

1. Part No. Expression:

**PIA 2313 SP 1R5 MN**

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

a) Series Code

b) Dimension Code

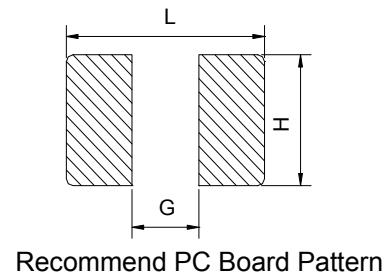
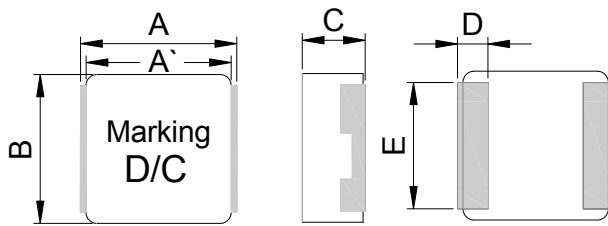
c) Type Code

d) Inductance Code

e) Tolerance Code

f) Internal Control Code

2. Configuration & Dimensions:



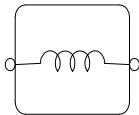
Note:

1. The above PCB layout is for reference only.
2. Solder paste thickness of 0.20mm and above is recommended.
3. Marking: Top row – Inductance code, Bottom row – YYWW

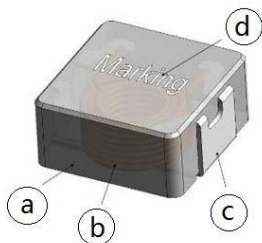
Unit: mm

A	A'	B	C	D	E	G	H	L
23.5±0.5	22.7±0.3	22.0±0.3	12.6±0.4	5.0±0.4	19.0±0.3	12.5 Ref.	19.6 Ref.	24.0 Ref.

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.
- (e) Saturation Current (Isat Typ.) will cause L0 to drop approximately 30%.
- (f) Part Temperature (Ambient + Temp. Rise): should not exceed 125°C under worst case operating conditions.
- (g) Storage condition (component in its packaging)
  - i) Temperature: Less than 40°C
  - ii) Humidity : 60% RH

