

# 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         | mΩ    | mΩ    | 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 ( $\Delta T : 40^{\circ}\text{C TYP.}$ )

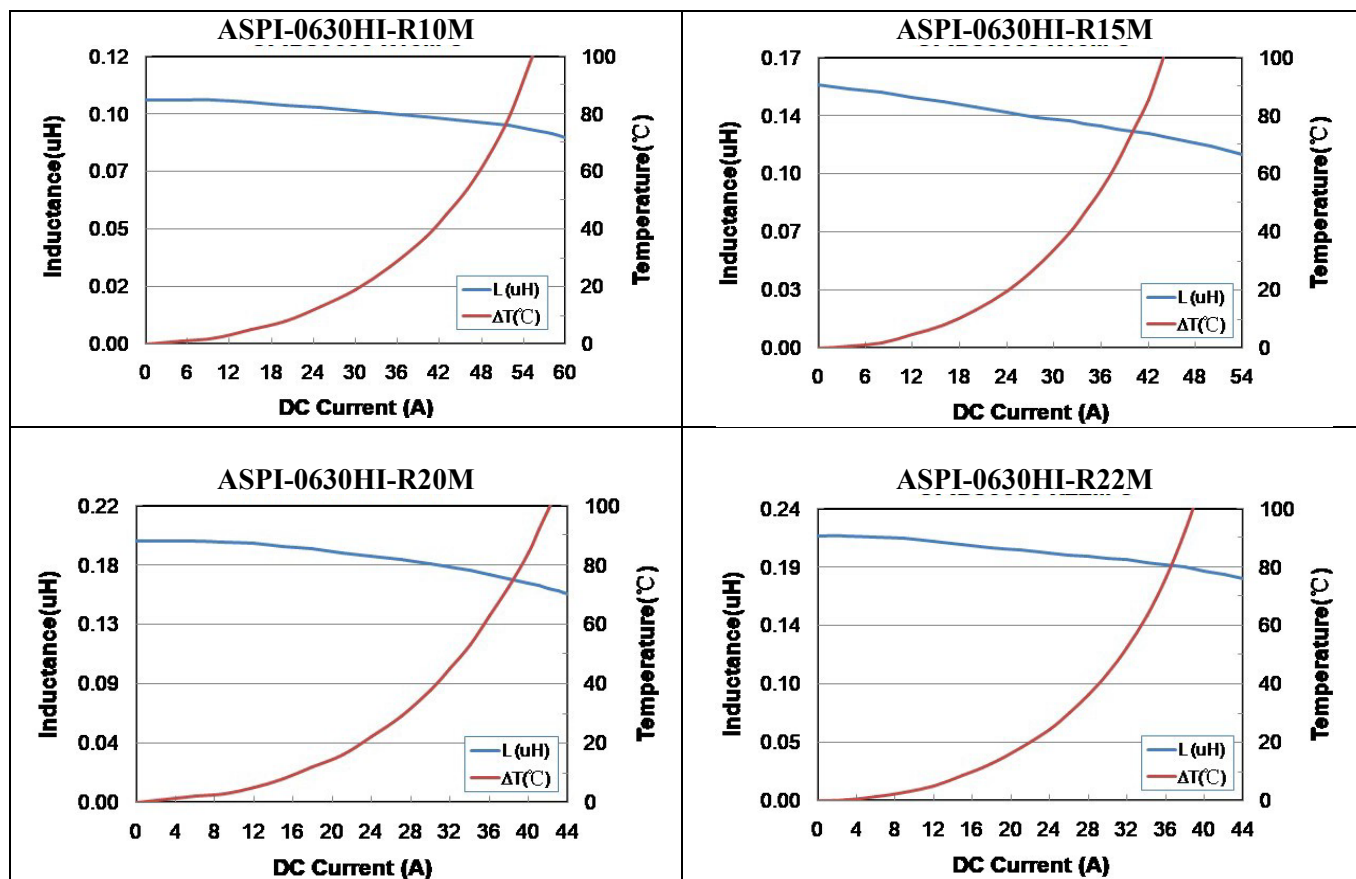
