

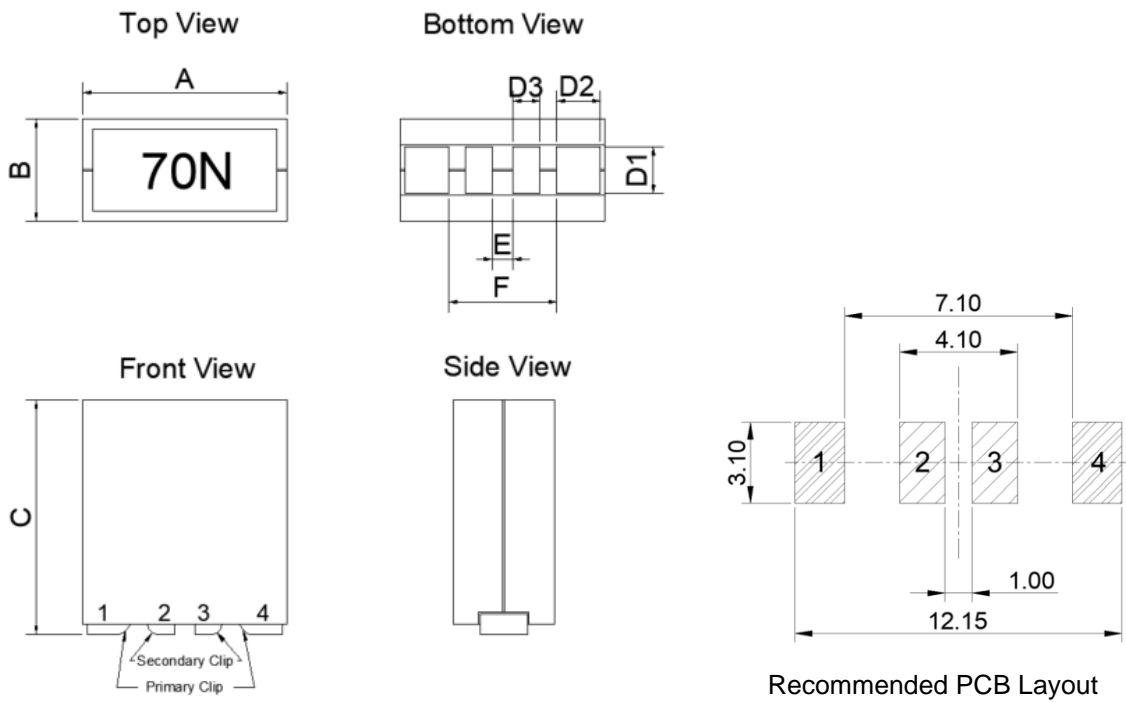
## 1. Part No. Expression

**S M F 1 2 0 6 1 2 R 0 7 L Z F**

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

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

## 2. Configuration & Dimensions (Unit: mm)

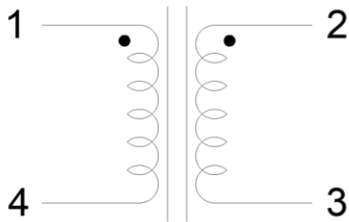


- Note:
1. Marking: Inductance (Please refer to Electrical Characteristics table)
  2. Dimension B please refer to Electrical Characteristics Table.

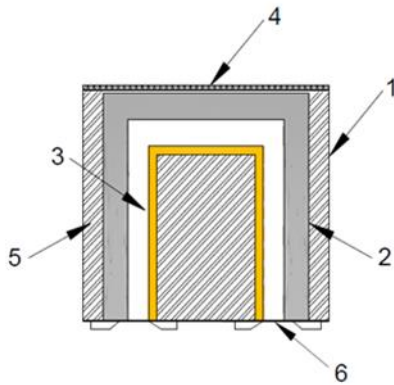
A	C	D1	D2	D3	E	F
12.00 Max	12.00 Max	2.40±0.20	3.10±0.20	1.05±0.20	1.40±0.20	5.30±0.20

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

## 1. Schematic



## 2. Material List



- (1) Core
- (2) Clip
- (3) Wire
- (4) Tape
- (5) Glue
- (6) Coating

## 3. 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 ( $I_{rms}$ ) will cause the coil temperature rise approximately  $\Delta T$  of 40°C.
- (d) Saturation Current ( $I_{sat 1}$ ) will cause inductance  $L_0$  to drop approximately 20% at +25°C.
- (e) Saturation Current ( $I_{sat 2}$ ) will cause inductance  $L_0$  to drop approximately 20% at +100°C.
- (f) Rated Current: The lower value of  $I_{sat}$  and  $I_{rms}$ .
- (g) Storage Condition (Component in its packaging)
  - i) Temperature: -10°C to +40°C
  - ii) Humidity: Less than 70% RH

