

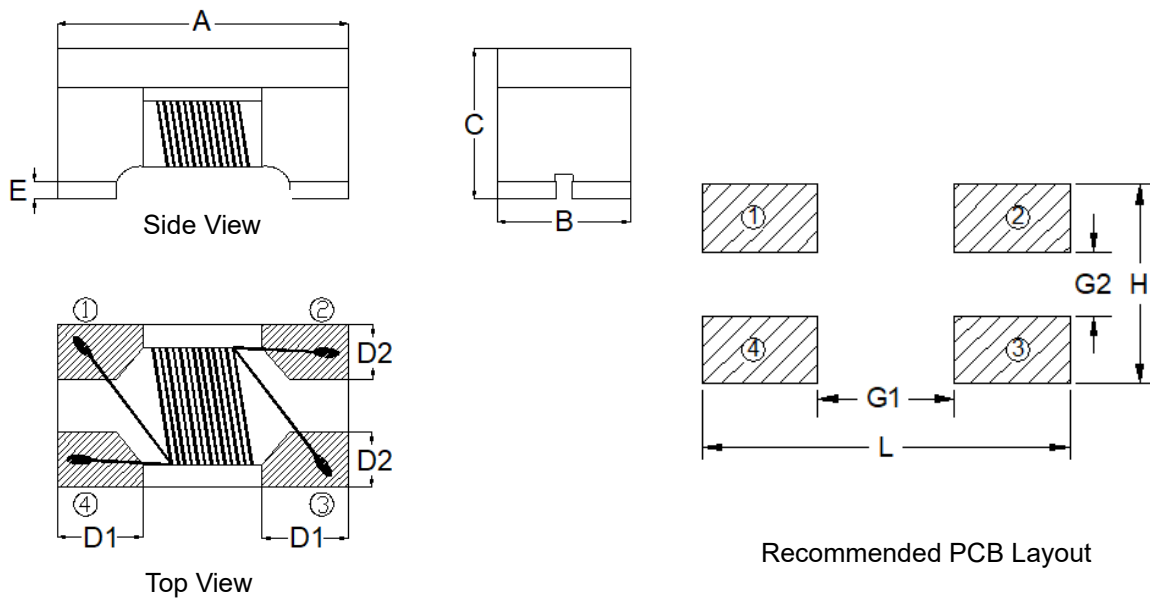
1. Part No. Expression

W 2 0 1 2 F 5 0 0 - R D - 1 0

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

- | | |
|--------------------|--------------------|
| (a) Series Code | (e) Packaging Code |
| (b) Dimension Code | (f) Current Code |
| (c) Material Code | (g) Internal Code |
| (d) Impedance Code | |

2. Configuration & Dimensions (Unit: mm)

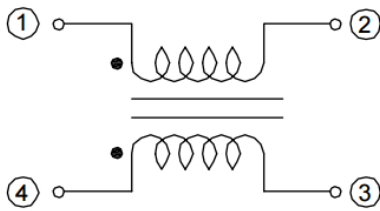


Note: The above PCB layout reference only.

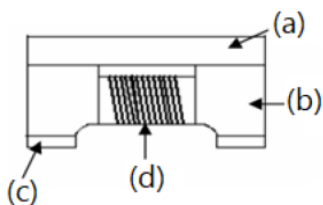
A	B	C	D1	D2
2.00±0.20	1.20±0.20	1.20±0.20	0.55±0.10	0.46±0.10
E	L	G1	G2	H
0.15±0.10	2.60 Ref	1.20 Ref	0.50 Ref	1.20 Ref

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

3. Schematic



4. Material List



- (a) Upper Plate
- (b) Core
- (c) Termination
- (d) Wire

5. General Specifications

- (a) Operating Temp.: -40°C to +125°C (including self-temperature rise)
- (b) Irms: Based on temperature rise ΔT 20°C Max at rated current < 1A and ΔT 40°C Max at rated current $\geq 1A$
- (c) Storage Condition (Component in its packaging)
 - i) Temperature: Less than 40°C
 - ii) Humidity: Less than 60% RH

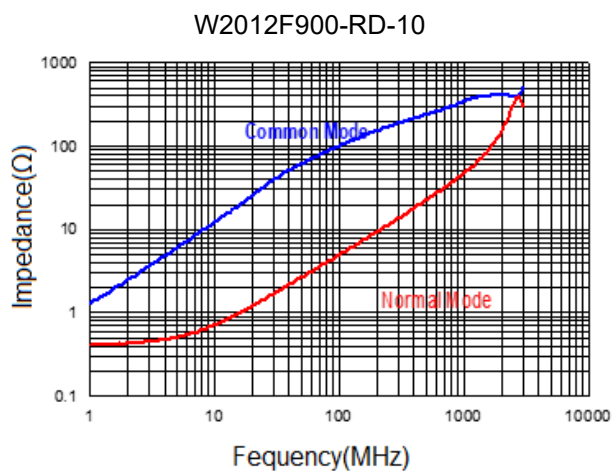
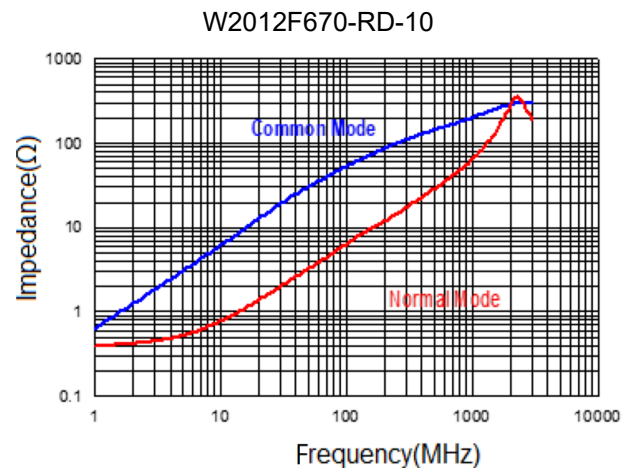
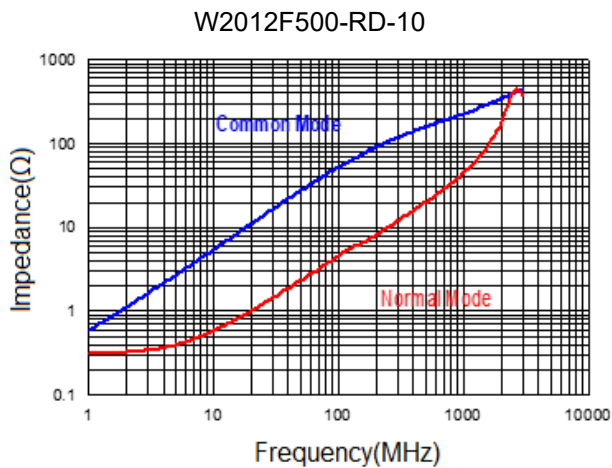
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6. Electrical Characteristics

Part Number	Impedance (Ω) $\pm 25\%$	Test Frequency (MHz)	DCR (Ω) Max	Rated Current (mA)	Rated Voltage (Vdc)	Withstand Voltage (Vdc)	IR (M Ω) Min
W2012F500-RD-10	50	100	0.25	400	50	125	10
W2012F670-RD-10	67	100	0.30	400	50	125	10
W2012F900-RD-10	90	100	0.30	400	50	125	10

