

MINIATURE LOW PROFILE HIGH CURRENT INDUCTORS



ASPI-M

2.5 x 2.0 x 1.2 mm
3.0 x 3.0 x 1.5 mm
MSL = 1

RoHS/RoHS II Compliant

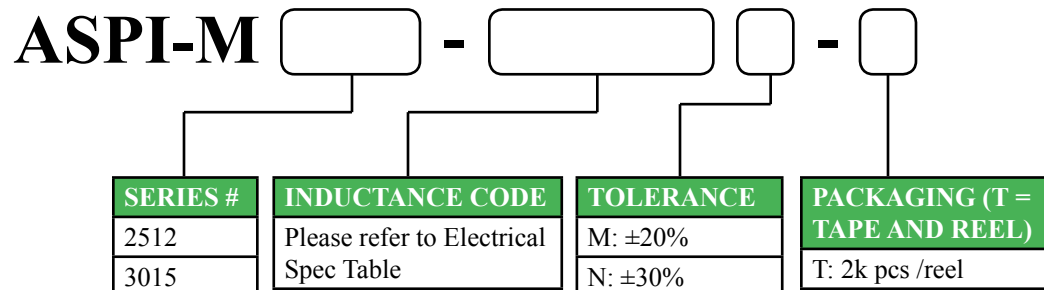
FEATURES

- Space saving small footprint
 - ASPI-M2512—2.0x2.5mm (5mm²)
 - ASPI-M3015—3.0x3.0mm (9mm²)
- Low profile design
 - ASPI-M2512—1.2mm MAX
 - ASPI-M3015—1.5mm MAX
- High RMS current carrying
 - ASPI-M2512—up to 4.1A
 - ASPI-M3015—up to 5A
- High saturation current
 - ASPI-M2512—up to 6.8A
 - ASPI-M3015—up to 8A
- Low DCR minimizes heat dissipation
 - ASPI-M2512—as low as 23mΩ
 - ASPI-M3015—as low as 27mΩ
- Wide inductance range
 - ASPI-M2512—0.47 to 10μH
 - ASPI-M3015—0.24 to 10μH
- Wide -40°C to 125°C operating temperature range

APPLICATIONS

- IoT/Industrial IoT
- Battery operated devices
- Drones and robotics
- Energy efficient lighting
- Audio and video
- Motor control
- Switch mode power supplies (SMPS)
- Instrumentation
- Medical and medical monitoring
- Class D amplifiers
- Handheld/ mobile devices
- DC/DC converter
- Set-top Boxes
- LED drivers and lighting
- POL Converters

OPTIONS AND PART IDENTIFICATION



ELECTRICAL SPECIFICATIONS: ASPI-M2512

| OPERATING TEMPERATURE | STORAGE CONDITION |
|--|----------------------------------|
| -40°C - 125°C (including self-temperature rise) | -40°C - +85°C and R.H. 70%max |

| PART NUMBER | INDUCTANCE | TOLERANCE | DC RESISTANCE | SATURATION CURRENT | TEMPERATURE RISE CURRENT |
|----------------|-------------|-----------|---------------|--------------------|--------------------------|
| | 0.1MHz/0.1V | | | | |
| UNITS | μH | % | mΩ | A | A |
| SYMBOL | L | M, N | DCR | Isat | Irms |
| ASPI-M2512-R24 | 0.24 | 20%, 30% | 23 | 6.8 | 4.1 |
| ASPI-M2512-R33 | 0.33 | 20%, 30% | 28 | 5.8 | 3.8 |
| ASPI-M2512-R47 | 0.47 | 20%, 30% | 35 | 5.0 | 3.5 |
| ASPI-M2512-R68 | 0.68 | 20%, 30% | 43 | 4.2 | 3.2 |
| ASPI-M2512-1R0 | 1.00 | 20%, 30% | 48 | 3.7 | 3.0 |
| ASPI-M2512-1R5 | 1.50 | 20%, 30% | 72 | 3.1 | 2.5 |
| ASPI-M2512-2R2 | 2.20 | 20%, 30% | 100 | 2.5 | 2.1 |
| ASPI-M2512-3R3 | 3.30 | 20%, 30% | 150 | 2.1 | 1.9 |
| ASPI-M2512-4R7 | 4.70 | 20%, 30% | 230 | 2.0 | 1.5 |
| ASPI-M2512-100 | 10.0 | 20%, 30% | 480 | 1.3 | 1.0 |

