

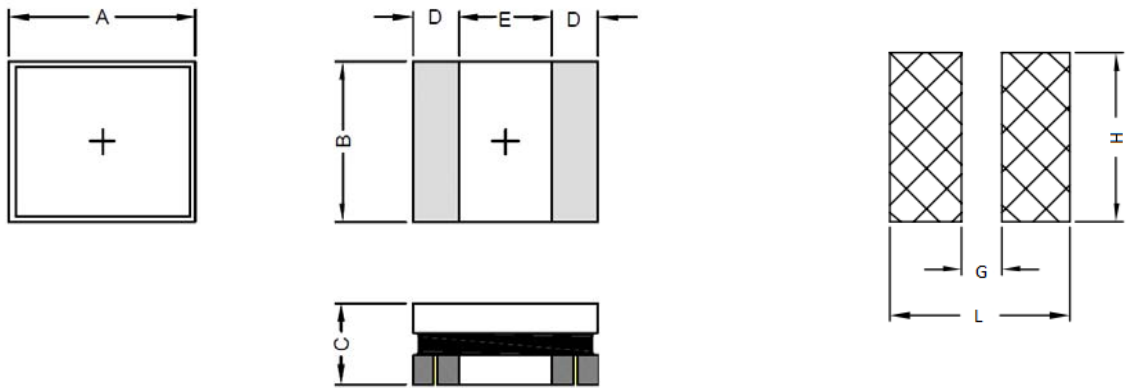
1. Part No. Expression:

S P S 2 0 1 6 1 0 E 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

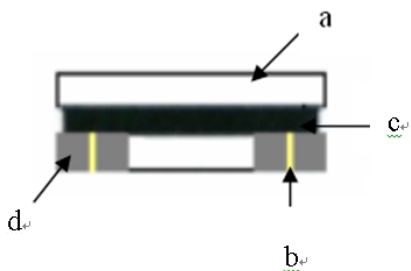
A	B	C	D	E	G	H	L
2.0 -0.1/+0.2	1.6 -0.1/+0.2	1.00 Max.	0.60 Ref.	0.80 Ref.	0.70	1.70	2.30

