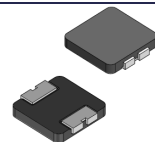


SMD Molded Power Inductors



AMELA5012S Series

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5.4 x 5.1 x 1 mm

RoHS/RoHS II Compliant

MSL Level = 1

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	μ H	%	m Ω		A	A	A	A
Symbol	L	M	DCR		Irms	Irms	Isat	Isat
AMELA5012S-R47M	0.47	$\pm 20\%$	12.0	14.4	9.0	8.0	12.0	10.0
AMELA5012S-R68M	0.68	$\pm 20\%$	15.0	18.0	8.0	7.5	11.0	9.5
AMELA5012S-1R0M	1.00	$\pm 20\%$	21.0	24.0	7.0	6.5	10.0	8.6
AMELA5012S-1R5M	1.50	$\pm 20\%$	26.0	31.2	6.0	5.5	7.2	6.5
AMELA5012S-2R2M	2.20	$\pm 20\%$	41.0	49.2	5.0	4.5	6.0	5.5
AMELA5012S-3R3M	3.30	$\pm 20\%$	61.0	73.2	4.5	4.0	5.2	4.7
AMELA5012S-4R7M	4.70	$\pm 20\%$	84.0	101.0	3.5	3.0	4.1	3.6
AMELA5012S-6R8M	6.80	$\pm 20\%$	123.0	148.0	3.0	2.6	3.7	3.3
AMELA5012S-100M	10.0	$\pm 20\%$	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



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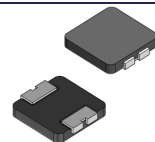
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www.abracon.com

REVISION Initial Release :
2/28/2025

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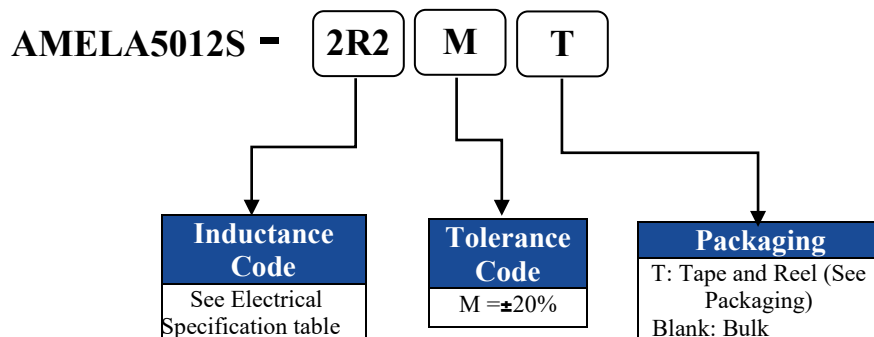


5.4 x 5.1 x 1 mm

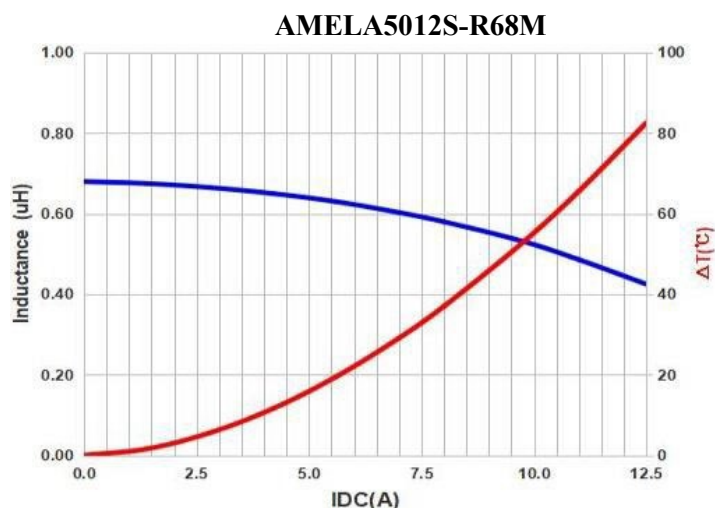
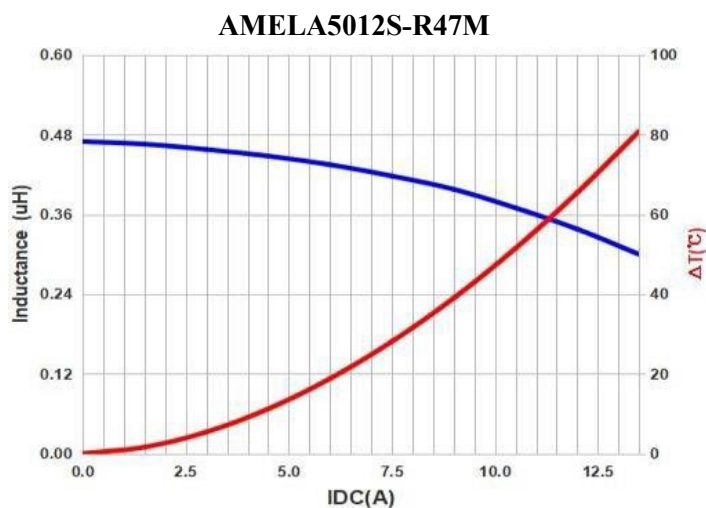
RoHS/RoHS II Compliant

