

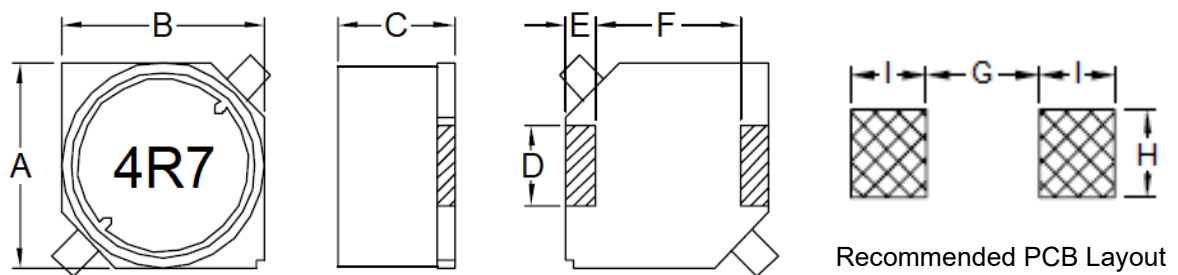
## 1. Part No. Expression

**SSB12054R7MZF**

(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.

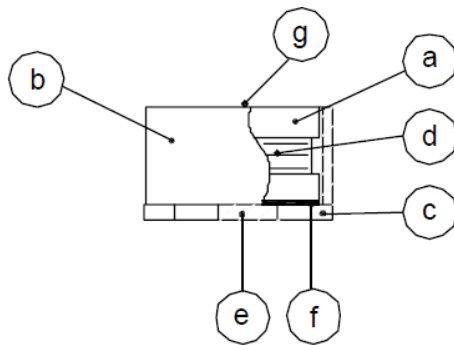
A	B	C	D	E
12.50±0.30	12.50±0.30	5.50±0.30	3.00±0.10	2.00±0.15
F	G	H	I	-
8.60±0.30	5.60 Ref	3.20 Ref	2.50 Ref	-

## 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 +125°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 approximately  $\Delta T$  of 40°C.
- (d) Saturation Current (Isat) will cause inductance L0 to drop approximately 10%.
- (e) Rated Current: The lower value of Isat and Irms.
- (f) Storage Condition (Component in its packaging)
  - i) Temperature: -10°C to 40°C
  - ii) Humidity: Less than 60% RH

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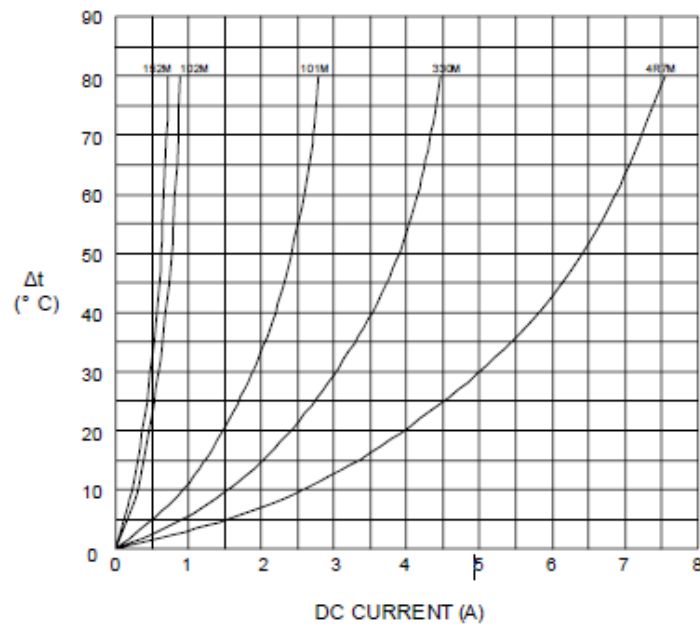
## 6. Electrical Characteristics

Part Number	Inductance (uH) ±20%	Test Frequency	RDC (mΩ) Max	Isat (A) Typ	Irms (A) Typ
SSB12054R7MZF	4.7	1V/100KHz	23	5.30	5.00
SSB12056R8MZF	6.8	1V/100KHz	25	5.00	4.00
SSB1205100MZF	10.0	1V/100KHz	30	4.50	3.50
SSB1205150MZF	15.0	1V/100KHz	38	4.00	2.80
SSB1205220MZF	22.0	1V/100KHz	46	3.50	2.30
SSB1205330MZF	33.0	1V/100KHz	60	3.20	1.90
SSB1205470MZF	47.0	1V/100KHz	85	2.50	1.60
SSB1205680MZF	68.0	1V/100KHz	110	2.20	1.30
SSB1205101MZF	100.0	1V/100KHz	150	1.80	1.10
SSB1205151MZF	150.0	1V/100KHz	240	1.40	0.90
SSB1205221MZF	220.0	1V/100KHz	350	1.20	0.72
SSB1205331MZF	330.0	1V/100KHz	500	1.00	0.60
SSB1205471MZF	470.0	1V/100KHz	710	0.88	0.50
SSB1205681MZF	680.0	1V/100KHz	1000	0.73	0.43
SSB1205102MZF	1000.0	1V/100KHz	1450	0.60	0.35
SSB1205152MZF	1500.0	1V/100KHz	2100	0.48	0.29

