

1. Part No. Expression:

**S P S 2 5 2 0 1 2 C R 4 7 Y F**

(a)            (b)    (c) (d) (e) (f)

(a) Series Code

(b) Dimension Code

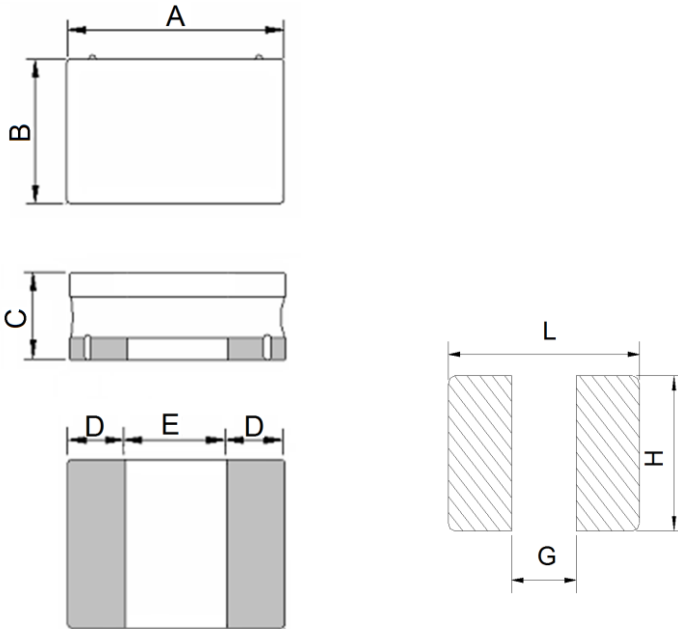
(c) Material Code

(d) Inductance Code

(e) Tolerance Code

(f) RoHS Compliant

2. Configuration & Dimensions:



Recommended PCB Pattern

Unit : mm

A	B	C	D	E	L	G	H
2.5 +0.2/-0.1	2.0 +0.35/-0.05	1.20 Max.	0.85 Ref.	0.80 Ref.	2.90 Ref.	0.80 Ref.	2.40 Ref.

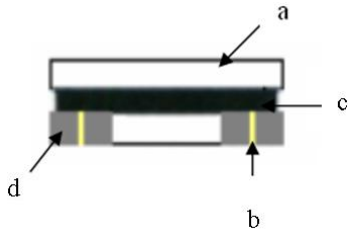
3. Schematic:



NOTE: Specifications subject to change without notice. Please check our website for latest information.



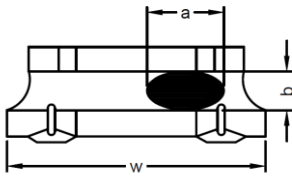
**4. Material List:**



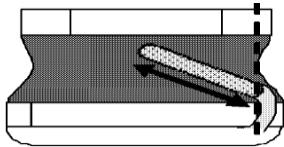
- (a) Core
- (b) Wire
- (c) Glue
- (d) Terminal

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



External appearance criterion for exposed wire

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

**5. General Specification:**

- (a) Operating Temp. : -40°C to +125°C (Inclusive of coil temp rise).
- (b) Storage Temp. : -40°C to +125°C (on board).
- (c) Heat Rated Current (Irms) will cause the coil temperature rise approximately  $\Delta t$  of 40°C.
- (d) Saturation Current (Isat) will cause L0 to drop approximately 30%.
- (e) Storage condition (component in its packaging)
  - i) Temperature: Less than 40°C
  - ii) Humidity : 60% RH

NOTE: Specifications subject to change without notice. Please check our website for latest information.



## 6. Electrical Characteristics:

Part No.	Inductance ( $\mu$ H)	Test Frequency (Hz)	DCR ( $\Omega$ ) $\pm 20\%$	Isat (A) Typ.	Isat (A) Max.	Irms (A) Typ.	Irms (A) Max.
SPS252012CR47YF	0.47	0.1V/1M	0.028	4.00	3.60	3.70	3.35
SPS252012CR68YF	0.68	0.1V/1M	0.036	3.00	2.70	3.30	3.00
SPS252012C1R0YF	1.00	0.1V/1M	0.049	2.70	2.45	2.60	2.30
SPS252012C1R5YF	1.50	0.1V/1M	0.063	2.30	2.05	2.20	1.95
SPS252012C2R2MF	2.20	0.1V/1M	0.080	2.15	1.95	1.85	1.65
SPS252012C3R3MF	3.30	0.1V/1M	0.120	1.70	1.50	1.45	1.30
SPS252012C4R7MF	4.70	0.1V/1M	0.176	1.50	1.35	1.20	1.05
SPS252012C6R8MF	6.80	0.1V/1M	0.250	1.15	1.00	1.00	0.90
SPS252012C100MF	10.0	0.1V/1M	0.410	0.85	0.75	0.75	0.65
SPS252012C150MF	15.0	0.1V/1M	0.540	0.63	0.56	0.60	0.54
SPS252012C220MF	22.0	0.1V/1M	0.850	0.56	0.50	0.50	0.45

