

The information contained in this drawing is the sole property of Coil Winding Specialist Inc (CWS). Any reproduction in part or whole without written permission of CWS is prohibited.

T106-3

Features

Highest carbonyl permeability.
Applies to high Q below 1 MHz, for utilization of band transformer range within 50-500 MHz

Electrical Specifications				
Item	Unit/Symbol	Condition	Value	Tol.
A _L	nH/N ²	Typ.	45.0	± 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.
Material Density	g/cm ³	N/A	6.5	Typ.
Permeability	μ ₀	N/A	35	± 10%
Temperature Stability	+ppm/°C	N/A	370	Typ.

Mix	Range (MHz)	Resonant Circuit (---) and Broadband Frequency Range (+++)									
		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)	1.060	0.020	26.90	0.51
A (Inner Diameter)	0.057	0.020	14.50	0.51
H (Height)	0.437	0.025	11.10	0.64
Weight	21.40 g			

For additional detail, specifications and charts see:

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

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

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

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

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

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)

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

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 3 (Carbonyl HP), Gray/Clear	
CHECKED	JL 3/7/13		
ENGR.	JL 3/7/13		
APPR.	JL 3/7/13		
SIZE DWG. NO.		T106-3	REV A
SCALE		N/A	SHEET 1 OF 1