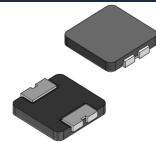


SMD Molded Power Inductors



AMELA5012S Series

[Request Samples](#)[Check Inventory](#)

5.4 x 5.1 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.
Units	µH	%	mΩ		A	A	A	A
Symbol	L	M	DCR		Irms	Irms	Isat	Isat
AMELA5012S-R47M	0.47	± 20%	12.0	14.4	9.0	8.0	12.0	10.0
AMELA5012S-R68M	0.68	± 20%	15.0	18.0	8.0	7.5	11.0	9.5
AMELA5012S-1R0M	1.00	± 20%	21.0	24.0	7.0	6.5	10.0	8.6
AMELA5012S-1R5M	1.50	± 20%	26.0	31.2	6.0	5.5	7.2	6.5
AMELA5012S-2R2M	2.20	± 20%	41.0	49.2	5.0	4.5	6.0	5.5
AMELA5012S-3R3M	3.30	± 20%	61.0	73.2	4.5	4.0	5.2	4.7
AMELA5012S-4R7M	4.70	± 20%	84.0	101.0	3.5	3.0	4.1	3.6
AMELA5012S-6R8M	6.80	± 20%	123.0	148.0	3.0	2.6	3.7	3.3
AMELA5012S-100M	10.0	± 20%	168.0	202.0	2.3	2.0	2.7	2.4

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

SMD Molded Power Inductors

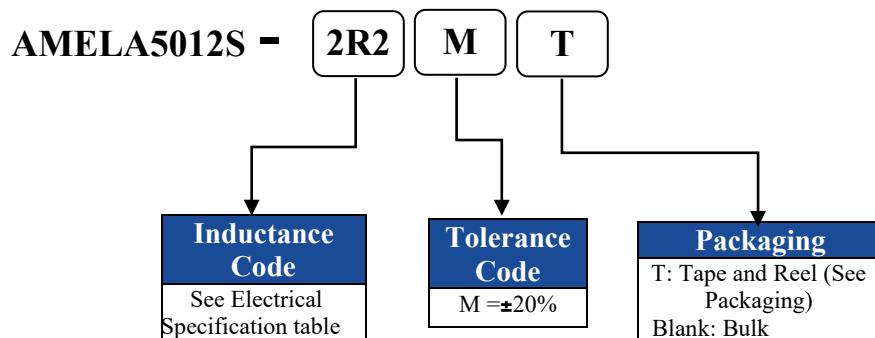


AMELA5012S Series

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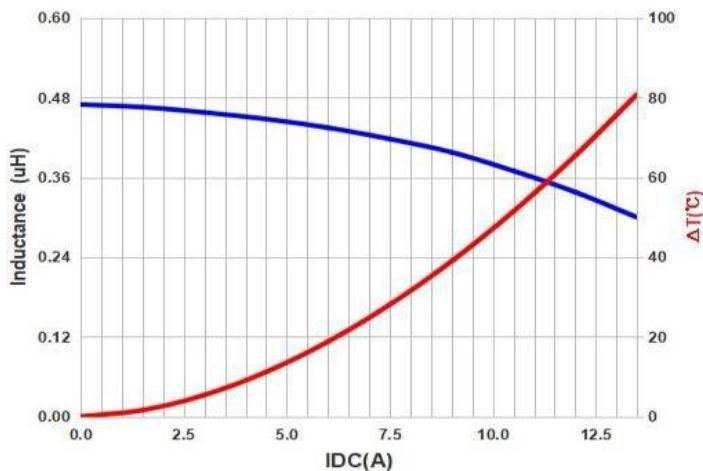
5.4 x 5.1 x 1 mm
RoHS/RoHS II Compliant
MSL Level = 1