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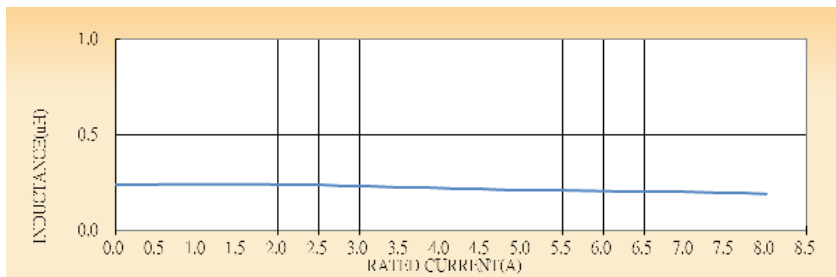
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ELECTRICAL SPECIFICATIONS: ASPI-M3015

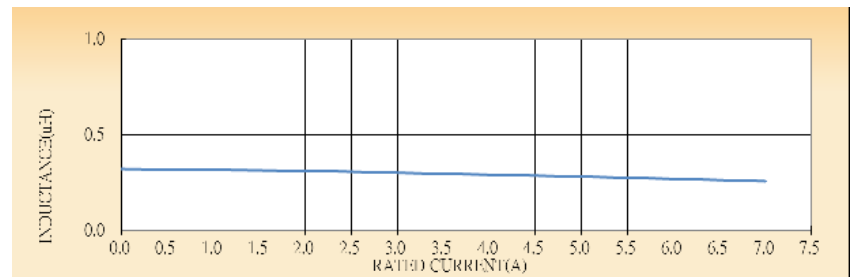
| PART NUMBER | INDUCTANCE | TOLERANCE | DC RESISTANCE | SATURATION CURRENT | TEMPERATURE RISE CURRENT |
|----------------|-------------|-----------|---------------|--------------------|--------------------------|
| | 0.1MHz/0.1V | | max | max | max |
| UNITS | μH | % | mΩ | A | A |
| SYMBOL | L | M | DCR | Isat | Irms |
| ASPI-M3015-R47 | 0.47 | 20% | 27 | 8.0 | 5.0 |
| ASPI-M3015-R68 | 0.68 | 20% | 35 | 8.0 | 4.1 |
| ASPI-M3015-1R0 | 1.00 | 20% | 42 | 5.8 | 3.8 |
| ASPI-M3015-1R5 | 1.50 | 20% | 46 | 4.4 | 3.5 |
| ASPI-M3015-2R2 | 2.20 | 20% | 85 | 3.6 | 2.4 |
| ASPI-M3015-3R3 | 3.30 | 20% | 120 | 3.3 | 2.1 |
| ASPI-M3015-4R7 | 4.70 | 20% | 150 | 3.0 | 1.8 |
| ASPI-M3015-6R8 | 6.80 | 20% | 200 | 2.5 | 1.6 |
| ASPI-M3015-100 | 10.0 | 20% | 270 | 2.2 | 1.5 |

