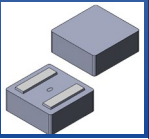


# Flat Wire / Hot Pressed Molded Power Inductor



**AMELH6030S**

Request Samples



Check Inventory



6.8 x 6.6 x 2.9 mm  
RoHS/RoHS II Compliant  
MSL Level = 1

## Features

- Excellent current capacity – up to 50A
- Exceptionally low DCR – down to only 1.0mΩ
- Soft saturation
- Compact size for high-density designs
- Shielded constructions for low EMI

## Applications

- Body electronics
- Lighting
- Motor control
- Solar inverters and solar power
- DC/DC converters in distributed power systems
- Battery powered device

## Electrical Specifications

| Part Number      | Inductance      | Tolerance | DC Resistance |      | Saturation Current |      | Temperature Rise Current |      | Self-Resonant Frequency |
|------------------|-----------------|-----------|---------------|------|--------------------|------|--------------------------|------|-------------------------|
|                  | 0.1MHz/<br>1.0V |           | Typ           | Max  | Typ                | Max  | Typ                      | Max  | Min                     |
| Units            | μH              | %         | mΩ            |      | A                  |      | A                        |      | MHz                     |
| SRF              | L               | M         | DCR           |      | Isat               |      | Irms                     |      | SRF                     |
| AMELH6030S-R18MT | 0.18            | 20        | 1.0           | 1.2  | 50.0               | 45.0 | 35.0                     | 30.0 | 153                     |
| AMELH6030S-R22MT | 0.22            | 20        | 1.1           | 1.4  | 43.0               | 39.0 | 32.0                     | 27.0 | 125                     |
| AMELH6030S-R33MT | 0.33            | 20        | 1.5           | 1.9  | 40.0               | 35.0 | 32.0                     | 27.0 | 86                      |
| AMELH6030S-R36MT | 0.36            | 20        | 1.6           | 2.0  | 39.0               | 34.0 | 30.0                     | 25.0 | 86                      |
| AMELH6030S-R38MT | 0.38            | 20        | 1.7           | 2.1  | 36.0               | 32.0 | 29.0                     | 25.0 | 85                      |
| AMELH6030S-R40MT | 0.40            | 20        | 1.8           | 2.2  | 35.0               | 32.0 | 28.0                     | 24.0 | 85                      |
| AMELH6030S-R42MT | 0.42            | 20        | 2.1           | 2.5  | 33.0               | 30.0 | 28.0                     | 24.0 | 70                      |
| AMELH6030S-R47MT | 0.47            | 20        | 2.2           | 2.6  | 32.0               | 29.0 | 27.0                     | 24.0 | 70                      |
| AMELH6030S-R56MT | 0.56            | 20        | 2.4           | 2.9  | 30.0               | 27.0 | 25.0                     | 22.0 | 65                      |
| AMELH6030S-R68MT | 0.68            | 20        | 2.8           | 3.4  | 27.0               | 24.0 | 23.0                     | 20.0 | 52                      |
| AMELH6030S-R82MT | 0.82            | 20        | 3.6           | 4.0  | 25.0               | 22.0 | 21.0                     | 19.0 | 50                      |
| AMELH6030S-1R0MT | 1.0             | 20        | 4.2           | 4.9  | 22.0               | 19.0 | 19.0                     | 17.0 | 44                      |
| AMELH6030S-1R2MT | 1.2             | 20        | 4.6           | 5.4  | 19.0               | 17.0 | 18.0                     | 16.0 | 40                      |
| AMELH6030S-1R5MT | 1.5             | 20        | 5.6           | 6.7  | 17.0               | 15.0 | 17.0                     | 15.0 | 33                      |
| AMELH6030S-1R8MT | 1.8             | 20        | 6.8           | 8.2  | 15.0               | 13.0 | 15.0                     | 13.0 | 30                      |
| AMELH6030S-2R2MT | 2.2             | 20        | 8.5           | 10.2 | 13.0               | 12.0 | 13.0                     | 12.0 | 25                      |
| AMELH6030S-3R3MT | 3.3             | 20        | 12.0          | 14.4 | 11.0               | 10.0 | 11.0                     | 10.0 | 20                      |
| AMELH6030S-4R7MT | 4.7             | 20        | 17.5          | 21.0 | 10.0               | 9.0  | 10.0                     | 9.0  | 18                      |
| AMELH6030S-5R6MT | 5.6             | 20        | 20.5          | 24.1 | 9.0                | 8.3  | 9.0                      | 8.3  | 15                      |
| AMELH6030S-6R8MT | 6.8             | 20        | 26.1          | 29.5 | 8.0                | 7.5  | 8.5                      | 7.7  | 14                      |
| AMELH6030S-8R2MT | 8.2             | 20        | 32.0          | 36.8 | 7.0                | 6.5  | 7.5                      | 7.0  | 13                      |
| AMELH6030S-100MT | 10.0            | 20        | 38.0          | 44.0 | 6.5                | 6.0  | 7.0                      | 6.5  | 12                      |

