

1. Part No. Expression:

S P S 2 5 2 0 1 2 E R 4 7 M F

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

(a) Series code

(b) Dimension code

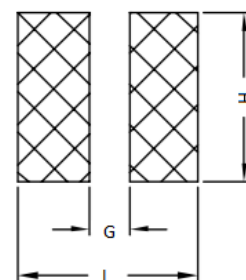
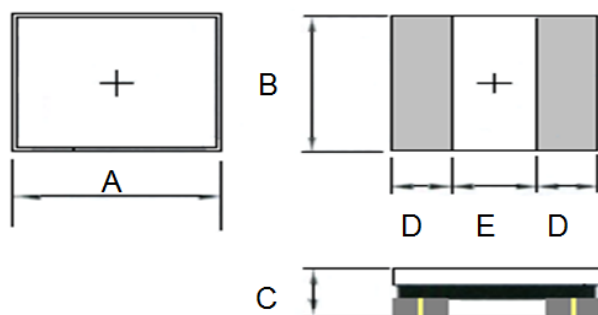
(c) Material code

(d) Inductance code

(e) Tolerance Code

(f) RoHS Compliant

2. Configuration & Dimensions : (Unit: mm)



Recommended PCB Pattern

Unit : mm

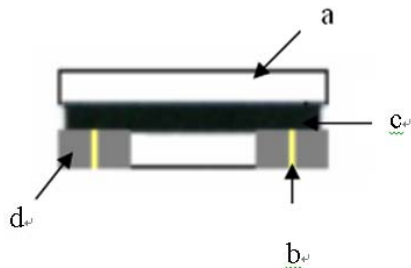
A	B	C	D	E	G	H	L
2.5 -0.1/+0.2	2.0 -0.05/+0.35	1.2 Max.	0.85 Ref.	0.80 Ref.	0.80	2.40	2.90

