

## 1. Part No. Expression:

**S P S 2 0 1 6 1 2 D R 2 4 M F**

(a) (b) (c) (d) (e) (f)

(a) Series code

(b) Dimension code

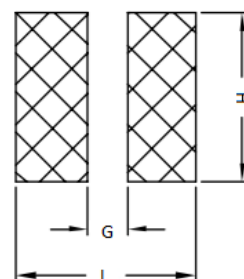
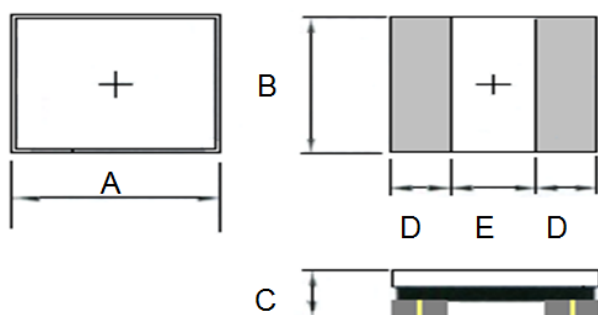
(c) Material code

(d) Inductance code

(e) Tolerance Code

(f) RoHS Compliant

## 2. Configuration & Dimensions : (Unit: mm)



Recommended PCB Pattern

Unit : mm

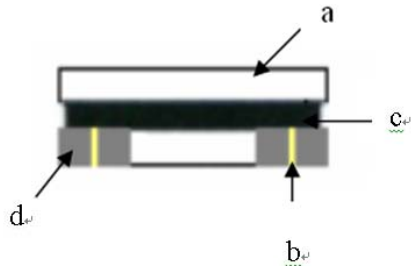
A	B	C	D	E	G	H	L
2.0 -0.1/+0.2	1.6 -0.1/+0.2	1.20 Max.	0.60 Ref.	0.80 Ref.	0.70	1.70	2.30

## 3. Schematic



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

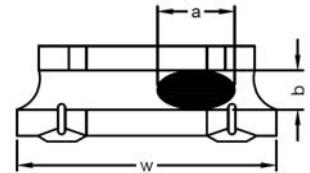
## 4. Material List



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

Exposed wire tolerance limit of coating resin part on product side:

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



## 5. General Specification

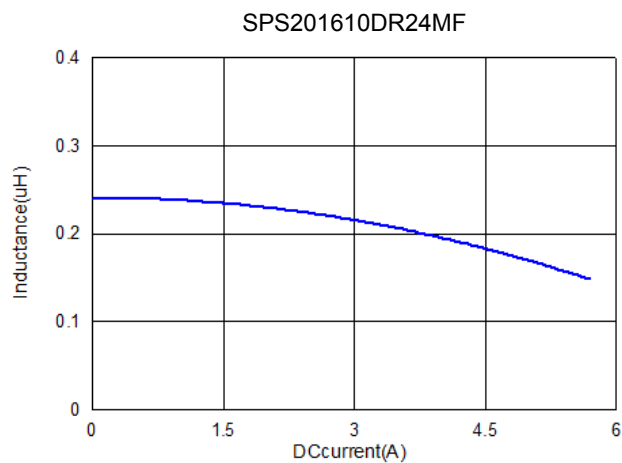
- a) Isat: Based on inductance change ( $\Delta L/L_0: \leq 30\%$  Typ.)
- b) Irms: Based on temperature rise (Approximately  $\Delta T: 40^\circ\text{C}$ )
- c) Operating Temperature:  $-40^\circ\text{C}$  to  $+125^\circ\text{C}$  (including self-temperature rise)
- d) Storage Temperature:  $-40^\circ\text{C}$  to  $+125^\circ\text{C}$
- e) Storage Condition (component in its packaging)
  - i) Temperature: Less than  $40^\circ\text{C}$
  - ii) Humidity: 60% RH

