



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

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

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1.6 x 0.8 x 0.8mm

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## PART IDENTIFICATIONS:

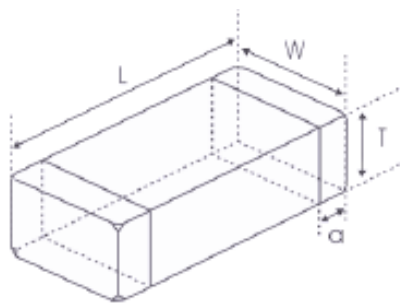
ASMPH-0603---

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

**Tolerance**  
M=±20%  
N=±30%

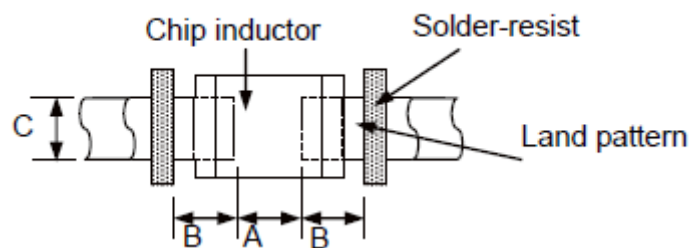
**Packaging**  
T: Tape and Reel (4kpcs / reel)

## OUTLINE DRAWING:



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

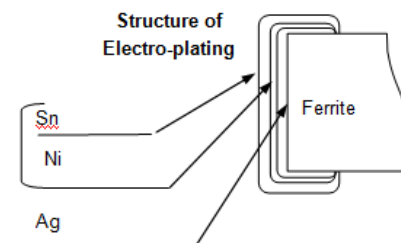
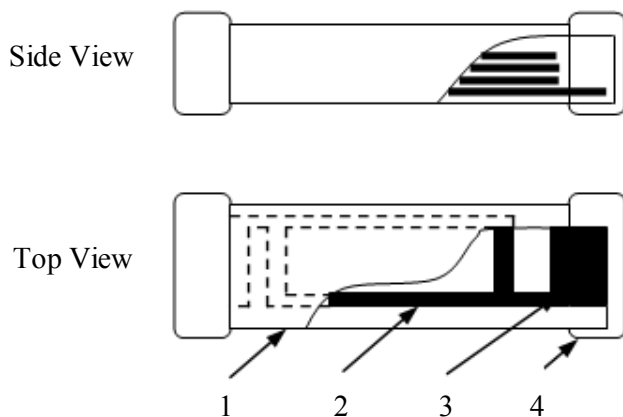
### Recommended Land Pattern



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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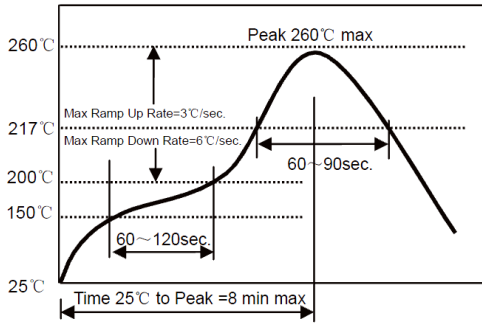


1.6 x 0.8 x 0.8mm

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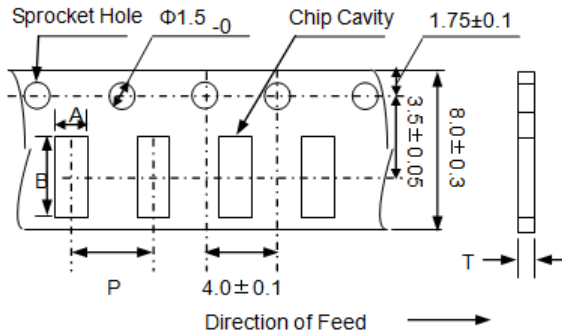
## REFLOW PROFILE:



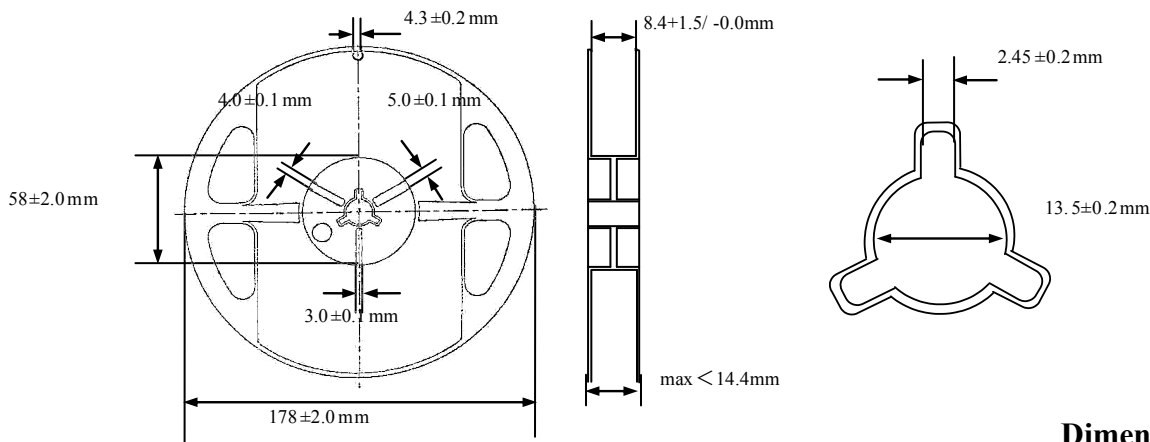
Preheat Condition	150 to 200 °C; 60 to 120 sec.
Allowed time above 217 °C	60 to 90 sec.
Max temperature	260 °C
Max time at max temperature	10 sec.
Solder paste	Sn/3.0Ag/0.5Cu
Allowed Reflow time	2x max.

## 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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- ✓ Shortage Management
- ✓ Alternative Solution
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