

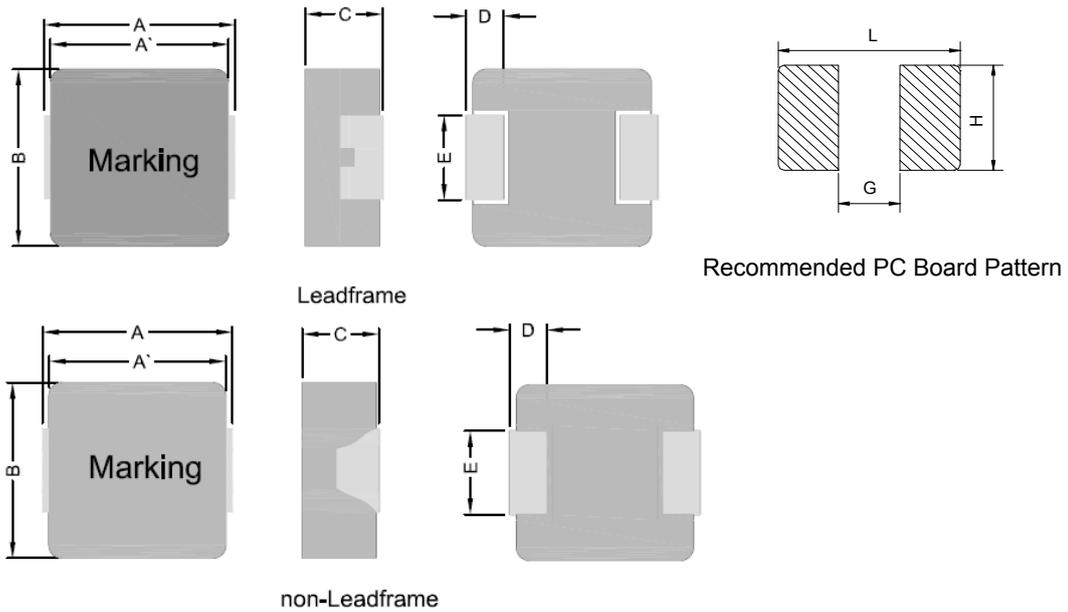
1. Part No. Expression:

PICQ1005HR22MF

(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:



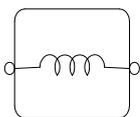
Note:

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

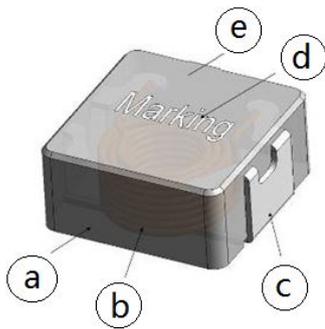
Series	Type	A	A'	B	C	D	E	L	G	H
PICQ1005	Leadframe	11.0±0.5	10.0±0.3	10.0±0.3	4.8±0.2	2.3±0.3	3.0±0.3	13.6 Ref.	5.4 Ref.	3.5 Ref.
	Non-Leadframe									

3. Schematic:



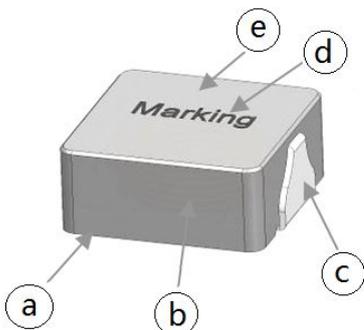
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4. Material List:



