



Semi-Shielded Inductor 1.0µH



APPLICATIONS

- · Battery-powered devices
- High-efficiency SMPS
- Embedded computing
- Input filters

FEATURES

- Size 4.9mmx4.9mmx4mm
- Semi-Shielded Construction
- Low DCR
- Low Stray Field
- Max Operating Temp +125°C
- RoHS/REACH-Compliant, Halogen-Free

ELECTRICAL CHARACTERISTICS					
Parameter			Value	Unit	
Inductance (1)	L	±20%	1.0	μH	
Resistance	R _{DC}	typ	9.4	mΩ	
Resistance MAX	RDC MAX	max	11	$\boldsymbol{m\Omega}$	
Rated Current (2)	I _R	typ	7.6	Α	
Saturation Current _{25°C} (3)	ISAT 25°C	typ	10.5	Α	
Saturation Current 100°C (4)	SAT 100°C	typ	9	Α	
Resonance Frequency	fr	typ	105	MHz	

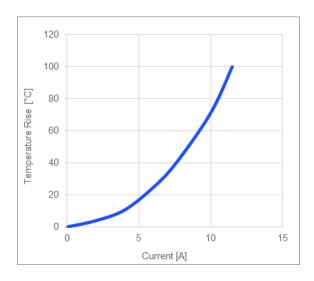
GENERAL SPECIFICATIONS		
(1) Inductance	Measured at 100kHz, 100mA	
(2) Rated Current	Rated current will cause the coil temperature rise ΔT of 40K I_R measured with the inductor soldered in a single-layer PCB. Copper layer thickness 35 μ m Cu / PCB size 30x50mm. Temperature behavior dependent on circuit design, PCB layout, proximity to other components, and trace dimensions and thickness.	
(3) Saturation Current 25°C	Saturation current will cause L to drop from 30% at 25°C ambient temperature	
(4) Saturation Current 100°C	Saturation current will cause L to drop from 30% at 100°C ambient temperature	
Temperature Test Condition	Electrical specifications measured at 25°C, 35% RH if not given differently	
Operating Condition	Operating temperature: -40°C to +125°C (including temp rise)	
	Should not exceed +125°C under worst-case operation conditions	
Storage Condition	Tape and Reel packaging: -10°C to +40°C Humidity: <50% RH	

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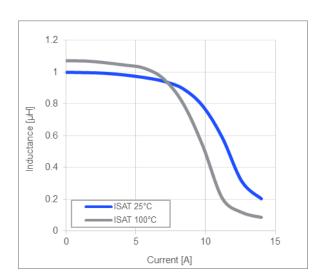


TYPICAL PERFORMANCE CURVES

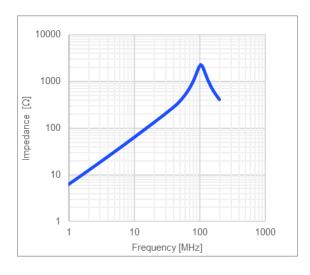
Temperature Rise vs. Current



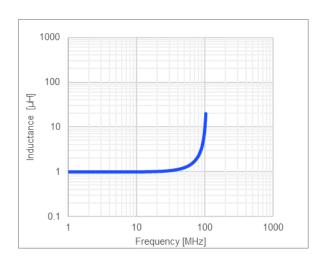
Inductance vs. Current



Impedance vs. Frequency

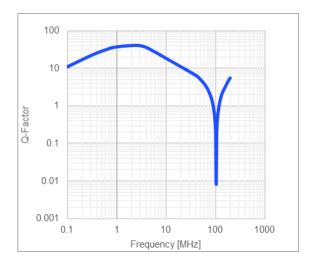


Inductance vs. Frequency

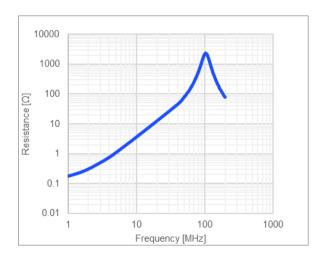




Quality Factor vs. Frequency

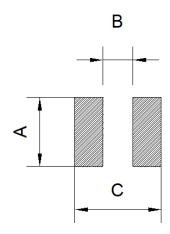


AC Resistance vs. Frequency





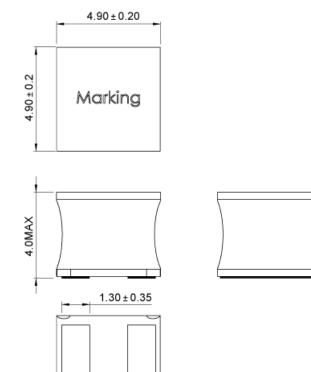
LAND PATTERN			
Dimensions			
А	4.0 ref.		
В	2.10 ref.		
С	5.10 ref.		
	(unit in mm)		



PRODUCT PACKAGE AND DIMENSIONS

Dimensions

(unit in mm)



1.90 ref.

TOP MARKING Marking

Inductance Code 1R0



ORDERING INFORMATION					
Part Number	L (1)	RDC	I _R (2)	I _{SAT 25°C} (3)	ISAT 100°C (4)
	typ (µH)	typ (mΩ)	typ (A)	typ (A)	typ (A)
MPL-SE5040-R47	0.47	7.3	8.0	16	13.5
MPL-SE5040-1R0	1.0	9.4	7.6	10.5	9
MPL-SE5040-1R5	1.5	14	6.2	9.3	8.4
MPL-SE5040-2R2	2.2	16	5.4	7.9	7.3
MPL-SE5040-3R3	3.3	22	5.2	6.4	5.2
MPL-SE5040-4R7	4.7	33	4.3	5	4.6
MPL-SE5040-6R8	6.8	45	3.5	4.6	4
MPL-SE5040-100	10	56	3.2	3.6	3
MPL-SE5040-150	15	83	2.5	2.9	2.6
MPL-SE5040-220	22	124	2.1	2.4	2.15

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