

Molded Power Inductor



ASPI-0630HI Series

Request Samples



Check Inventory



7.2 x 6.6 x 3.0 mm
RoHS/RoHS II Compliant
MSL Level = 1

Features

- High saturation current
- Low loss due to low DC resistance.
- Frequency application up to 3MHz.
- Low profile with max thickness 3.0mm.
- 100% lead free and meets RoHS standard.
- Suitable for reflow soldering.
- High reliability SMD package

Applications

- DC/DC converters
- Notebook/Laptop power circuitry
- Desktop, Workstation, Server power circuitry
- Low profile, high current power supplies.

Electrical Specifications

| Part Number | Inductance | DCR | | Saturation Current | Temperature Rise Current | Dim E |
|------------------|---------------|------------------|------------------|--------------------|--------------------------|-------|
| | | Typ | Max | | | |
| Units | μH | $\text{m}\Omega$ | $\text{m}\Omega$ | A | A | mm |
| Symbol | L | | | Isat | Irms | |
| ASPI-0630HI-R10M | 0.10 | 1.15 | 1.7 | 60.0 | 32.5 | 2.0 |
| ASPI-0630HI-R15M | 0.15 | 1.35 | 2.5 | 52.0 | 26.0 | 2.0 |
| ASPI-0630HI-R20M | 0.20 | 2.45 | 3.0 | 41.0 | 24.0 | 3.0 |
| ASPI-0630HI-R22M | 0.22 | 2.45 | 2.8 | 40.0 | 23.0 | 3.0 |
| ASPI-0630HI-R33M | 0.33 | 3.1 | 3.9 | 30.0 | 20.0 | 3.0 |
| ASPI-0630HI-R47M | 0.47 | 4.0 | 4.2 | 26.0 | 17.5 | 3.0 |
| ASPI-0630HI-R56M | 0.56 | 4.8 | 5.0 | 25.5 | 16.5 | 3.0 |
| ASPI-0630HI-R68M | 0.68 | 4.95 | 5.5 | 25.0 | 15.5 | 3.0 |
| ASPI-0630HI-R82M | 0.82 | 7.15 | 8.0 | 24.0 | 13.0 | 3.0 |
| ASPI-0630HI-1R0M | 1.0 | 9.3 | 10.0 | 22.0 | 11.0 | 3.0 |
| ASPI-0630HI-1R2M | 1.2 | 11.6 | 13.0 | 20.0 | 10.0 | 3.0 |
| ASPI-0630HI-1R5M | 1.5 | 13.5 | 15.0 | 18.0 | 9.0 | 3.0 |
| ASPI-0630HI-1R8M | 1.8 | 14.9 | 18.0 | 16.0 | 8.5 | 3.0 |
| ASPI-0630HI-2R2M | 2.2 | 18.3 | 20.0 | 14.0 | 8.0 | 3.0 |
| ASPI-0630HI-3R3M | 3.3 | 28.0 | 30.0 | 13.5 | 6.0 | 3.0 |
| ASPI-0630HI-4R7M | 4.7 | 38.0 | 40.0 | 10.0 | 5.5 | 3.0 |
| ASPI-0630HI-5R6M | 5.6 | 46.9 | 50.0 | 9.0 | 5.0 | 3.0 |
| ASPI-0630HI-6R8M | 6.8 | 54.8 | 60.0 | 8.0 | 4.5 | 3.0 |
| ASPI-0630HI-8R2M | 8.2 | 61.5 | 68.0 | 7.5 | 4.0 | 3.0 |
| ASPI-0630HI-100M | 10.0 | 102.5 | 105.0 | 7.0 | 3.0 | 3.0 |

ASPI-0630HI is RoHS/RoHS II Compliant and Pb free

MSL level: 1



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Test Conditions

1. Temperature: $26^{\circ}\text{C} \pm 3^{\circ}\text{C}$, Humidity: $< 70\% \text{ RH}$, Frequency $100\text{KHz}/0.25\text{v}$
2. Inductance is measured in HP-4284A Precision LCR Meter.
3. RDC is measured in HP-4338B milli ohm meter.(or equivalent).
4. Isat: Based on inductance change ($\Delta L/L_0 : \leq -20\%$)
5. Irms: Based on temperature rise ($\Delta T : 40^{\circ}\text{C TYP.}$)