7. Characteristics Curve

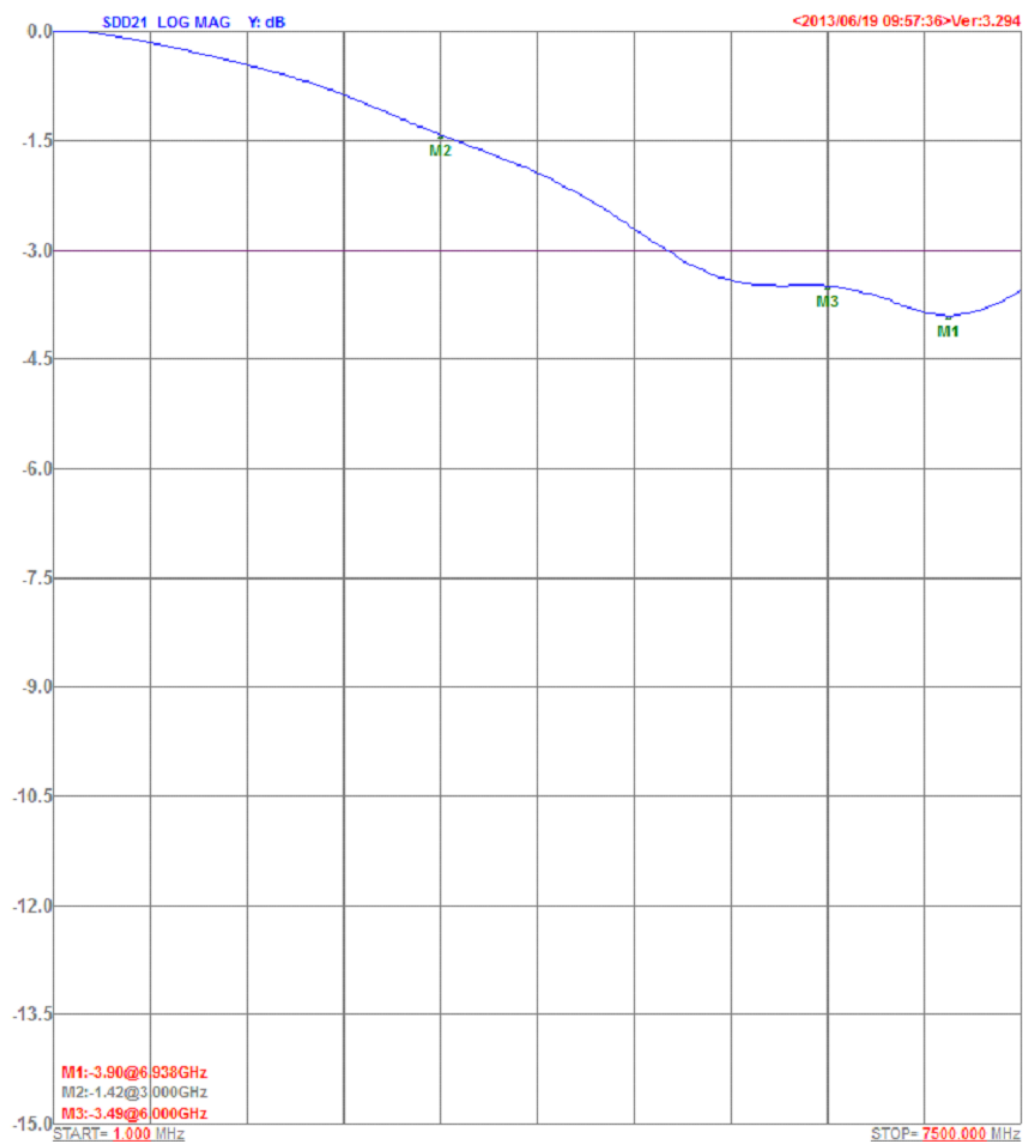
7-1. Impedance versus Frequency



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

7-2. Insertion Loss Test

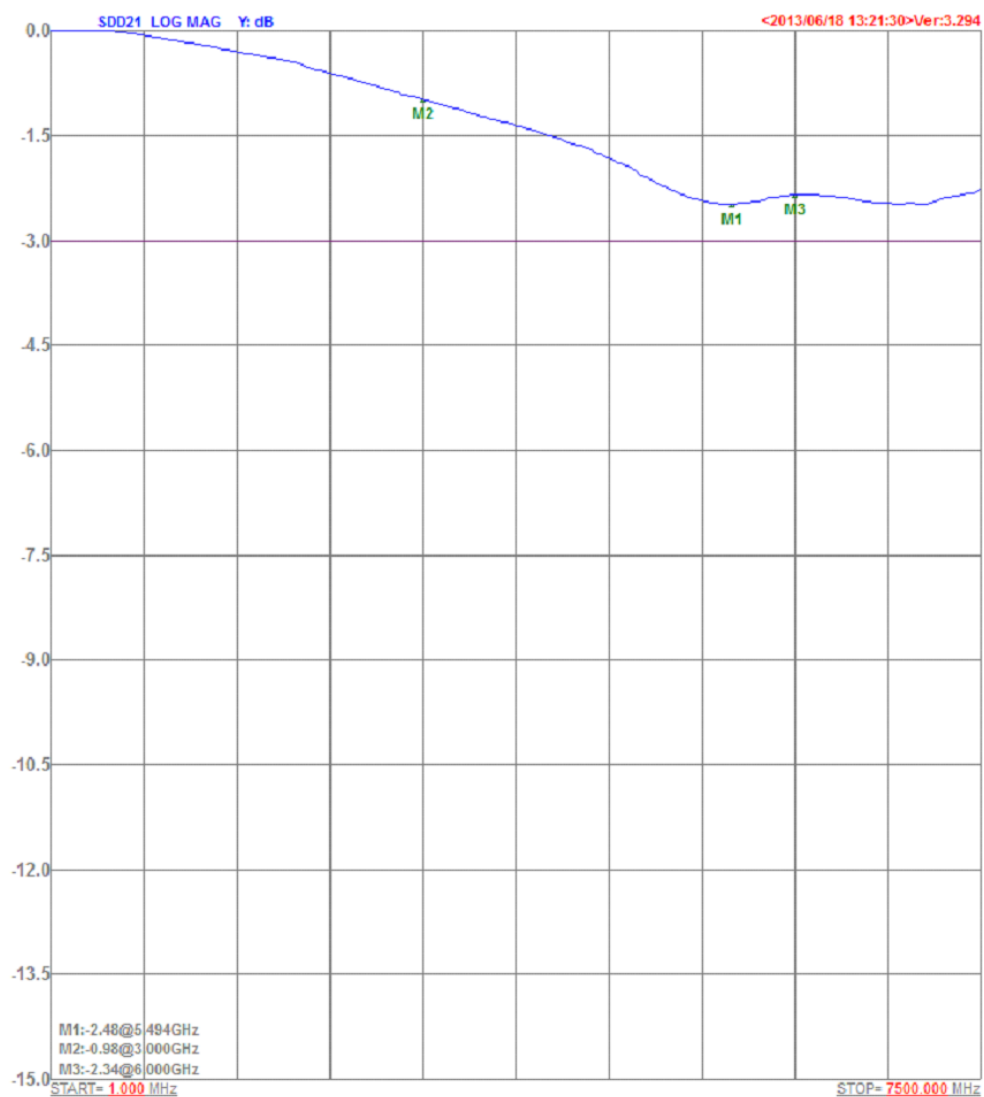
W2012F500-RD-10



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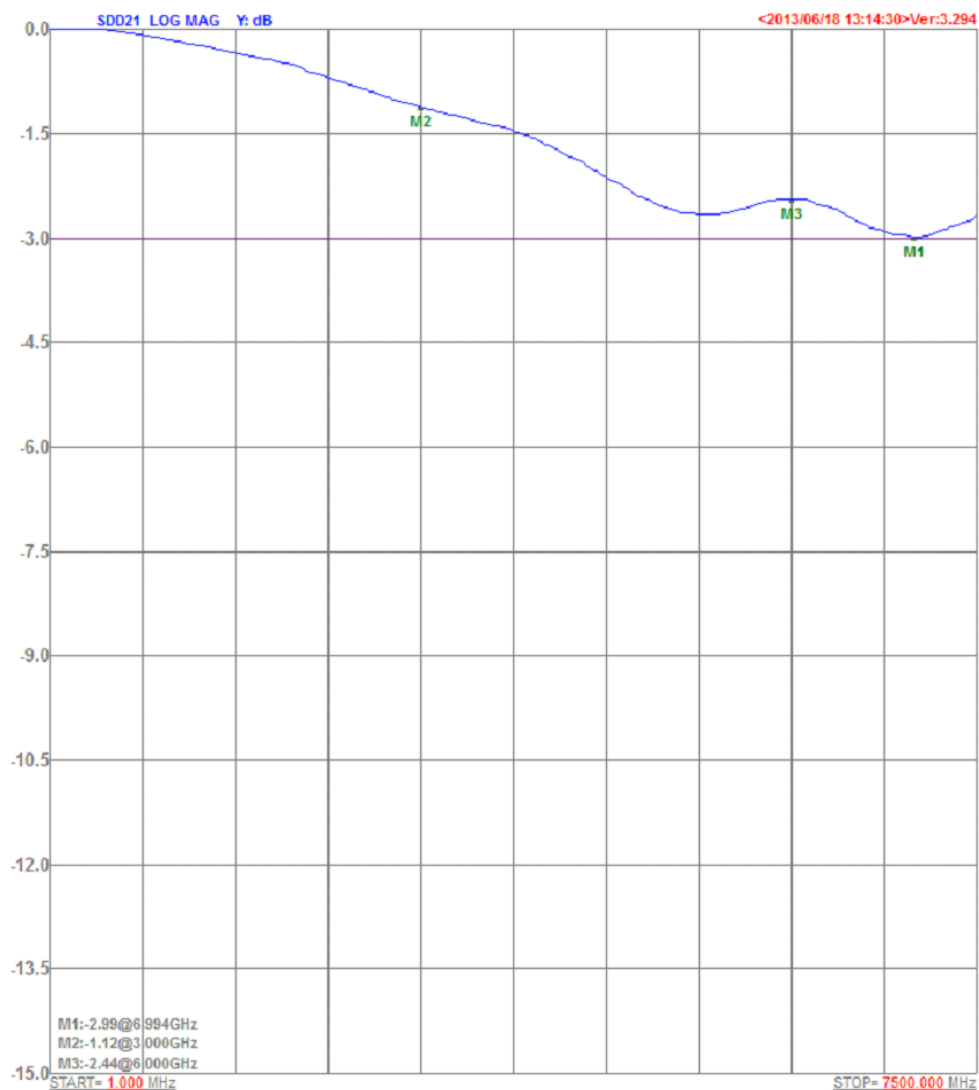
