

LOW PROFILE POWER INDUCTORS

SPS3015T SERIES

1. PART NO. EXPRESSION :

S P S 3 0 1 5 T 4 R 7 M F
(a) (b) (c) (d) (e) (f)

(a) Series code

(b) Dimension code

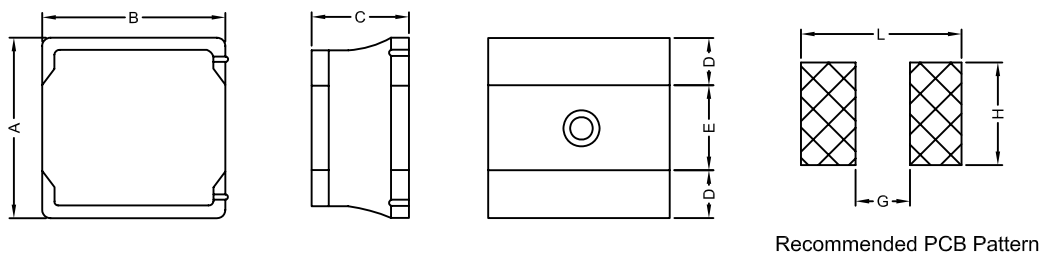
(c) Material Code

(d) Inductance code : 4R7 = 4.7uH

(e) Tolerance code : M=±20%, Y=±30%

(f) F : RoHS Compliant

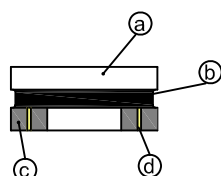
2. CONFIGURATION & DIMENSIONS :



Unit:m/m

A	B	C	D	E	L	G	H
3.0±0.2	3.0±0.2	1.5 Max.	1.0 Ref.	1.0 Ref.	3.2 Ref.	1.0 Ref.	3.2 Ref.

3. MATERIALS :



(a) Core

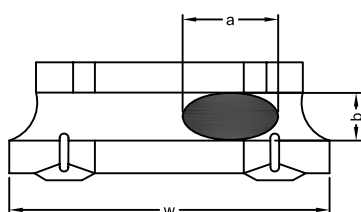
(b) Coating

(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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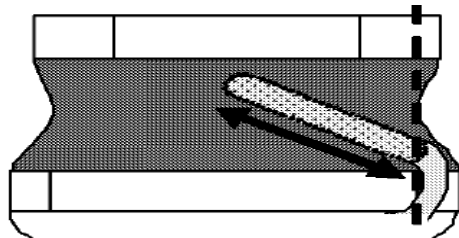


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External appearance criterion for exposed wire

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 ($\Delta T: 40^\circ\text{C}$) 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 (uH)	Test Frequency (Hz)	RDC (Ω) $\pm 20\%$	Isat (A) Typ.	Irms (A) Typ.	SRF (MHz) Typ.
SPS3015T1R0YF	1.0 $\pm 30\%$	1V/100K	0.030	2.20	2.20	100
SPS3015T1R5YF	1.5 $\pm 30\%$	1V/100K	0.040	2.00	2.00	87
SPS3015T2R2MF	2.2 $\pm 20\%$	1V/100K	0.060	1.70	1.70	64
SPS3015T3R3MF	3.3 $\pm 20\%$	1V/100K	0.080	1.40	1.40	49
SPS3015T4R7MF	4.7 $\pm 20\%$	1V/100K	0.120	1.20	1.20	40
SPS3015T6R8MF	6.8 $\pm 20\%$	1V/100K	0.160	1.00	1.00	36
SPS3015T100MF	10 $\pm 20\%$	1V/100K	0.220	0.75	0.80	28
SPS3015T150MF	15 $\pm 20\%$	1V/100K	0.320	0.65	0.70	23
SPS3015T220MF	22 $\pm 20\%$	1V/100K	0.460	0.55	0.60	20
SPS3015T330MF	33 $\pm 20\%$	1V/100K	0.800	0.40	0.45	18
SPS3015T470MF	47 $\pm 20\%$	1V/100K	1.200	0.35	0.40	17



