

# SMD Multilayer Chip Power Inductor

ASMPH-1008



RoHS/RoHS II Compliant



2.5 x 2.0 x 0.9mm

## FEATURES:

- High DC bias current due to trench technology
- Much lower profile than any other series
- Monolithic structure for high reliability
- Excellent solderability and heat resistance
- Magnetically shielded structure to eliminate cross coupling

## APPLICATIONS:

ASMPH family is a miniature type of multilayer power inductors constructed using low loss ferrite material to support high-speed switching frequencies. The compact size and high efficiency is ideal for DC/DC converter applications in space limited boards.

- Switching mode regulators for smart phones and cameras.
- Buck converters for RFIC, RFPA and Audio Codec modules.
- Boost converters for flash drivers.
- Wireless cards, DVD players and other electronic devices.

## ELECTRICAL SPECIFICATIONS:

**Operating Temperature:** -55°C to +125°C

**Storage Temperature:** -10°C to +40°C and RH 70% (Max.)

| Part Number<br>ASMPH-1008-<br>Inductance Code | Inductance | Tolerance        | DCR     | SRF Min. | Temperature<br>Rise Current<br>(max) | Saturation<br>Current<br>(Typ) |
|---|------------|------------------|---------|----------|--------------------------------------|--------------------------------|
| Units   | μH         | %                | Ω ± 25% | MHz      | mA                                   | mA                             |
| Symbol  | L          | M=±20%<br>N=±30% | DCR     | SRF      | I <sub>rms</sub>                     | I <sub>sat</sub>               |
| ASMPH-1008-R47                                | 0.47       | M, N             | 0.04    | 105      | 1800                                 | 1500                           |
| ASMPH-1008-1R0                                | 1.0        | M, N             | 0.06    | 70       | 1600                                 | 1400                           |
| ASMPH-1008-1R5                                | 1.5        | M, N             | 0.07    | 65       | 1500                                 | 1200                           |
| ASMPH-1008-2R2                                | 2.2        | M, N             | 0.08    | 55       | 1300                                 | 850                            |
| ASMPH-1008-3R3                                | 3.3        | M, N             | 0.10    | 30       | 1200                                 | 450                            |
| ASMPH-1008-4R7                                | 4.7        | M, N             | 0.11    | 25       | 1100                                 | 320                            |

Unless otherwise specified, the standard atmospheric conditions for measurement/test as:

- Ambient Temperature: 20±15°C
- Relative Humidity: 65±20%
- Air Pressure: 86 kPa to 106 kPa

**Inductance (L):** HP4291B+HP16192A or Equivalent, tested at 1MHz, -20dBm or 50mV.

**Direct Current Resistance (DCR):** Milliohmeter-HP4338B or Equivalent

**Self-Resonant Frequency (SRF):** HP4291B+HP16192A or Equivalent, -20dBm or 50mV.

**Temperature Rise current (I<sub>rms</sub>):** Electric Power, Electric current meter, Thermometer.

I<sub>rms</sub> is the value of DC current as chip surface temperature rose just 40°C against chip initial surface temperature.

**Saturation Current (I<sub>sat</sub>):** HP6632B system DC power supply, HP4291B+HP16192A+HP16200A or equivalent.

I<sub>sat</sub> is the value of DC current as inductance decreased just 30% against initial value

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## PART IDENTIFICATIONS:

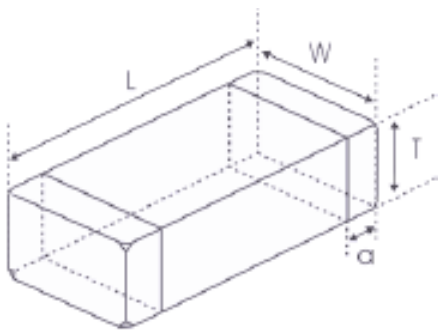
ASMPH-1008- - - 

**Inductance Code**  
Please refer to the table above

**Tolerance**  
M=±20%  
N=±30%

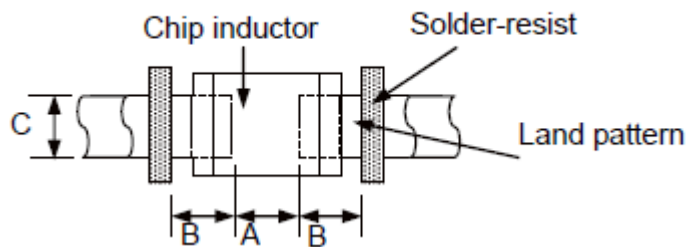
**Packaging**  
T: Tape and Reel (3kpcs / reel)

## OUTLINE DRAWING:



| L       | W               | T       | a       |
|---------|-----------------|---------|---------|
| 2.5±0.2 | 2.0(+0.3, -0.1) | 0.9±0.1 | 0.5±0.3 |

