

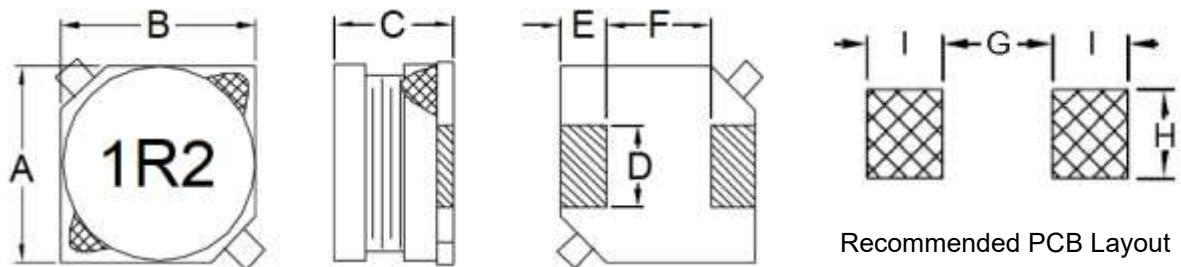
1. Part No. Expression

P S B 0 6 0 4 1 R 2 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 |

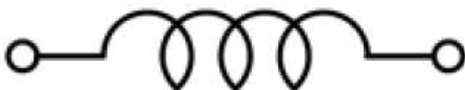
2. Configuration & Dimensions (Unit: mm)



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

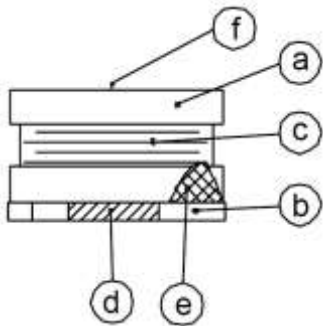
A	B	C	D	E
6.0±0.3	6.0±0.3	3.9±0.3	2.0±0.2	1.5±0.2
F	G	H	I	-
3.0±0.2	2.8 Ref	2.2 Ref	1.9 Ref	-

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 (I_{rms}) will cause the coil temperature rise ΔT of 40°C Max.
- (d) Saturation Current (I_{sat}) will cause inductance L₀ to drop 10% Max.
- (e) Rated Current: The lower value of I_{sat} and I_{rms}.
- (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
PSB06041R2MZF	1.2	1V/100KHz	25	3.00
PSB06041R8MZF	1.8	1V/100KHz	30	2.85
PSB06042R2MZF	2.2	1V/100KHz	35	2.65
PSB06043R3MZF	3.3	1V/100KHz	40	2.35
PSB06044R7MZF	4.7	1V/100KHz	45	2.15

Tolerance Code: K=±10%, M=±20%

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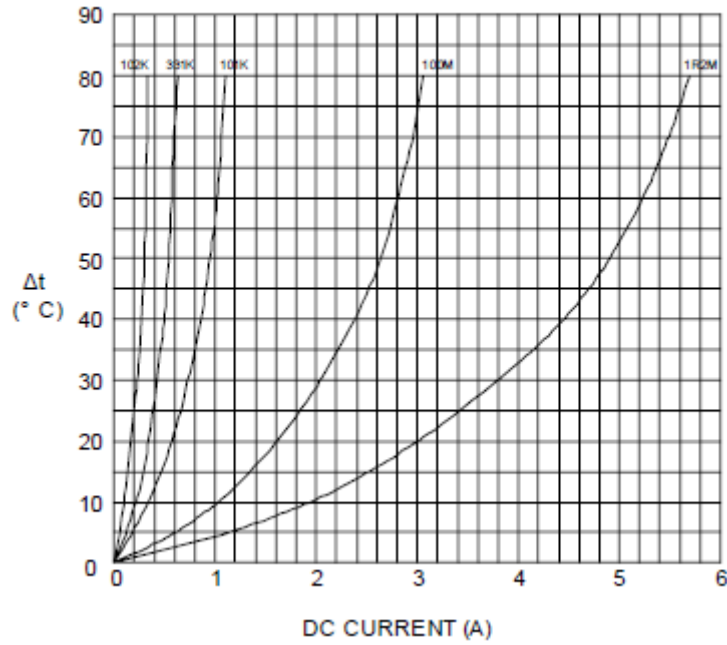
Part Number	Inductance (uH) @0A	Test Frequency	DCR (mΩ) Max	IDC (A) Max
PSB06046R8MZF	6.8	1V/100KHz	60	1.85
PSB0604100MZF	10.0	1V/100KHz	85	1.60
PSB0604120MZF	12.0	1V/100KHz	90	1.50
PSB0604150MZF	15.0	1V/100KHz	110	1.45
PSB0604180MZF	18.0	1V/100KHz	120	1.30
PSB0604220MZF	22.0	1V/100KHz	160	1.25
PSB0604270MZF	27.0	1V/100KHz	190	1.10
PSB0604330KZF	33.0	1V/100KHz	280	1.00
PSB0604390KZF	39.0	1V/100KHz	300	0.90
PSB0604470KZF	47.0	1V/100KHz	330	0.85
PSB0604560KZF	56.0	1V/100KHz	410	0.80
PSB0604680KZF	68.0	1V/100KHz	450	0.70
PSB0604820KZF	82.0	1V/100KHz	600	0.60
PSB0604101KZF	100.0	1V/100KHz	660	0.55
PSB0604121KZF	120.0	1V/100KHz	720	0.50
PSB0604151KZF	150.0	1V/100KHz	1050	0.45
PSB0604181KZF	180.0	1V/100KHz	1150	0.40
PSB0604221KZF	220.0	1V/100KHz	1250	0.35
PSB0604271KZF	270.0	1V/100KHz	1800	0.30
PSB0604331KZF	330.0	1V/100KHz	1950	0.28
PSB0604391KZF	390.0	1V/100KHz	2780	0.25
PSB0604471KZF	470.0	1V/100KHz	2980	0.23
PSB0604561KZF	560.0	1V/100KHz	3300	0.21
PSB0604681KZF	680.0	1V/100KHz	5100	0.20
PSB0604821KZF	820.0	1V/100KHz	5400	0.18
PSB0604102KZF	1000.0	1V/100KHz	6000	0.16