## Notes:

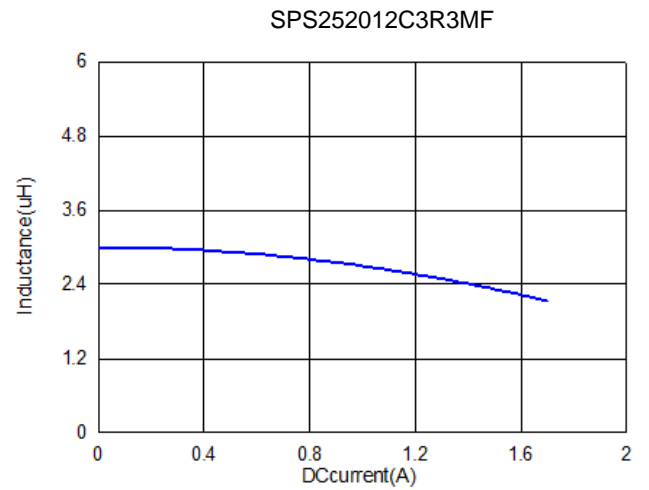
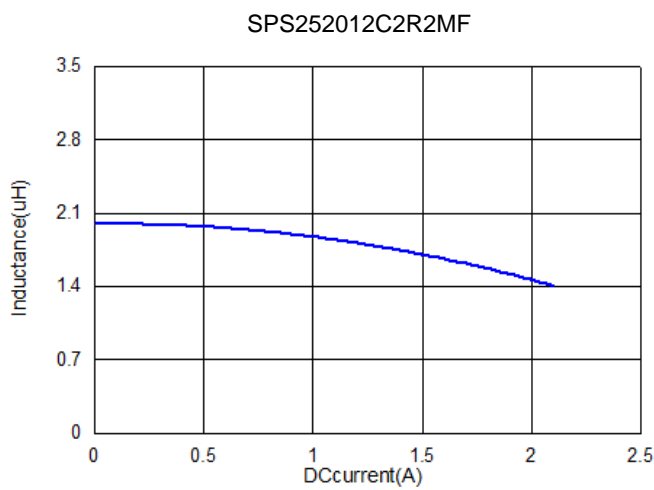
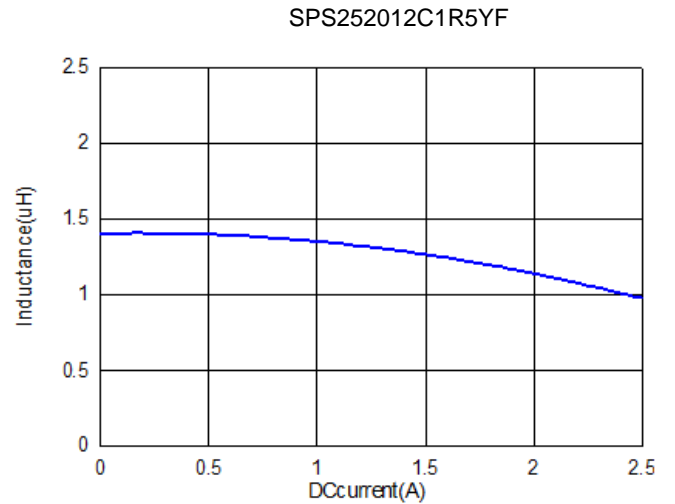
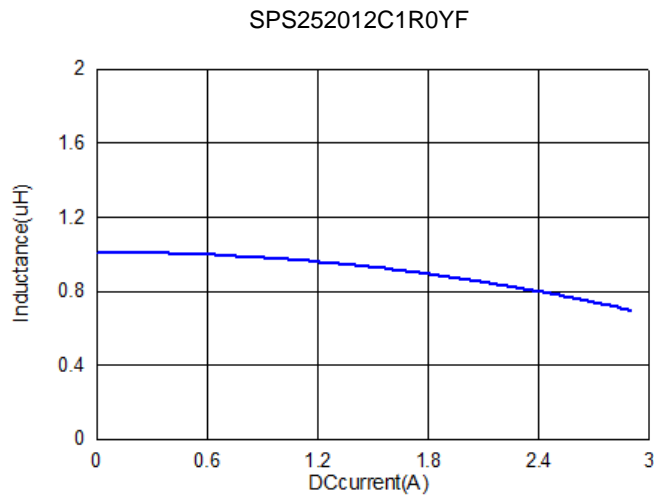
