

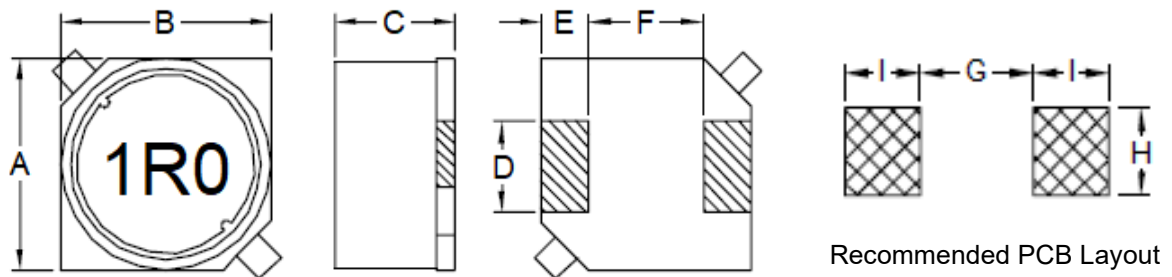
1. Part No. Expression

SSB06031R0MZF

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

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

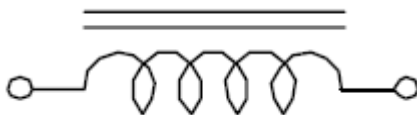
2. Configuration & Dimensions (Unit: mm)



Note: The above PCB layout reference only.

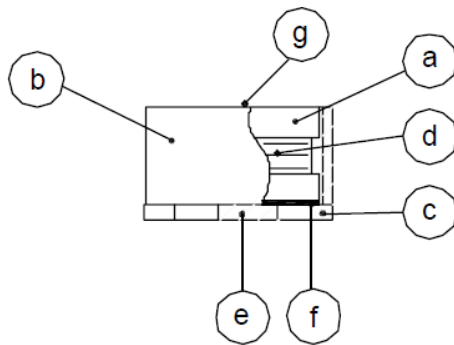
A	B	C	D	E
6.0±0.3	6.0±0.3	2.9 Max	2.0±0.2	1.5±0.2
F	G	H	I	-
3.0±0.2	2.8 Ref	2.2 Ref	1.9 Ref	-

3. Schematic



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

4. Material List



- (a) DR Core
- (b) RI Core
- (c) Base
- (d) Wire
- (e) Terminal
- (f) Adhesive
- (g) 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, 10Sec.
- (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) ±20%	Q Ref	Test Frequency	SRF (MHz) Typ	RDC (mΩ) Max	IDC (A) Max
SSB06031R0MZF	1.0	30	1V/100KHz	190.0	19	2.40
SSB06031R5MZF	1.5	30	1V/100KHz	140.0	25	2.20
SSB06032R2MZF	2.2	35	1V/100KHz	100.0	32	1.90
SSB06033R3MZF	3.3	35	1V/100KHz	85.0	50	1.50
SSB06034R7MZF	4.7	35	1V/100KHz	65.0	60	1.30

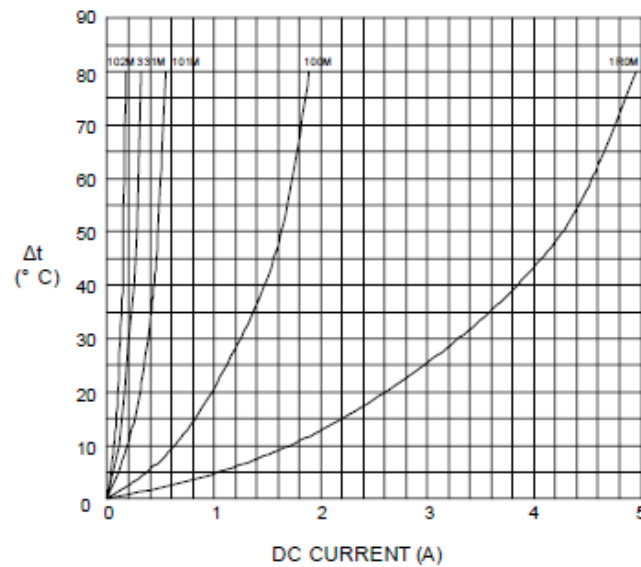
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Part Number	Inductance (μ H) $\pm 20\%$	Q Ref	Test Frequency	SRF (MHz) Typ	RDC (m Ω) Max	IDC (A) Max
SSB06036R8MZF	6.8	35	1V/100KHz	55.0	70	1.20
SSB0603100MZF	10.0	40	1V/100KHz	45.0	120	1.00
SSB0603120MZF	12.0	40	1V/100KHz	40.0	130	0.90
SSB0603150MZF	15.0	35	1V/100KHz	38.0	150	0.80
SSB0603180MZF	18.0	35	1V/100KHz	35.0	160	0.75
SSB0603220MZF	22.0	40	1V/100KHz	26.0	230	0.65
SSB0603270MZF	27.0	40	1V/100KHz	24.0	250	0.60
SSB0603330MZF	33.0	45	1V/100KHz	22.0	340	0.55
SSB0603390MZF	39.0	45	1V/100KHz	20.0	380	0.52
SSB0603470MZF	47.0	45	1V/100KHz	19.0	420	0.50
SSB0603560MZF	56.0	45	1V/100KHz	17.0	570	0.48
SSB0603680MZF	68.0	50	1V/100KHz	14.0	620	0.45
SSB0603820MZF	82.0	50	1V/100KHz	13.0	900	0.40
SSB0603101MZF	100.0	50	1V/100KHz	12.0	990	0.35
SSB0603121MZF	120.0	50	1V/100KHz	11.0	1150	0.30
SSB0603151MZF	150.0	50	1V/100KHz	9.0	1750	0.28
SSB0603181MZF	180.0	55	1V/100KHz	8.0	1950	0.26
SSB0603221MZF	220.0	55	1V/100KHz	7.5	2200	0.22
SSB0603271MZF	270.0	55	1V/100KHz	7.0	2500	0.20
SSB0603331MZF	330.0	55	1V/100KHz	6.0	3200	0.18
SSB0603391MZF	390.0	55	1V/100KHz	5.5	3500	0.17
SSB0603471MZF	470.0	55	1V/100KHz	5.0	4950	0.16
SSB0603561MZF	560.0	55	1V/100KHz	4.8	5350	0.15
SSB0603681MZF	680.0	55	1V/100KHz	4.5	6300	0.14
SSB0603821MZF	820.0	55	1V/100KHz	4.0	8200	0.13
SSB0603102MZF	1000.0	55	1V/100KHz	3.5	9200	0.12