### Operating Temperature

$-55^{\circ}\text{C}$  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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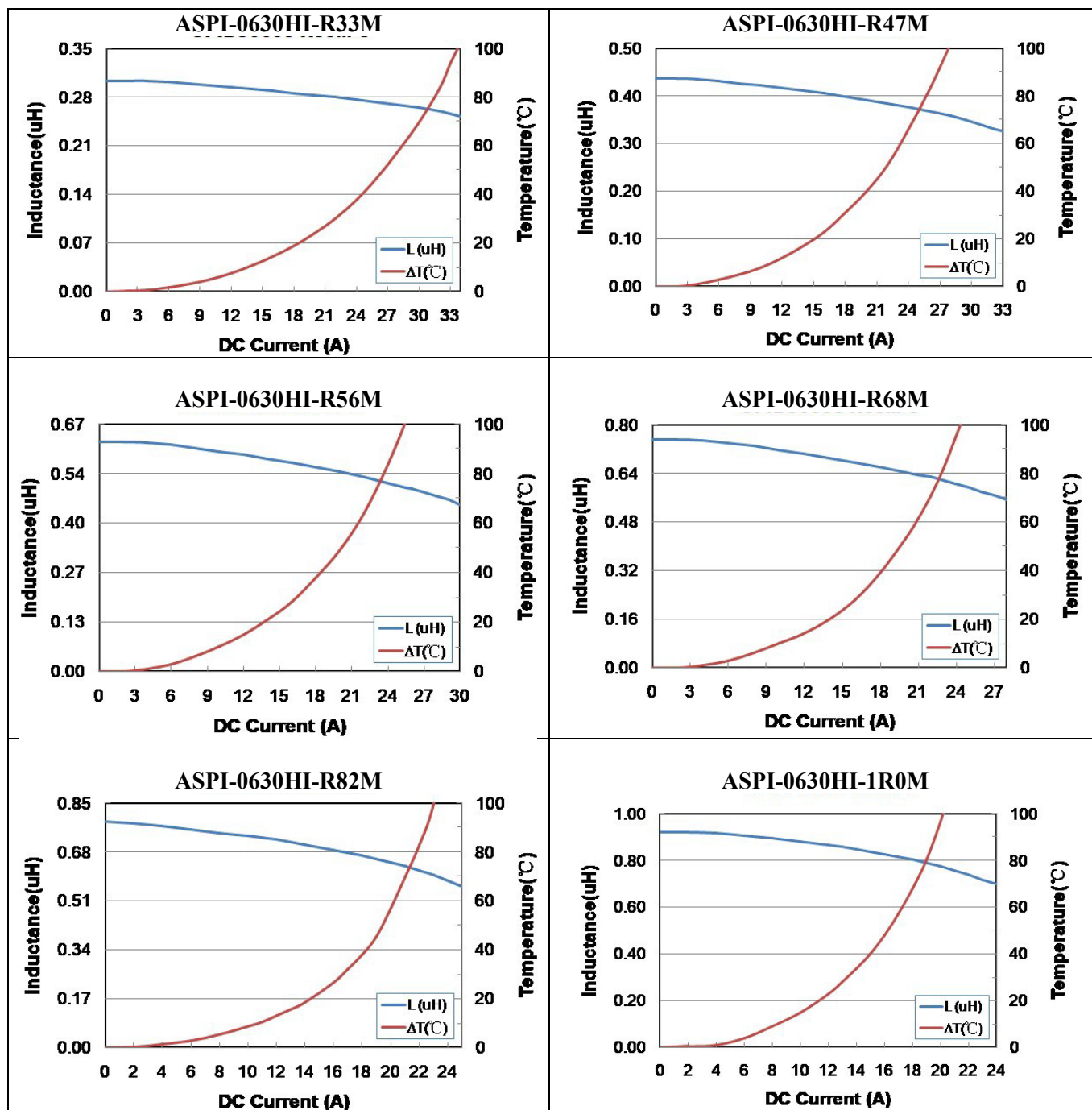
