



Low-Resistance Molded Inductor 6.8µH

APPLICATIONS



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

FEATURES

- Size 5.5mmx5.3mmx4.8mm
- 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%	6.8	μH	
Resistance	R _{DC}	typ	25	mΩ	
Resistance MAX	RDC MAX	max	28.7	mΩ	
Rated Current (2)	I _R	typ	6.1	Α	
Saturation Current _{25°C} (3)	SAT 25°C	typ	7.6	Α	
Saturation Current 100°C (4)	SAT 100°C	typ	7.6	Α	
Resonance Frequency	fr	typ	15	MHz	

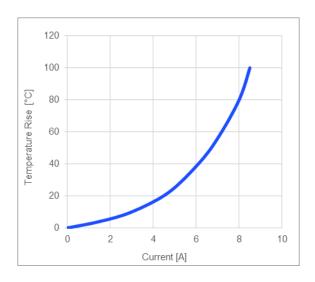
GENERAL SPECIFICATION	IS CONTRACTOR OF THE CONTRACTO
(1) Inductance	Measured at 100kHz, 100mA
(2) Rated Current	Rated current will cause the coil temperature rise ΔT of 40K I_R measured with the inductor soldered in a single-layer PCB. Copper layer thickness 35 μ m Cu / PCB size 30x50mm. Temperature 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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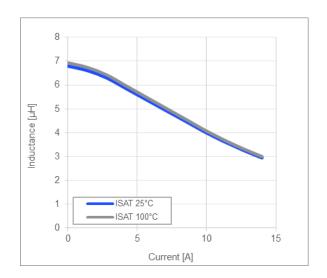


TYPICAL PERFORMANCE CURVES

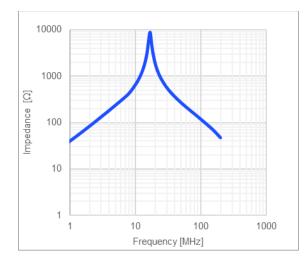
Temperature Rise vs. Current



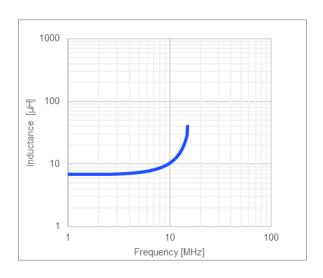
Inductance vs. Current



Impedance vs. Frequency

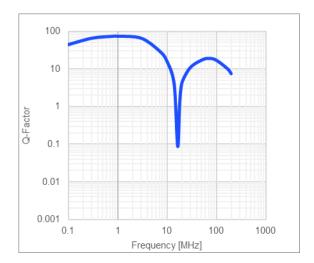


Inductance vs. Frequency

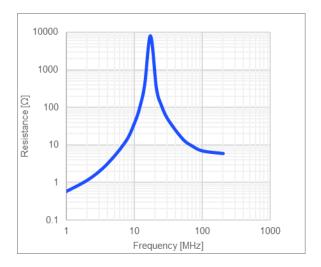




Quality Factor vs. Frequency

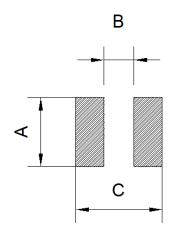


AC Resistance vs. Frequency





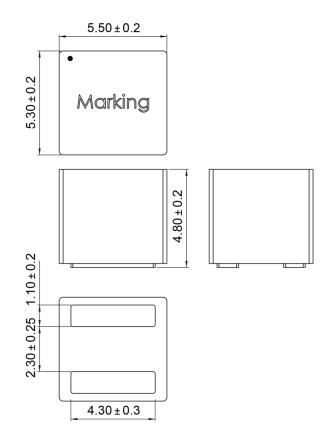
LAND PATTERN		
Dimensions		
Α	4.70 ref.	
В	2.0 ref.	
С	4.50 ref.	
	(unit in mm)	



PRODUCT PACKAGE AND DIMENSIONS

Dimensions

(unit in mm)



TOP MARKING Marking Start of Winding · (dot) 6R8 Inductance Code MPS Code MPS



ORDERING INFORMATION					
Part Number	L (1)	RDC	I _R ⁽²⁾	ISAT 25°C (3)	I SAT 100°C ⁽⁴⁾
	typ (µH)	typ (mΩ)	typ (A)	typ (A)	typ (A)
MPL-AL5050-5R6	5.6	20	6.8	8	8
MPL-AL5050-6R8	6.8	25	6.1	7.6	7.6
MPL-AL5050-8R2	8.2	28	5.8	7.2	7.2

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