

1. PART NO. EXPRESSION :

S P S 4 0 1 2 T 4 R 7 M F
 (a) (b) (c) (d) (e)(f)

(a) Series code

(d) Inductance code : 4R7 = 4.7 μ H

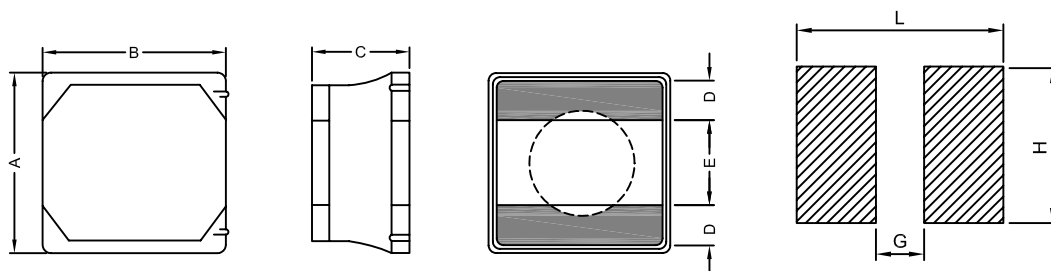
(b) Dimension code

(e) Tolerance code : M=±20%, Y=±30%

(c) Material code

(f) RoHS Compliant

2. CONFIGURATION & DIMENSIONS :



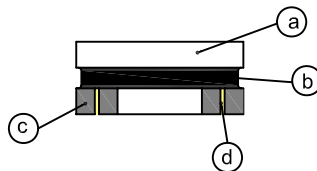
PCB Pattern

Unit:m/m

A	B	C	D	E	L	G	H
4.0±0.2	4.0±0.2	1.2 max	1.1 ref.	2.5 ref	4.2ref	1.2 ref.	4.2 ref

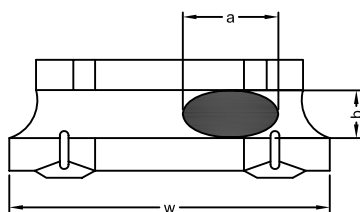
3. MATERIALS :

- (a) Core
- (b) Coating
- (c) Termination
- (d) Wire



Void appearance tolerance Limit

Size of voids occurring to coating resin is specified below.



Appearance of exposed wire tolerance limit:

1. Width direction (dimension a) : Acceptable when $a \leq w/2$
 Nonconforming when $a > w/2$
2. Length direction (dimension b) : Dimension b is not specified.
3. The total area of exposed wire occurring to each sides is not greater than 50% of coating resin area, and is acceptable.



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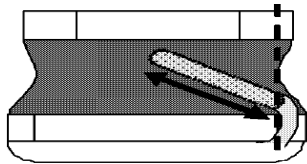
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External appearance criterion for exposed wire

Exposed end of the winding wire at the secondary side should be 2mm and below.



4. GENERAL SPECIFICATION :

- a) Isat: Based on inductance change ($\Delta L/L_0 \leq -30\%$) @ ambient temp. 25°C
- b) Irms: Based on temperature rise ($\Delta T: 40^\circ\text{C}$ typ.) max
- c) Operating Temperature : -40°C to 125°C
- d) Storage Condition (Component in its packaging)
 - i) Temperature: -10°C to 40°C
 - ii) Humidity: 60%

5. ELECTRICAL CHARACTERISTICS :

Part No.	Inductance (μH)	Test Frequency (Hz)	RDC (Ω) $\pm 20\%$	Isat (A) Typ.	Irms (A) Typ.	SRF (MHz) Typ.
SPS4012T1R0YF	1.0 $\pm 30\%$	1V/100K	0.042	2.80	2.20	100
SPS4012T2R2MF	2.2 $\pm 20\%$	1V/100K	0.060	1.65	1.90	70
SPS4012T3R3MF	3.3 $\pm 20\%$	1V/100K	0.070	1.40	1.70	60
SPS4012T4R7MF	4.7 $\pm 20\%$	1V/100K	0.095	1.20	1.50	45
SPS4012T6R8MF	6.8 $\pm 20\%$	1V/100K	0.125	0.90	1.30	35
SPS4012T100MF	10 $\pm 20\%$	1V/100K	0.180	0.80	1.10	30
SPS4012T150MF	15 $\pm 20\%$	1V/100K	0.260	0.65	0.75	24
SPS4012T220MF	22 $\pm 20\%$	1V/100K	0.400	0.50	0.62	18



