

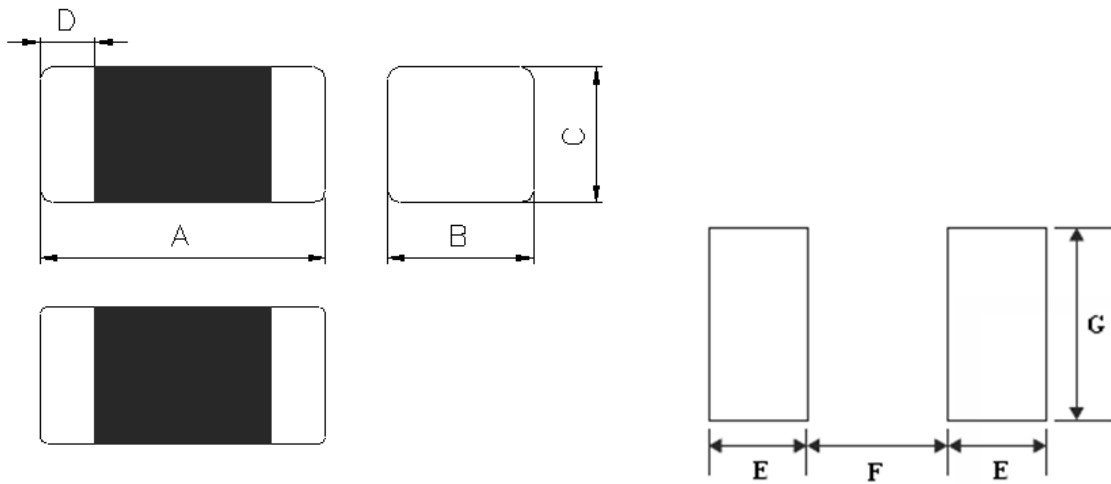
## 1. Part No. Expression

**Z 2 P Z 3 0 0 – R R – 1 0**

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

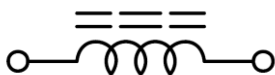
- (a) Series Code
- (b) Dimension Code
- (c) Material Code
- (d) Impedance Code
- (e) Packaging Code
- (f) Current Code
- (g) Internal Code

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



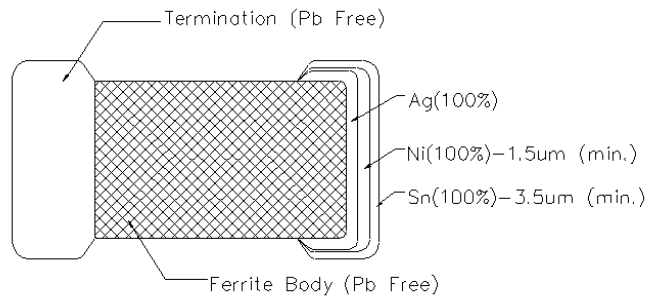
A(mm)	B(mm)	C(mm)	D(mm)	E(mm)	F(mm)	G(mm)
1.6±0.15	0.80±0.15	0.80±0.15	0.30±0.20	0.80 Ref	0.85 Ref	0.95 Ref