3. Schematic



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

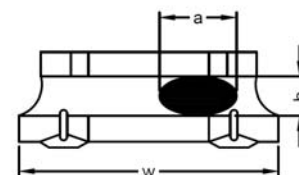
4. Material List



- 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

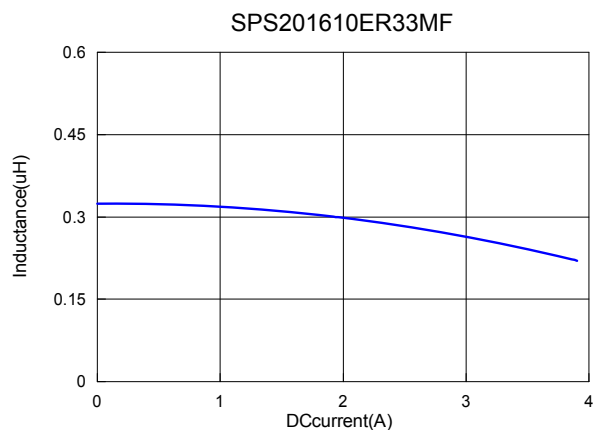
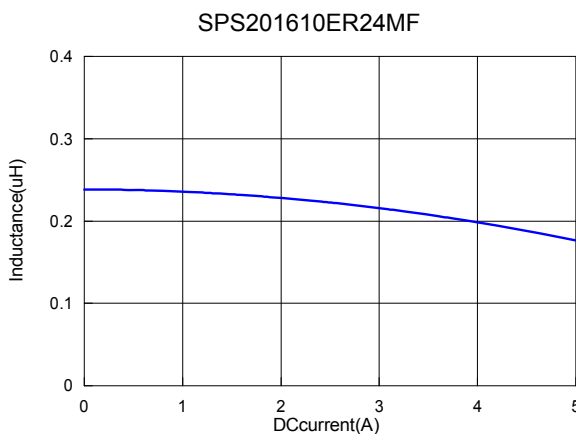
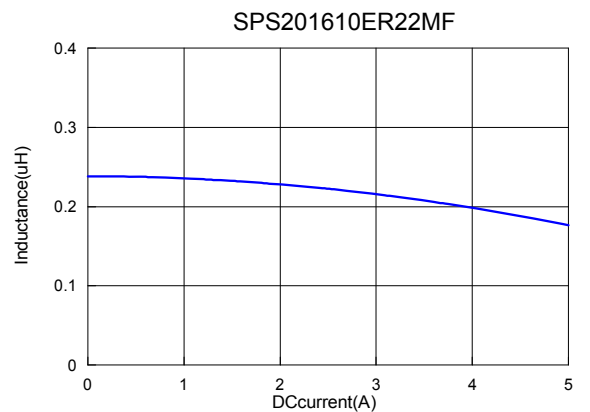
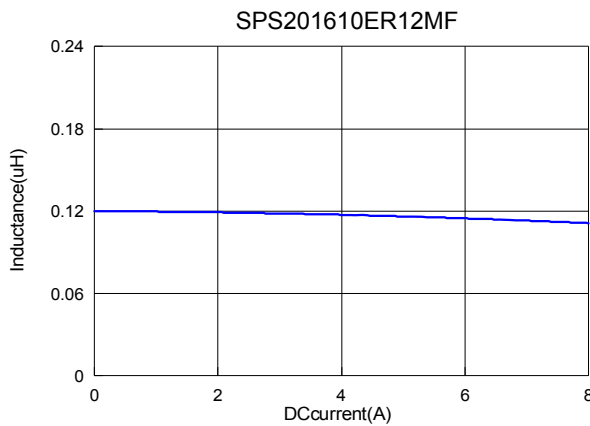
- a) Isat: Based on inductance change ($\Delta L/L_0: \leq 30\%$ Typ.)
- b) Irms: Based on temperature rise ($\Delta T: 40^\circ\text{C Max.}$)
- c) Operating Temperature: -40°C to $+125^\circ\text{C}$ (including self-temperature rise)
- d) Storage Temperature: -40°C to $+125^\circ\text{C}$
- e) Storage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

