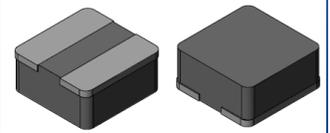


# Molded Power Inductors



**AMELH4018S**

Request Samples



Check Inventory



**4.0 x 4.0 x 2.0 mm**  
**RoHS/RoHS II Compliant**  
**MSL Level = 1**

## Features

- JEDEC PMIC50xx in common-footprint
- Ultra-low AC losses
- High saturation current
- Soft saturation
- Minimal audible buzzing

## Applications

- AI Servers
- DDR5 memory cards
- Smart NICs
- Test & Measurement edge cards
- Smart home

## Electrical Specifications

Part Number*	Inductance			Tolerance	Self-resonant Frequency	DC Resistance		AC Resistance		Saturation Current		Temperature Rise Current	
	1MHz	Min@Ipk1	Min@Ipk2		Min	Max	Typ	Max	Typ	Max	Typ	Max	Typ
Units	μH			%	MHz	mΩ		mΩ		A		A	
Symbol	L	L1	L2	M	SRF	DCR		ACR		Isat		Irms	
AMELH4018S-R47M	0.47	0.34	0.31	20	58.0	3.1	2.0	19.2	12.8	11.3	12.7	19.8	23.3
AMELH4018S-1R0M	1.0	0.86	0.79	20	38.0	6.4	4.3	47.2	40.8	7.9	8.8	11.8	14.5

\*For full orderable part number, please refer to the [Part Identification](#) section.

## Test Conditions

**Ipk1:** 10A for 0.47uH, 3.5A for 1uH.

**Ipk2:** 12A for 0.47uH, 6.0A for 1uH.

**ACR:** 1MHz, w/o DC bias.

**Isat:** DC current at which the inductance drops 30% from its nominal value at 25°C.

**Irms:** DC current that causes the temperature rise ( $\Delta T$ , approximate 40 °C) from 25°C ambient.

**Rated voltage:** 40V

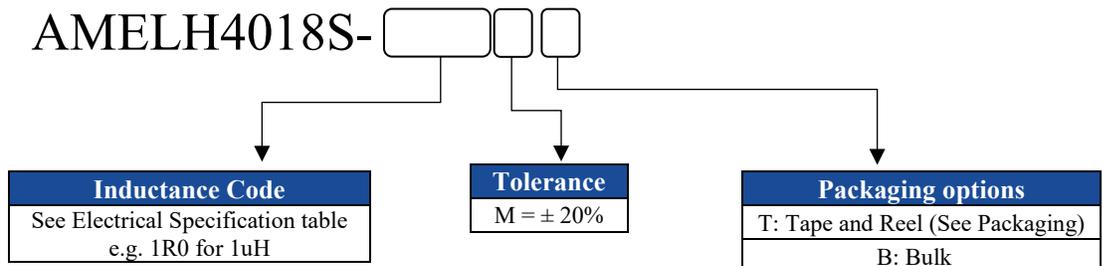
**Operating Temperature:** -40°C ~ +150°C. (including self-temperature rise)

**Storage Condition:** -40°C ~ +150°C (on board), -10°C ~ +40°C (with packaging) and R.H. 70% Max.

AMELH4018S Series is **RoHS Compliant and Pb free**.

For saturation and temperature rise graphs, please visit [Abracon | Power Inductor Performance Analyzer \(PIPA\)](#).

## Part Identification



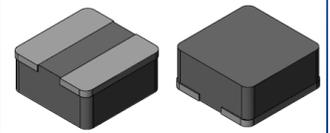
\*Tolerance is only available as indicated in Electrical Spec. table



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**REVISION Initial Release :**  
**12/5/2025**

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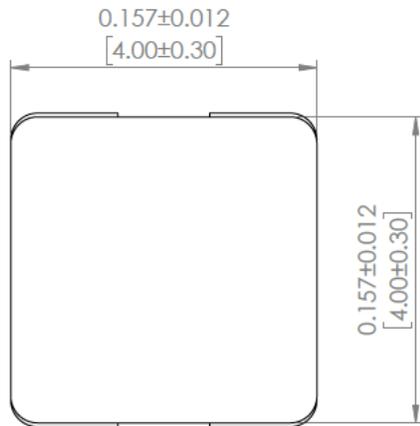