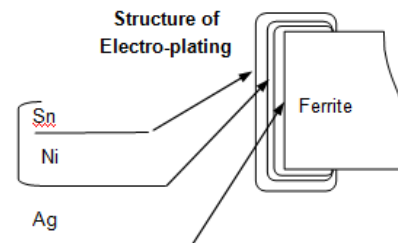
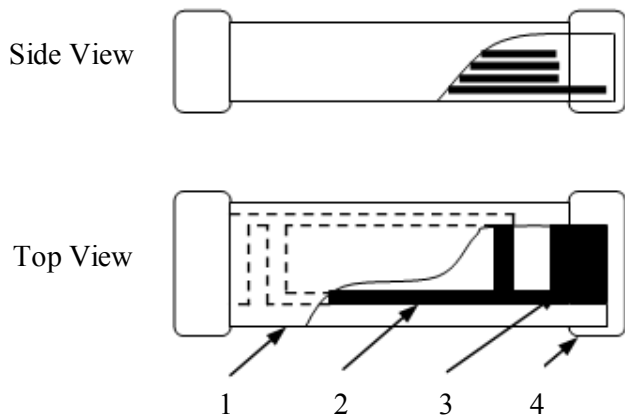
## Recommended Land Pattern



| A       | B       | C       |
|---------|---------|---------|
| 1.0~1.4 | 0.6~1.0 | 1.8~2.2 |

Dimension: mm

## MATERIALS:



|   | Part Name          | Material                                |
|---|--------------------|---|
| 1 | Base Material      | Ferrite                                 |
| 2 | Internal Conductor | Ag                                      |
| 3 | Pull out Electrode | Ag                                      |
| 4 | Terminal Electrode | Ag (Inner layer)<br>Ni-Sn (Outer layer) |

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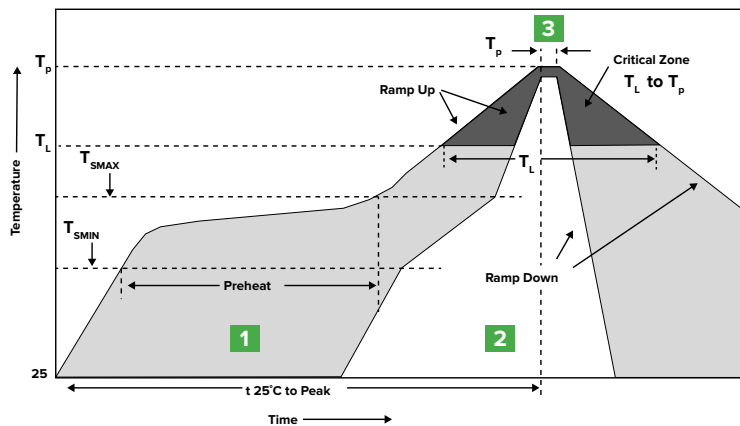
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## REFLOW PROFILE:



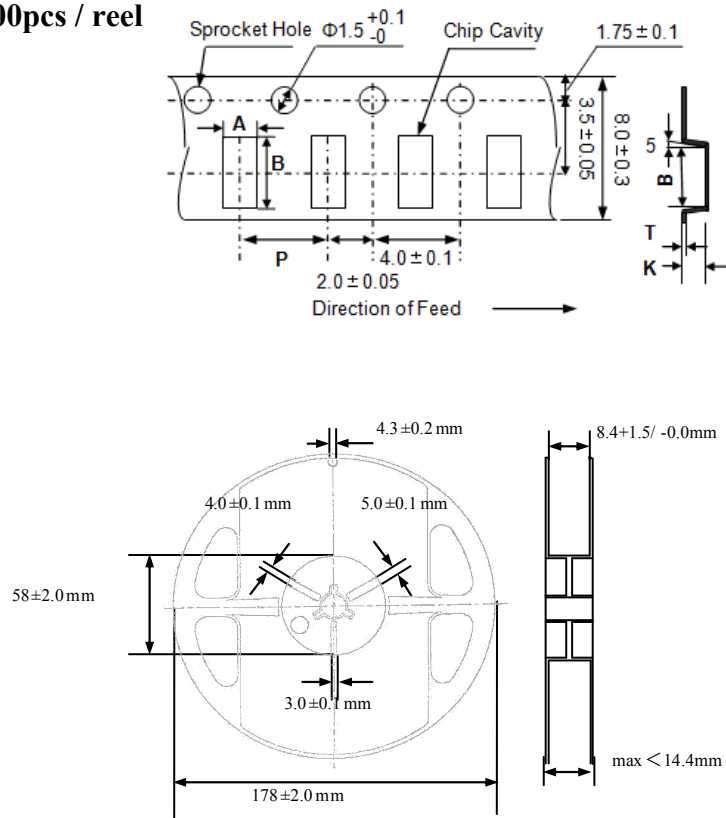
| Zone | Description | Temperature  | Times         |
|------|-------------|--|---------------|
| 1    | Preheat     | $T_{SMIN} \sim T_{SMAX}$<br>$150^{\circ}C \sim 200^{\circ}C$ | 60 ~ 120 sec. |
| 2    | Reflow      | $T_L$<br>$217^{\circ}C$                                      | 60 ~ 90 sec.  |
| 3    | Peak heat   | $T_P$<br>$260^{\circ}C \pm 5^{\circ}C$                       | 10 sec. MAX   |

Solder Paste Sn/3.0Ag/0.5Cu  
Allowed Reflow time 2x Max.

## TAPE & REEL:

### Packing

T: 3,000pcs / reel



| A        | B        | P       | K max | T max |
|----------|----------|---------|-------|-------|
| 2.30±0.1 | 2.80±0.1 | 4.0±0.1 | 1.45  | 0.3   |

Dimension: mm

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