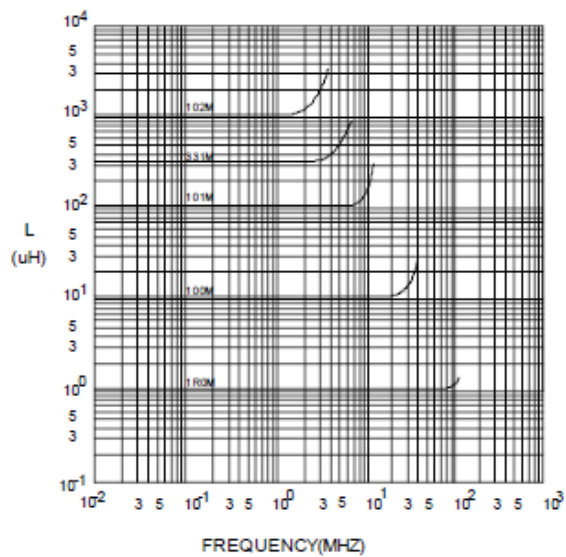
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7. Characteristics Curves

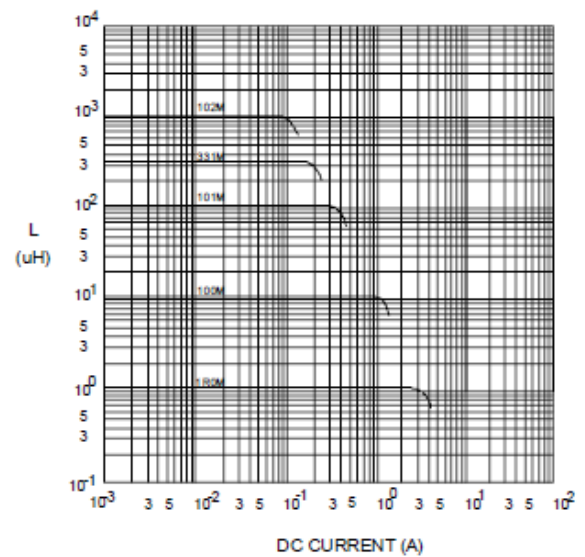
@ TEMP. RISE VS. DC SUPERPOSITION RESPONSE CURVE



@ 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

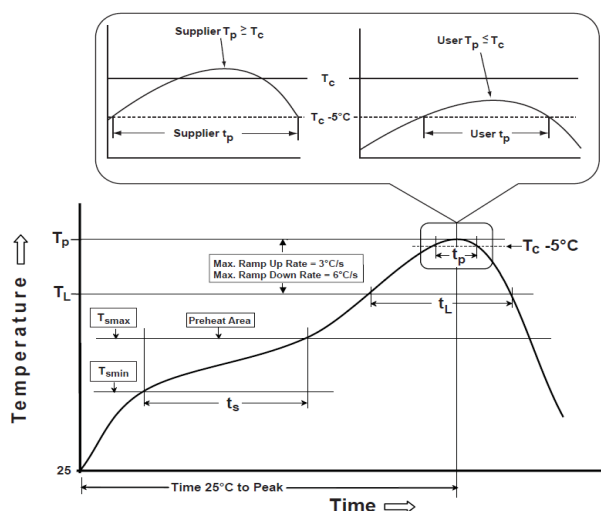
Recommended temperature profiles for lead free re-flow soldering in Figure 1, Table 1.1 & 1.2 (J-STD-020E).

