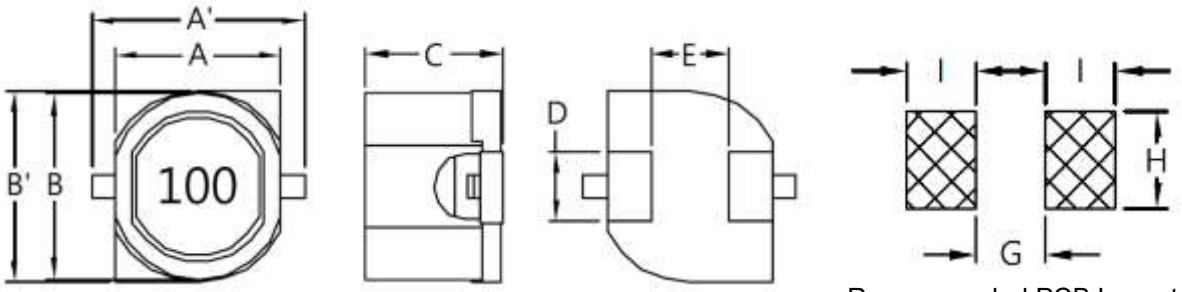
1. Part No. Expression

S D B 1 1 0 5 1 0 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)

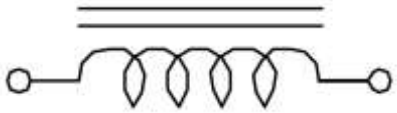


Recommended PCB Layout

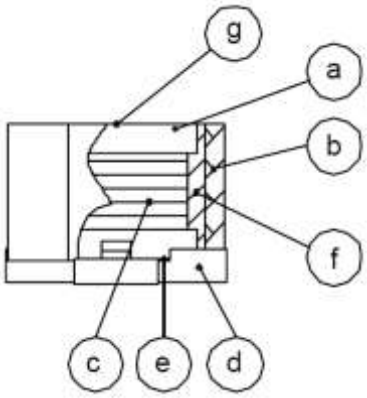
Note: 1. The above PCB layout reference only.
2. Marking: Inductance Code

A’	A	B’	B	C
15.0 Max	11.6 Ref	12.7±0.3	12.6 Ref	5.7±0.3
D	E	G	H	I
3.0±0.2	8.2±0.3	7.3 Ref	3.9 Ref	2.8 Ref

3. Schematic



4. Material List



(a) DR Core
(b) RI Core
(c) Wire
(d) Base
(e) Terminal
(f) Adhesive
(g) Ink

5. General Specifications

(a) Operating Temp.: -40°C to +75°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 50°C Max.
(d) Saturation Current (Isat) will cause inductance L0 to drop approximately 10%.
(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