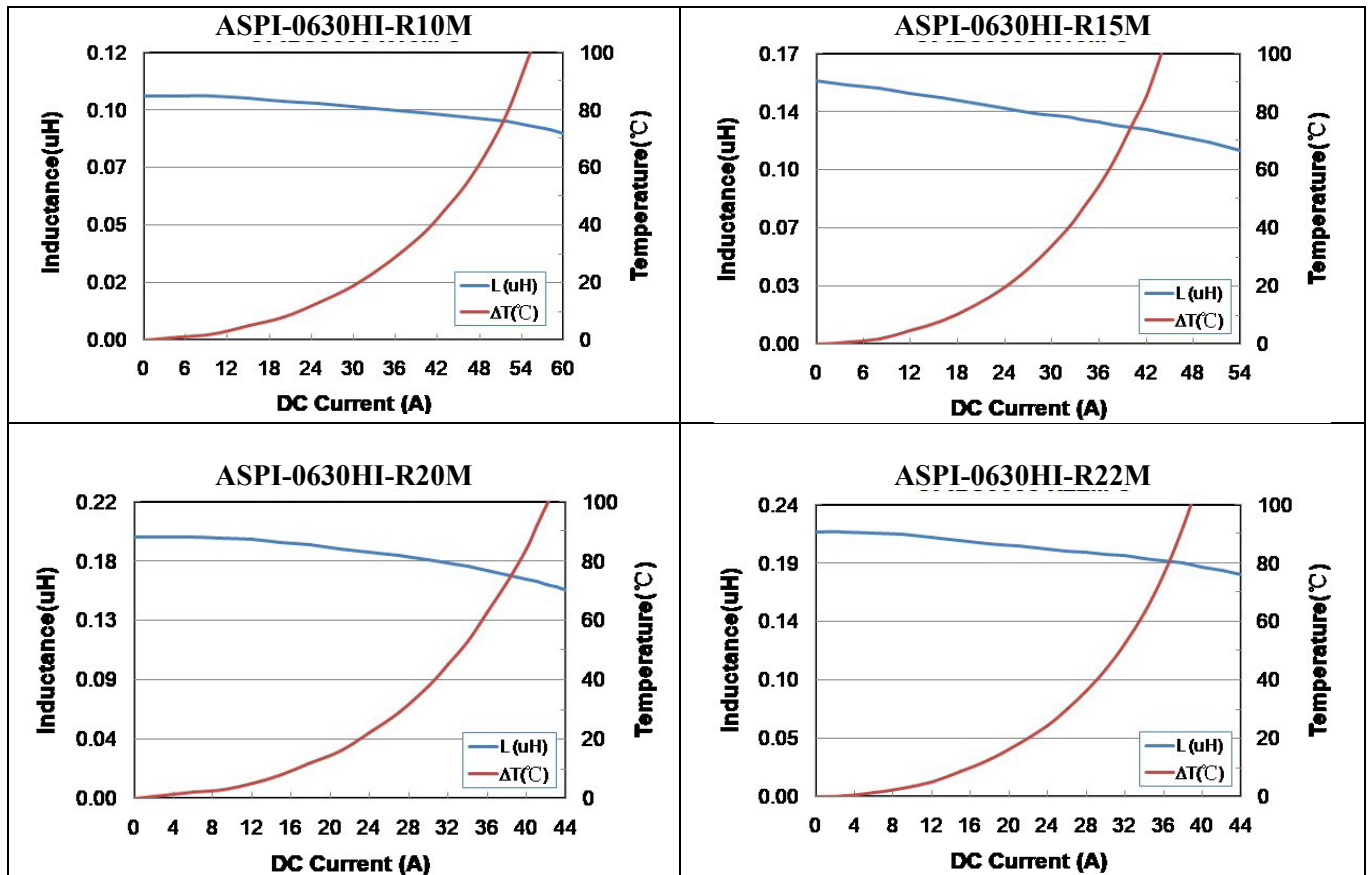
Operating Temperature

-55°C to $+125^{\circ}\text{C}$ (Including self-generated heat)

