

SMD Molded Power Inductors



AMELA6012S Series

Request Samples



Check Inventory



6.1 x 6.1 x 1 mm

RoHS/RoHS II Compliant

MSL Level = 1

Features

- Low loss realized with low DCR.
- High Saturation current
- High performance realized by metal alloy core
- Ultra-low buzz noise, due to molded, composite construction.
- Fully Shielded component
- 100% Lead (Pb)-Free and RoHS compliant.

Applications

- DC/DC Switching power supplies
- Power supplies for Notebooks, workstations, and Servers
- Low Profile applications
- High current, transient load applications
- Consumer applications
- Medical applications
- Telecommunication

Electrical Specifications

Part Number	Inductance	Tolerance	DC Resistance		Irms		Isat	
	0.1MHz/1.0V		Typ.	MAX	Typ.	MAX.	Typ.	MAX.
Units	μH	%	mΩ		A	A	A	A
Symbol	L	M	DCR		Irms	Irms	Isat	Isat
AMELA6012S-R47M	0.47	± 20%	14.3	16.5	8.5	7.8	16.0	14.5
AMELA6012S-R68M	0.68	± 20%	19.5	22.0	7.2	6.7	15.0	13.0
AMELA6012S-1R0M	1.00	± 20%	23.0	26.5	6.5	6.0	12.0	11.0
AMELA6012S-1R5M	1.50	± 20%	28.5	32.8	6.1	5.6	9.0	8.0
AMELA6012S-2R2M	2.20	± 20%	33.2	38.8	5.6	5.1	8.0	7.0
AMELA6012S-3R3M	3.30	± 20%	50.0	60.0	5.0	4.5	7.5	6.5
AMELA6012S-4R7M	4.70	± 20%	70.0	82.0	4.2	3.8	6.3	5.7
AMELA6012S-6R8M	6.80	± 20%	115.0	138.0	3.5	3.0	4.6	4.0
AMELA6012S-100M	10.0	± 20%	150.0	180.0	2.8	2.4	4.0	3.5

Test conditions:

Test Frequency: 1.0V/100KHz

All test data referenced to 25°C ambient temperature.

Operating Voltage: 40V Max.

Operating Temp.: -40°C to +125°C (including self-temperature rise)

Storage Temp.: -40°C to +125°C (on board)

Isat: DC current at which the inductance drops 30% from its value without current.

Irms: DC current that causes the temperature rise (ΔT , approximate 40 °C) from 25°C ambient.

Rated DC Current: The lower value of Irms and Isat

Part Temperature (Ambient + Temp. Rise): Should not exceed 125°C under worst case operating conditions.

Storage Condition (Component in its packaging)

Temperature: Less than 40°C

Humidity: Less than 85% RH



5101 Hidden Creek Ln, Spicewood TX 78669

Phone: 512-371-6159 Fax: 512-351-8858

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2/28/2025

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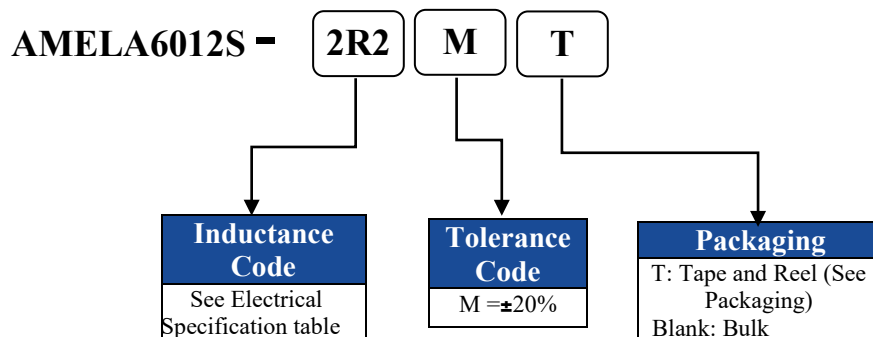