## 6. Electrical Characteristics

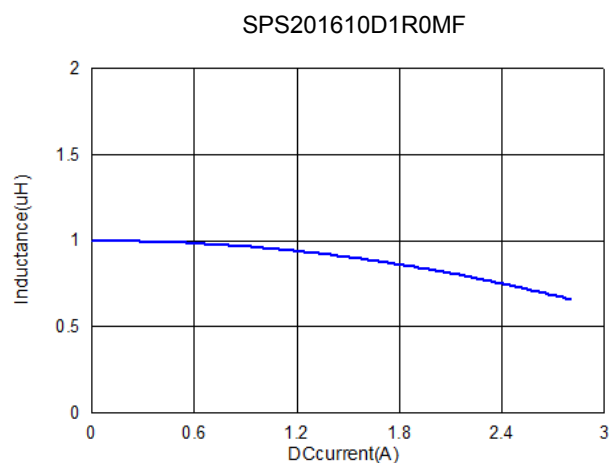
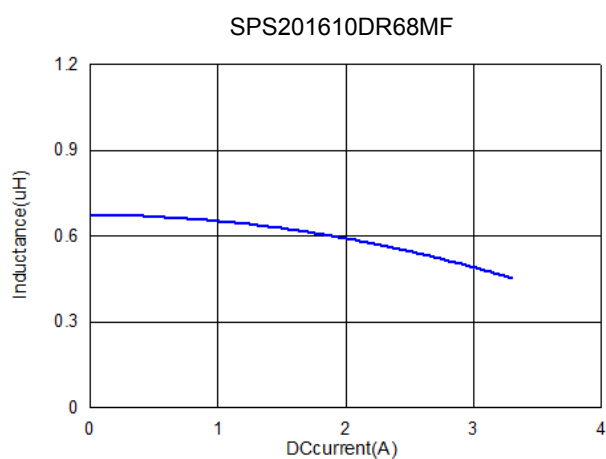
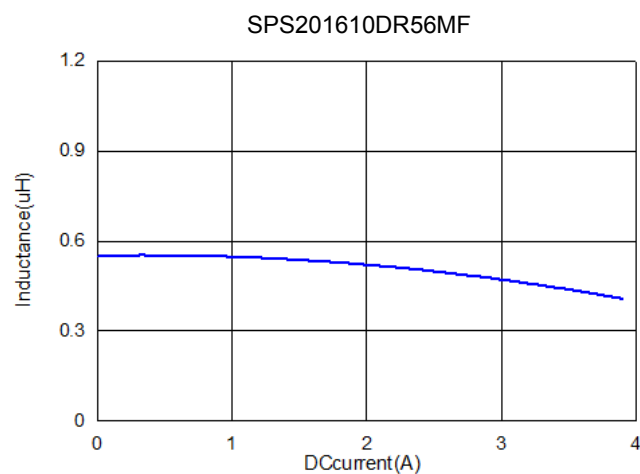
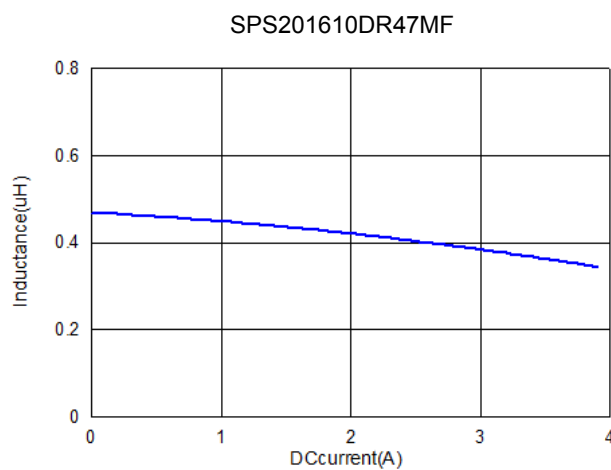
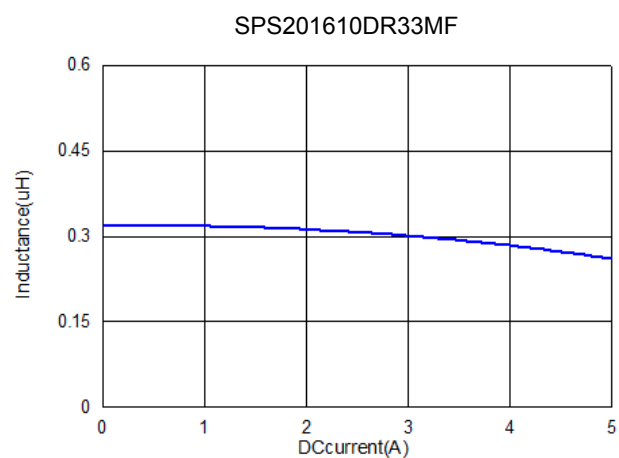
Part No.	Inductance ( $\mu\text{H}$ )	Test Frequency (Hz)	DCR ( $\Omega$ ) Max.	Isat (A) Max.	Irms (A) Max.
SPS201612DR24MF	$0.24 \pm 20\%$	0.1V/1M	0.033	4.80	3.50
SPS201612DR33MF	$0.33 \pm 20\%$	0.1V/1M	0.034	3.90	3.20
SPS201612DR47MF	$0.47 \pm 20\%$	0.1V/1M	0.046	3.50	2.90
SPS201612DR56MF	$0.56 \pm 20\%$	0.1V/1M	0.064	3.00	2.60
SPS201612DR68MF	$0.68 \pm 20\%$	0.1V/1M	0.066	2.80	2.60
SPS201612D1R0MF	$1.00 \pm 20\%$	0.1V/1M	0.104	2.50	2.30
SPS201612D1R2MF	$1.20 \pm 20\%$	0.1V/1M	0.106	2.50	2.30
SPS201612D1R5MF	$1.50 \pm 20\%$	0.1V/1M	0.108	2.00	1.80
SPS201612D2R2MF	$2.20 \pm 20\%$	0.1V/1M	0.186	1.60	1.30

