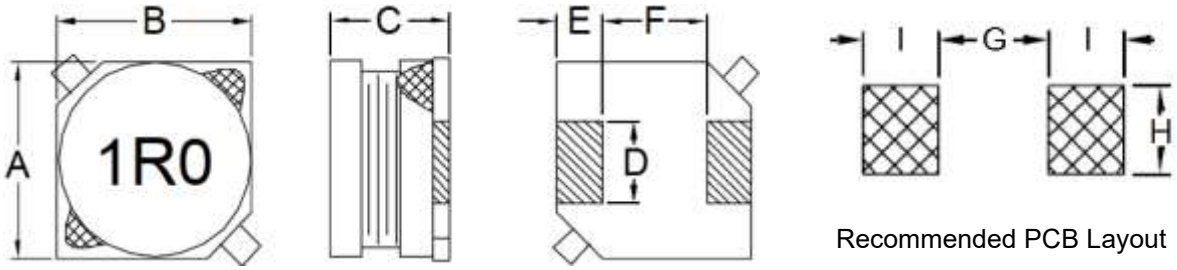
1. Part No. Expression

P S B 0 7 0 3 1 R 0 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)



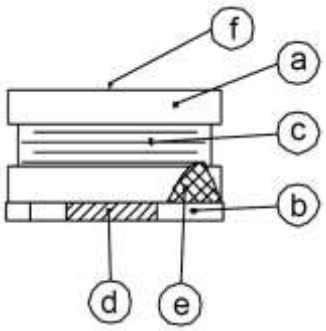
Recommended PCB Layout

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

A	B	C	D	E
7.0±0.3	7.0±0.3	3.0±0.3	2.0±0.2	1.5±0.2
F	G	H	I	-
4.0±0.2	3.7 Ref	2.2 Ref	1.9 Ref	-

3. Schematic

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
PSB07031R0MZF	1.0	1V/100KHz	20	3.20
PSB07031R5MZF	1.5	1V/100KHz	25	2.80
PSB07032R2MZF	2.2	1V/100KHz	35	2.50
PSB07033R3MZF	3.3	1V/100KHz	40	2.20
PSB07034R7MZF	4.7	1V/100KHz	45	2.00

