

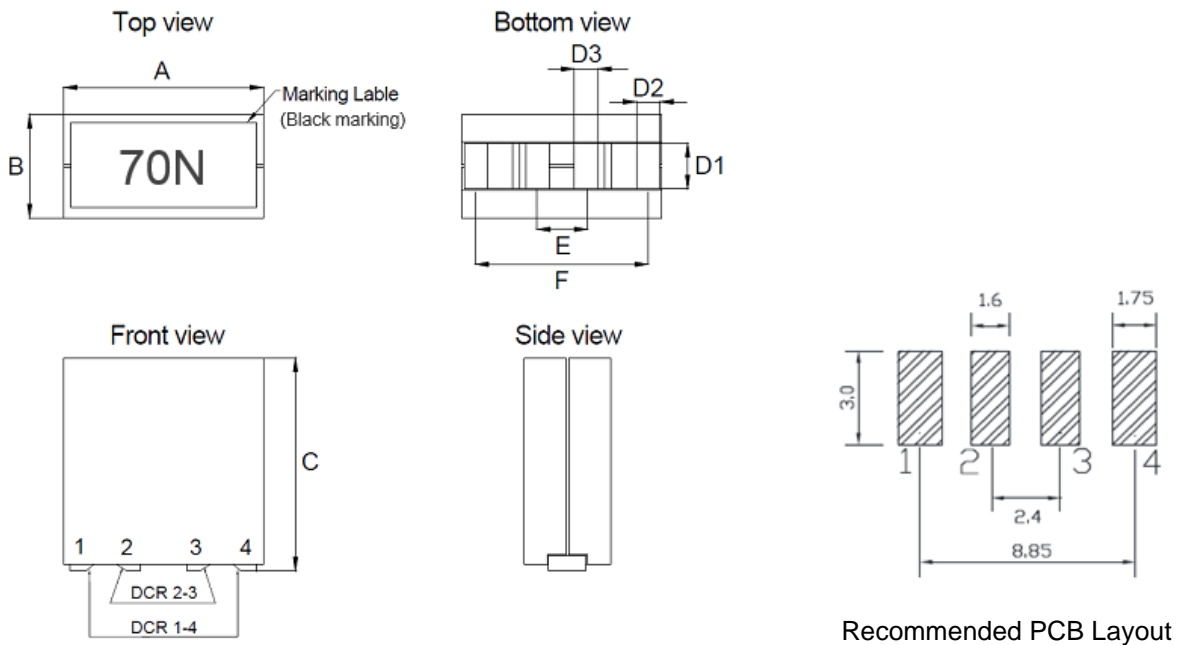
1. Part No. Expression

SMF100512R07KZF

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

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

2. Configuration & Dimensions (Unit: mm)

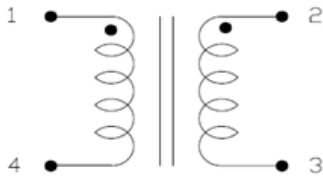


- Note:
1. Marking: Inductance (Please refer to Electrical Characteristics table)
 2. PAD surface flatness 0.1 mm max.
 3. Recommended: modules should be surface-mounted on the second time (last time) of customer's double-sided PCB to prevent shift of parts.
 4. Before soldering, be sure to preheat components. The recommended preheating condition is 150°C for 3 minutes.

