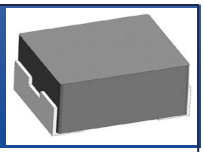
# Molded Inductor



## AMELA2012S

Request Samples | Check Inventory

**2.5 x 2.0 x 1.2 mm**
**RoHS/RoHS II Compliant**
**MSL Level = 1**

## Features

- Shielded Construction
- Soft Saturation
- Highly Efficient
- Designed for switching frequencies between 100KHz – 5MHz
- Automotive option available upon request

## Applications

- Buck DC/DC Converters
- Buck-Boost DC/DC converters
- Power Factor Correction applications
- Server/ Workstation VRM's
- Industrial power supplies
- Solar inverters / Renewable Energy Systems
- Battery energy storage systems
  EMI/Power line filtering chokes
- Industrial / Heavy equipment

## Electrical Specifications

| Part Number* | Inductance (uH) | Tolerance (%) | Irms (A) | Isat (A) | DC Resistance (mΩ) | | Type |
|---|---|---|---|---|---|---|---|
| | | | | | Typ | Max | |
| AMELA2012S-R33MT | 0.33 | 20 | 5.8 | 7.0 | 15 | 16.5 | Lead Frame |
| AMELA2012S-R47MT | 0.47 | 20 | 4.8 | 6.0 | 20 | 25 | Lead Frame |
| AMELA2012S-R68MT | 0.68 | 20 | 3.9 | 4.6 | 30 | 34 | Lead Frame |
| AMELA2012S-1R0MT | 1 | 20 | 3.7 | 4.3 | 38 | 45 | Lead Frame |
| AMELA2012S-1R5MT | 1.5 | 20 | 2.9 | 3.0 | 53 | 60 | Lead Frame |
| AMELA2012S-2R2MT | 2.2 | 20 | 2.4 | 2.7 | 78 | 90 | Lead Frame |

**Test Conditions**

**Inductance:** 1 MHz, 1 V, 0 ADC
**Humidity Range:** 65% RH
**Temperature Rise Current:** Typical current measured when ΔT of 40°C
**Saturation Current:** Typical current measured when ΔL of 30%

**General Specifications**

**Operating Temperature:** -55°C to +125°C with (40°C rise) Irms current.
**Maximum Part Temperature:** +125°C
**Components Storage Temperature:** -55°C to +125°C
**Tape and Reel packaging Temperature:** –20°C to +65°C

**AMELA2012S Series is RoHS/ RoHS II Compliant and Pb free.**
**Moisture Sensitivity Level (MSL) – Level 1**

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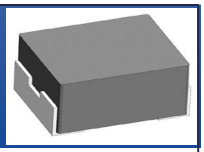
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**AMELA2012S**

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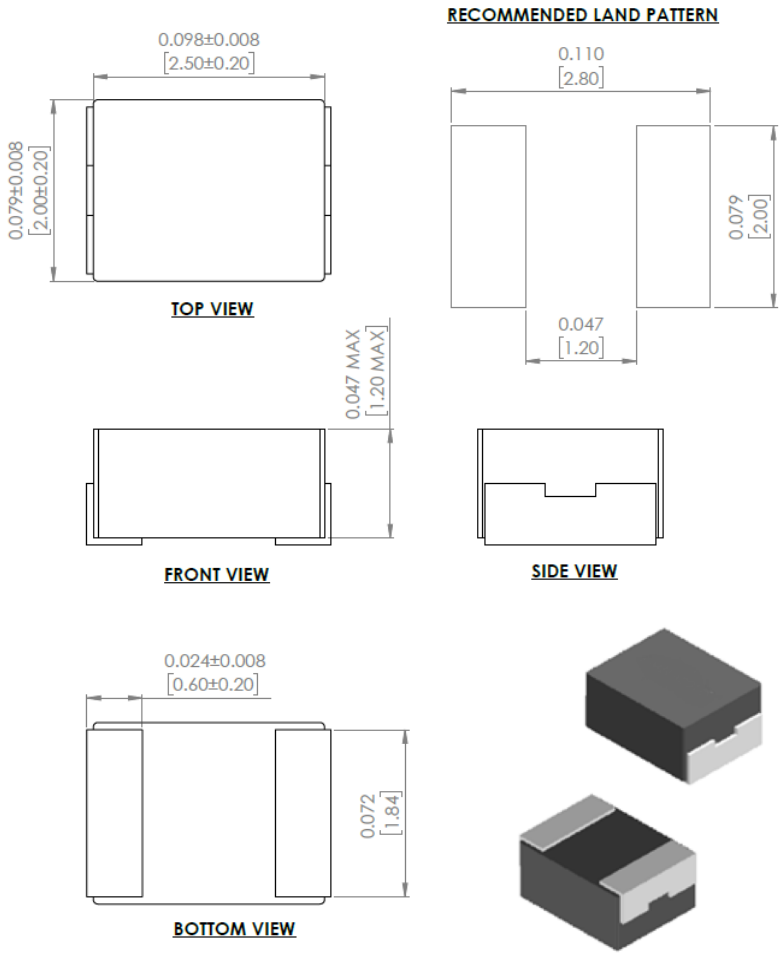
**2.5 x 2.0 x 1.2 mm**
**RoHS/RoHS II Compliant**
**MSL Level = 1**

## Part Identification

AMELA2012S - □ □ □

| Inductance Code | Tolerance | Packaging |
|---|---|---|
| Refer to Electrical Specification table E.g. R22 | M: 20% | B: Bulk<br>T: 3,000 pcs/reel |

