

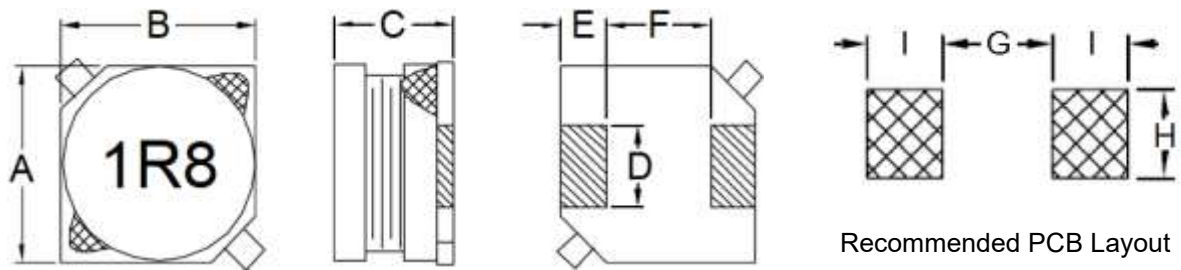
1. Part No. Expression

PSB10041R8MZF

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

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

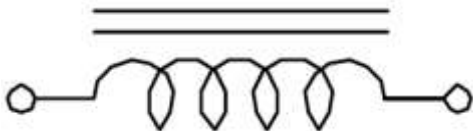
2. Configuration & Dimensions (Unit: mm)



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

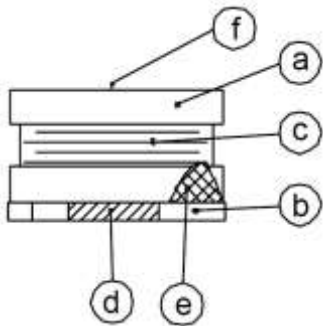
A	B	C	D	E
10.0±0.3	10.0±0.3	4.6±0.3	2.4±0.2	2.0±0.2
F	G	H	I	-
6.0±0.2	5.7 Ref	2.8 Ref	2.5 Ref	-

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 (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
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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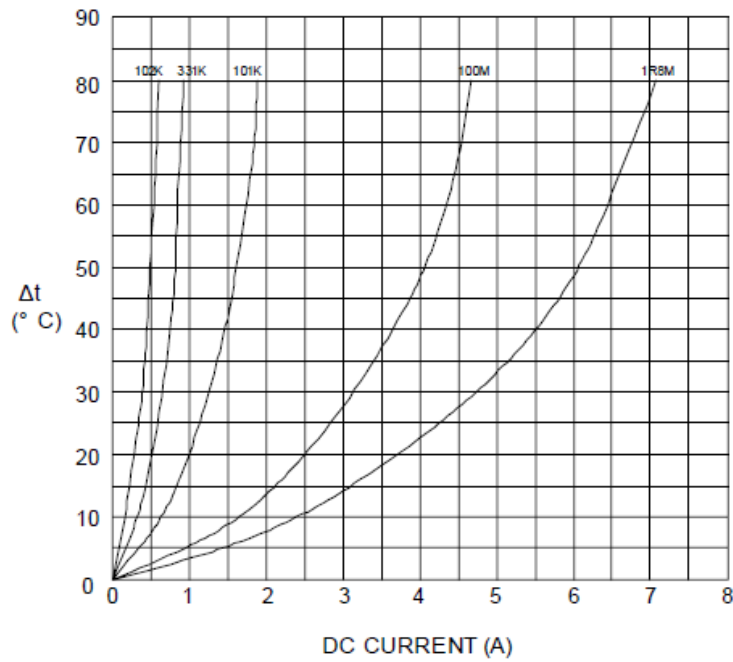
Part Number	Inductance (uH) @0A	Test Frequency	DCR (mΩ) Max	IDC (A) Max
PSB1004100MZF	10.0	1V/100KHz	50	3.30
PSB1004120MZF	12.0	1V/100KHz	55	3.20
PSB1004150MZF	15.0	1V/100KHz	65	3.00
PSB1004180LZF	18.0	1V/100KHz	70	2.70
PSB1004220LZF	22.0	1V/100KHz	80	2.60
PSB1004270LZF	27.0	1V/100KHz	90	2.40
PSB1004330LZF	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%

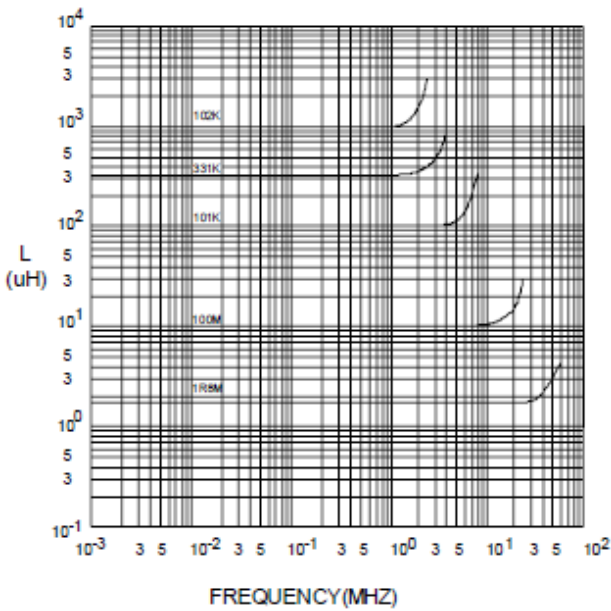
NOTE: Specifications subject to change without notice. Please check our website for latest information.

