

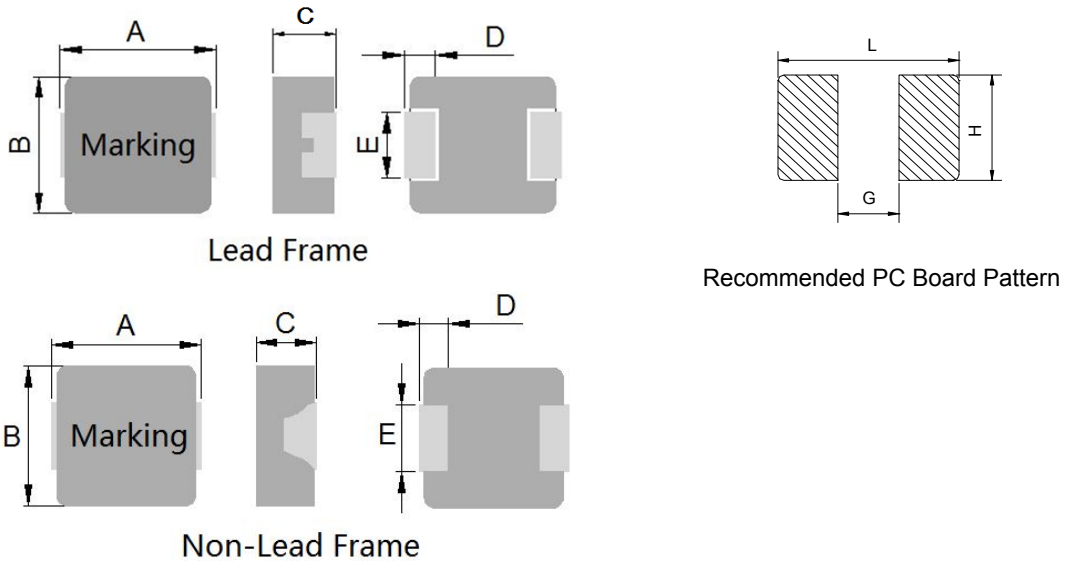
1. Part No. Expression:

PICQ1205HPR20MF

(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:



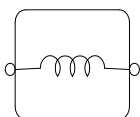
Note:

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

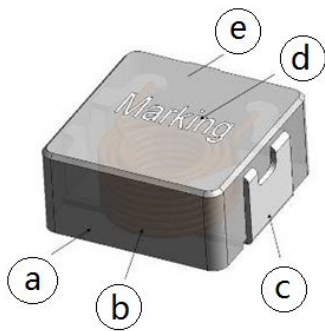
Series	Type	A	B	C	D	E	L	G	H
PICQ1205	Leadframe	13.5±0.5	12.5±0.3	4.8±0.2	2.3±0.3	4.7±0.3	14.2 Ref.	8.0 Ref.	5.0 Ref.
	Non-Leadframe								

3. Schematic:



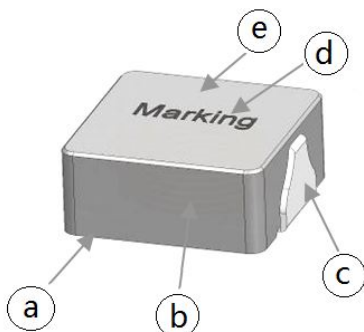
NOTE: Specifications subject to change without notice. Please check our website for latest information.