### Test Conditions:

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

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

**Operating Voltage:** 40V

**Operating Temperature:** -40°C ~ +125°C. (including self-temperature rise)

**Storage Condition:** -40°C ~ +125°C (on board), -10°C ~ +40°C (with packaging) and R.H. 85% max.

**AMELH6030S Series is RoHS Compliant and Pb free.**

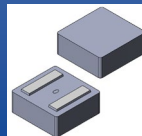


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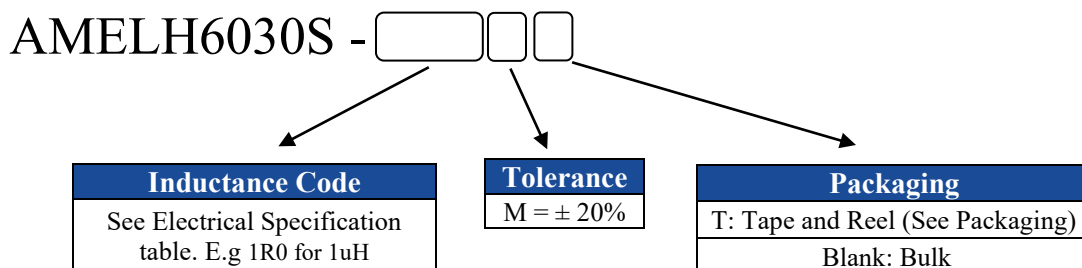


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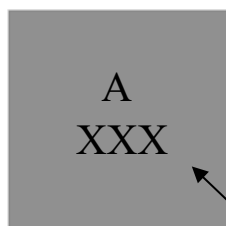


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**RoHS/RoHS II Compliant**  
MSL Level = 1

## Part Identification



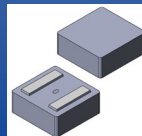
## Marking



Inductance Code  
e.g. 2R2

**Marking Method = Ink Marking**

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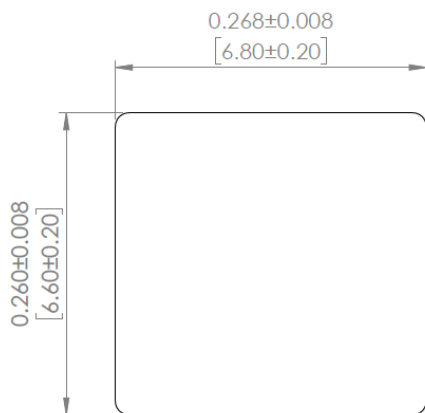


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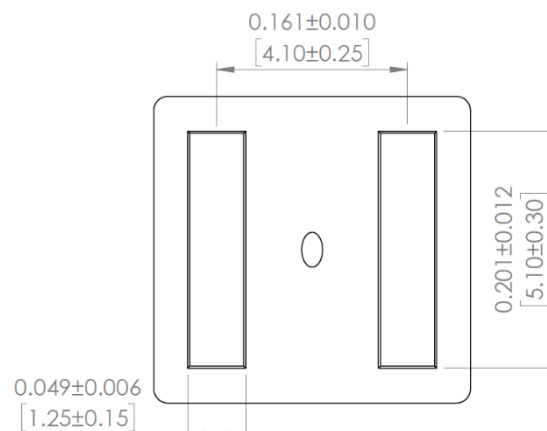