## 3. Schematic



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

## 4. Material List



## 5. General Specification

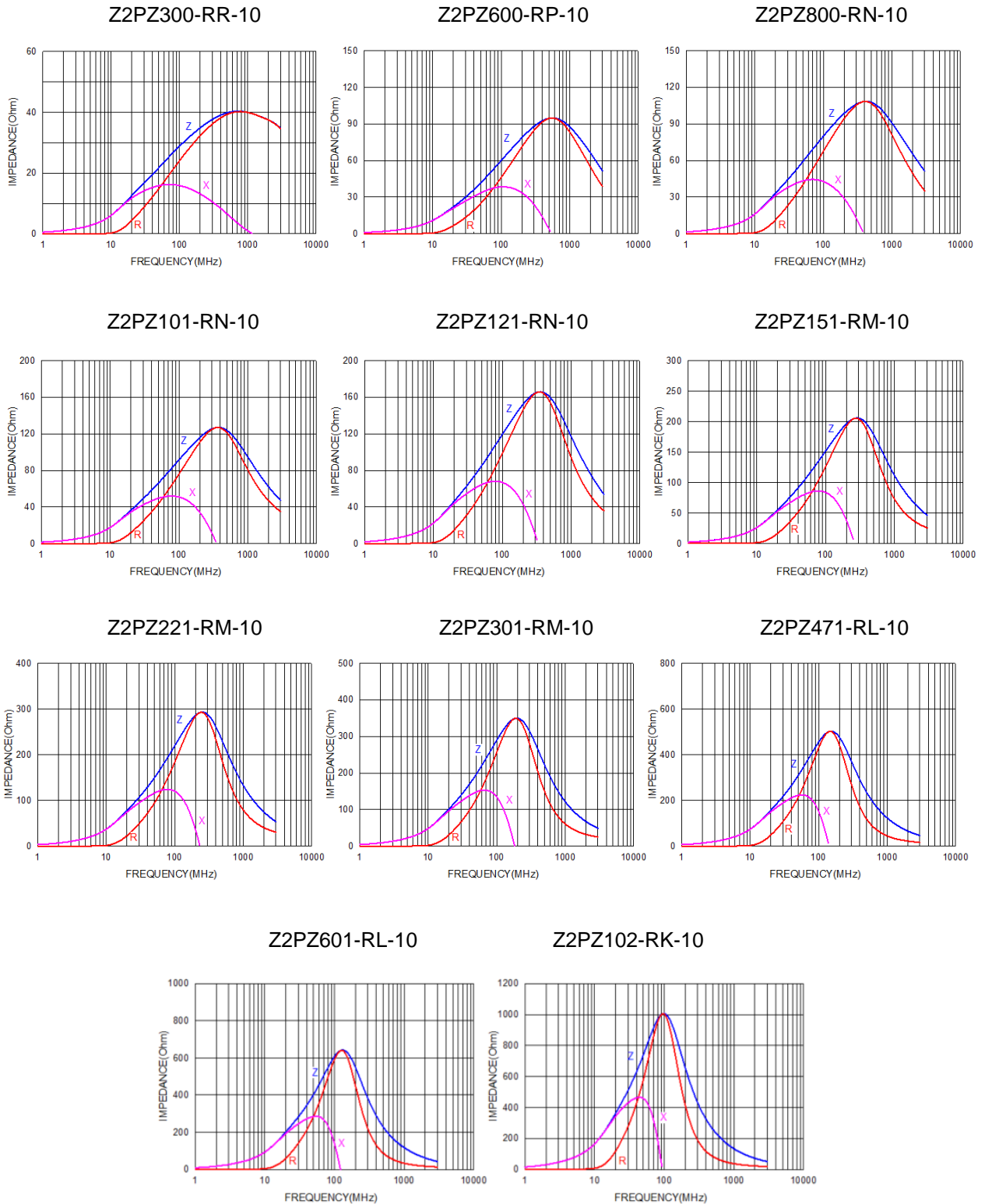
- (a) Operating Temp.: -55°C to +125°C (including self-temperature rise)
- (b) Storage Temp.: -55°C to +125°C (on board)
- (c) Irms: Based on temperature rise  $\Delta T$  40°C Max at rated current  $\geq 1A$
- (d) Storage Condition (Component in its packaging)
  - i) Temperature: Less than 40°C
  - ii) Humidity: 60% RH

## 6. Electrical Characteristics

Part Number	Impedance ( $\Omega$ ) $\pm 25\%$	Test Frequency (MHz)	DC Resistance ( $\Omega$ ) Max	Rated Current (mA) Max
Z2PZ300-RR-10	30	100	0.010	5000
Z2PZ600-RP-10	60	100	0.020	4000
Z2PZ800-RN-10	80	100	0.030	3000
Z2PZ101-RN-10	100	100	0.030	3000
Z2PZ121-RN-10	120	100	0.035	3000
Z2PZ151-RM-10	150	100	0.040	2500
Z2PZ221-RM-10	220	100	0.050	2300
Z2PZ301-RM-10	300	100	0.070	2200
Z2PZ471-RL-10	470	100	0.090	2000
Z2PZ601-RL-10	600	100	0.095	2000
Z2PZ102-RK-10	1000	100	0.150	1500

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

7. Characteristics Curve



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



**8. Soldering**

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**

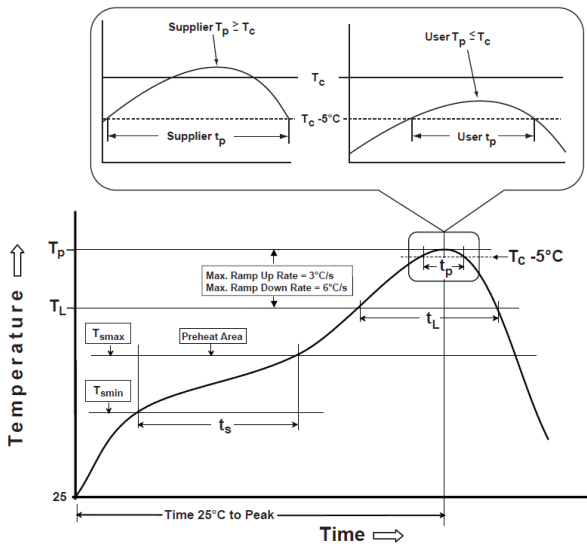
Recommended temperature profiles for lead free re-flow soldering in Figure 1, Table 1.1 & 1.2 (J-STD-020E).

