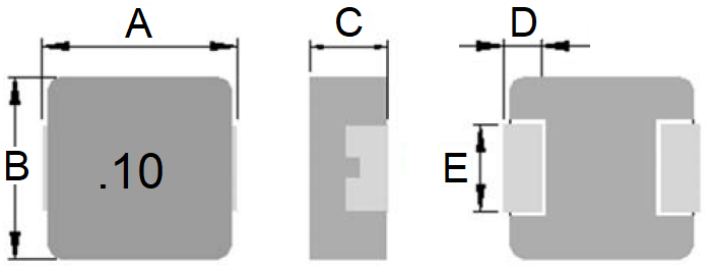
1. Part No. Expression

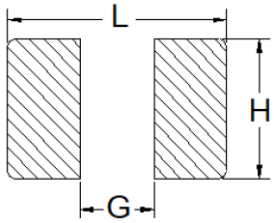
P I C 0 3 0 2 H R 1 0 Y F

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

(a) Series Code
(b) Dimension Code
(c) Material Code
(d) Inductance Code
(e) Tolerance Code
(f) Packaging Code

2. Configuration & Dimensions (Unit: mm)



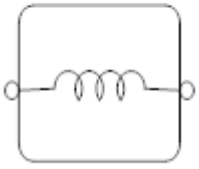


Recommended PCB Layout

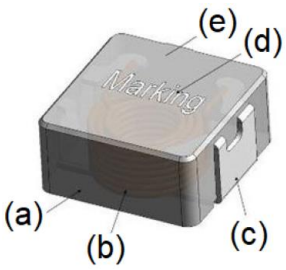
Note: 1. The above PCB layout reference only.
2. Marking: Inductance, Black

A	B	C	D	E	L	G	H
3.50±0.20	3.20±0.20	1.80±0.20	0.70±0.20	1.20±0.20	4.10 Ref	1.90 Ref	1.45 Ref

3. Schematic



4. Material List



NO	Items
(a)	Core
(b)	Wire
(c)	Terminal
(d)	Ink
(e)	Paint

5. General Specifications

(a) Operating Temp.: - 40°C to + 125°C (including self-temperature rise)

(b) All test data referenced to 25°C ambient.

(c) Heat Rated Current (Irms) will cause the coil temperature rise approximately ΔT of 40°C. (keep 1min.)

(d) Saturation Current (Isat) will cause inductance L0 to drop approximately 30%.

(e) Rated DC Current: The lower value of Irms and Isat.

(f) Part Temperature (Ambient + Temp. Rise): Should not exceed 125°C under worst case operating conditions.

(g) Maximum Operating Voltage: 20V

(h) Storage Condition (Component in its packaging)

i) Temperature: Less than 40°C

ii) Humidity: Less than 60% RH

6. Electrical Characteristics

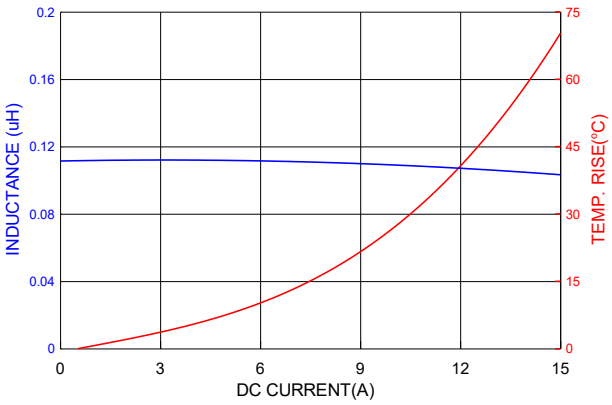
Part Number	Inductance (μH) @0A	Test Frequency	Irms (A) Typ	Isat (A) Typ	DCR (mΩ)	
					Typ	Max
PIC0302HR10YF	0.10	1.0V/100KHz	10.5	14.0	6.6	9.0
PIC0302HR22YF	0.22	1.0V/100KHz	9.0	11.2	11.0	14.0
PIC0302HR33MF	0.33	1.0V/100KHz	8.0	10.0	17.0	21.0
PIC0302HR47MF	0.47	1.0V/100KHz	7.0	9.0	19.7	23.0
PIC0302HR68MF	0.68	1.0V/100KHz	5.5	7.0	25.5	29.0
PIC0302HR82MF	0.82	1.0V/100KHz	4.8	6.0	27.0	32.0
PIC0302H1R0MF	1.00	1.0V/100KHz	4.0	5.0	32.0	38.0
PIC0302H1R5MF	1.50	1.0V/100KHz	3.8	4.0	42.0	50.0
PIC0302H2R2MF	2.20	1.0V/100KHz	3.5	3.7	65.0	75.0
PIC0302H3R3MF	3.30	1.0V/100KHz	3.0	3.5	125	145
PIC0302H4R7MF	4.70	1.0V/100KHz	2.6	3.0	172	200
PIC0302H5R6MF	5.60	1.0V/100KHz	2.2	2.6	205	238
PIC0302H6R8MF	6.80	1.0V/100KHz	1.9	2.2	260	300
PIC0302H8R2MF	8.20	1.0V/100KHz	1.6	1.9	340	390
PIC0302H100MF	10.0	1.0V/100KHz	1.4	1.6	366	422

