

1. Part No. Expression

P S B 0 6 0 5 1 R 2 M Z F
(a) (b) (c) (d) (e) (f)

- (a) Series Code

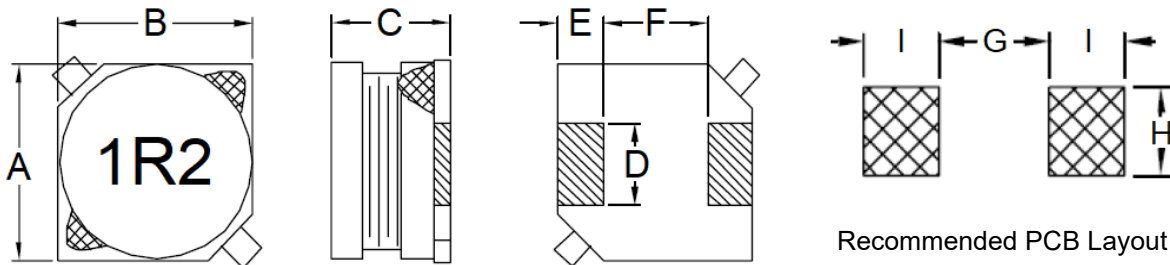
(b) Dimension Code

(c) Inductance Code
- (d) Tolerance Code

(e) Special Code

(f) Packaging Code

2. Configuration & Dimensions (Unit: mm)



- Note:
1. The above PCB layout reference only.

2. Marking: Inductance Code

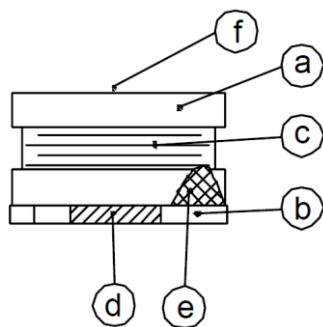
A	B	C	D	E
6.0±0.3	6.0±0.3	4.9±0.3	2.0±0.2	1.5±0.2
F	G	H	I	-
3.0±0.2	2.8 Ref	2.2 Ref	1.9 Ref	-

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
PSB06051R2MZF	1.2	1V/100KHz	28	3.50
PSB06051R5MZF	1.5	1V/100KHz	30	3.00
PSB06052R2MZF	2.2	1V/100KHz	35	2.70
PSB06053R3MZF	3.3	1V/100KHz	42	2.50
PSB06054R7MZF	4.7	1V/100KHz	50	2.20

Tolerance Code: K=±10%, M=±20%

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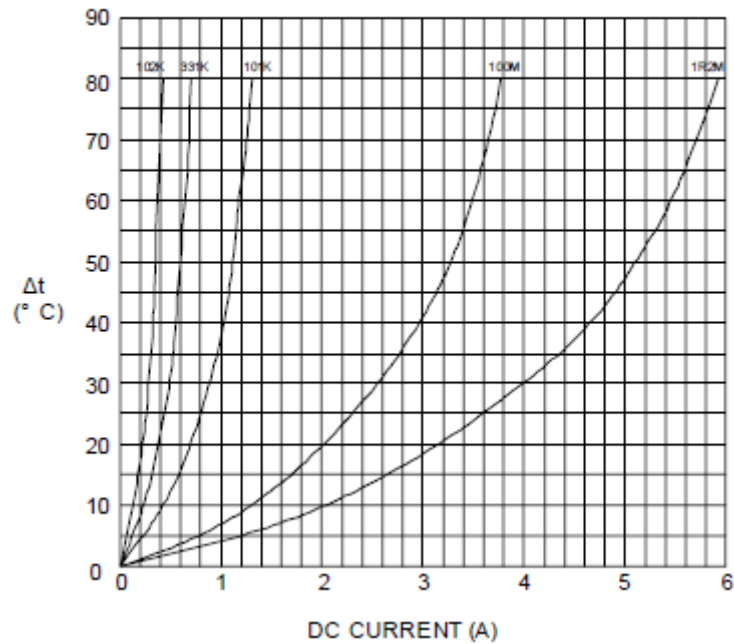
Part Number	Inductance (uH) @0A	Test Frequency	DCR (mΩ) Max	IDC (A) Max
PSB06056R8MZF	6.8	1V/100KHz	60	2.00
PSB0605100MZF	10.0	1V/100KHz	70	1.80
PSB0605120MZF	12.0	1V/100KHz	80	1.60
PSB0605150MZF	15.0	1V/100KHz	90	1.50
PSB0605180MZF	18.0	1V/100KHz	95	1.30
PSB0605220MZF	22.0	1V/100KHz	110	1.20
PSB0605270MZF	27.0	1V/100KHz	130	1.10
PSB0605330KZF	33.0	1V/100KHz	180	1.00
PSB0605390KZF	39.0	1V/100KHz	210	0.90
PSB0605470KZF	47.0	1V/100KHz	220	0.80
PSB0605560KZF	56.0	1V/100KHz	250	0.75
PSB0605680KZF	68.0	1V/100KHz	300	0.70
PSB0605820KZF	82.0	1V/100KHz	390	0.60
PSB0605101KZF	100.0	1V/100KHz	430	0.55
PSB0605121KZF	120.0	1V/100KHz	500	0.50
PSB0605151KZF	150.0	1V/100KHz	620	0.45
PSB0605181KZF	180.0	1V/100KHz	690	0.40
PSB0605221KZF	220.0	1V/100KHz	890	0.38
PSB0605271KZF	270.0	1V/100KHz	1000	0.35
PSB0605331KZF	330.0	1V/100KHz	1400	0.32
PSB0605391KZF	390.0	1V/100KHz	1500	0.30
PSB0605471KZF	470.0	1V/100KHz	2000	0.28
PSB0605561KZF	560.0	1V/100KHz	2300	0.25
PSB0605681KZF	680.0	1V/100KHz	3200	0.20
PSB0605821KZF	820.0	1V/100KHz	3500	0.18
PSB0605102KZF	1000.0	1V/100KHz	4100	0.16

