR.	JL	1 - - - - - - - -		T60-18			A A	
ANGLE PROJECTION 🔴 🖅			JL	3/1/13	B				Α	
	DO NOT SCALE DRAWING				SCALE	N/A		SHEET 1 OF	1	
OAD FUE										

EP FORM0005 REV 3 10/01 CAD-FILE:

L = inductancenH = nanohenries

H = oersteds (Oe)N = Number of turns

I = Current (amperes) ℓ = Mean Magnetic Path (cm)