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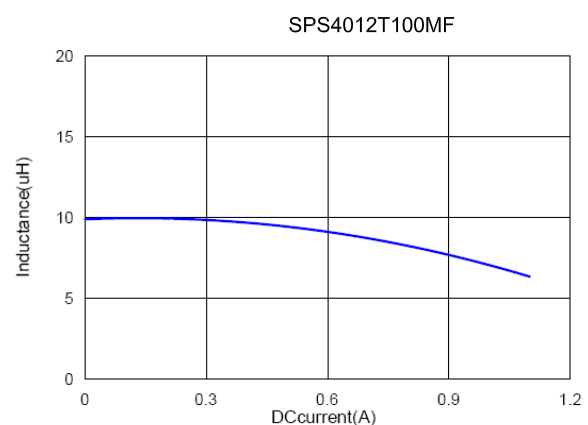
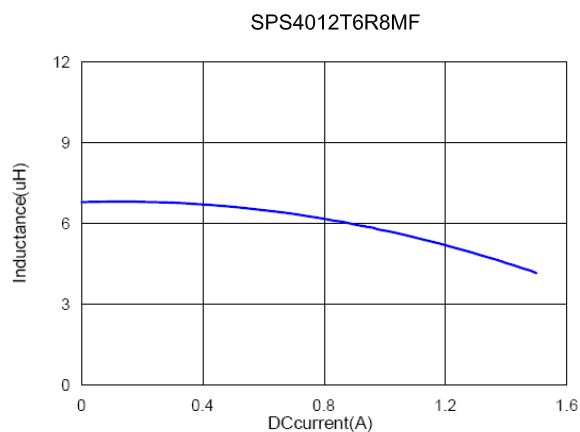
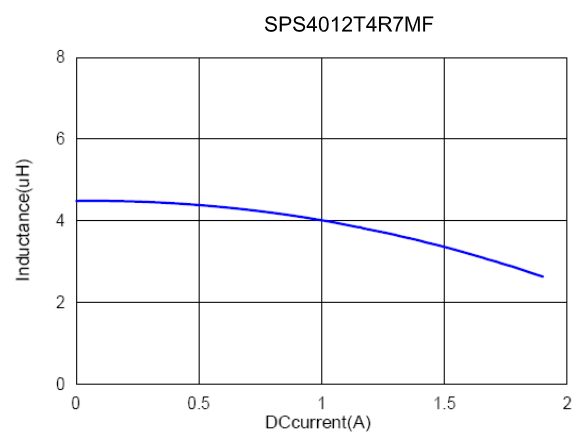
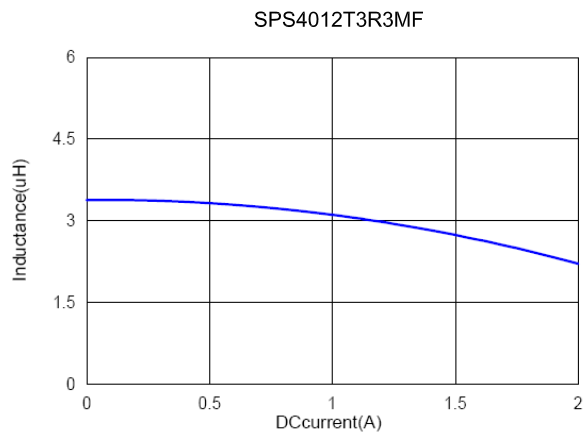
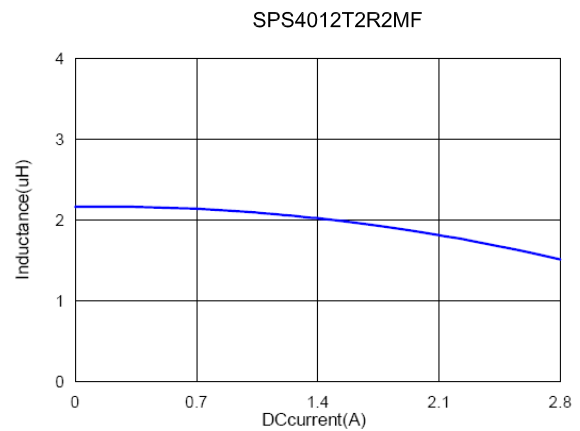
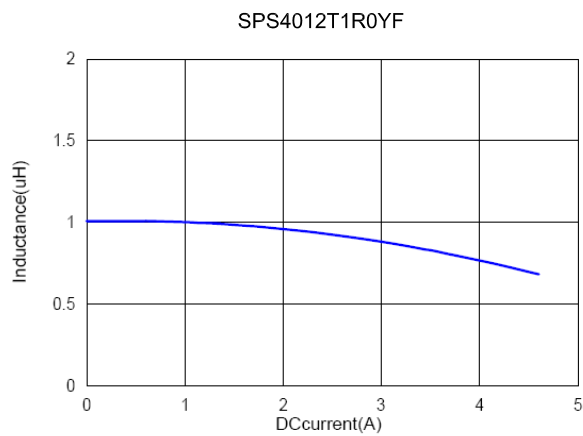
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6. CHARACTERISTIC CURVES :