**6.8 x 6.6 x 2.9 mm**  
**RoHS/RoHS II Compliant**  
MSL Level = 1

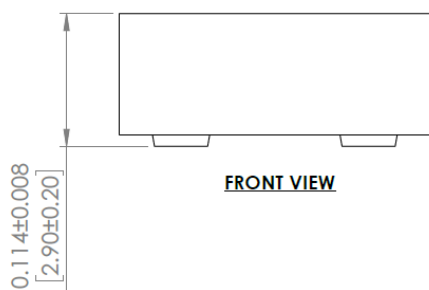
## Mechanical Specifications



**TOP VIEW**

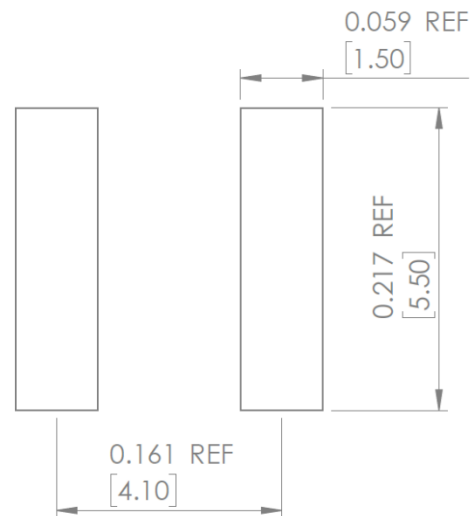


**BOTTOM VIEW**



**FRONT VIEW**

## RECOMMENDED LAND PATTERN



### NOTES:

The above PCB layout reference only.  
Recommending solder paste thickness at .005[0.15] and above.  
Inductance code markings, black.

**DIMENSIONS: INCHES[mm]**

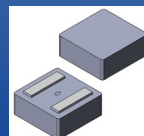


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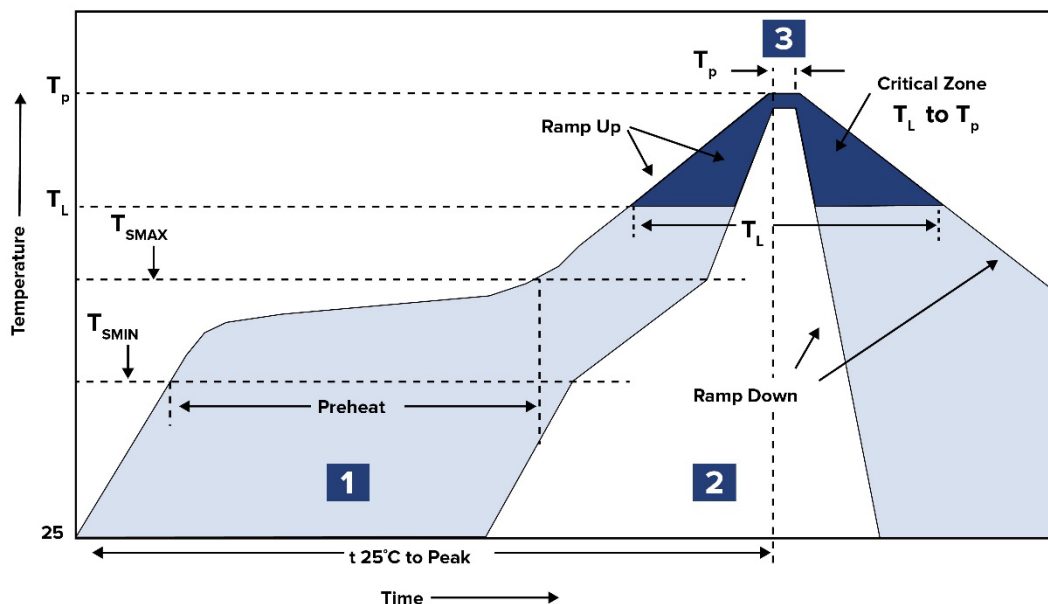


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RoHS/RoHS II Compliant  
MSL Level = 1

## Reflow Profile



| Zone | Description | Temperature                               | Times         |
|------|-------------|-------------------------------------------|---------------|
| 1    | Preheat     | $T_{SMIN} \sim T_{SMAX}$<br>150°C ~ 200°C | 60 ~ 120 sec. |
| 2    | Reflow      | $T_L$<br>217°C                            | 60 ~ 150 sec. |
| 3    | Peak heat   | $T_P$<br>250°C±5°C                        | 10 sec. MAX   |

Ref. Solder paste: Sn/3.0Ag/0.5Cu (Pb-free assembly)

Ramp up rate: 3°C/s Max.