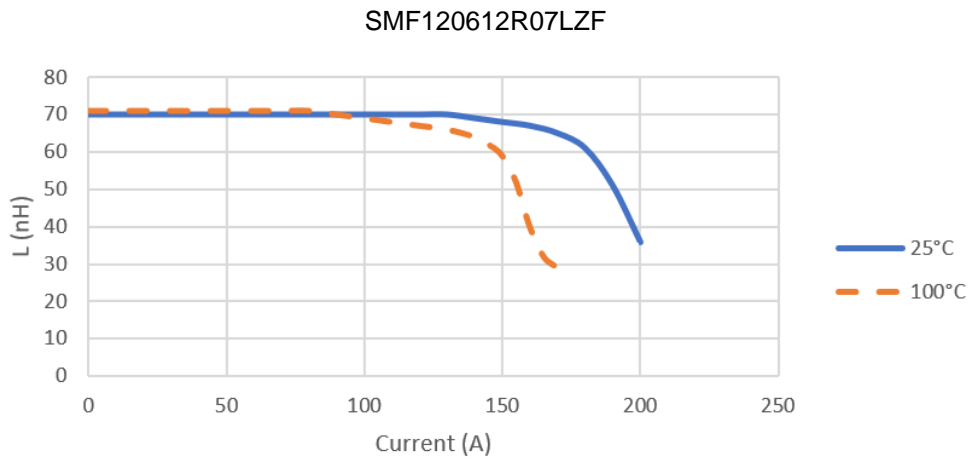
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## 4. Electrical Characteristics

Part Number	Inductance (nH) @0A ±15%	DCR (mΩ)		Isat 1 (A) Typ	Isat 2 (A) Typ	I <sub>rms</sub> (A) Typ	Leakage Inductance (nH) Typ	Coupling Coefficient Typ	Dimension B (mm) Max	Marking
		1-4 ±10%	2-3 Max							
SMF120612R07LZF	70.0	0.125	0.450	160	140	70	17.0	0.90	6.2	70N
SMF120612R10LZF	100.0	0.125	0.450	125	105	70	17.0	0.91	6.2	R10
SMF120612R105LZF	105.0	0.125	0.450	120	100	70	17.0	0.91	6.0	R105
SMF120612R12LZF	120.0	0.125	0.450	100	90	70	17.0	0.92	6.0	R12
SMF120612R15LZF	150.0	0.125	0.450	80	70	70	17.0	0.93	6.0	R15
SMF120612R17LZF	170.0	0.125	0.450	70	55	70	17.0	0.94	6.0	R17
SMF120612R20LZF	200.0	0.125	0.450	50	40	70	17.0	0.95	6.0	R20