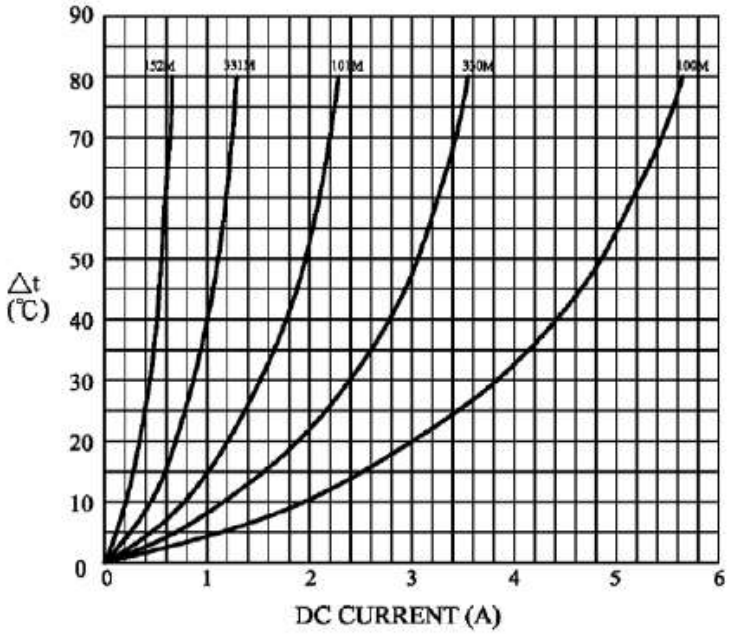
6. Electrical Characteristics

Part Number	Inductance (μH) @0A ±20%	Test Frequency	RDC (Ω) Max	IDC (A)
SDB1105100MZF	10	1V/1KHz	0.05	2.50
SDB1105120MZF	12	1V/1KHz	0.05	2.40
SDB1105150MZF	15	1V/1KHz	0.06	2.30
SDB1105180MZF	18	1V/1KHz	0.07	2.20
SDB1105220MZF	22	1V/1KHz	0.08	2.10
SDB1105270MZF	27	1V/1KHz	0.10	2.00
SDB1105330MZF	33	1V/1KHz	0.10	1.90
SDB1105390MZF	39	1V/1KHz	0.12	1.80
SDB1105470MZF	47	1V/1KHz	0.14	1.60
SDB1105560MZF	56	1V/1KHz	0.15	1.40
SDB1105680MZF	68	1V/1KHz	0.18	1.30
SDB1105820MZF	82	1V/1KHz	0.20	1.20
SDB1105101MZF	100	1V/1KHz	0.25	1.10
SDB1105121MZF	120	1V/1KHz	0.30	0.97
SDB1105151MZF	150	1V/1KHz	0.35	0.86
SDB1105181MZF	180	1V/1KHz	0.40	0.84
SDB1105221MZF	220	1V/1KHz	0.50	0.72
SDB1105271MZF	270	1V/1KHz	0.60	0.65
SDB1105331MZF	330	1V/1KHz	0.70	0.61
SDB1105391MZF	390	1V/1KHz	0.80	0.58
SDB1105471MZF	470	1V/1KHz	0.90	0.50
SDB1105561MZF	560	1V/1KHz	1.10	0.48
SDB1105681MZF	680	1V/1KHz	1.20	0.43
SDB1105821MZF	820	1V/1KHz	1.50	0.38
SDB1105102MZF	1000	1V/1KHz	2.00	0.35
SDB1105122MZF	1200	1V/1KHz	2.20	0.32
SDB1105152MZF	1500	1V/1KHz	2.50	0.30

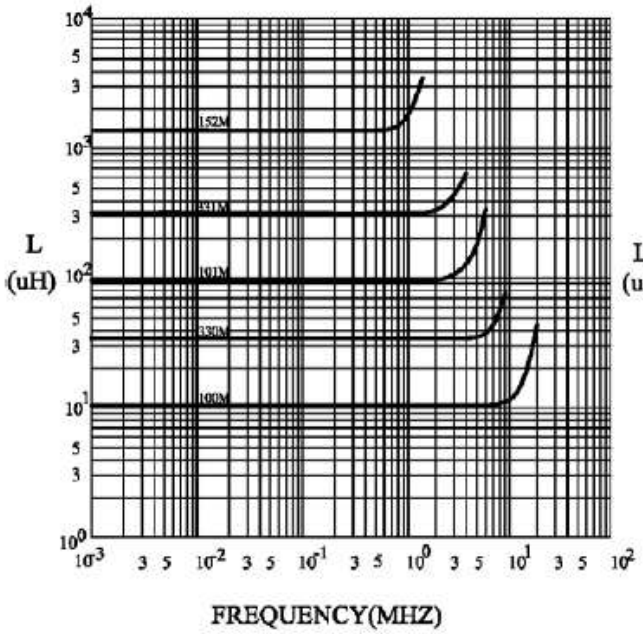
NOTE: Specifications subject to change without notice. Please check our website for latest information.

7. Characteristics Curve

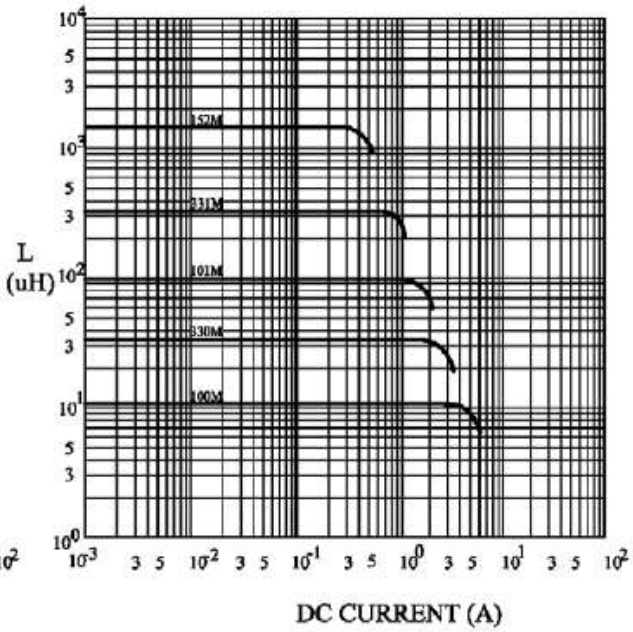
@ TEMP. RISE VS. DC SUPERPOSITION RESPONSE CURVE



@ 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.

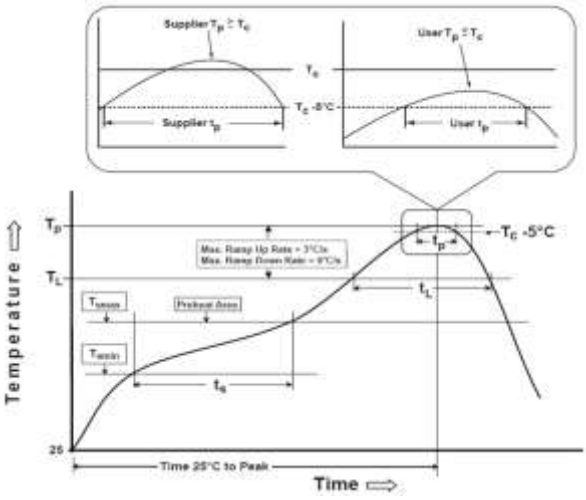
(b) 350°C tip temperature (Max.)