MSL Level = 1

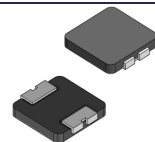
Part Identification



Performance Graphs



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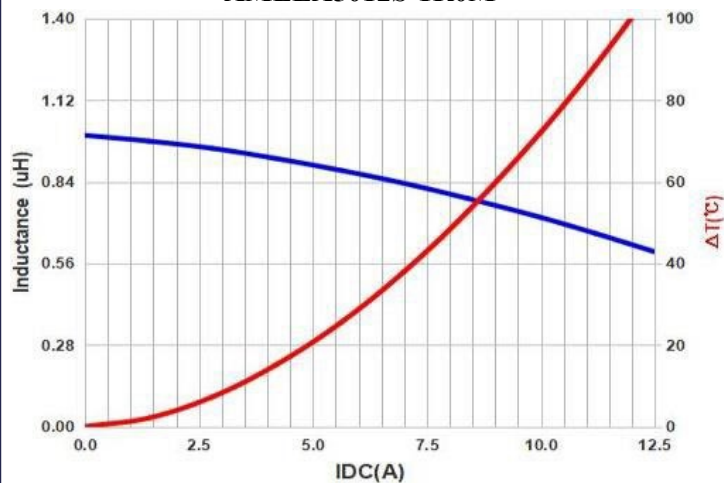