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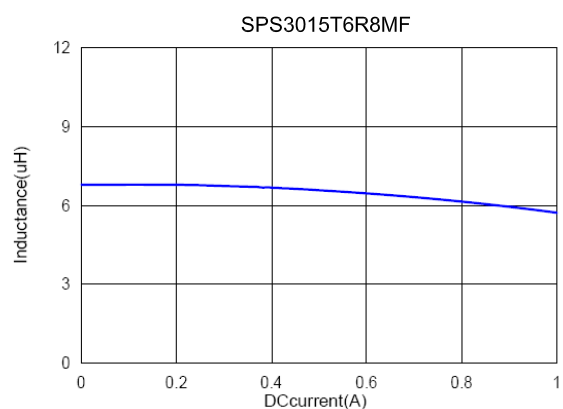
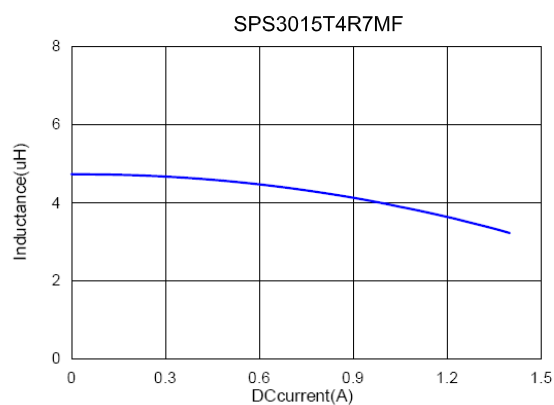
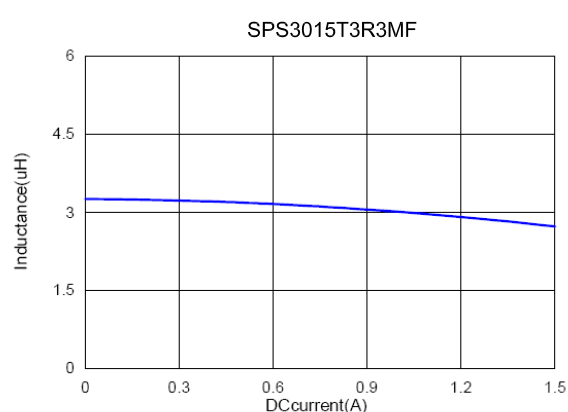
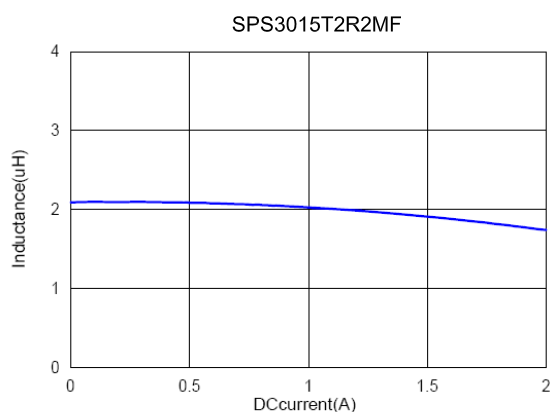
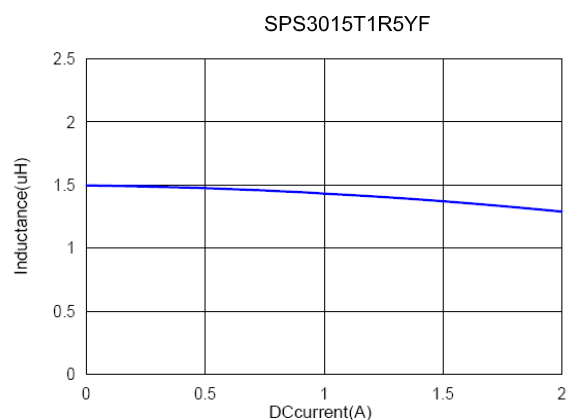
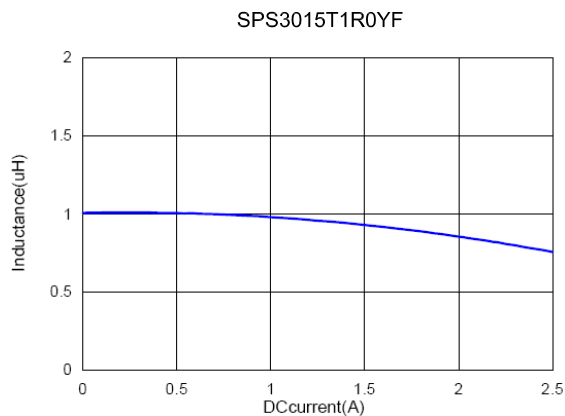
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6. CHARACTERISTICS CURVES :