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

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

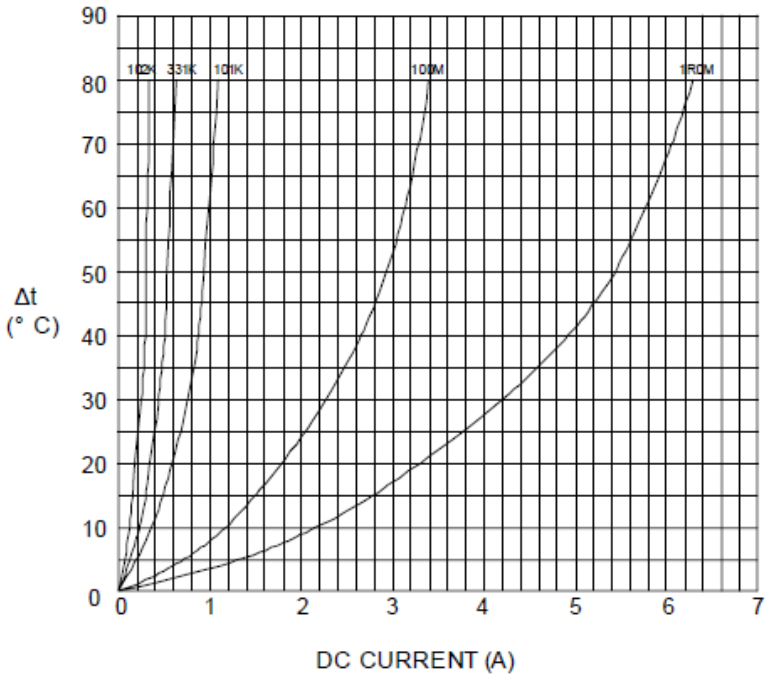
Part Number	Inductance (uH) @0A	Test Frequency	DCR (mΩ) Max	IDC (A) Max
PSB07036R8MZF	6.8	1V/100KHz	60	1.60
PSB0703100MZF	10.0	1V/100KHz	80	1.40
PSB0703120MZF	12.0	1V/100KHz	85	1.30
PSB0703150LZF	15.0	1V/100KHz	110	1.10
PSB0703180LZF	18.0	1V/100KHz	130	1.05
PSB0703220LZF	22.0	1V/100KHz	150	1.00
PSB0703270LZF	27.0	1V/100KHz	190	0.95
PSB0703330LZF	33.0	1V/100KHz	210	0.85
PSB0703390LZF	39.0	1V/100KHz	270	0.75
PSB0703470LZF	47.0	1V/100KHz	310	0.70
PSB0703560KZF	56.0	1V/100KHz	390	0.65
PSB0703680KZF	68.0	1V/100KHz	430	0.60
PSB0703820KZF	82.0	1V/100KHz	490	0.50
PSB0703101KZF	100.0	1V/100KHz	650	0.45
PSB0703121KZF	120.0	1V/100KHz	700	0.40
PSB0703151KZF	150.0	1V/100KHz	850	0.35
PSB0703181KZF	180.0	1V/100KHz	1100	0.33
PSB0703221KZF	220.0	1V/100KHz	1250	0.30
PSB0703271KZF	270.0	1V/100KHz	1450	0.28
PSB0703331KZF	330.0	1V/100KHz	2000	0.25
PSB0703391KZF	390.0	1V/100KHz	2250	0.23
PSB0703471KZF	470.0	1V/100KHz	2600	0.22
PSB0703561KZF	560.0	1V/100KHz	3700	0.20
PSB0703681KZF	680.0	1V/100KHz	4300	0.18
PSB0703821KZF	820.0	1V/100KHz	4900	0.16
PSB0703102KZF	1000.0	1V/100KHz	5600	0.15

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

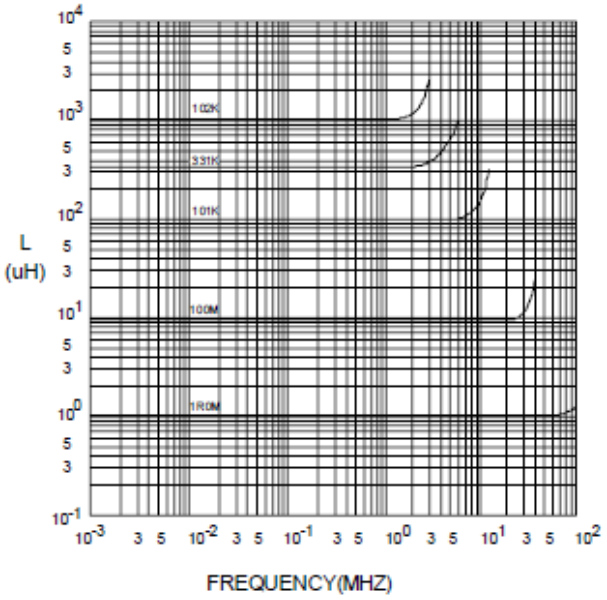
NOTE: Specifications subject to change without notice. Please check our website for latest information.