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

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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
PICQ1205HPR20MF	0.20	100KHz/1.0V	52.0	110	0.45	0.55	Non-Leadframe
PICQ1205HPR22MF	0.22	100KHz/1.0V	52.0	110	0.5	0.7	Non-Leadframe
PICQ1205HPR33MF	0.33	100KHz/1.0V	42.0	80.0	0.7	0.9	Non-Leadframe
PICQ1205HPR36MF	0.36	100KHz/1.0V	42.0	75.0	0.75	0.95	Non-Leadframe
PICQ1205HPR39MF	0.39	100KHz/1.0V	42.0	70.0	0.78	0.95	Non-Leadframe
PICQ1205HPR47MF	0.47	100KHz/1.0V	38.0	65.0	0.86	1.1	Non-Leadframe
PICQ1205HPR50MF	0.50	100KHz/1.0V	37.0	60.0	0.9	1.3	Non-Leadframe
PICQ1205HPR56MF	0.56	100KHz/1.0V	36.0	55.0	1.0	1.5	Non-Leadframe
PICQ1205HPR68MF	0.68	100KHz/1.0V	34.0	54.0	1.4	1.7	Non-Leadframe
PICQ1205HPR82MF	0.82	100KHz/1.0V	31.0	52.0	1.7	2.1	Non-Leadframe
PICQ1205HP1R0MF	1.00	100KHz/1.0V	29.0	50.0	1.85	2.5	Non-Leadframe
PICQ1205HP1R2MF	1.20	100KHz/1.0V	28.0	49.0	2.5	3.0	Non-Leadframe
PICQ1205HP1R5MF	1.50	100KHz/1.0V	27.0	48.0	2.8	3.3	Non-Leadframe
PICQ1205HP1R8MF	1.80	100KHz/1.0V	21.0	40.0	4.0	4.9	Leadframe
PICQ1205HP2R2MF	2.20	100KHz/1.0V	20.0	32.0	4.2	5.5	Leadframe
PICQ1205HP2R7MF	2.70	100KHz/1.0V	17.0	32.0	4.7	6.7	Leadframe
PICQ1205HP3R3MF	3.30	100KHz/1.0V	15.0	32.0	6.8	9.2	Leadframe
PICQ1205HP4R7MF	4.70	100KHz/1.0V	12.0	27.0	11.4	15.0	Leadframe
PICQ1205HP5R6MF	5.60	100KHz/1.0V	11.5	22.0	12.3	16.5	Leadframe
PICQ1205HP6R0MF	6.00	100KHz/1.0V	11.5	21.5	13.0	16.5	Leadframe
PICQ1205HP6R8MF	6.80	100KHz/1.0V	11.0	21.0	14.5	18.5	Leadframe
PICQ1205HP8R2MF	8.20	100KHz/1.0V	9.5	18.0	16.8	22.5	Leadframe
PICQ1205HP100MF	10.0	100KHz/1.0V	9.0	16.0	21.4	25.5	Leadframe
PICQ1205HP150MF	15.0	100KHz/1.0V	8.2	13.0	32.0	38.0	Leadframe
PICQ1205HP180MF	18.0	100KHz/1.0V	7.5	11.0	40.0	45.0	Leadframe
PICQ1205HP220MF	22.0	100KHz/1.0V	6.5	10.0	50.0	58.0	Leadframe
PICQ1205HP330MF	33.0	100KHz/1.0V	5.0	8.0	73.0	88.0	Leadframe

*Tolerance code : Y = ±30%; M = ±20%

Notes:

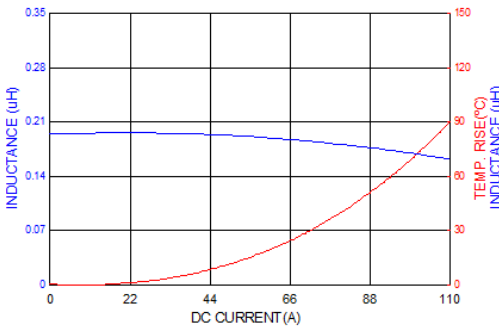
1) Isat Typ. and Irms Typ. value is derived based from accounting the upper limit tolerance into the inductance value.

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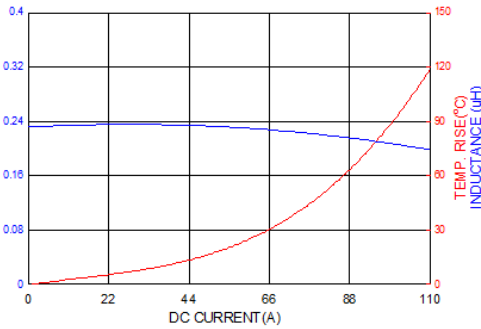


