



Low-Resistance Molded Inductor 4.7µH

APPLICATIONS



- Battery-powered devices
- Embedded computing
- High-current SMPS
- High-frequency SMPS
- POL converters
- FPGA

FEATURES

- Size 6.6mmx6.4mmx4.8mm
- Low DCR
- Low AC Losses
- Low Audible Noise
- Molded Construction
- Soft Saturation
- Stable Over High Temperatures
- Max Operating Temp +155°C
- RoHS/REACH-Compliant, Halogen-Free

ELECTRICAL CHARACTERISTICS					
Parameter			Value	Unit	
Inductance (1)	L	±20%	4.7	μH	
Resistance	R _{DC}	typ	16.5	mΩ	
Resistance MAX	RDC MAX	max	18.5	mΩ	
Rated Current (2)	I _R	typ	7.5	Α	
Saturation Current 25°C (3)	ISAT 25°C	typ	11	Α	
Saturation Current 100°C (4)	ISAT 100°C	typ	11	Α	
Resonance Frequency	fr	typ	20	MHz	

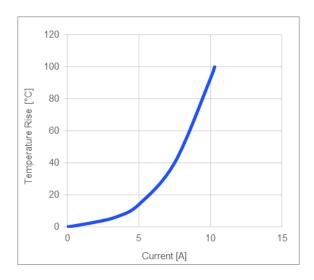
GENERAL SPECIFICATIONS		
(1) Inductance	Measured at 100kHz, 100mA	
(2) Rated Current	Rated current will cause the coil temperature rise ΔT of 40K I_R measured with the inductor soldered in a single-layer PCB. Copper layer thickness 35 μ m Cu / PCB size 30x50mm. Temperature behavior dependent on circuit 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 +155°C (including temp rise)	
	Should not exceed +155°C under worst-case operation conditions	
Storage Condition	Tape and Reel packaging: -10°C to +40°C	
	Humidity: <50% RH	

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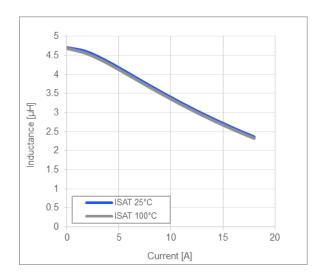


TYPICAL PERFORMANCE CURVES

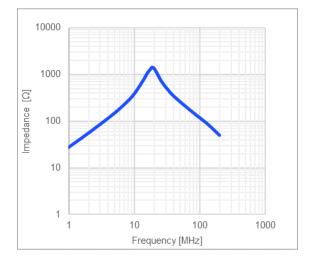
Temperature Rise vs. Current



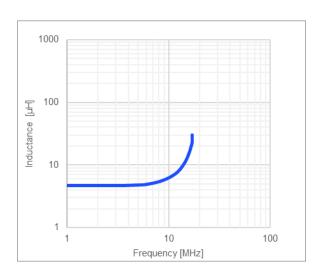
Inductance vs. Current



Impedance vs. Frequency

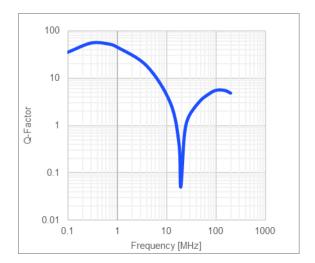


Inductance vs. Frequency

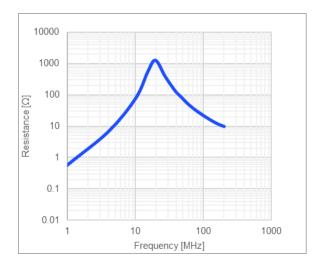




Quality Factor vs. Frequency

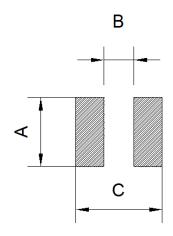


AC Resistance vs. Frequency





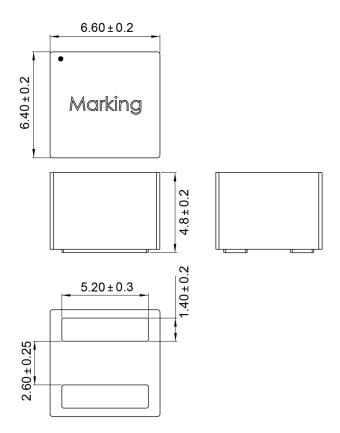
LAND PATTERN		
Dimensions		
Α	5.60 ref.	
В	2.50 ref.	
С	5.60 ref.	
	(unit in mm)	



PRODUCT PACKAGE AND DIMENSIONS

Dimensions

(unit in mm)



TOP MARKING Marking Start of Winding · (dot) Inductance Code 4R7 MPS Code MPS



ORDERING INFORMATION					
Part Number	<u>L</u> (1)	RDC	<i>I</i> _R ⁽²⁾	ISAT 25°C (3)	ISAT 100°C (4)
	typ (µH)	typ (mΩ)	typ (A)	typ (A)	typ (A)
MPL-AL6050-R82	0.82	3.9	16.9	24	24
MPL-AL6050-1R0	1.0	4.3	16.2	21	21
MPL-AL6050-1R2	1.2	5.3	14.6	20	20
MPL-AL6050-1R5	1.5	6.0	13.3	18	18
MPL-AL6050-2R2	2.2	8.3	12.0	15	15
MPL-AL6050-3R3	3.3	11.5	10.1	12	12
MPL-AL6050-4R7	4.7	16.5	7.5	11	11
MPL-AL6050-5R6	5.6	19	7	10	10

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