3. Schematic



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

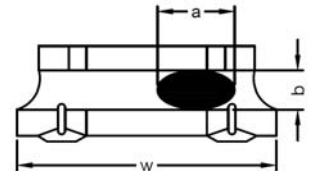
4. Material List



- 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

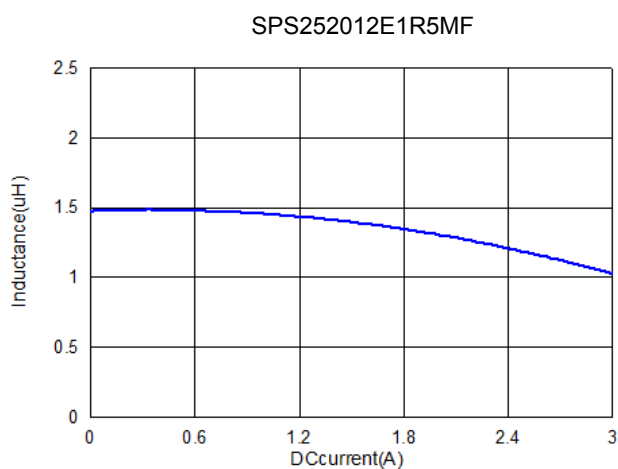
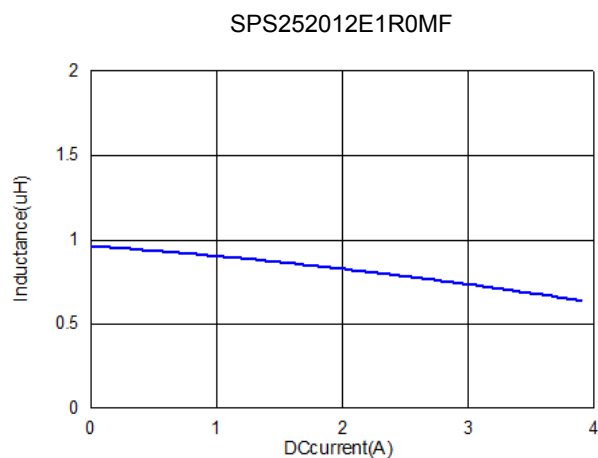
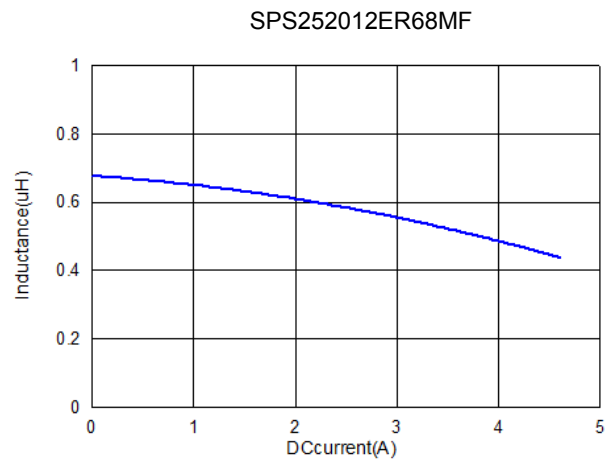
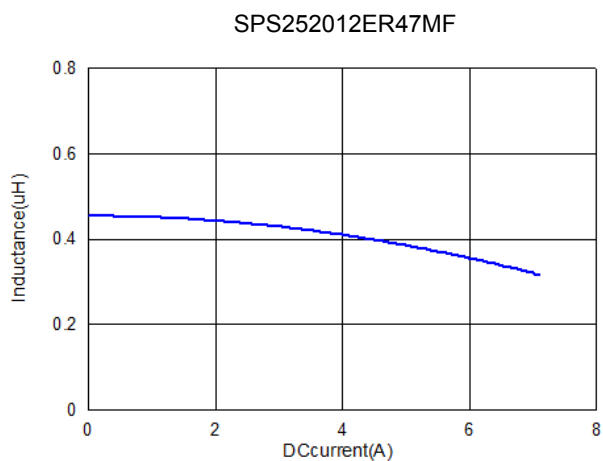
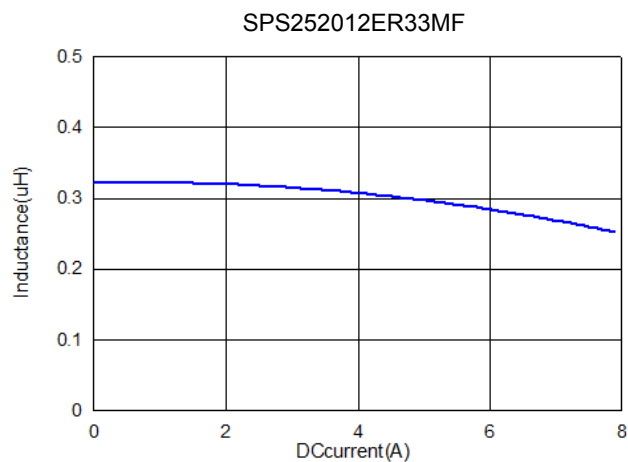
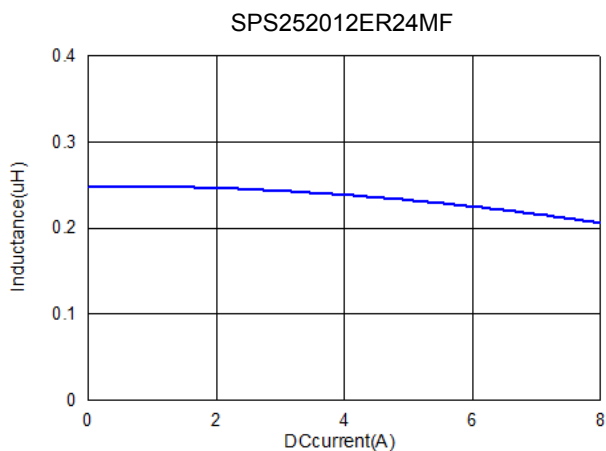
- a) Isat: Based on inductance change ($\Delta L/L_0: \leq 30\%$ Typ.)
- b) Irms: Based on temperature rise ($\Delta T: 40^\circ\text{C}$ Max.)
- c) Operating Temperature: -40°C to $+125^\circ\text{C}$ (including self-temperature rise)
- d) Storage Temperature: -40°C to $+125^\circ\text{C}$
- e) Storage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

6. Electrical Characteristics

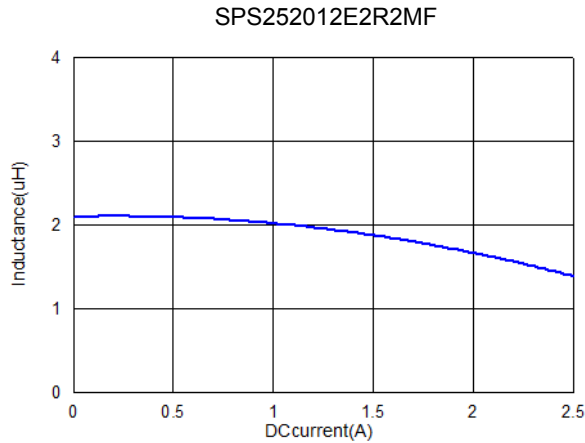
Part No.	Inductance (μH)	Test Frequency (Hz)	DCR (Ω) Max.	Isat (A) Max.	Irms (A) Typ.
SPS252012ER24MF	$0.24 \pm 20\%$	0.1V/1M	0.028	6.50	4.70
SPS252012ER33MF	$0.33 \pm 20\%$	0.1V/1M	0.032	4.60	4.50
SPS252012ER47MF	$0.47 \pm 20\%$	0.1V/1M	0.032	4.50	4.40
SPS252012ER68MF	$0.68 \pm 20\%$	0.1V/1M	0.043	3.80	3.60
SPS252012E1R0MF	$1.00 \pm 20\%$	0.1V/1M	0.057	3.40	3.50
SPS252012E1R5MF	$1.50 \pm 20\%$	0.1V/1M	0.096	2.60	2.50
SPS252012E2R2MF	$2.20 \pm 20\%$	0.1V/1M	0.102	2.30	2.30

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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 :

- 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.