7. Characteristics Curves:

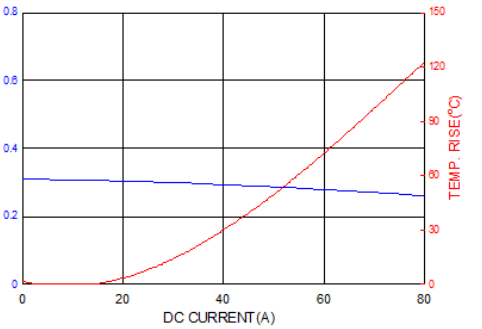
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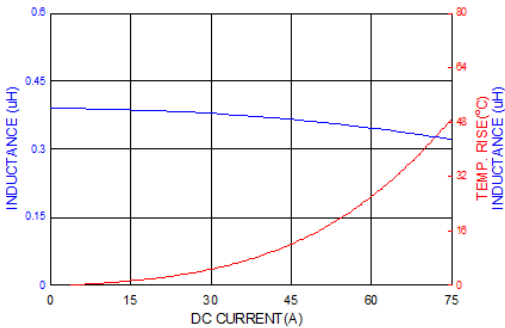
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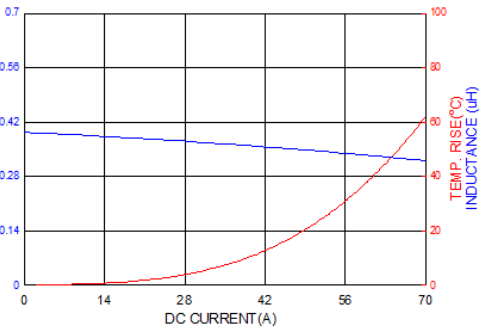
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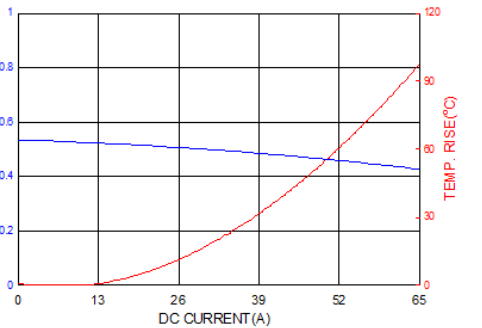
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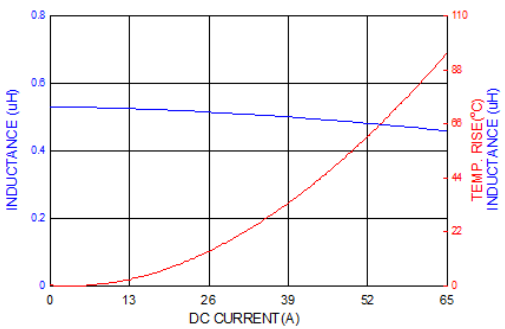
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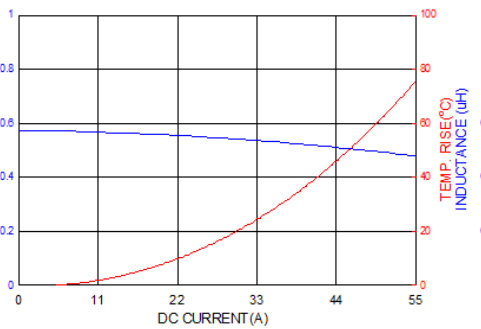
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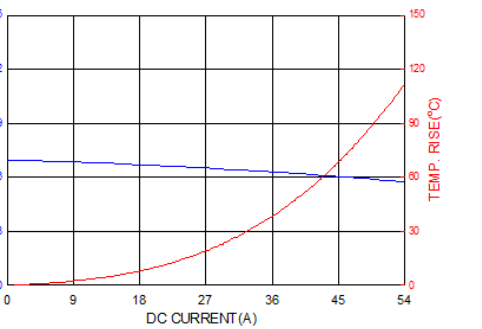
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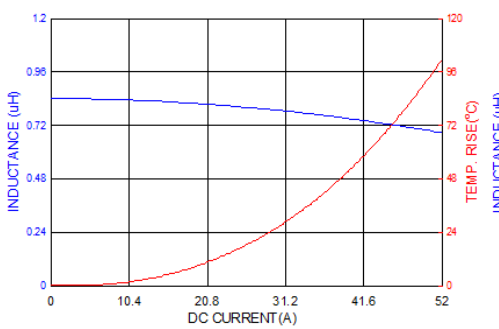
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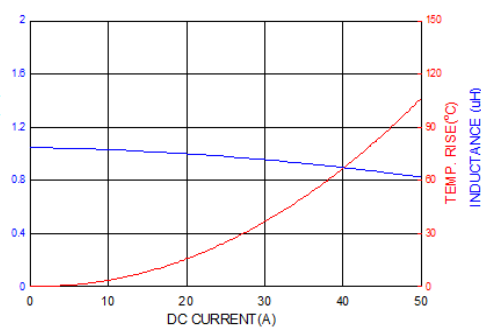
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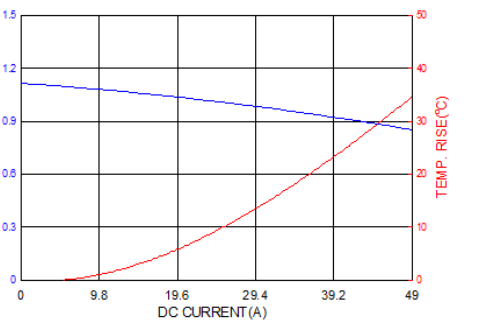
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PICQ1205HP1R0MF



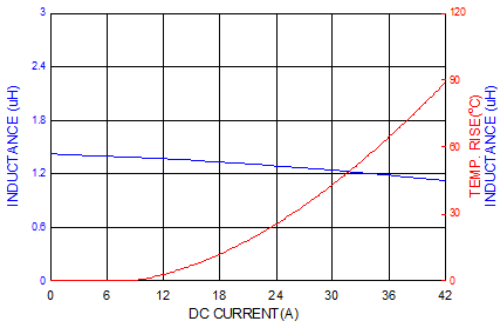
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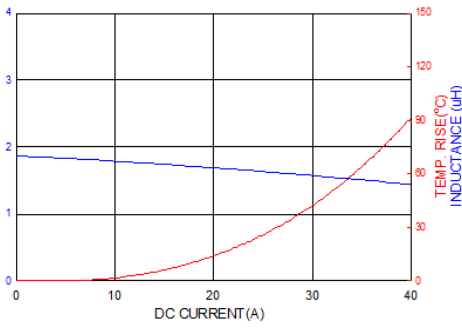
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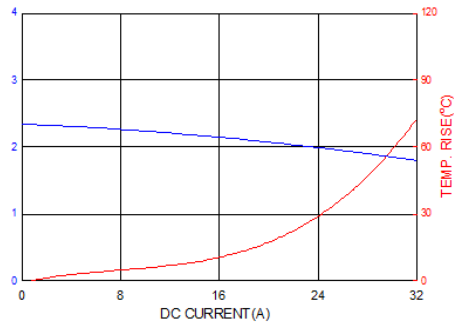
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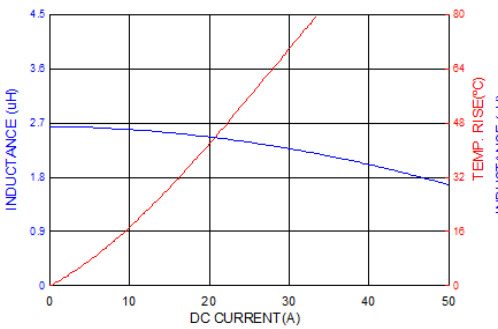
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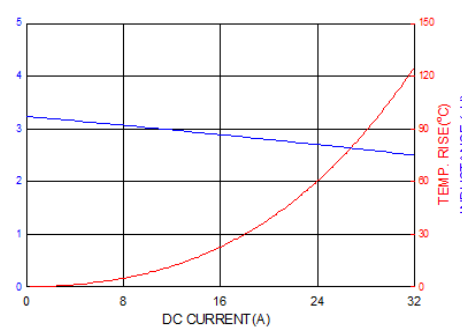
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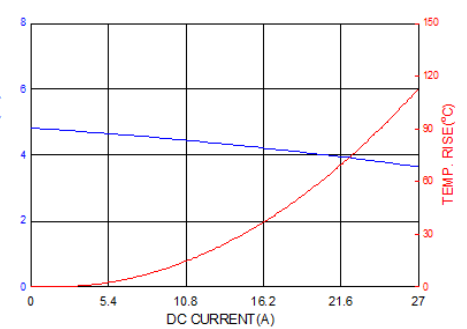
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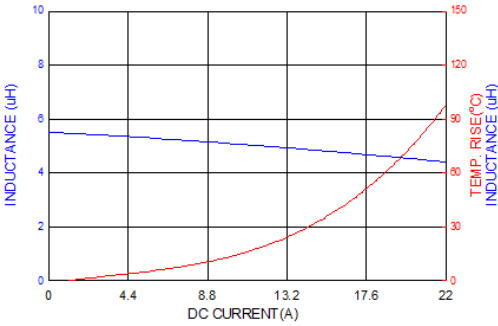
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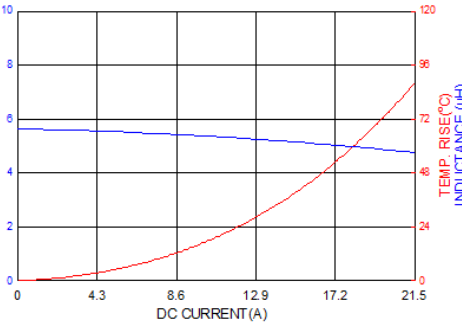
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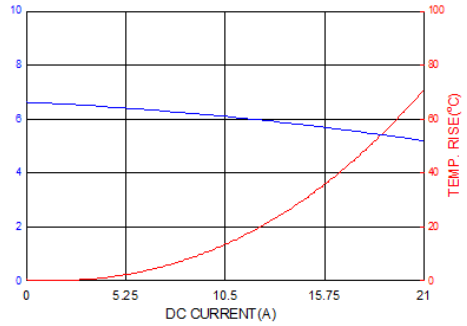
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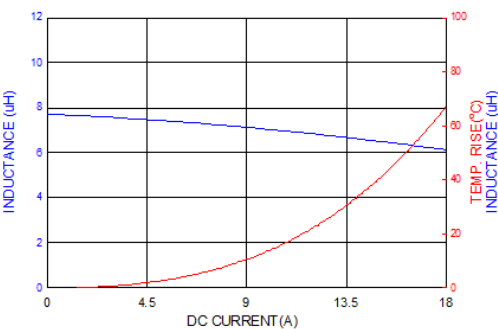
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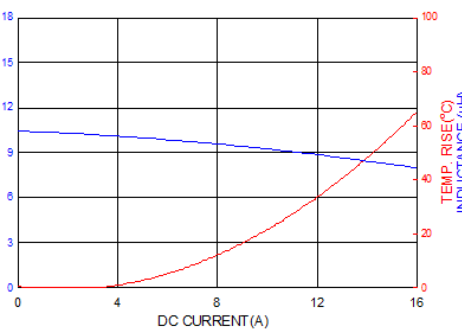
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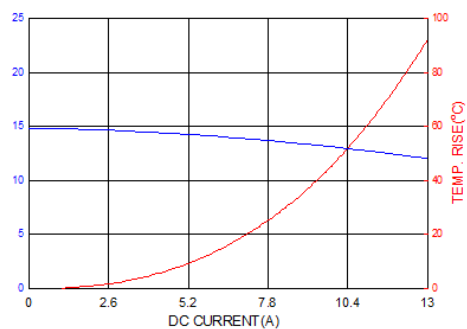
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PICQ1205HP100MF