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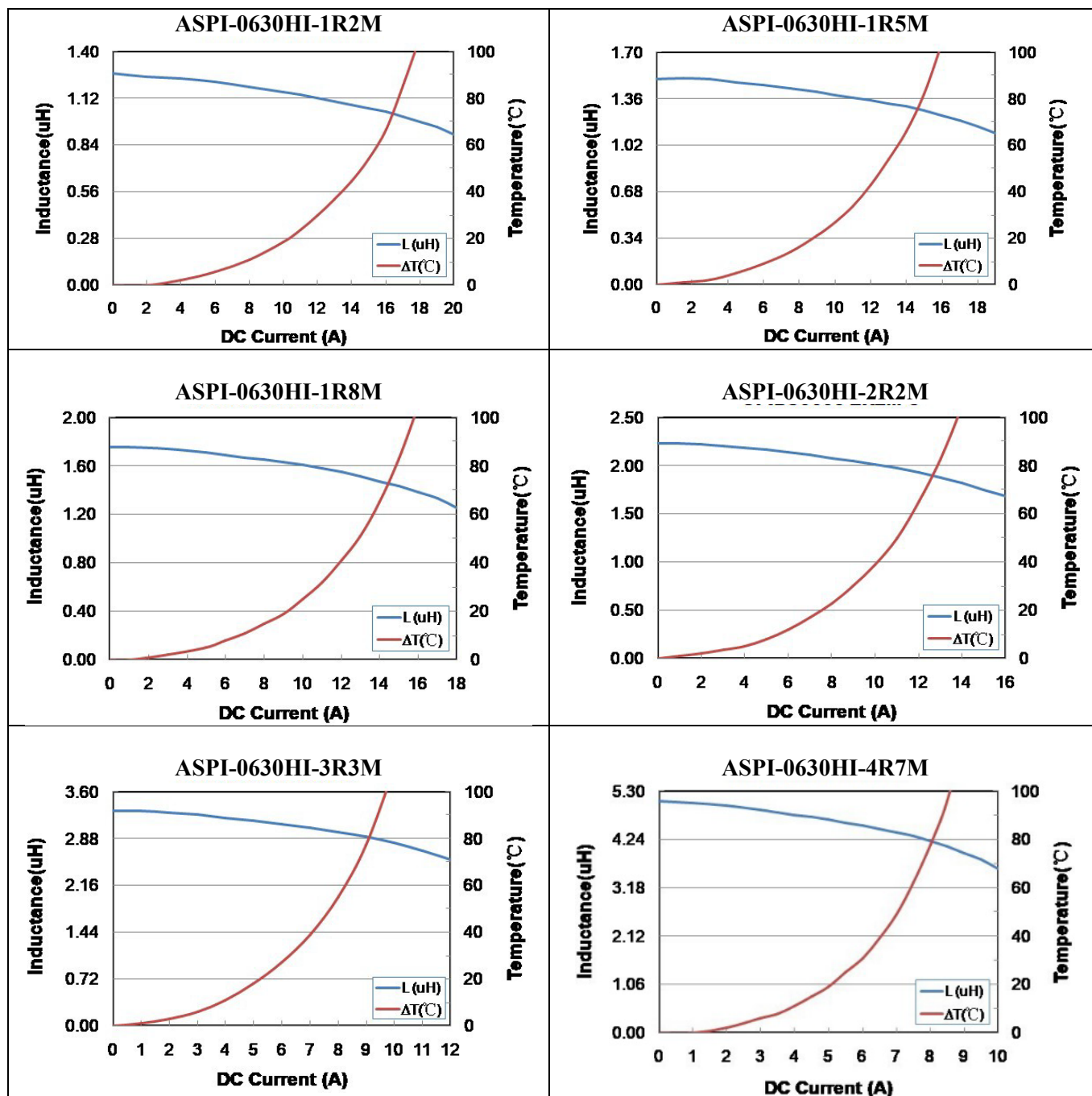
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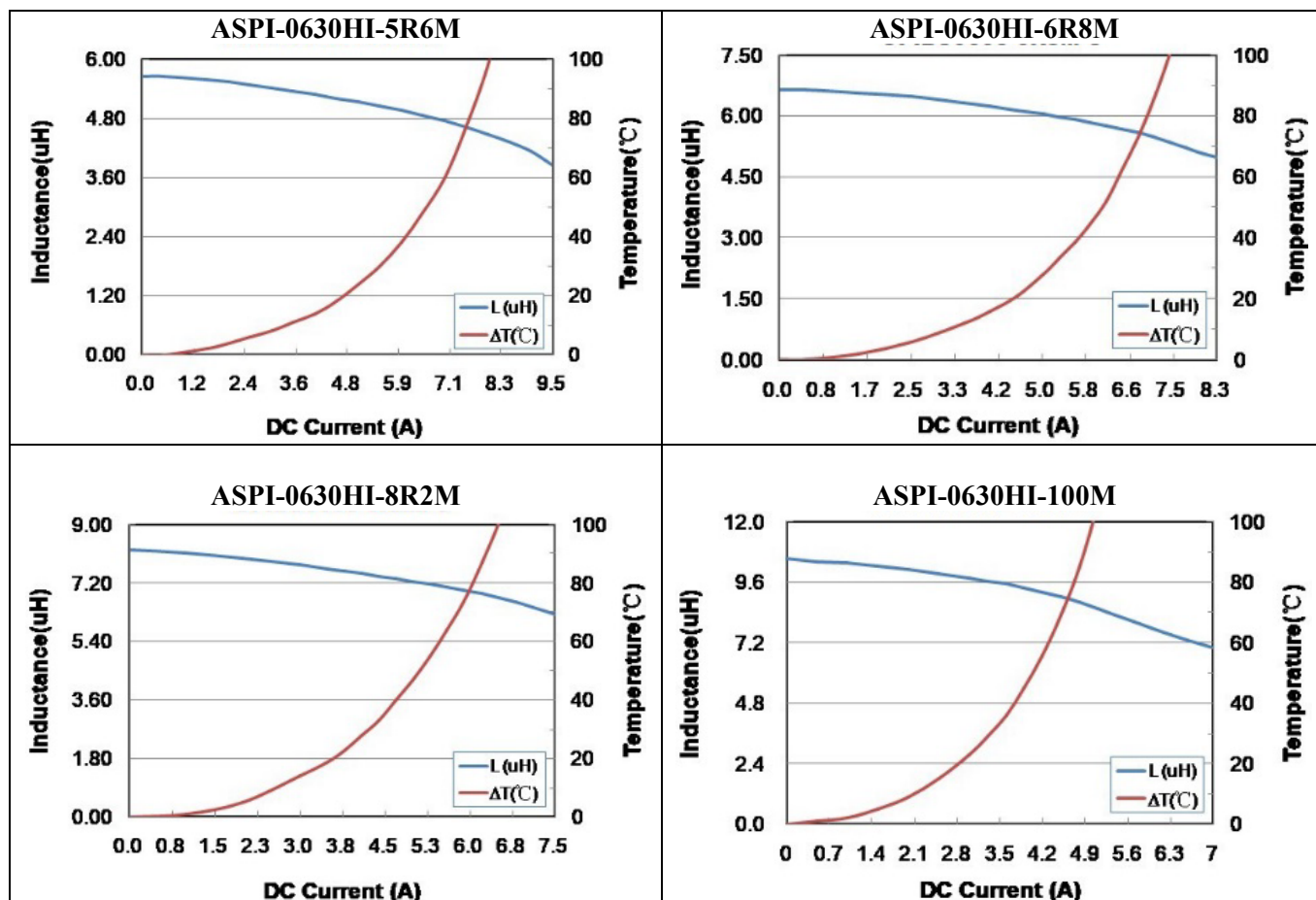
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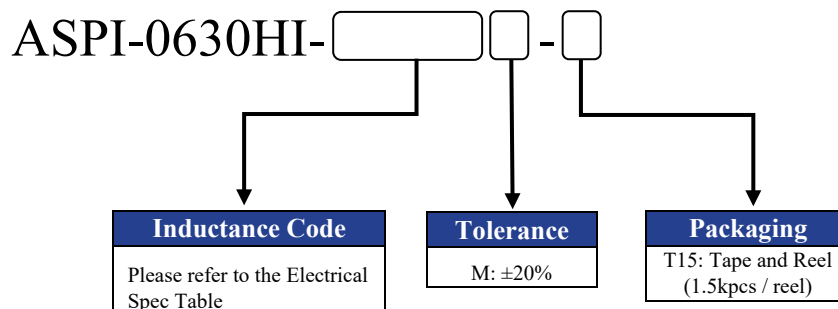
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## Part Number Identification



