

1. Part No. Expression:

PIC1003H1R0MF

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

a) Series Code

b) Dimension Code

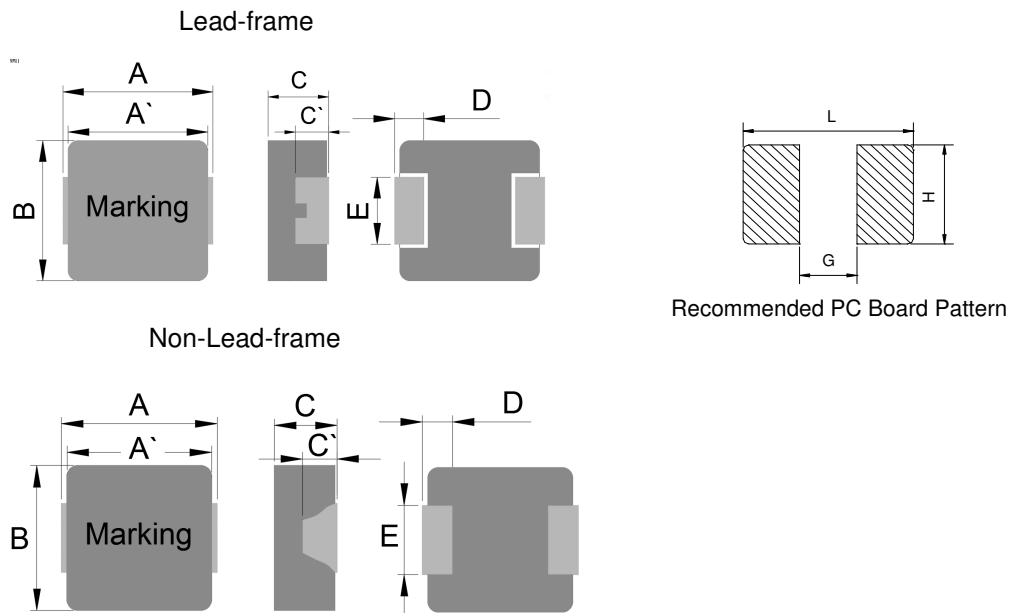
c) Type Code

d) Inductance Code

e) tolerance Code

f) Internal Code

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.

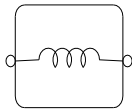
Unit: mm

Series	Type	A	A'	B	C	C'	D	E	L	G	H
PIC1003	leadframe	11.0±0.5	10.0±0.3	10.0±0.3	2.8±0.2	1.9 Ref.	2.3±0.3	3.0±0.3	13.6 Ref.	5.4 Ref.	3.5 Ref.
	non-leadframe										

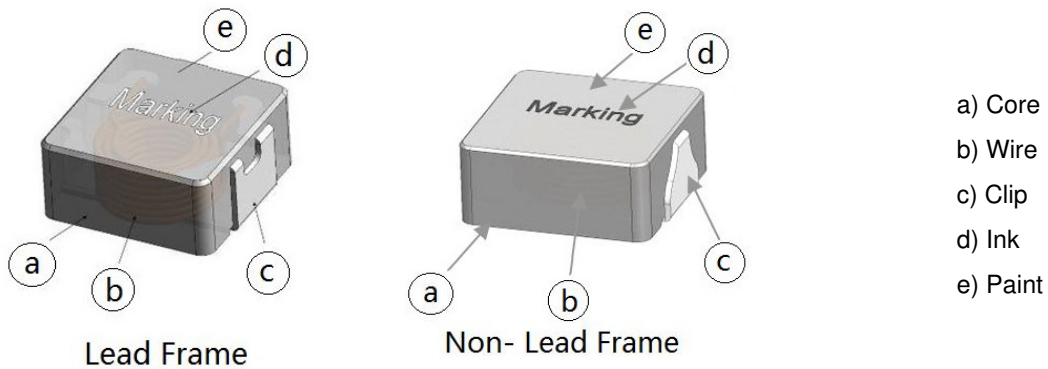
NOTE: Specifications subject to change without notice. Please check our website for latest information.