6.1 x 6.1 x 1 mm

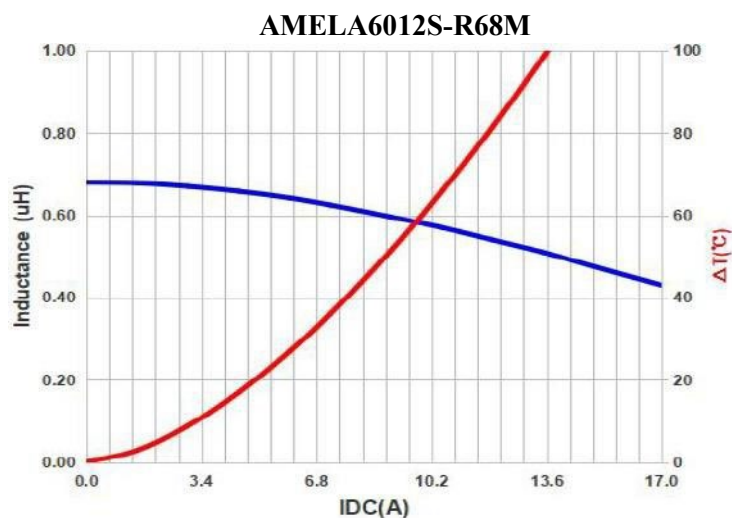
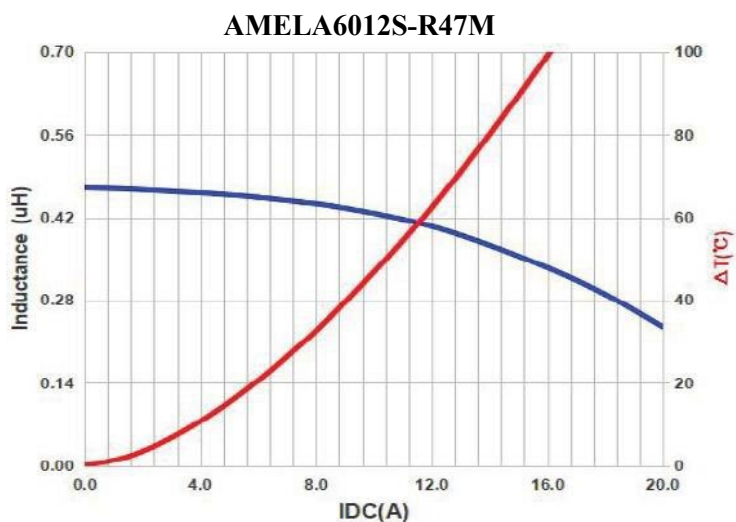
RoHS/RoHS II Compliant

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Part Identification



Performance Graphs



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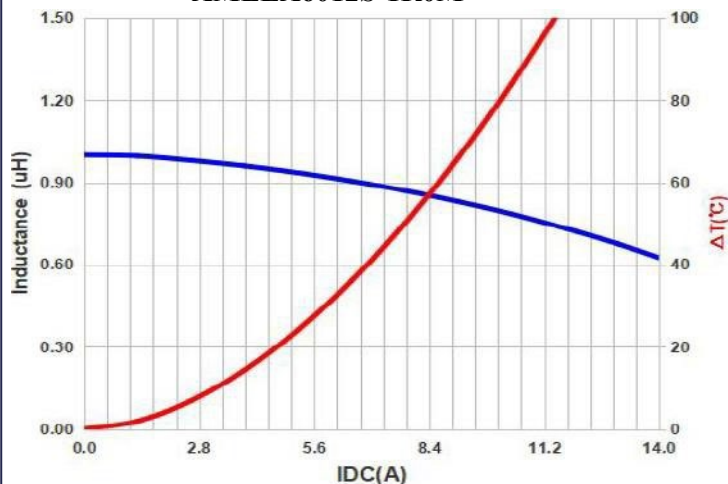


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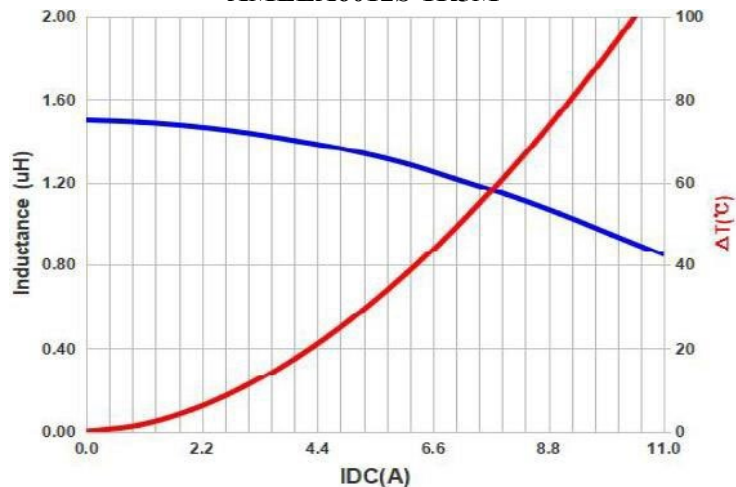
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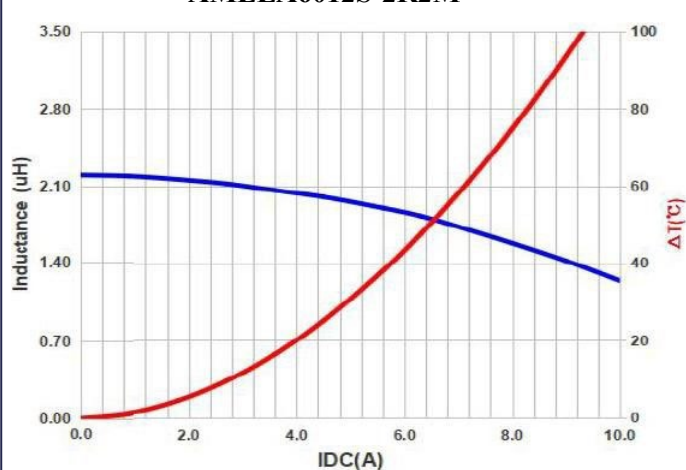
AMELA6012S-1R0M