Tolerance Code: K=±10%, M=±20%

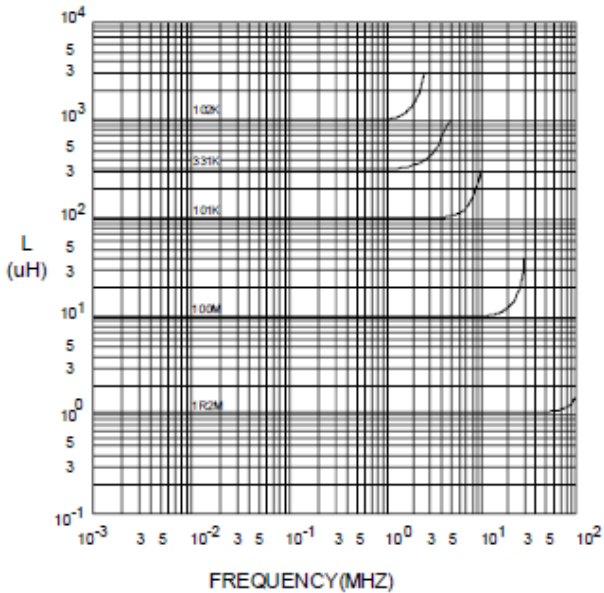
NOTE: Specifications subject to change without notice. Please check our website for latest information.

7. Characteristics Curves

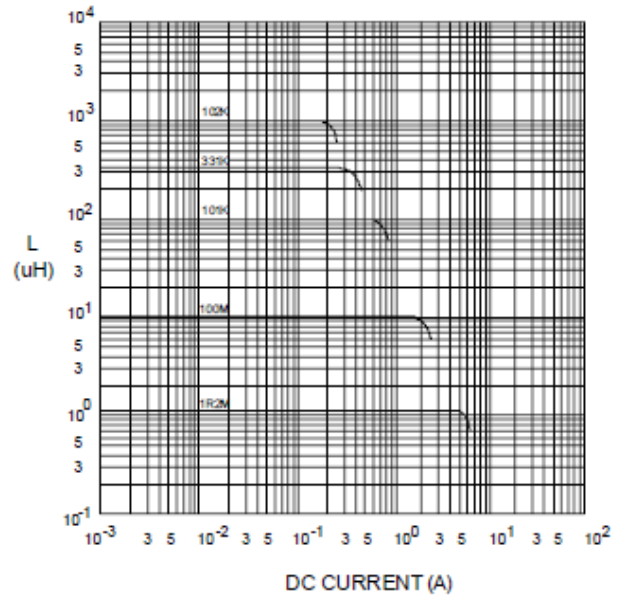
@ TEMP. RISE VS. DC SUPERPOSITION RESPONSE CURVE



@ 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-020F).

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).