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

## 7. Characteristics Curves

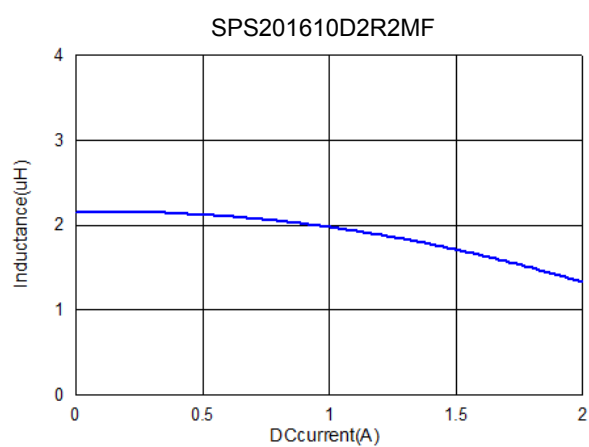
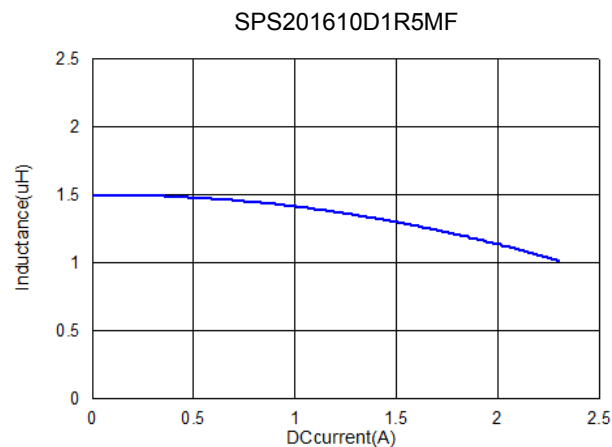
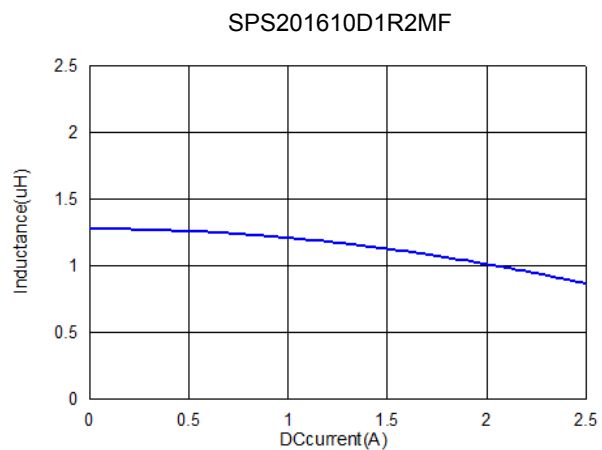


5



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 :

