

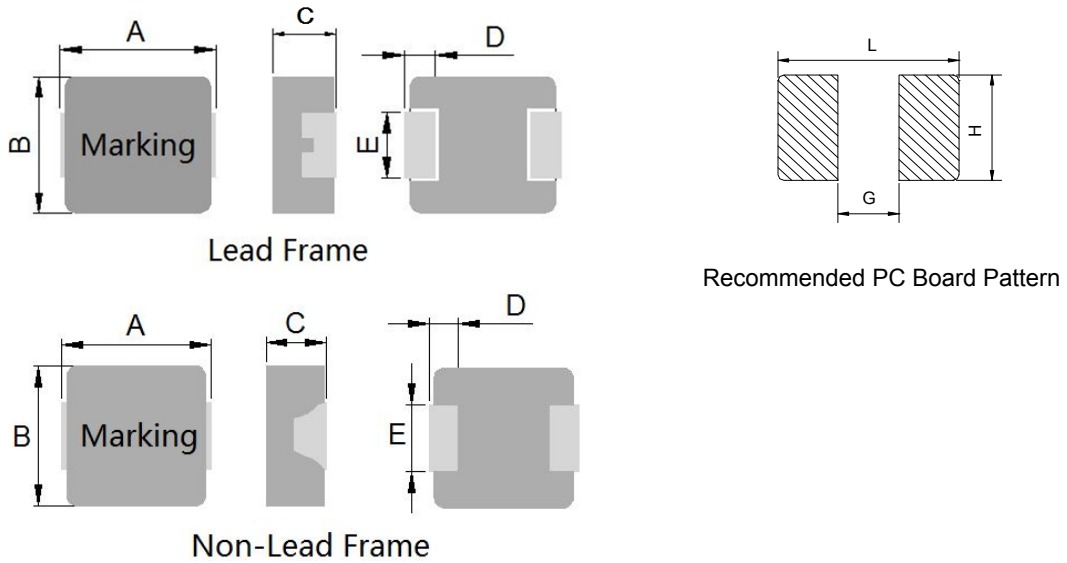
1. Part No. Expression:

PICQ1004HR15YF

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

- a) Series Code
- b) Dimension Code
- c) Type Code
- d) Inductance Code
- e) Tolerance Code
- f) RoHS Compliant

2. Configuration & Dimensions:



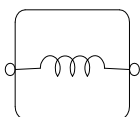
Note:

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 – Year/World week

Unit: mm

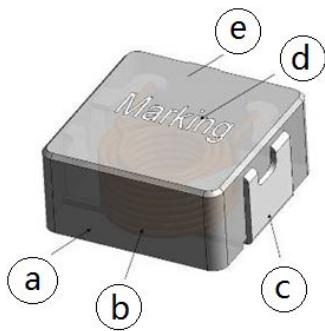
Series	Type	A	B	C	D	E	L	G	H
PICQ1004	Leadframe	11.0±0.5	10.0±0.3	3.8±0.2	2.3±0.3	3.0±0.3	13.6 Ref.	5.4 Ref.	3.5 Ref.
	Non-Leadframe								

3. Schematic:



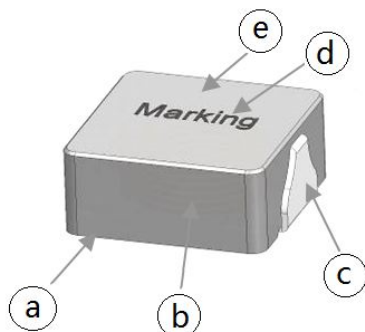
NOTE: Specifications subject to change without notice. Please check our website for latest information.

4. Material List:



Lead Frame

- a) Core
- b) Wire
- c) Clip
- d) Ink
- e) Paint



Non- Lead Frame

- a) Core
- b) Wire
- c) Solder
- d) Ink
- e) Paint

5. General Specification:

- (a) Reliability test for this part meets AEC-Q200 standard
- (b) Operating Temp. : -55°C to +125°C(including self-temperature rise)
- (c) Storage Temp. : -55°C to +125°C (on board)
- (d) Humidity Range. : 85 ± 3% RH
- (e) Heat Rated Current (I_{rms}) will cause the coil temperature rise approximately Δt of 40°C
- (f) Saturation Current (I_{sat}) will cause L₀ to drop approximately 30%.
- (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: Less than 40°C
 - ii) Humidity : 60% RH

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

6. Electrical Characteristics:

Part Number	Inductance L0 (uH) @ 0 A	Test Frequency, L	I rms (A) Typ.	I sat (A) Typ.	DCR(mΩ) Typ.@25°C	DCR(mΩ) Max.@25°C	Type
PICQ1004HR15YF	0.15	100KHz/1.0V	43.0	75.0	0.5	0.6	Non-Leadframe
PICQ1004HR19YF	0.19	100KHz/1.0V	36.0	70.0	0.6	0.9	Non-Leadframe
PICQ1004HR20YF	0.20	100KHz/1.0V	35.0	70.0	0.66	0.95	Non-Leadframe
PICQ1004HR22MF	0.22	100KHz/1.0V	35.0	60.0	0.8	1.0	Non-Leadframe
PICQ1004HR24MF	0.24	100KHz/1.0V	34.0	60.0	0.8	1.0	Non-Leadframe
PICQ1004HR27MF	0.27	100KHz/1.0V	33.0	60.0	0.82	1.0	Non-Leadframe
PICQ1004HR30MF	0.30	100KHz/1.0V	32.0	60.0	0.94	1.1	Non-Leadframe
PICQ1004HR36MF	0.36	100KHz/1.0V	31.0	60.0	1.05	1.2	Non-Leadframe
PICQ1004HR39MF	0.39	100KHz/1.0V	30.0	60.0	1.1	1.3	Non-Leadframe
PICQ1004HR45MF	0.45	100KHz/1.0V	29.0	45.0	1.3	1.5	Non-Leadframe
PICQ1004HR47MF	0.47	100KHz/1.0V	28.0	43.0	1.3	1.5	Non-Leadframe
PICQ1004HR56MF	0.56	100KHz/1.0V	25.0	40.0	1.6	1.8	Non-Leadframe
PICQ1004HR68MF	0.68	100KHz/1.0V	22.0	39.0	2.4	2.7	Non-Leadframe
PICQ1004HR75MF	0.75	100KHz/1.0V	22.0	39.0	2.4	2.7	Non-Leadframe
PICQ1004HR88MF	0.88	100KHz/1.0V	20.0	38.0	2.5	2.9	Non-Leadframe
PICQ1004H1R0MF	1.00	100KHz/1.0V	18.0	36.0	3.0	3.3	Non-Leadframe
PICQ1004H1R2MF	1.20	100KHz/1.0V	17.0	33.0	3.3	3.8	Non-Leadframe
PICQ1004H1R5MF	1.50	100KHz/1.0V	16.0	33.0	4.0	4.6	Non-Leadframe
PICQ1004H1R8MF	1.80	100KHz/1.0V	14.0	30.0	5.3	6.4	Leadframe
PICQ1004H2R2MF	2.20	100KHz/1.0V	12.0	27.0	6.5	7.0	Leadframe
PICQ1004H2R5MF	2.50	100KHz/1.0V	11.5	23.0	7.9	8.7	Leadframe
PICQ1004H3R0MF	3.00	100KHz/1.0V	11.5	21.0	10.0	11.5	Leadframe
PICQ1004H3R3MF	3.30	100KHz/1.0V	11.0	20.0	10.8	11.8	Leadframe
PICQ1004H3R9MF	3.90	100KHz/1.0V	10.5	19.0	12.6	14.5	Leadframe
PICQ1004H4R0MF	4.00	100KHz/1.0V	10.2	18.0	13.0	15.0	Leadframe
PICQ1004H4R7MF	4.70	100KHz/1.0V	10.0	17.0	15.0	15.5	Leadframe
PICQ1004H5R6MF	5.60	100KHz/1.0V	9.0	14.0	17.0	19.3	Leadframe
PICQ1004H6R2MF	6.20	100KHz/1.0V	8.7	13.7	17.2	21.3	Leadframe
PICQ1004H6R5MF	6.50	100KHz/1.0V	8.6	13.6	17.3	22.3	Leadframe
PICQ1004H6R8MF	6.80	100KHz/1.0V	8.5	13.5	17.5	23.3	Leadframe
PICQ1004H7R3MF	7.30	100KHz/1.0V	8.3	13.0	19.0	21.8	Leadframe
PICQ1004H8R2MF	8.20	100KHz/1.0V	8.0	12.5	20.0	22.5	Leadframe
PICQ1004H100MF	10.0	100KHz/1.0V	7.5	12.0	27.0	30.0	Leadframe

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



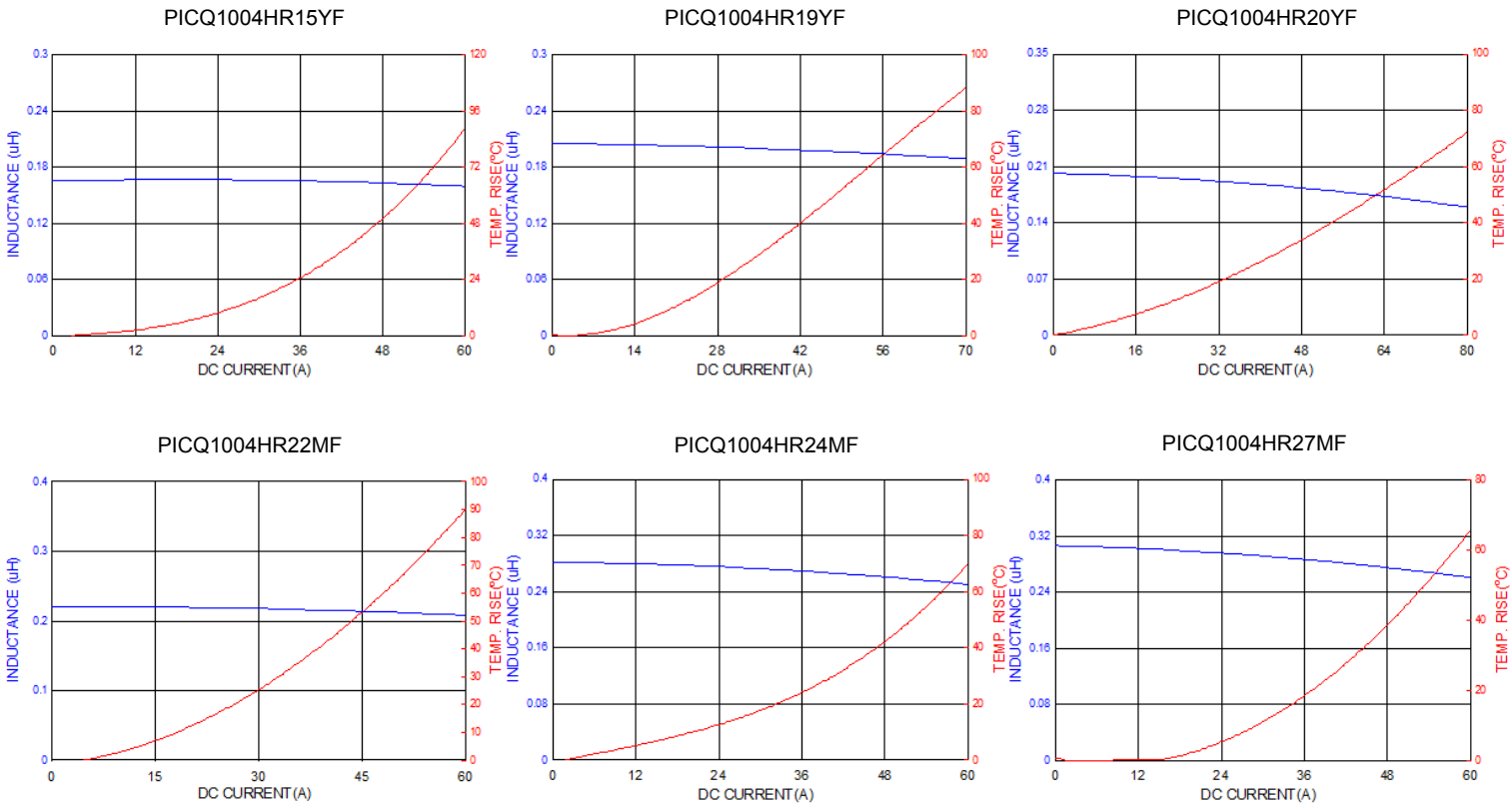
Part Number	Inductance L0 (uH) @ 0 A	Test Frequency, L	I rms (A) Typ.	I sat (A) Typ.	DCR(mΩ) Typ.@25°C	DCR(mΩ) Max.@25°C	Type
PICQ1004H150MF	15.0	100KHz/1.0V	6.25	10.0	40.0	45.0	Leadframe
PICQ1004H180MF	18.0	100KHz/1.0V	5.5	9.0	56.0	62.0	Leadframe
PICQ1004H220MF	22.0	100KHz/1.0V	5.0	7.0	64.0	74.0	Leadframe
PICQ1004H270MF	27.0	100KHz/1.0V	4.0	6.0	86.0	100	Leadframe
PICQ1004H330MF	33.0	100KHz/1.0V	3.5	5.0	92.0	112	Leadframe
PICQ1004H470MF	47.0	100KHz/1.0V	3.0	4.5	145	167	Leadframe
PICQ1004H680MF	68.0	100KHz/1.0V	2.0	3.0	205	240	Leadframe
PICQ1004H820MF	82.0	100KHz/1.0V	1.5	2.5	265	320	Leadframe

*Tolerance code : Y = ±30%; M = ±20%

Notes:

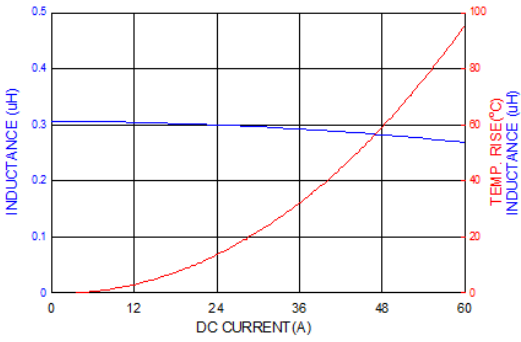
1) Isat Typ. and Irms Typ. value is derived based from accounting the upper limit tolerance into the inductance value.

7. Characteristics Curves:

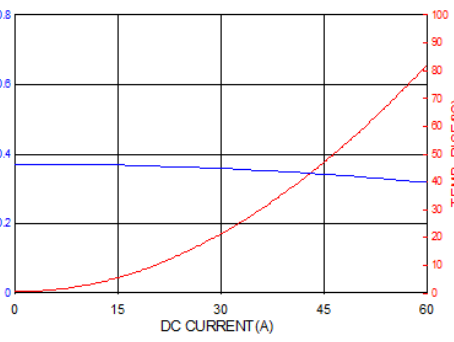


NOTE: Specifications subject to change without notice. Please check our website for latest information.

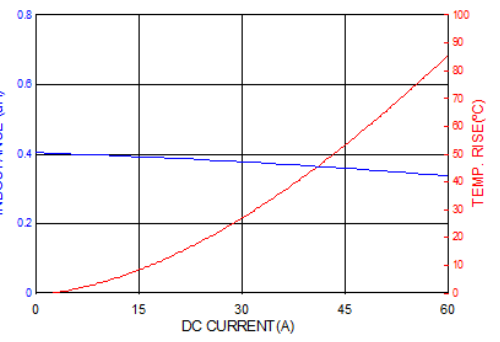
PICQ1004HR30MF



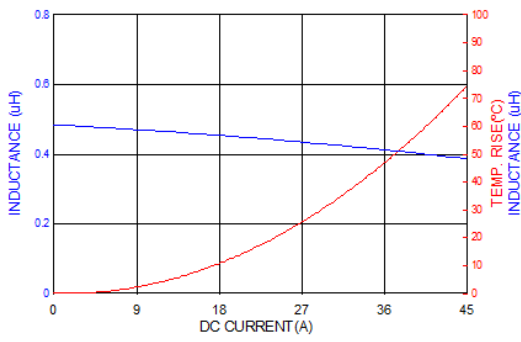
PICQ1004HR36MF



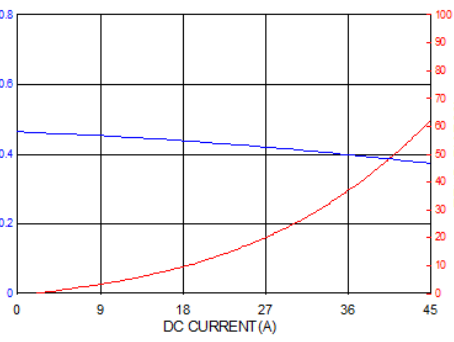
PICQ1004HR39MF



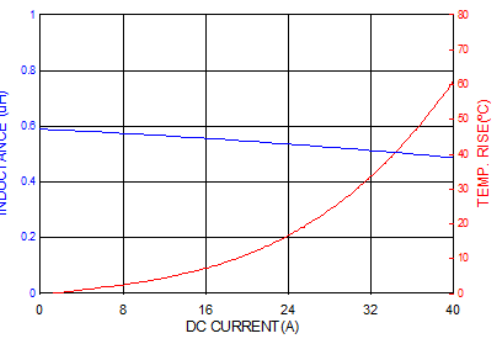
PICQ1004HR45MF



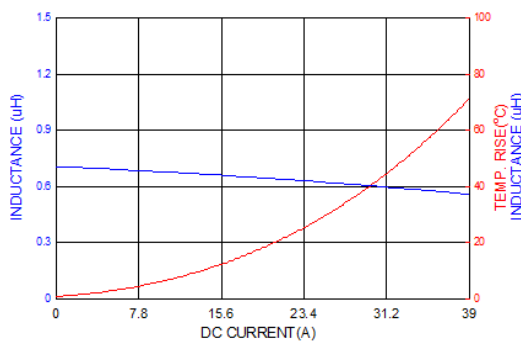
PICQ1004HR47MF



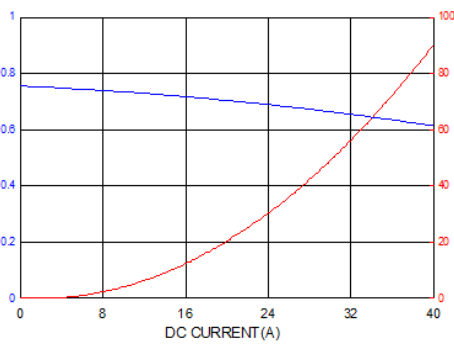
PICQ1004HR56MF



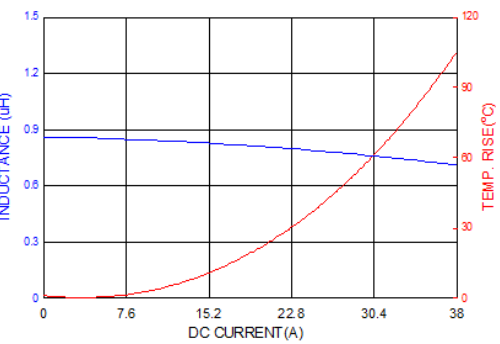
PICQ1004HR68MF



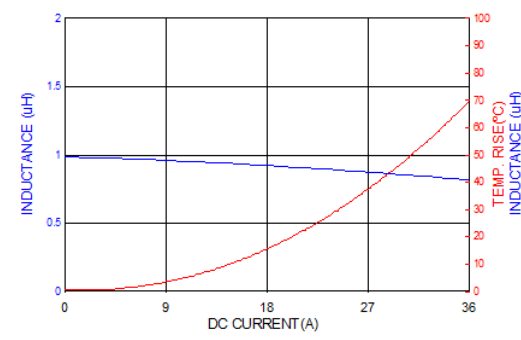
PICQ1004HR75MF



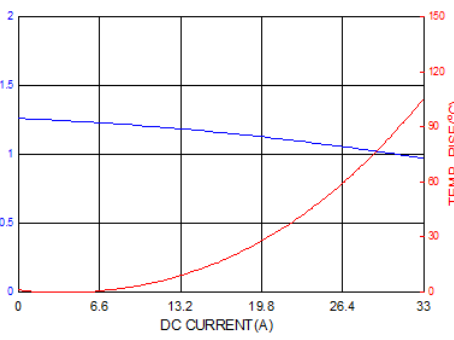
PICQ1004HR88MF



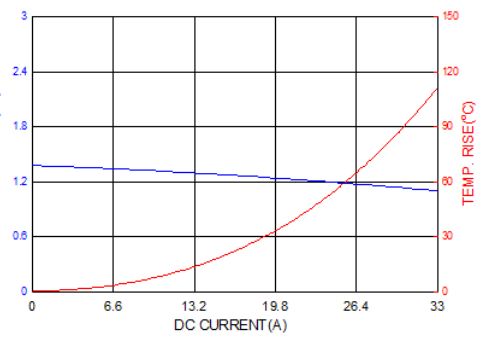
PICQ1004H1R0MF



PICQ1004H1R2MF



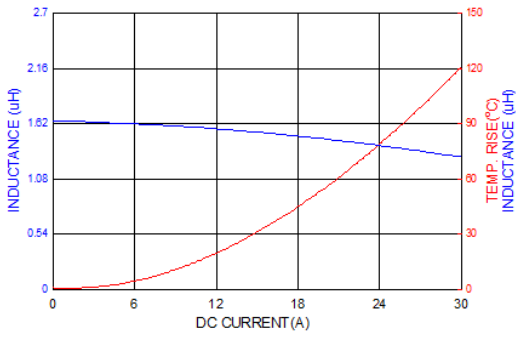
PICQ1004H1R5MF



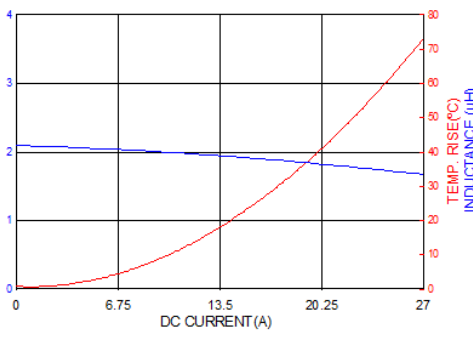
NOTE: Specifications subject to change without notice. Please check our website for latest information.



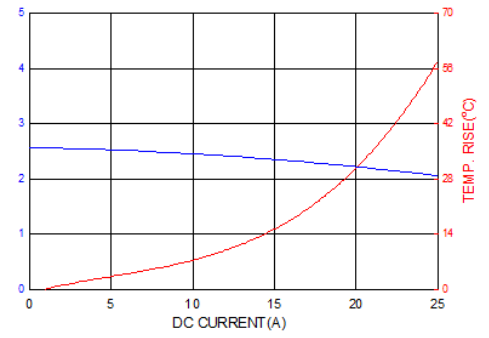
PICQ1004H1R8MF



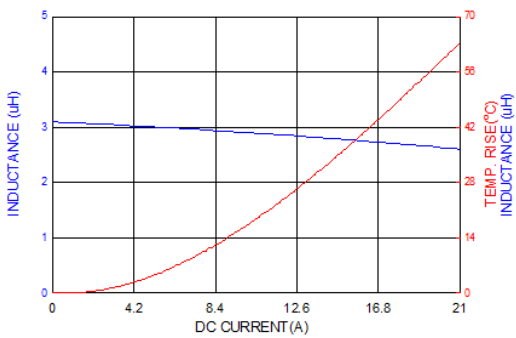
PICQ1004H2R2MF



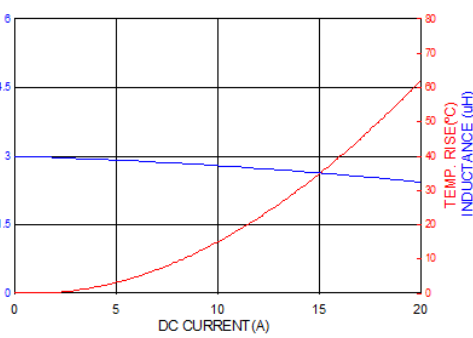
PICQ1004H2R5MF



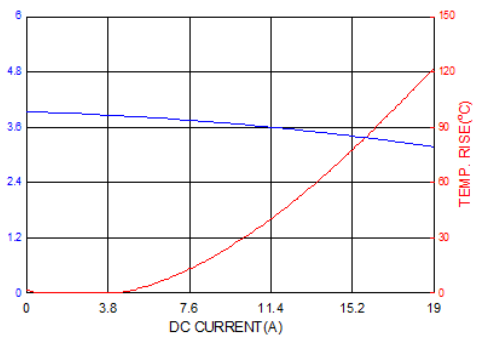
PICQ1004H3R0MF



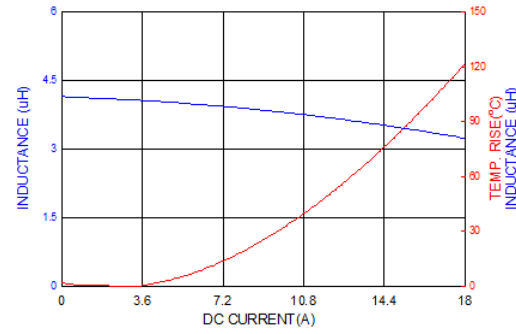
PICQ1004H3R3MF



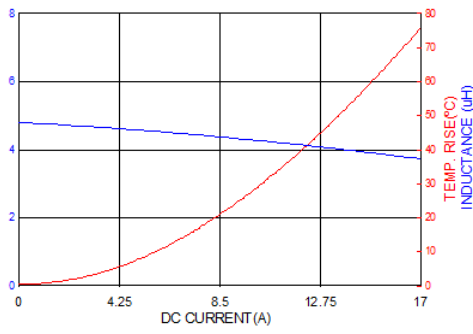
PICQ1004H3R9MF



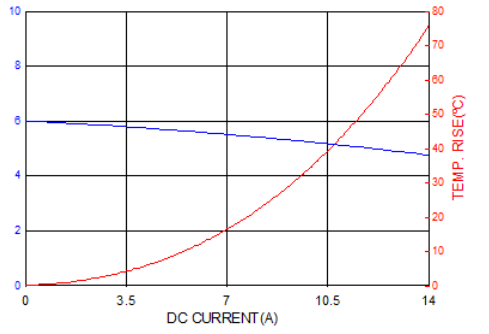
PICQ1004H4R0MF



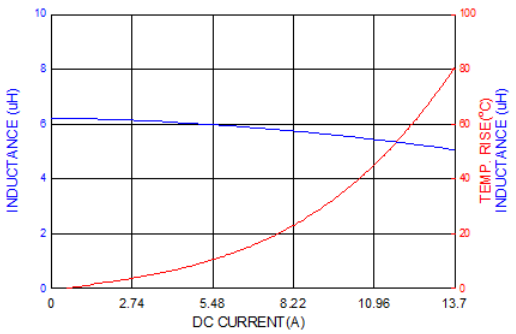
PICQ1004H4R7MF



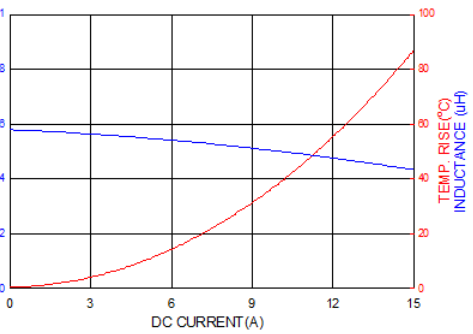
PICQ1004H5R6MF



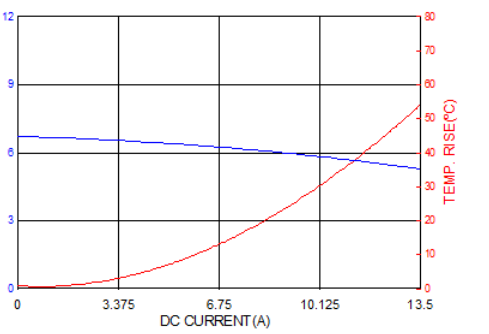
PICQ1004H6R2MF



PICQ1004H6R5MF



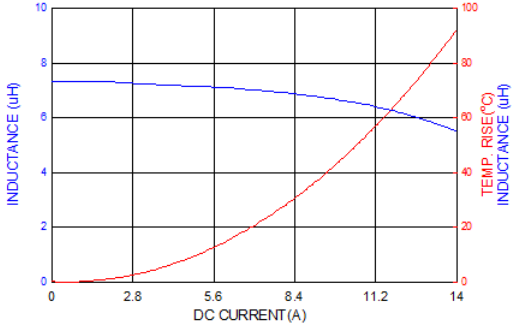
PICQ1004H6R8MF



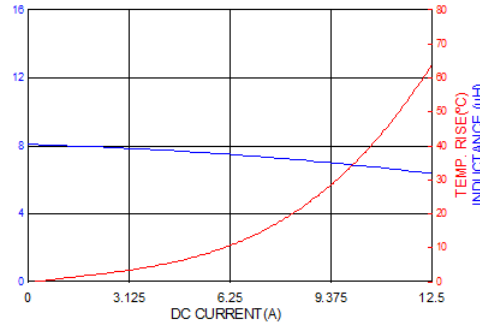
NOTE: Specifications subject to change without notice. Please check our website for latest information.



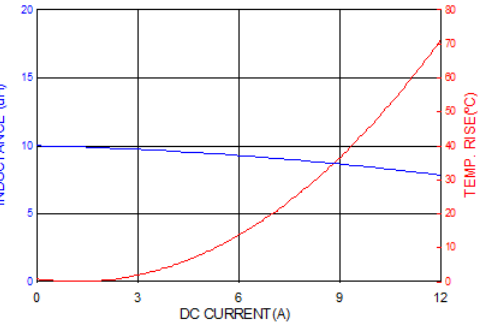
PICQ1004H7R3MF



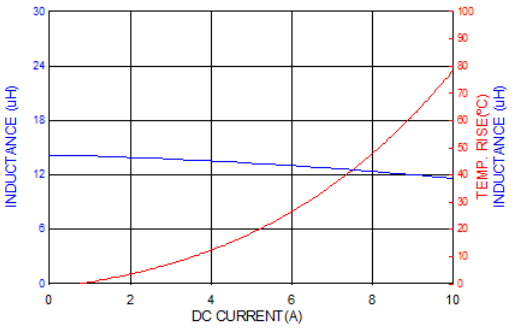
PICQ1004H8R2MF



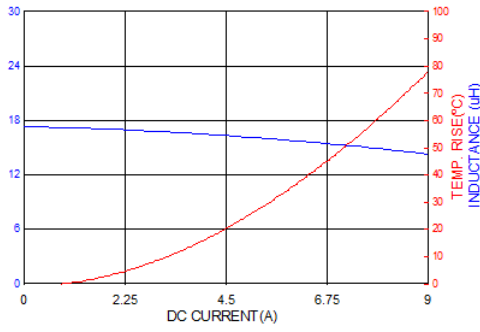
PICQ1004H100MF



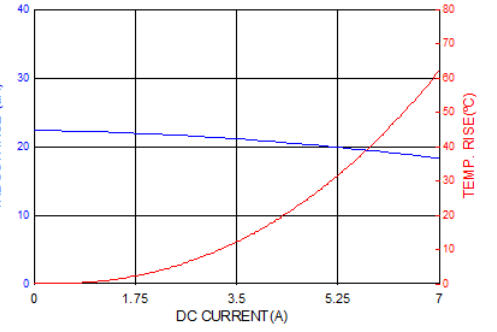
PICQ1004H150MF



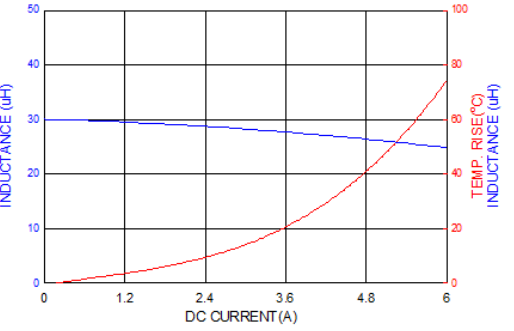
PICQ1004H180MF



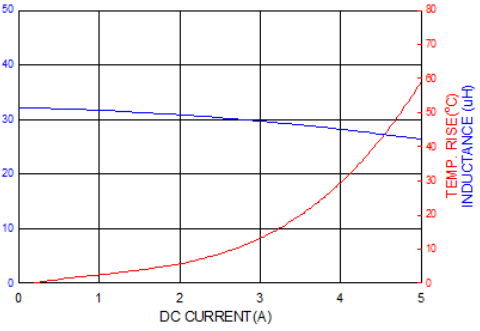
PICQ1004H220MF



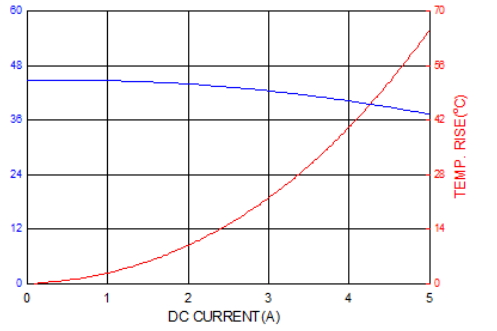
PICQ1004H270MF



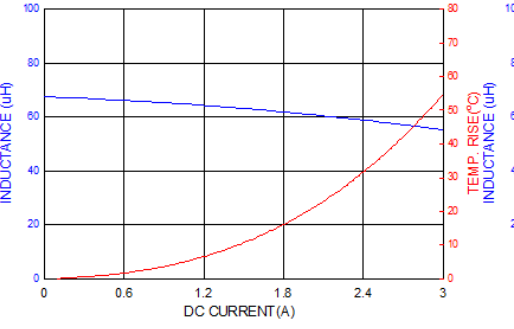
PICQ1004H330MF



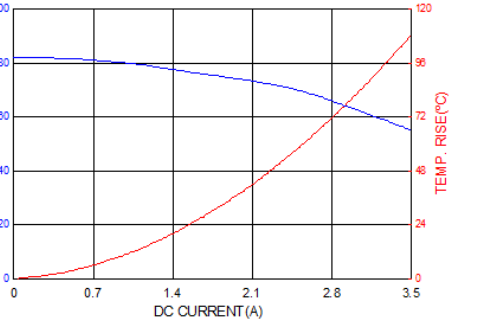
PICQ1004H470MF



PICQ1004H680MF



PICQ1004H820MF



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



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:

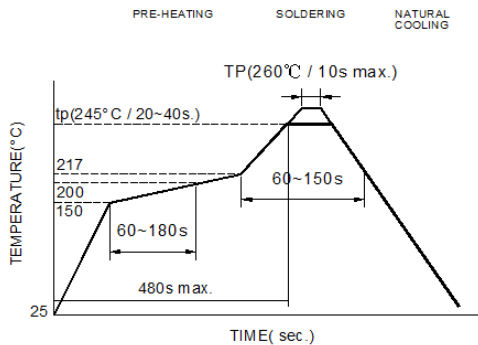
Recommended temperature profiles for re-flow soldering in Figure 1.

