

SMD Multilayer Chip Power Inductor

ASMPH-0603



RoHS/RoHS II Compliant



1.6 x 0.8 x 0.8mm

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

Component Storage Temperature: -55°C to +125°C

Package Storage Temperature: -10°C to +40°C

| Part Number ASMPH-0603- Inductance Code | Inductance | Tolerance | DCR (Typ) | DCR (Max) | SRF Min. | Temperature Rise Current (Max) | Saturation Current (Typ) | Saturation Current (Max) |
|---|------------|------------------|--------------|--------------|-------------|--------------------------------------|--------------------------------|--------------------------------|
| Units | μH | % | Ω | Ω | MHz | mA | mA | mA |
| Symbol | L | M=±20% N=±30% | DCR | DCR | SRF | I _{rms} | I _{sat} | I _{sat} |
| ASMPH-0603-R22 | 0.22 | M, N | 0.10 | 0.13 | 200 | 1250 | 1600 | 1350 |
| ASMPH-0603-R33 | 0.33 | M, N | 0.13 | 0.17 | 190 | 1200 | 1500 | 1250 |
| ASMPH-0603-R47 | 0.47 | M, N | 0.15 | 0.19 | 180 | 1100 | 1200 | 1000 |
| ASMPH-0603-R68 | 0.68 | M, N | 0.18 | 0.23 | 160 | 1150 | 1100 | 950 |
| ASMPH-0603-1R0 | 1.0 | M, N | 0.20 | 0.25 | 125 | 1000 | 800 | 650 |
| ASMPH-0603-1R5 | 1.5 | M, N | 0.23 | 0.29 | 100 | 900 | 500 | 420 |
| ASMPH-0603-2R2 | 2.2 | M, N | 0.30 | 0.38 | 80 | 850 | 300 | 250 |
| ASMPH-0603-2R7 | 2.7 | M, N | 0.34 | 0.43 | 90 | 750 | 220 | 180 |
| ASMPH-0603-3R3 | 3.3 | M, N | 0.40 | 0.50 | 100 | 700 | 150 | 125 |
| ASMPH-0603-4R7 | 4.7 | M, N | 0.40 | 0.50 | 65 | 700 | 80 | 65 |

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.

I_{rms} is the value of DC current as chip surface temperature rose just 40°C against chip initial surface temperature.

I_{sat} is the value of DC current inductance decreased just 30% against initial value.

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PART IDENTIFICATIONS:

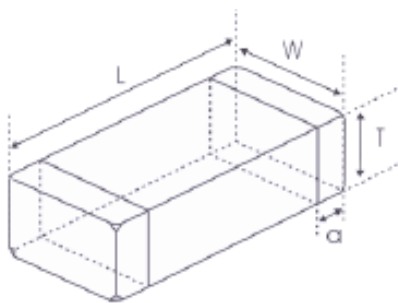
ASMPH-0603- - -

Inductance Code
Please refer to the table above

Tolerance
M=±20%
N=±30%

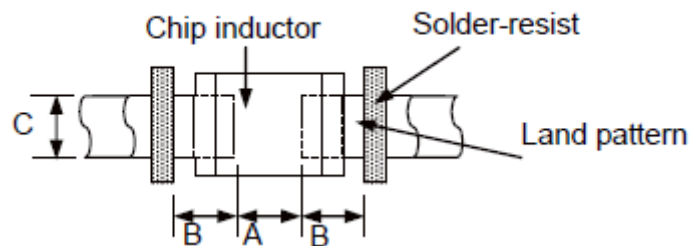
Packaging
T: Tape and Reel (4kpcs / reel)

OUTLINE DRAWING:



| L | W | T | a |
|-----------|----------|----------|---------|
| 1.60±0.15 | 0.8±0.15 | 0.8±0.15 | 0.3±0.2 |