7. Characteristics Curves

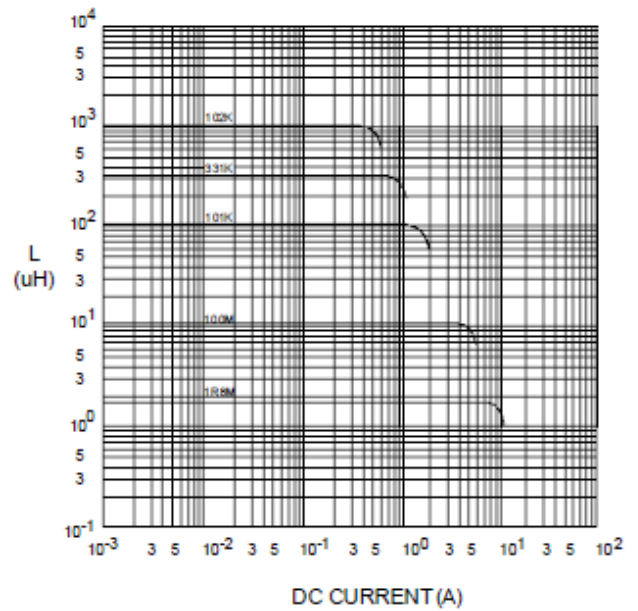
@ TEMP. RISE VS. DC SUPERPOSITION RESPONSE CURVE



@ 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-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).

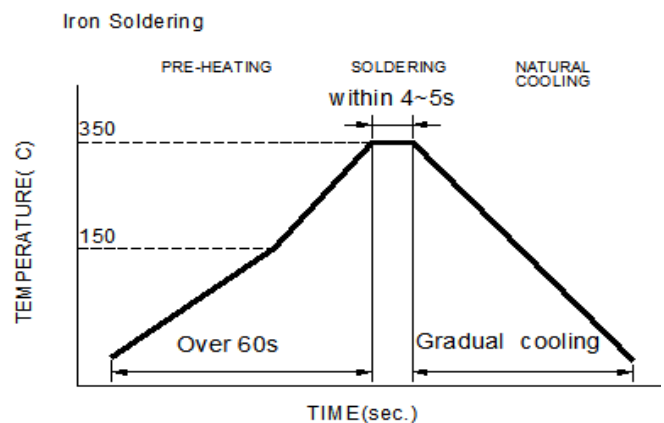
Note:

- (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.

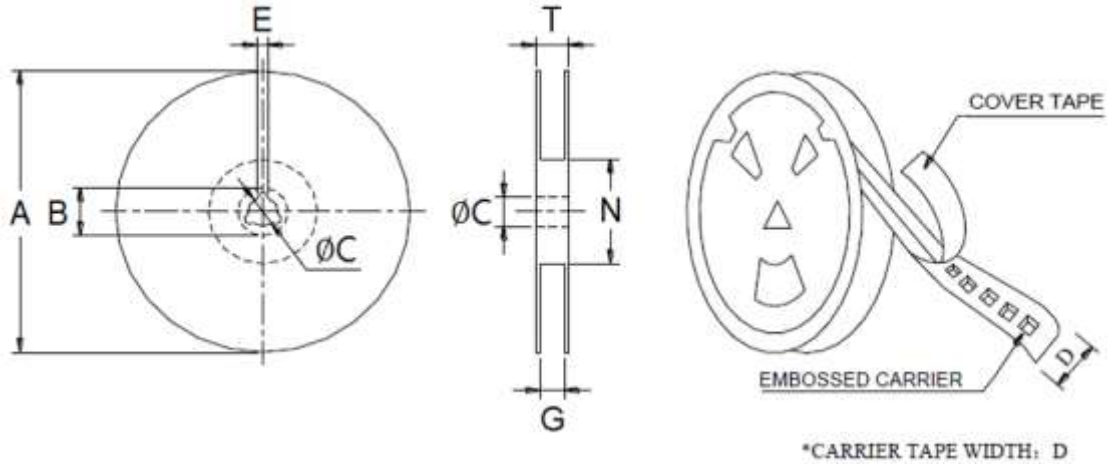
Minimum fillet height = soldering thickness + 25% product height.



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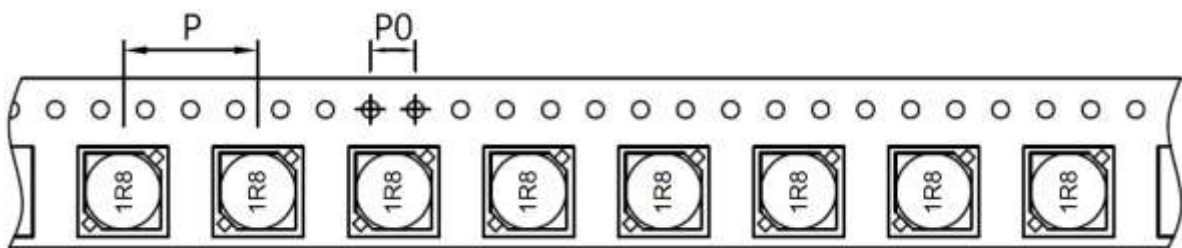
9. Packaging Information

9-1. Reel Dimension (Unit: mm)



Type	A	B	C	D
	330.0 Ref	21.0 Ref	13.0 Ref	24.0 Ref
13"x24mm	E	G	N	T
	2.0 Ref	26.0 Max	50.0 Min	30.4 Ref

9-2. Tape Dimension (Unit: mm)



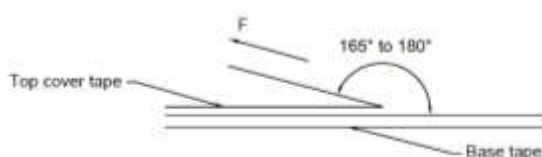
P	P0
16	4

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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)	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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