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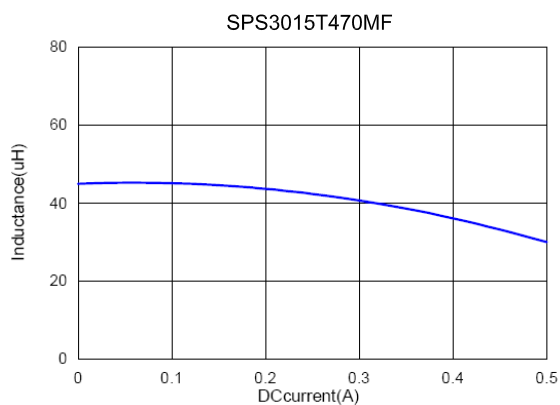
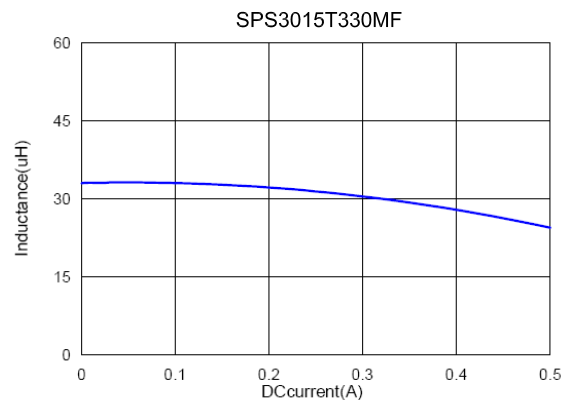
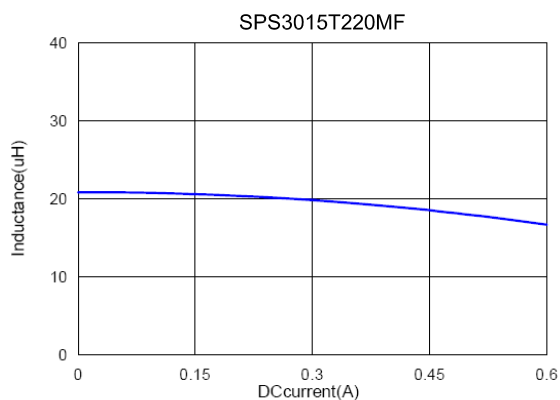
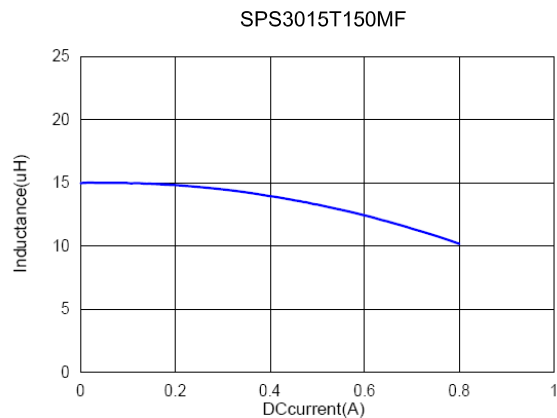
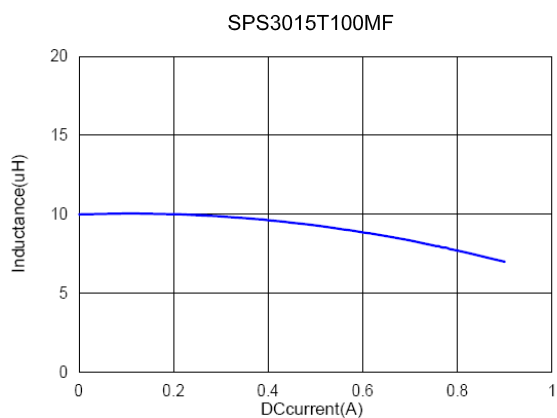
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7. SOLDERING AND MOUNTING :