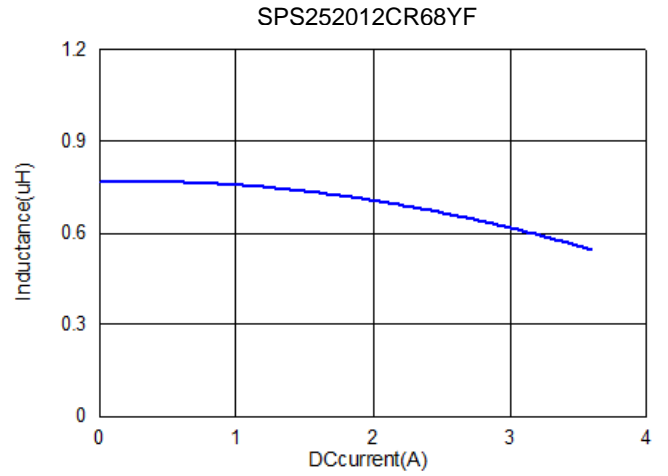
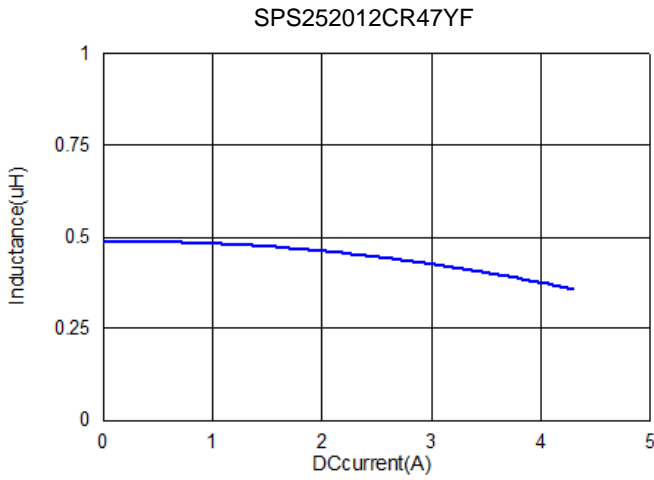
(a) Tolerance Code: M =  $\pm 20\%$ ; Y =  $\pm 30\%$ .