Storage Temperature and Humidity

$+25^{\circ}\text{C}$ to $+35^{\circ}\text{C}$, 45% to 85% RH

Typical Performance Graphs



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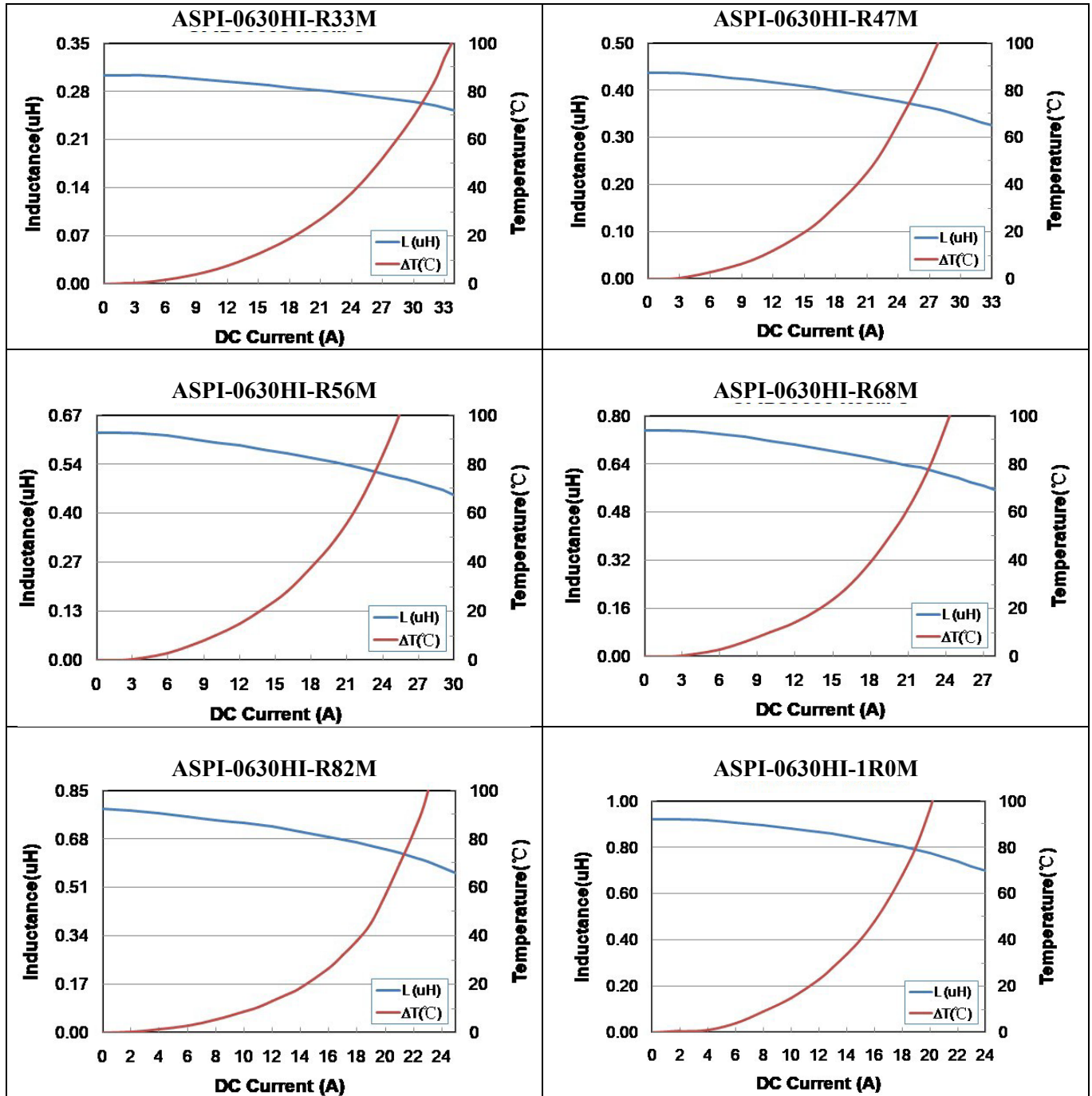