**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).

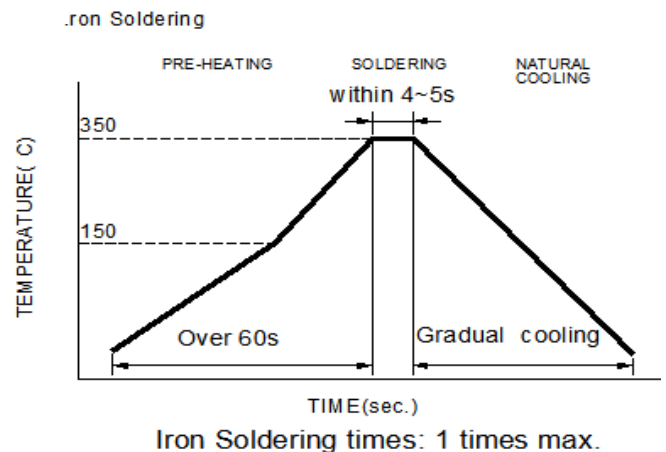
Note:

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



Soldering iron method: 350± 5°C 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 ( $T_{smin}$ )	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.
Liquidus 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>**.

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

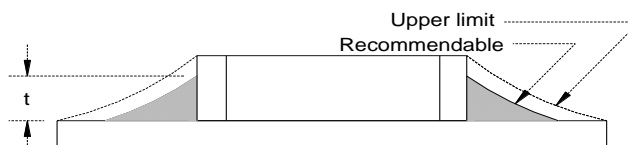
	Package Thickness	Volume mm <sup>3</sup> <350	Volume mm <sup>3</sup> 350-2000	Volume mm <sup>3</sup> >2000
PB-Free Assembly	<1.6mm	260°C	260°C	260°C
	1.6-2.5mm	260°C	250°C	245°C
	≥2.5mm	250°C	245°C	245°C

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

### 8-3 Soldering Volume

Accordingly increasing the solder volume, the mechanical stress to product is also increased.

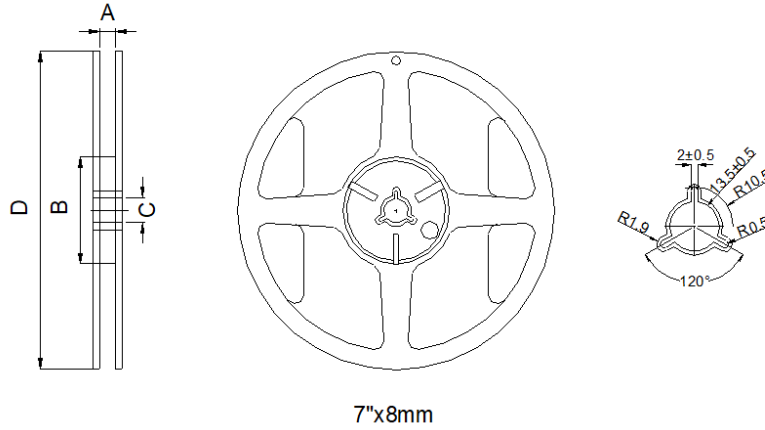
Exceeding solder volume may cause the failure of mechanical or electrical performance. Solder shall be used not to be exceeded as shown in the Figure below. Minimum fillet height = soldering thickness + 25% product height.



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

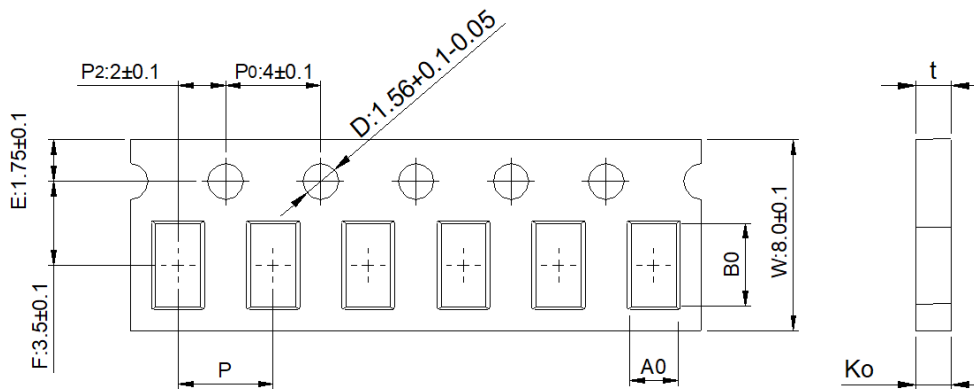
## 9. Packaging Information

### 9-1 Reel Dimension



Type	A(mm)	B(mm)	C(mm)	D(mm)
7"x8mm	9.0±0.5	60±2	13.5±0.5	178±2

### 9-2 Reel Dimension/ 8mm



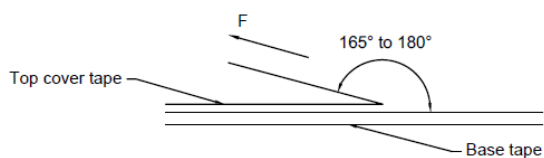
Bo(mm)	Ao(mm)	Ko(mm)	P(mm)	t(mm)
1.80±0.05	0.96+0.05/-0.03	0.95±0.05	4.0±0.10	0.95±0.05

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

## 9-3 Packaging Quantity

Chip / Reel	4,000
Inner box	20,000
Middle box	100,000
Carton	200,000

## 9-4 Tearing Off Force



The force for tearing off cover tape is 15 to 60 grams in the arrow direction under the following conditions.

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.