Tolerance Code: K=±10%, M=±20%

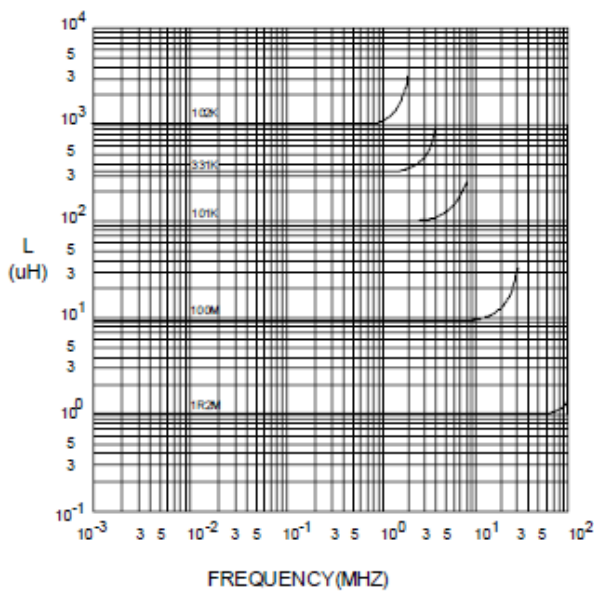
NOTE: Specifications subject to change without notice. Please check our website for latest information.

7. Characteristics Curves

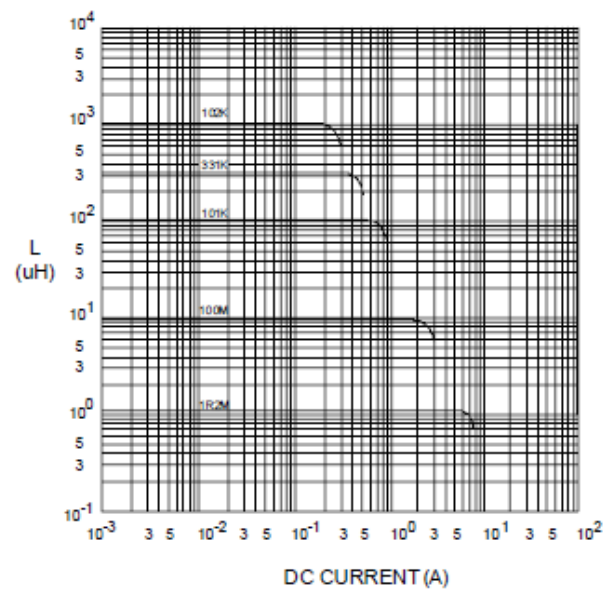
@ TEMP. RISE VS. DC SUPERPOSITION RESPONSE CURVE



@ 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

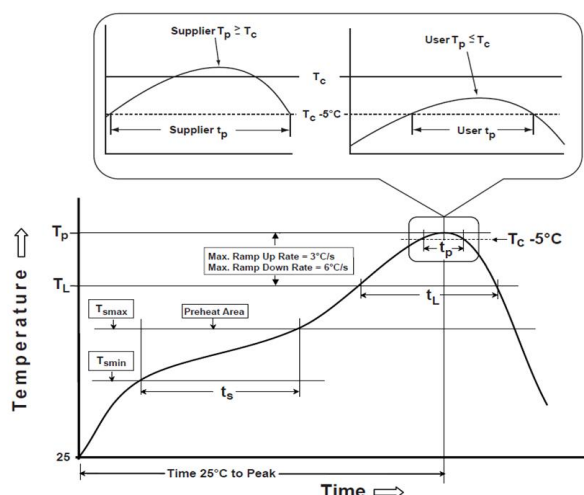
Recommended temperature profiles for lead free re-flow soldering in Figure 1, Table 1.1 & 1.2 (J-STD-020E).

