

LOW PROFILE POWER INDUCTORS

PNS3012T SERIES

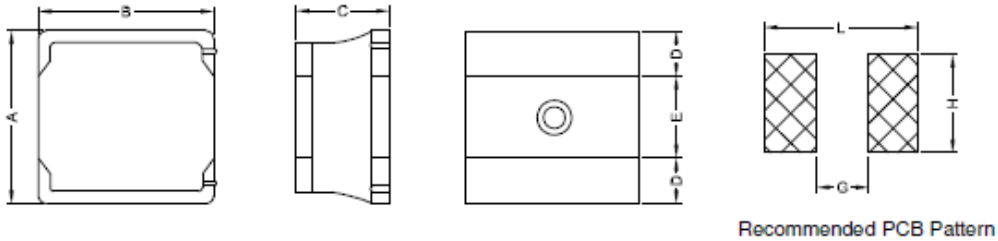
1. Part No. Expression:

PNS3012T1R0YF
 (a) (b) (c) (d) (e)(f)

- (a) Series Code
- (b) Dimension Code
- (c) Material Code
- (d) Inductance Code

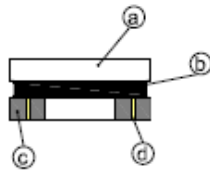
- (e) Tolerance Code
- (f) RoHS Compliance

2. Configurations and Dimensions: (Unit:- mm)



A	B	C	D	E	L	G	H
3.0±0.2	3.0±0.2	1.2 Max.	1.0 Ref.	1.0 Ref.	3.2 Ref.	1.0 Ref.	3.2 Ref.

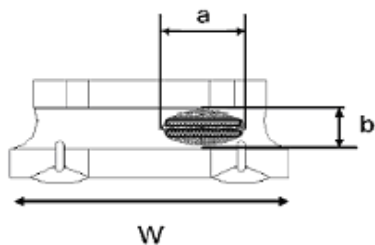
3. Materials:



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

Void appearance tolerance Limit

Size of voids occurring to coating resin is specified below.



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

Size of exposed wire occurring to coating resin is specified below.

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.

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



RoHS Compliant

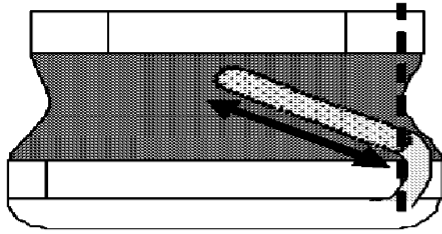


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External appearance criterion for exposed wire

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



4. General Specifications:

- (a) Operating Temperature: -40°C to +125°C (including self - temperature rise).
- (b) Storage Temperature: -40°C to +125°C (on board).
- (c) Isat: Saturation current (Isat) will cause L0 to drop approximately $\Delta L = 30\%$.
- (d) Irms: Heat Rated Current (Irms) will cause the coil temperature rise approximately $\Delta T (40\text{ }^\circ\text{C})$ without core loss.
- (e) Storage Condition (Component in its packaging):-
 - (i) Temperature: -40°C to +125°C
 - (ii) Humidity: 60% RH.

5. Electrical Characteristics:

Part Number	Inductance (uH)	Test Frequency (Hz)	DCR (Ω) $\pm 20\%$	I sat (A) typ.	I sat (A) max.	I rms (A) typ	I rms (A) max.
PNS3012T1R0YF	1.0 $\pm 30\%$	0.1V/1M	0.042	2.50	2.15	2.20	2.00
PNS3012T1R5YF	1.5 $\pm 30\%$	0.1V/1M	0.056	2.00	1.70	2.00	1.85
PNS3012T2R2MF	2.2 $\pm 20\%$	0.1V/1M	0.080	1.80	1.50	1.90	1.70
PNS3012T3R3MF	3.3 $\pm 20\%$	0.1V/1M	0.100	1.50	1.20	1.70	1.55
PNS3012T4R7MF	4.7 $\pm 20\%$	0.1V/1M	0.130	1.30	1.05	1.50	1.30
PNS3012T6R8MF	6.8 $\pm 20\%$	0.1V/1M	0.180	1.20	0.90	1.20	1.05
PNS3012T100MF	10 $\pm 20\%$	0.1V/1M	0.245	0.90	0.76	1.00	0.89
PNS3012T150MF	15 $\pm 20\%$	0.1V/1M	0.386	0.80	0.62	0.90	0.74
PNS3012T220MF	22 $\pm 20\%$	0.1V/1M	0.580	0.60	0.49	0.70	0.61
PNS3012T330MF	33 $\pm 20\%$	0.1V/1M	1.10	0.45	0.40	0.45	0.40
PNS3012T470MF	47 $\pm 20\%$	0.1V/1M	1.45	0.40	0.36	0.40	0.36

