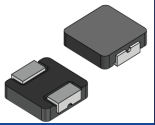


# SMD Molded Power Inductors



## AMELA3012S Series

Request Samples



Check Inventory



3.3 x 3.1 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		Marking
	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	
AMELA3012S-R30M	0.30	±20%	11.0	12.7	8.6	7.9	9.2	8.3	R30
AMELA3012S-R47M	0.47	±20%	15.3	17.6	7.3	6.4	8.0	7.2	R47
AMELA3012S-R68M	0.68	±20%	21.2	24.4	5.6	5.1	6.3	5.5	R68
AMELA3012S-1R0M	1.00	±20%	29.0	33.4	4.7	4.2	5.3	4.5	1R0
AMELA3012S-1R5M	1.50	±20%	49.0	58.0	3.8	3.4	4.3	3.8	1R5
AMELA3012S-2R2M	2.20	±20%	63.5	74.0	3.3	2.9	3.7	3.2	2R2
AMELA3012S-3R3M	3.30	±20%	95.0	114.0	2.8	2.4	3.0	2.6	3R3
AMELA3012S-4R7M	4.70	±20%	162.0	194.0	2.2	1.9	2.5	2.1	4R7

### Test condition:

**Test Frequency:** 1.0V/100KHz

**All test data referenced to 25°C ambient**

**Operating voltage:** 20V 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 ( $\Delta T$ , 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

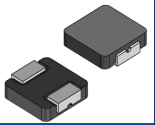


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**2/28/2025**

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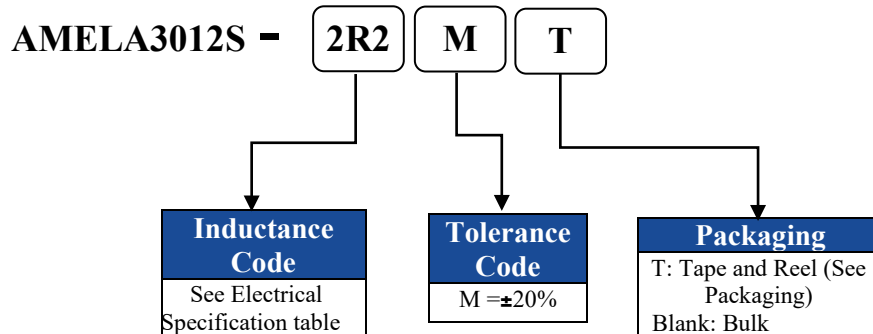


Check Inventory

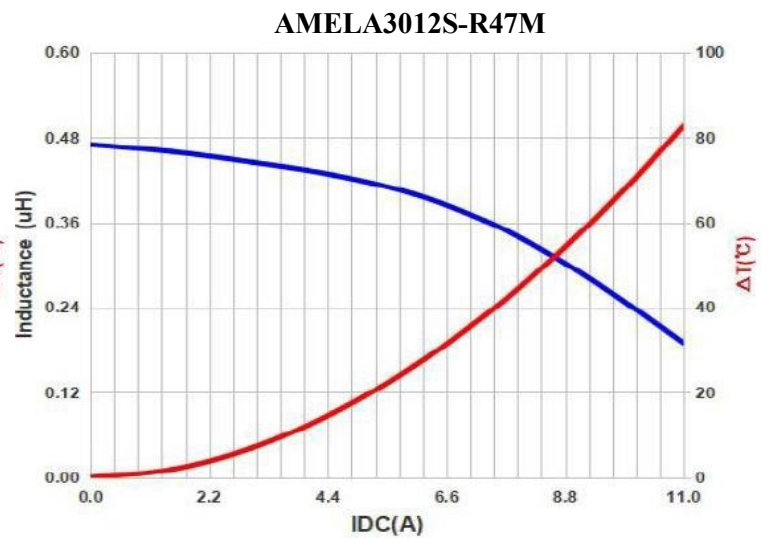
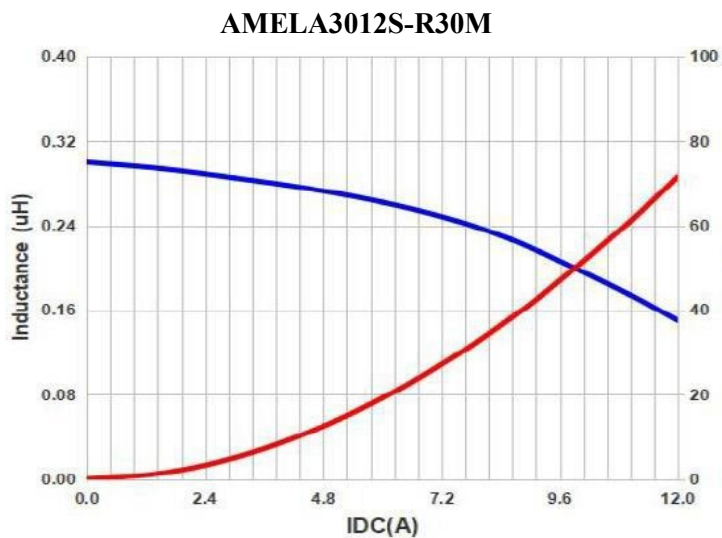


