SMD High Current Molded Inductor – *PIA1206SP Series*

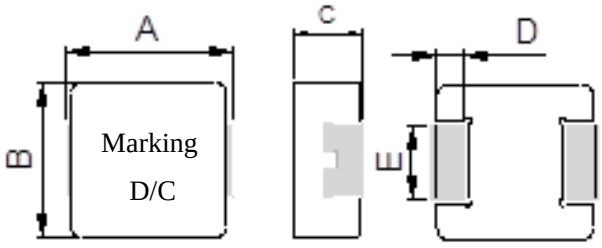
1. Part No. Expression:

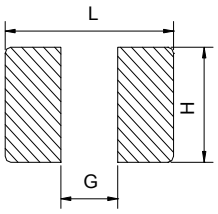
P I A 1 2 0 6 S P 8 R 2 M N

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

a) Series Code
b) Dimension Code
c) Type Code
d) Inductance Code
e) Tolerance Code
f) Internal Control Code

2. Configuration & Dimensions:





Recommend PC Board Pattern

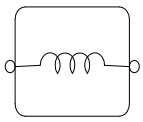
Note:

1. The above PCB layout is for reference only.
2. Solder paste thickness of 0.15mm and above is recommended.
3. Marking: Top row – Inductance code, Bottom row – YYWW

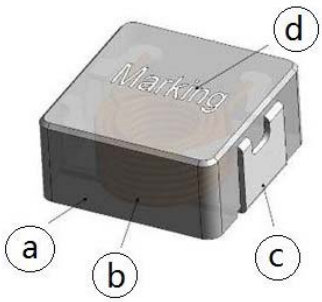
Unit: mm

A	B	C	D	E	G	H	L
13.5±0.5	12.6±0.2	5.7±0.3	2.3±0.3	4.7±0.3	8.0	5.0	14.5

3. Schematic:



4. Material List:



a) Core
b) Wire
c) Terminal
d) Ink

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

5. General Specification:

(a) Operating Temp. : -40°C to +125°C (Inclusive of coil temp rise)

(b) Storage Temp. : -40°C to +125°C (on board)

(c) Humidity Range : 85 ± 2% RH

(d) Heat Rated Current (Irms) will cause the coil temperature rise approximately Δt of 40°C (keep 1min)

(e) Saturation Current (Isat Typ.) will cause L0 to drop approximately 30%.

(f) Part Temp. (Ambient + Temp. Rise) should not exceed 125°C under worst case operating conditions.

(g) Storage condition (component in its packaging)

i) Temperature: -10 to 40°C

ii) Humidity : 50~60% RH

6. Electrical Characteristics:

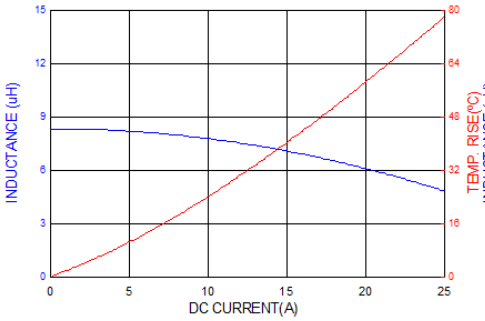
Part Number	Inductance Lo (uH) @ 0A ±20%	Test Frequency, L	Heat Rating Current DC (A) Irms.		Saturation Current DC (A) Isat.		DCR (mΩ)Typ.	DCR (mΩ)Max.
			Typ.	Max.	Typ.	Max.		
PIA1206SP8R2MN	8.20	100kHz/1.0V	13.5	12.0	17.0	15.5	13.5	16.0
PIA1206SP100MN	10.0	100kHz/1.0V	12.0	10.5	16.0	14.5	15.5	18.6
PIA1206SP150MN	15.0	100kHz/1.0V	10.0	8.50	10.0	9.00	24.0	29.0
PIA1206SP220MN	22.0	100kHz/1.0V	8.00	7.00	9.00	8.00	31.2	37.5
PIA1206SP330MN	33.0	100kHz/1.0V	6.50	5.50	7.80	6.70	56.0	68.0
PIA1206SP470MN	47.0	100kHz/1.0V	5.20	4.50	6.70	5.50	76.0	88.0
PIA1206SP680MN	68.0	100kHz/1.0V	4.50	3.70	5.80	5.00	103	124
PIA1206SP101MN	100.0	100kHz/1.0V	3.20	2.80	5.00	4.00	162	195
PIA1206SP151MN	150.0	100kHz/1.0V	2.60	2.20	4.10	3.20	270	325

Notes:

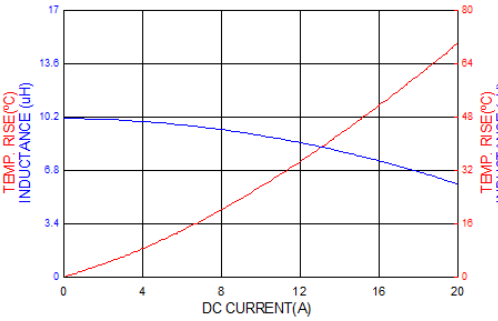
1) At all times, the current supplied to the product should not exceed Isat Max. value.

