

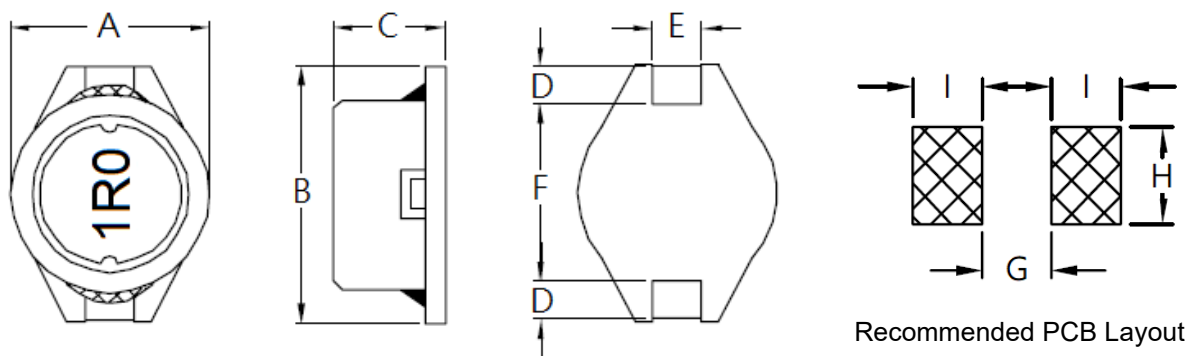
1. Part No. Expression

S D B 1 0 0 5 1 R 0 M Z F

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

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

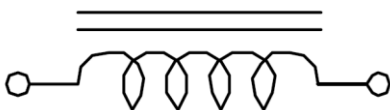
2. Configuration & Dimensions (Unit: mm)



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

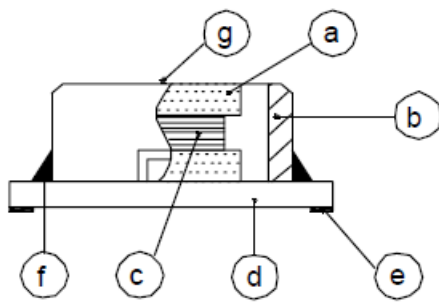
A	B	C	D	E
10.0±0.2	12.7±0.2	4.9±0.3	2.4±0.2	2.2±0.2
F	G	H	I	-
7.6±0.3	7.3 Ref	2.8 Ref	3.0 Ref	-

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) Wire
- (d) Base
- (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 10 secs
- (g) 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 (μH) @0A	Q Ref	Test Frequency	SRF (MHz) Typ	RDC (mΩ) Max	IDC (A)
SDB10051R0MZF	1.0	50	1V/100KHz	130.0	21	5.00
SDB10051R5MZF	1.5	60	1V/100KHz	110.0	22	4.50
SDB10052R2MZF	2.2	70	1V/100KHz	90.0	27	3.10
SDB10053R0MZF	3.0	70	1V/100KHz	65.0	30	2.90
SDB10054R7MZF	4.7	70	1V/100KHz	50.0	40	2.50
SDB10056R8MZF	6.8	70	1V/100KHz	30.0	55	2.20
SDB1005100MZF	10.0	60	1V/100KHz	28.0	65	2.00
SDB1005120MZF	12.0	60	1V/100KHz	25.0	80	1.80
SDB1005150MZF	15.0	60	1V/100KHz	20.0	85	1.70
SDB1005180LZF	18.0	60	1V/100KHz	19.0	90	1.60
SDB1005220LZF	22.0	50	1V/100KHz	18.0	100	1.40
SDB1005270LZF	27.0	50	1V/100KHz	16.0	120	1.30
SDB1005330LZF	33.0	70	1V/100KHz	14.0	160	1.20
SDB1005390LZF	39.0	70	1V/100KHz	12.0	180	1.05
SDB1005470LZF	47.0	70	1V/100KHz	11.0	190	1.00
SDB1005560LZF	56.0	70	1V/100KHz	10.0	210	0.90
SDB1005680LZF	68.0	85	1V/100KHz	9.0	340	0.82
SDB1005820LZF	82.0	85	1V/100KHz	8.0	380	0.75
SDB1005101KZF	100.0	85	1V/100KHz	7.5	420	0.68
SDB1005121KZF	120.0	90	1V/100KHz	7.0	460	0.60
SDB1005151KZF	150.0	90	1V/100KHz	6.3	520	0.55
SDB1005181KZF	180.0	100	1V/100KHz	5.5	700	0.50
SDB1005221KZF	220.0	100	1V/100KHz	5.0	800	0.45
SDB1005271KZF	270.0	100	1V/100KHz	4.5	1100	0.40
SDB1005331KZF	330.0	110	1V/100KHz	4.0	1200	0.35

Note:

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

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Part Number	Inductance (μ H) @0A	Q Ref	Test Frequency	SRF (MHz) Typ	RDC (m Ω) Max	IDC (A)
SDB1005391KZF	390.0	110	1V/100KHz	3.8	1400	0.33
SDB1005471KZF	470.0	70	1V/100KHz	3.0	1600	0.30
SDB1005561KZF	560.0	70	1V/100KHz	2.7	1800	0.28
SDB1005681KZF	680.0	70	1V/100KHz	2.6	2300	0.26
SDB1005821KZF	820.0	70	1V/100KHz	2.5	2600	0.24
SDB1005102KZF	1000.0	70	1V/100KHz	2.0	3200	0.22
SDB1005122KZF	1200.0	70	1V/100KHz	2.0	3600	0.20
SDB1005152KZF	1500.0	70	1V/100KHz	1.6	5200	0.17
SDB1005182KZF	1800.0	70	1V/100KHz	1.4	5700	0.16
SDB1005222KZF	2200.0	70	1V/100KHz	1.4	6500	0.14
SDB1005272KZF	2700.0	70	1V/100KHz	1.2	8600	0.12
SDB1005332KZF	3300.0	70	1V/100KHz	1.2	10000	0.10

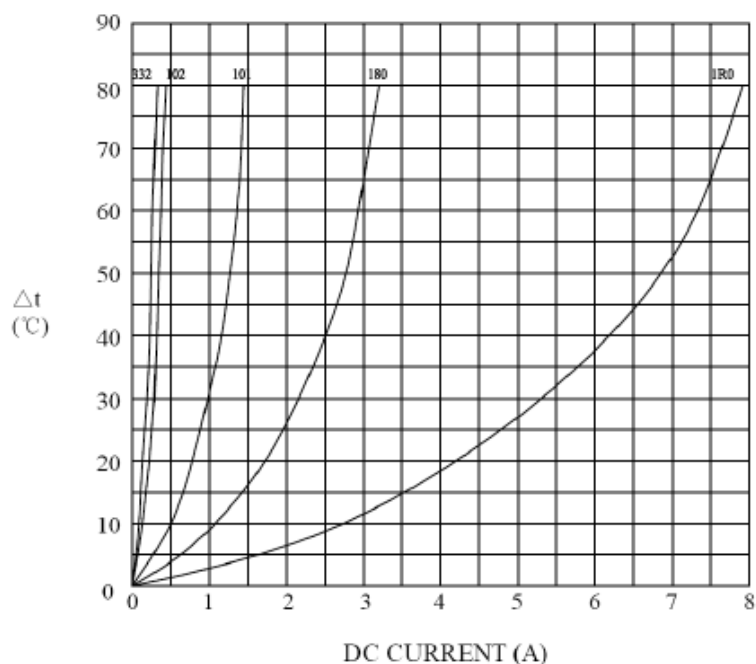
Note:

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

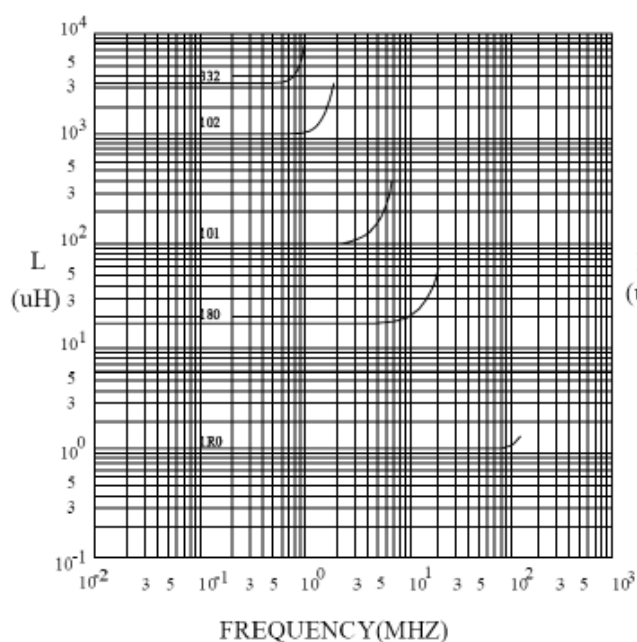
NOTE: Specifications subject to change without notice. Please check our website for latest information.

7. Characteristics Curve

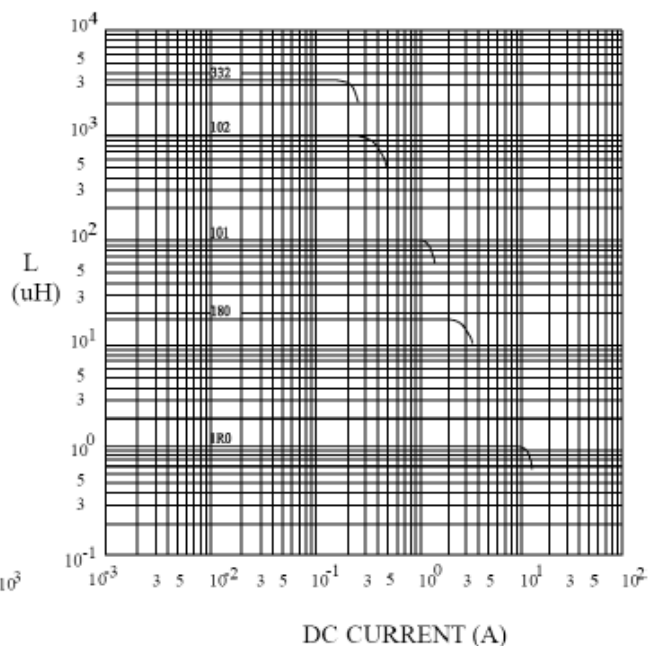
@ TEMP. RISE VS. DC SUPERPOSITION RESPONSE CURVE



@ INDUCTANCE VS. FREQUENCY RESPONSE CURVE



@ INDUCTANCE VS. DC SUPERPOSITION RESPONSE CURVE



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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

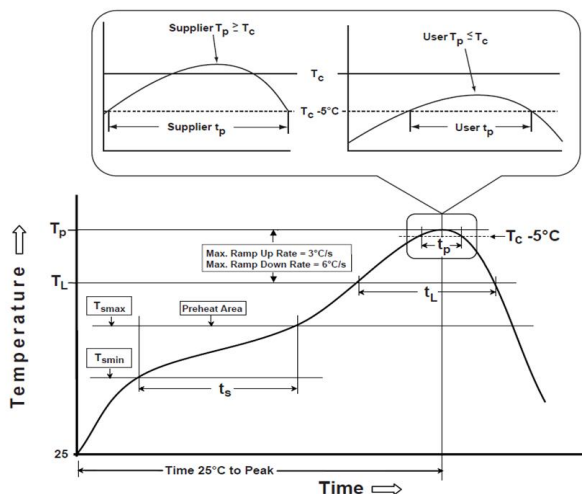
Recommended temperature profiles for lead free re-flow soldering in Figure 1, Table 1.1 & 1.2 (J-STD-020E).

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).