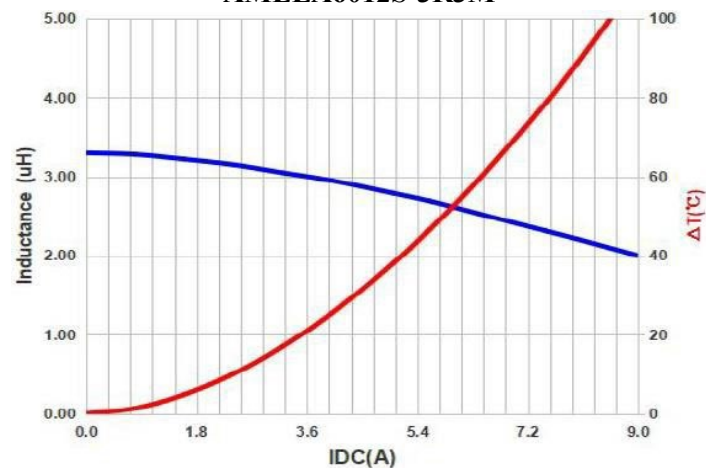
AMELA6012S-1R5M



AMELA6012S-2R2M



AMELA6012S-3R3M



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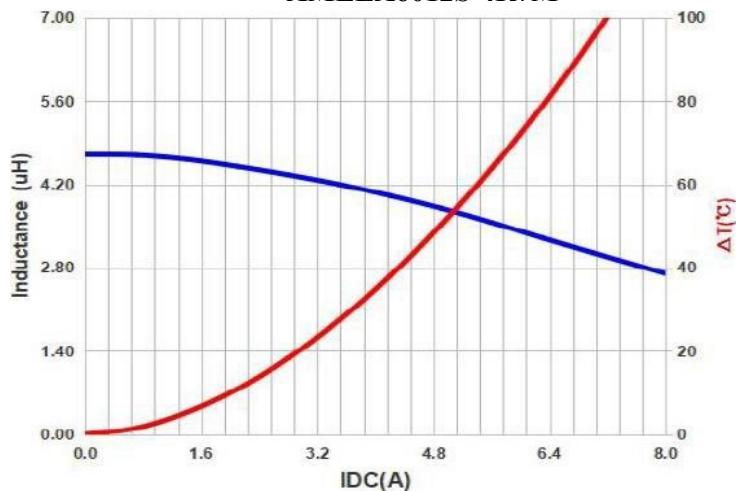