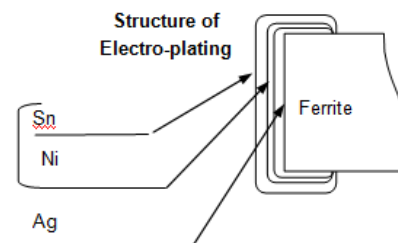
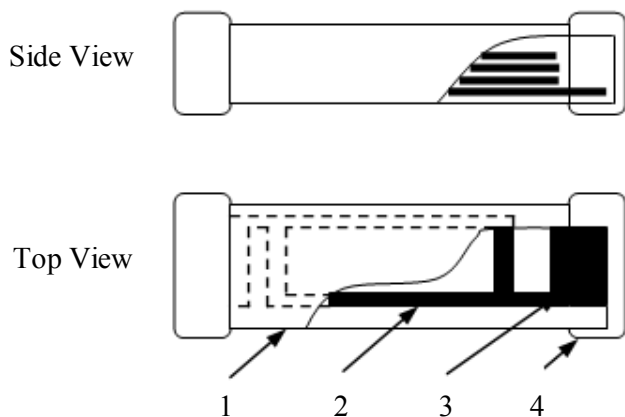
Recommended Land Pattern



| A | B | C |
|-----------|-----------|-----------|
| 0.60~0.80 | 0.60~0.80 | 0.60~0.80 |

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) Ni-Sn (Outer layer) |

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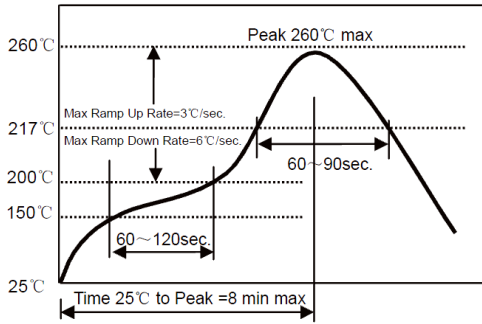


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REFLOW PROFILE:

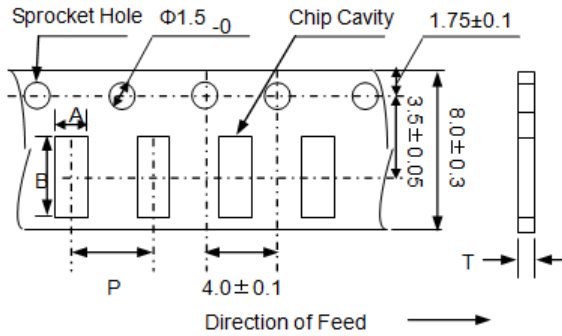


| | |
|-----------------------------|-------------------------------|
| Preheat Condition | 150 to 200 °C; 60 to 120 sec. |
| Allowed time above 217 °C | 60 to 90 sec. |
| Max temperature | 260 °C |
| Max time at max temperature | 10 sec. |
| Solder paste | Sn/3.0Ag/0.5Cu |
| Allowed Reflow time | 2x max. |

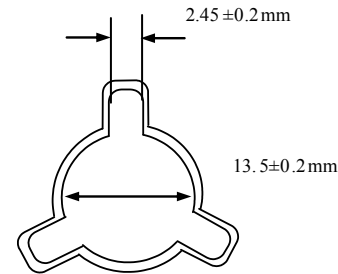
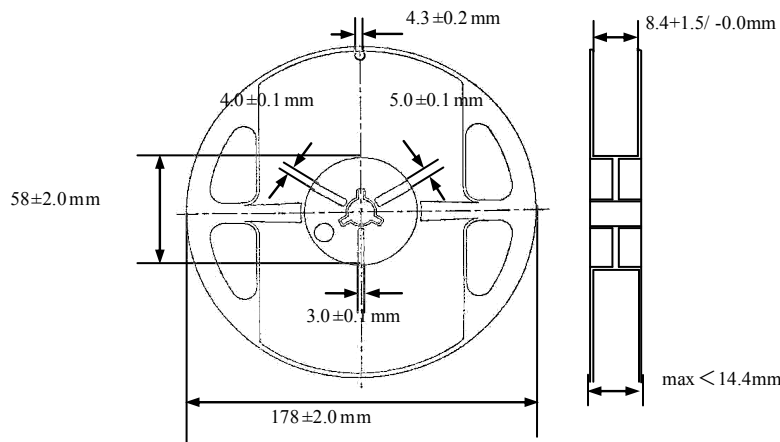
TAPE & REEL:

Packing

T: 4,000pcs / reel



| A | B | P | T (max) |
|---------|---------|---------|---------|
| 1.0±0.2 | 1.8±0.2 | 4.0±0.1 | 1.1 |



Dimension: mm

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