Tolerance Code: M=±20%, Y=±30%

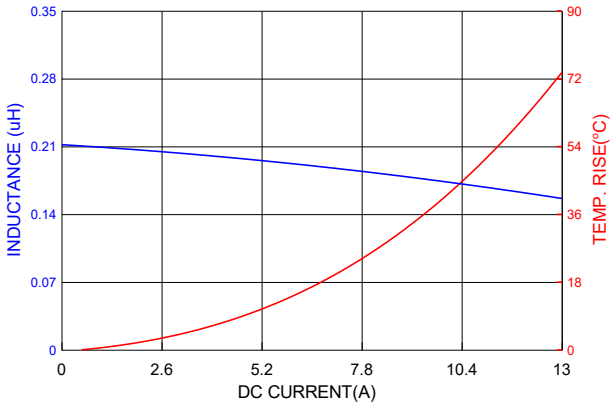
NOTE: Specifications subject to change without notice. Please check our website for latest information.

7. Characteristics Curve

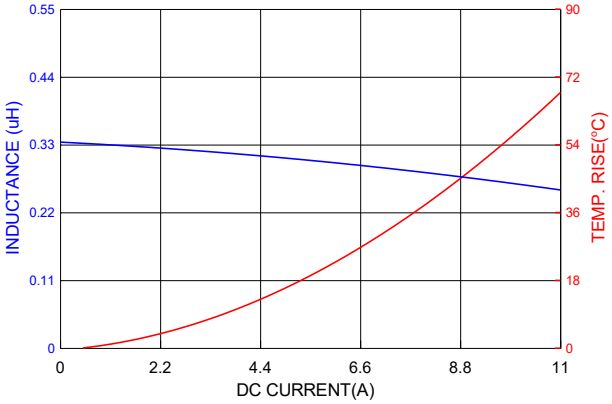
PIC0302HR10YF



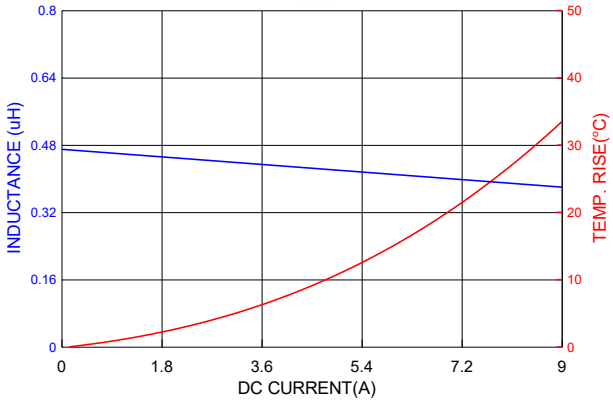
PIC0302HR22YF



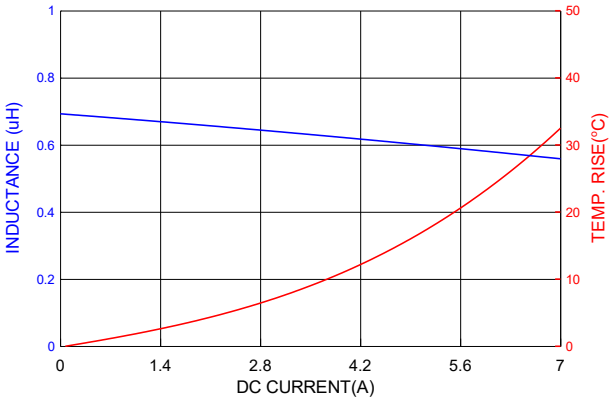
PIC0302HR33MF



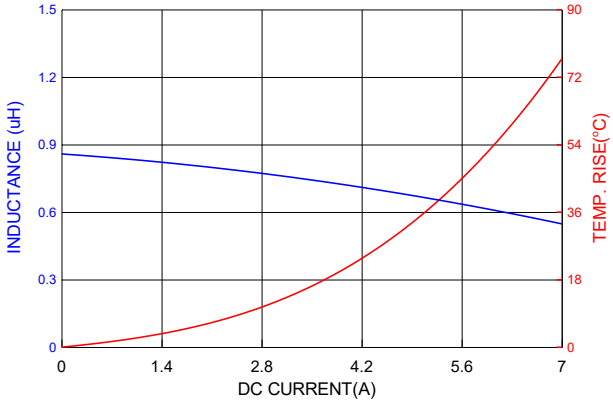
PIC0302HR47MF



PIC0302HR68MF

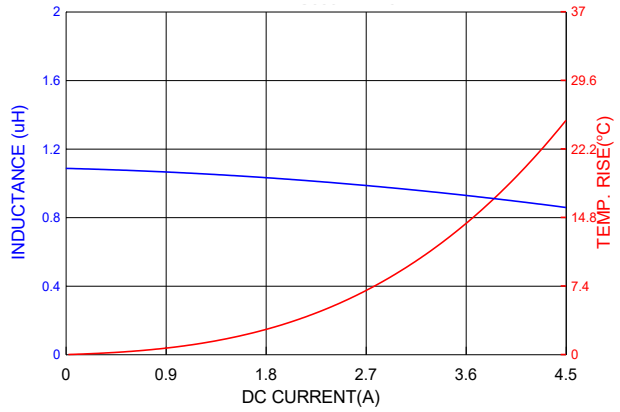


PIC0302HR82MF

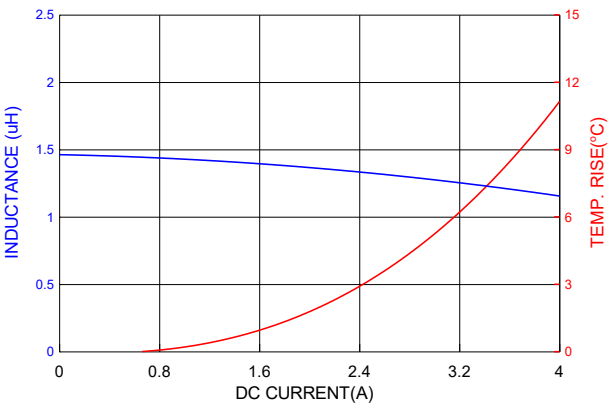


NOTE: Specifications subject to change without notice. Please check our website for latest information.