3. Schematic:



4. Material List:



5. General Specification:

- (a) Operating Temp. : -40°C to +125°C (Including self - temperature rise).
- (b) Storage Temp. : -40°C to +125°C (on board).
- (c) Heat Rated Current (I_{rms}) will cause the coil temperature rise approximately Δt of 40°C.
- (d) Saturation Current (I_{sat}) will cause L₀ to drop approximately 30%.
- (e) Part Temperature (Ambient+Temp. Rise):. Should not exceed 125°C under worst case operating conditions.
- (f) Humidity Range: 85 ± 2% RH.
- (g) 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 (Hz)	I rms (A) Typ.	I sat (A) Typ.	DCR (mΩ) Typ.	DCR (mΩ) Max.	Type
PIC1003HR15YF	0.15	1.0V/100K	35.0	60.0	0.9	1.1	non-lead frame
PIC1003HR22MF	0.22	1.0V/100K	30.0	55.0	1.1	1.3	non-lead frame
PIC1003HR24MF	0.24	1.0V/100K	30.0	50.0	1.2	1.4	non-lead frame
PIC1003HR33MF	0.33	1.0V/100K	25.0	47.0	1.2	1.5	non-lead frame
PIC1003HR36MF	0.36	1.0V/100K	23.0	40.0	1.3	1.6	non-lead frame
PIC1003HR47MF	0.47	1.0V/100K	20.0	33.0	2.1	2.5	non-lead frame
PIC1003HR56MF	0.56	1.0V/100K	16.0	24.0	2.6	3.0	lead frame
PIC1003HR82MF	0.82	1.0V/100K	15.0	22.0	3.9	4.5	lead frame
PIC1003H1R0MF	1.00	1.0V/100K	15.0	20.0	4.6	6.0	lead frame
PIC1003H1R5MF	1.50	1.0V/100K	13.0	20.0	6.5	7.5	lead frame
PIC1003H2R2MF	2.20	1.0V/100K	12.0	16.0	8.0	9.0	lead frame
PIC1003H3R3MF	3.30	1.0V/100K	9.0	14.0	14.5	16.0	lead frame
PIC1003H4R7MF	4.70	1.0V/100K	7.0	13.0	20.5	22.5	lead frame
PIC1003H5R6MF	5.60	1.0V/100K	7.0	12.0	28.0	32.5	lead frame
PIC1003H6R8MF	6.80	1.0V/100K	6.5	9.5	30.2	35.0	lead frame
PIC1003H8R2MF	8.20	1.0V/100K	6.0	8.5	42.0	48.0	lead frame
PIC1003H100MF	10.0	1.0V/100K	5.0	8.0	50.0	55.0	lead frame
PIC1003H150MF	15.0	1.0V/100K	4.0	7.0	72.0	86.0	lead frame
PIC1003H220MF	22.0	1.0V/100K	3.0	5.5	115	140	lead frame
PIC1003H470MF	47.0	1.0V/100K	2.0	4.0	216	260	lead frame