7. Characteristics Curves

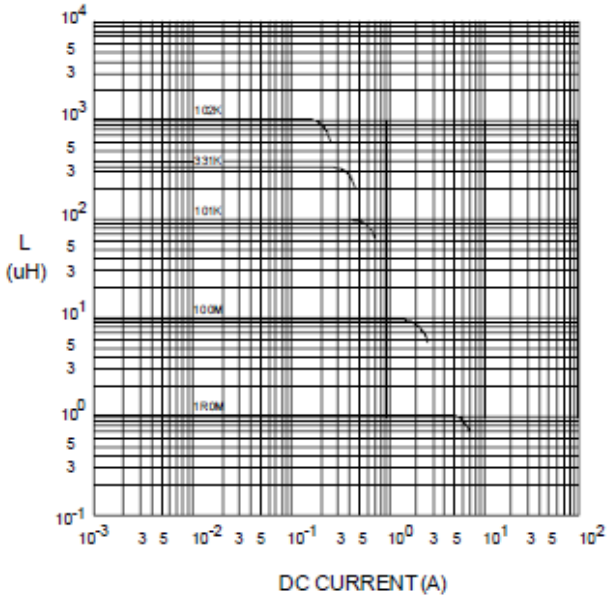
@ TEMP. RISE VS. DC SUPERPOSITION RESPONSE CURVE



@ INDUCTANCE VS. FREQUENCY RESPONSE CURVE



@ INDUCTANCE VS. DC SUPERPOSITION RESPONSE CURVE



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

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.

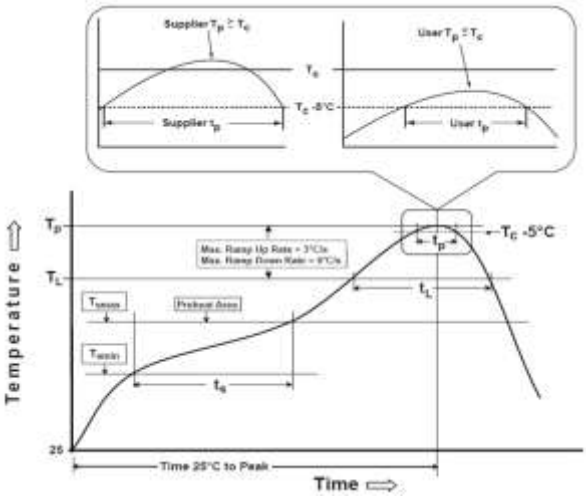
(b) 350°C tip temperature (Max.)

(c) Never contact the ceramic with the iron tip

(d) 1.0mm tip diameter (Max.)

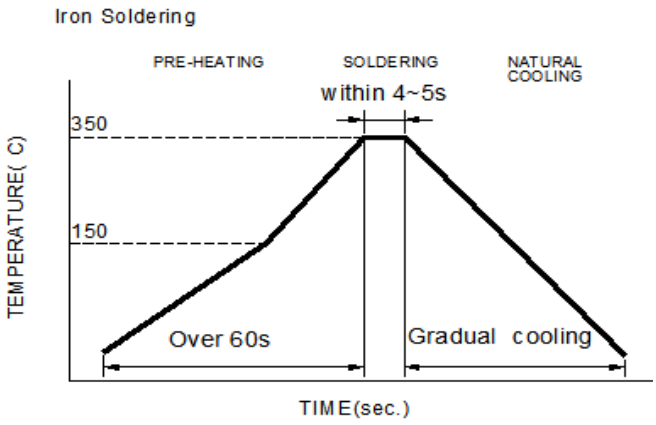
(e) Use a 20 watt soldering iron with tip diameter of 1.0mm

(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

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_{smin}) -Temperature Max (T_{smax}) -Time (t_s) from (T_{smin} to T_{smax})	 150°C 200°C 60-120seconds
Ramp-up rate ($T_L$to T_p)	3°C /second max.
Liquids temperature (T_L) Time (t_L) maintained above T_L	217°C 60-150 seconds
Classification temperature (T_c)	See Table (1.2)
Time (t_p) at Tc- 5°C (Tp should be equal to or less than Tc.)	< 30 seconds
Ramp-down rate (T_p to T_L)	6°C /second max.
Time 25°C to peak temperature	8 minutes max.

Tp: maximum peak package body temperature, **Tc**: the classification temperature.