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**ASPI-0630HI Series**

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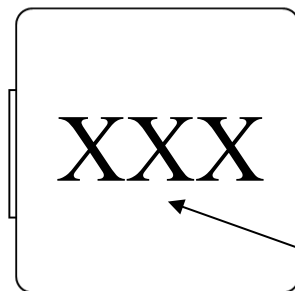


Check Inventory



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

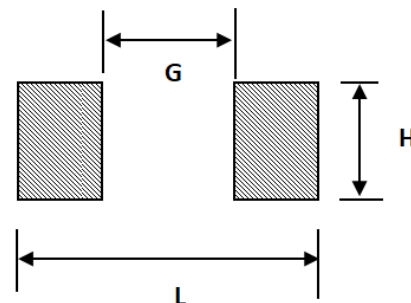
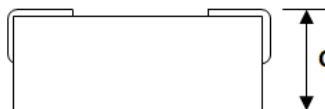
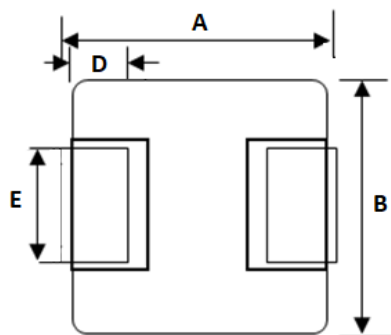
## Marking



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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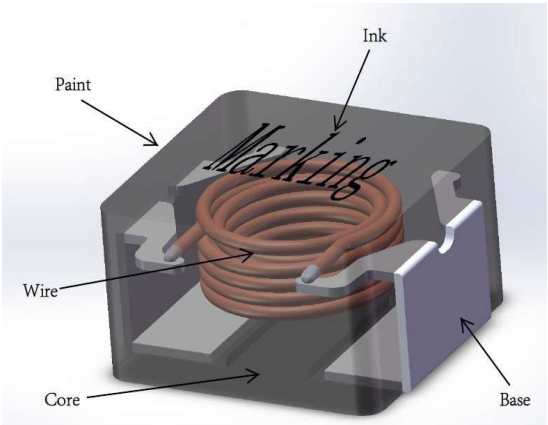
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## Materials List

| 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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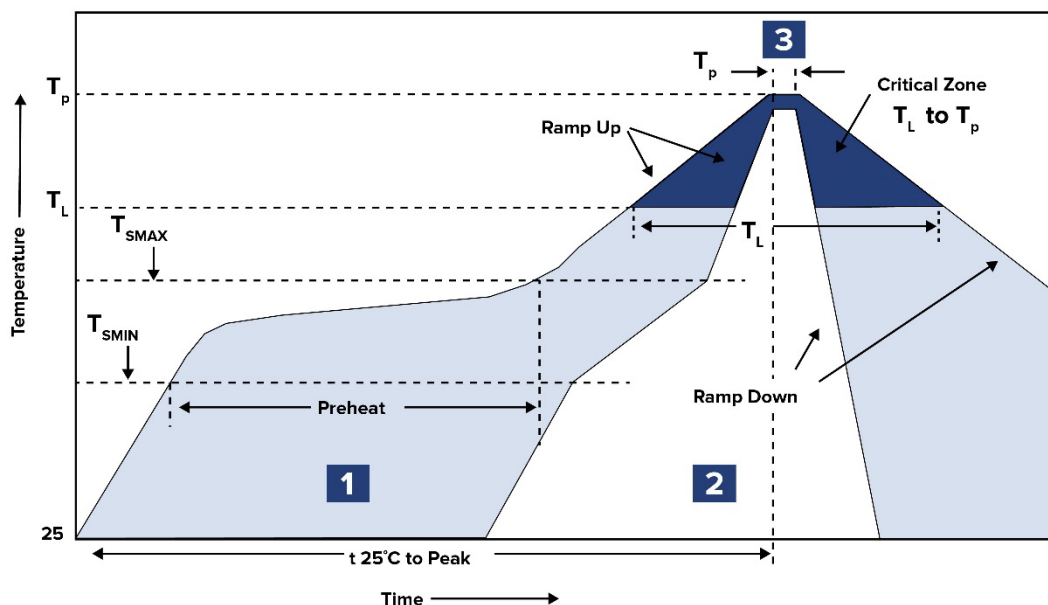