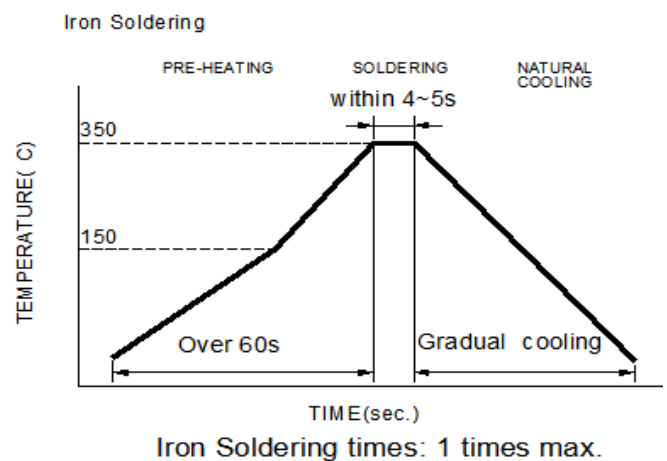
Note:

- 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)

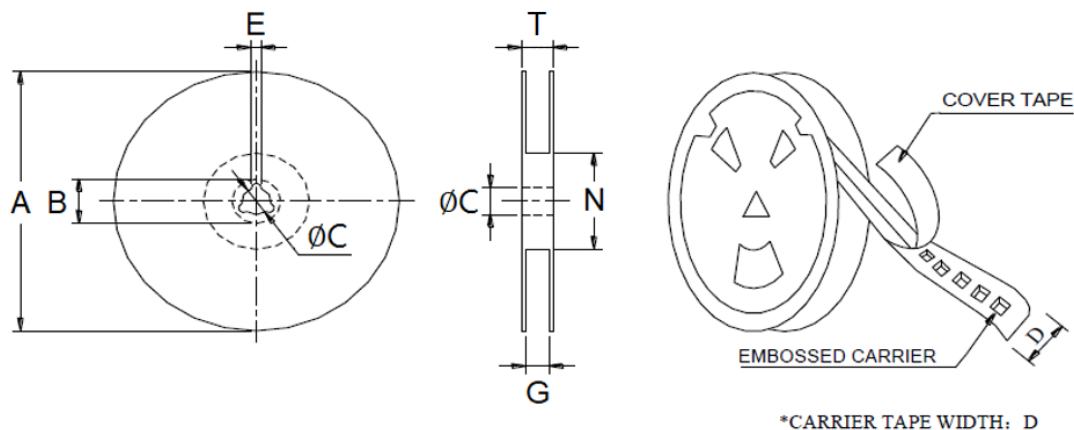
	Package Thickness	Volume mm ³ <350	Volume mm ³ 350-2000	Volume mm ³ >2000
PB-Free Assembly	<1.6mm	260°C	260°C	260°C
	1.6-2.5mm	260°C	250°C	245°C
	≥2.5mm	250°C	245°C	245°C

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

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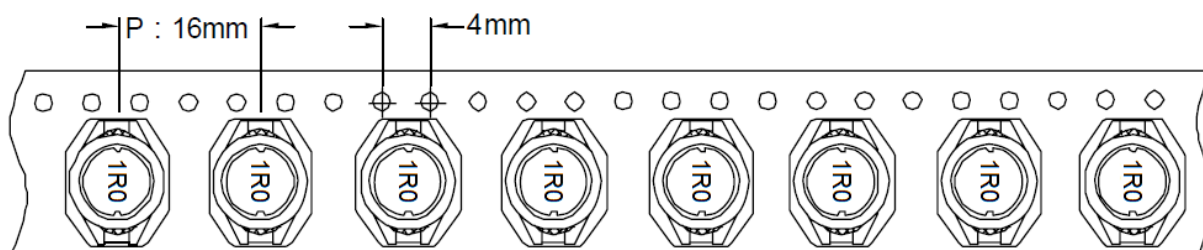
9. Packaging Information

9-1. Reel Dimension (Unit: mm)



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

9-2. Tape Dimension (Unit: mm)

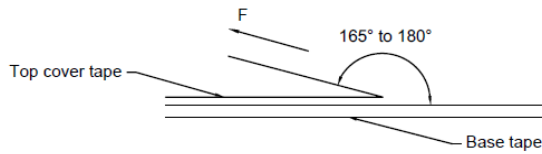


9-3. Packaging Quantity & G.W & Size

INNER : REEL			OUTER : CARTON		
QTY(PCS)	G.W(gw)	STYLE	QTY(PCS)	G.W(Kg)	SIZE(cm)
600	1,100	13-24	2,400	7.9	38x36.5x21
500	916	13-24	2,000	6.6	38x36.5x21

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

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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