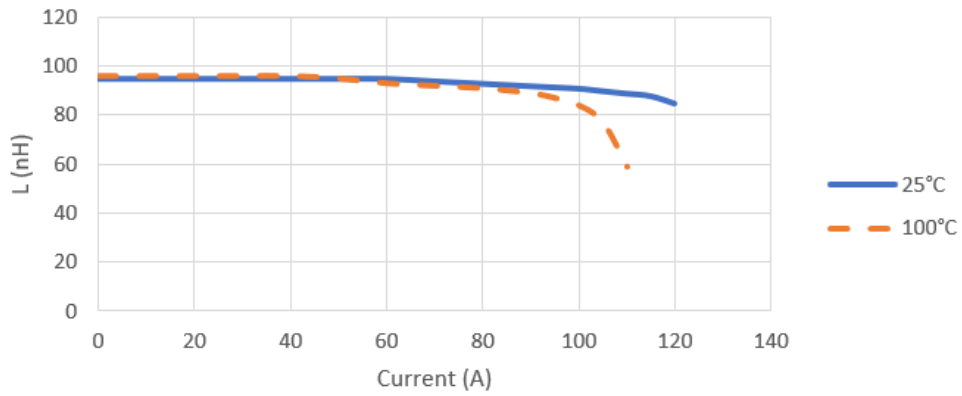
Test Frequency: 1.0V/100kHz

## 5. Characteristics Curve

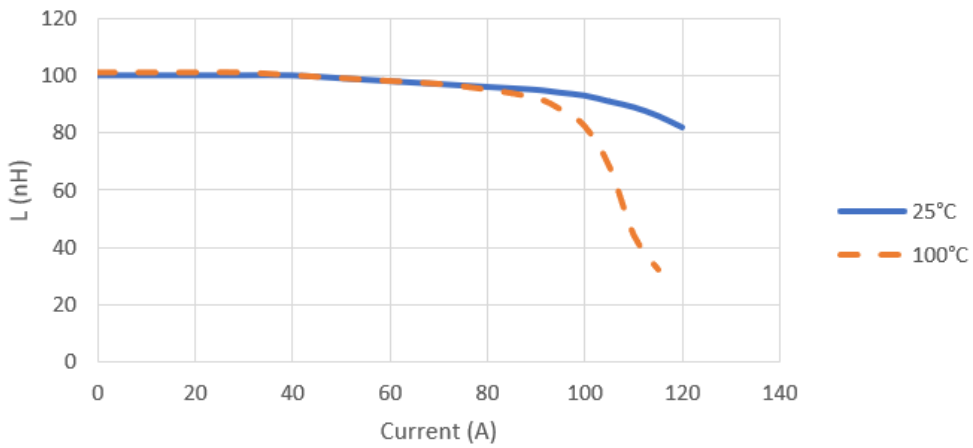


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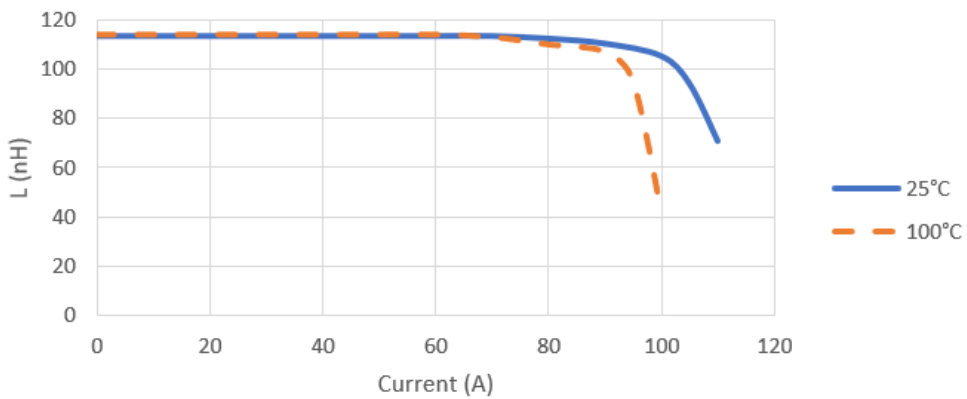
### SMF120612R10LZF