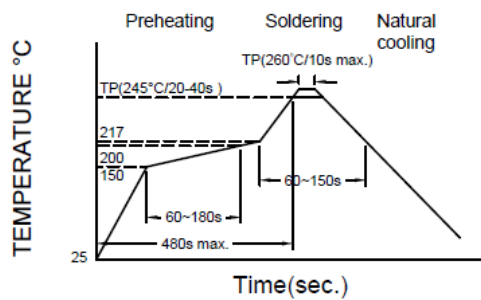


Fig.1

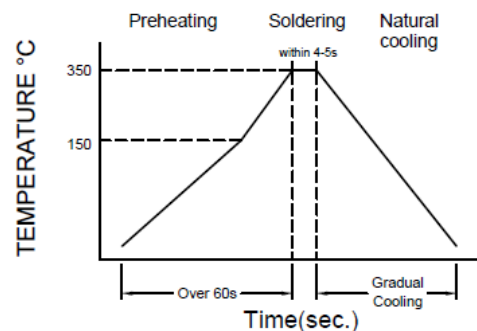
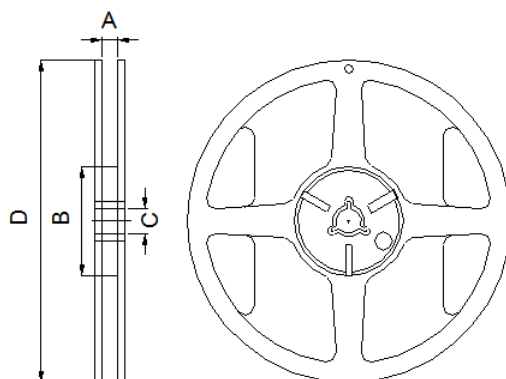


Fig.2

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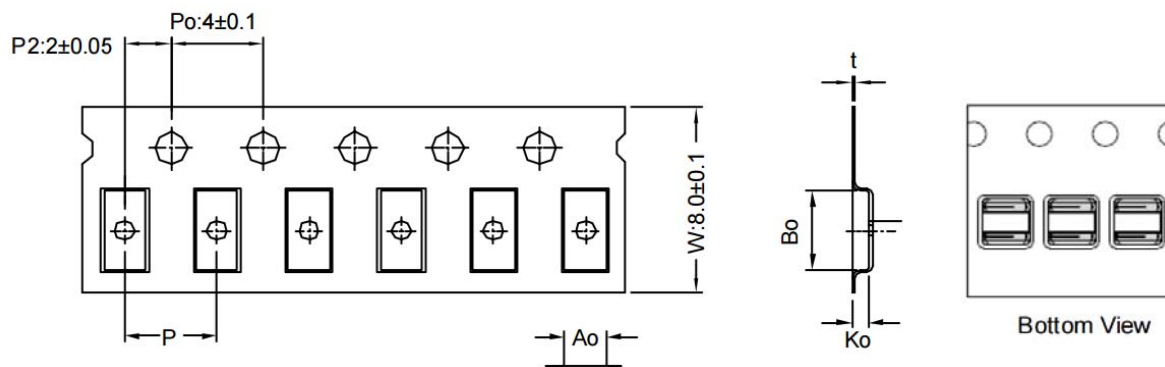
9. Packaging Information

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



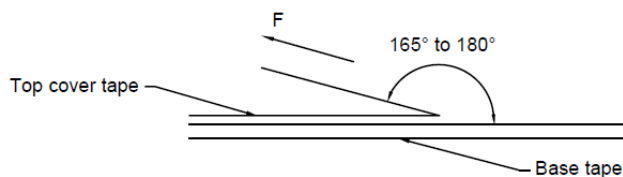
Series	Ao(mm)	Bo(mm)	Ko(mm)	P(mm)	t(mm)
SPS252012	2.45 ± 0.10	2.85 ± 0.10	1.40 ± 0.10	4.00 ± 0.10	0.23 ± 0.05

9-3. Packaging Quantity

Size	252012
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:

- 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.

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