*Tolerance code: Y = ±30%; M = ±20%

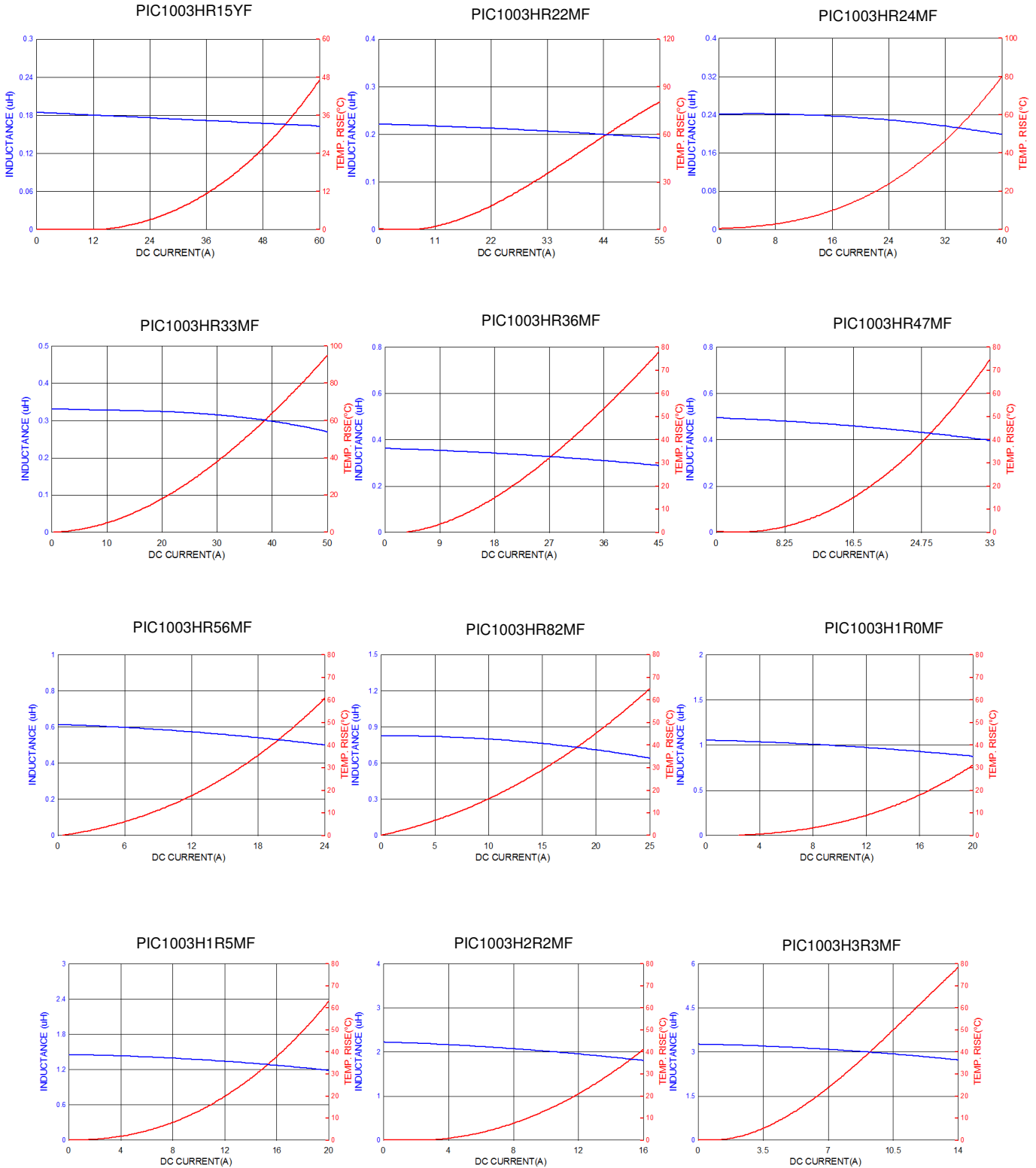
Notes:

