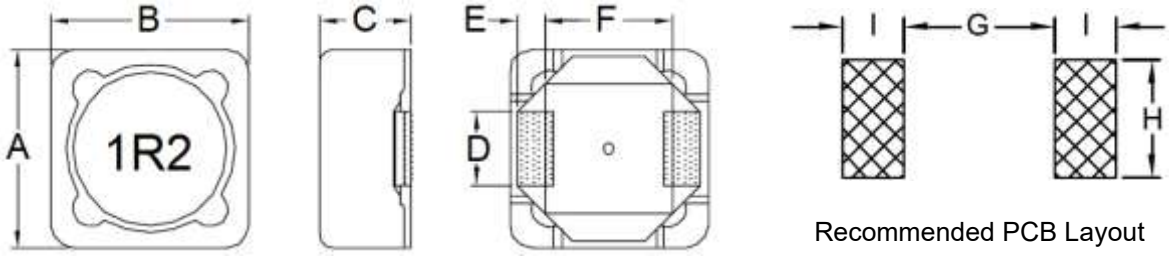
1. Part No. Expression

S D B 1 2 0 7 1 R 2 Y 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)

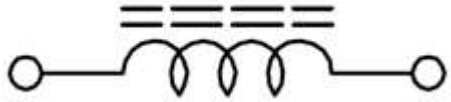


Recommended PCB Layout

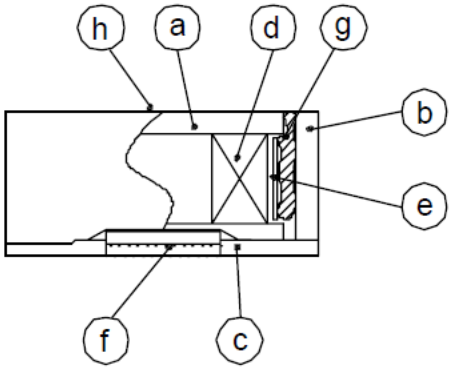
Note: 1. The above PCB layout reference only.
2. Marking: Inductance Code

A	B	C	D	E
12.5±0.3	12.5±0.3	8.0 Max	5.0±0.2	2.2±0.2
F	G	H	I	-
7.6±0.2	7.0 Ref	5.4 Ref	2.8 Ref	-

3. Schematic



4. Material List



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

5. General Specifications

(a) Operating Temp.: -40°C to +125°C (including self-temperature rise)
(b) Storage Temp.: -40°C to +125°C (on board)
(c) All test data referenced to 25°C ambient.
(d) Heat Rated Current (Irms) will cause the coil temperature rise ΔT of 40°C Max.
(e) Saturation Current (Isat) will cause inductance L0 to drop 20% Max.
(f) Rated Current: The lower value of Isat and Irms.
(g) Storage Condition (Component in its packaging)
    i) Temperature: Less than 40°C
    ii) Humidity: Less than 60% RH

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

6. Electrical Characteristics

Part Number	Inductance (μH) @0A	Test Frequency	RDC (mΩ) Max	Isat (A) Max	Irms (A) Max
SDB12071R2YZF	1.2	1V/100KHz	7.0	9.80	8.90
SDB12072R7YZF	2.7	1V/100KHz	11.5	8.00	7.20
SDB12073R9YZF	3.9	1V/100KHz	13.5	7.50	6.90
SDB12074R7YZF	4.7	1V/100KHz	15.8	6.80	6.60
SDB12075R6YZF	5.6	1V/100KHz	17.6	6.60	6.30
SDB12077R6YZF	7.6	1V/100KHz	20.0	5.90	6.00
SDB1207100MZF	10	1V/1KHz	21.6	5.40	5.20
SDB1207120MZF	12	1V/1KHz	24.3	4.90	5.20
SDB1207150MZF	15	1V/1KHz	27.0	4.50	4.90
SDB1207180MZF	18	1V/1KHz	39.2	3.90	4.50
SDB1207220MZF	22	1V/1KHz	43.2	3.60	4.20
SDB1207270MZF	27	1V/1KHz	45.9	3.40	4.00
SDB1207330MZF	33	1V/1KHz	64.8	3.00	3.40
SDB1207390MZF	39	1V/1KHz	72.9	2.75	3.20
SDB1207470MZF	47	1V/1KHz	100	2.50	2.60
SDB1207560LZF	56	1V/1KHz	110	2.35	2.50
SDB1207680LZF	68	1V/1KHz	140	2.10	2.30
SDB1207820LZF	82	1V/1KHz	160	1.95	2.00
SDB1207101LZF	100	1V/1KHz	220	1.70	1.90
SDB1207121LZF	120	1V/1KHz	250	1.60	1.80
SDB1207151LZF	150	1V/1KHz	280	1.42	1.70
SDB1207181KZF	180	1V/1KHz	350	1.30	1.40
SDB1207221KZF	220	1V/1KHz	390	1.16	1.30
SDB1207271KZF	270	1V/1KHz	560	1.06	1.20
SDB1207331KZF	330	1V/1KHz	640	0.95	1.10