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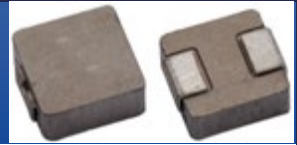
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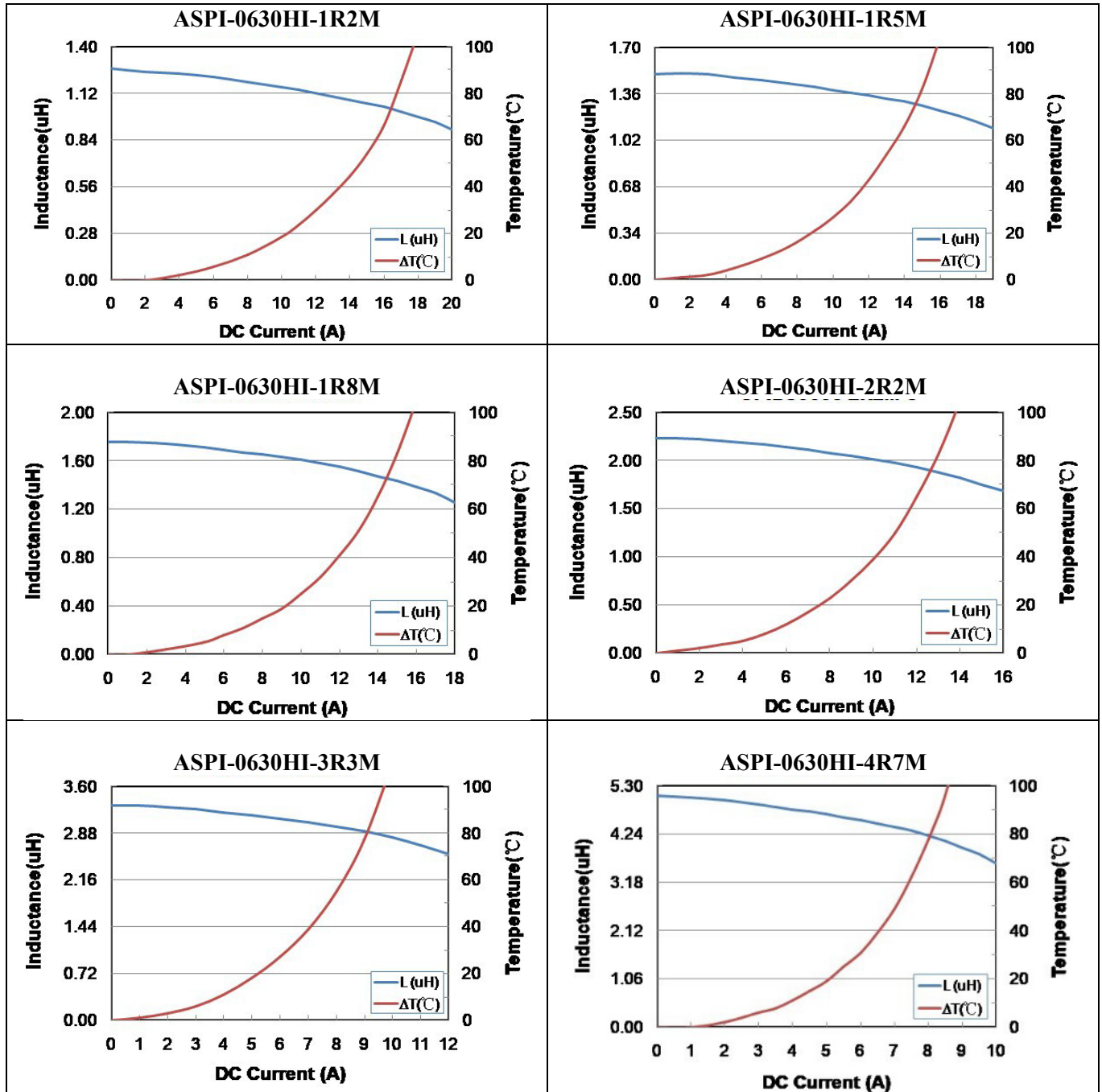
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