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T50-6

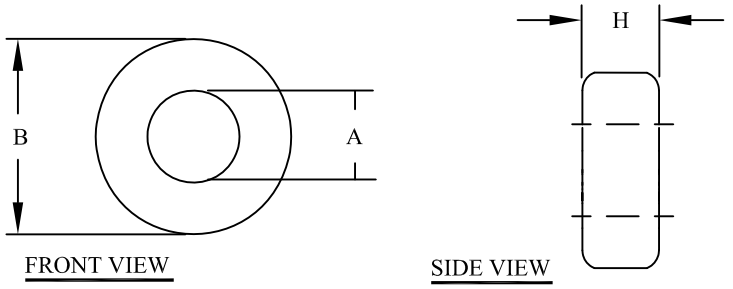
REVISION HISTORY						
REV	ECN	DESCRIPTION	SIGN & DATE			
			BY	DATE	AP.	DATE
A		Production release	EO	3/7/13	JL	3/7/13

Features

Applies to high Q below 40 MHz, for utilization of band transformer range within 200-400 MHz

Electrical Specifications				
Item	Unit/Symbol	Condition	Value	Tol.
A_L	nH/N^2	Typ.	4	± 5%
L_e	cm	N/A	3.19	Typ.
A_e	cm^2	N/A	0.112	Typ.
V_e	cm^3	N/A	0.358	Typ.
Approx. Material Density	g/cm^3	N/A	5.0	Typ.
Permeability	μ_0	N/A	8.5	± 5%
Temperature Stability	+ppm/°C	N/A	35	Typ.

Resonant Circuit (---) and Broadband Frequency Range (+++)											
Mix	Range (MHz)	2-50 KHz	50-250 KHz	250-500 KHz	500KHz-2MHz	2-10 MHz	10-40 MHz	40-150 MHz	150-250 MHz	250-500 MHz	500 MHz to 1GHz
42	0.3-80	----------									
3	0.02-1	----------	----------	----------							
8	0.02-1	----------	----------	----------			++++++++++				
1	0.15-3		----------	----------	----------	----------			+++++++		
15	0.15-3		----------	----------	----------	----------					
2	0.25-10			----------	----------	----------	----------				
7	1-25				----------	----------	----------				
4	3-40					----------	----------				
6	3-40					----------	----------		+++++++		
10	15-100						----------	----------		+++++++	
17	20-200						----------	----------			
12	30-250						----------	----------			
0	50-350							----------	+++	++++	



Case Dimensional Tolerances				
	in	tol.	mm	tol.
B (Outer Diameter)	0.500	0.015	12.70	0.38
A (Inner Diameter)	0.303	0.015	7.70	0.38
H (Height)	0.190	0.020	4.83	0.51
Weight 1.79 g				

For additional detail, specifications and charts see:

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

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

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

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

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

L = inductance
nH = nanohenries
H = oersteds (Oe)
N = Number of turns
I = Current (amperes)
ℓ = Mean Magnetic Path (cm)
A = Cross-sectional area (cm^2)
f = frequency (hertz)
B_{pk} = Gauss (G)

CODE IDENT	MFG. P/N	DESCRIPTION	ITEM NO.
PARTS LIST			

UNLESS OTHERWISE SPECIFIED
DIMENSIONING AND TOLERANCE PER ANSI Y14.5M
ALL DIMENSIONS ARE IN INCHES AND [MILIMETERS].
TOLERANCE INCHES: .XXX=±.005 .XX=±.015 ∠=±0°30'
TOLERANCE METRICS: .XXX=±.127 .XX=±.38 ∠=±0°30'
ANGLE PROJECTION
DO NOT SCALE DRAWING

	SIGN	DATE
AUTOCAD	X	
SOLIDWORKS		
DRAWN	EO	3/7/13
CHECKED	JL	3/7/13
ENGR.	JL	3/7/13
APPR.	JL	3/7/13

www.coilws.com
www.cwsbytemark.com

CWSBYTEMARK
353 West Grove Ave. Orange, CA. 92865

TITLE: Iron Powder Core: Material Mix 6 (Carbonyl SF), Yellow/Clear

SIZE	DWG. NO.	REV
B	T50-6	A

SCALE N/A SHEET 1 OF 1

CAD–FILE: