SMD Power Choke Coil – *PIC1003H Series*

1. Part No. Expression:

P I C 1 0 0 3 H 1 R 0 M F - □

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

(a) Series Code

(b) Dimension Code

(c) Type Code

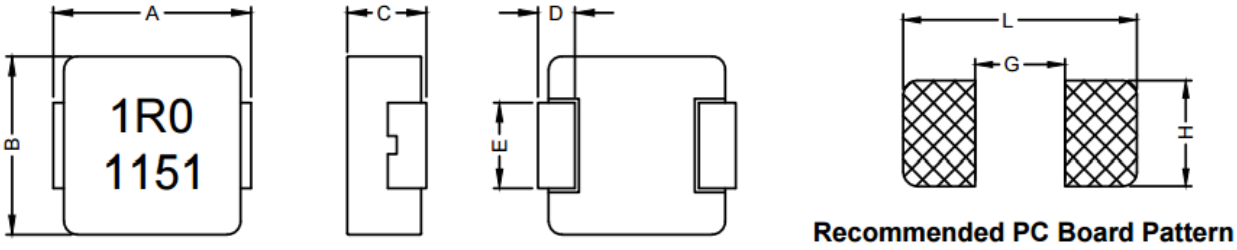
(d) Inductance Code

(e) Tolerance Code

(f) RoHS Compliant

(g) Internal Control Number

2. Configuration & Dimensions :

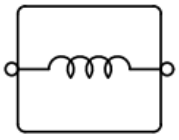


Recommended PC Board Pattern

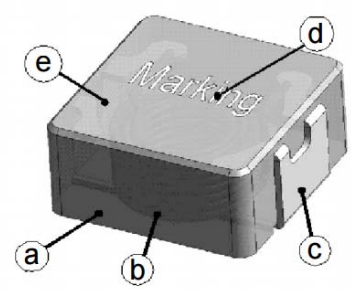
Unit: mm

A	B	C	D	E	G	H	L
11.00 ± 0.50	10.00 ± 0.30	2.80 ± 0.20	2.30 ± 0.30	3.00 ± 0.30	5.40	3.50	13.60

3. Schematic



4. Material List



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

5. General Specification

a) Test Freq. : L:100KHz/1.0V
b) Operating Temperature: - 40°C to +125°C
c) Storage Temperature: - 40°C to +125°C
d) Humidity Range: 85 ± 3% RH
e) Heat Rated Current (Irms) will cause the coil temperature rise approximately Δt of 40°C (keep 1min.)
f) Saturation Current (Isat) will cause L0 to drop 20% Typical
g) Part temperature (Ambient + Temp. Rise): Should not exceed 125°C under worst case operating conditions
h) Storage Condition (component in its packaging)
    i) Temperature: - 10°C to 40°C
    ii) Humidity: 50 - 60% RH

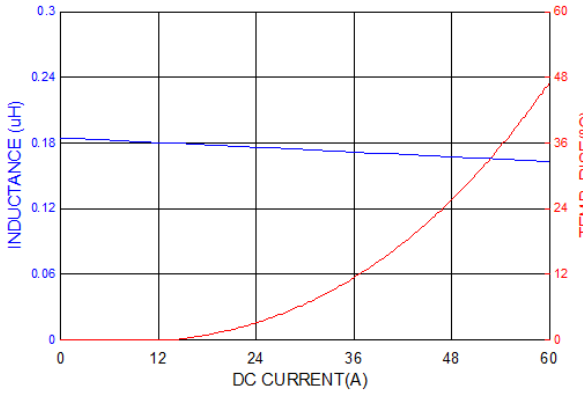
6. Electrical Characteristics

Part Number	Inductance L0 (uH) @ 0 A	I rms (A) Typ.	I sat (A) Typ.	DCR(mΩ) Typ. @25℃	DCR(mΩ) Max. @25℃
PIC1003HR15YF	0.15	35	60	0.9	1.1
PIC1003HR22MF	0.22	30	55	1.1	1.3
PIC1003HR33MF	0.33	25	47	1.2	1.5
PIC1003HR36MF	0.36	23	40	1.3	1.6
PIC1003HR47MF	0.47	20	33	2.1	2.5
PIC1003HR56MF	0.56	16	24	2.6	3.0
PIC1003H1R0MF	1.00	15	20	4.6	6.0
PIC1003H1R5MF	1.50	13	20	6.5	7.5
PIC1003H2R2MF	2.20	12	16	8.0	9.0
PIC1003H3R3MF	3.30	9.0	14	14.5	16
PIC1003H4R7MF	4.70	7.0	13	20.5	22.5
PIC1003H5R6MF	5.60	7.0	12	28	32.5
PIC1003H6R8MF	6.80	6.5	9.5	30.2	35
PIC1003H8R2MF	8.20	6.0	8.5	42	48
PIC1003H100MF	10.0	5.0	8.0	50	55
PIC1003H220MF	22.0	3.0	5.5	115	140

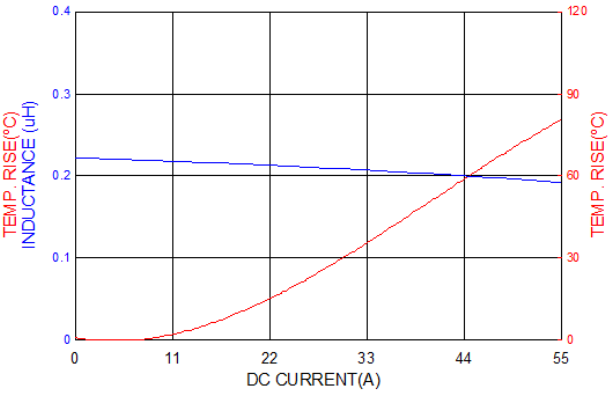
Tolerance: M = ± 20% ; Y = ±30%

7. Characteristics Curves

PIC1003HR15YF



PIC1003HR22MF



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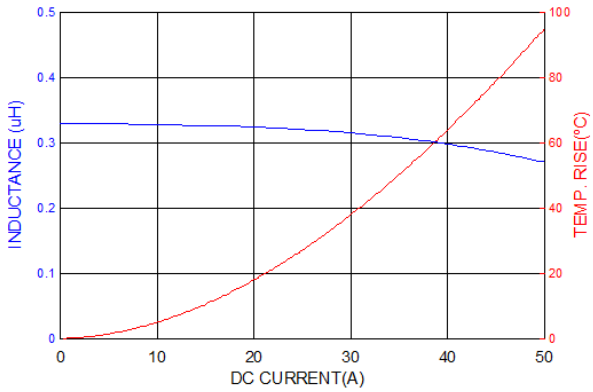

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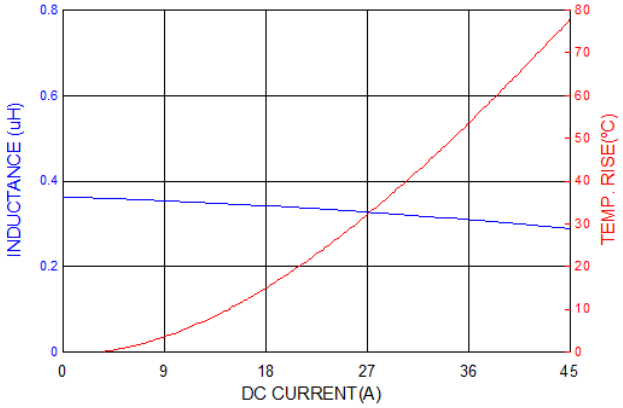

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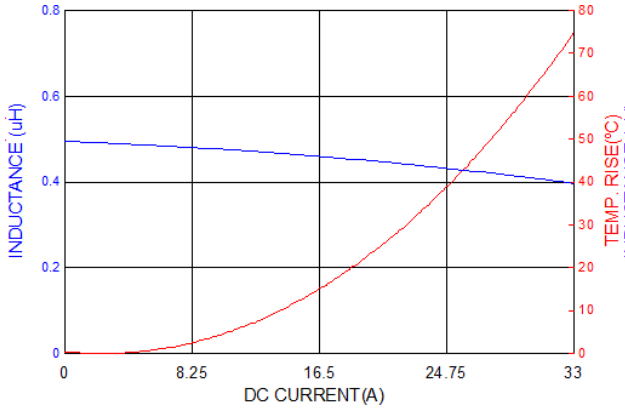

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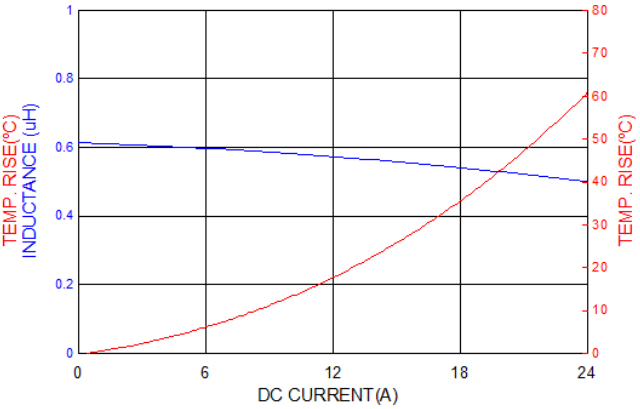

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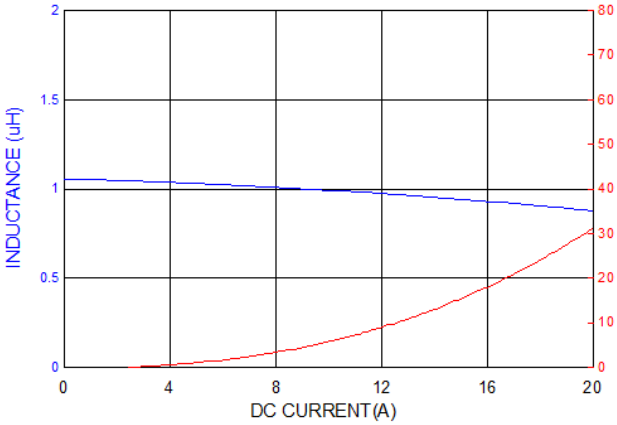

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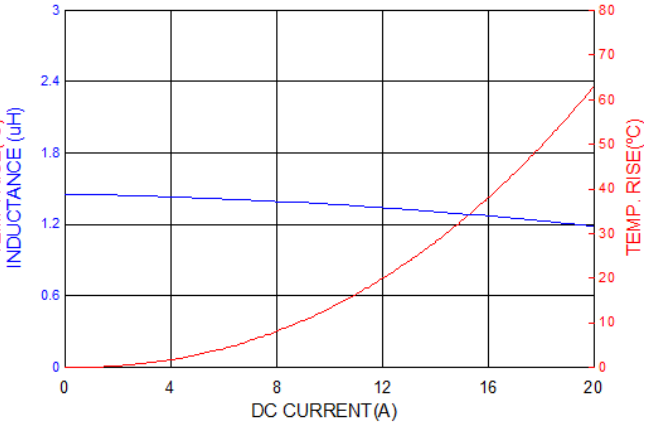

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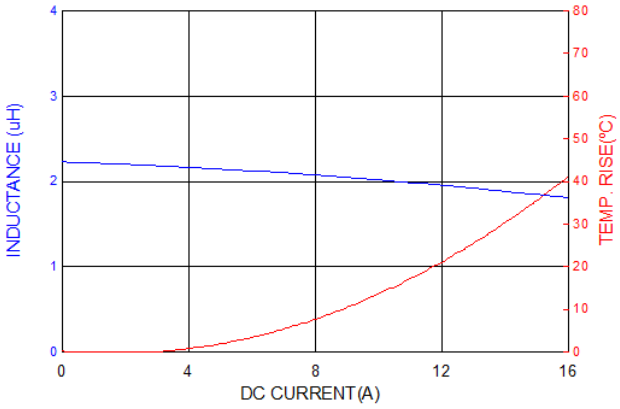

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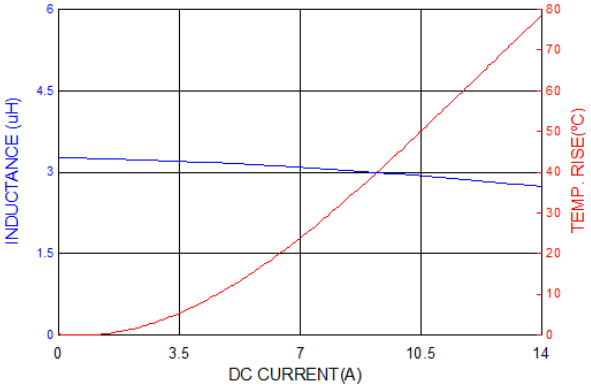
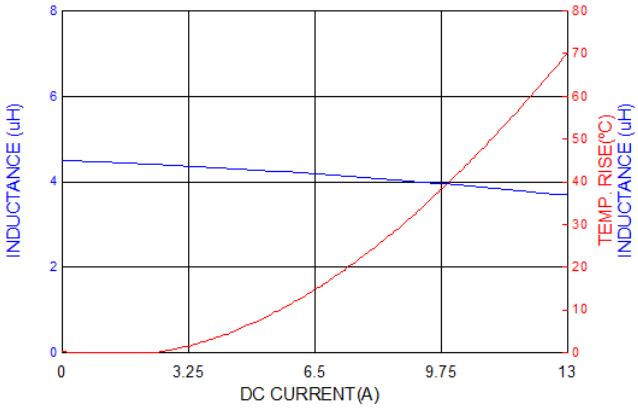
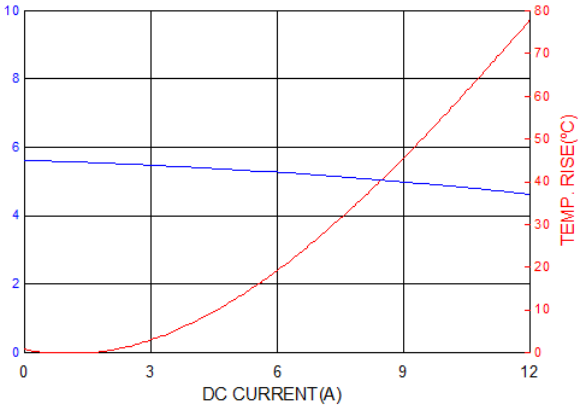