W2012F670-RD-10



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W2012F900-RD-10



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.

1-1. IR Soldering Reflow

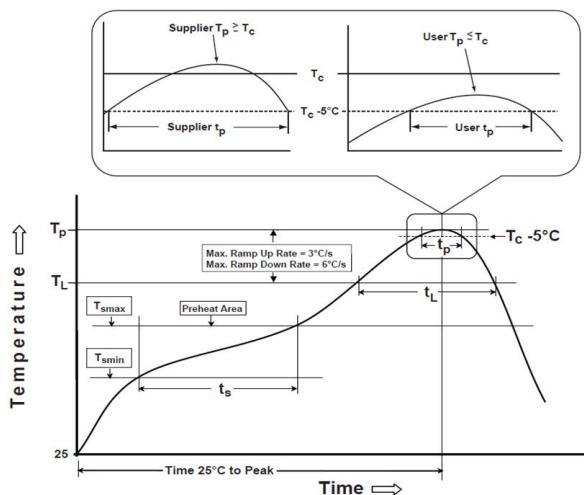
Recommended temperature profiles for lead free re-flow soldering in Figure 1, Table 1.1 & 1.2 (J-STD-020E).

1-2. 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).

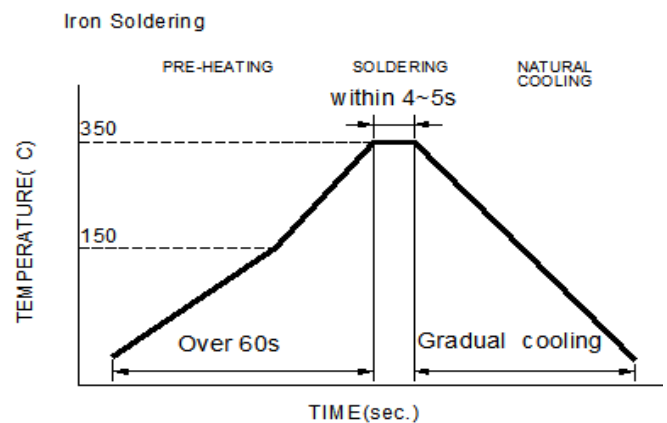
Note:

- Preheat circuit and products to 150°C.
- 355°C tip temperature (Max.)
- Never contact the ceramic with the iron tip
- 1.0mm tip diameter (Max.)
- Use a 20 watt soldering iron with tip diameter of 1.0mm
- Limit soldering time to 4~5 sec.