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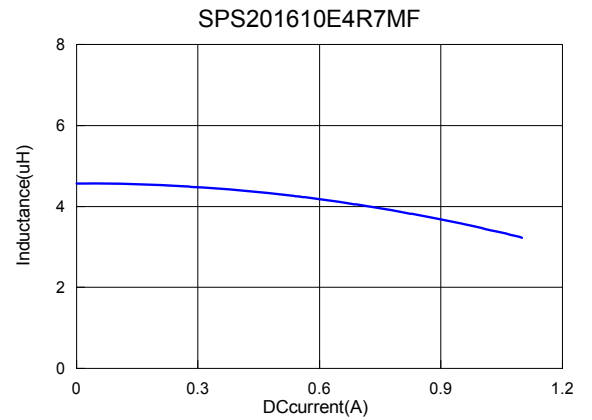
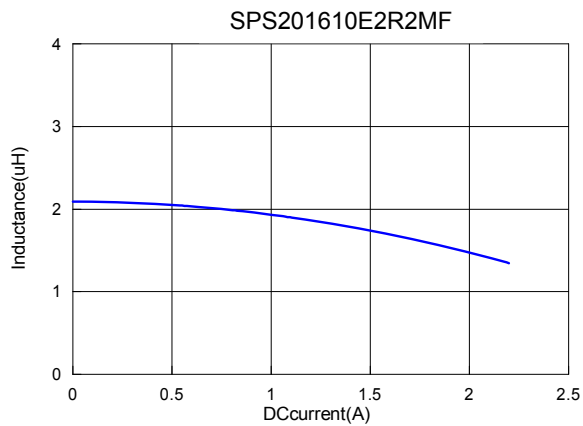
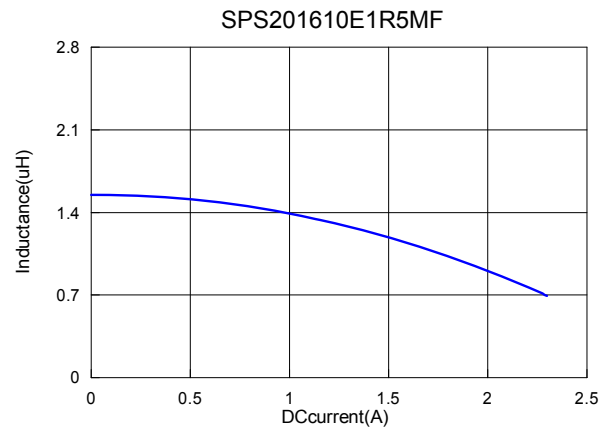
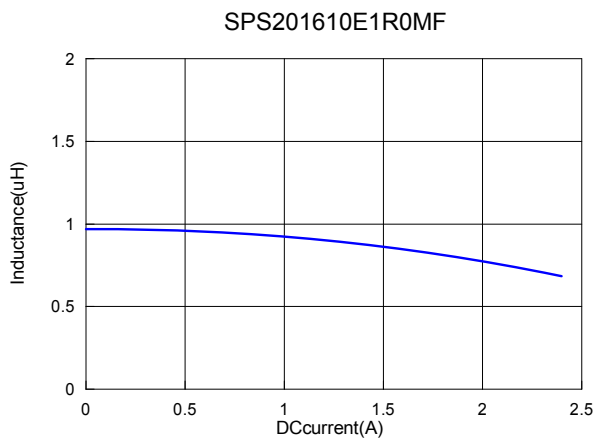
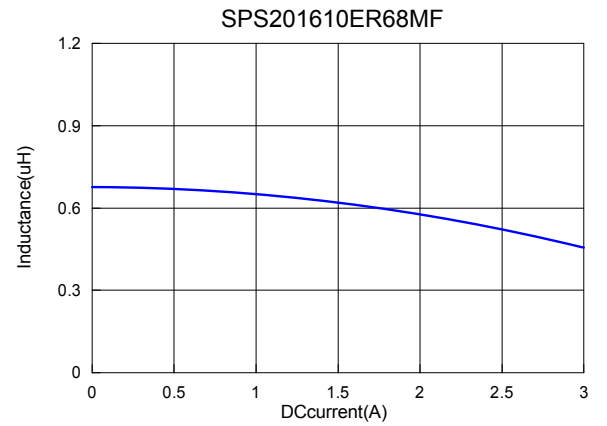
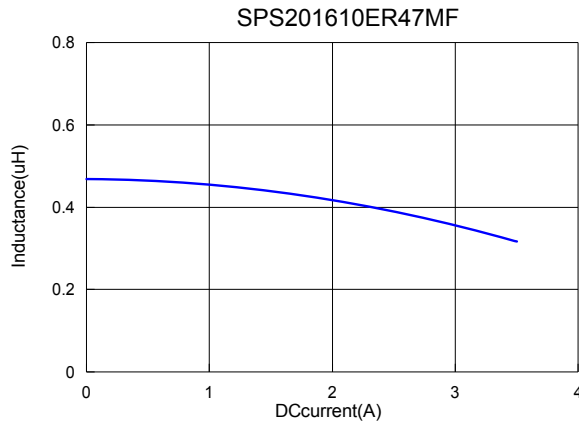
6. Electrical Characteristics

Part No.	Inductance (μH)	Test Frequency (Hz)	DCR (Ω) Max.	Isat (A) Max.	Irms (A) Max.
SPS201610ER12MF	0.12 ± 20%	0.1V/1M	0.026	6.00	4.50
SPS201610ER22MF	0.22 ± 20%	0.1V/1M	0.028	4.50	3.90
SPS201610ER24MF	0.24 ± 20%	0.1V/1M	0.028	4.50	3.90
SPS201610ER33MF	0.33 ± 20%	0.1V/1M	0.040	3.50	3.10
SPS201610ER47MF	0.47 ± 20%	0.1V/1M	0.042	3.40	3.00
SPS201610ER68MF	0.68 ± 20%	0.1V/1M	0.055	2.80	2.50
SPS201610E1R0MF	1.00 ± 20%	0.1V/1M	0.072	2.50	2.20
SPS201610E1R5MF	1.50 ± 20%	0.1V/1M	0.118	1.80	1.80
SPS201610E2R2MF	2.20 ± 20%	0.1V/1M	0.170	1.70	1.55
SPS201610E4R7MF	4.70 ± 20%	0.1V/1M	0.384	0.90	0.90

7. Characteristics Curves



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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.