7. Characteristics Curves:

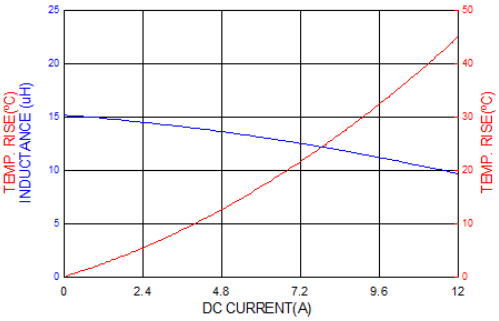
PIA1206SP8R2MN



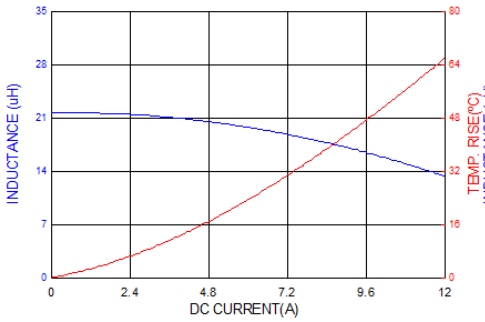
PIA1206SP100MN



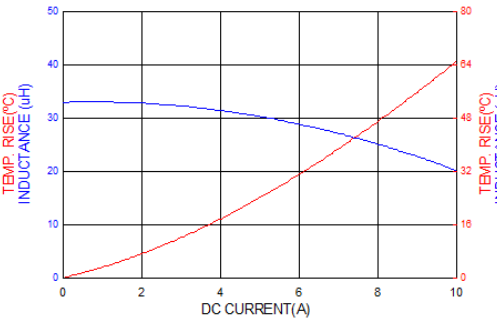
PIA1206SP150MN



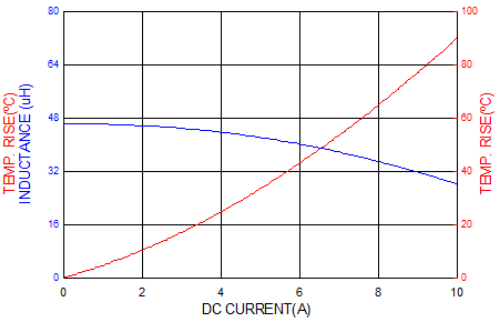
PIA1206SP220MN



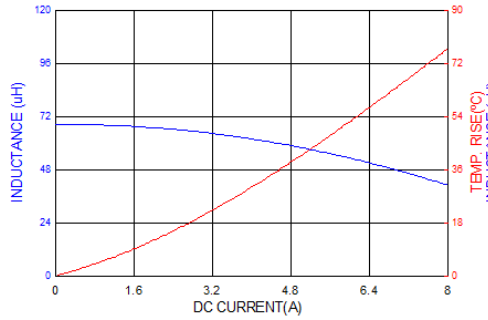
PIA1206SP330MN



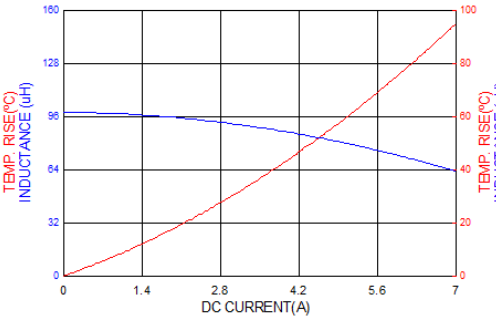
PIA1206SP470MN



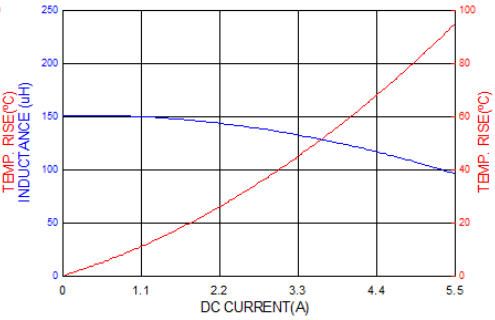
PIA1206SP680MN



PIA1206SP101MN



PIA1206SP151MN



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8. Soldering:

Mildly activated rosin fluxes are preferred. The minimum amount of solder can lead to damage from the stresses caused by the difference in coefficients of expansion between solder, chip and substrate. Our terminations are suitable for all re-flow soldering systems. If hand soldering cannot be avoided, the preferred technique is the utilization of hot air.

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.

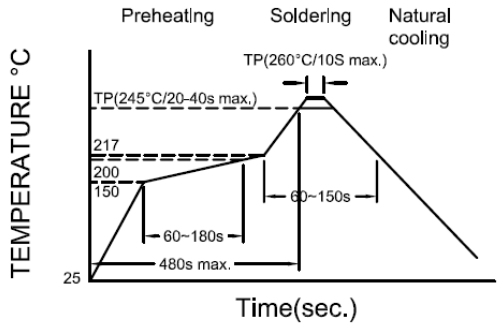
b) 355°C tip temperature (Max.)

c) Never contact the ceramic with the iron tip

d) 1.0mm tip diameter (Max.)