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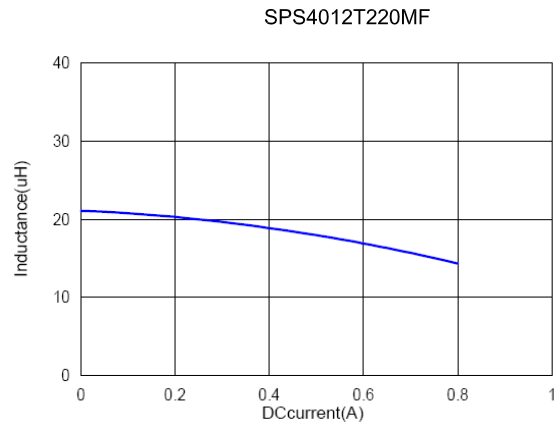
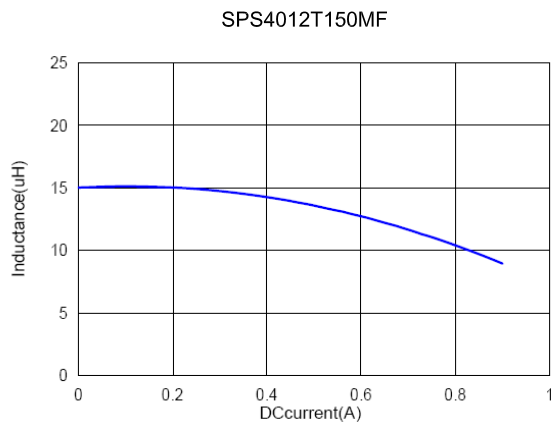
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7. SOLDERING AND MOUNTING :

7-1. Soldering

Mildly activated rosin fluxes are preferred. Our terminations are suitable for all wave and re-flow soldering systems. If hand soldering cannot be avoided, the preferred technique is the utilization of hot air soldering tools.

7-1.1 Lead Free Solder Re-flow :

Recommended temperature profiles for re-flow soldering in Figure 1.

7-1.2 Soldering Iron (Figure 2) :

Products attachment with soldering iron is discouraged due to the inherent process control limitations. In the event that a soldering iron must be employed the following precautions are recommended.

