



**Part Number:** **MS-040090-2**  
 Revision 20160816 - Generated 2016-Aug-16



<b>OD</b>	(nom. - bare core) (max. - after coating)	10.16 mm 10.80 mm	0.400 in 0.425 in
<b>ID</b>	(nom. - bare core) (min. - after coating)	5.08 mm 4.57 mm	0.200 in 0.180 in
<b>Ht</b>	(nom. - bare core) (max. - after coating)	3.96 mm 4.57 mm	0.156 in 0.180 in
<b>Mass</b>	(approximate)	1.4 grams	
<b>Magnetic Dimensions</b>	A <sub>e</sub> - Eff. Mag. Cross Section	0.100 cm <sup>2</sup>	
	L <sub>e</sub> - Eff. Mag. Path Length	2.38 cm	
	V <sub>e</sub> - Eff. Core Volume	0.238 cm <sup>3</sup>	
	WA - Min. Eff. Window Area	0.164 cm <sup>2</sup>	
	sa - Surface Area	4.20 cm <sup>2</sup>	
	mlt - mean length per turn	1.77 cm	
<b>Inductance</b>	μ <sub>i</sub> (reference)	90	
	A <sub>L</sub> value (nominal)	48 nH/N <sup>2</sup>	
	Test Winding	N=55, #30 AWG	
	Frequency	10 kHz	
	Voltage on Agilent 4284A	0.024 V	
	AL tolerance	±12%	
<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	9,000 Pcs/Box	

<b>Winding Table</b>	<b>Wire Size</b>	AWG	20	22	24	26	28	30	32	34	36	38	40
		mm	0.800	0.630	0.500	0.400	0.315	0.250	0.200	0.160	0.125	0.100	0.080
	<b>Single Layer</b>	Turns	12	15	19	25	32	40	50	63	80	100	125
		Rdc(Ω)	7.0 m	14.0 m	28.2 m	59.1 m	120.3 m	239.1 m	475.2 m	952.3 m	1.9	3.8	7.6
<b>Full Winding</b>	Turns	12	18	28	44	68	105	162	251	389	602	931	
	Rdc(Ω)	7.0 m	16.8 m	41.6 m	104.0 m	255.5 m	627.5 m	1.5	3.8	9.4	23.0	56.6	