## Mechanical Specifications




**Dimensions: mm**


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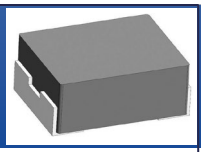
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**MSL Level = 1**

## Reflow Profile

### Reflow standard: [JEDEC J-STD-020]

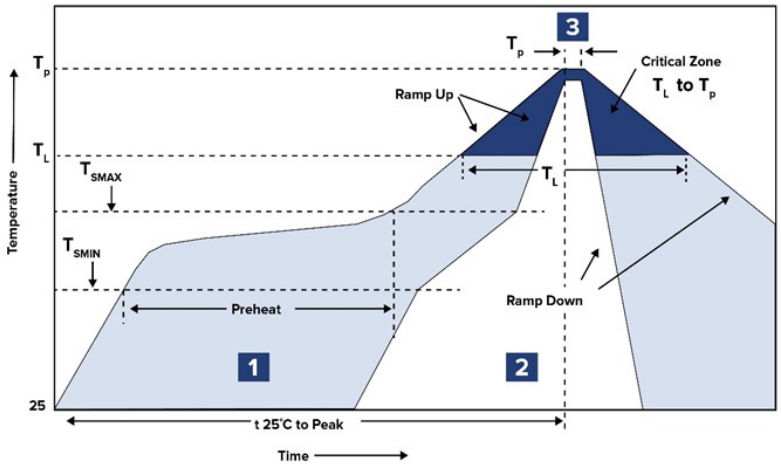



**Table 1**

| SnPb Eutectic Process Classification Temperatures ($T_c$) | | |
|---|---|---|
| **Package Thickness** | **Volume mm³ <350** | **Volume mm³ ≥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 mm³ <350** | **Volume mm³ 350-2000** | **Volume mm³ >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 ($T_P$)* | **see Table 1** | **see Table 2** |
| 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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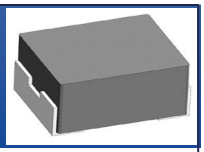


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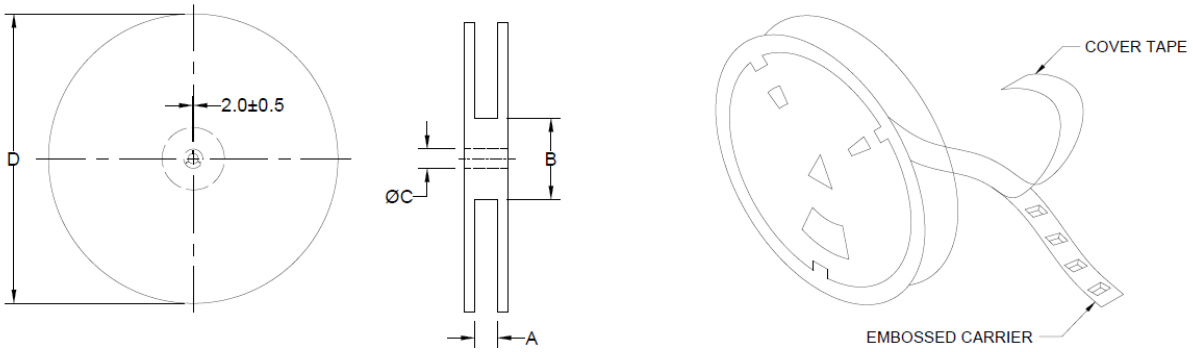
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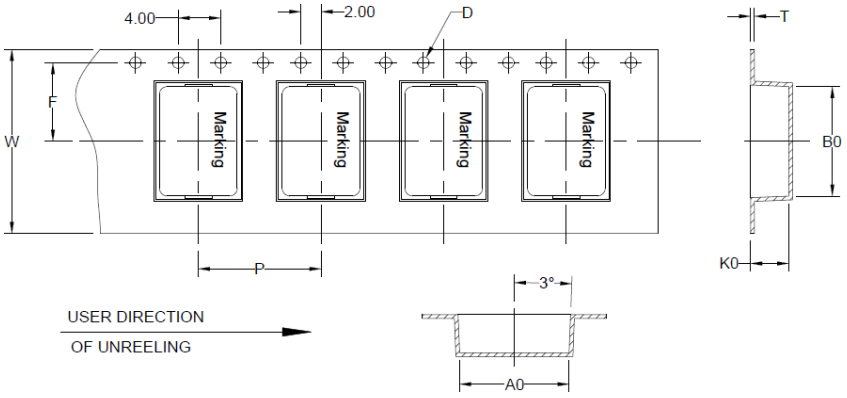
**2.5 x 2.0 x 1.2 mm**
**RoHS/RoHS II Compliant**
**MSL Level = 1**

### Packaging

Tape and Reel: 3,000
Units per Carton: 144,000
T&R per Carton: 48
Weight per Carton: 6.3 kg
Weight per Unit: 0.06 g
Carton Dimensions: 450 x 380 x 210 mm




| TYPE | A | B | C | D |
|---|---|---|---|---|
| 7" x 8 mm | 9.7 ± 0.5 | 50.0 ± 0.5 | 13.0 ± 0.1 | 183 ± 3.0 |




| $B_0$ | $A_0$ | $K_0$ | P | W | F | T | D |
|---|---|---|---|---|---|---|---|
| 2.85 ± 0.1 | 2.4 ± 0.1 | 1.35 ± 0.05 | 4.0 ± 0.1 | 8.0 ± 0.1 | 3.5 ± 0.1 | 0.25 ± 0.03 | 1.5 |

### 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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