

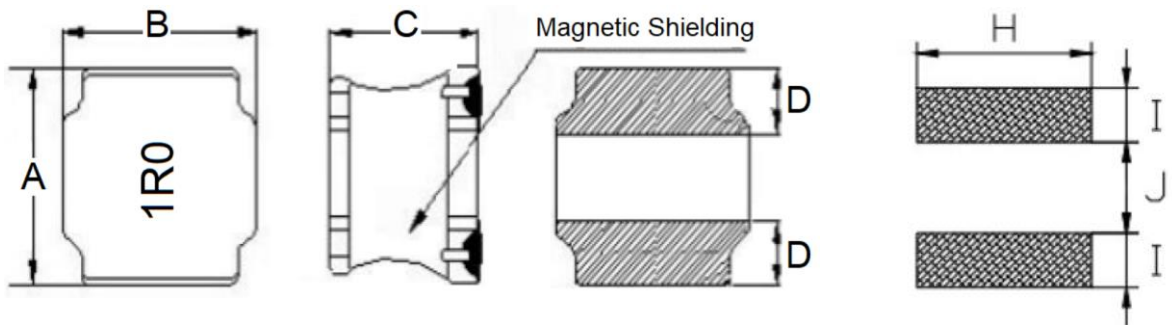
1. Part No. Expression

PNS30151R0YW F

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

- | | |
|---------------------|--------------------|
| (a) Series Code | (d) Tolerance Code |
| (b) Dimension Code | (e) Special Code |
| (c) Inductance Code | (f) Packaging Code |

2. Configuration & Dimensions (Unit: mm)



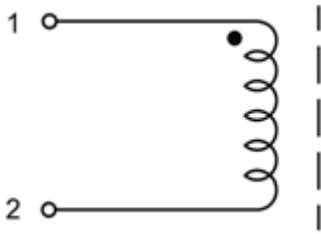
Recommended PCB Layout

- Note:
1. The above PCB layout reference only.
 2. Recommend solder paste thickness at 0.12 mm and above.
 3. Marking: Inductance Code

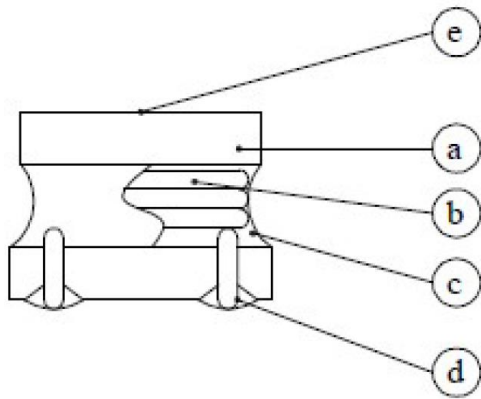
A	B	C	D	H	I	J
3.0±0.2	3.0±0.2	1.5+0.2/-0.3	0.9 Ref	3.2 Ref	1.0 Ref	1.0 Ref

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

3. Schematic

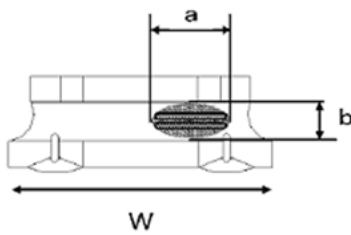


4. Material List



- (a) Core
- (b) Wire
- (c) Adhesive
- (d) Terminal
- (e) Ink

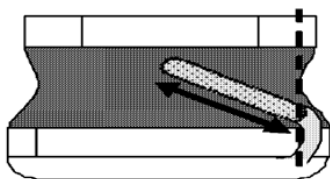
Void appearance tolerance limit & size of voids occurring to coating resin is specified below.



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 side 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.

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5. General Specifications

- (a) Operating Temp.: -40°C to +125°C (including self-temperature rise)
- (b) Storage Temp.: -40°C to +125°C (on board)
- (c) All test data referenced to 25°C ambient.
- (d) Heat Rated Current (Irms) will cause the coil temperature rise approximately ΔT of 40°C.
- (e) Saturation Current (Isat) will cause inductance L0 to drop approximately 30%.
- (f) Rated Current: The lower value of Isat and Irms.
- (g) Storage Condition (Component in its packaging)
 - i) Temperature: Less than 40°C
 - ii) Humidity: Less than 60% RH

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6. Electrical Characteristics