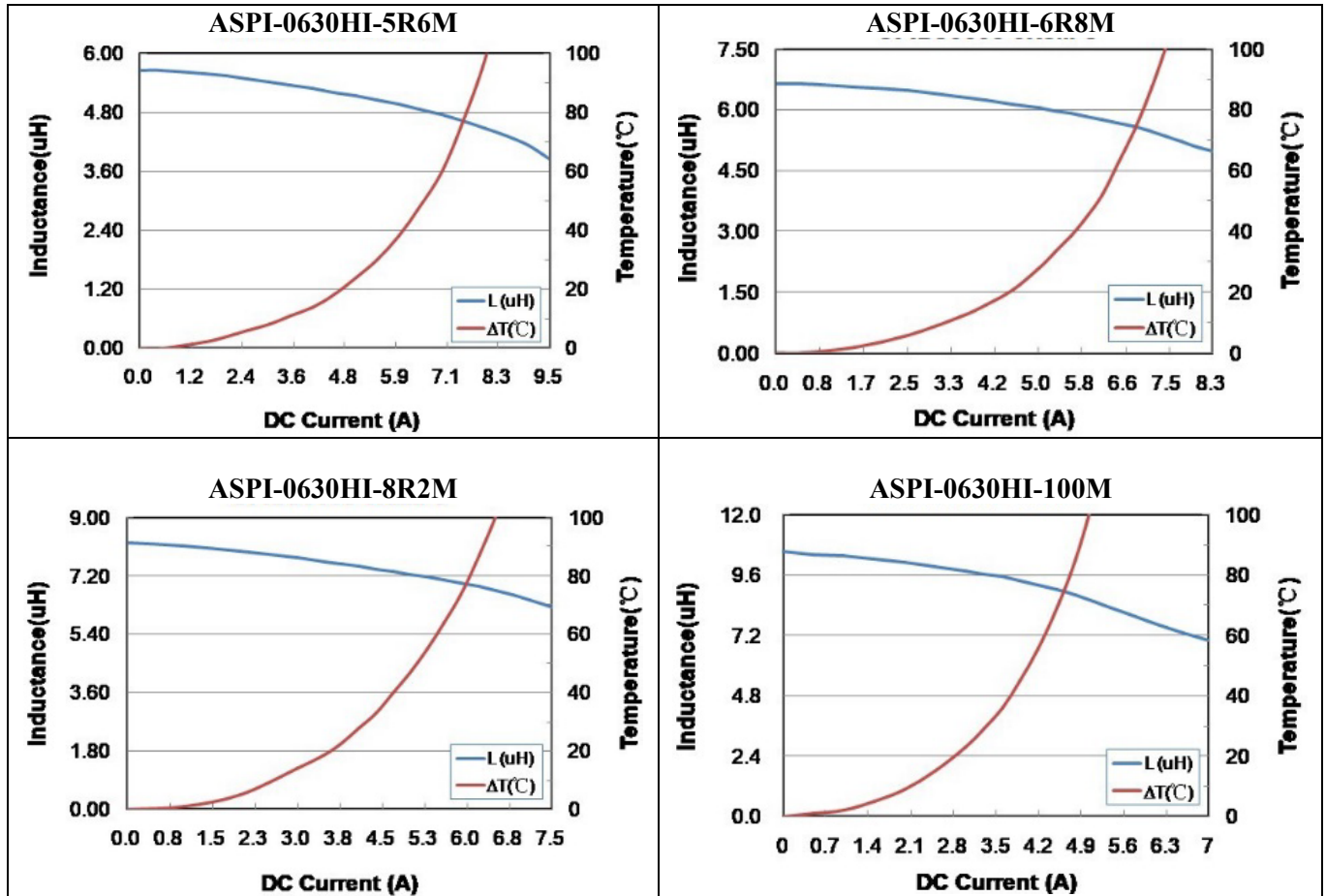
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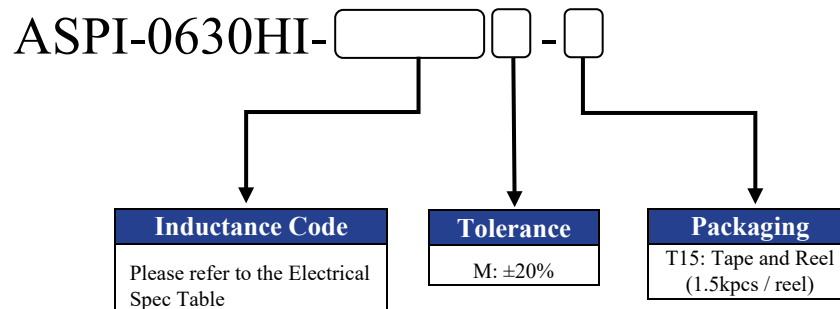
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Part Number Identification