3.3 x 3.1 x 1 mm  
RoHS/RoHS II Compliant  
MSL Level = 1

## Part Identification



## Performance Graphs

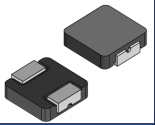


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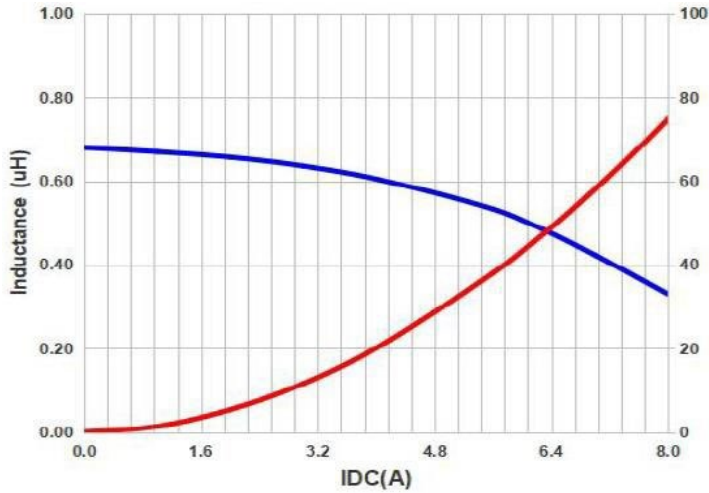