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
PICQ1005HR22MF	0.22	100KHz/1.0V	45.0	70.0	0.45	0.5	Non-Leadframe
PICQ1005HR30MF	0.30	100KHz/1.0V	38.0	65.0	0.57	0.61	Non-Leadframe
PICQ1005HR56MF	0.56	100KHz/1.0V	26.5	43.0	1.3	1.5	Non-Leadframe
PICQ1005HR90MF	0.90	100KHz/1.0V	25.0	32.0	2.2	3.0	Non-Leadframe
PICQ1005H1R0MF	1.00	100KHz/1.0V	22.0	30.0	2.8	3.5	Non-Leadframe
PICQ1005H1R2MF	1.20	100KHz/1.0V	20.0	28.0	2.9	3.5	Non-Leadframe
PICQ1005H1R3MF	1.30	100KHz/1.0V	20.0	28.0	3.2	3.7	Non-Leadframe
PICQ1005H1R5MF	1.50	100KHz/1.0V	19.0	27.0	3.5	4.1	Non-Leadframe
PICQ1005H1R8MF	1.80	100KHz/1.0V	17.5	25.5	3.7	4.7	Non-Leadframe
PICQ1005H2R2MF	2.20	100KHz/1.0V	16.0	24.0	5.4	6.0	Leadframe
PICQ1005H3R3MF	3.30	100KHz/1.0V	14.0	22.0	9.0	10.4	Leadframe
PICQ1005H4R7MF	4.70	100KHz/1.0V	13.0	19.0	10.0	12.5	Leadframe
PICQ1005H5R0MF	5.0	100KHz/1.0V	12.0	18.0	12.2	15.0	Leadframe
PICQ1005H5R6MF	5.60	100KHz/1.0V	10.0	16.0	14.0	16.8	Leadframe
PICQ1005H8R2MF	8.20	100KHz/1.0V	9.0	14.5	18.5	24.0	Leadframe
PICQ1005H100MF	10.0	100KHz/1.0V	8.0	13.5	25.0	29.0	Leadframe
PICQ1005H120MF	12.0	100KHz/1.0V	6.0	10.0	30.0	35.0	Leadframe
PICQ1005H220MF	22.0	100KHz/1.0V	5.0	9.0	50.0	60.0	Leadframe
PICQ1005H330MF	33.0	100KHz/1.0V	4.3	7.5	80.0	92.0	Leadframe
PICQ1005H470MF	47.0	100KHz/1.0V	3.8	6.5	125	145	Leadframe
PICQ1005H680MF	68.0	100KHz/1.0V	2.5	4.0	176	205	Leadframe
PICQ1005H101MF	100	100KHz/1.0V	2.0	3.0	315	380	Leadframe

*Tolerance code : Y = $\pm 30\%$; M = $\pm 20\%$

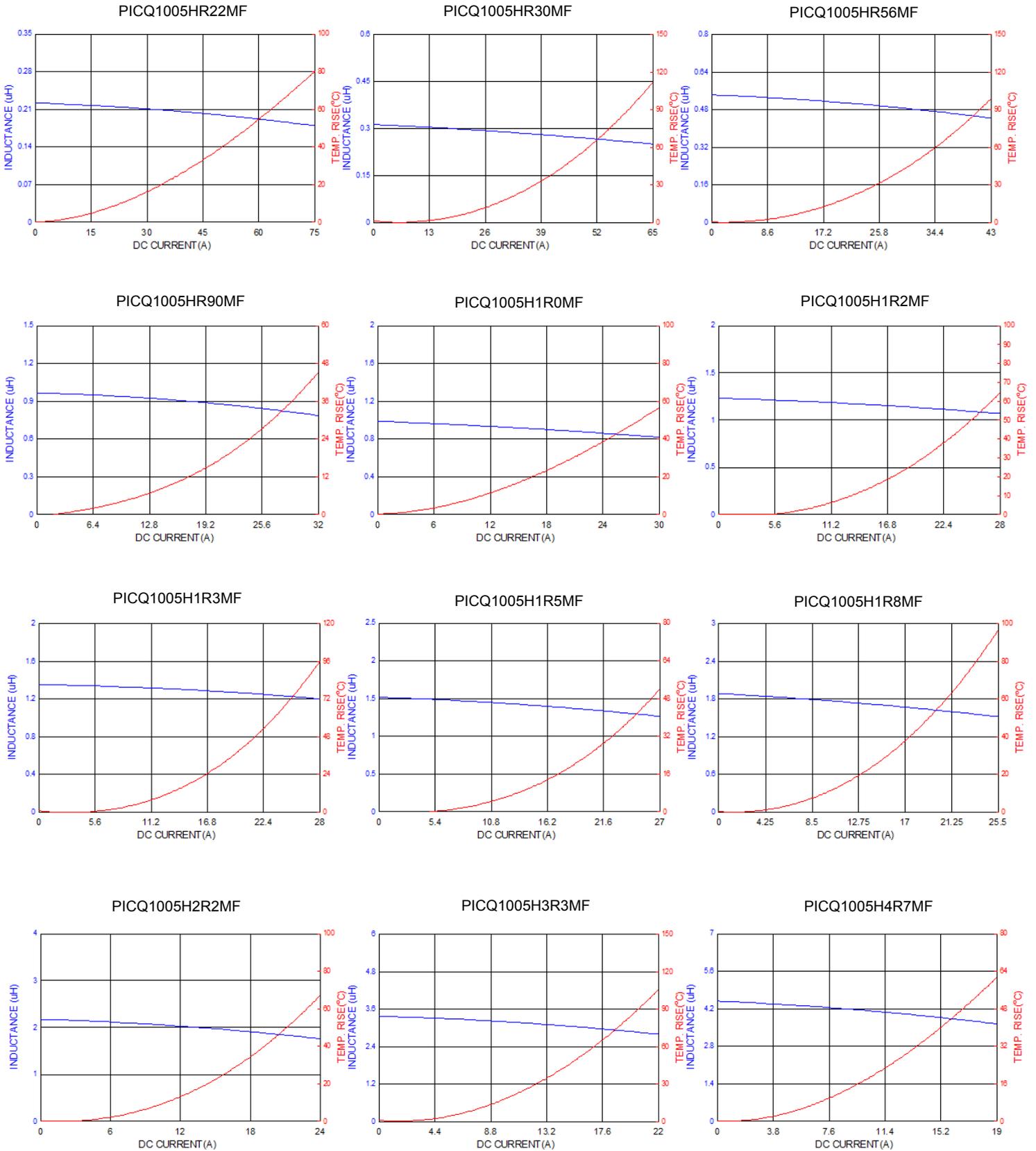
Notes:

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

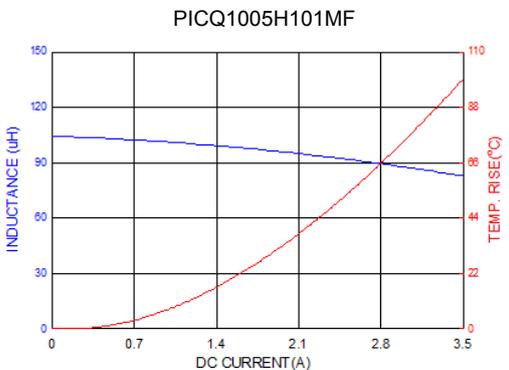
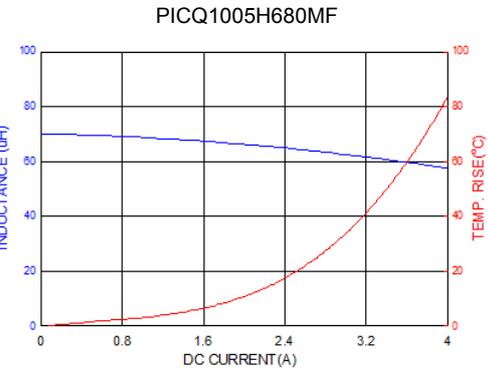
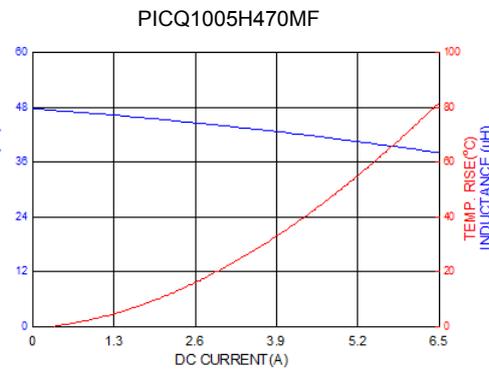
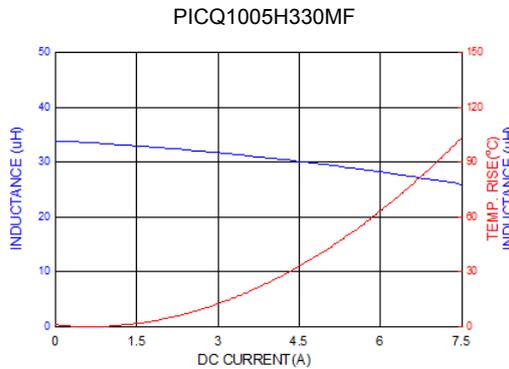
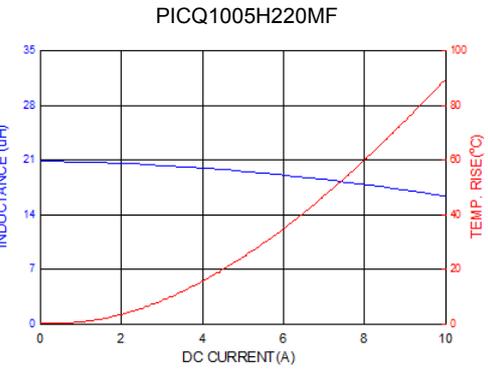
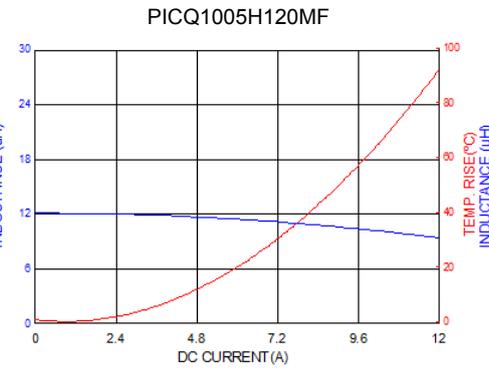
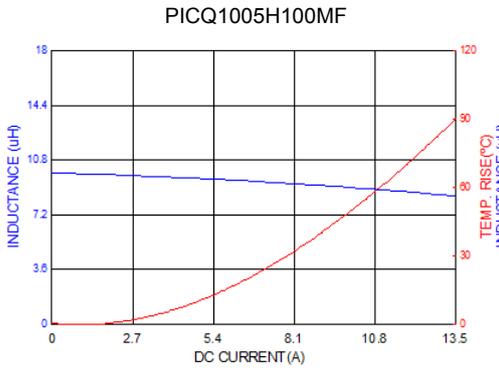
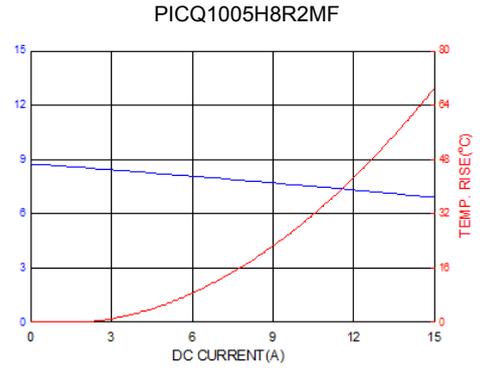
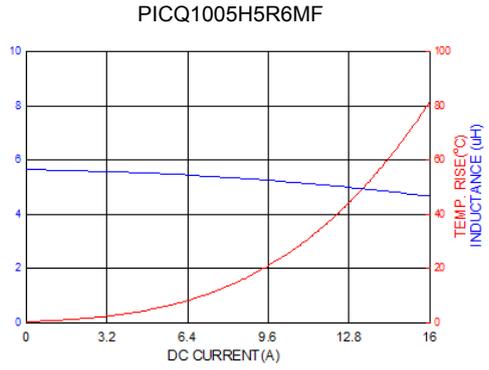