(c) Never contact the ceramic with the iron tip

(d) 1.0mm tip diameter (Max.)

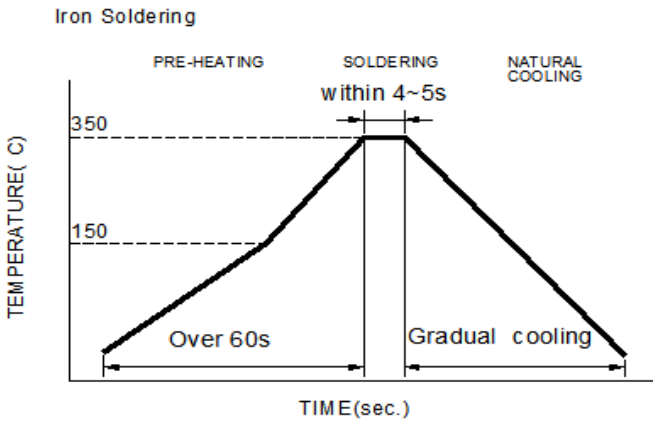
(e) Use a 20 watt soldering iron with tip diameter of 1.0mm

(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.**

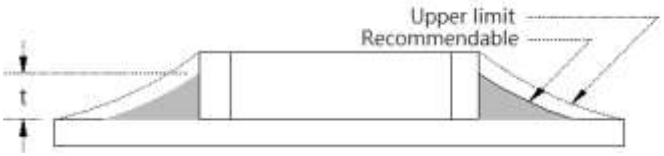
Table (1.2) Package Thickness/Volume and Classification Temperature (T_c)

	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.

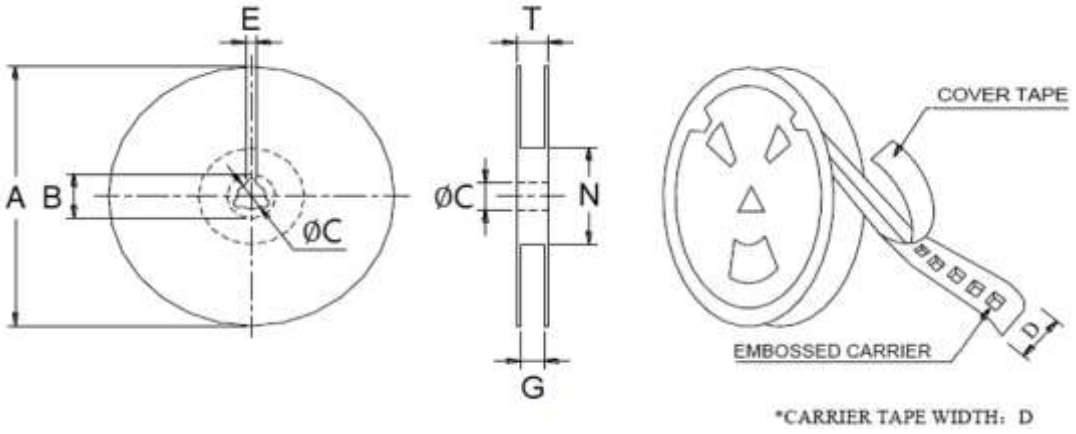
8-3. Soldering Volume

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.



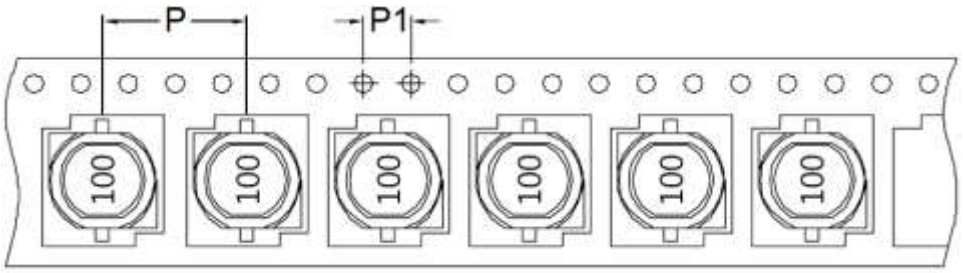
9. Packaging Information

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)



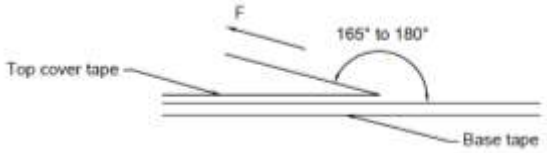
P	P1
16	4

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

9-3. Packaging Quantity & G.W & Size

INNER : REEL			OUTER : CARTON		
QTY(PCS)	G.W(gw)	STYLE	QTY(PCS)	G.W(Kg)	SIZE(cm)
500	1500	13-24	2000	9.5	40x40x24

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.