

1. Part No. Expression

Z 3 2 3 0 2 3 W 5 4 0 0

(a) (b) (c) (d)

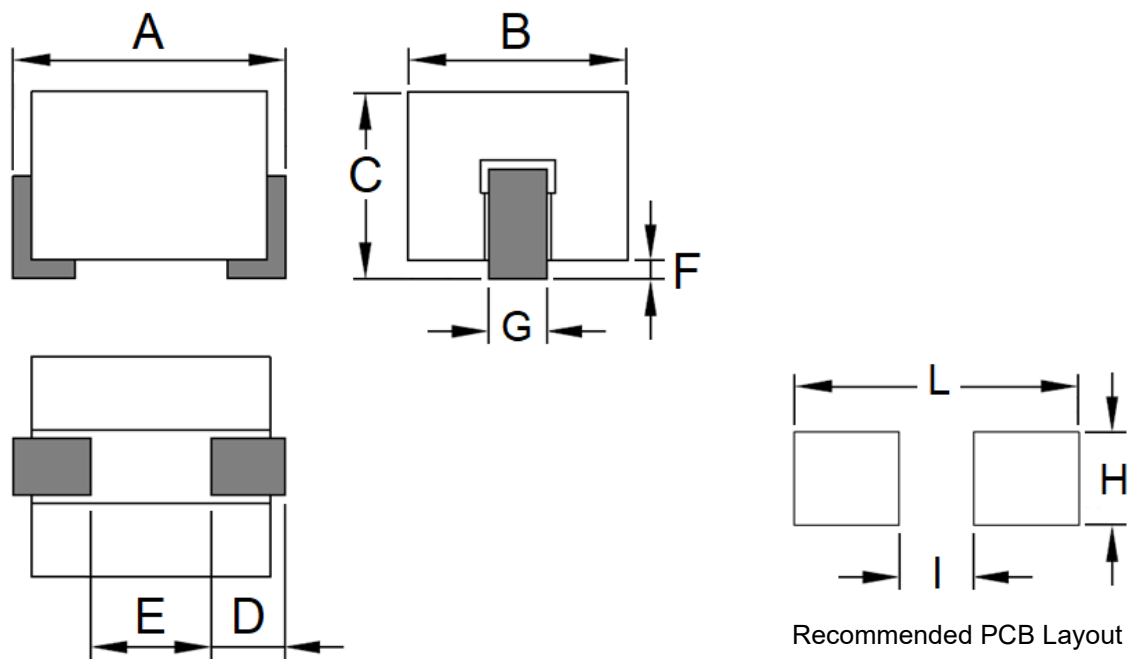
(a) Series Code

(c) Material Code

(b) Dimension Code

(d) Impedance Code

2. Configuration & Dimensions (Unit: mm)

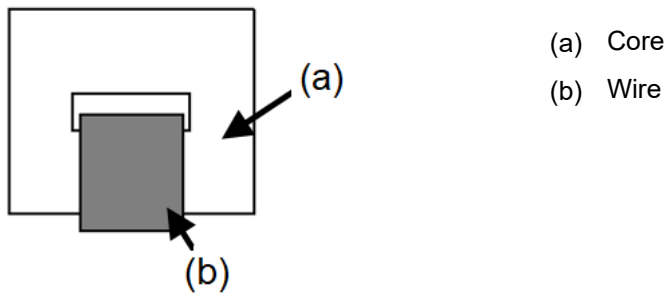


Note: The above PCB layout reference only.

A	B	C	D	E
3.08+0.10/-0.15	2.90±0.10	2.20±0.10	0.80±0.20	1.20 Min
F	G	L	I	H
0.06±0.05	0.85±0.10	3.70 Ref	1.10 Ref	1.10 Ref

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

3. Material List



4. 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 & 60°C.
- (e) Rated Current: The lower value of I_{sat} and I_{rms}.
- (f) Storage Condition (Component in its packaging)
 - i) Temperature: Less than 40°C
 - ii) Humidity: Less than 60% RH

5. Electrical Characteristics

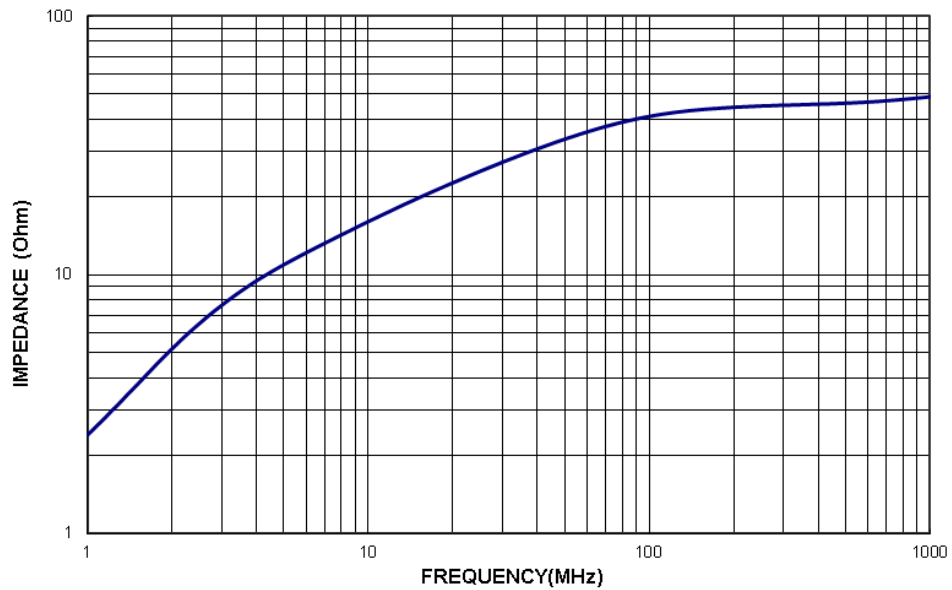
Impedance (Ω) $\pm 25\%$		DCR (m Ω) Max	I _{rms} (A) Typ	
@25MHz	@100MHz		$\Delta T=40^\circ\text{C}$	$\Delta T=60^\circ\text{C}$
23	40	0.60	21.0(1) 15.0(2)	26.0(1) 18.0(2)

Rated Current:

- (1) Chroma high current test fixture.
- (2) PCB test fixture. (30x45mm copper pattern, 50um copper thickness)

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6. Characteristics Curve



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7. 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.