For user (customer) **Tp** should be equal to or less than **Tc.**

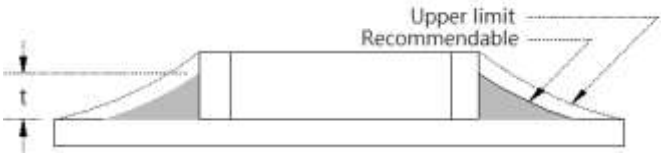
Table (1.2) Package Thickness/Volume and Classification Temperature (T_c)

	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

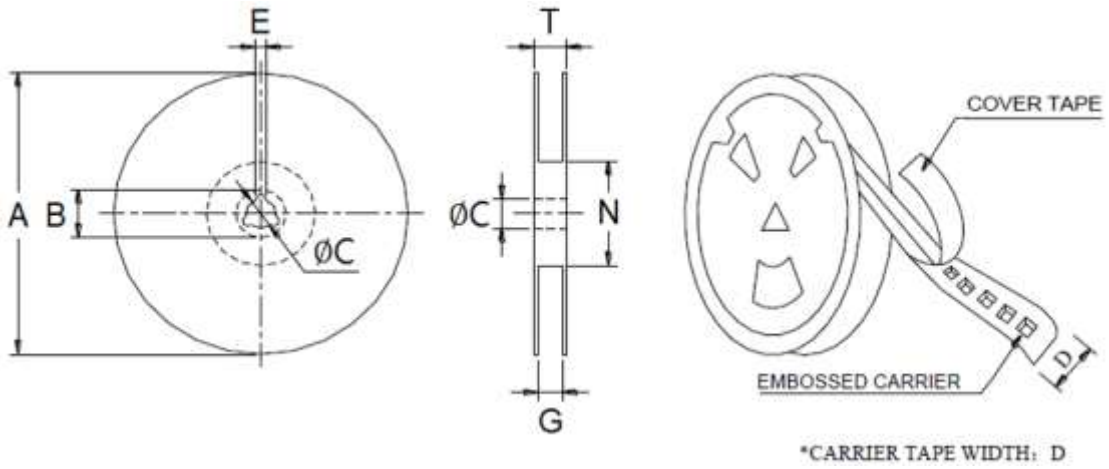
Accordingly increasing the solder volume, the mechanical stress to product is also increased. Exceeding solder volume may cause the failure of mechanical or electrical performance. Solder shall be used not to be exceeded as shown in the Figure below. Minimum fillet height = soldering thickness + 25% product height.



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

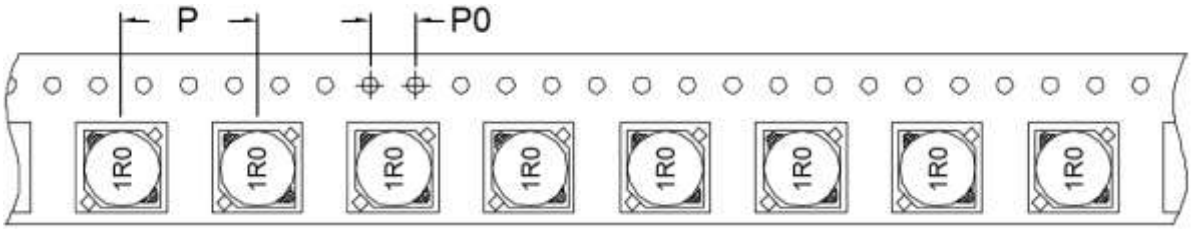
9. Packaging Information

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)



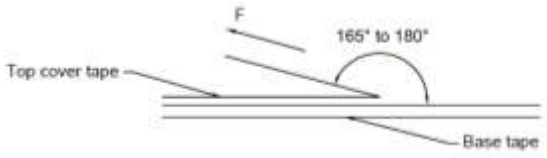
P	P0
12	4

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

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	600	13-16	6,000	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) 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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