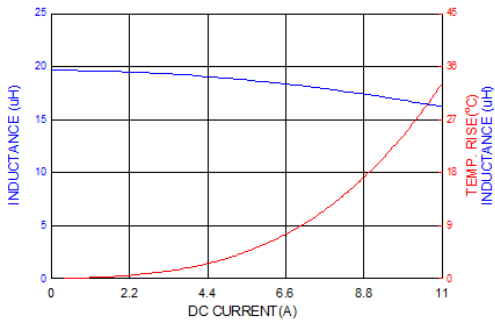
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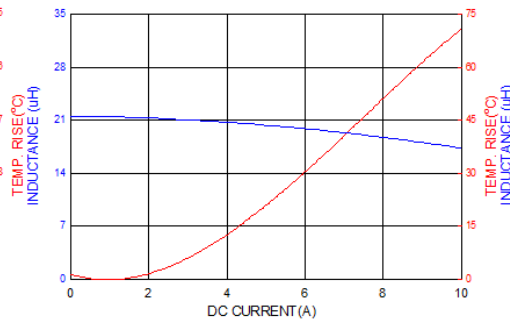
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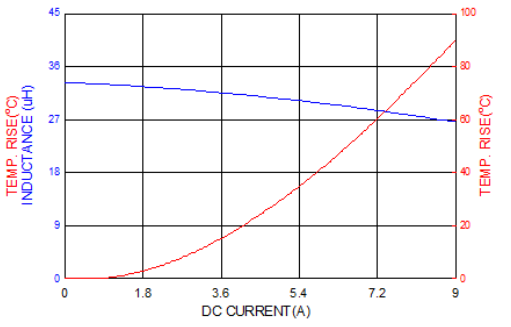
PICQ1205HP180MF



PICQ1205HP220MF



PICQ1205HP330MF



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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:

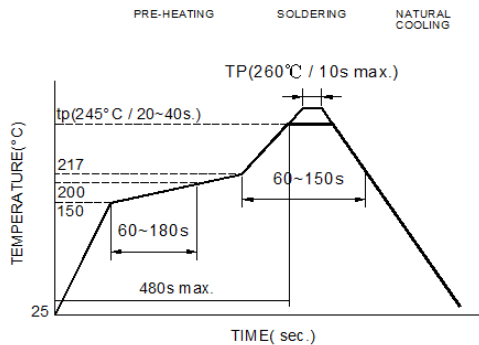
Recommended temperature profiles for re-flow soldering in Figure 1.