Part Identification

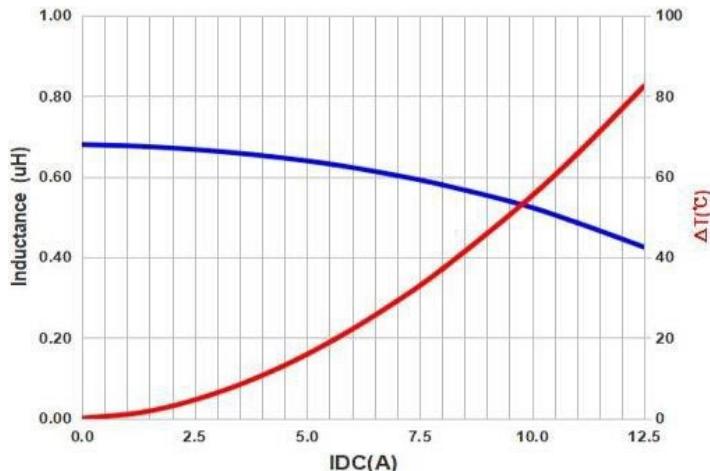


Performance Graphs

AMELA5012S-R47M



AMELA5012S-R68M



SMD Molded Power Inductors



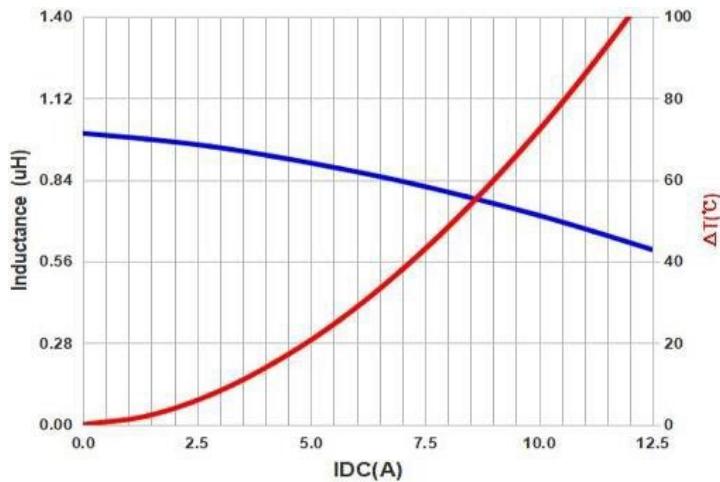
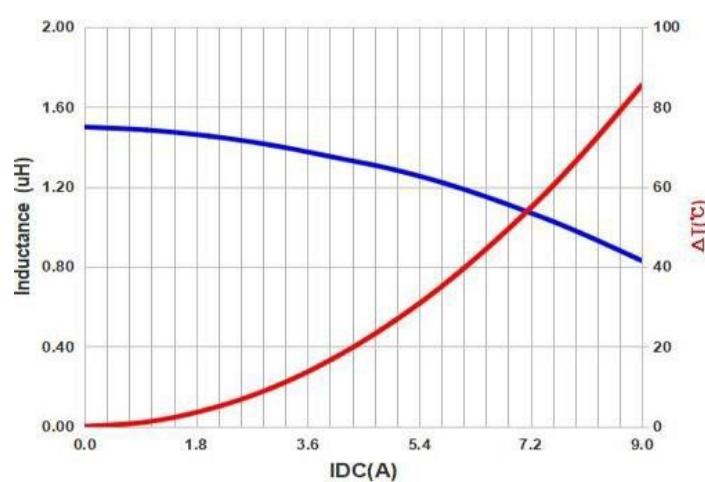
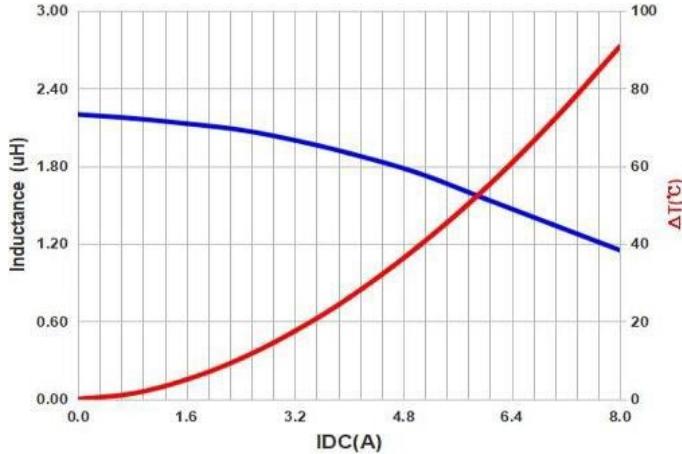
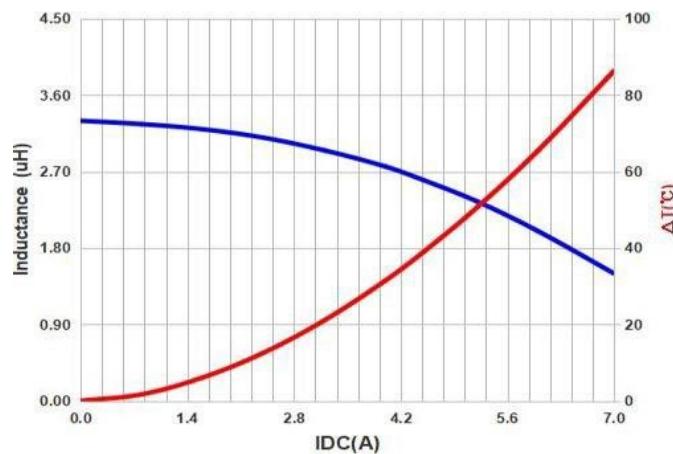
AMELA5012S Series