7-1. IR Soldering Reflow

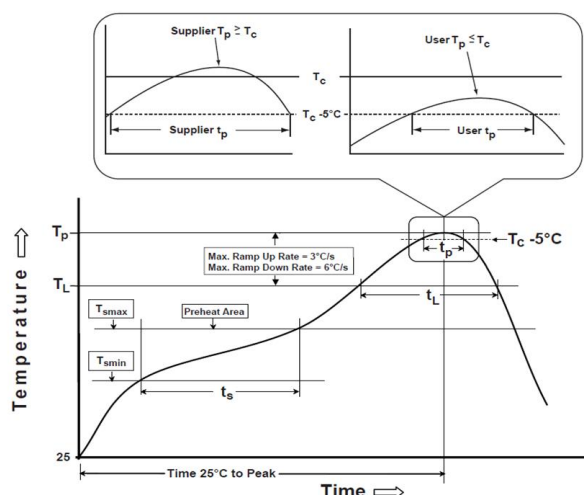
Recommended temperature profiles for lead free re-flow soldering in Figure 1, Table 1.1 & 1.2 (J-STD-020E).

7-2. 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).

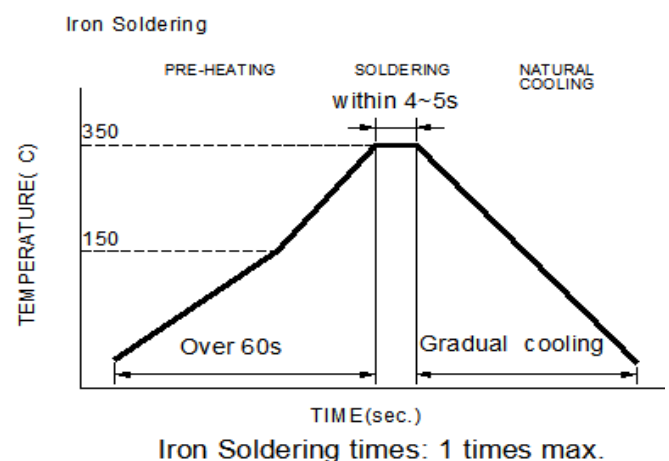
Note:

- 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



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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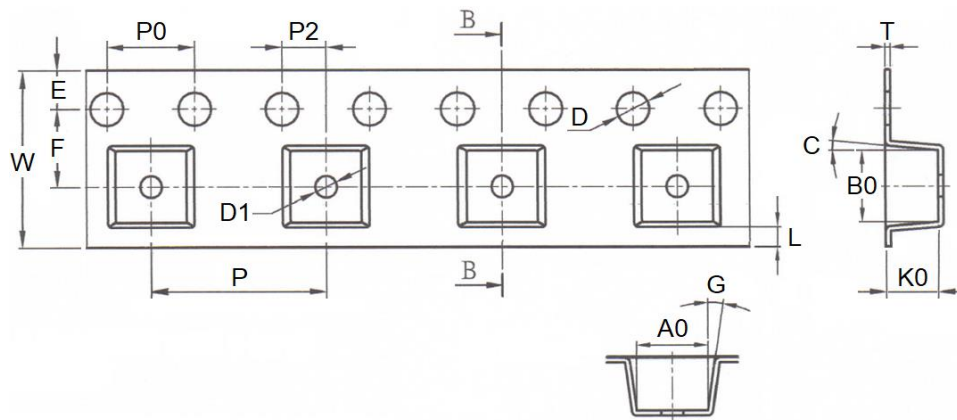
8. Packaging Information

8-1. Reel Dimension (Unit: mm)



Type	A	B	C	D	a
	13.5±0.5	60.0±2.0	13.5±0.5	178.0±2.0	2.0±0.5
7"x12mm	b	c	d	e	f
	13.5±0.5	R10.5	R0.5	120°	R1.9

8-2. Tape Dimension (Unit: mm)



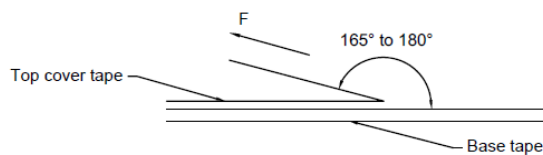
W	P	E	F	P2	D
12.0000±0.1000	8.0000±0.1000	1.7500±0.1000	5.5000±0.0500	2.0000±0.0500	1.5000+0.1000/-0.0000
D1	P0	A0	B0	K0	T
1.5000±0.1000	4.0000±0.1000	3.5000±0.1000	3.3500±0.1000	2.4000±0.1000	0.3000±0.0500
10 P0	L	G	C	-	-
40.0000±0.2000	0.9063	8°	5°	-	-

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8-3. Packaging Quantity (Unit: Pcs)

Chip/ Reel	1,000
Inner Box	4,000
Middle Box	20,000
Carton	40,000

8-4. 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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