Note :

- a) Preheat circuit and products to 150°C.
- b) 355°C tip temperature (max)
- c) Never contact the ceramic with the iron tip
- d) 1.0mm tip diameter (max)
- e) Use a 20 watt soldering iron with tip diameter of 1.0mm
- f) Limit soldering time to 4-5 secs.

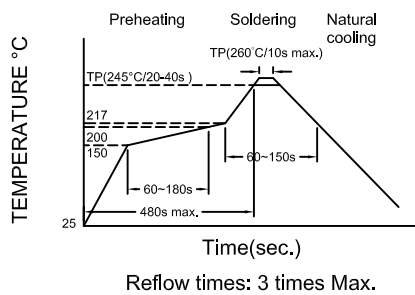


Fig.1

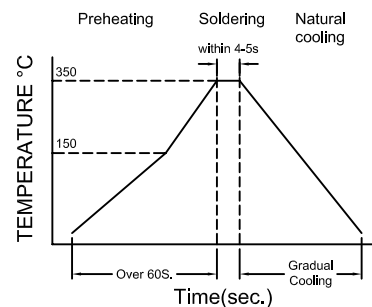


Fig.2



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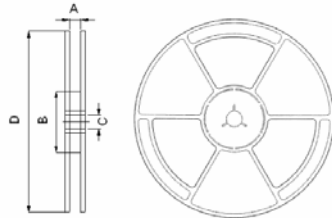
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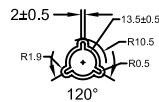
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8. PACKAGING INFORMATION :

8-1. Reel Dimension

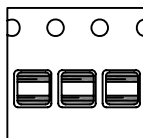
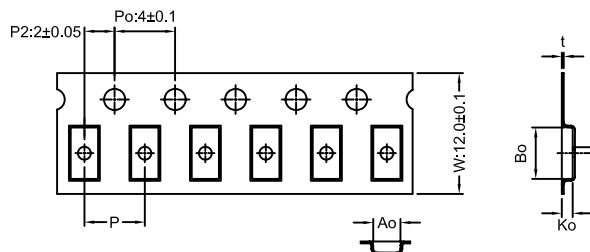


13" x 12mm



Type	A(mm)	B(mm)	C(mm)	D(mm)
13" x 12mm	12±1.5	100±0.5	13.2±0.5	330±0.5

8-2 Tape Dimension / 8mm



Bottom View

Series	Ao(mm)	Bo(mm)	Ko(mm)	P(mm)	t(mm)
SPS4012T	4.50±0.1	4.35±0.1	1.55±0.1	8.0±0.10	0.25±0.05

8-3 Packaging Quantity

Series	SPS4012T
Chip / Reel	4500



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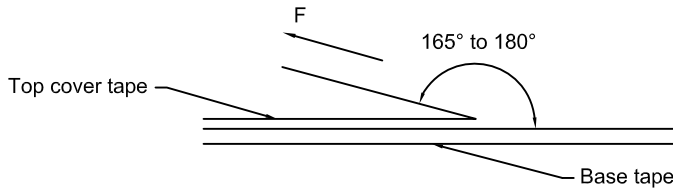
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8-4. Tearing Off Force



The force for tearing off cover tape is 15 to 80 grams in the arrow direction under the following conditions.

Room Temp. (°C)	Room Humidity (%)	Room atm (hPa)	Tearing Speed (mm/min)
5~35	45~85	860~1060	300

Application Notice

1. Storage Conditions :

To maintain the solderability of terminal electrodes :

- Temperature and humidity conditions : Less than 40°C and 60% RH.
- Recommended products should be used within 12 months from the time of delivery.
- The packaging material should be kept where no chlorine or sulfur exists in the air.

2. Transportation :

- Products should be handled with care to avoid damage or contamination from perspiration and skin oils.
- The use of tweezers or vacuum pick up is strongly recommended for individual components.
- Bulk handling should ensure that abrasion and mechanical shock are minimized.



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