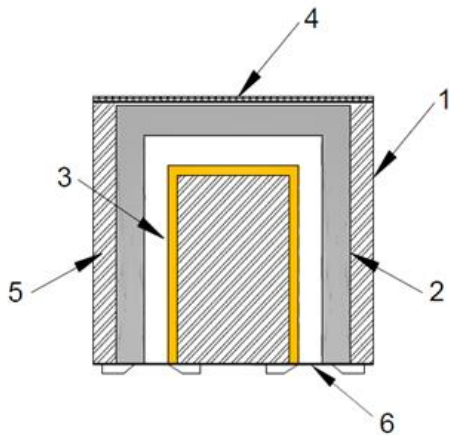
A	B	C	D1	D2	D3	E	F
10.00 Max	5.00 Max	12.00 Max	2.30 Typ	1.10 Typ	0.86 Typ	1.96 Typ	8.60 Typ

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

3. Schematic



4. Material List



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

5. General Specifications

- (a) Operating Temp.: -40°C to +125°C (including self-temperature rise)
- (b) Storage Temp.: -40°C to +125°C (on board)
- (c) All test data referenced to 25°C ambient.
- (d) Heat Rated Current (I_{rms}) will cause the coil temperature rise approximately ΔT of 40°C.
- (e) Saturation Current (I_{sat1}) will cause inductance L_0 to drop approximately 20% at +25°C.
Saturation Current (I_{sat2}) will cause inductance L_0 to drop approximately 20% at +100°C.
Saturation Current (I_{sat3}) will cause inductance L_0 to drop approximately 20% at +125°C.
- (f) Rated Current: The lower value of I_{sat} and I_{rms} .
- (g) Maximum Operating Voltage: 80V
- (h) 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

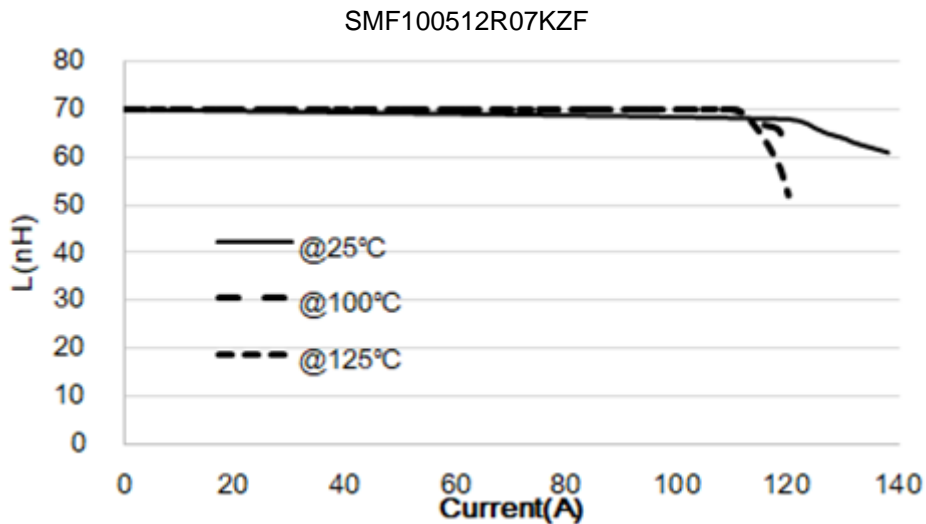
Part Number	L(nH) @0A 1-4/2-3 ±10%	L2(nH) 1-4 Min	DCR (mΩ) ±10%		Isat 1 (A)	Isat 2 (A)	Isat 3 (A)	I _{rms} (A)		Lk (nH) Typ	K _{ps} Typ	Marking
			1-4	2-3	25°C	100°C	125°C	1-4	2-3			
SMF100512R07KZF	70	50	0.125	0.450	127	110	100	75	35	9	0.93	70N
SMF100512R08KZF	80	57	0.125	0.450	111	96	87	75	35	9	0.94	80N
SMF100512R09KZF	90	64	0.125	0.450	98	85	77	75	35	9	0.95	90N
SMF100512R10KZF	100	72	0.125	0.450	89	77	70	75	35	9	0.95	R10
SMF100512R12KZF	120	86	0.125	0.450	74	64	58	75	35	9	0.96	R12
SMF100512R15KZF	150	108	0.125	0.450	59	51	46	75	35	9	0.96	R15
SMF100512R17KZF	170	122	0.125	0.450	52	45	41	75	35	9	0.97	R17

Test Frequency: 1.0V/100KHz

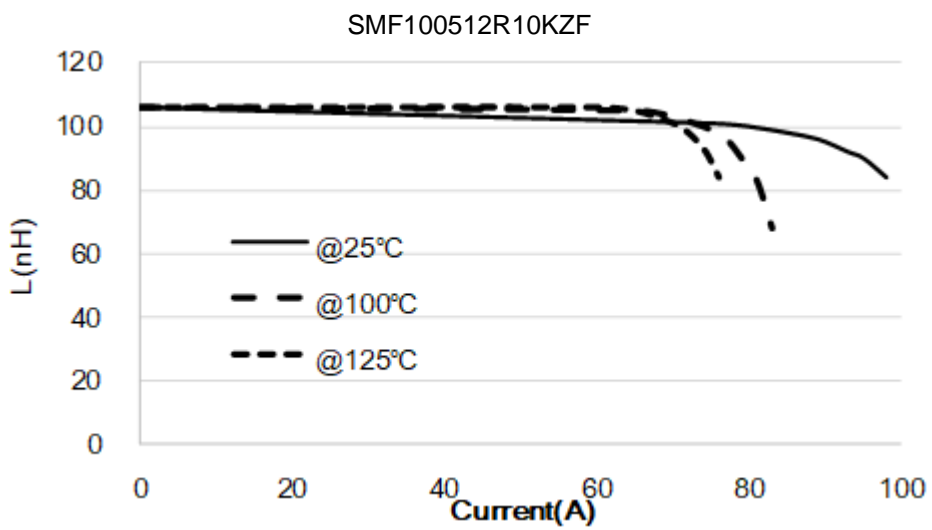
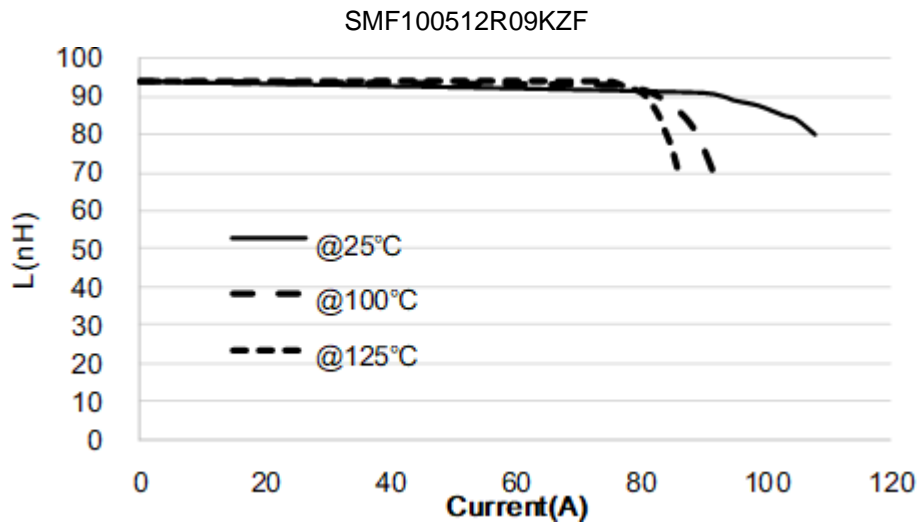
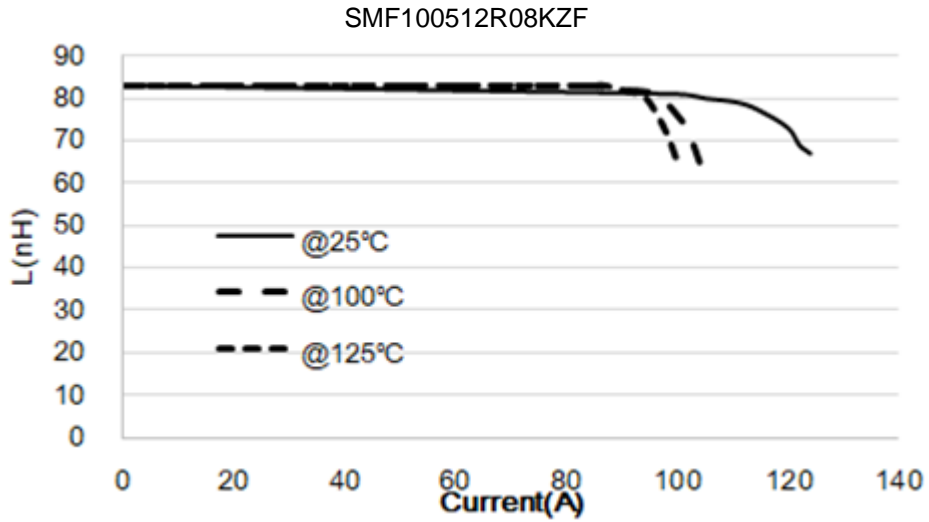
K_{ps}: Coupling Coefficient

L_k: Leakage inductance

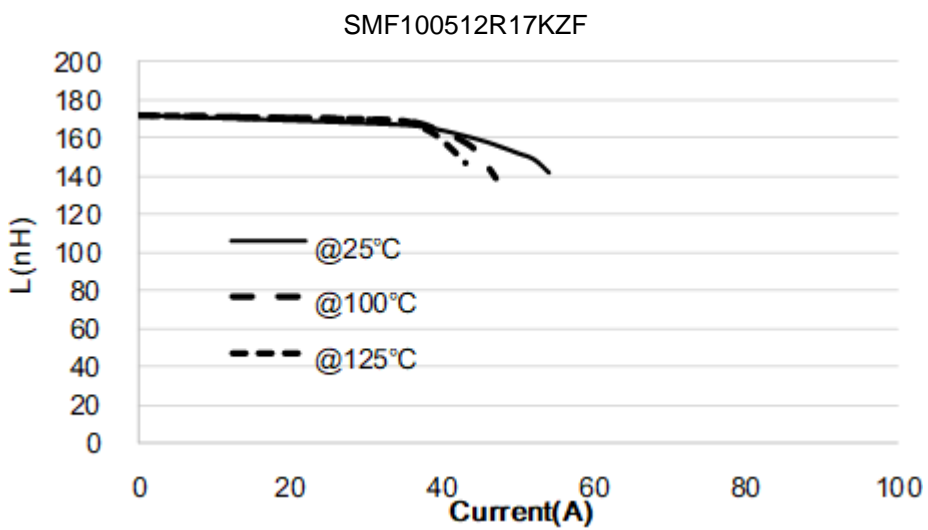
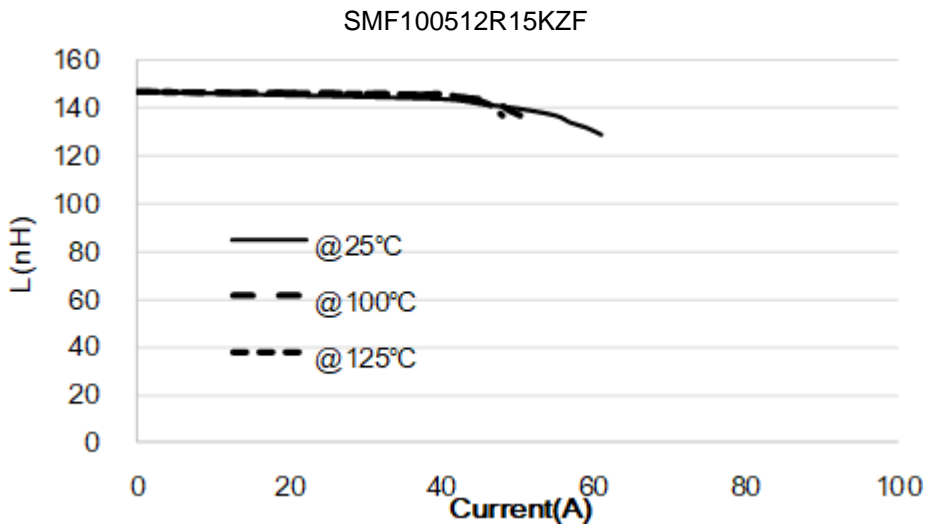
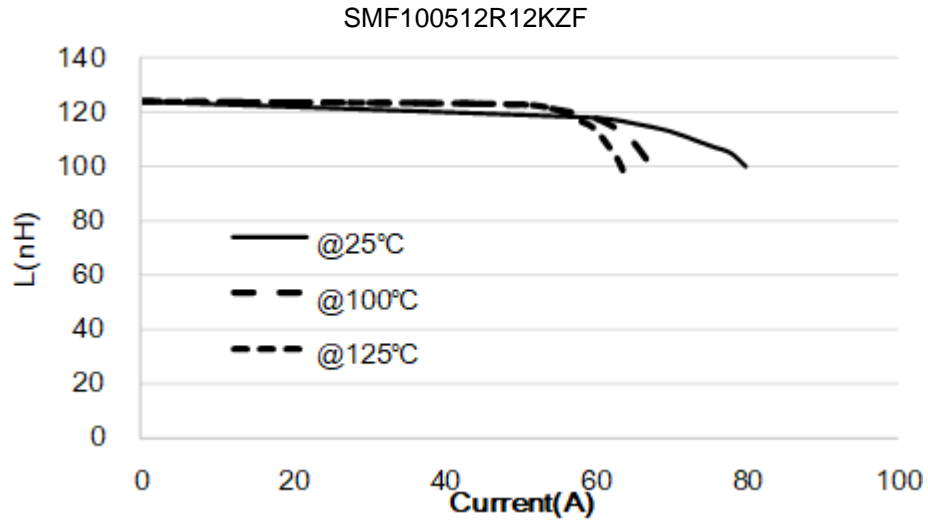
7. Characteristics Curve