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.

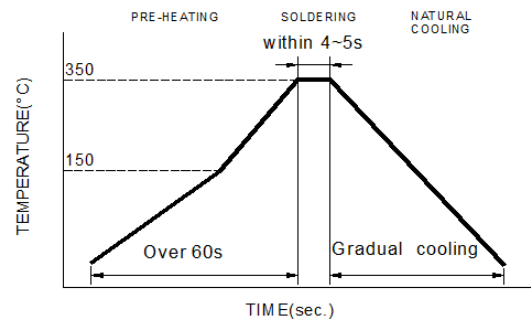
Note :

- 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.

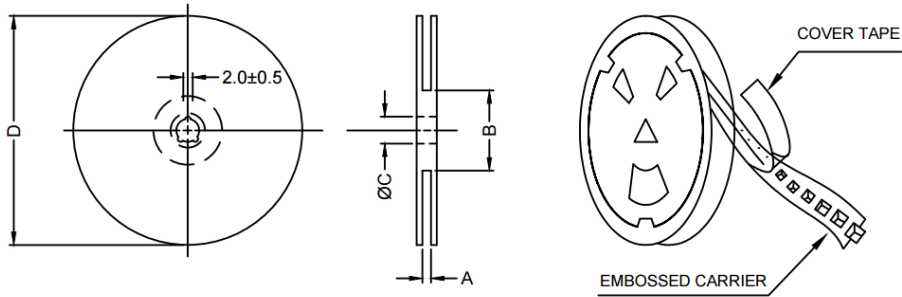
Fig.2

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



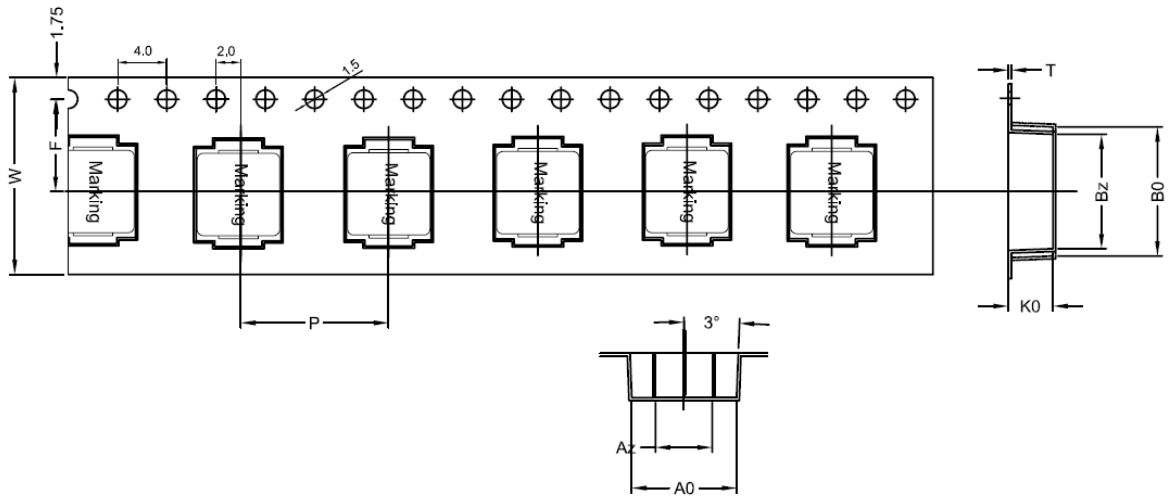
9. Packaging Information:

9-1 Reel Dimension



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

9-2 Tape Dimension



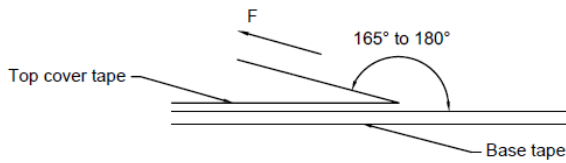
Series	Size	Bo(mm)	Bz(mm)	Ao(mm)	Az(mm)	Ko(mm)	P(mm)	W(mm)	F(mm)	t(mm)
PICQ	1205	14.1±0.1	13.0±0.1	12.9±0.1	7.0±0.1	5.5±0.1	16.0±0.1	24±0.3	11.5±0.1	0.35±0.05

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9-3 Packaging Quantity

PICQ	1205
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 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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