

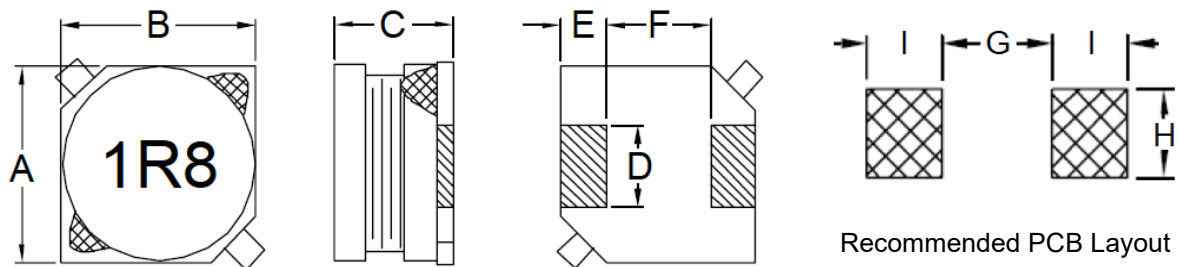
1. Part No. Expression

P S B 1 0 0 4 1 R 8 M Z F

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

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

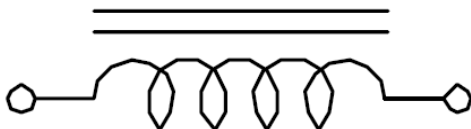
2. Configuration & Dimensions (Unit: mm)



- Note: 1. The above PCB layout reference only.
2. Marking: Inductance Code

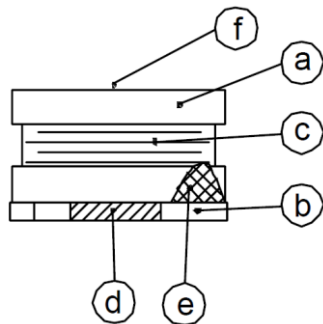
A	B	C	D	E
10.0±0.3	10.0±0.3	4.6±0.3	2.4±0.2	2.0±0.2
F	G	H	I	-
6.0±0.2	5.7 Ref	2.8 Ref	2.5 Ref	-

3. Schematic



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

4. Material List



- (a) Core
- (b) Base
- (c) Wire
- (d) Terminal
- (e) Adhesive
- (f) Ink

5. General Specifications

- (a) Operating Temp.: -40°C to +85°C (including self-temperature rise)
- (b) All test data referenced to 25°C ambient.
- (c) Heat Rated Current (Irms) will cause the coil temperature rise ΔT of 40°C Max.
- (d) Saturation Current (Isat) will cause inductance L0 to drop 10% Max.
- (e) Rated Current: The lower value of Isat and Irms.
- (f) Resistance to solder heat: 260° C.10 secs
- (g) Storage Condition (Component in its packaging)
 - i) Temperature: -10°C to 40°C
 - ii) Humidity: Less than 60% RH

6. Electrical Characteristics

Part Number	Inductance (uH) @0A	Test Frequency	DCR (mΩ) Max	IDC (A) Max
PSB10041R8MZF	1.8	1V/100KHz	23	5.50
PSB10042R7MZF	2.7	1V/100KHz	25	5.00
PSB10043R9MZF	3.9	1V/100KHz	30	4.50
PSB10044R7MZF	4.7	1V/100KHz	35	4.00
PSB10046R8MZF	6.8	1V/100KHz	40	3.80

Tolerance Code: K=±10%, L=±15%, M=±20%

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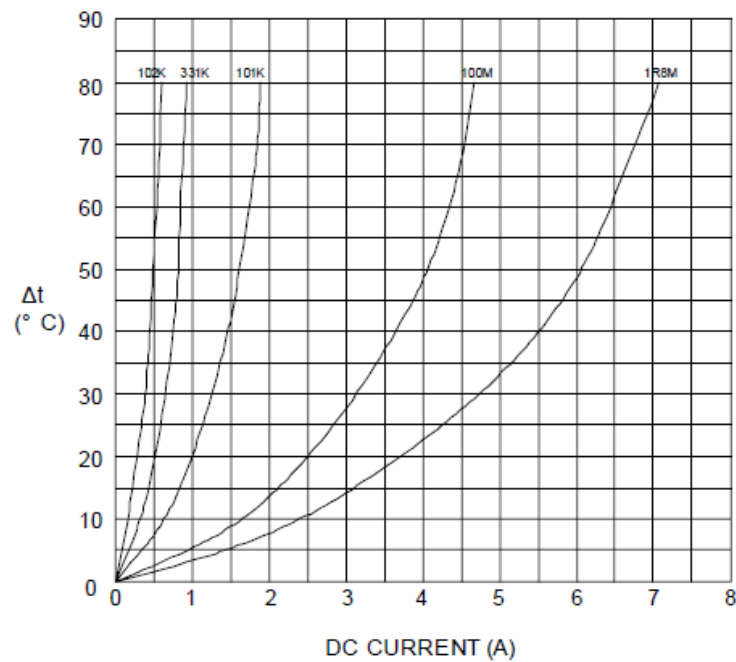
Part Number	Inductance (uH) @0A	Test Frequency	DCR (mΩ) Max	IDC (A) Max
PSB1004100MZF	10.0	1V/100KHz	50	3.30
PSB1004120MZF	12.0	1V/100KHz	55	3.20
PSB1004150MZF	15.0	1V/100KHz	65	3.00
PSB1004180LZF	18.0	1V/100KHz	70	2.70
PSB1004220LZF	22.0	1V/100KHz	80	2.60
PSB1004270LZF	27.0	1V/100KHz	90	2.40
PSB1004330LZF	33.0	1V/100KHz	110	2.00
PSB1004390LZF	39.0	1V/100KHz	120	1.90
PSB1004470LZF	47.0	1V/100KHz	130	1.80
PSB1004560LZF	56.0	1V/100KHz	180	1.60
PSB1004680LZF	68.0	1V/100KHz	210	1.40
PSB1004820LZF	82.0	1V/100KHz	240	1.30
PSB1004101KZF	100.0	1V/100KHz	290	1.20
PSB1004121KZF	120.0	1V/100KHz	340	1.10
PSB1004151KZF	150.0	1V/100KHz	470	1.00
PSB1004181KZF	180.0	1V/100KHz	530	0.90
PSB1004221KZF	220.0	1V/100KHz	730	0.80
PSB1004271KZF	270.0	1V/100KHz	830	0.70
PSB1004331KZF	330.0	1V/100KHz	990	0.65
PSB1004391KZF	390.0	1V/100KHz	1100	0.60
PSB1004471KZF	470.0	1V/100KHz	1250	0.55
PSB1004561KZF	560.0	1V/100KHz	1600	0.50
PSB1004681KZF	680.0	1V/100KHz	1800	0.45
PSB1004821KZF	820.0	1V/100KHz	2060	0.40
PSB1004102KZF	1000.0	1V/100KHz	2800	0.38

Tolerance Code: K=±10%, L=±15%, M=±20%

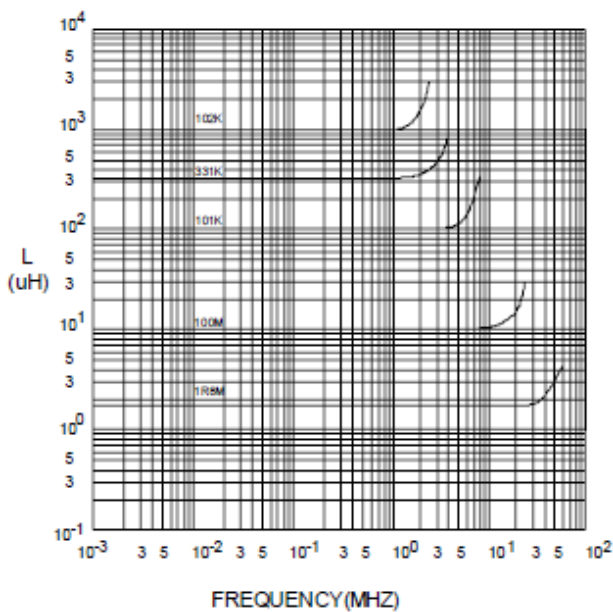
NOTE: Specifications subject to change without notice. Please check our website for latest information.