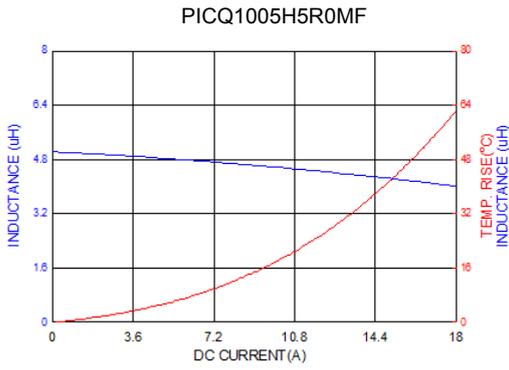
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7. Characteristics Curves:



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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:

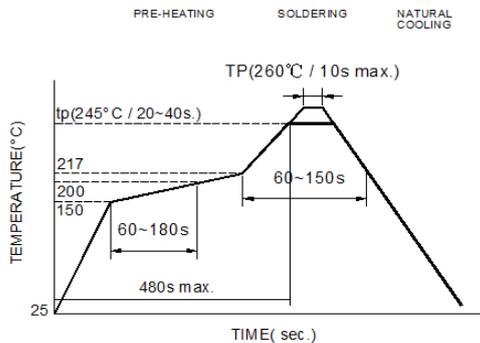
Recommended temperature profiles for re-flow soldering in Figure 1.

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.