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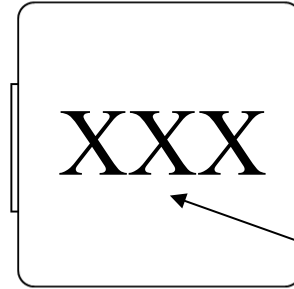


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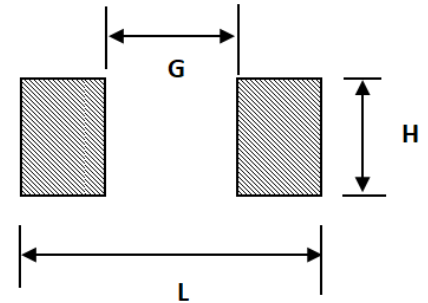
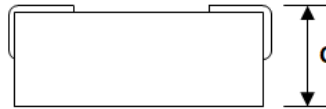
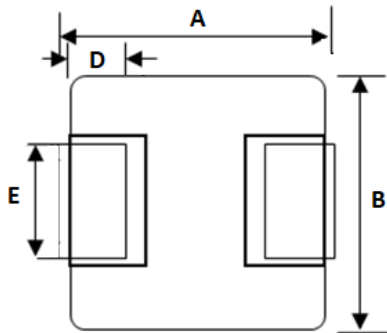
Marking



Inductance Code
 e.g. 2R2

Marking Method = Ink Marking

Mechanical Specifications



Recommended Layout

| A | B | C | D | E | G | H | L |
|----------|-----------|---------|----------|----------------------------|-----|-----|-----|
| 7.2 ±0.3 | 6.60 ±0.3 | 3.0 MAX | 1.6 ±0.3 | See Electrical Specs table | 3.7 | 3.5 | 8.0 |

Dimension: mm

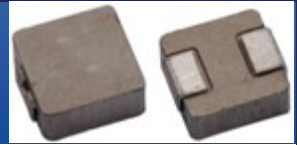


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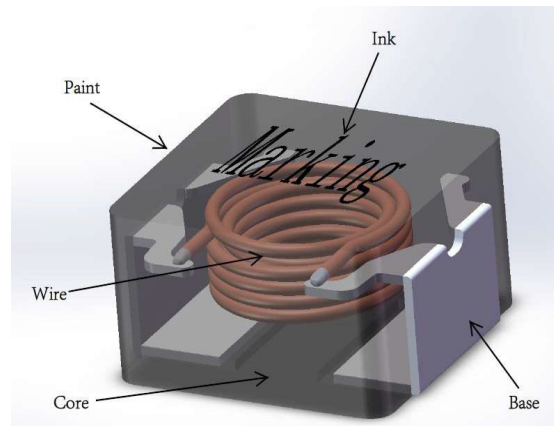
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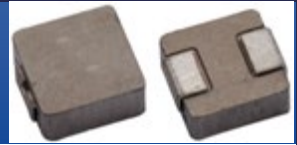
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Materials List

| No | Part Name | Material |
|----|-----------|------------------------|
| 1 | Core | Metal powder |
| 2 | Base | Cu + Ni + Sn plating |
| 3 | Wire | Copper wire, EIW Class |
| 4 | Marking | Ink(black) |
| 5 | Paint | Epoxy resin |



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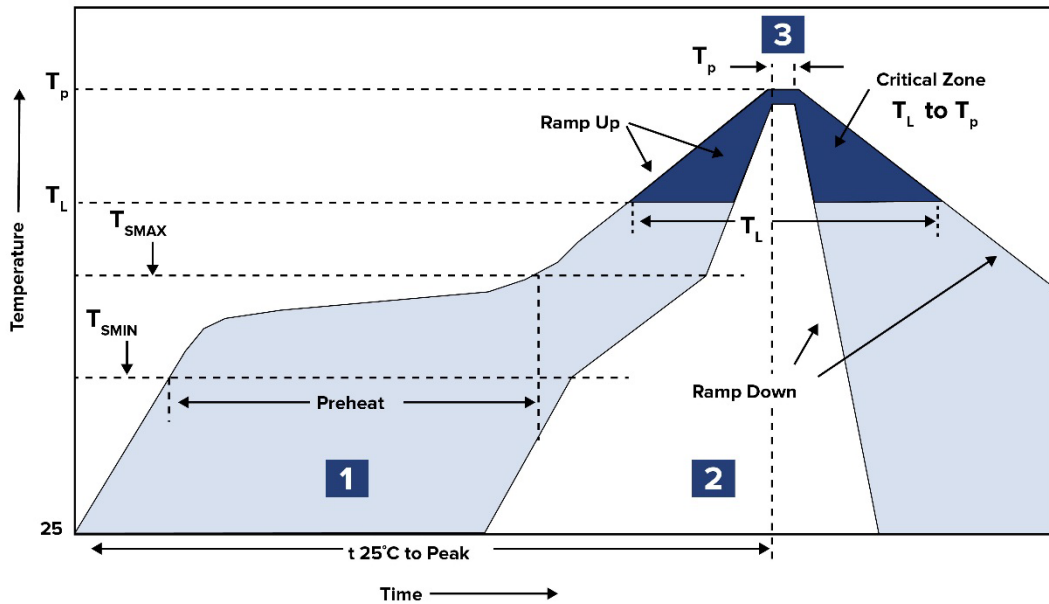