5.4 x 5.1 x 1 mm

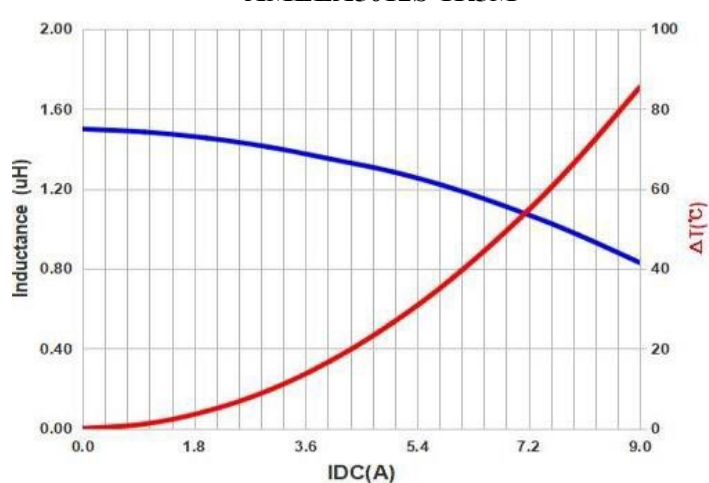
RoHS/RoHS II Compliant

MSL Level = 1

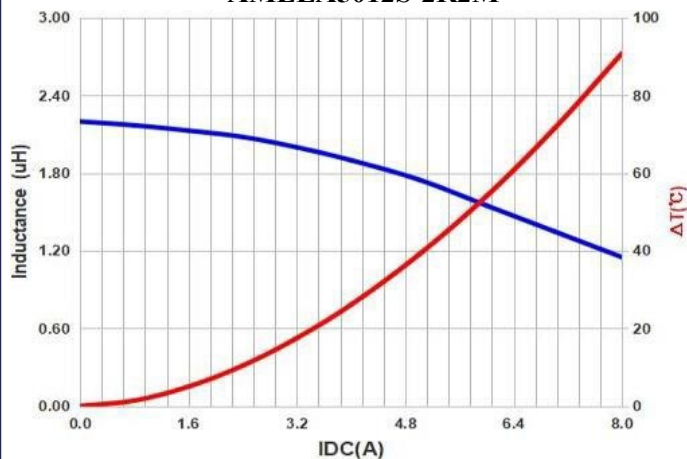
AMELA5012S-1R0M



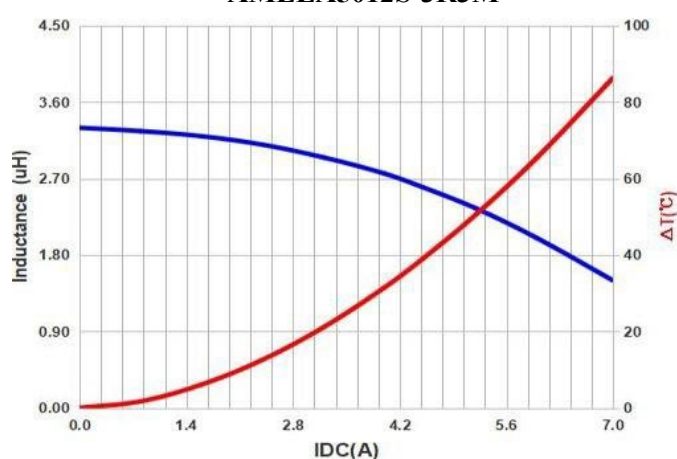
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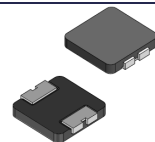
AMELA5012S-2R2M



AMELA5012S-3R3M



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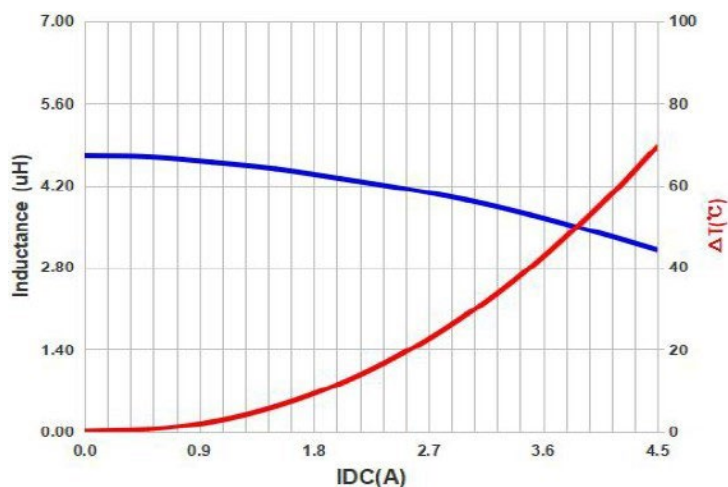