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

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

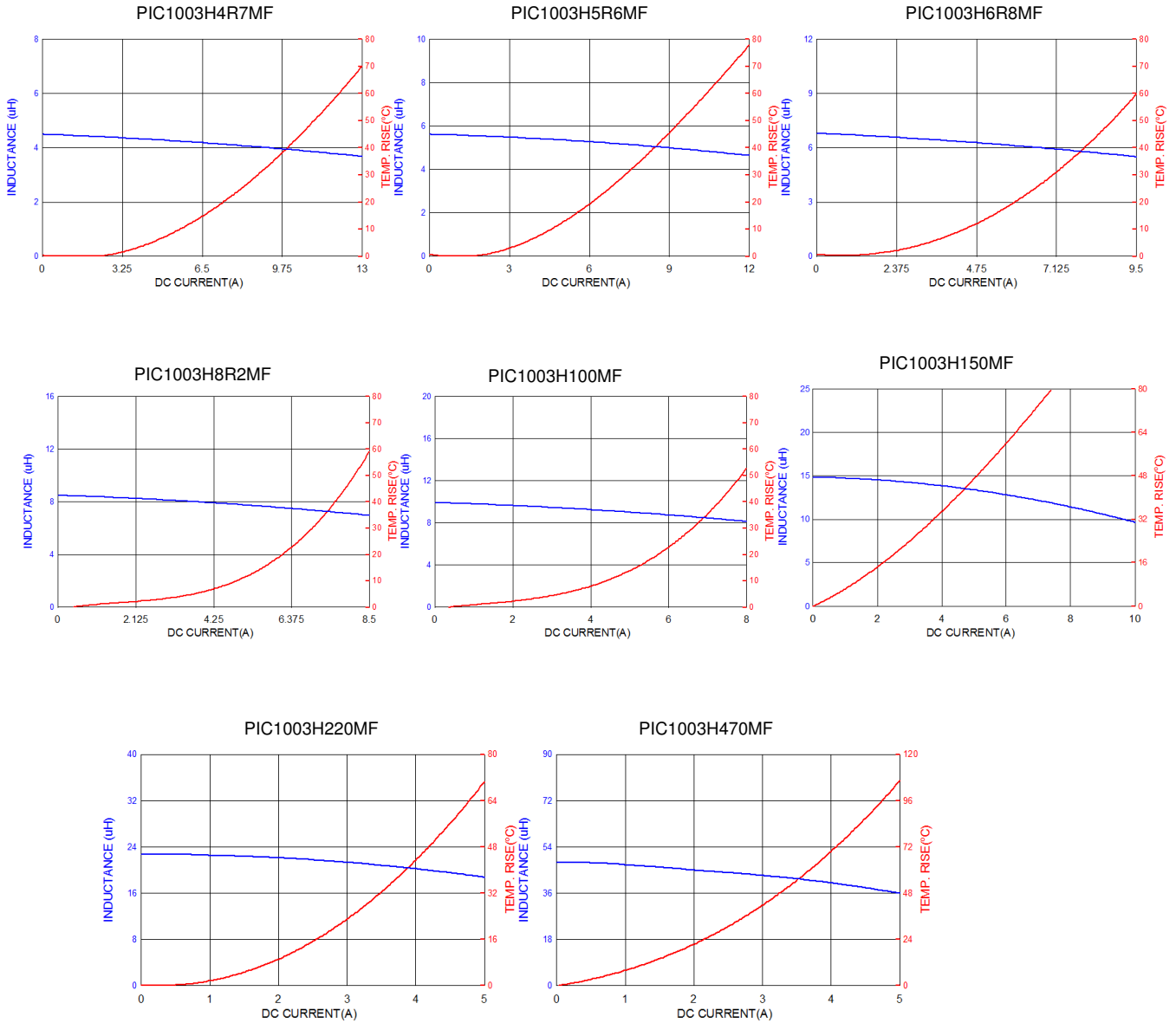


7. Characteristics Curves:



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





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



8. Soldering and Mounting:

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:

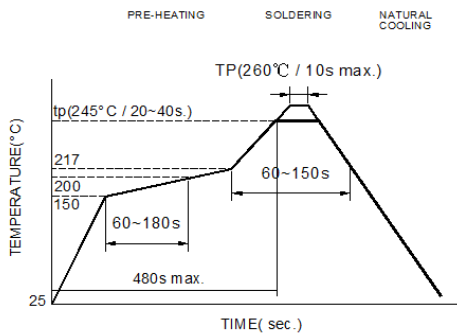
Recommended temperature profiles for re-flow soldering in Figure 1.