Check Inventory

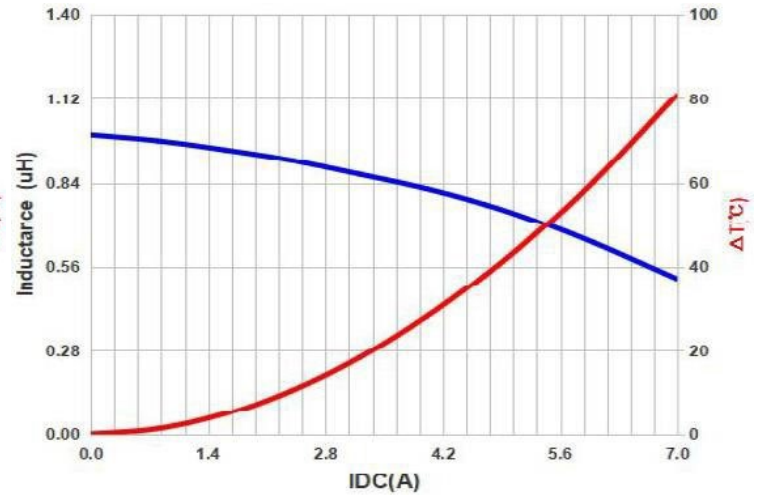


3.3 x 3.1 x 1 mm  
 RoHS/RoHS II Compliant  
 MSL Level = 1

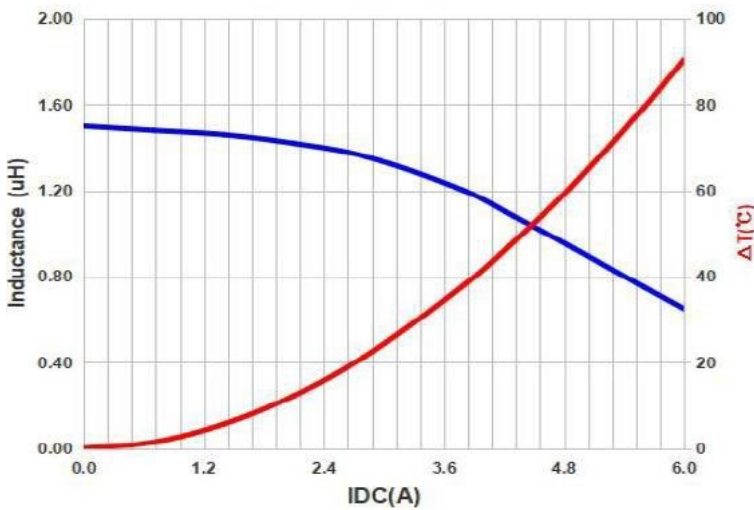
AMELA3012S-R68M



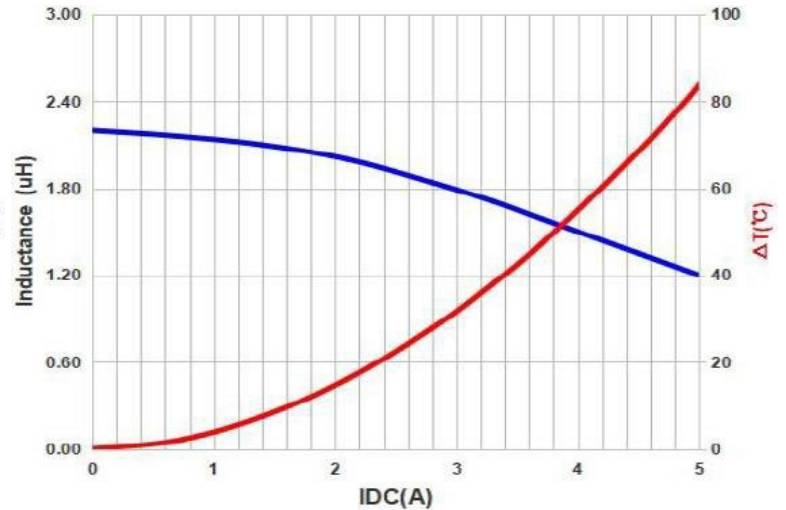
AMELA3012S-1R0M



AMELA3012S-1R5M



AMELA3012S-2R2M

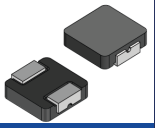


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## AMELA3012S Series

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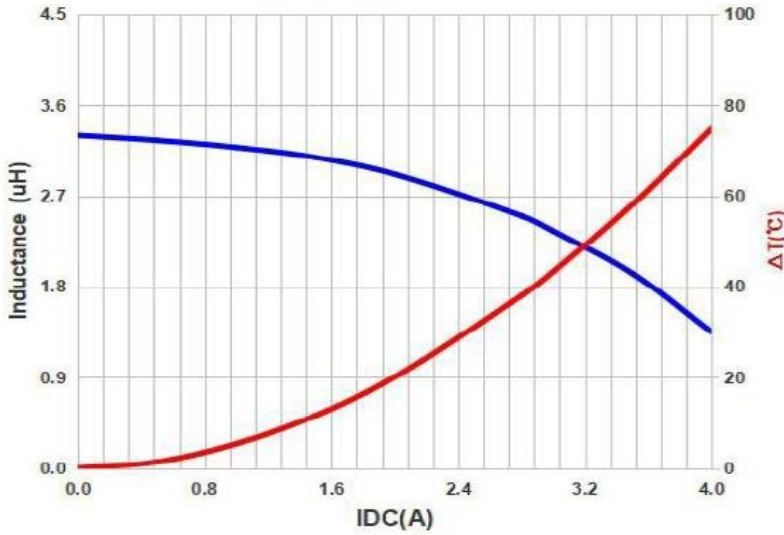