5.4 x 5.1 x 1 mm

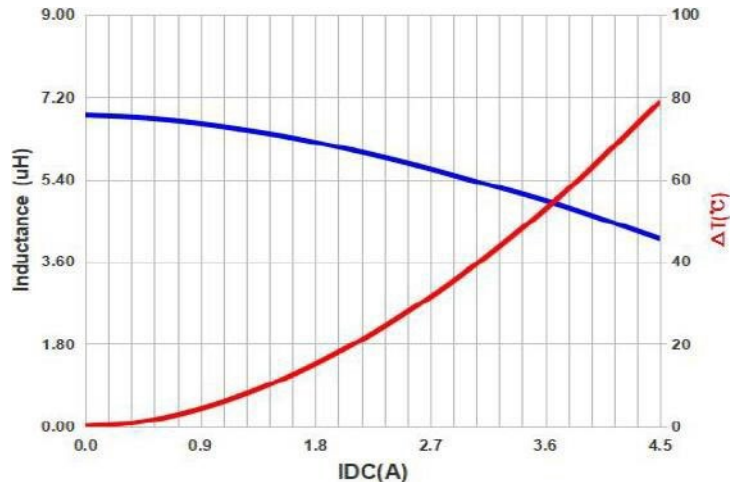
RoHS/RoHS II Compliant

MSL Level = 1

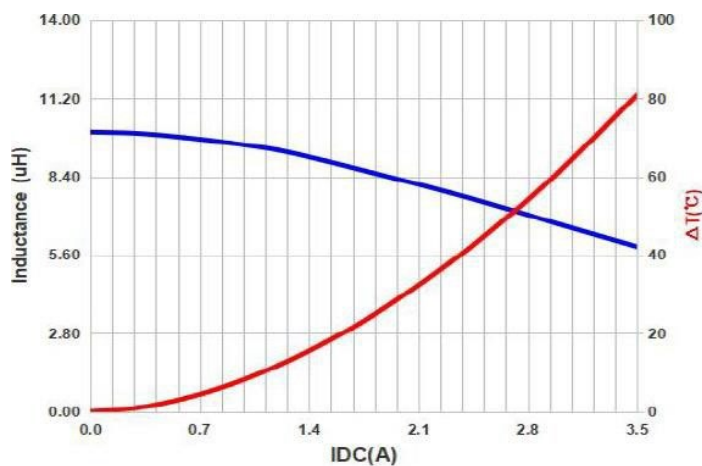
AMELA5012S-4R7M



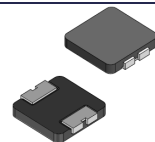
AMELA5012S-6R8M



AMELA5012S-100M



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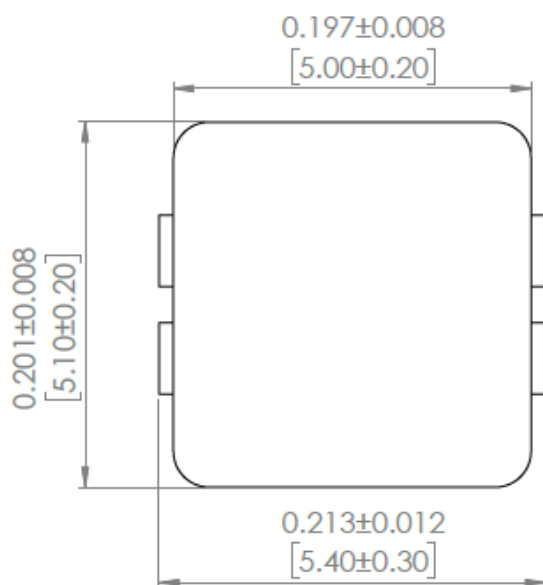
5.4 x 5.1 x 1 mm

RoHS/RoHS II Compliant

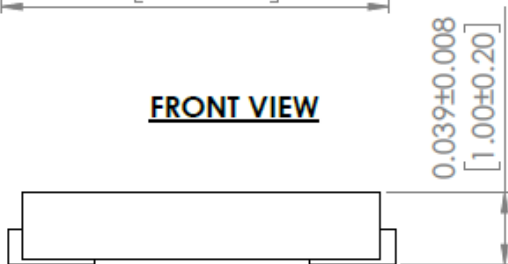
MSL Level = 1

Mechanical Specifications

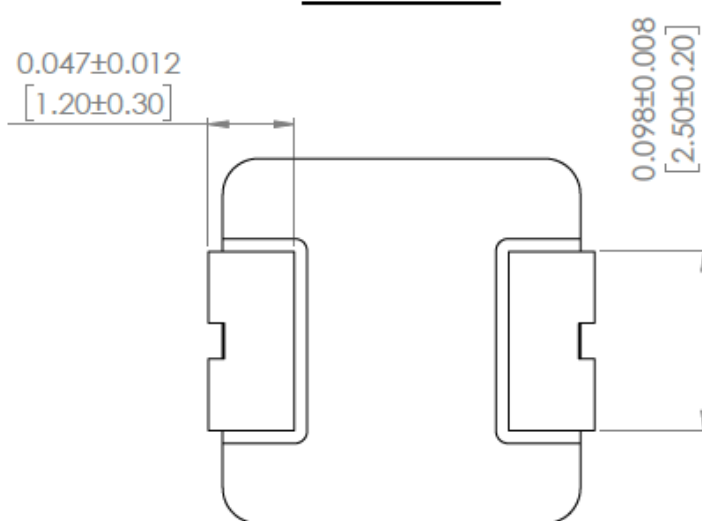
TOP VIEW



FRONT VIEW



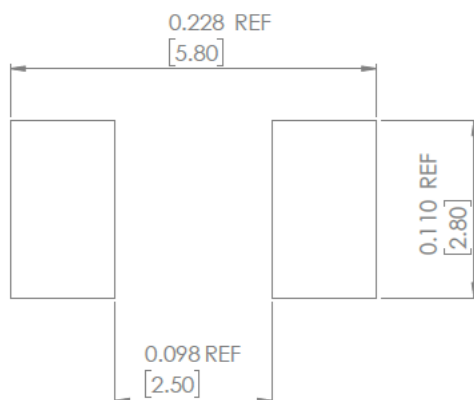
BOTTOM VIEW



SIDE VIEW



RECOMMENDED LAND PATTERN

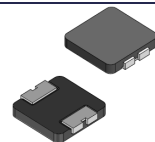


DIMENSIONS: INCHES[mm]