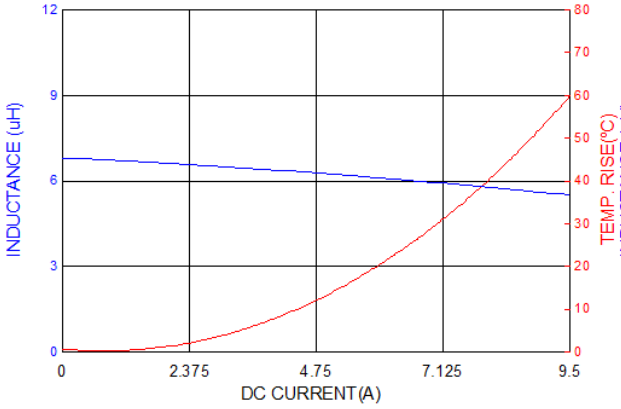
PIC1003H4R7MF



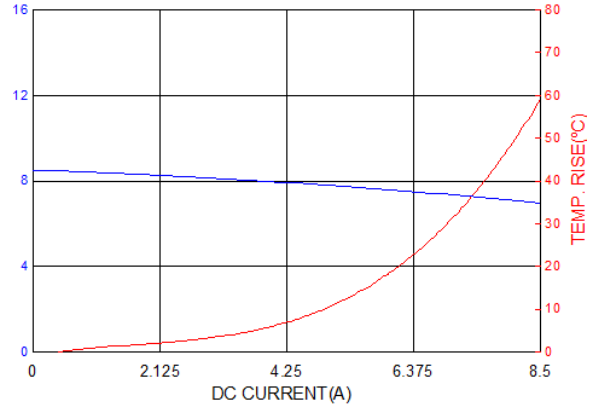
PIC1003H5R6MF



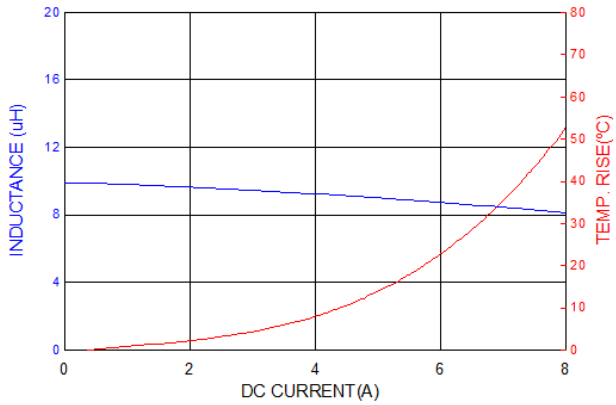
PIC1003H6R8MF



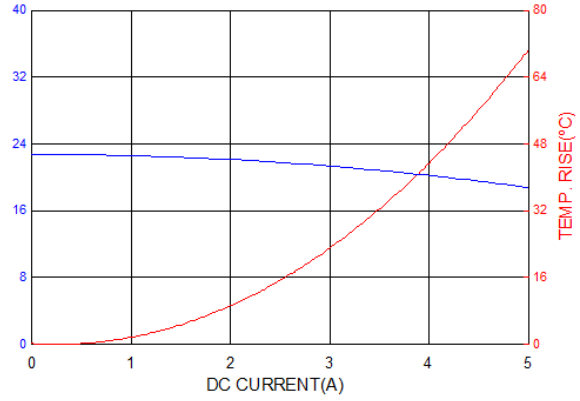
PIC1003H8R2MF



PIC1003H100MF



PIC1003H220MF



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.

Notes:

a) Preheat circuit and products to 150°C.

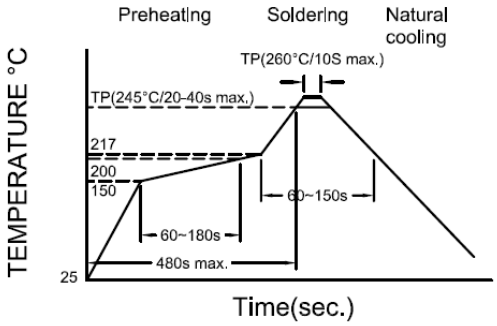
b) 355°C tip temperature (Max.)

c) Never contact the ceramic with the iron tip

d) 1.0mm tip diameter (Max.)

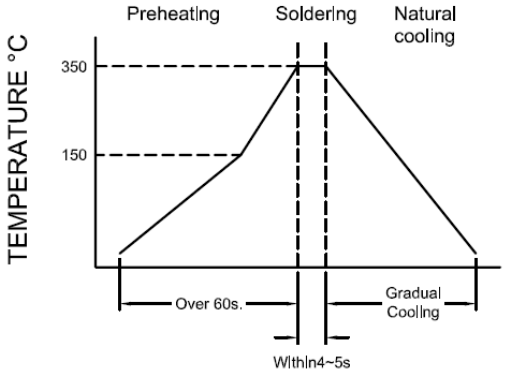
e) Use a 20 watt soldering iron with tip diameter of 1.0mm

f) Limit soldering time to 4~5 sec



Reflow times: 3 times max

Fig.1

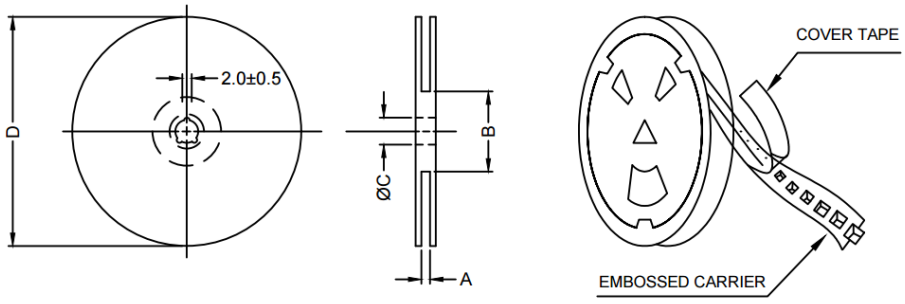


Iron Soldering times：1 times max

Fig.2

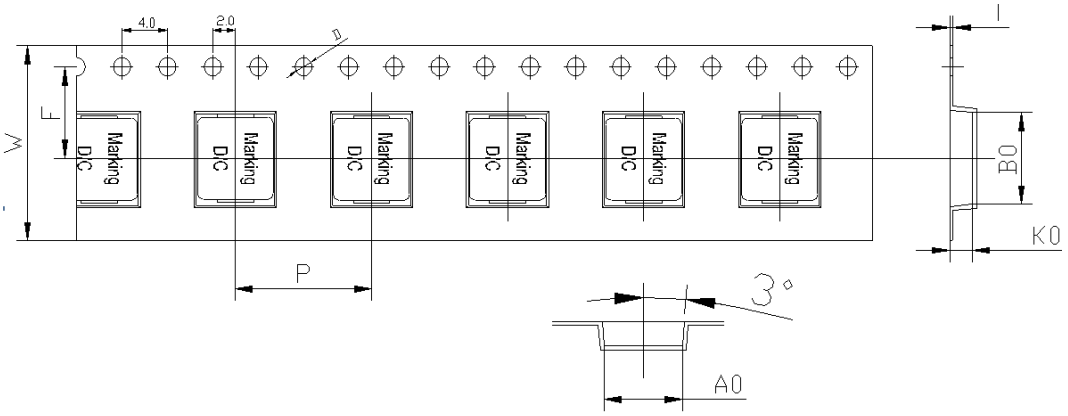
9. Packaging Information:

9-1 Reel Dimension



Type	A(mm)	B(mm)	C(mm)	D(mm)
13”x24mm	24.0±0.5	100±2	13.5±0.5	330

9-2 Tape Dimension

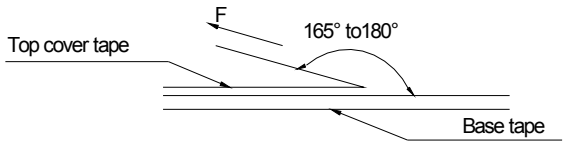


Series	Size	Bo(mm)	Ao(mm)	Ko(mm)	P(mm)	W(mm)	F(mm)	T(mm)	D(mm)
PIC	1003	11.6±0.1	10.4±0.1	3.5±0.1	16.0±0.1	24±0.3	11.5±0.1	0.35±0.05	1.5±0.1

9-3 Packaging Quantity

PIC	1003
Chip / Reel	500
Inner box	1000
Carton	4000

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 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.