CHARACTERISTICS

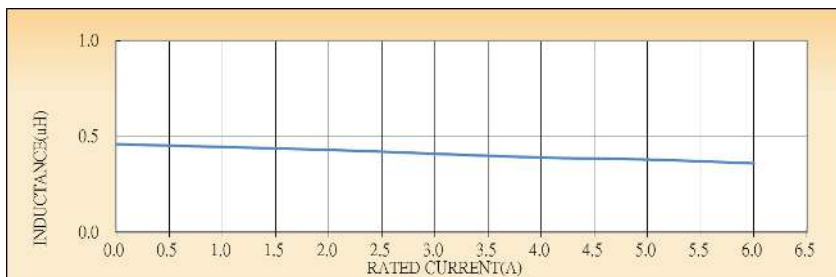
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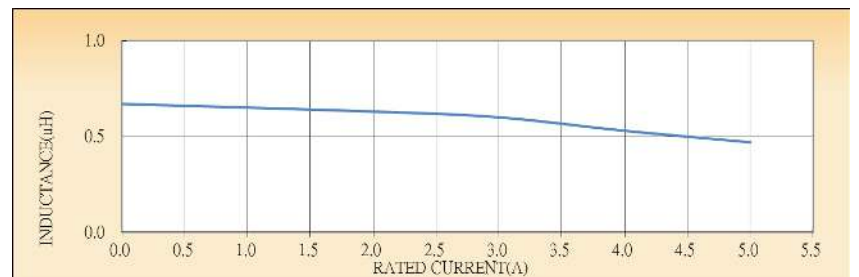
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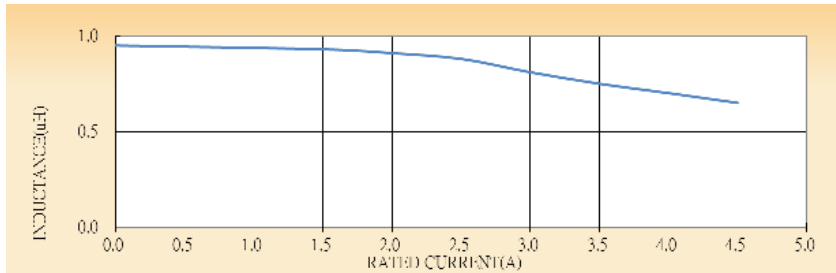
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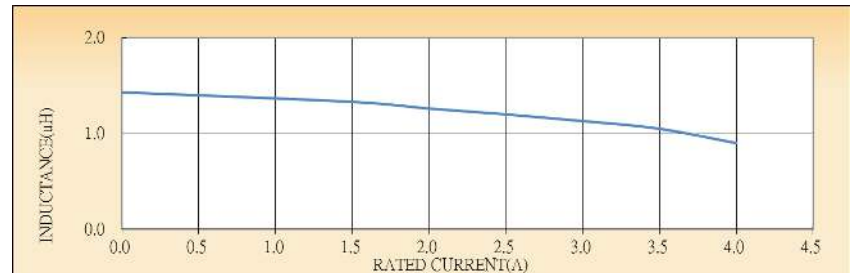
ASPI-M2512-R68