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

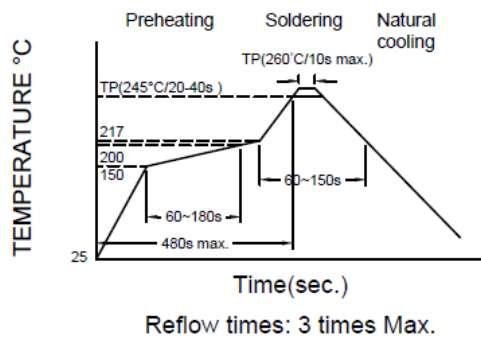


Fig.1

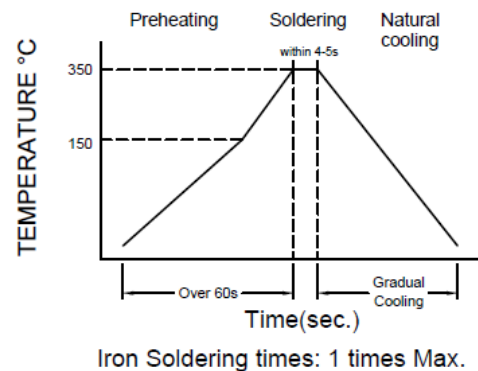
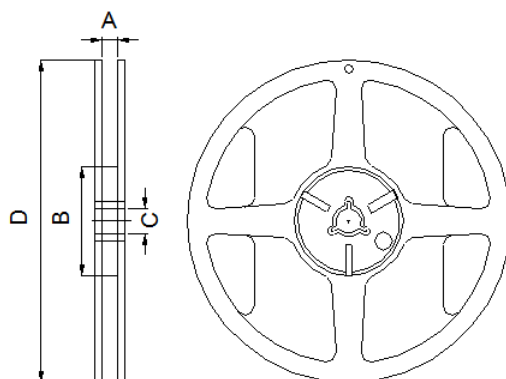


Fig.2

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

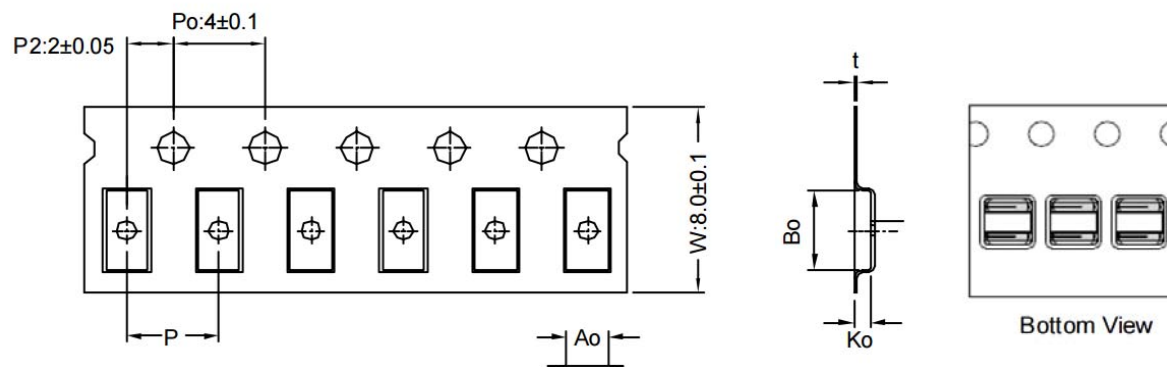
## 9. Packaging Information

### 9-1. Reel Dimension



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

### 9-2. Tape Dimension



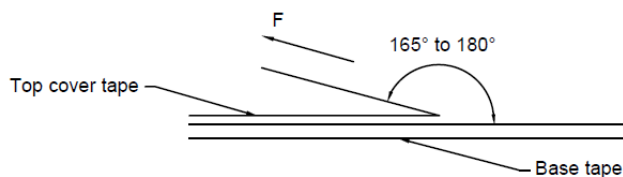
Series	Ao(mm)	Bo(mm)	Ko(mm)	P(mm)	t(mm)
SPS201612	$2.00 \pm 0.10$	$2.50 \pm 0.10$	$1.40 \pm 0.10$	$4.00 \pm 0.10$	$0.23 \pm 0.05$

### 9-3. Packaging Quantity

Size	201612
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:

- 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.
- Vacuum pick up is strongly recommended for individual components.
- 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.