



Low-Profile Molded Inductor 1.5µH

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

GENERAL SPECIFICATIONS

 RoHS/REACH-Compliant, Halogen-Free

ELECTRICAL CHARACTERISTICS						
Parameter			Value	Unit		
Inductance (1)	L	±20%	1.5	μH		
Resistance	R _{DC}	typ	56	mΩ		
Resistance MAX	RDC MAX	max	68	$\boldsymbol{m\Omega}$		
Rated Current (2)	I _R	typ	4.3	Α		
Saturation Current _{25°C} (3)	ISAT 25°C	typ	4.2	Α		
Saturation Current 100°C (4)	ISAT 100°C	typ	4.2	Α		
Resonance Frequency	f _r	typ	52	MHz		

(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

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.

Tape and Reel packaging: -10°C to +40°C

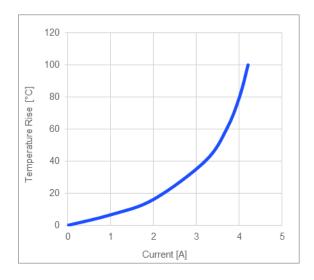
Humidity: <50% RH

Storage Condition

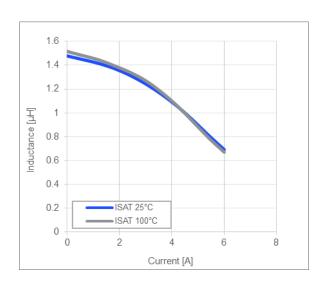


TYPICAL PERFORMANCE CURVES

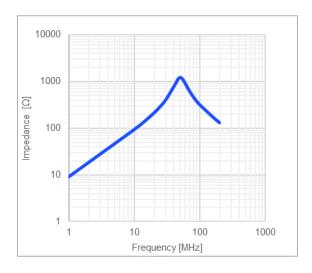
Temperature Rise vs. Current



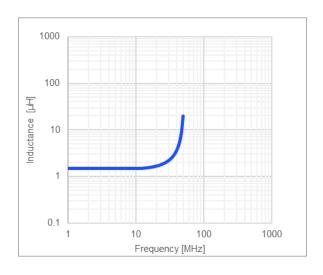
Inductance vs. Current



Impedance vs. Frequency

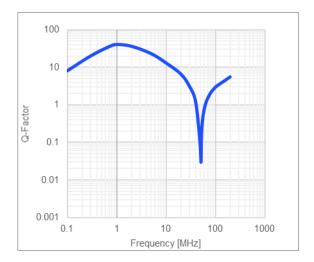


Inductance vs. Frequency

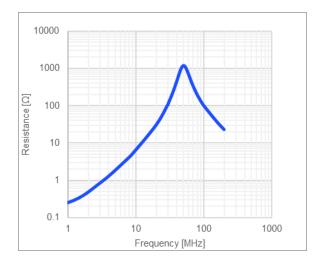




Quality Factor vs. Frequency

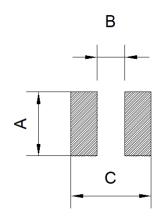


AC Resistance vs. Frequency





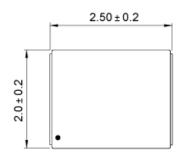
LAND PATTERN		
Dimensions		
Α	2.0 ref.	
В	1.20 ref.	
С	2.80 ref.	
	(unit in mm)	



PRODUCT PACKAGE AND DIMENSIONS

Dimensions

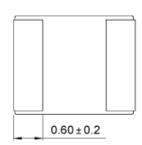
(unit in mm)













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-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

GENERAL SPECIFICATIONS		
Measured at 100kHz, 100mA		
	n a single-layer PCB. Copper layer thickness ature behavior dependent on circuit design,	
urrent 25°C Saturation current will cause L to drop from	om 30% at 25°C ambient temperature	
urrent 100°C Saturation current will cause L to drop from	om 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°	PC .	
Humidity: <50% RH		
Rated current will cause the coil tempera Is measured with the inductor soldered in 35µm Cu / PCB size 30x50mm. Tempera PCB layout, proximity to other componer Saturation current will cause L to drop from Saturation current will cause L to drop fr	in a single-layer PCB. Copper layer thickness ature behavior dependent on circuit design, ints, and trace dimensions and thickness. In 30% at 25°C ambient temperature om 30% at 100°C ambient temperature or 35% RH if not given differently including temp rise) case operation conditions	

NOTICE: The information in this document is subject to change without notice. Please contact MPS for current specifications. Users should warrant and guarantee that third-party Intellectual Property rights are not infringed upon when integrating MPS products into any application. MPS will not assume any legal responsibility for any said applications.

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