ASPI-M2512-1R0



ASPI-M2512-1R5



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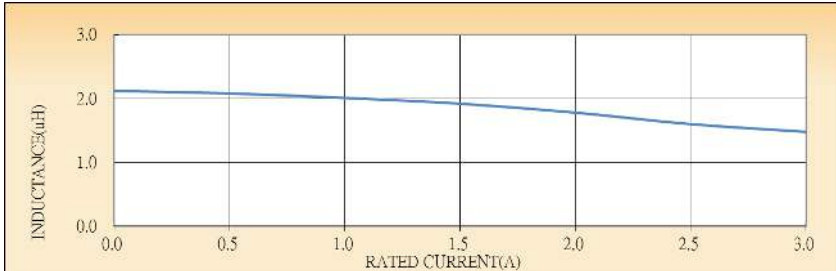
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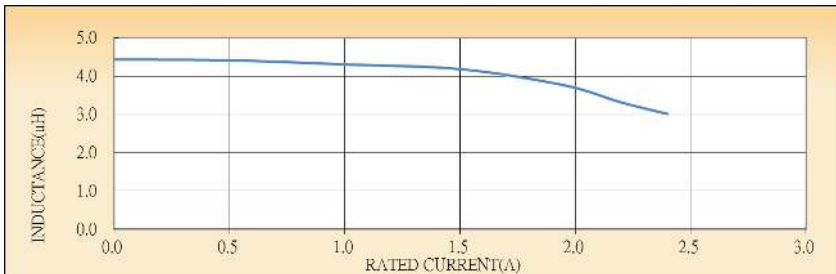
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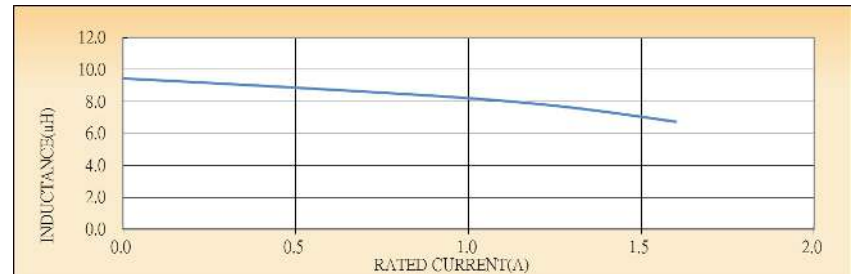
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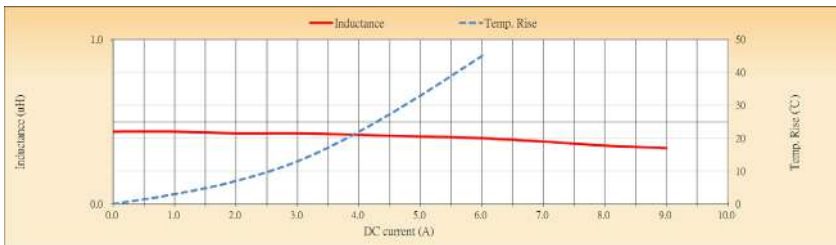
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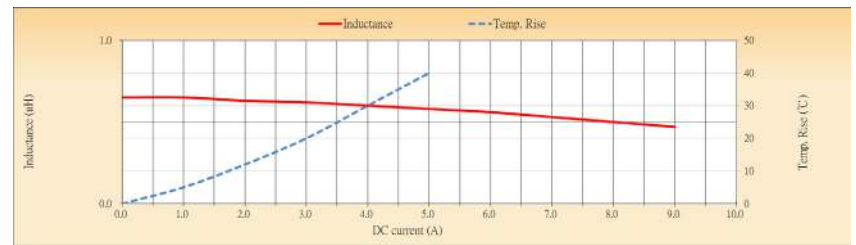
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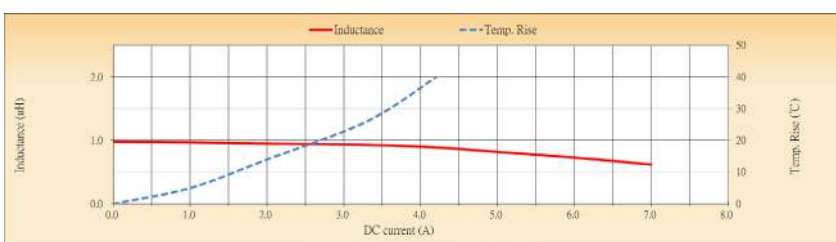
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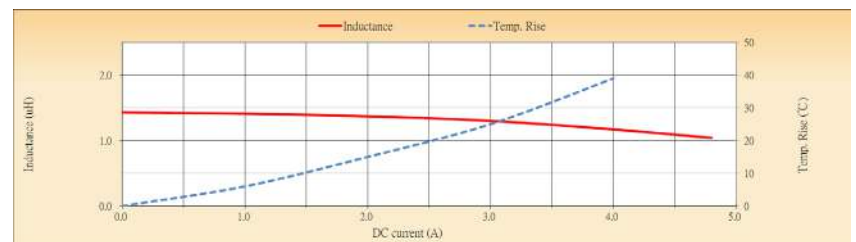
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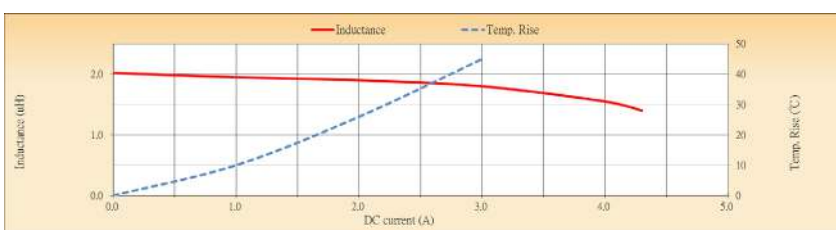
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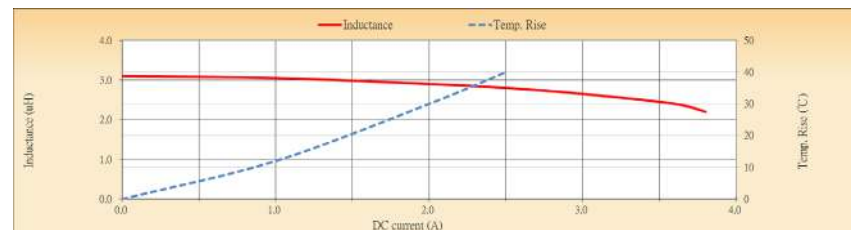
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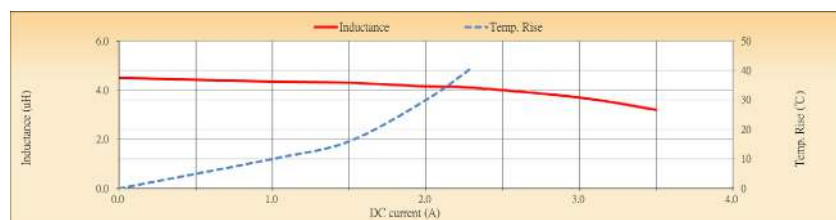
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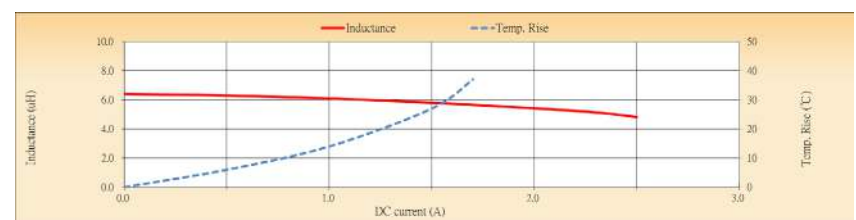
ASPI-M3015-3R3