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## Reflow Profile



| Zone | Description | Temperature                                                            | Times         |
|------|-------------|------------------------------------------------------------------------|---------------|
| 1    | Preheat     | $T_{SMIN} \sim T_{SMAX}$<br>$150^\circ\text{C} \sim 200^\circ\text{C}$ | 60 ~ 120 sec. |
| 2    | Reflow      | $T_L$<br>$217^\circ\text{C}$                                           | 60 ~ 90 sec.  |
| 3    | Peak heat   | $T_P$<br>$255^\circ\text{C} \pm 5^\circ\text{C}$                       | 10 sec. MAX   |

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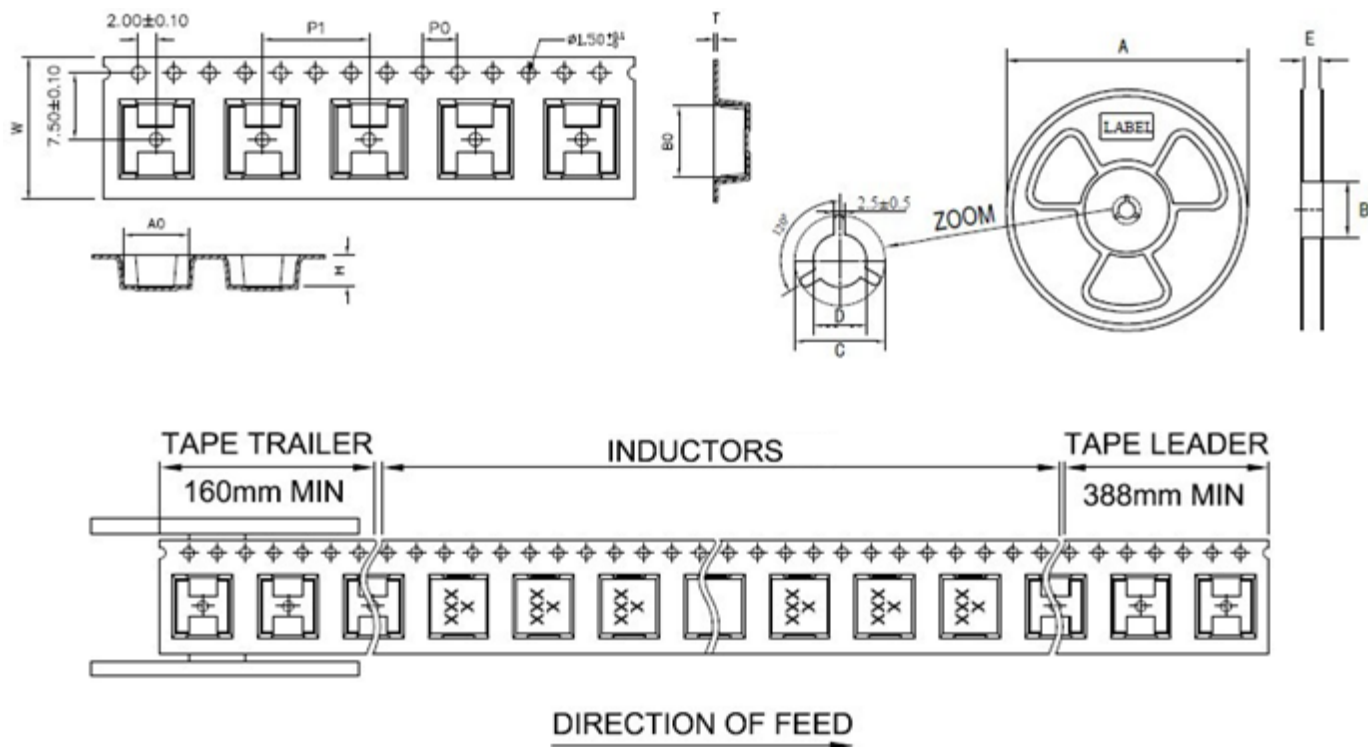
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## Packaging

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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