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.

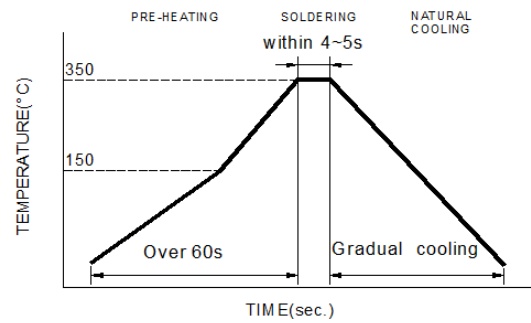
Note :

- 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.

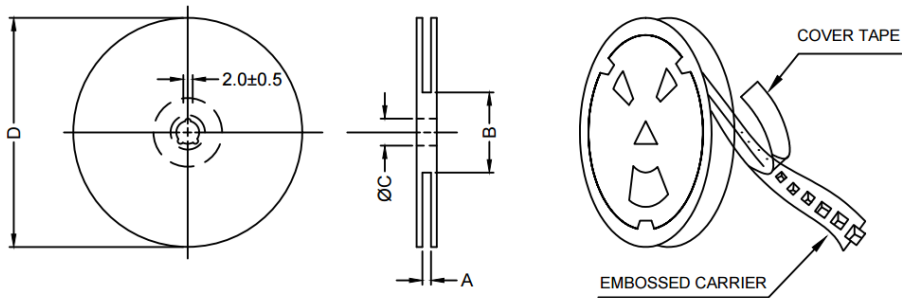
Fig.2

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



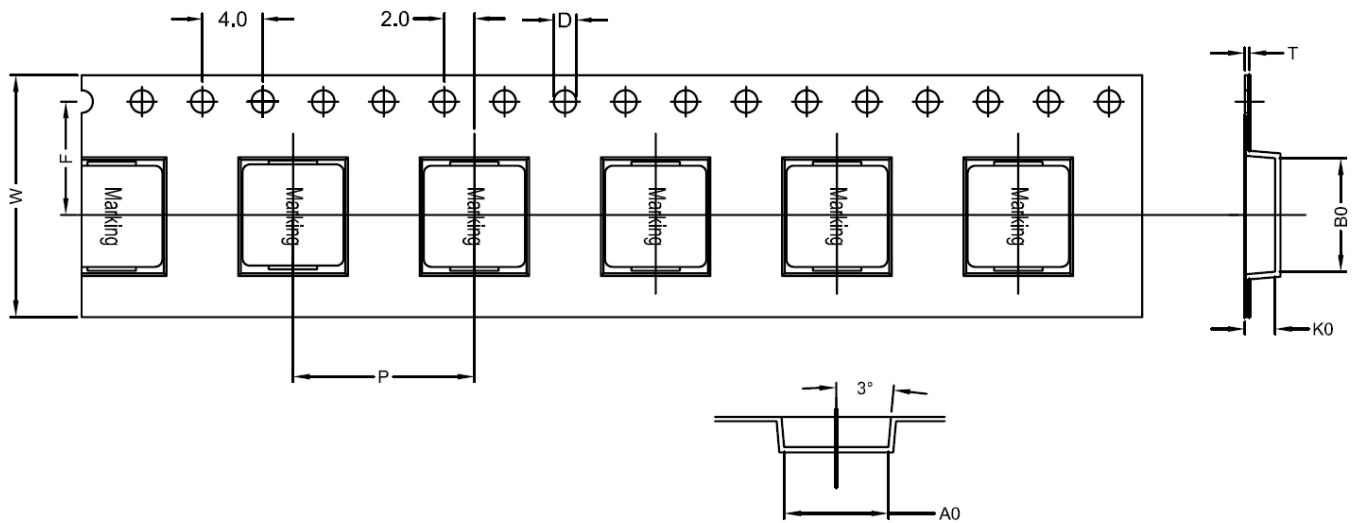
9. Packaging Information:

9-1 Reel Dimension



Type	A(mm)	B(mm)	C(mm)	D(mm)
13"x24mm	$24.4 \pm 2 / -0$	100 ± 2	$13.0 \pm 0.5 / -0.2$	330

9-2 Tape Dimension



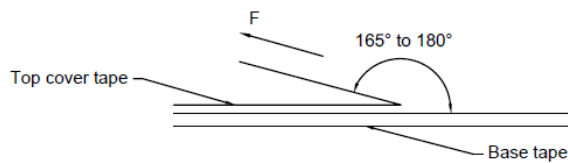
Series	Size	Bo(mm)	Ao(mm)	Ko(mm)	P(mm)	W(mm)	F(mm)	t(mm)	D(mm)
PICQ	1004	11.6 ± 0.1	10.4 ± 0.1	4.5 ± 0.1	16.0 ± 0.1	24.0 ± 0.3	11.5 ± 0.1	0.35 ± 0.05	1.5 ± 0.1

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

9-3 Packaging Quantity

PICQ	1004
Chip / Reel	500
Inner box	1,000
Carton	4,000

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.

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