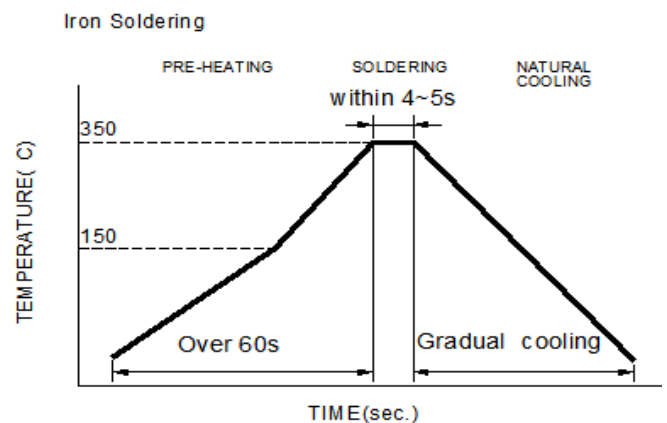
Note:

- (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



Iron Soldering times : 1 times 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**.

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-020F.

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.

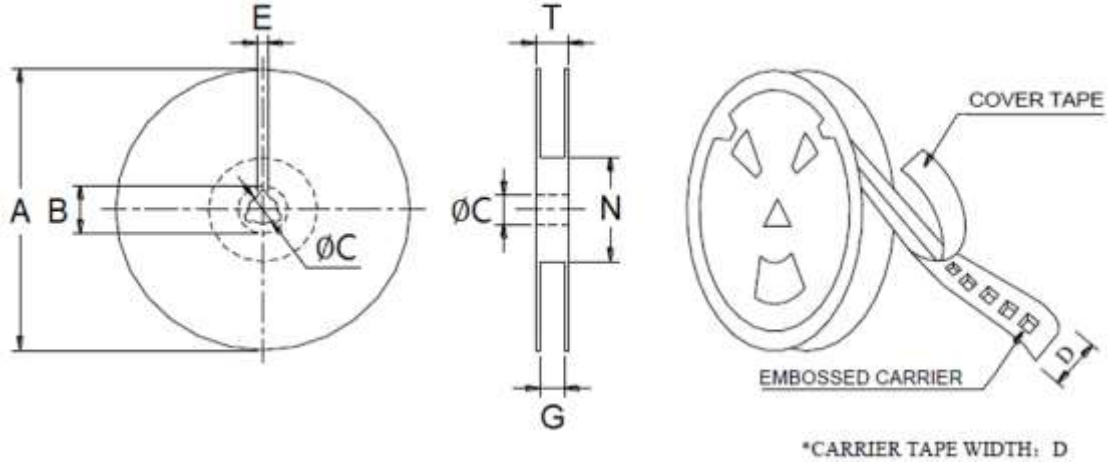
Minimum fillet height = soldering thickness + 25% product height.



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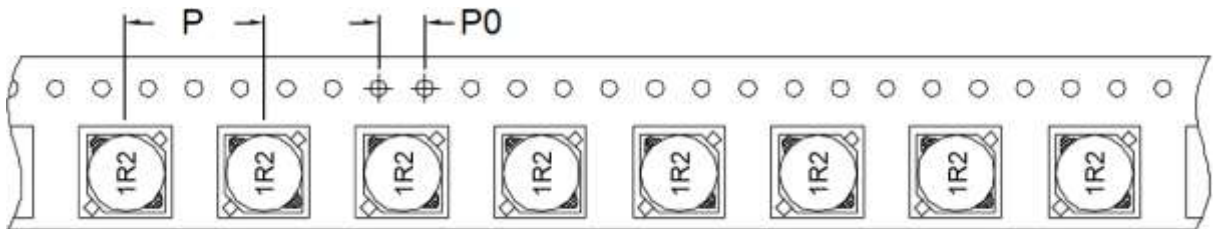
9. Packaging Information

9-1. Reel Dimension (Unit: mm)



Type	A	B	C	D
	330.0 Ref	21.0 Ref	13.0 Ref	16.0 Ref
13"x16mm	E	G	N	T
	2.0 Ref	18.0 Max	50.0 Min	22.4 Ref

9-2. Tape Dimension (Unit: mm)



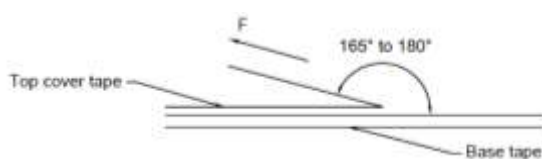
P	P0
12	4

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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	580	13-16	6,000	7.0	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)	Tape Size	8 mm	12 to 56 mm	72 mm or Wider
5~35	45~85	860~1060	300±10	Tearing Off Force (grams)	10~100	10~130	10~150

Application Notice

1. Storage Conditions

To maintain the solderability of terminal electrodes:

- (a) Products meet IPC/JEDEC J-STD-020F standard-MSL, level 1.
- (b) Recommended products should be used within 12 months from the time of delivery.
- (c) 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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