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.

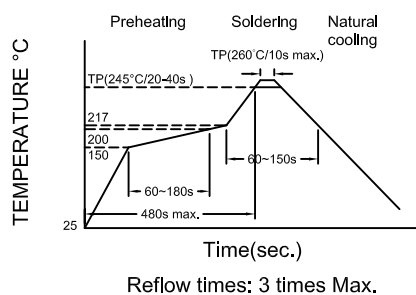


Fig.1

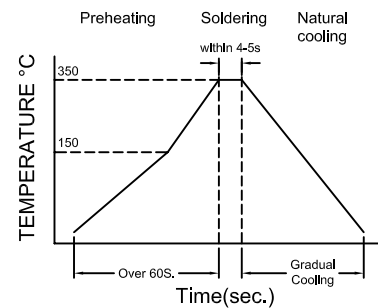


Fig.2



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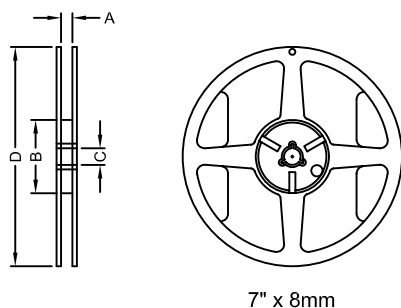
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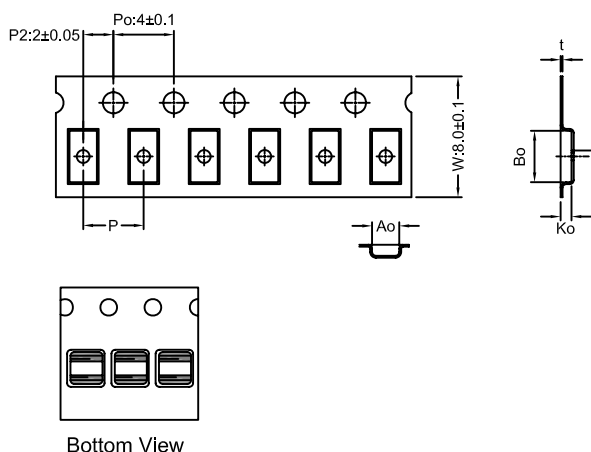
8. PACKAGING INFORMATION :

8-1. Reel Dimension



Type	A(mm)	B(mm)	C(mm)	D(mm)
7" x 8mm	8.4±1.0	50 Min.	13±0.8	178±2

8-2 Tape Dimension / 8mm



Series	Ao(mm)	Bo(mm)	Ko(mm)	P(mm)	t(mm)
SPS3015T	3.2±0.05	3.2±0.05	1.70±0.2	4.0±0.05	0.23±0.05

8-3. Packaging Quantity

Size	SPS3015T
Chip / Reel	2000



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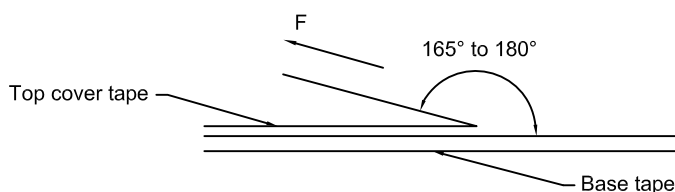
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8-4. Tearing Off Force



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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