Check Inventory

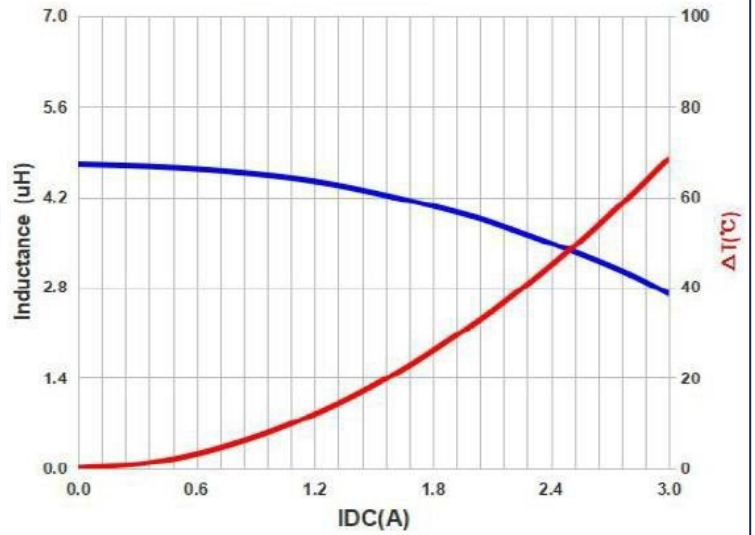


3.3 x 3.1 x 1 mm  
RoHS/RoHS II Compliant  
MSL Level = 1

### AMELA3012S-3R3M



### AMELA3012S-4R7M

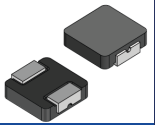


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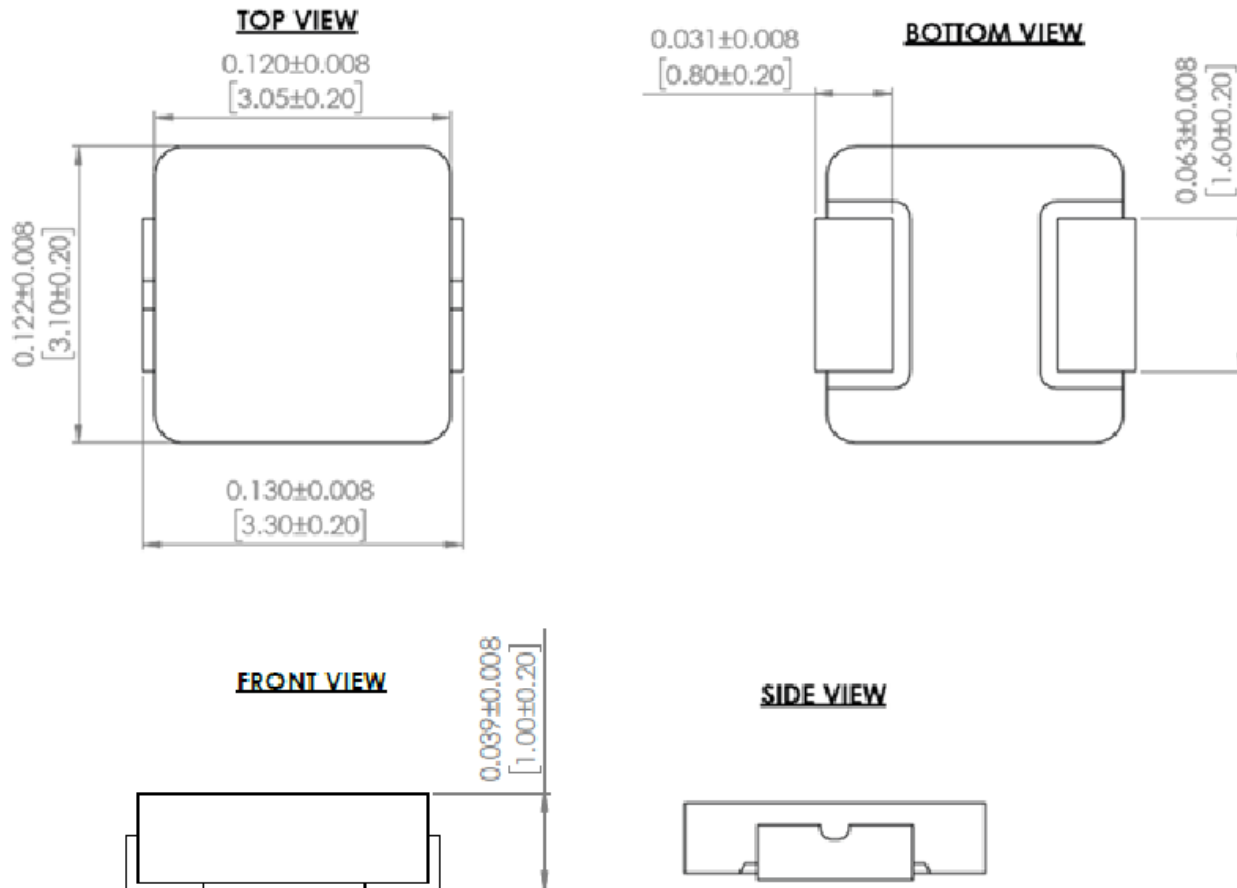


Check Inventory

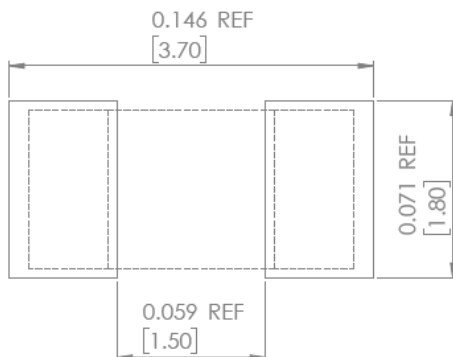


3.3 x 3.1 x 1 mm  
RoHS/RoHS II Compliant  
MSL Level = 1

## Mechanical Specifications



### RECOMMENDED LAND PATTERN

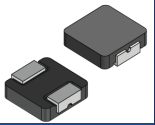


### DIMENSIONS: INCHES[mm]

Notes:

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

# SMD Molded Power Inductors



AMELA3012S Series

Request Samples

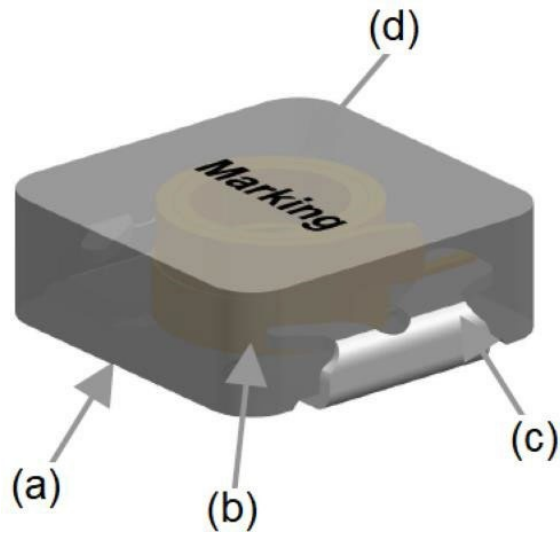


Check Inventory



3.3 x 3.1 x 1 mm  
RoHS/RoHS II Compliant  
MSL Level = 1

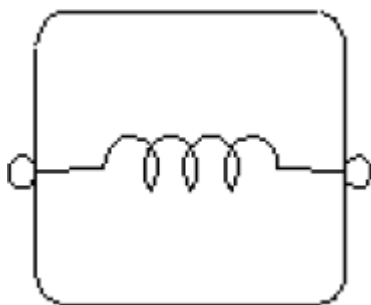
## Materials

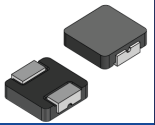


- (a) Core
- (b) Wire
- (c) Clip
- (d) Ink

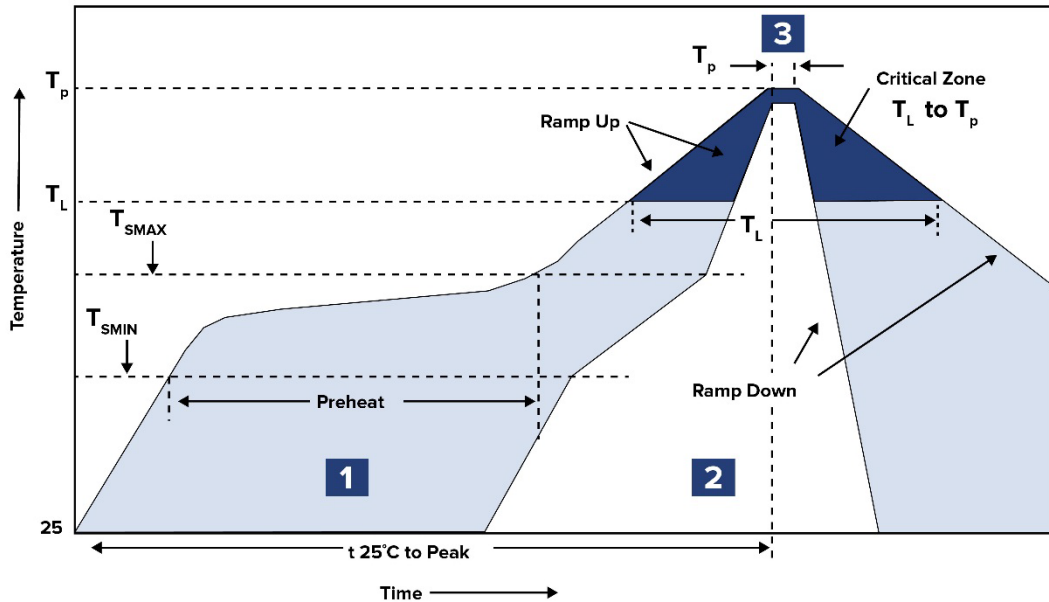
Components	Material
Core	Metal Alloy
Wire	Polyester Wire
Clip	100% Pb free solder (Ni+Sn Plating)
Ink	Halogen-free ketone

## Schematic:





### 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

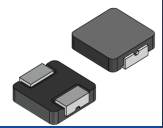
Ramp up rate: 3°C/s Max.

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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**AMELA3012S Series**

