



**Part Number:** **MS-109090-2**  
 Revision 20160816 - Generated 2016-Aug-16



<b>OD</b>	(nom. - bare core) (max. - after coating)	26.92 mm 27.81 mm	1.060 in 1.095 in
<b>ID</b>	(nom. - bare core) (min. - after coating)	14.73 mm 14.10 mm	0.580 in 0.555 in
<b>Ht</b>	(nom. - bare core) (max. - after coating)	18.00 mm 19.00 mm	0.709 in 0.748 in
<b>Mass</b>	(approximate)	38 grams	
<b>Magnetic Dimensions</b>	A <sub>e</sub> - Eff. Mag. Cross Section	1.01 cm <sup>2</sup>	
	L <sub>e</sub> - Eff. Mag. Path Length	6.35 cm	
	V <sub>e</sub> - Eff. Core Volume	6.43 cm <sup>3</sup>	
	WA - Min. Eff. Window Area	1.56 cm <sup>2</sup>	
	sa - Surface Area	35.8 cm <sup>2</sup>	
	mlt - mean length per turn	5.88 cm	
<b>Inductance</b>	μ <sub>i</sub> (reference)	90	
	A <sub>L</sub> value (nominal)	180 nH/N <sup>2</sup>	
	Test Winding	N=80, #26 AWG	
	Frequency	10 kHz	
	Voltage on Agilent 4284A	0.36 V	
AL tolerance	±8%		
<b>Core Loss</b>	$\text{Core Loss (mW/cm}^3\text{)} = \frac{f}{\frac{a}{B_{pk}^3} + \frac{b}{B_{pk}^{2.3}} + \frac{c}{B_{pk}^{1.65}}} + d \cdot B_{pk}^2 \cdot f^2$		
	where B <sub>pk</sub> expressed in gauss, f expressed in hertz, and: a=7.890E+09, b=7.111E+08, c=8.980E+06, d=2.846E-14		
	B <sub>pk</sub>	1000 G	
	frequency	50 kHz	
	Core Loss (nominal)	323 mW/cm <sup>3</sup>	
Core Loss (maximum)	372 mW/cm <sup>3</sup>		
<b>DC Saturation</b>	$\% \mu_i = \frac{1}{a + b \cdot H^c} + d$		
	where H expressed in oersteds, and: a=1.000E-02, b=3.994E-06, c=1.883, d=0.000		
	H <sub>DC</sub>	50 Oe	
	Percent Initial Perm (nom.)	61.3%	
Percent Initial Perm (min.)	52.9%		
<b>Coating/Pkg</b>	Coating Type:	Blue Epoxy	
	Voltage Breakdown (min.)	1000 Vrms	
	Limit	0.1 mA, 5 s	
	Package Quantity	400 Pcs/Box	

<b>Winding Table</b>	<b>Wire Size</b>	AWG	10	12	14	16	18	20	22	24	26	28	30
		mm	2.500	2.000	1.600	1.250	1.000	0.800	0.630	0.500	0.400	0.315	0.250
	<b>Single Layer</b>	Turns	12	16	20	26	33	41	52	66	82	103	129
		Rdc(Ω)	2.3 m	4.9 m	9.7 m	20.1 m	40.6 m	80.2 m	161.7 m	326.4 m	644.9 m	1.3	2.6
<b>Full Winding</b>	Turns	13	20	30	47	73	112	174	269	417	645	998	
	Rdc(Ω)	2.5 m	6.1 m	14.6 m	36.3 m	89.7 m	219.0 m	541.0 m	1.3	3.3	8.1	19.9	