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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

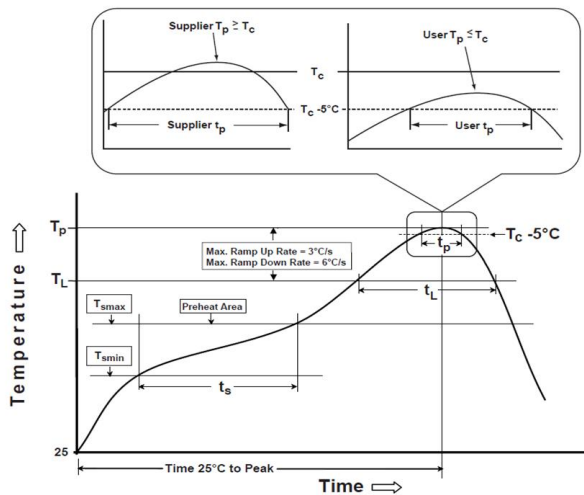
Recommended temperature profiles for lead free re-flow soldering in Figure 1, Table 1.1 & 1.2 (J-STD-020E).

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).

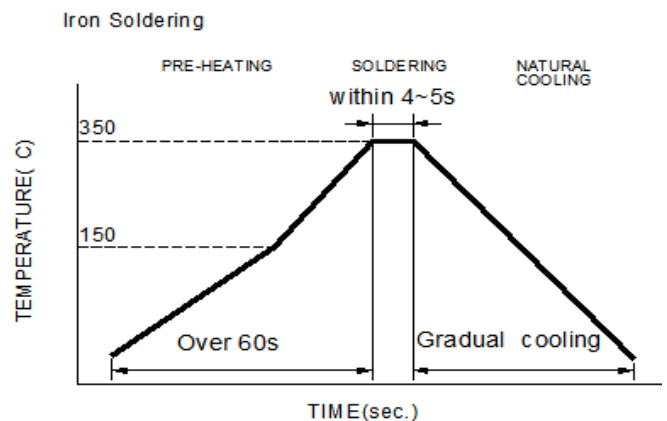
Note:

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



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)

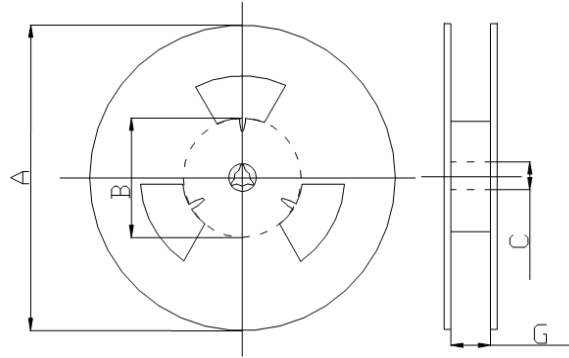
	Package Thickness	Volume mm ³ <350	Volume mm ³ 350-2000	Volume mm ³ >2000
PB-Free Assembly	<1.6mm	260°C	260°C	260°C
	1.6-2.5mm	260°C	250°C	245°C
	≥2.5mm	250°C	245°C	245°C

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

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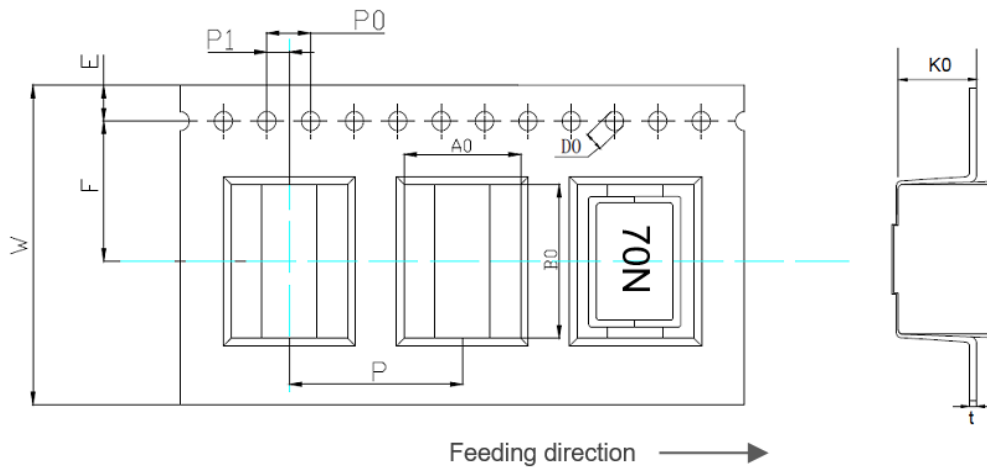
9. Packaging Information

9-1. Reel Dimension (Unit: mm)



Type	A	B	C	D
13" x 24mm	330.0	100.0	13.5	24.5

9-2. Tape Dimension (Unit: mm)



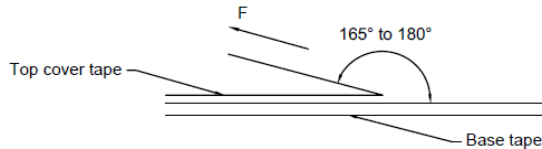
B0	A0	K0	P	P0	P1
10.20±0.10	5.20±0.10	12.20±0.10	16.00±0.10	4.00±0.10	2.00±0.10
W	F	E	D0	t	-
24.00±0.30	11.50±0.10	1.75±0.10	1.50±0.10	0.40±0.05	-

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9-3. Packaging Quantity (Unit: Pcs)

Chip/ Reel	300
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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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