**6. Electrical Characteristics:**

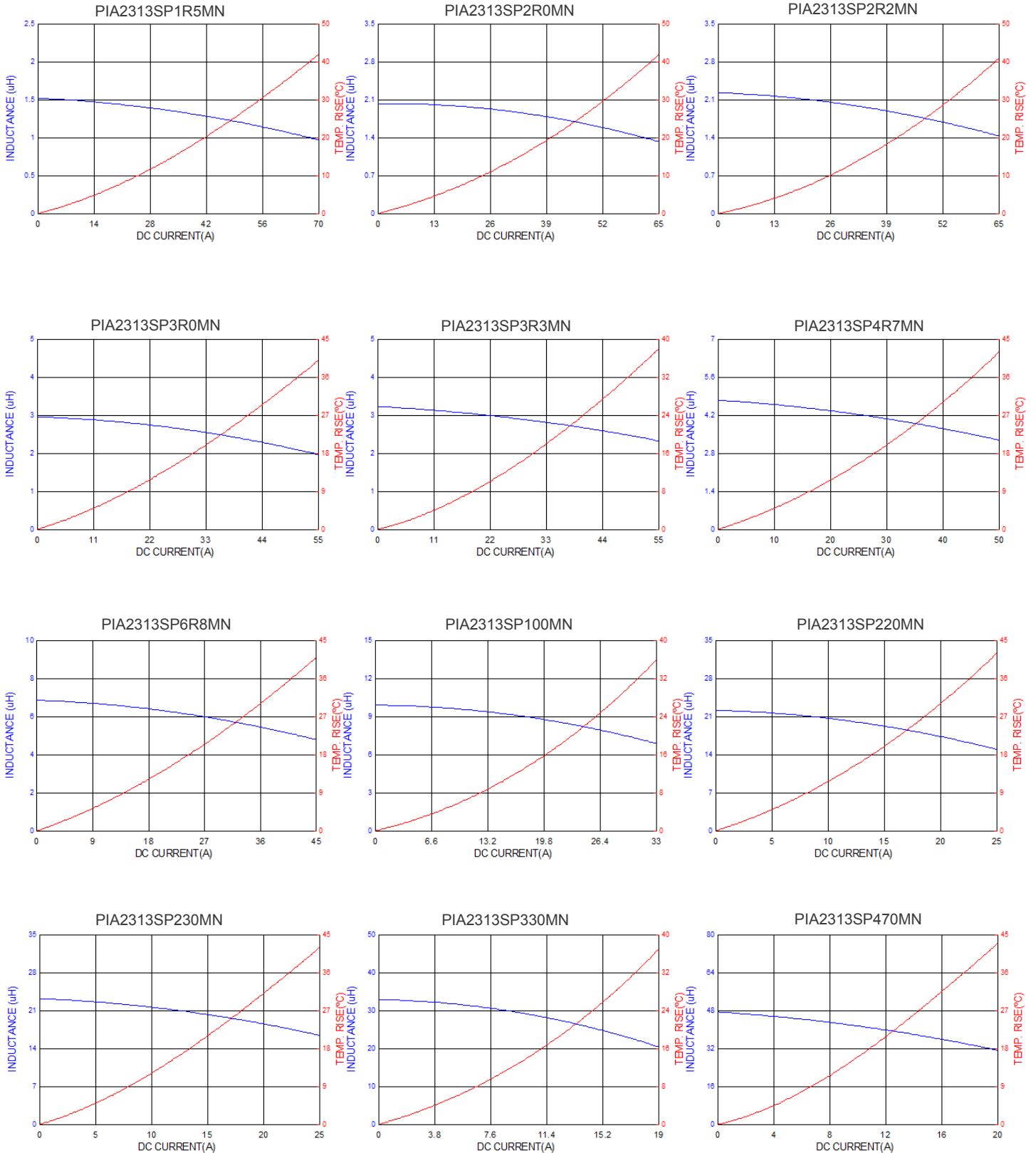
Part Number	Inductance L (uH) @ 0A ±20%	Test Frequency (Hz)	Heat Rating Current DC (A) Irms.		Saturation Current DC (A) Isat.		DCR (mΩ)	
			Typ.	Max.	Typ.	Max.	Typ.	Max.
PIA2313SP1R5MN	1.50	1.0V/100K	62.0	57.0	52.0	48.0	1.0	1.15
PIA2313SP2R0MN	2.00	1.0V/100K	60.0	54.0	50.0	45.0	1.02	1.20
PIA2313SP2R2MN	2.20	1.0V/100K	58.0	52.0	48.0	43.0	1.05	1.25
PIA2313SP3R0MN	3.00	1.0V/100K	51.0	48.0	44.0	39.0	1.42	1.64
PIA2313SP3R3MN	3.30	1.0V/100K	49.0	47.0	41.0	37.0	1.5	1.75
PIA2313SP4R7MN	4.70	1.0V/100K	47.0	44.0	38.0	34.0	1.9	2.2
PIA2313SP6R8MN	6.80	1.0V/100K	40.0	36.0	36.0	32.0	2.7	3.1
PIA2313SP100MN	10.0	1.0V/100K	33.0	30.0	28.0	20.0	3.8	4.15
PIA2313SP220MN	22.0	1.0V/100K	22.0	18.0	15.0	14.0	9.2	11.0
PIA2313SP230MN	23.0	1.0V/100K	22.0	18.0	15.0	14.0	9.2	11.0
PIA2313SP330MN	33.0	1.0V/100K	19.0	16.0	12.0	10.5	13.5	15.4
PIA2313SP470MN	47.0	1.0V/100K	17.0	14.0	12.0	10.0	17.3	20.8
PIA2313SP680MN	68.0	1.0V/100K	14.0	12.0	12.0	9.0	26.2	29.5
PIA2313SP750MN	75.0	1.0V/100K	13.0	11.0	10.5	8.5	27.5	31.6
PIA2313SP820MN	82.0	1.0V/100K	12.0	10.0	9.0	7.7	31.0	34.2
PIA2313SP101MN	100.0	1.0V/100K	11.0	9.5	9.0	7.5	36.0	40.0