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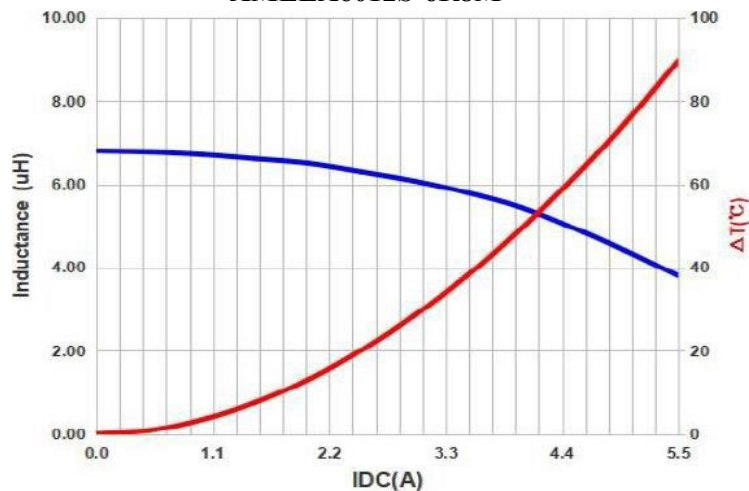
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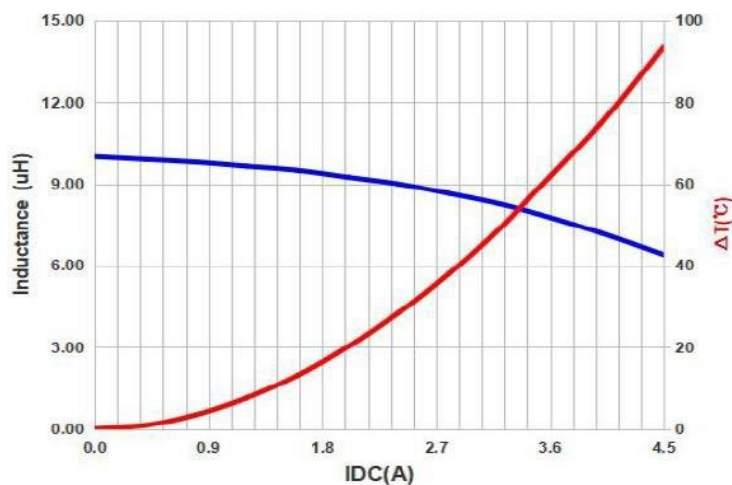
AMELA6012S-4R7M



AMELA6012S-6R8M



AMELA6012S-100M

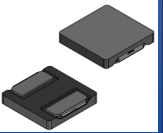


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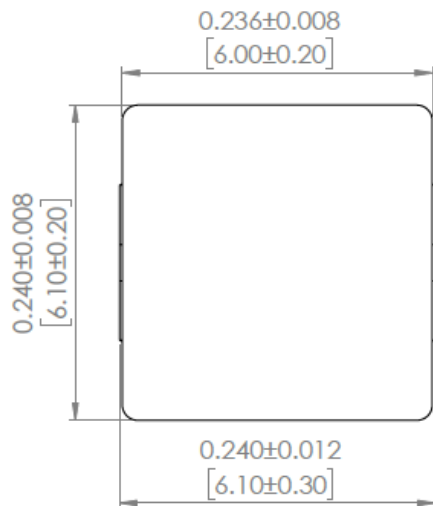
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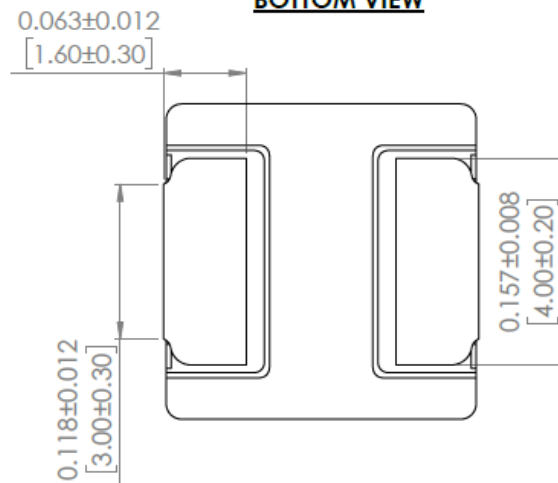
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Mechanical Specifications

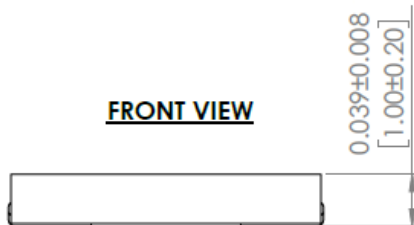
TOP VIEW



BOTTOM VIEW



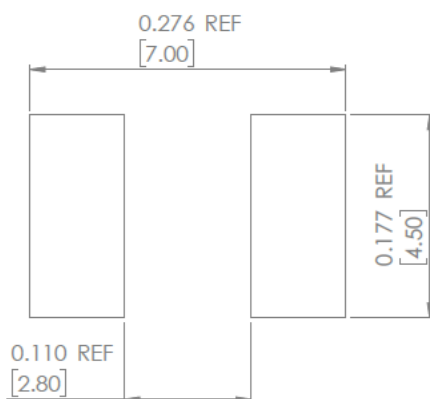
FRONT VIEW



SIDE VIEW



RECOMMENDED LAND PATTERN



DIMENSIONS: INCHES[mm]

Notes:

- The above PCB layout reference only.
- Recommend solder paste thickness at 0.12mm and above.