Part Number	Inductance (μ H) @0A	Test Frequency	DCR (m Ω) Max	Isat (A)		Irms (A)		Marking
				Typ	Max	Typ	Max	
PNS30151R0YWF	1.0	1V/100KHz	39.0	2.50	2.20	1.80	1.50	1R0
PNS30151R2YWF	1.2	1V/100KHz	52.0	2.10	1.90	1.78	1.40	1R2
PNS30151R5YWF	1.5	1V/100KHz	65.0	1.82	1.62	1.75	1.50	1R5
PNS30151R8YWF	1.8	1V/100KHz	65.0	1.80	1.60	1.50	1.20	1R8
PNS30152R2MWF	2.2	1V/100KHz	78.0	1.78	1.56	1.30	1.15	2R2
PNS30153R3MWF	3.3	1V/100KHz	104.0	1.35	1.28	1.17	0.90	3R3
PNS30154R7MWF	4.7	1V/100KHz	162.5	1.35	1.20	1.00	0.85	4R7
PNS30155R1MWF	5.1	1V/100KHz	172.9	1.30	1.20	0.78	0.70	5R1
PNS30156R8MWF	6.8	1V/100KHz	260.0	1.10	0.85	0.75	0.65	6R8
PNS3015100MWF	10.0	1V/100KHz	325.0	0.92	0.55	0.59	0.45	100
PNS3015120MWF	12.0	1V/100KHz	416.0	0.90	0.81	0.58	0.45	120
PNS3015180MWF	18.0	1V/100KHz	559.0	0.65	0.58	0.46	0.36	180
PNS3015220MWF	22.0	1V/100KHz	598.0	0.55	0.48	0.44	0.33	220
PNS3015330MWF	33.0	1V/100KHz	1066.0	0.52	0.46	0.34	0.28	330
PNS3015390MWF	39.0	1V/100KHz	1293.5	0.45	0.40	0.35	0.26	390
PNS3015470MWF	47.0	1V/100KHz	1625.0	0.36	0.32	0.27	0.22	470
PNS3015560MWF	56.0	1V/100KHz	1664.0	0.29	0.26	0.27	0.20	560
PNS3015680MWF	68.0	1V/100KHz	3510.0	0.23	0.20	0.19	0.17	680
PNS3015101MWF	100.0	1V/100KHz	4043.0	0.18	0.16	0.15	0.13	101

Tolerance Code: M= \pm 20%, Y= \pm 30%

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7. Soldering Specification

Mildly activated rosin fluxes are preferred. Our terminations are suitable for re-flow soldering systems. If hand soldering cannot be avoided, the preferred technique is the utilization of hot air soldering tools.

7-1. IR Soldering Reflow

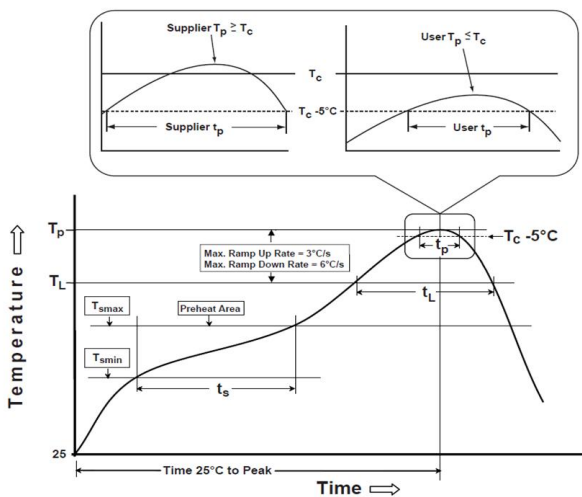
Recommended temperature profiles for lead free re-flow soldering in Figure 1, Table 1.1 & 1.2 (J-STD-020F).

7-2. Iron Reflow

Products attachment with a 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 (Figure 2).

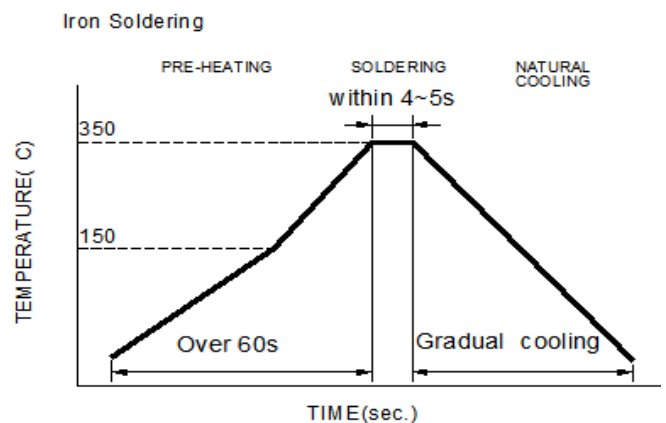
Note:

- (a) Preheat circuit and products to 150°C.
- (b) 350°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 sec.



Reflow times: 3 times Max

Figure 1: IR Soldering Reflow



Iron Soldering times : 1 times max

Figure 2: Iron soldering temperature profiles

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Table (1.1) Reflow Profiles

Profile Type:	Pb-Free Assembly
Preheat	
-Temperature Min (T_{smin})	150°C
-Temperature Max (T_{smax})	200°C
-Time (t_s) from (T_{smin} to T_{smax})	60-120seconds
Ramp-up rate (T_L to T_p)	3°C /second max.
Liquids temperature (T_L)	217°C
Time (t_L) maintained above T_L	60-150 seconds
Classification temperature (T_c)	See Table (1.2)
Time (t_p) at $T_c - 5^\circ\text{C}$ (T_p should be equal to or less than T_c .)	< 30 seconds
Ramp-down rate (T_p to T_L)	6°C /second max.
Time 25°C to peak temperature	8 minutes max.