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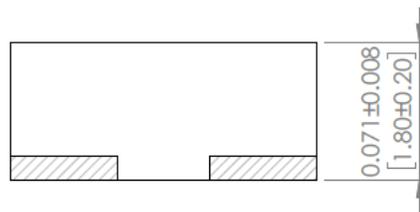


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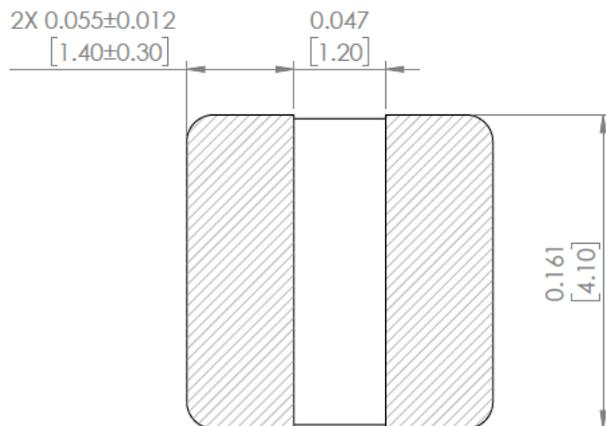
## Mechanical Specifications



**TOP VIEW**

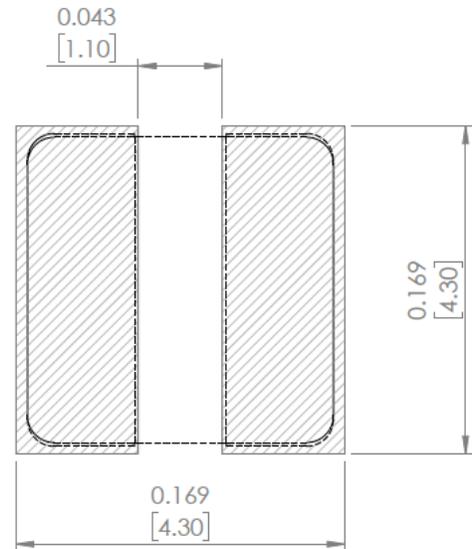


**FRONT VIEW**

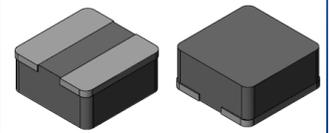


**BOTTOM VIEW**

## RECOMMENDED LAND PATTERN



**Dimensions: inches [mm]**



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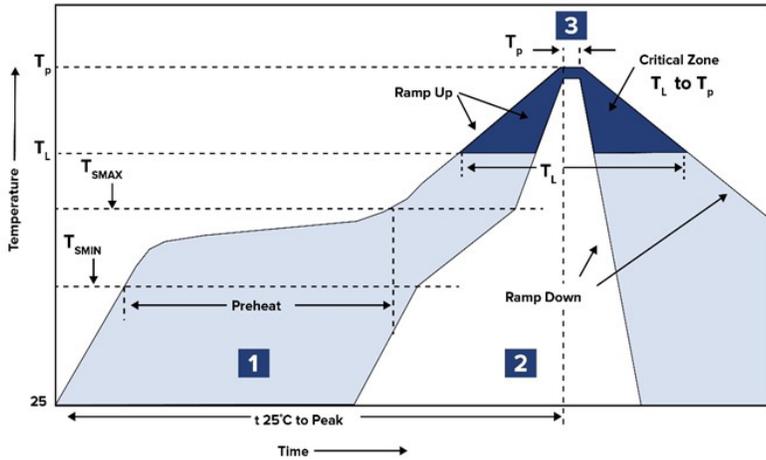
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**4.0 x 4.0 x 2.0 mm**  
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**MSL Level = 1**

## Reflow Profile

Reflow standard: [JEDEC J-STD-020]



**Table 1**

### SnPb Eutectic Process Classification Temperatures ( $T_c$ )

Package Thickness	Volume mm <sup>3</sup> <350	Volume mm <sup>3</sup> ≥350
<2.5 mm	235 °C	220 °C
≥2.5 mm	220 °C	220 °C