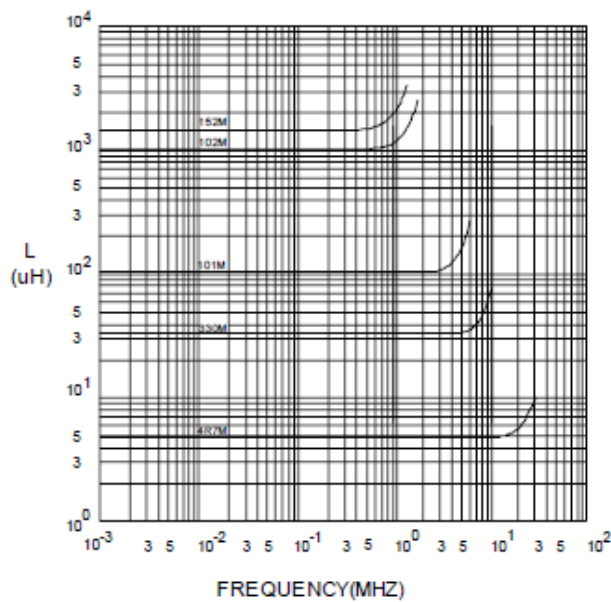
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## 7. Characteristics Curves

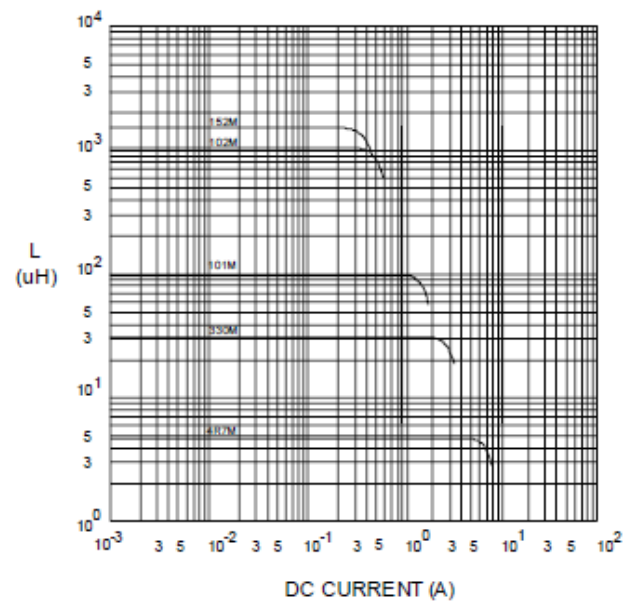
@ TEMP. RISE VS. DC SUPERPOSITION RESPONSE CURVE



@ 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

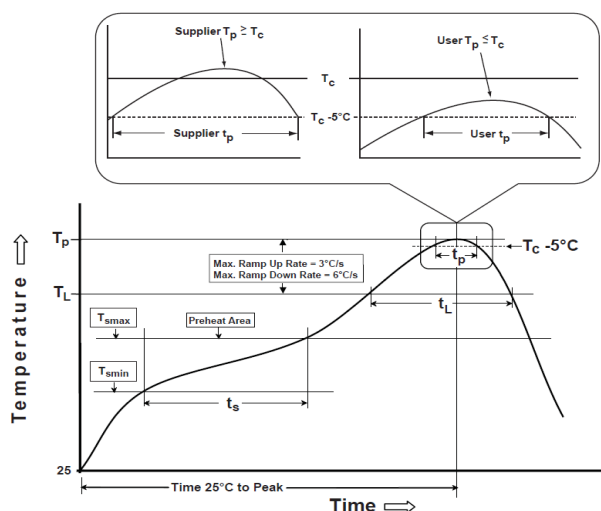
Recommended temperature profiles for lead free re-flow soldering in Figure 1, Table 1.1 & 1.2 (J-STD-020E).