Notes:

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

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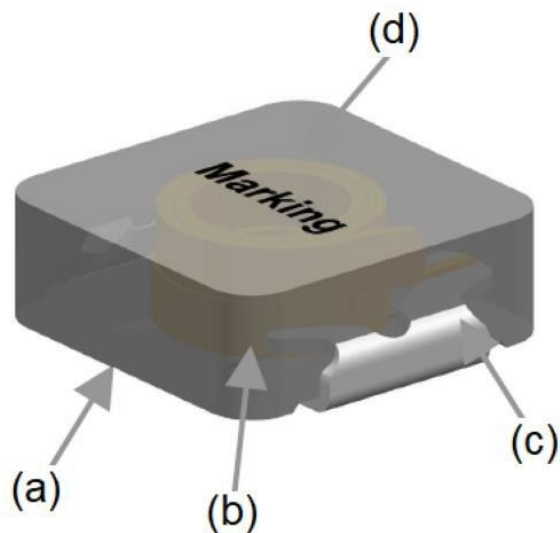


5.4 x 5.1 x 1 mm

RoHS/RoHS II Compliant

MSL Level = 1

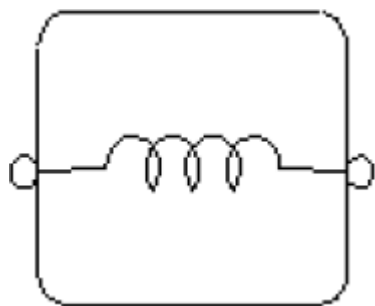
Materials



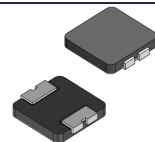
- (a) Core
- (b) Wire
- (c) Clip
- (d) Ink

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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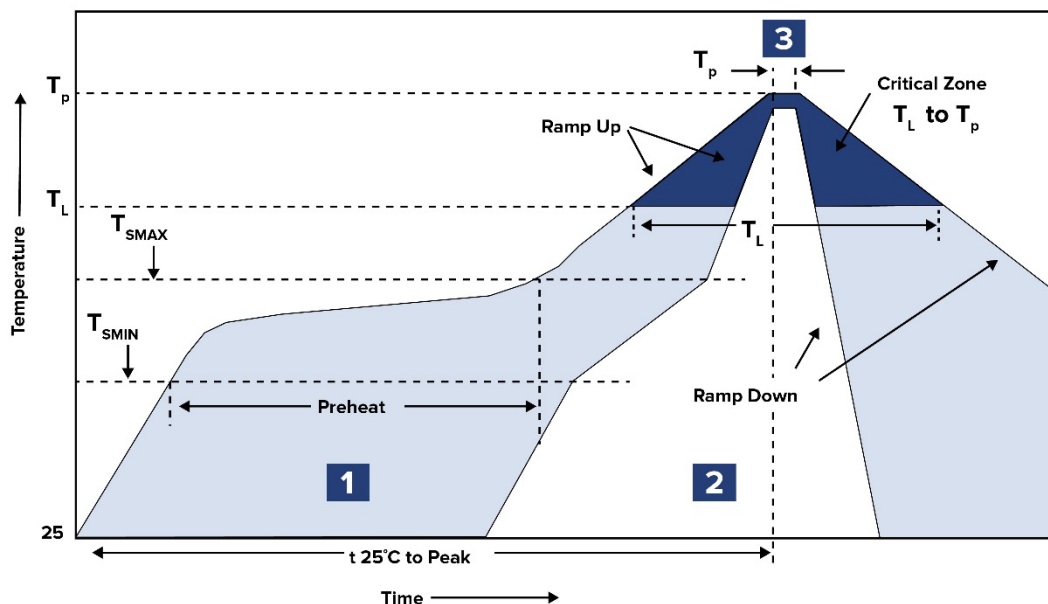


5.4 x 5.1 x 1 mm

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

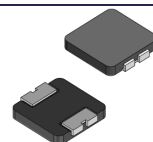
Ramp up rate: 3°C/s Max.