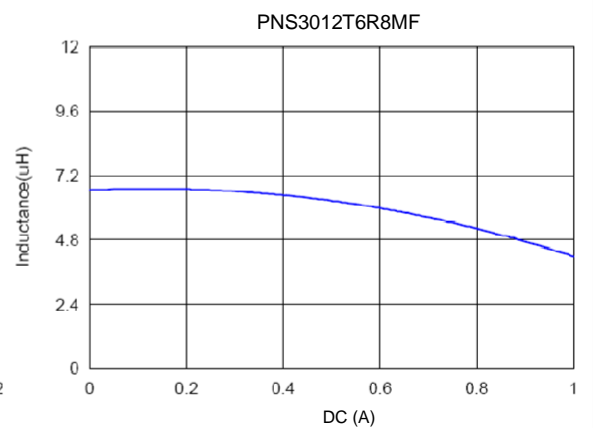
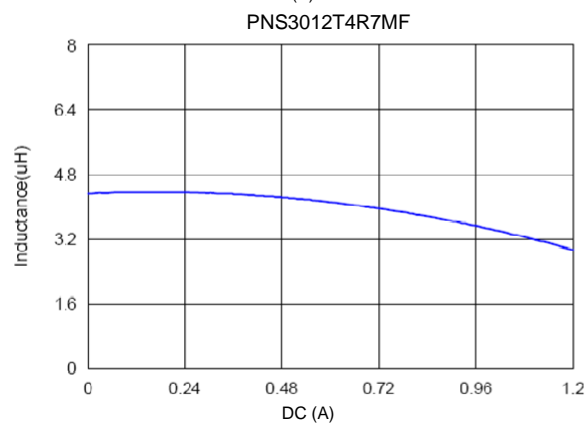
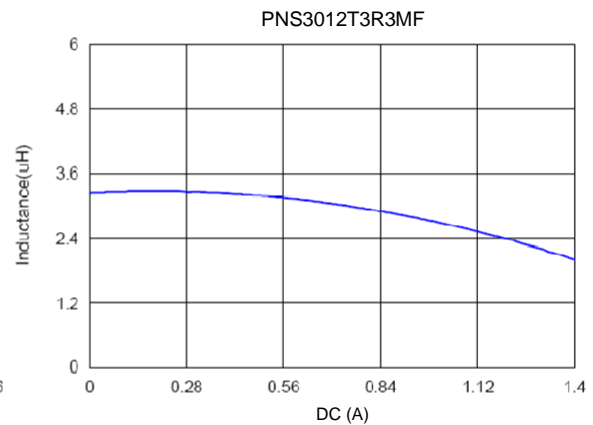
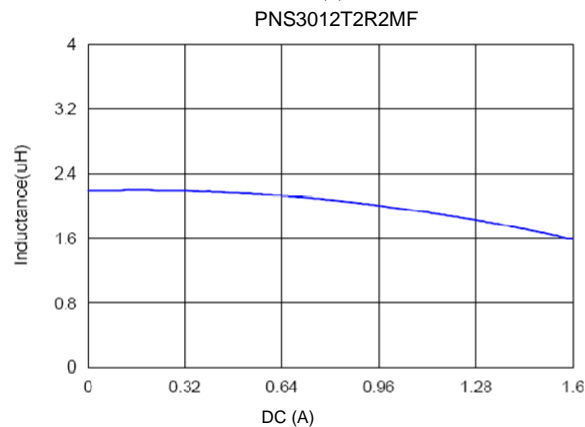
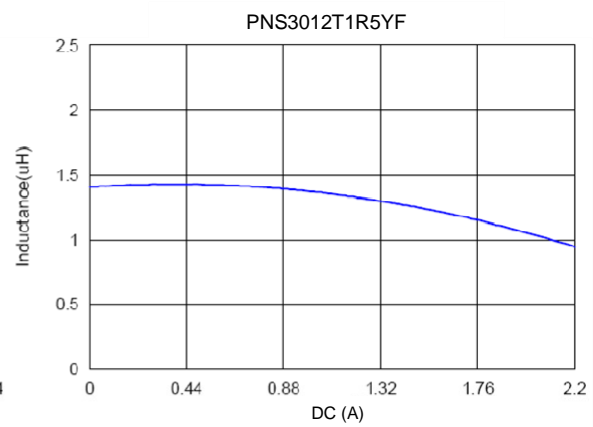
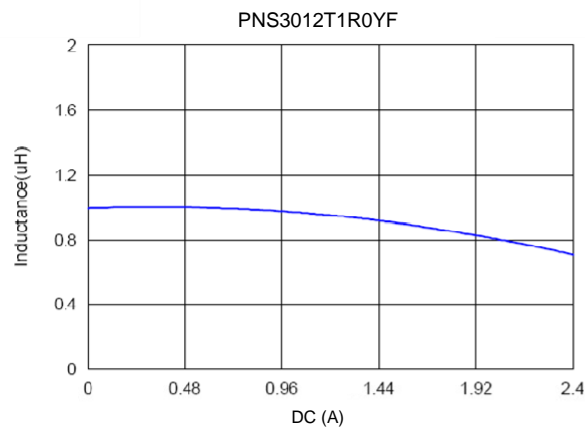