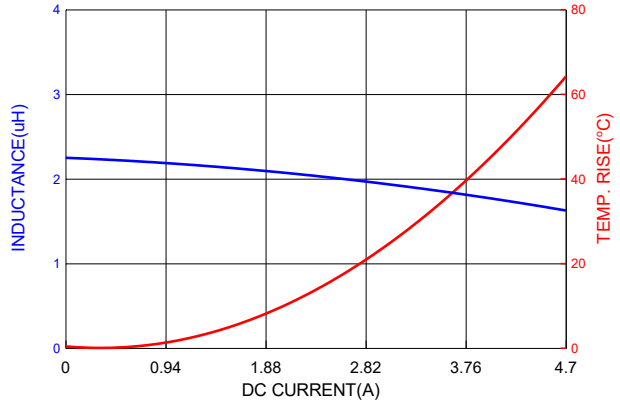
PIC0302H1R0MF



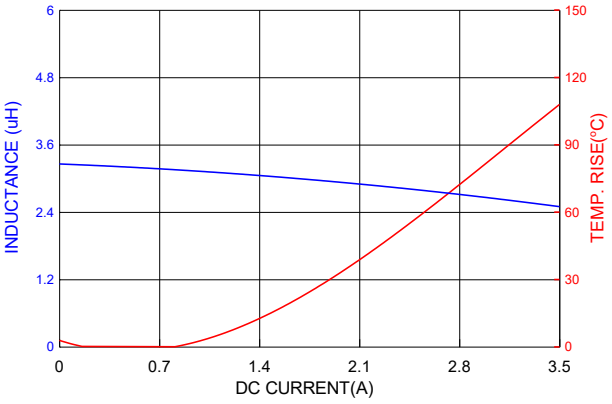
PIC0302H1R5MF



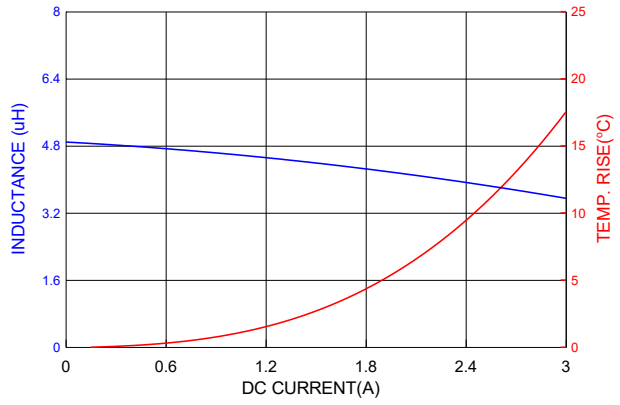
PIC0302H2R2MF



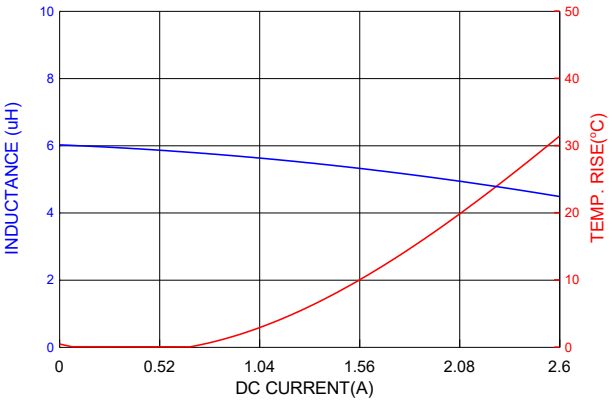
PIC0302H3R3MF



PIC0302H4R7MF

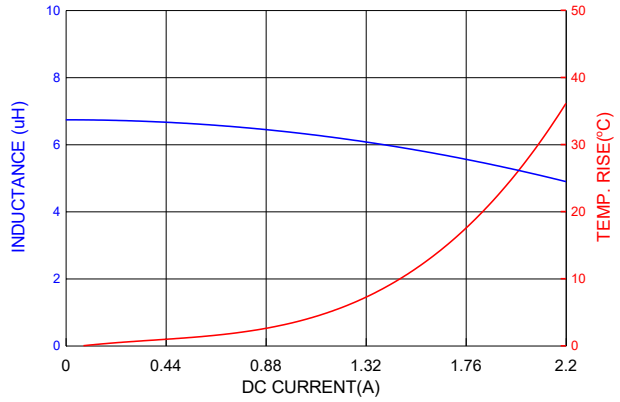


PIC0302H5R6MF

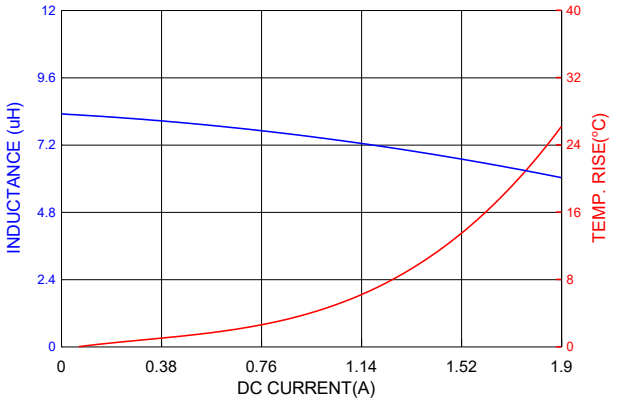


NOTE: Specifications subject to change without notice. Please check our website for latest information.

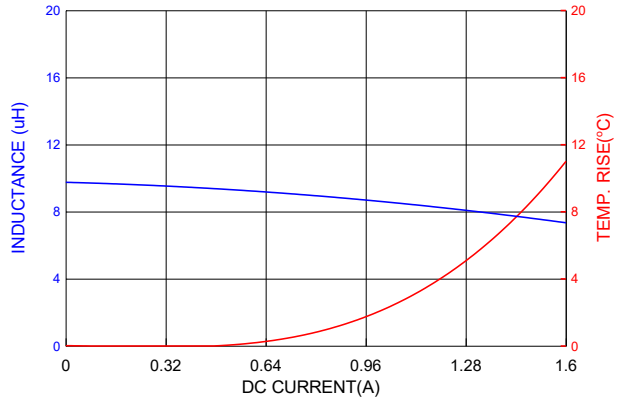
PIC0302H6R8MF



PIC0302H8R2MF



PIC0302H100MF



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

8. Soldering Specification

Mildly activated rosin fluxes are preferred. Our terminations are suitable for re-flow soldering systems. If hand soldering cannot be avoided, the preferred technique is the utilization of hot air soldering tools.