Ramp down rate: 6°C/s Max.

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

Reflow times: 3 times maximum

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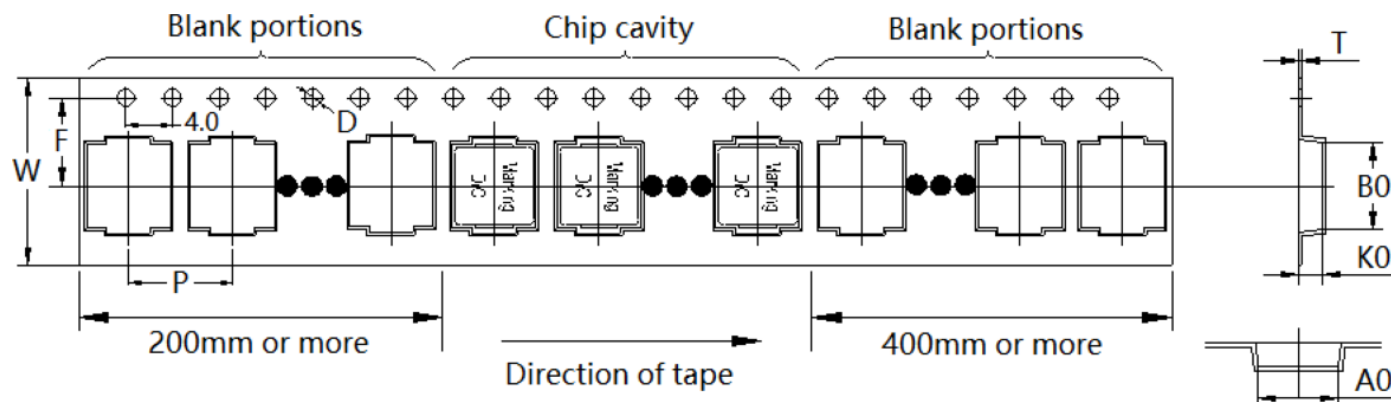
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RoHS/RoHS II Compliant

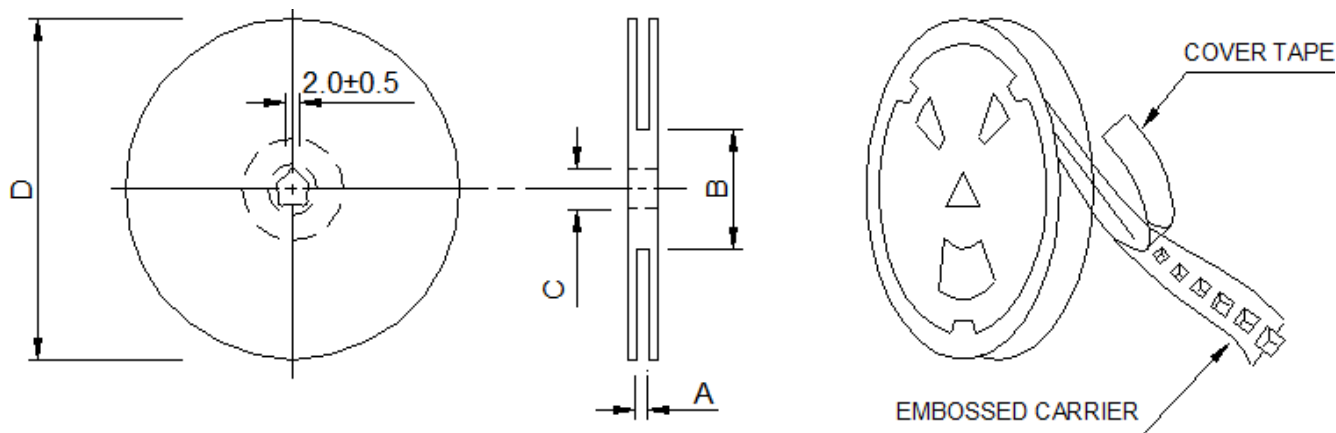
MSL Level = 1

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"x12mm	12.4+2.0/-0.0	100.0±2.0	13.0+0.5/-0.2	330.0

Dimensions: mm

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