7. Characteristics Curves

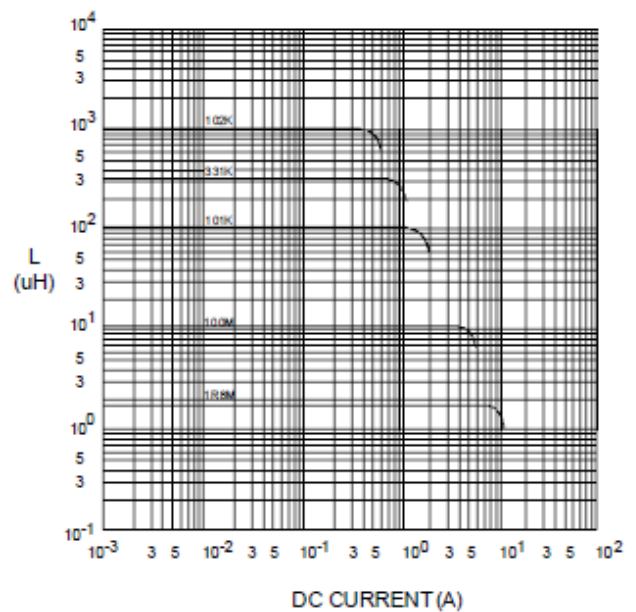
@ TEMP. RISE VS. DC SUPERPOSITION RESPONSE CURVE



@ INDUCTANCE VS. FREQUENCY RESPONSE CURVE



@ INDUCTANCE VS. DC SUPERPOSITION RESPONSE 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

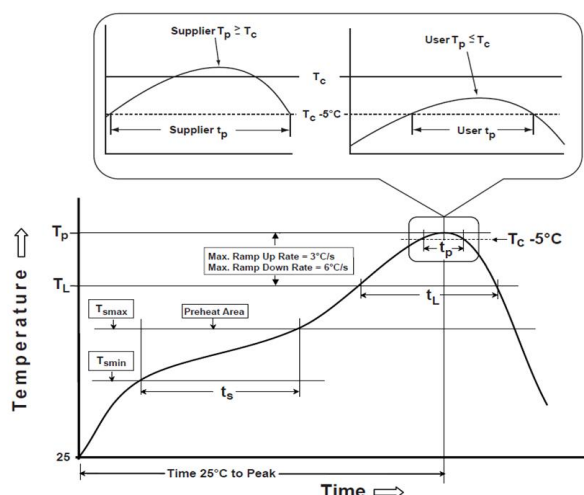
Recommended temperature profiles for lead free re-flow soldering in Figure 1, Table 1.1 & 1.2 (J-STD-020E).

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).

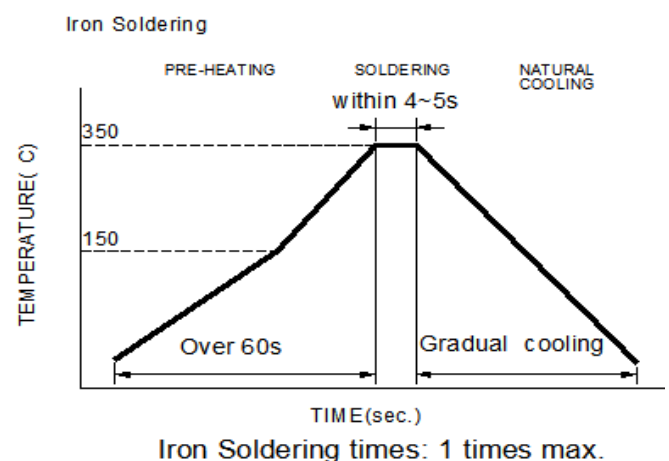
Note:

- 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

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_{min})	150°C
-Temperature Max (T_{max})	200°C
-Time (t_s) from (T_{min} to T_{max})	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)

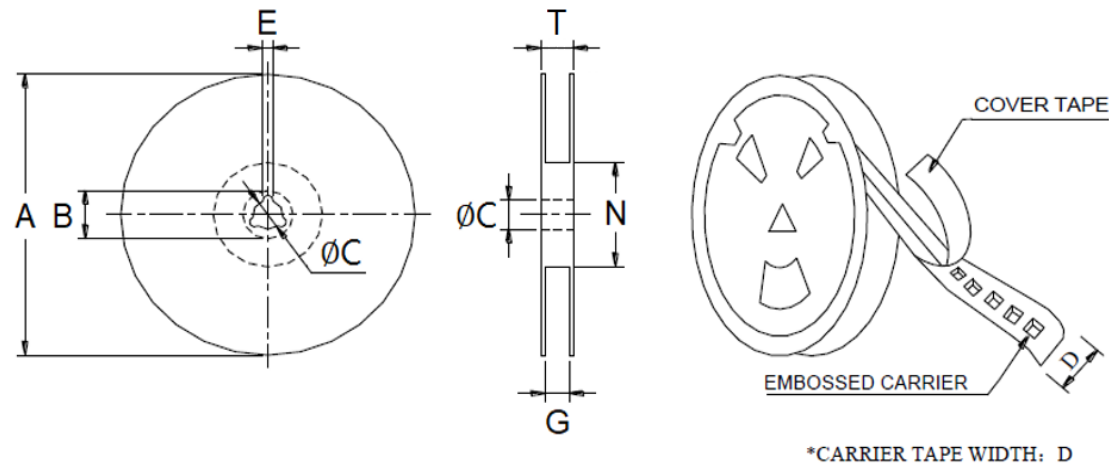
	Package Thickness	Volume mm ³ <350	Volume mm ³ 350-2000	Volume mm ³ >2000
PB-Free Assembly	<1.6mm	260°C	260°C	260°C
	1.6-2.5mm	260°C	250°C	245°C
	≥2.5mm	250°C	245°C	245°C

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

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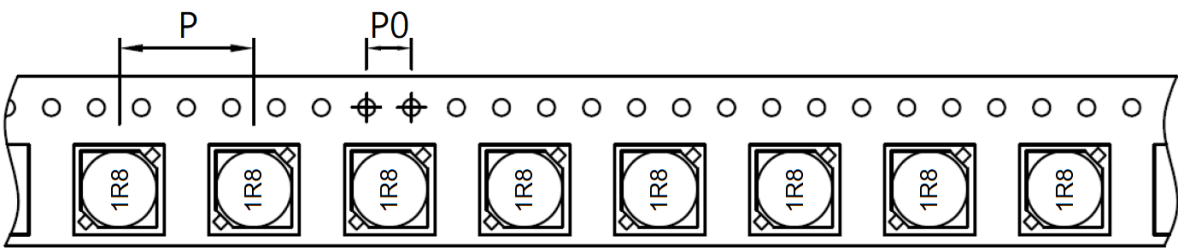
9. Packaging Information

9-1. Reel Dimension (Unit: mm)



Type	A	B	C	D
	330.0 Ref	21.0 Ref	13.0 Ref	24.0 Ref
13"x24	E	G	N	T
	2.0 Ref	26.0 Max	50.0 Min	30.4 Ref

9-2. Tape Dimension (Unit: mm)



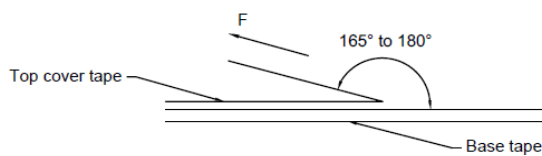
P	P0
16	4

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9-3. Packaging Type

Inner/Reel			Outer Carton		
Q'TY(PCS)	G.W. (gw)	STYLE	Q'TY(PCS)	G.W. (Kg)	SIZE (cm)
600	900	13-24	2,400	7.1	40 x 40 x 24

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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