T_p: maximum peak package body temperature, **T_c**: the classification temperature.

For user (customer) **T_p** should be equal to or less than **T_c**.

Table (1.2) Package Thickness/Volume and Classification Temperature (T_c)

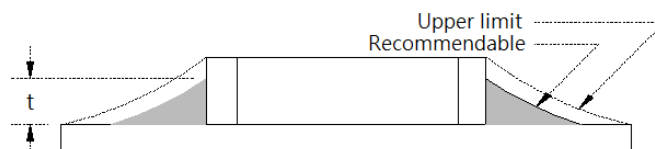
	Package Thickness	Volume mm ³ <350	Volume mm ³ 350-2000	Volume mm ³ >2000
PB-Free Assembly	<1.6mm	260°C	260°C	260°C
	1.6-2.5mm	260°C	250°C	245°C
	≥2.5mm	250°C	245°C	245°C

Reflow is referred to standard IPC/JEDEC J-STD-020F.

7-3. Soldering Volume

Accordingly increasing the solder volume, the mechanical stress to product is also increased. Exceeding solder volume may cause the failure of mechanical or electrical performance. Solder shall be used not to be exceeded as shown in the Figure below.

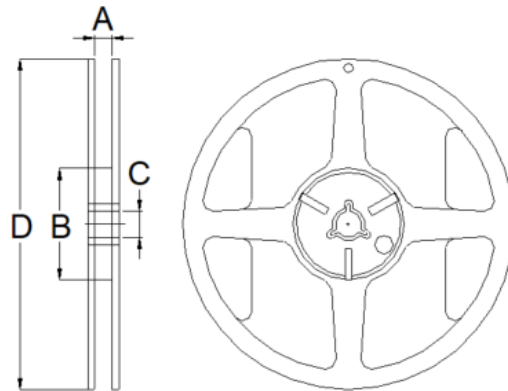
Minimum fillet height = soldering thickness + 25% product height.



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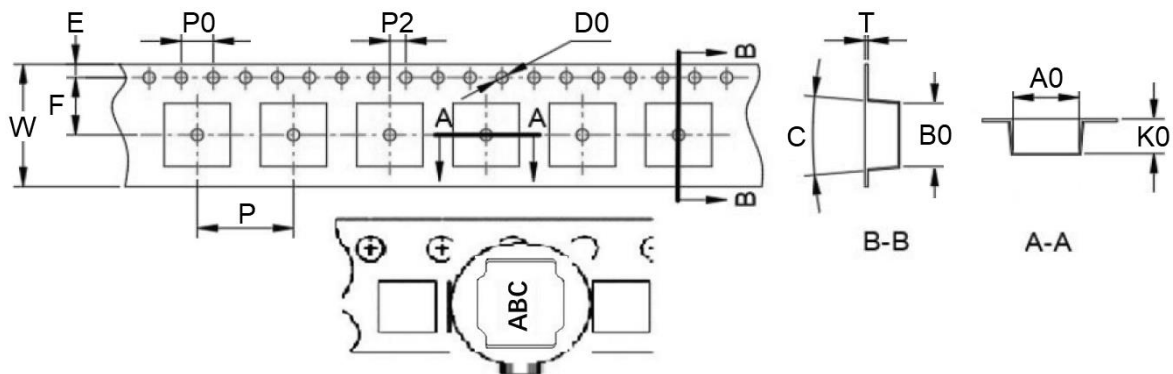
8. Packaging Information

8-1. Reel Dimension (Unit: mm)



Type	A	B	C	D
7"x8mm	8.2 Ref	60.0 Ref	13.0 Ref	180.0 Ref

8-2. Tape Dimension (Unit: mm)



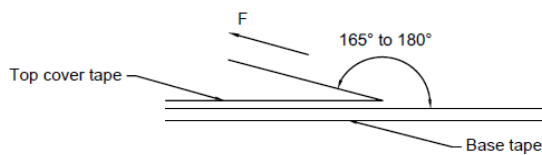
W	A0	B0	K0	P	F
8.00	3.20	3.20	1.70	4.00	3.50
E	D0	P0	P2	T	C
1.75	1.50	4.00	2.00	0.25	10°

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8-3. Packaging Quantity (Unit: Pcs)

Chip/ Reel	2,000
Inner Box	10,000
Carton	100,000

8-4. Tearing Off Force



The force for tearing off cover tape is according to the follow table, in the arrow direction under the following conditions.

(Referenced ANSI/EIA-481-D-2008 of 4.11 standard)

Room Temp. (°C)	Room Humidity (%)	Room atm (hPa)	Tearing Speed (mm/min)
5~35	45~85	860~1060	300±10

Tape Size	8 mm	12 to 56 mm	72 mm or Wider
Tearing Off Force (grams)	10~100	10~130	10~150

Application Notice

1. Storage Conditions

To maintain the solderability of terminal electrodes:

- (a) Products meet IPC/JEDEC J-STD-020F standard-MSL, level 1.
- (b) Recommended products should be used within 12 months from the time of delivery.
- (c) 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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