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.

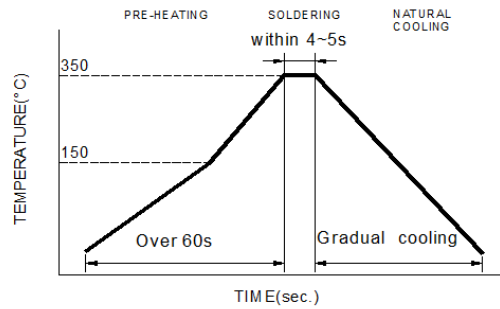
Note :

- 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.

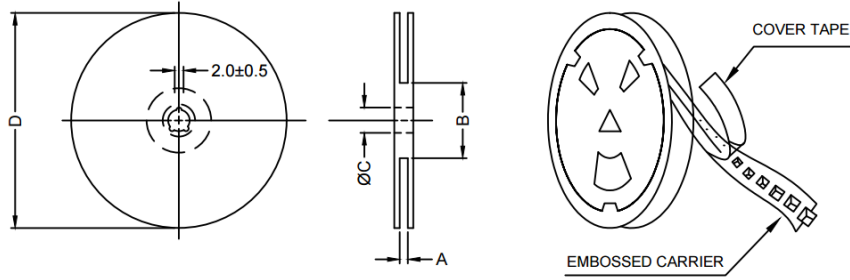
Fig.2

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



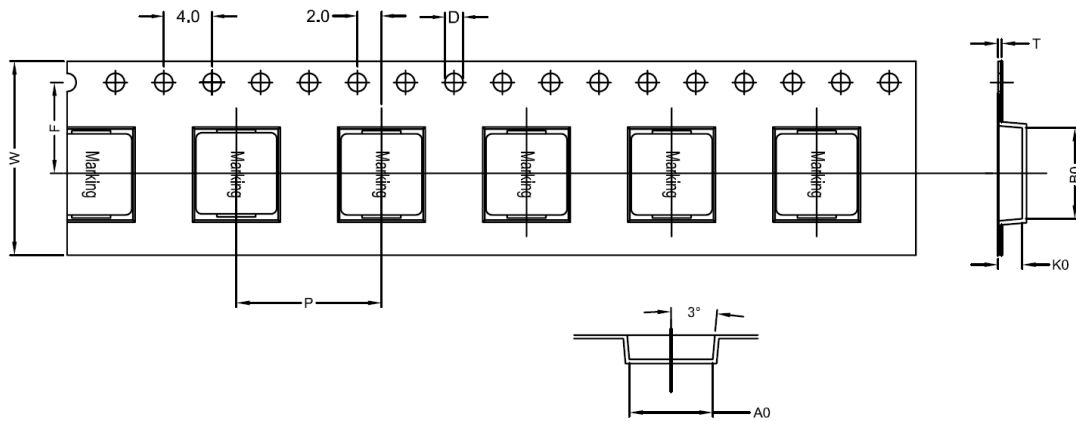
9. Packaging Information:

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



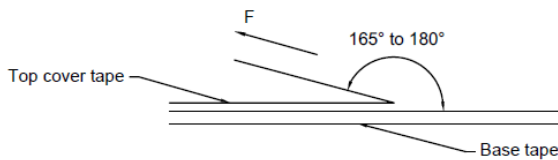
Series	Size	Bo(mm)	Ao(mm)	Ko(mm)	P(mm)	W(mm)	F(mm)	T(mm)	D(mm)
PIC	1003	11.6±0.1	10.4±0.1	3.5±0.1	16.0±0.1	24.0±0.3	11.5±0.1	0.35±0.05	1.5±0.1

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

9-3 Packaging Quantity

PIC	1003
Chip / Reel	1000
Inner box	2000
Carton	8000

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 (referenced ANSI/EIA-481-D-2008 of 4.11 standard).

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.