Reflow times: 3 times Max

Figure 1: IR Soldering Reflow



Iron Soldering times: 1 times max.

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_p : maximum peak package body temperature, **T_c** : the classification temperature.

For user (customer) **T_p** should be equal to or less than **T_c** .

*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)

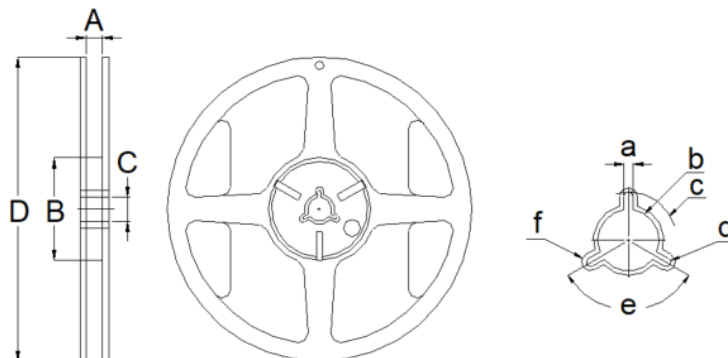
	Package Thickness	Volume mm ³ <350	Volume mm ³ 350-2000	Volume mm ³ >2000
PB-Free Assembly	<1.6mm	260°C	260°C	260°C
	1.6-2.5mm	260°C	250°C	245°C
	≥2.5mm	250°C	245°C	245°C

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

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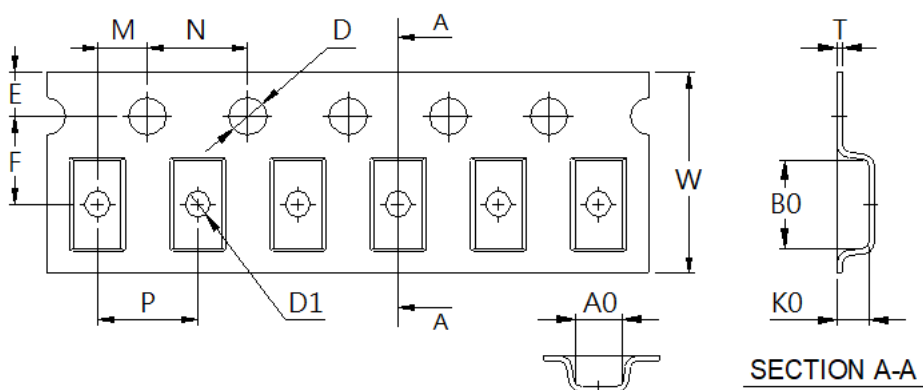
9. Packaging Information

9-1. Reel Dimension (Unit: mm)



Type	A	B	C	D	a
	9.0±0.5	60.0±2.0	13.5 Ref	178.0±2.0	2.0 Ref
7"x8mm	b	c	d	e	f
	13.5 Ref	R10.5	R0.5	120°	R1.9

9-2. Tape Dimension (Unit: mm)

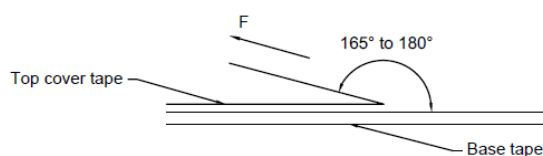


B0	A0	K0	P	T	E
2.25±0.10	1.50±0.10	1.35±0.10	4.00±0.10	0.22±0.05	1.75±0.10
F	M	N	D	D1	W
3.50±0.05	2.00±0.05	4.00±0.10	1.50+0.10/-0.00	1.00±0.10	8.00±0.10

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9-3. Packaging Quantity (Unit: Pcs)

Chip/ Reel	2,000
Inner Box	10,000
Middle Box	50,000
Carton	100,000

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) 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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