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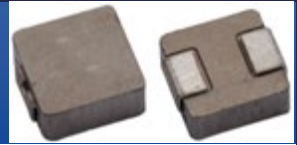
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Reflow Profile



| 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 ~ 90 sec. |
| 3 | Peak heat | T_P 255°C±5°C | 10 sec. MAX |

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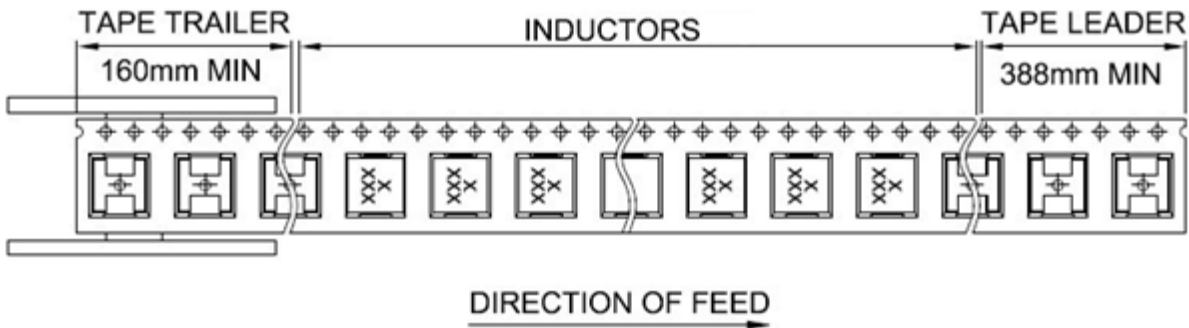
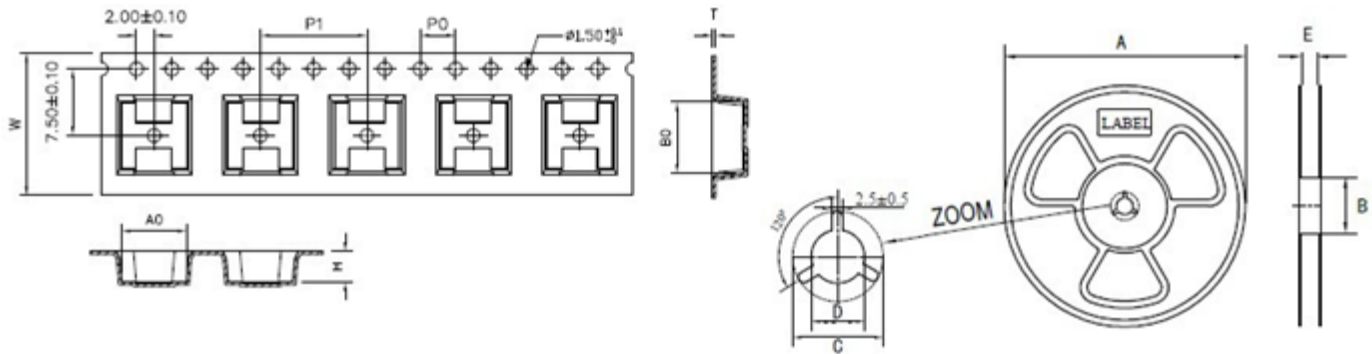
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Packaging

T15: 1,500pcs / reel



| Part Number | Reel Dimensions (mm) | | | | |
|-------------|----------------------|----------|----------|------------|------------|
| | A | B | C | D | E |
| ASPI-0630HI | 330 ±1 | 100 ±0.5 | 20.2 min | 13 +0.5/-0 | 16.4 +2/-0 |

| Part Number | Tap Dimensions (mm) | | | | | | |
|-------------|---------------------|---------|----------|----------|------------|----------|----------|
| | W | P1 | P0 | H | T | A0 | B0 |
| ASPI-0630HI | 16 ±0.3 | 12 ±0.1 | 4.0 ±0.1 | 3.4 ±0.1 | 0.30 ±0.05 | 6.9 ±0.1 | 6.0 ±0.1 |

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