Request Samples



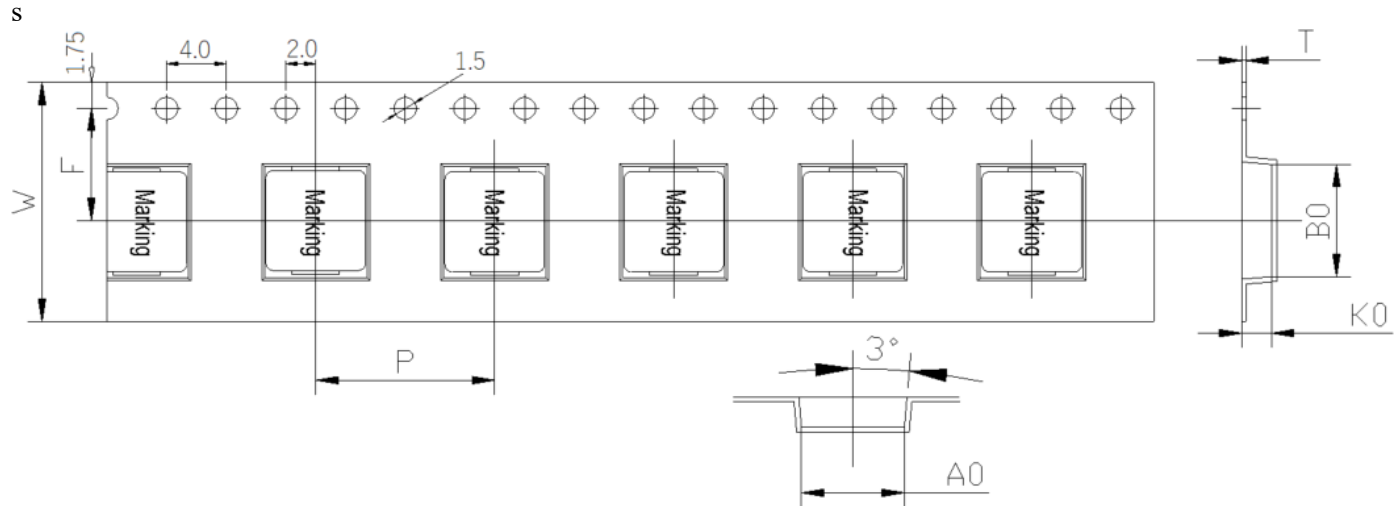
Check Inventory



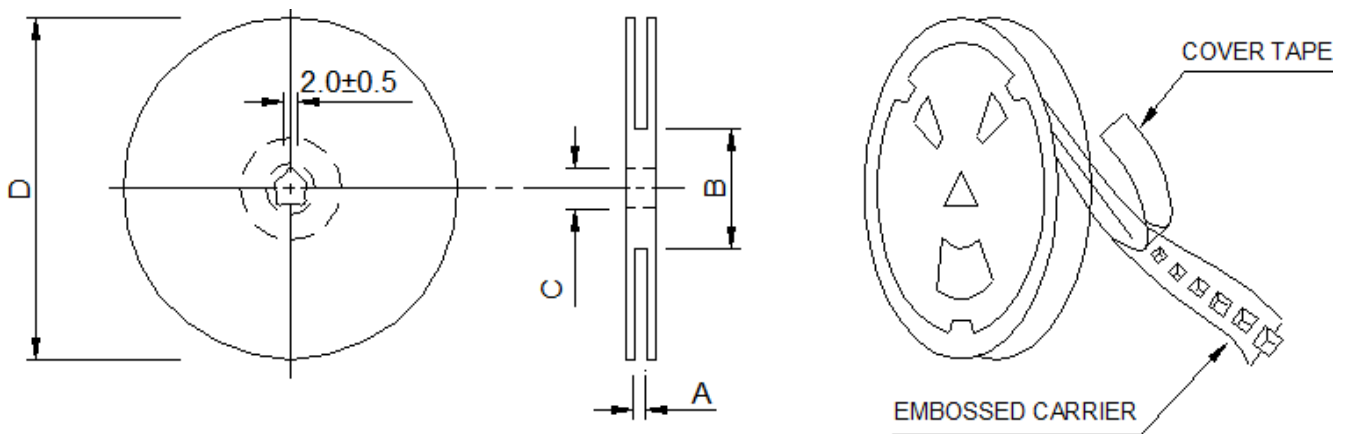
**3.3 x 3.1 x 1 mm**  
**RoHS/RoHS II Compliant**  
**MSL Level = 1**

## Packaging

**Tape & Reel: 4000 pcs/reel**



B0	A0	K0	P	W	F	T
3.80±0.10	3.50±0.10	1.40±0.10	8.00±0.10	12.00±0.30	5.50±0.10	0.35±0.05



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

**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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