ASPI-M3015-4R7



ASPI-M3015-6R8



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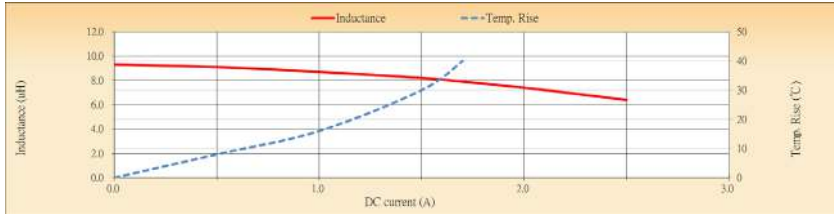
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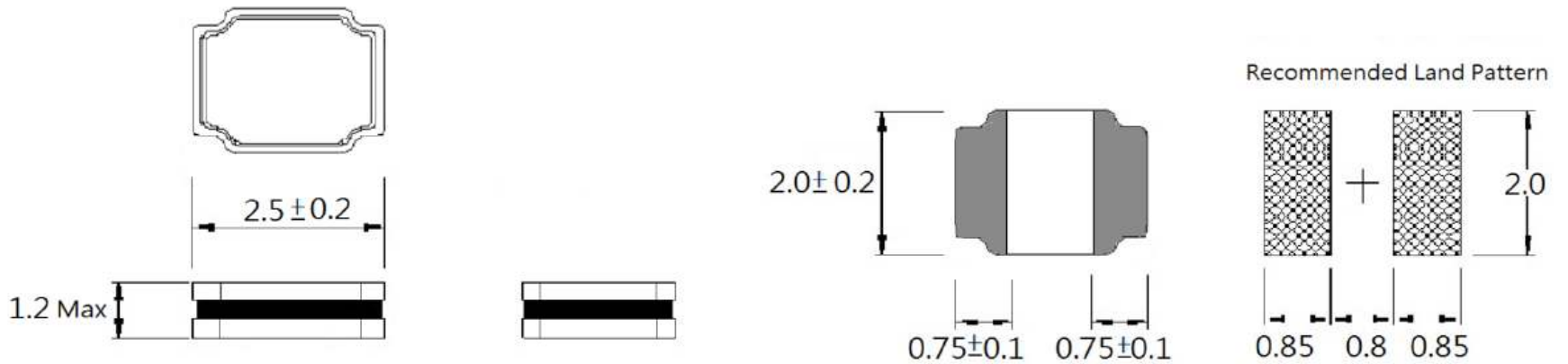
CHARACTERISTICS