**Table 2**

### Pb-Free Process Classification Temperatures ( $T_c$ )

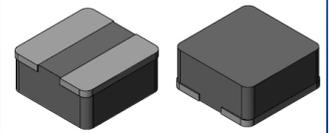
Package Thickness	Volume mm <sup>3</sup> <350	Volume mm <sup>3</sup> 350-2000	Volume mm <sup>3</sup> >2000
<1.6 mm	260 °C	260 °C	260 °C
1.6 mm - 2.5 mm	260 °C	250 °C	245 °C
>2.5 mm	250 °C	245 °C	245 °C

Profile Feature	Sn-Pb Eutectic Assembly	Pb-Free Assembly
Preheat / soak		
Temperature minimum ( $T_{smin}$ )	100°C	150°C
Temperature maximum ( $T_{smax}$ )	150°C	200°C
Time ( $T_{smin}$ to $T_{smax}$ ) ( $t_s$ )	60 - 120 sec.	60 - 120 sec.
Average ramp-up rate ( $T_{smax}$ to $T_p$ )	3°C/sec. max	3°C/sec. max
Liquidous temperature ( $T_L$ )	183°C	217°C
Time at liquidous ( $t_L$ )	60 - 150 sec.	60 - 150 sec.
Peak package body temperature ( $T_p$ )*	<b>see Table 1</b>	<b>see Table 2</b>
Time ( $t_p$ )** within 5°C of the specified classification temperature ( $T_c$ )	20 sec.	30 sec.
Ramp-down rate ( $T_p$ to $T_{smax}$ )	6°C/sec. max	6°C/sec. max
Time 25°C to peak temperature	6 min. max	8 min. max
Reflow cycles	2 max	2 max

\*Tolerance for peak profile temperature ( $T_p$ ) is defined as a supplier minimum and a user maximum.

\*\*Tolerance for time at peak profile temperature ( $t_p$ ) is defined as supplier minimum and a user maximum.

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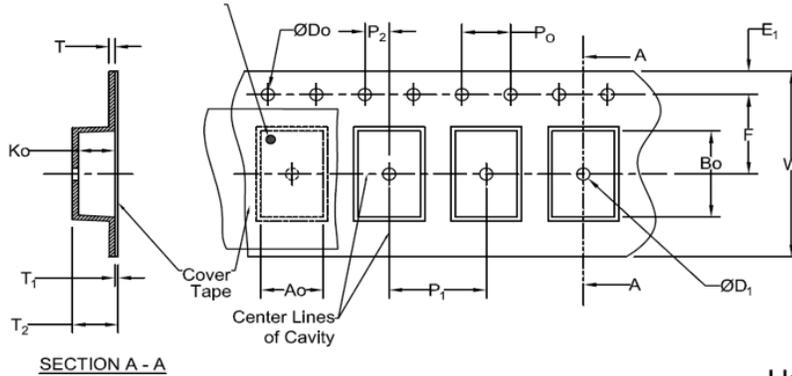
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## Packaging

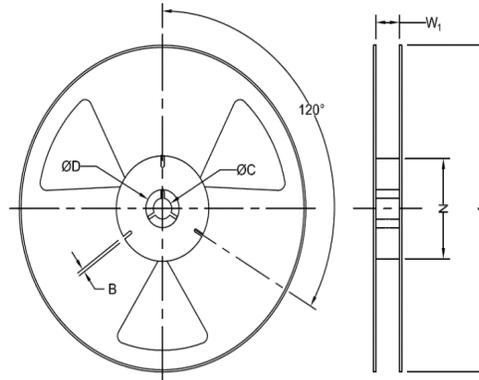
**Tape & Reel: 2500 pcs/reel**



Unit: mm

### Tape Specifications (mm)

Width	Ao	Bo	Do	D <sub>1</sub> (Min)	E <sub>1</sub>	F	Ko
12mm	4.5±0.1	4.5±0.1	1.5+0.1/-0.0	1.0	1.75±0.1	5.5±0.05	2.35±0.1
	P <sub>1</sub>	P <sub>2</sub>	P <sub>0</sub>	T (Max)	T <sub>1</sub> (Max)	T <sub>2</sub> (Max)	W (Max)
	8.0±0.1	2.0±0.05	4.0±0.1	0.35±0.03	0.1	*	12.2



Unit: mm

### Reel Specifications (mm)

Width	Qty/Reel	A (Nom)	B (Min)	C (Min)	D (Min)	N (Min)	*W <sub>1</sub>
12mm	2500	330	1.5	13.0+0.5/-0.2	20.2	100	12.4+2.0/-0.0

**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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