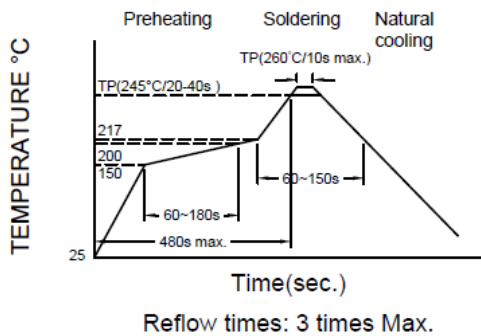


Fig.1

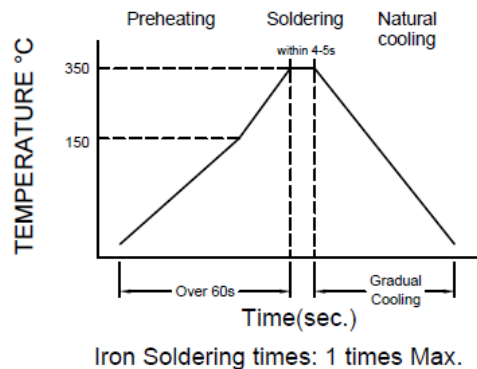


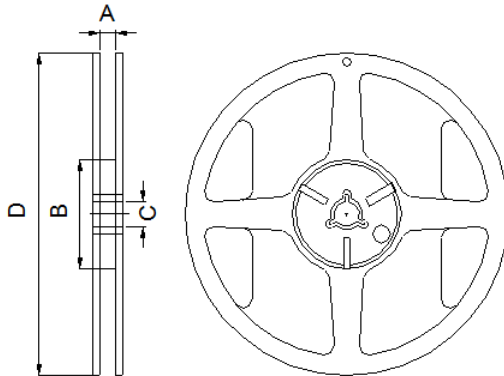
Fig.2

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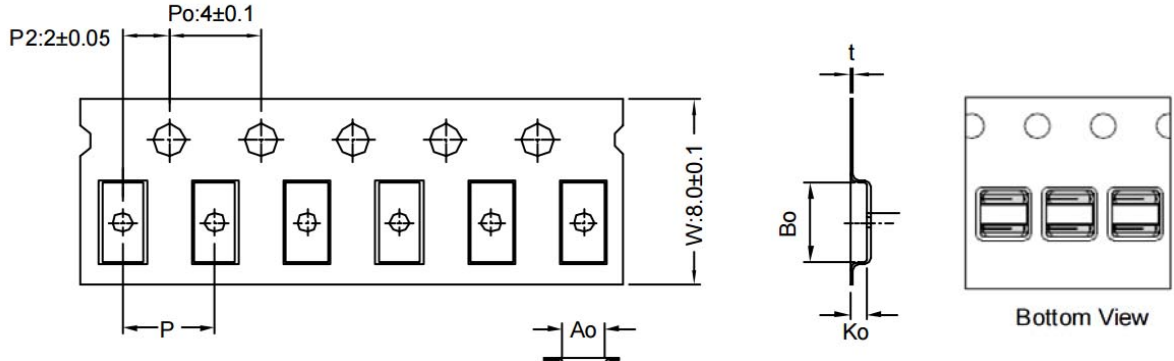
9. Packaging Information

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



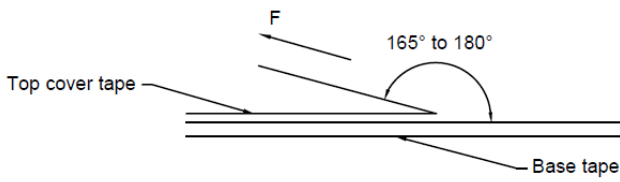
Series	Ao(mm)	Bo(mm)	Ko(mm)	P(mm)	t(mm)
SPS201610	2.00 ± 0.10	2.50 ± 0.10	1.40 ± 0.10	4.00 ± 0.10	0.23 ± 0.05

9-3. Packaging Quantity

Size	201610
Chip/ Reel	2000

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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.

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