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T12-7

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.	1.8	± 5%
L _e	cm	N/A	0.75	Typ.
A _e	cm ²	N/A	0.010	Typ.
V _e	cm ³	N/A	0.0077	Typ.
Permeability	μ ₀	N/A	9.0	± 5%
Material Density	g/cm ³	N/A	5.0	Typ.
Temperature Stability	+ppm/°C	N/A	30	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										+++++

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)	0.125	0.005	3.18	0.13
A (Inner Diameter)	0.062	0.005	1.57	0.13
H (Height)	0.050	0.005	1.27	0.13
Weight	0.04 g			

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

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

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

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

L = inductance
 nH = nanohenries
 H = oersteds (Oe)
 N = Number of turns
 I = Current (amperes)
 ℓ = Mean Magnetic Path (cm)
 A = Cross-sectional area (cm²)
 f = frequency (hertz)
 B_{pk} = Gauss (G)

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

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 7 (Carbonyl TH), White/Clear	
CHECKED	JL 3/7/13		
ENGR.	JL 3/7/13		
APPR.	JL 3/7/13		
SIZE DWG. NO.		B T12-7	REV A
SCALE		N/A	SHEET 1 OF 1