ASPI-M3015-100

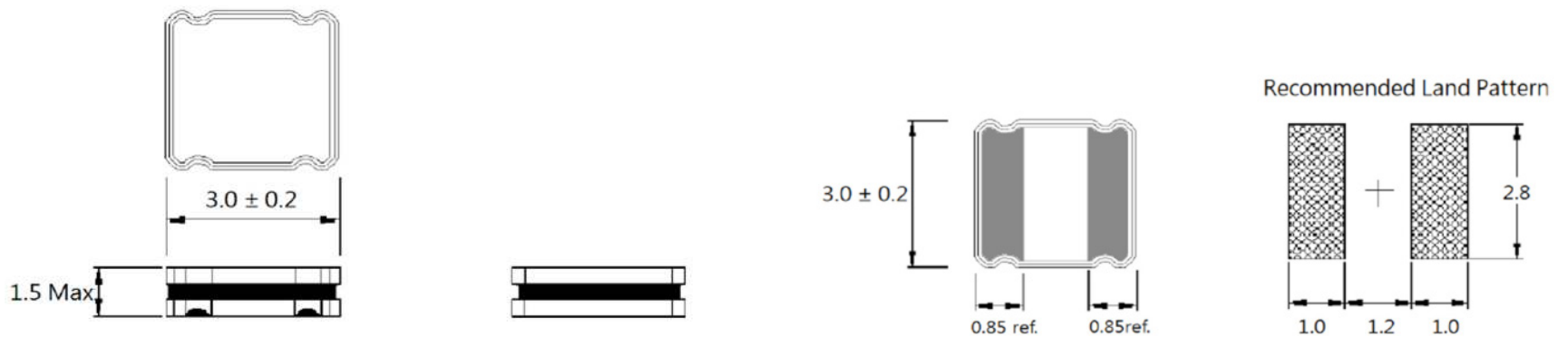


MECHANICAL DIMENSIONS

ASPI-M2512



ASPI-M3015



Dimension: mm

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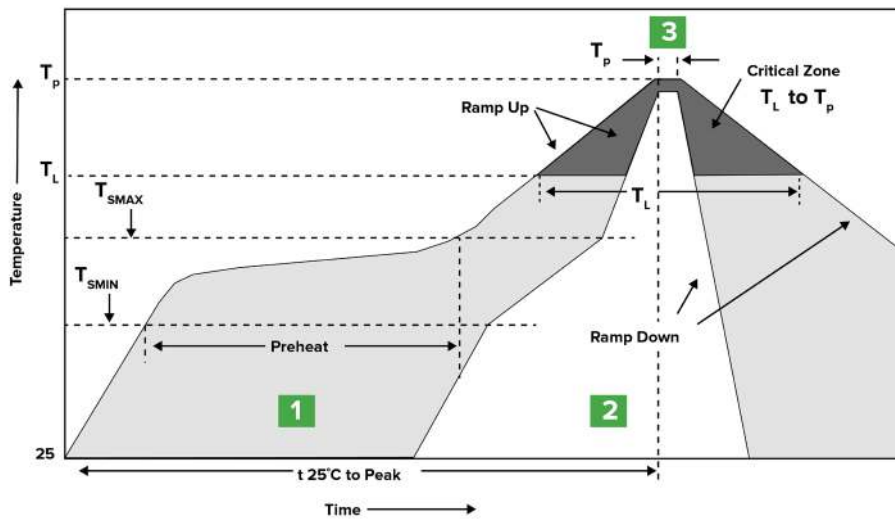