### 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).

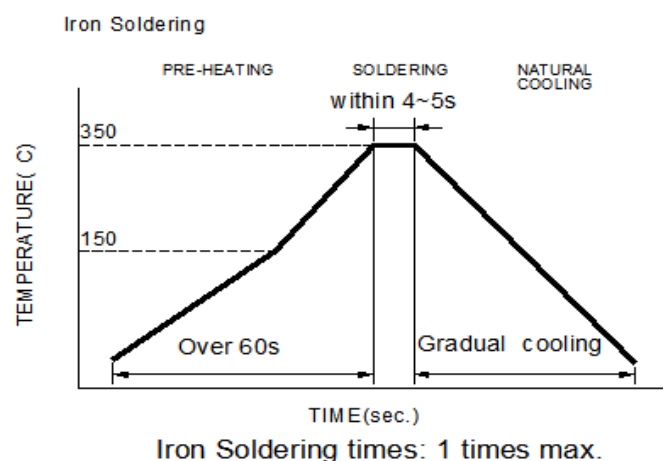
Note:

- 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 ( $T_{smin}$ )	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 ( $T_c$ )**

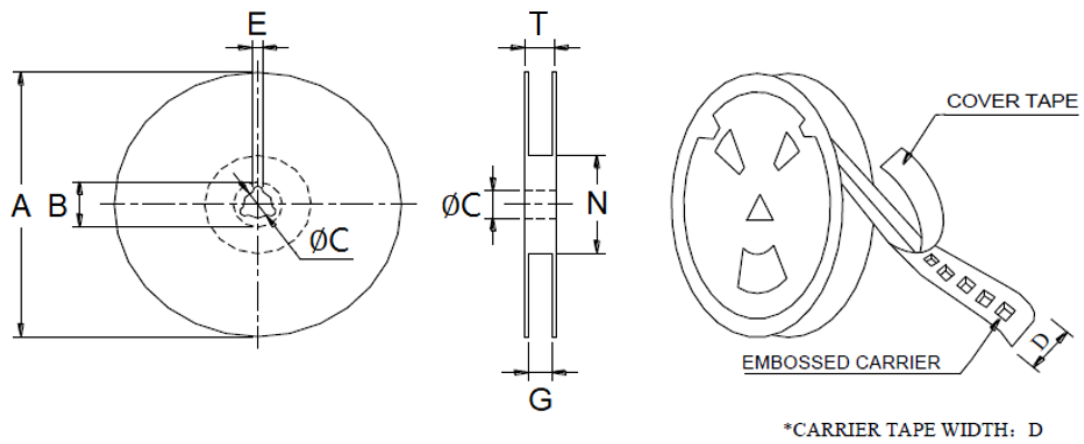
	Package Thickness	Volume mm <sup>3</sup> <350	Volume mm <sup>3</sup> 350-2000	Volume mm <sup>3</sup> >2000
PB-Free Assembly	<1.6mm	260°C	260°C	260°C
	1.6-2.5mm	260°C	250°C	245°C
	≥2.5mm	250°C	245°C	245°C

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

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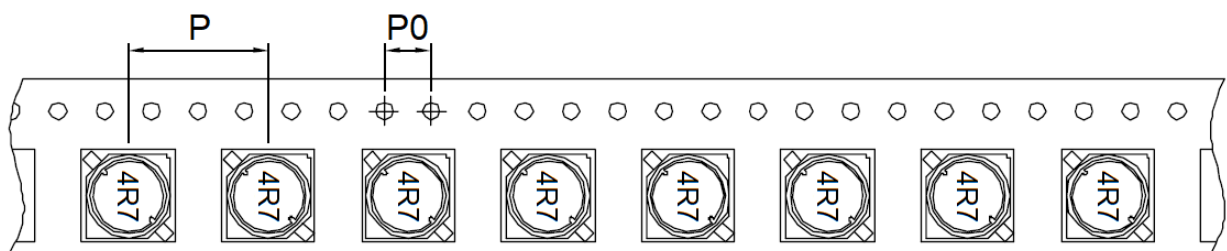
## 9. Packaging Information

### 9-1. Reel Dimension (Unit: mm)



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

### 9-2. Tape Dimension (Unit: mm)



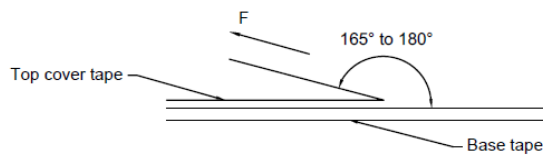
P	P0
16	4

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## 9-3. Packaging Quantity (Unit: Pcs)

Inner: Reel			Outer: Carton		
Qty (pcs)	G.W (gw)	Style	Qty (pcs)	G.W(kg)	Size (cm)
600	1,000	13-24	2,400	7.5	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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