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).

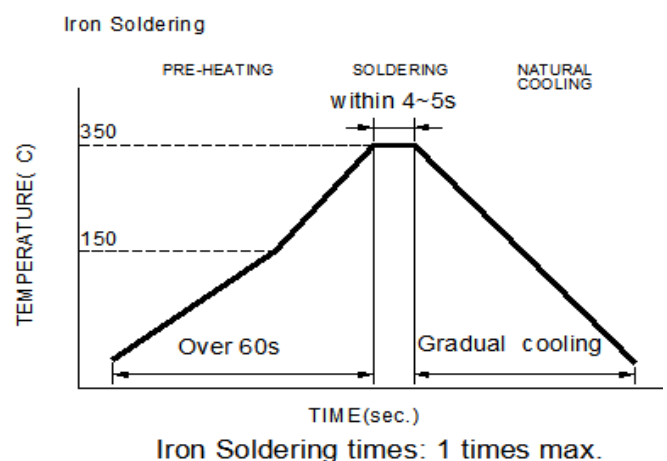
Note:

- 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_{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)

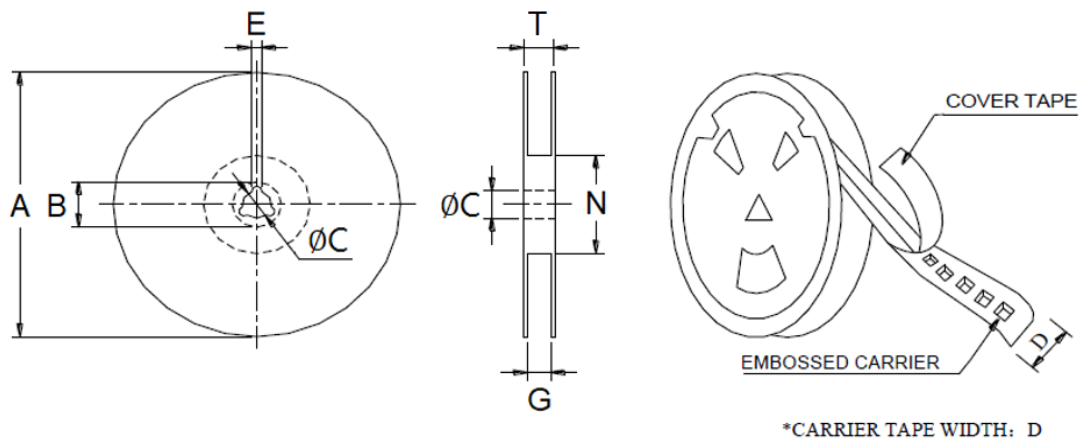
	Package Thickness	Volume mm ³ <350	Volume mm ³ 350-2000	Volume mm ³ >2000
PB-Free Assembly	<1.6mm	260°C	260°C	260°C
	1.6-2.5mm	260°C	250°C	245°C
	≥2.5mm	250°C	245°C	245°C

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

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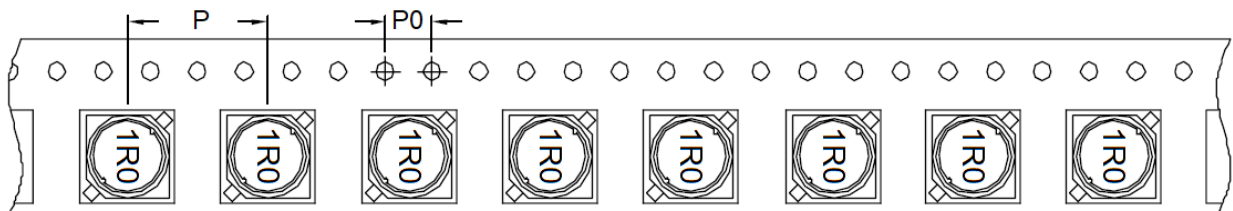
9. Packaging Information

9-1. Reel Dimension (Unit: mm)



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

9-2. Tape Dimension (Unit: mm)



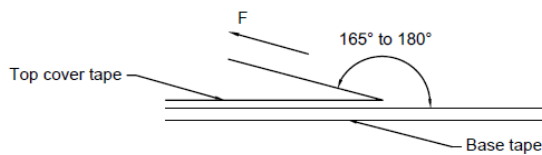
P	P0
12	4

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9-3. Packaging Quantity (Unit: Pcs)

Inner: Reel			Outer: Carton		
Qty (pcs)	G.W (gw)	Style	Qty (pcs)	G.W(kg)	Size (cm)
1,000	800	13-16	6,000	8.3	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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