(b) At all times, the current supplied to the product should not exceed Isat Max. value.

NOTE: Specifications subject to change without notice. Please check our website for latest information.

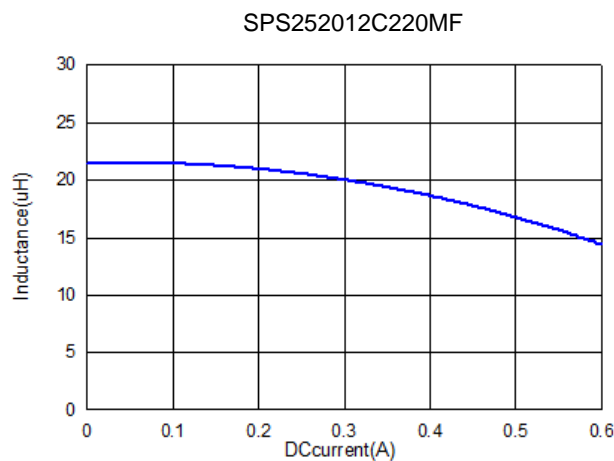
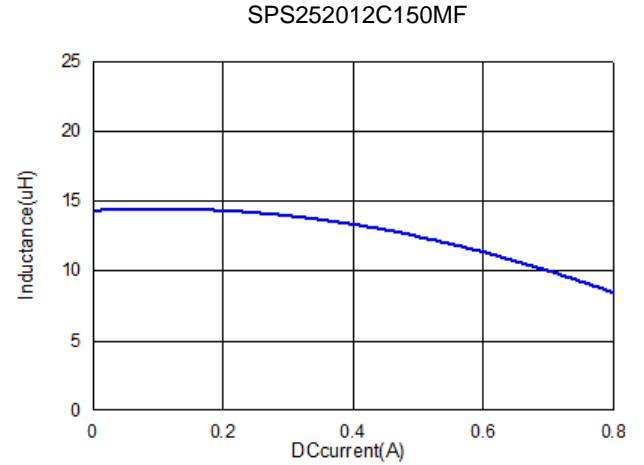
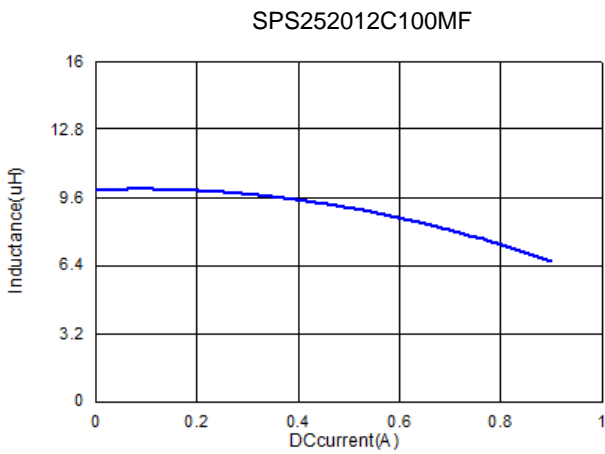
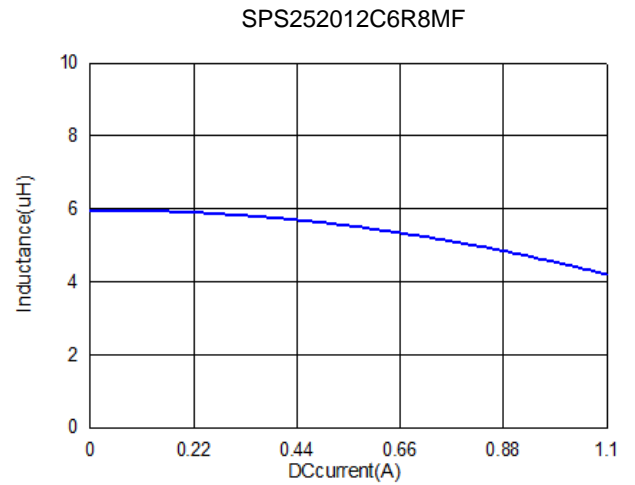
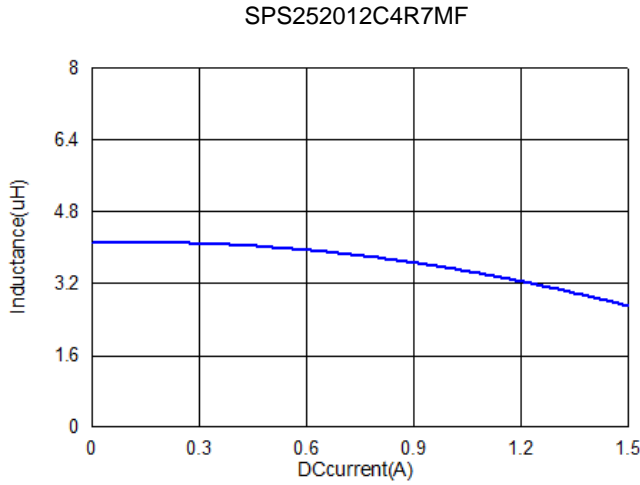


7. Characteristics Curves:



NOTE: Specifications subject to change without notice. Please check our website for latest information.





NOTE: Specifications subject to change without notice. Please check our website for latest information.



**8. Soldering:**

Mildly activated rosin fluxes are preferred. The 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.

**8-1 Solder Re-flow:**

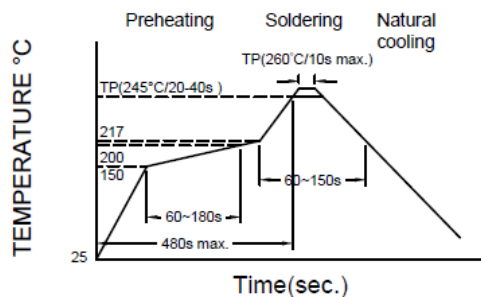
Recommended temperature profiles for re-flow soldering in Figure 1.