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5.4 x 5.1 x 1 mm

RoHS/RoHS II Compliant

MSL Level = 1

AMELA5012S-1R0M**AMELA5012S-1R5M****AMELA5012S-2R2M****AMELA5012S-3R3M**

SMD Molded Power Inductors

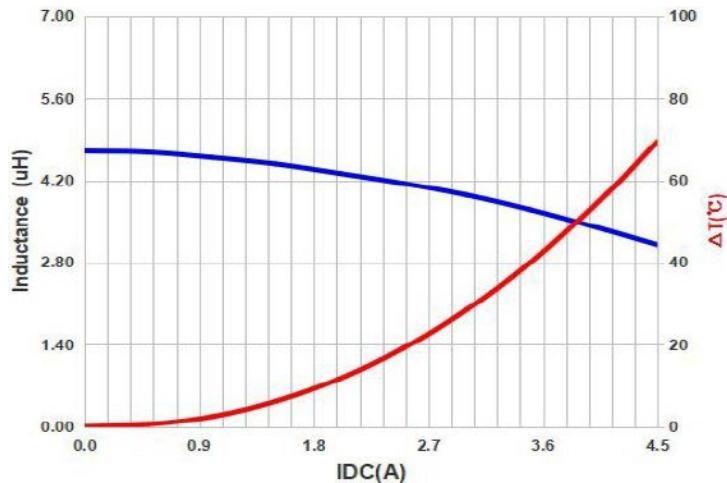


AMELA5012S Series

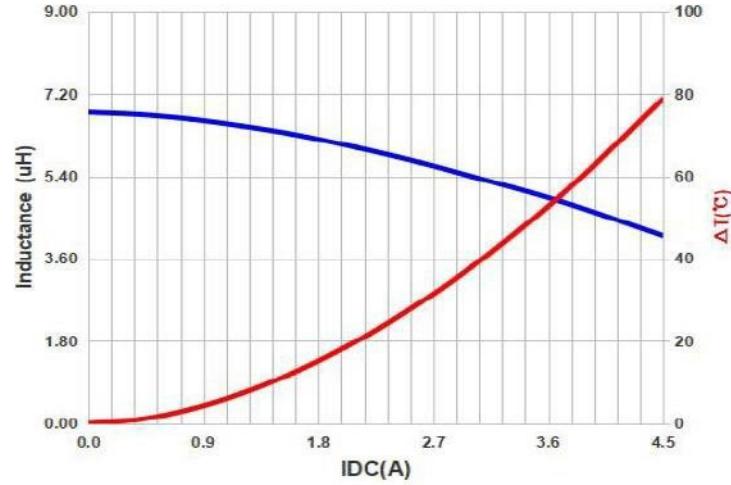
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5.4 x 5.1 x 1 mm
RoHS/RoHS II Compliant
MSL Level = 1