### SMF120612R105LZF

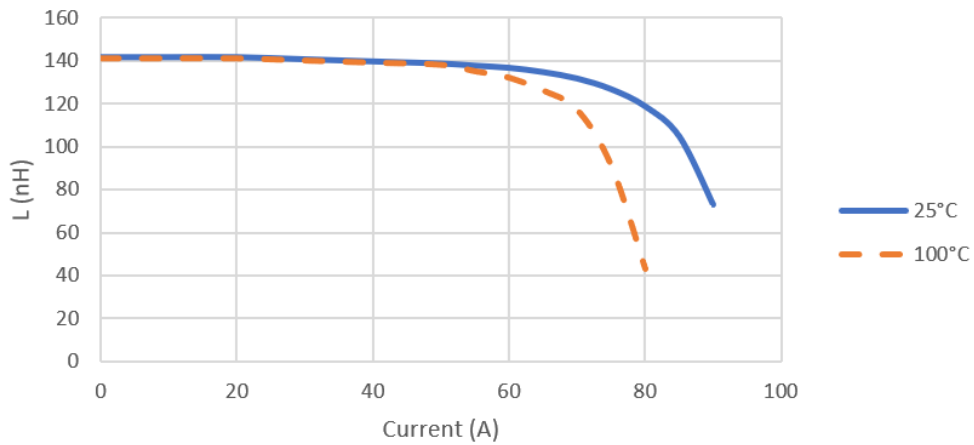


### SMF120612R12LZF

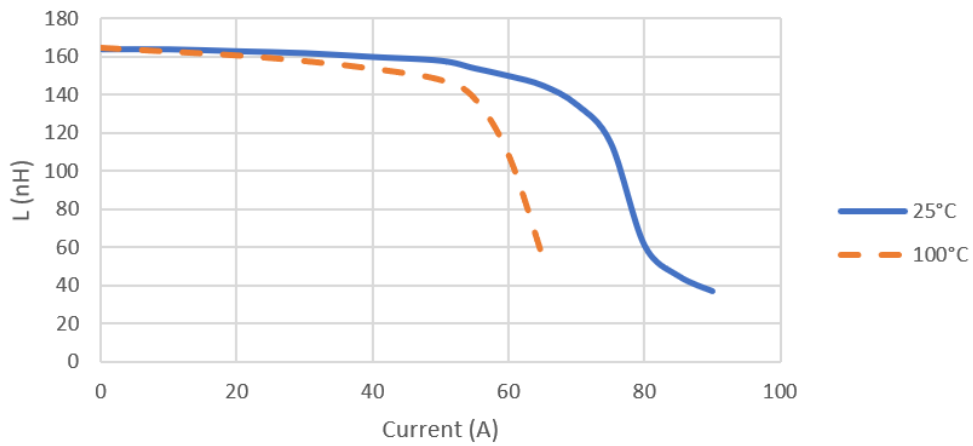


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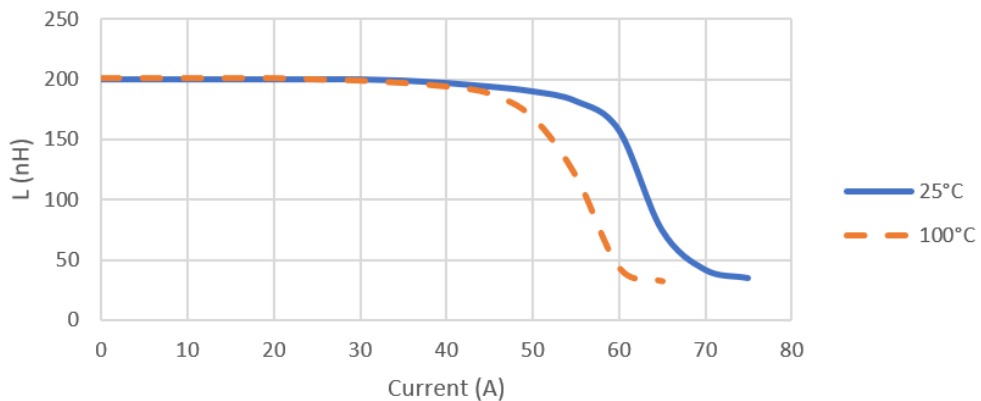
SMF120612R15LZF



SMF120612R17LZF



SMF120612R20LZF



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## 6. 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.

### 6-1. IR Soldering Reflow

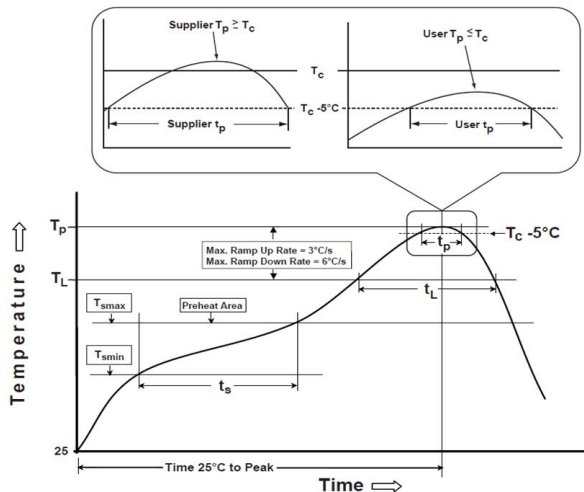
Recommended temperature profiles for lead free re-flow soldering in Figure 1, Table 1.1 & 1.2 (J-STD-020E).

### 6-2. 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).

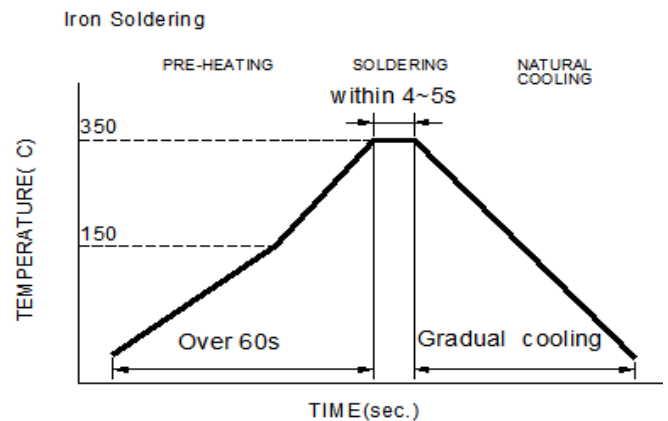
Note:

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



Reflow times: 3 times Max

Figure 1: IR Soldering Reflow



Soldering iron method: 350±5°C Max

Figure 2: Iron soldering temperature profiles

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**Table (1.1) Reflow Profiles**

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

**T<sub>p</sub>**: maximum peak package body temperature, **T<sub>c</sub>**: the classification temperature.

For user (customer) **T<sub>p</sub>** should be equal to or less than **T<sub>c</sub>**.