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RoHS Compliant



6. Characteristic Curves:

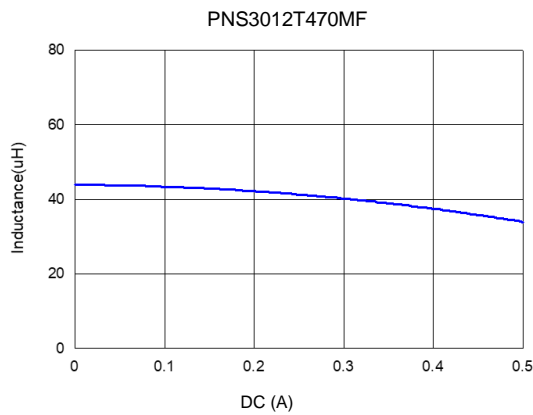
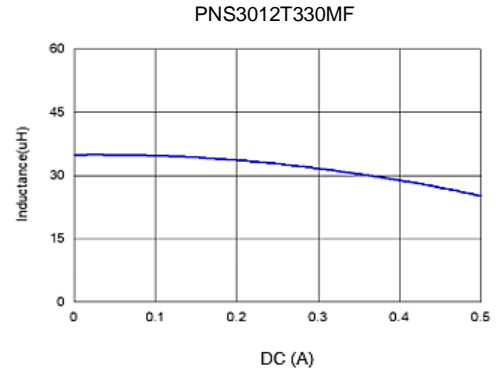
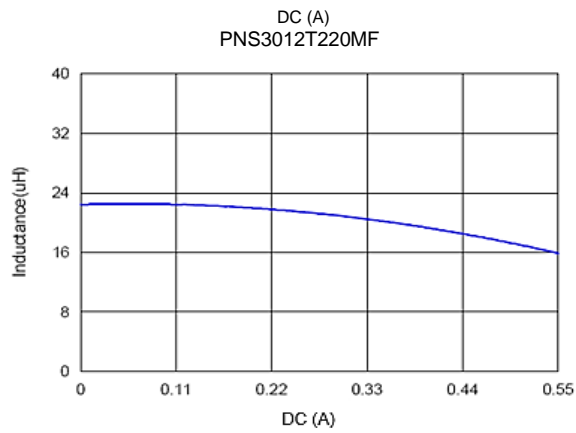
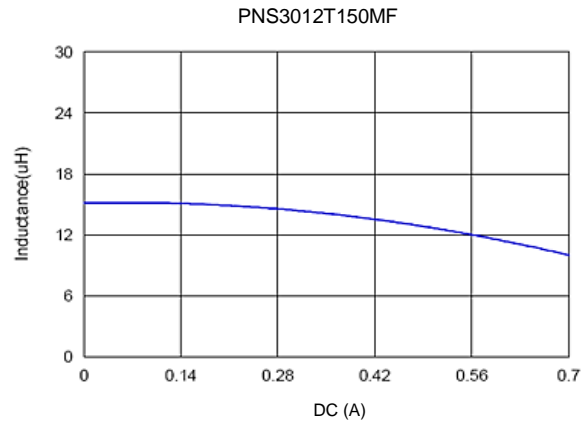
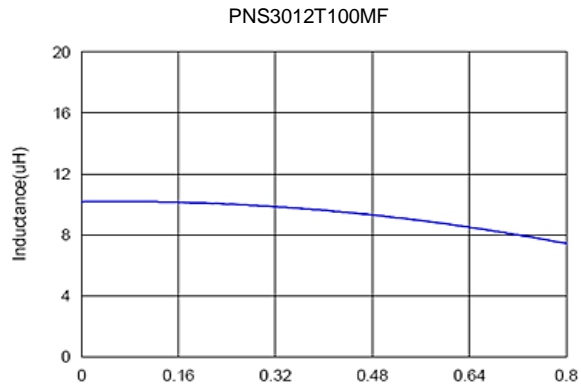