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).

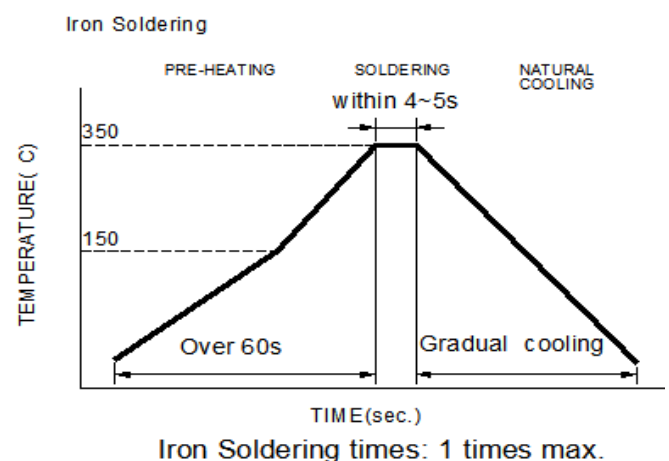
Note:

- 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

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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)

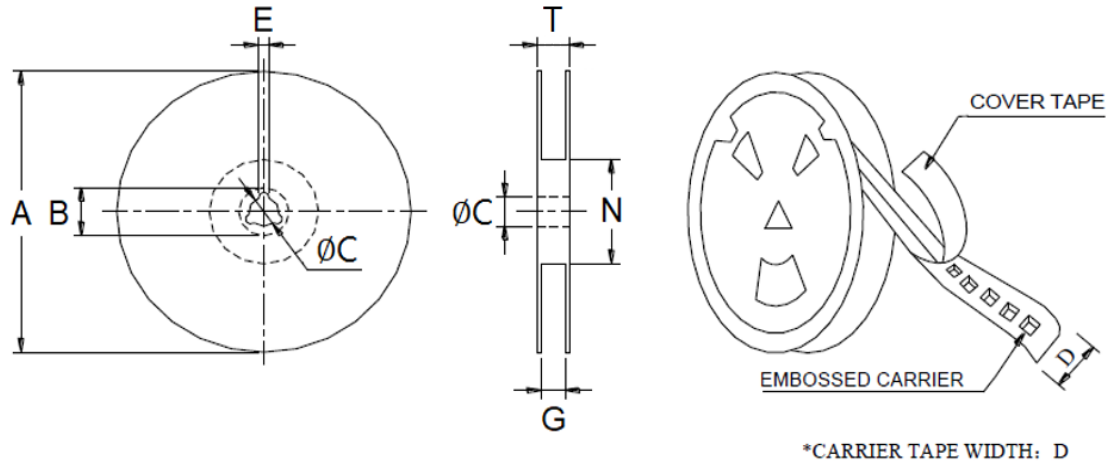
	Package Thickness	Volume mm ³ <350	Volume mm ³ 350-2000	Volume mm ³ >2000
PB-Free Assembly	<1.6mm	260°C	260°C	260°C
	1.6-2.5mm	260°C	250°C	245°C
	≥2.5mm	250°C	245°C	245°C

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

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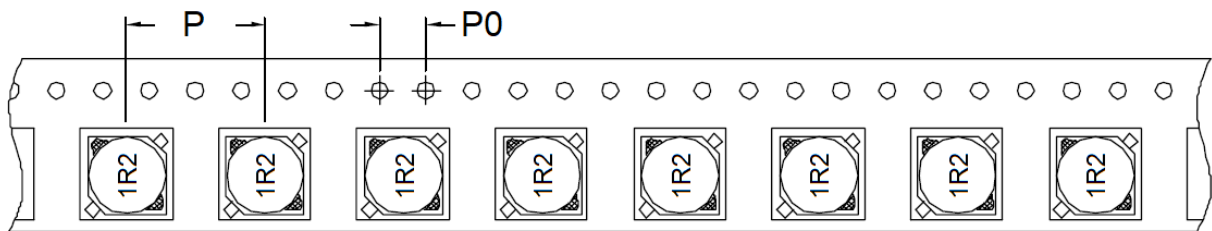
9. Packaging Information

9-1. Reel Dimension (Unit: mm)



Type	A	B	C	D
	330.0 Ref	21.0 Ref	13.0 Ref	16.0 Ref
13"x16	E	G	N	T
	2.0 Ref	18.0 Max	50.0 Min	22.4 Ref

9-2. Tape Dimension (Unit: mm)



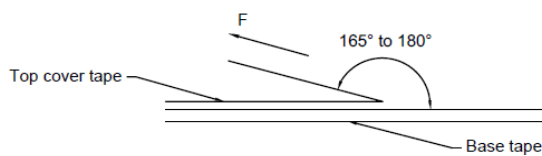
P	P0
12	4

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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)
1,000	700	13-16	6,000	7.7	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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