**8-2 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.

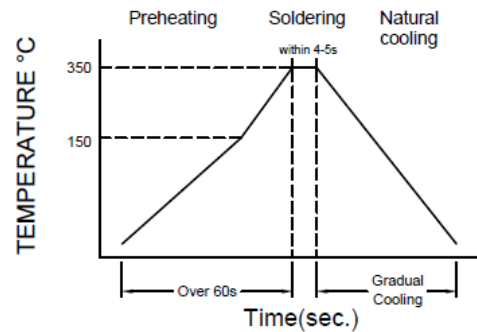
Note :

- 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.



Reflow times: 3 times Max.

Fig.1



Iron Soldering times: 1 times Max.

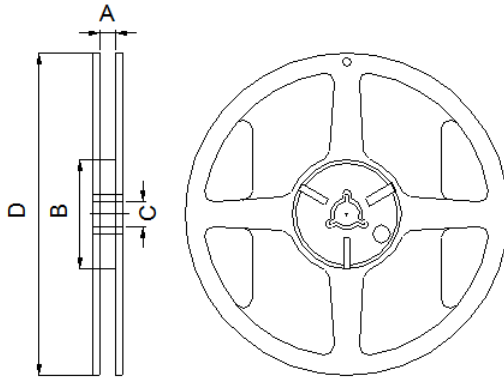
Fig.2

NOTE: Specifications subject to change without notice. Please check our website for latest information.



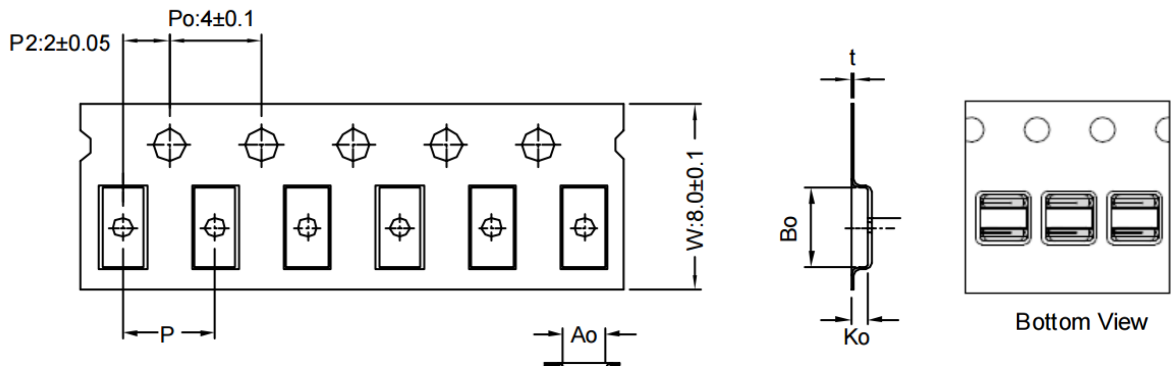
9. Packaging Information:

9-1. Reel Dimension



Type	A (mm)	B (mm)	C (mm)	D (mm)
7" x 8mm	8.4 ± 1.0	50 Min.	13.0 ± 0.8	178.0 ± 2.0

9-2. Tape Dimension



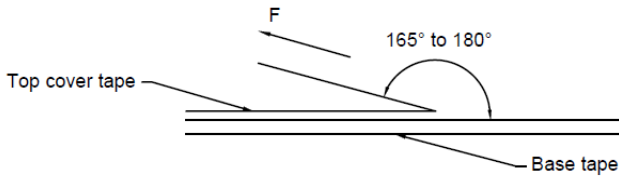
Series	Bo(mm)	Ao(mm)	Ko(mm)	P(mm)	t(mm)
SPS252012	3.10 ± 0.10	2.45 ± 0.10	1.40 ± 0.10	4.00 ± 0.10	0.23 ± 0.05

9-3. Packaging Quantity

Size	SPS252012
Chip/ Reel	2000

NOTE: Specifications subject to change without notice. Please check our website for latest information.

**9-4. 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:

- a) Recommended products should be used within 12 months from the time of delivery.
- b) The packaging material should be kept where no chlorine or sulfur exists in the air.

2. Transportation:

- a) Products should be handled with care to avoid damage or contamination from perspiration and skin oils.
- b) Vacuum pick up is strongly recommended for individual components.
- c) Bulk handling should ensure that abrasion and mechanical shock are minimized.

NOTE: Specifications subject to change without notice. Please check our website for latest information.