8-1. IR Soldering Reflow

Recommended temperature profiles for lead free re-flow soldering in Figure 1, Table 1.1 & 1.2 (J-STD-020F).

8-2. Iron Reflow

Products attachment with a 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 (Figure 2).

Note:

(a) Preheat circuit and products to 150°C.

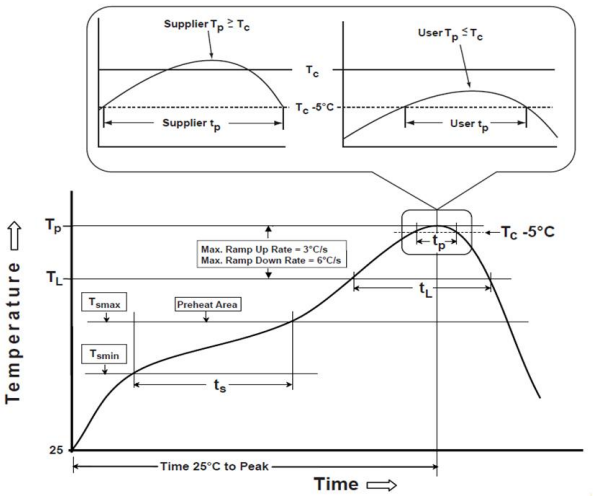
(b) 350°C tip temperature (Max.)

(c) Never contact the ceramic with the iron tip

(d) 1.0mm tip diameter (Max.)

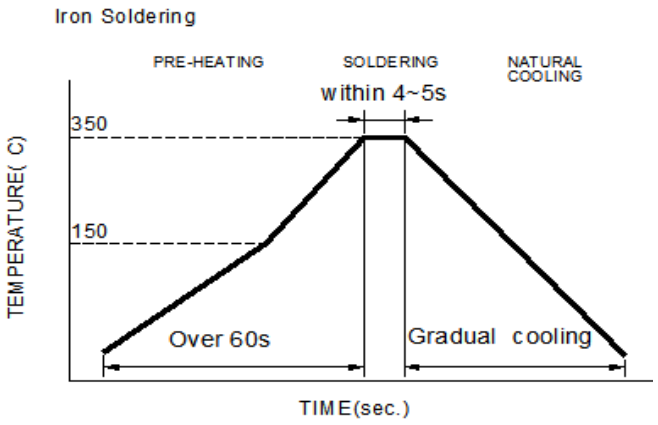
(e) Use a 20 watt soldering iron with tip diameter of 1.0mm

(f) Limit soldering time to 4~5 sec.



Reflow times: 3 times Max

Figure 1: IR Soldering Reflow



Iron Soldering times：1 times max

Figure 2: Iron soldering temperature profiles

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

Table (1.1) Reflow Profiles

Profile Type:	Pb-Free Assembly
Preheat -Temperature Min (T_{smin}) -Temperature Max (T_{smax}) -Time (t_s) from (T_{smin} to T_{smax})	 150°C 200°C 60-120seconds
Ramp-up rate ($T_L$to T_p)	3°C /second max.
Liquids temperature (T_L) Time (t_L) maintained above T_L	217°C 60-150 seconds
Classification temperature (T_c)	See Table (1.2)
Time (t_p) at Tc- 5°C (Tp should be equal to or less than Tc.)	< 30 seconds
Ramp-down rate (T_p to T_L)	6°C /second max.
Time 25°C to peak temperature	8 minutes max.

Tp: maximum peak package body temperature, **Tc**: the classification temperature.

For user (customer) **Tp** should be equal to or less than **Tc.**

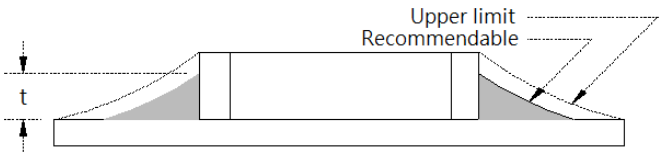
Table (1.2) Package Thickness/Volume and Classification Temperature (T_c)

	Package Thickness	Volume mm^3 <350	Volume mm^3 350-2000	Volume mm^3 >2000
PB-Free Assembly	<1.6mm	260°C	260°C	260°C
	1.6-2.5mm	260°C	250°C	245°C
	≥2.5mm	250°C	245°C	245°C

Reflow is referred to standard IPC/JEDEC J-STD-020F.