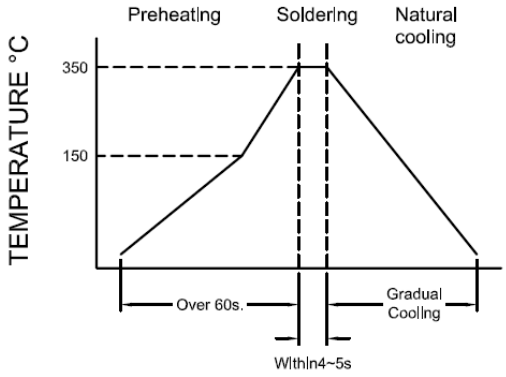
e) Use a 20 watt soldering iron with tip diameter of 1.0mm

f) Limit soldering time to 4~5 secs.



Reflow times: 3 times max

Fig.1



Iron Soldering times：1 times max

Fig.2

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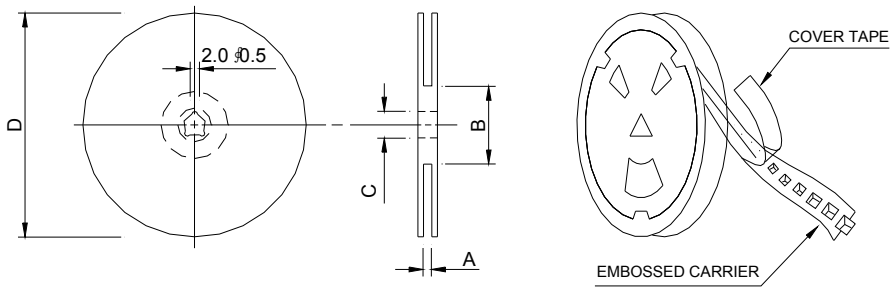
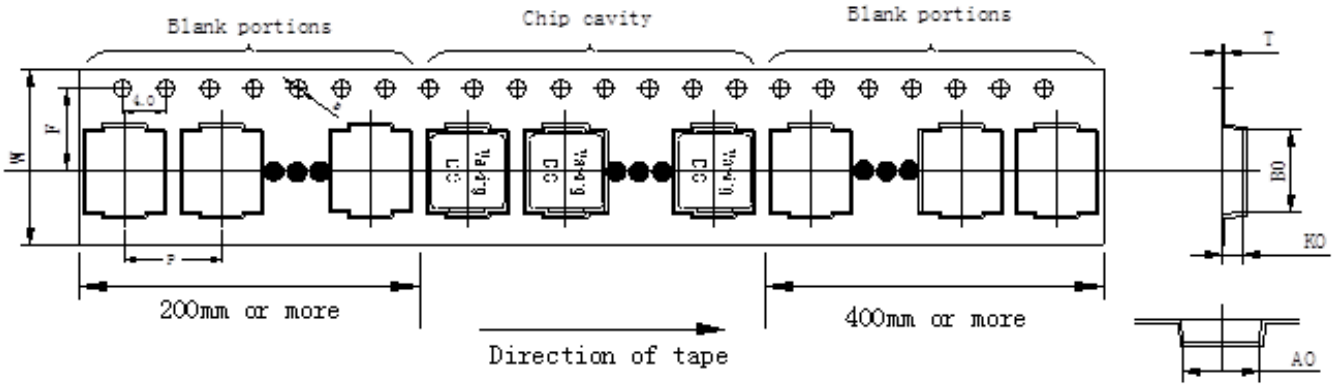
9. Packaging Information:

9-1 Reel Dimension:



Type	A(mm)	B(mm)	C(mm)	D(mm)
13”x24mm	24.4+2/-0	100±2	13.5±0.5	330

9-2 Tape Dimension:



Series	Size	Bo(mm)	Ao(mm)	Ko(mm)	P(mm)	W(mm)	F(mm)	T(mm)	D(mm)
PIA	1206	14.1±0.1	12.9±0.1	6.5±0.1	16.0±0.1	24.0±0.3	11.5±0.1	0.35±0.05	1.5±0.1

9-3 Packaging Quantity:

PIA	1206
Chip / Reel	500
Inner box	1000
Carton	4000

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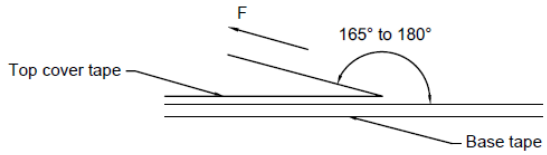
9-4 Tearing Off Force:



The force for tearing off cover tape is 10 to 130 grams in the arrow direction under the following conditions.

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

Application Notice:

1. Storage Conditions:

To maintain the solderabililty 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.