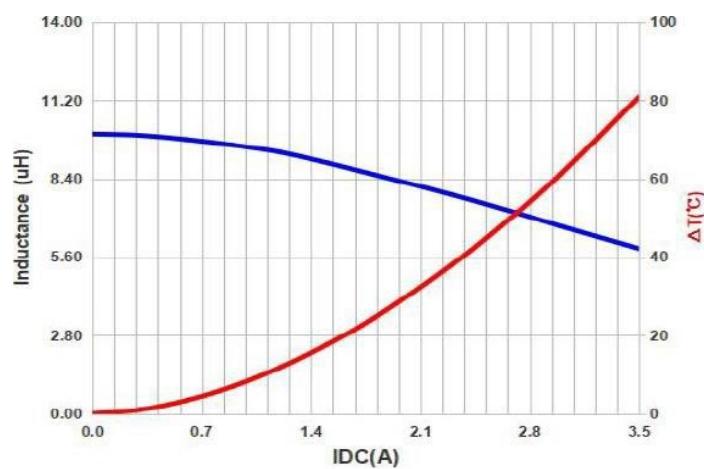
AMELA5012S-4R7M



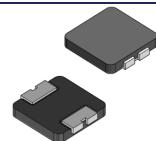
AMELA5012S-6R8M



AMELA5012S-100M



SMD Molded Power Inductors



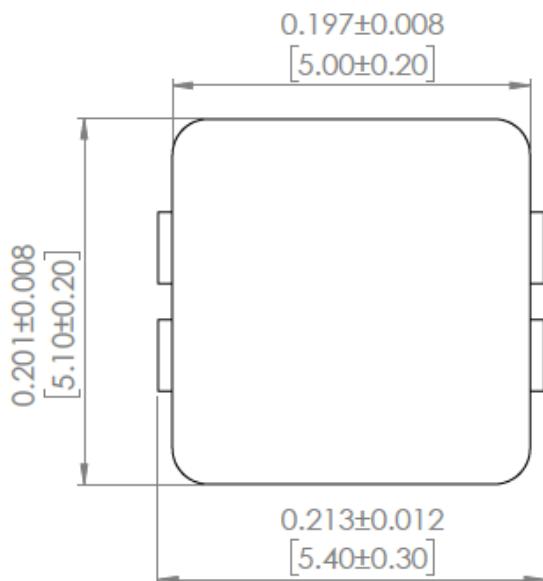
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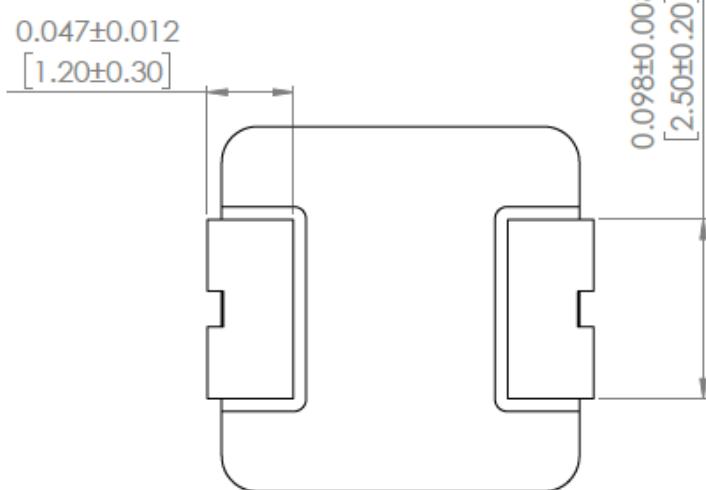
5.4 x 5.1 x 1 mm
RoHS/RoHS II Compliant
MSL Level = 1

Mechanical Specifications

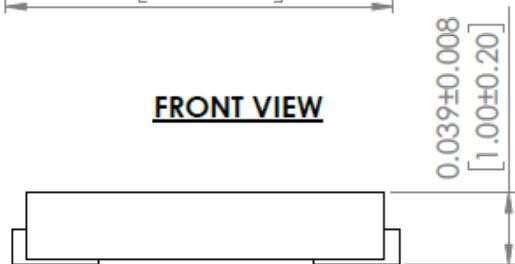
TOP VIEW



BOTTOM VIEW



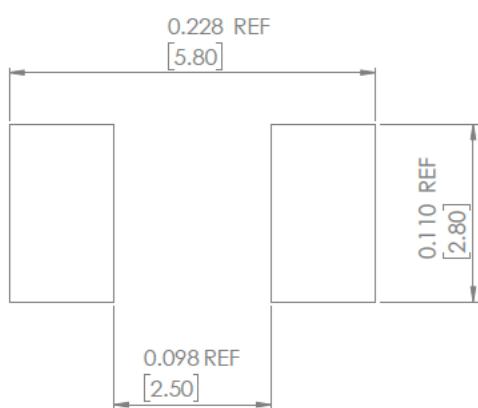
FRONT VIEW



SIDE VIEW



RECOMMENDED LAND PATTERN

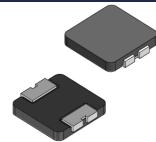


DIMENSIONS: INCHES[mm]

Notes:

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

SMD Molded Power Inductors



AMELA5012S Series

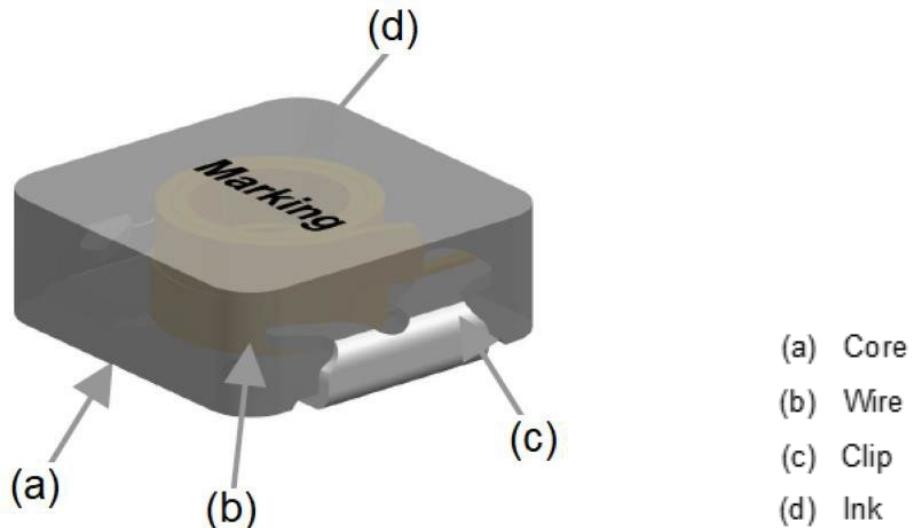
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5.4 x 5.1 x 1 mm

RoHS/RoHS II Compliant

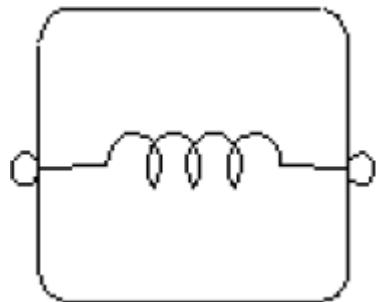
MSL Level = 1

Materials

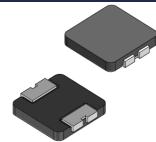


Components	Material
Core	Metal Alloy
Wire	Polyester Wire
Clip	100% Pb free solder (Ni+Sn Plating)
Ink	Halogen-free ketone

Schematic:



SMD Molded Power Inductors



AMELA5012S Series

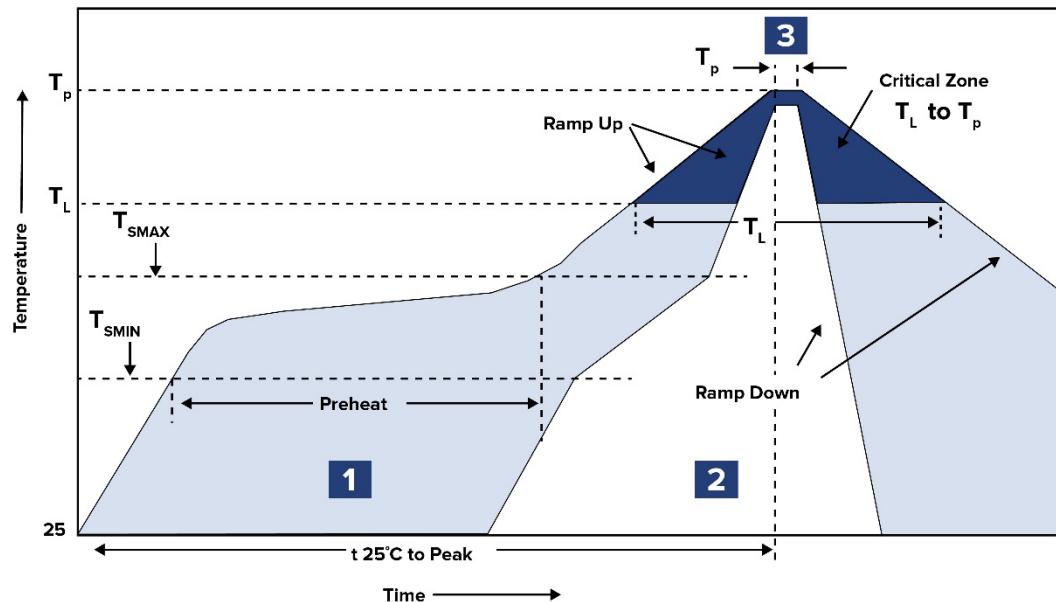
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5.4 x 5.1 x 1 mm