8-3. Soldering Volume

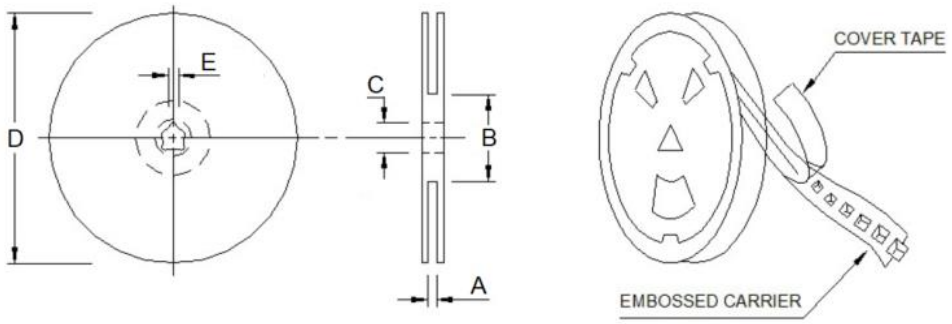
Accordingly increasing the solder volume, the mechanical stress to product is also increased. Exceeding solder volume may cause the failure of mechanical or electrical performance. Solder shall be used not to be exceeded as shown in the Figure below. Minimum fillet height = soldering thickness + 25% product height.



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

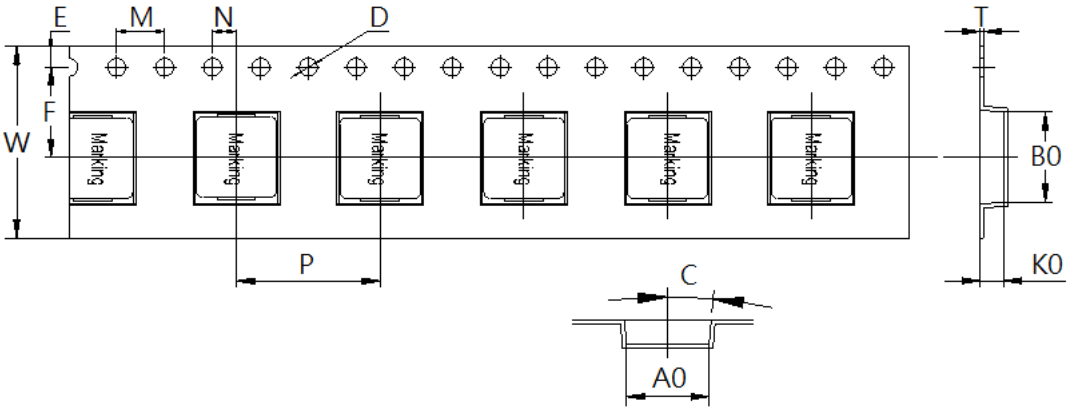
9. Packaging Information

9-1. Reel Dimension (Unit: mm)



Type	A	B	C	D	E
13”x12mm	12.0 Ref	100.0 Ref	13.5 Ref	330.0 Ref	2.0 Ref

9-2. Tape Dimension (Unit: mm)



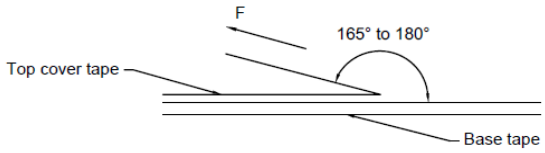
B0	A0	K0	P	W	F
3.80±0.10	3.50±0.10	2.30±0.10	8.00±0.10	12.00±0.30	5.50±0.10
T	E	M	N	D	C
0.35±0.05	1.75 Ref	4.00 Ref	2.00 Ref	1.50 Ref	3°

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

9-3. Packaging Quantity (Unit: Pcs)

Chip/ Reel	3,000
Inner box	6,000
Carton	24,000

9-4. Tearing Off Force



The force for tearing off cover tape is according to the follow table, 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±10

Tape Size	8 mm	12 to 56 mm	72 mm or Wider
Tearing Off Force (grams)	10~100	10~130	10~150

Application Notice

1. Storage Conditions

To maintain the solderability of terminal electrodes:

(a) Products meet IPC/JEDEC J-STD-020F standard-MSL, level 1.

(b) Recommended products should be used within 12 months from the time of delivery.

(c) 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.