Note:

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

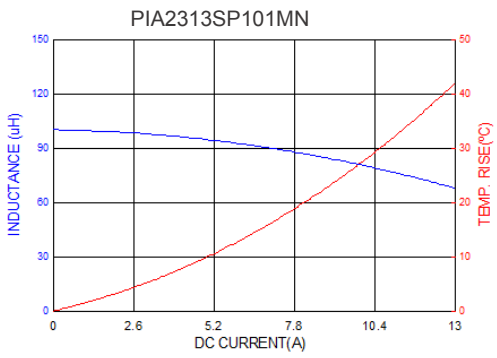
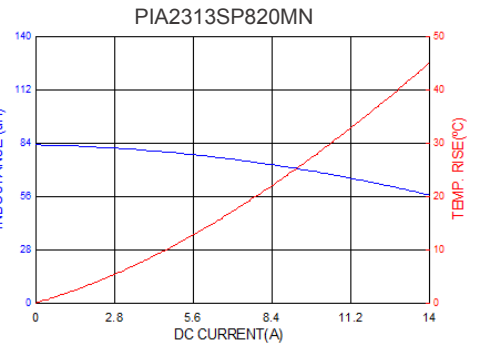
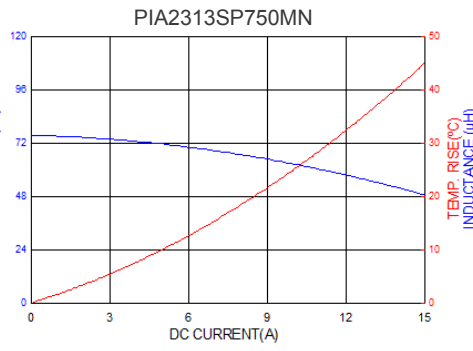
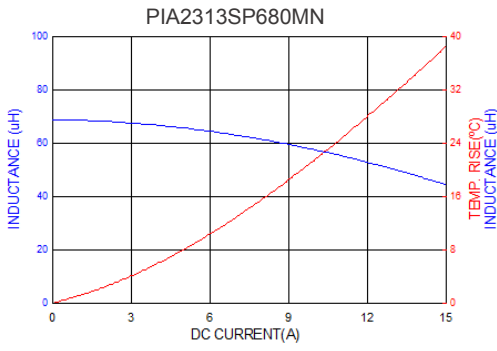
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## 7. Characteristics Curves:



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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:**

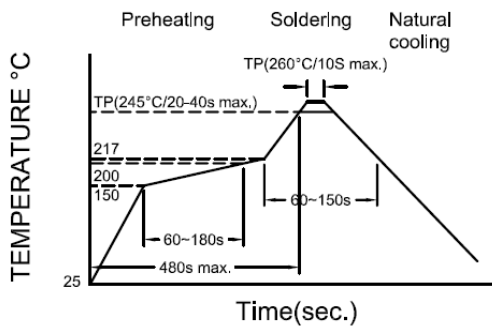
Recommended temperature profiles for re-flow soldering in Figure 1.