Ramp down rate: 6°C/s Max.

Time from 25C to  $T_P$ : 8mins Max

Refer to standard IPC/JEDEC J-STD-020E for more information

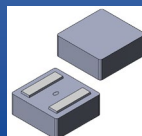


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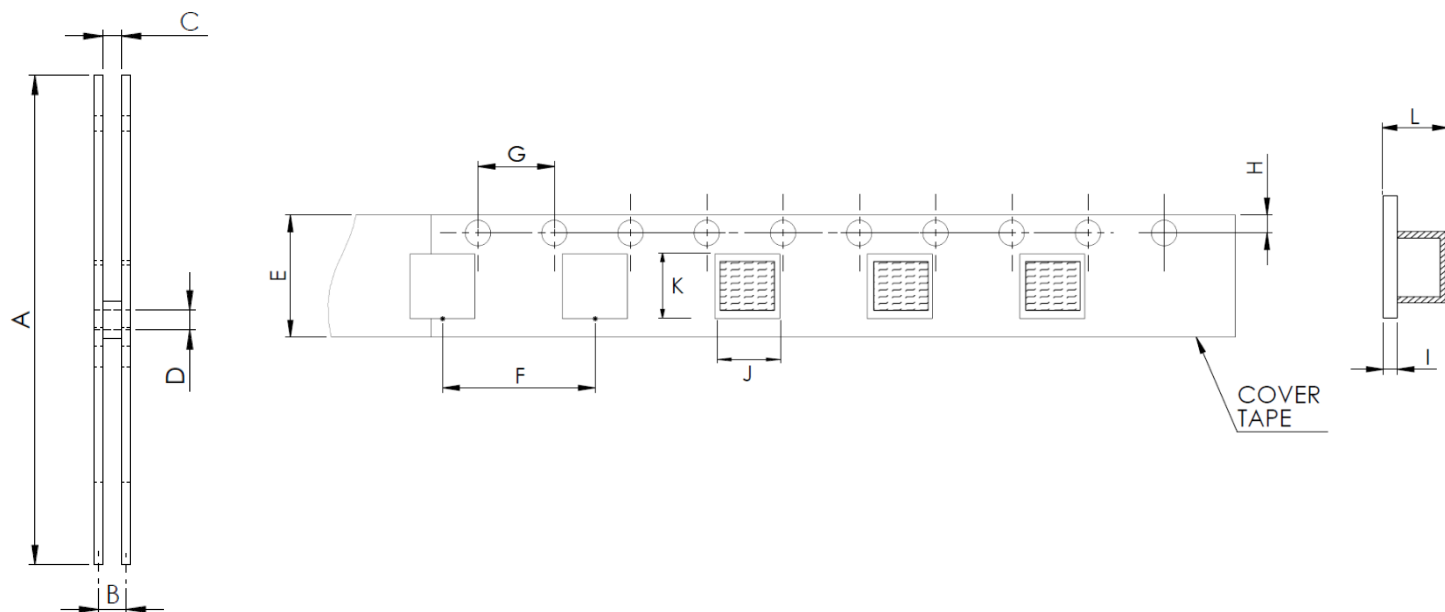
Check Inventory



**6.8 x 6.6 x 2.9 mm**  
**RoHS/RoHS II Compliant**  
**MSL Level = 1**

## Packaging

**T: Tape & Reel, 1000 pcs/reel**



| A     | B      | D        | E        | F        | G       | H        | I        | J         | K         | L         |
|-------|--------|----------|----------|----------|---------|----------|----------|-----------|-----------|-----------|
| 330.0 | 16.4±2 | 13.0±0.5 | 16.0±0.3 | 12.0±0.1 | 4.0±0.1 | 1.75±0.1 | 0.35±0.1 | 7.00 Ref. | 6.80 Ref. | 3.30 Ref. |

**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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