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6. Characteristic Curves:



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7. Soldering and Mounting

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 Solder Re-flow:

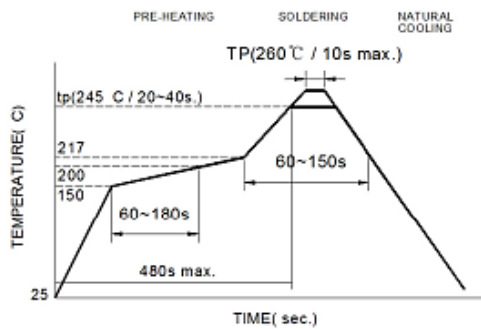
Recommended temperature profiles for re-flow soldering in Figure 1.

7-2 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.

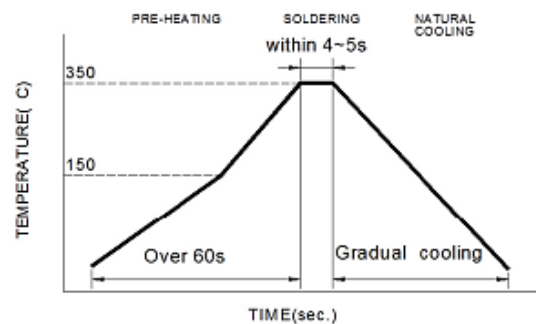
Note:

- 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.



Reflow times: 3 times max..

Fig.1.



Iron Soldering times: 1 times max..

Fig.2.



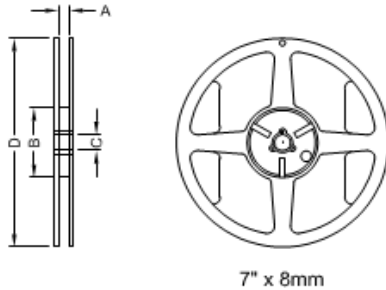
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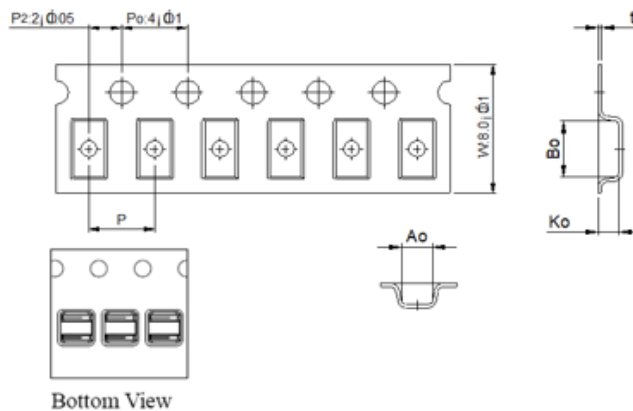
8. Packaging Information:

8.1 Reel Dimension



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

8.2 Tape Dimension/ 8mm



Series	Size	B ₀ (mm)	A ₀ (mm)	K ₀ (mm)	P(mm)	t(mm)
PNS	3012	3.2±0.05	3.2±0.05	1.40±0.2	4.0±0.05	0.23±0.05

8.3 Packaging Quantity

Size	PNS3012
Chip/Reel	2000

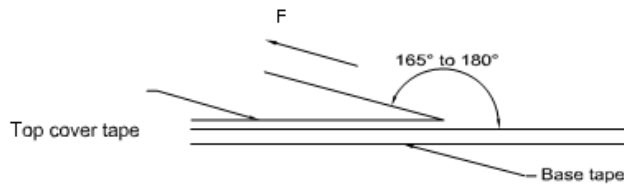


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8.4 Tearing Off Force



The force for tearing off cover tape is 10 to 100 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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