\*Tolerance for peak profile temperature ( $T_p$ ) is defined as a supplier minimum and a user maximum.

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

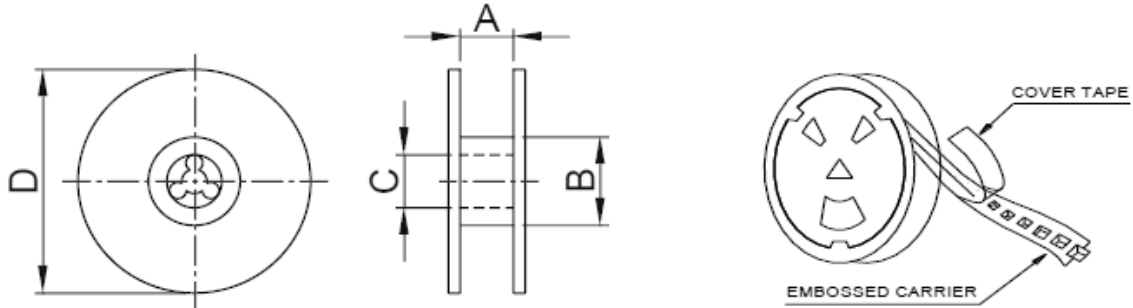
	Package Thickness	Volume mm <sup>3</sup> <350	Volume mm <sup>3</sup> 350-2000	Volume mm <sup>3</sup> >2000
PB-Free Assembly	<1.6mm	260°C	260°C	260°C
	1.6-2.5mm	260°C	250°C	245°C
	≥2.5mm	250°C	245°C	245°C

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

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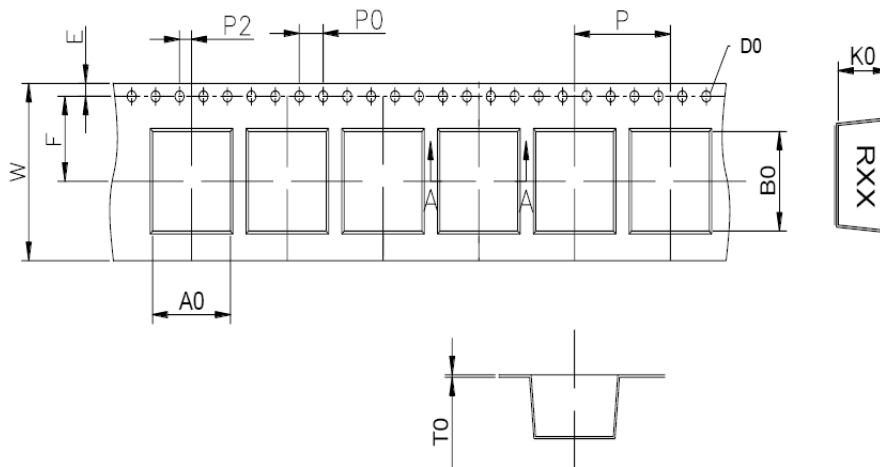
7. Packaging Information

7-1. Reel Dimension (Unit: mm)



Type	A	B	C	D
13" x 24mm	24.5±0.5	100.0±2.0	13.0±0.5	330.0 Ref

7-2. Tape Dimension (Unit: mm)



W	P	P0	P2	E	F
24.00±0.30	16.00±0.10	4.00 Ref	2.00 Ref	1.75 Ref	11.50 Ref
D0	T0	A0	B0	K0	-
1.50 Ref	0.50±0.05	6.20±0.10	12.20±0.10	12.20±0.10	-

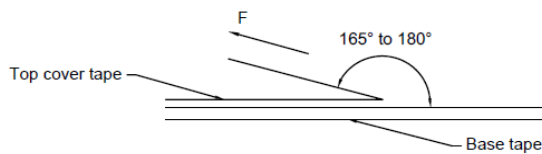
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### 7-3. Packaging Quantity (Unit: Pcs)

Chip/ Reel	300
Inner Box	600
Outer Box	2,400

### 7-4. 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) 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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