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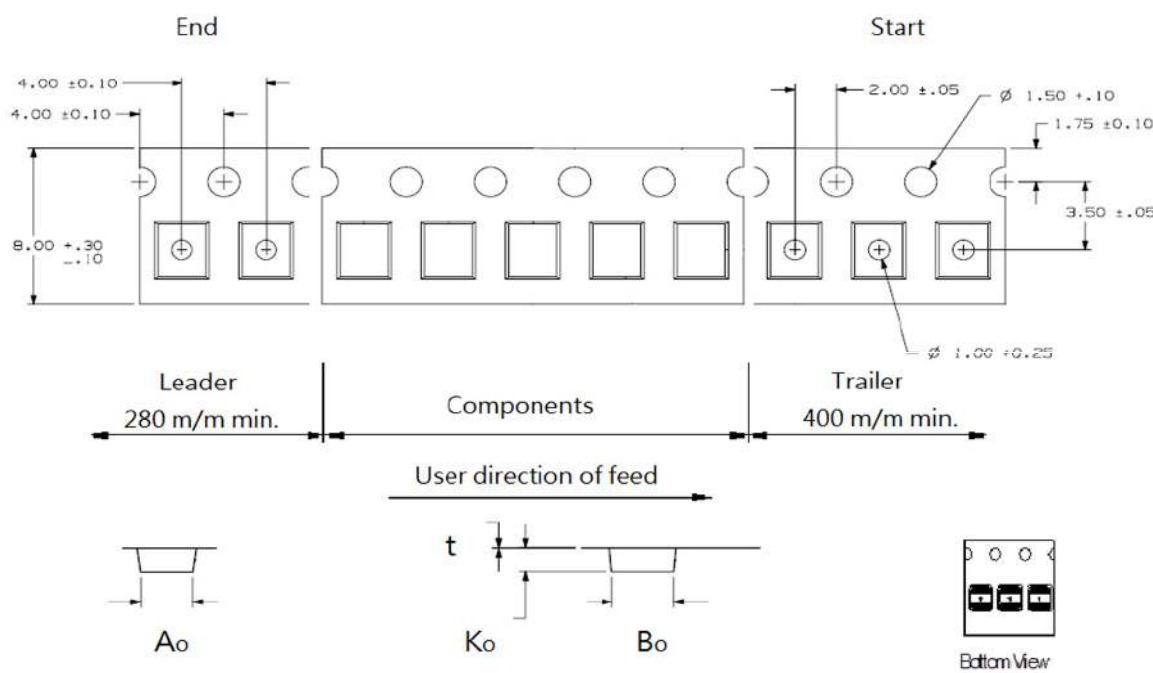
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REFLOW

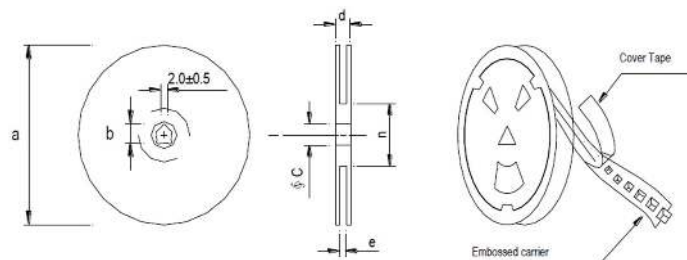


| Zone | Description | Temperature | Times |
|------|-------------|---|---------------|
| 1 | Preheat | $T_{SMIN} \sim T_{SMAX}$ 150°C ~ 200°C | 60 ~ 180 sec. |
| 2 | Reflow | T_L 217°C | 40 ~ 90 sec. |
| 3 | Peak heat | T_P 260°C | 5 sec. MAX |

PACKING (TAPE & REEL: 2000 PCS/REEL)



| Series | A ₀ | B ₀ | t | K ₀ |
|--------|----------------|----------------|-----------|----------------|
| 2512 | 2.35±0.1 | 2.90 ±0.1 | 0.25±0.05 | 1.40±0.1 |
| 3015 | 3.15±0.1 | 3.15 ±0.1 | 0.25±0.05 | 1.60±0.1 |



| a | b | ΨC | d | E | N |
|-------------|------------|------------|----------|-----------|--------|
| 178.0 ± 2.0 | 21.0 ± 0.8 | 13.0 ± 0.8 | 12.5 MAX | 8.4 ± 1.0 | 50 MIN |

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