RoHS/RoHS II Compliant

MSL Level = 1

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

SMD Molded Power Inductors



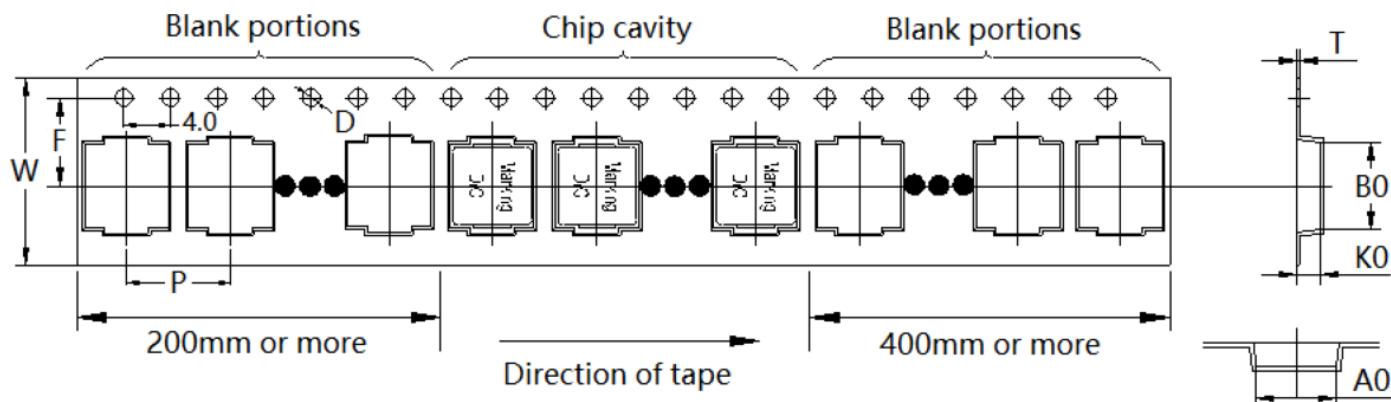
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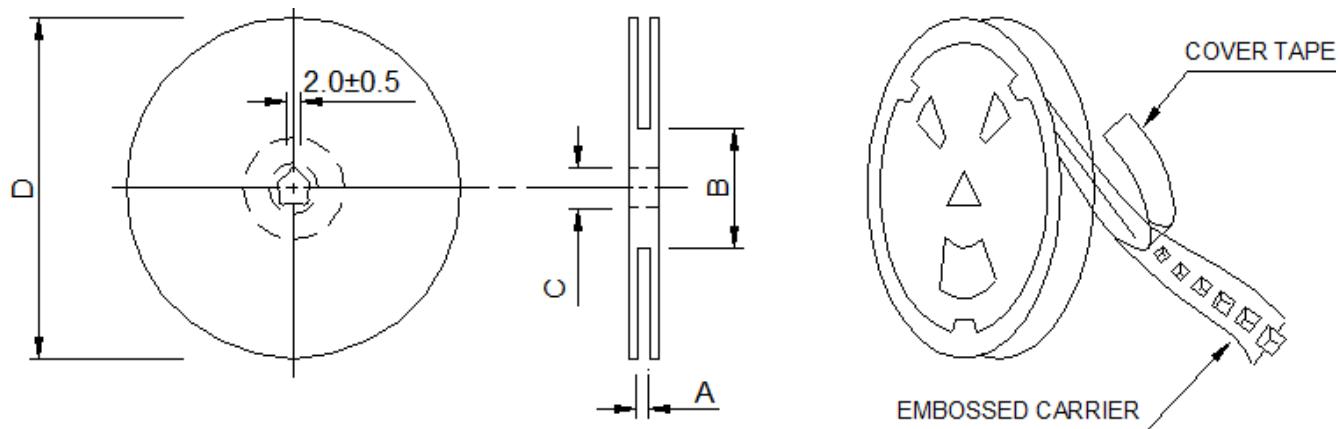
5.4 x 5.1 x 1 mm
RoHS/RoHS II Compliant
MSL Level = 1

Packaging

Tape & Reel: 4000 pcs/reel



B0	A0	K0	P	W	F	T	D
6.20 Ref	5.60 Ref	1.40 Ref	8.00±0.10	12.00±0.30	5.50±0.10	0.35±0.05	1.50±0.10



Type	A	B	C	D
13" x 12mm	12.4+2.0/-0.0	100.0±2.0	13.0+0.5/-0.2	330.0

Dimensions: mm

ATTENTION: Abracon LLC's products are Commercial-Off-The-Shelf (COTS, which are designed, intended and validated for use in commercial, industrial and automotive applications. The customer is responsible for testing and verifying the performance of an Abracon solution to meet their system-level requirements.



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REVISION Initial Release :
2/28/2025

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