



Molded Inductor 10µH



APPLICATIONS

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

FEATURES

- Size 11mmx10mmx4.8mm
- Molded Construction
- Low Audible Noise
- Soft Saturation
- Stable Over High Temperatures
- Max Operating Temp +155°C
- RoHS/REACH-Compliant, Halogen-Free

ELECTRICAL CHARACT	TERISTICS			
Parameter			Value	Unit
Inductance (1)	L	±20%	10	μH
Resistance	R _{DC}	typ	19	mΩ
Resistance MAX	RDC MAX	max	21.9	mΩ
Rated Current (2)	I _R	typ	7.8	Α
Saturation Current _{25°C} (3)	ISAT 25°C	typ	12	Α
Saturation Current 100°C (4)	ISAT 100°C	typ	12	Α
Resonance Frequency	fr	typ	8	MHz

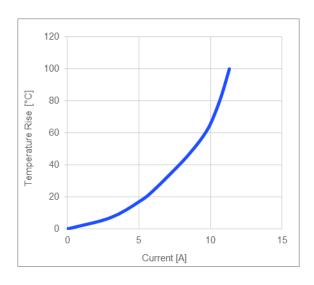
GENERAL SPECIFICATIONS		
(1) Inductance	Measured at 100kHz, 100mA	
(2) Rated Current	Rated current will cause the coil temperature rise ΔT of 40K I_R measured with the inductor soldered in a single-layer PCB. Copper layer thickness 35 μ m Cu / PCB size 30x50mm. Temperature behavior dependent on circuit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

All MPS parts are lead-free, halogen-free, and adhere to the RoHS directive. For MPS green status, please visit the MPS website under Quality Assurance. "MPS", the MPS logo, and "Simple, Easy Solutions" are registered trademarks of Monolithic Power Systems, Inc. or its subsidiaries.

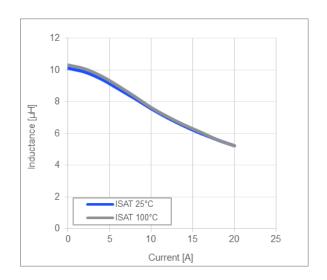


TYPICAL PERFORMANCE CURVES

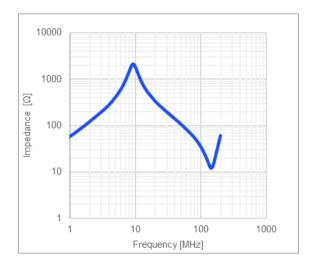
Temperature Rise vs. Current



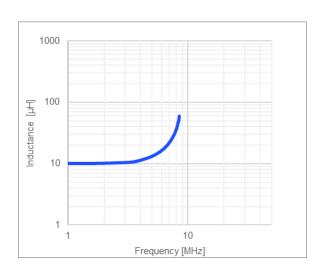
Inductance vs. Current



Impedance vs. Frequency

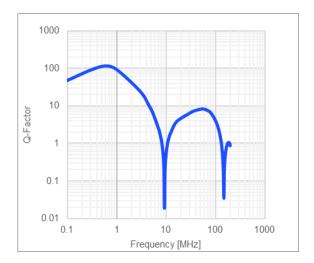


Inductance vs. Frequency

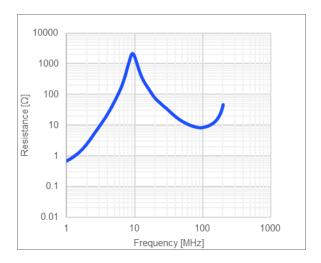




Quality Factor vs. Frequency

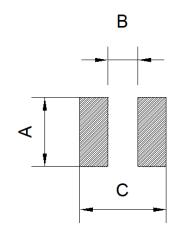


AC Resistance vs. Frequency





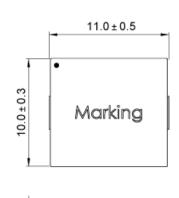
Dimensions A 3.50 ref. B 5.40 ref. C 12.50 ref. (unit in mm)

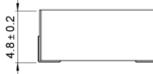


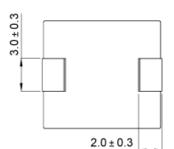
PRODUCT PACKAGE AND DIMENSIONS

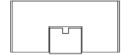
Dimensions

(unit in mm)









TOP MARKING Marking Start of Winding · (dot) Inductance Code 100 MPS Code MPS Date Code YYWW



ORDERING INFORMATION					
Part Number	L (1)	RDC	I _R ⁽²⁾	I _{SAT 25°C} (3)	I _{SAT 100°C} (4)
	typ (µH)	typ (mΩ)	typ (A)	typ (A)	typ (A)
MPL-AY1050-R47	0.47	1.25	25	41	41
MPL-AY1050-R68	0.68	1.75	23	36	36
MPL-AY1050-1R0	1.0	2.6	19	33	33
MPL-AY1050-1R5	1.5	3.4	17	26.5	26.5
MPL-AY1050-2R2	2.2	4.9	15	19.5	19.5
MPL-AY1050-3R3	3.3	8	12.5	17	17
MPL-AY1050-4R7	4.7	9.5	11.5	15	15
MPL-AY1050-5R6	5.6	13	9.8	14	14
MPL-AY1050-6R8	6.8	15	9	13	13
MPL-AY1050-100	10	19	7.8	12	12

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