



Low-Profile Molded Inductor 10µH

APPLICATIONS



- · Battery-powered devices
- High switching frequency SMPS
- IoT
- Wearable
- Portable devices
- Input filters

FEATURES

- Size 2.5mmx2.0mmx1.2mm
- Low Profile
- Low Audible Noise
- Molded Construction
- Soft Saturation
- Stable Over High Temperatures
- Low DCR
- Max Operating Temp +125°C
- RoHS/REACH-Compliant, Halogen-Free

ELECTRICAL CHARACTERISTICS

Parameter			Value	Unit
Inductance (1)	L	±20%	10	μH
Resistance	R _{DC}	typ	355	mΩ
Resistance MAX	R _{DC MAX}	max	400	$\boldsymbol{m\Omega}$
Rated Current (2)	I _R	typ	1.2	Α
Saturation Current _{25°C} (3)	I _{SAT 25°C}	typ	1.7	Α
Saturation Current 100°C (4)	I _{SAT 100°C}	typ	1.7	Α
Resonance Frequency	fr	typ	16	MHz

GENERAL SPECIFICATIONS

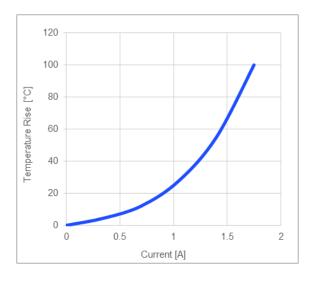
(1) Inductance	Measured at 100kHz, 100mA
(2) Rated Current	Rated current will cause the coil temperature rise ΔT of 40K I_R measured with the inductor soldered in a single-layer PCB. Copper layer thickness 35 μ m Cu / PCB size 30 x 50 m m. Temperature behavior dependent on circuit design, PCB layout, 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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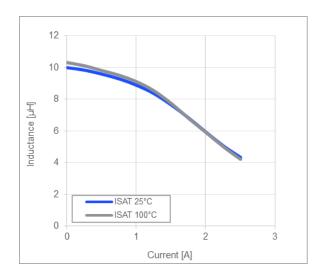


TYPICAL PERFORMANCE CURVES

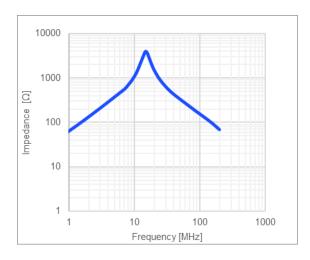
Temperature Rise vs. Current



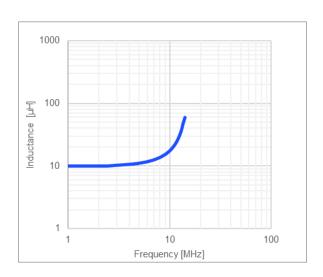
Inductance vs. Current



Impedance vs. Frequency

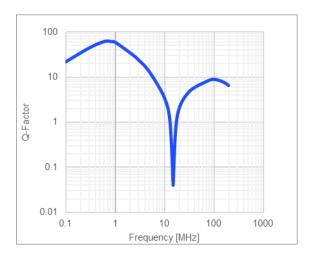


Inductance vs. Frequency

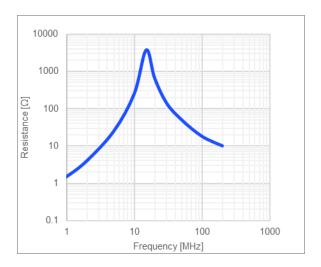




Quality Factor vs. Frequency

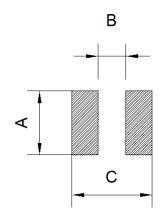


AC Resistance vs. Frequency





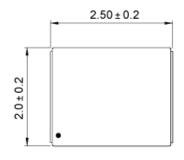
LAND PATTERN			
Dimensions			
Α	2.1 ref.		
В	0.60 ref.		
С	2.60 ref.		
	(unit in mm)		



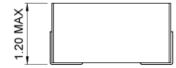
PRODUCT PACKAGE AND DIMENSIONS

Dimensions

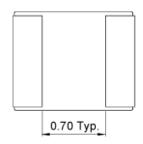
(unit in mm)













ORDERING INFORMATION					
Part Number	L (1)	R _{DC}	I _R ⁽²⁾	ISAT 25°C (3)	Isat 100°C ⁽⁴⁾
	typ (µH)	typ (mΩ)	typ (A)	typ (A)	typ (A)
MPL-AT2512-R33	0.33	13.5	6.4	8.5	8.5
MPL-AT2512-R47	0.47	19	5.5	6.4	6.4
MPL-AT2512-R68	0.68	26	4.7	6	6
MPL-AT2512-1R0	1.0	35	4.0	5.2	5.2
MPL-AT2512-1R5	1.5	56	3.2	4.2	4.2
MPL-AT2514-2R2	2.2	70	2.6	3.4	3.4
MPL-AT2512-3R3	3.3	121	2.0	2.7	2.7
MPL-AT2514-4R7	4.7	180	1.7	2.4	2.4
MPL-AT2512-6R8	6.8	280	1.4	2.2	2.2
MPL-AT2512-100	10	355	1.2	1.7	1.7

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Measured at 100kHz, 100mA		
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Saturation current will cause L to drop from 30% at 25°C ambient temperature		
Saturation current will cause L to drop from 30% at 100°C ambient temperature		
Electrical specifications measured at 25°C, 35% RH if not given differently		
Operating temperature: -40°C to +125°C (including temp rise)		
Should not exceed +125°C under worst-case operation conditions		
Tape and Reel packaging: -10°C to +40°C		
Humidity: <50% RH		

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