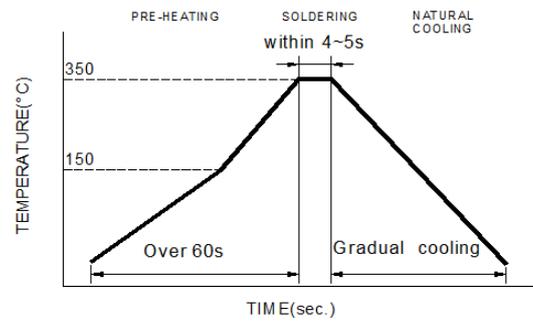
Note :

- 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.

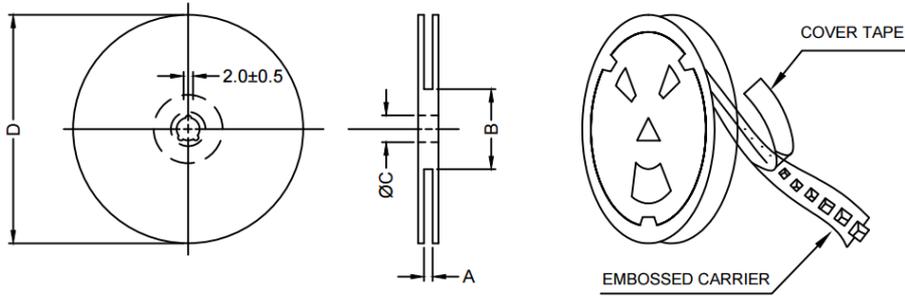
Fig.2

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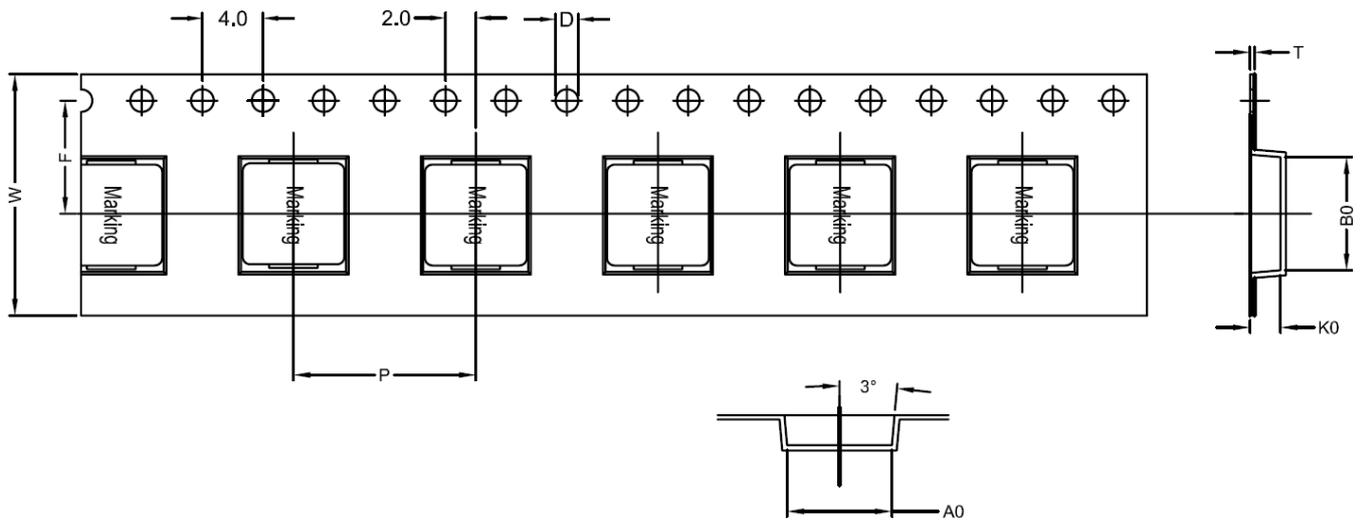
9. Packaging Information:

9-1 Reel Dimension



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

9-2 Tape Dimension



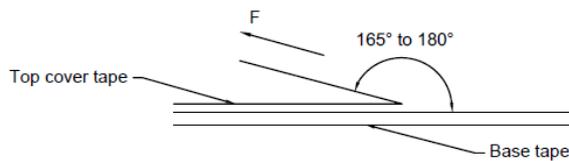
Series	Size	Bo(mm)	Ao(mm)	Ko(mm)	P(mm)	W(mm)	F(mm)	t(mm)	D(mm)
PICQ	1005	11.6±0.1	10.4±0.1	5.3±0.1	16.0±0.1	24.0±0.3	11.5±0.1	0.35±0.05	1.5±0.1

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9-3 Packaging Quantity

PICQ	1005
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.

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