**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.

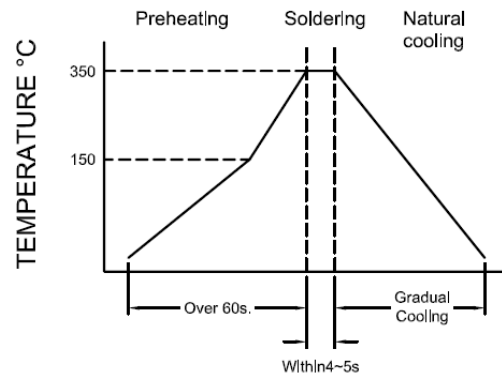
Note :

- 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



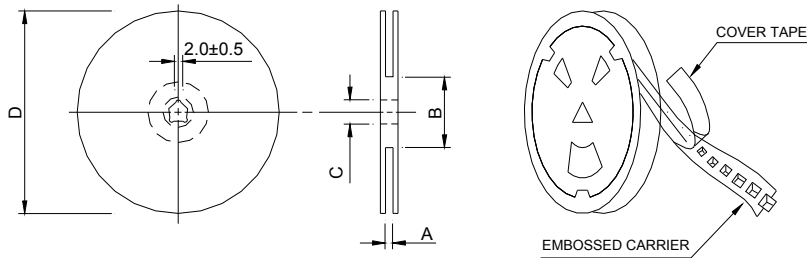
Iron Soldering times: 1 times max

Fig.2

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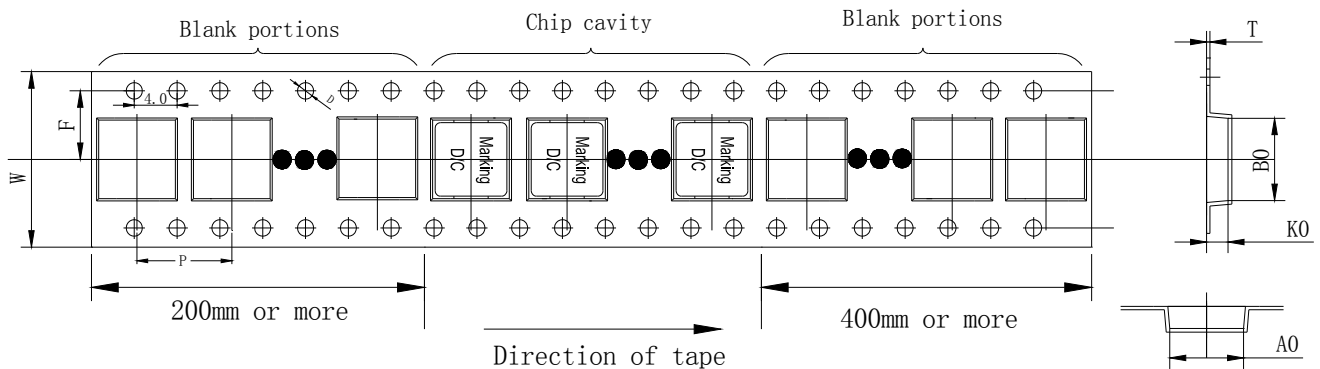
9. Packaging Information:

9-1 Reel Dimension:



Type	A(mm)	B(mm)	C(mm)	D(mm)
13" x 44mm	44.4 + 2/-0	100 ± 2	13.0 + 0.5/-0.2	330

9-2 Tape Dimension:



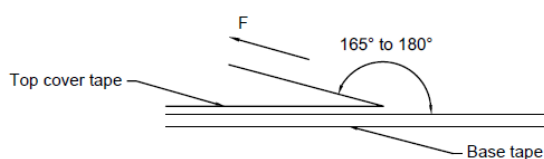
Series	Size	Bo(mm)	Ao(mm)	Ko(mm)	P(mm)	W(mm)	F(mm)	T(mm)	D(mm)
PIA	2313	25.0 ± 0.1	23.0 ± 0.1	13.6 ± 0.1	32.0 ± 0.1	44.0 ± 0.3	20.2 ± 0.1	0.5 ± 0.05	1.5 ± 0.1

9-3 Packaging Quantity:

PIA	2313
Chip / Reel	80
Inner box	80
Carton	320

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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. (°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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