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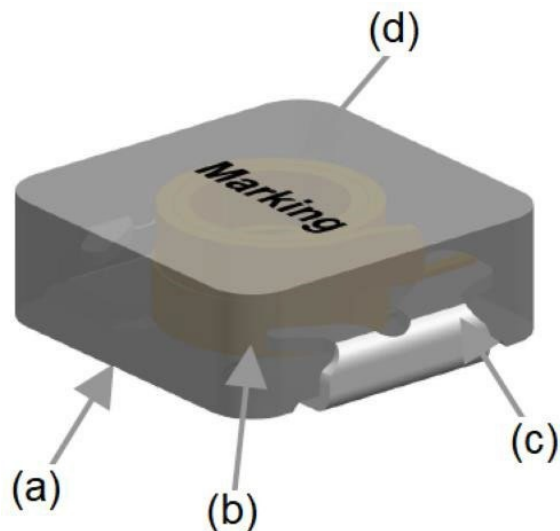


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Materials



(a) Core

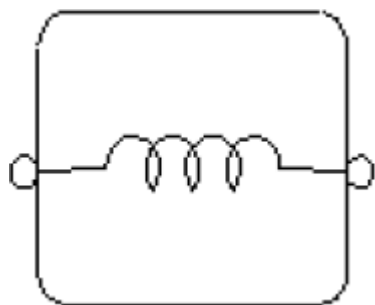
(b) Wire

(c) Clip

(d) Ink

Components	Material
Core	Metal Alloy
Wire	Polyester Wire
Clip	100% Pb free solder (Ni+Sn Plating)
Ink	Halogen-free ketone

Schematic:



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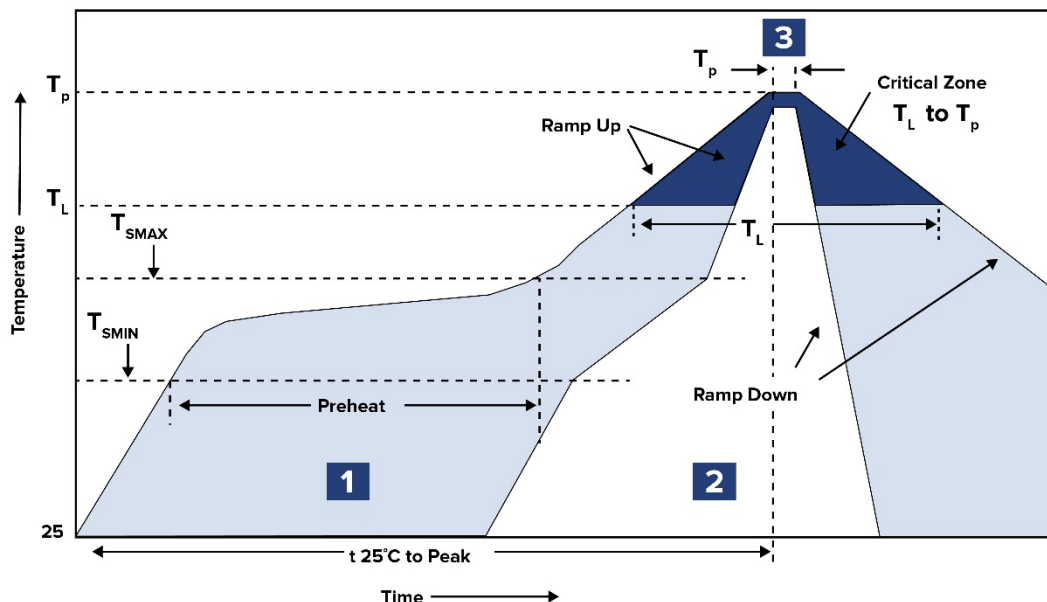


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Reflow Profile



Zone	Description	Temperature	Times
1	Preheat	$T_{SMIN} \sim T_{SMAX}$ 150°C ~ 200°C	60 ~ 120 sec.
2	Reflow	T_L 217°C	60 ~ 150 sec.
3	Peak heat	T_p 255°C	< 30 seconds

Ref.

Solder paste: Sn/3.0Ag/0.5Cu

Ramp up rate: 3°C/s Max.

Ramp down rate: 6°C/s Max.

Reflow is referred to standard IPC/JEDEC J-STD-020E.

Reflow times: 3 times maximum



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