Note:

Tolerance Code: K=±10%, L=±15%, M=±20%, Y=±30%

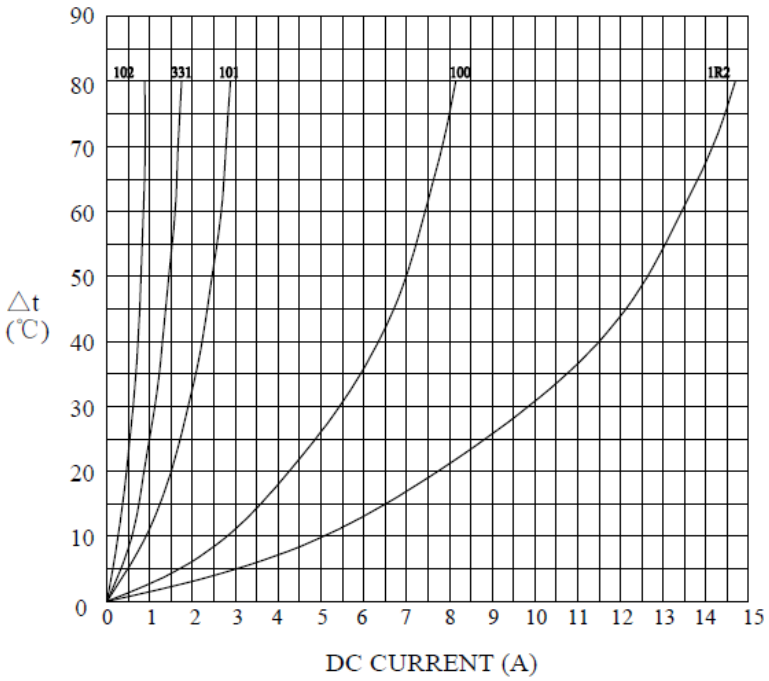
Part Number	Inductance (μH) @0A	Test Frequency	RDC (mΩ) Max	Isat (A) Max	Irms (A) Max
SDB1207391KZF	390	1V/1KHz	700	0.88	1.10
SDB1207471KZF	470	1V/1KHz	980	0.79	0.90
SDB1207561KZF	560	1V/1KHz	1070	0.73	0.90
SDB1207681KZF	680	1V/1KHz	1460	0.67	0.80
SDB1207821KZF	820	1V/1KHz	1640	0.60	0.60
SDB1207102KZF	1000	1V/1KHz	1820	0.55	0.60

Note:

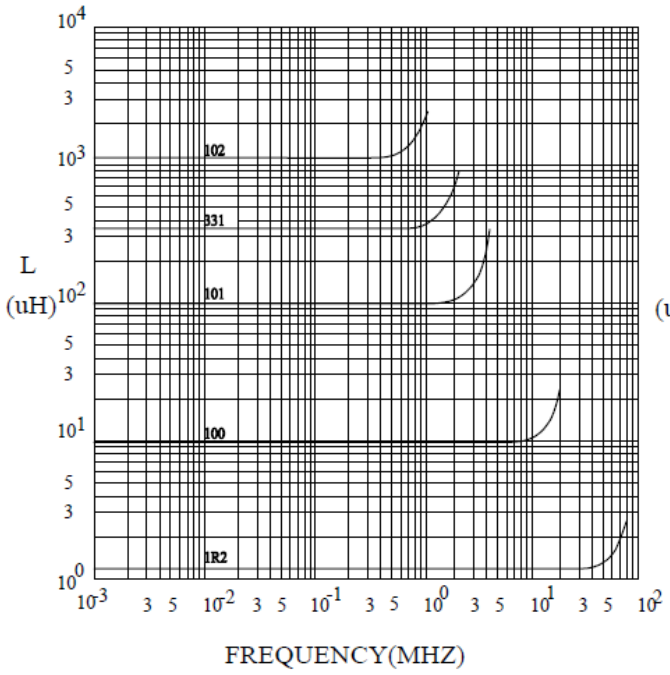
Tolerance Code: K=±10%, L=±15%, M=±20%, Y=±30%

7. Characteristics Curve

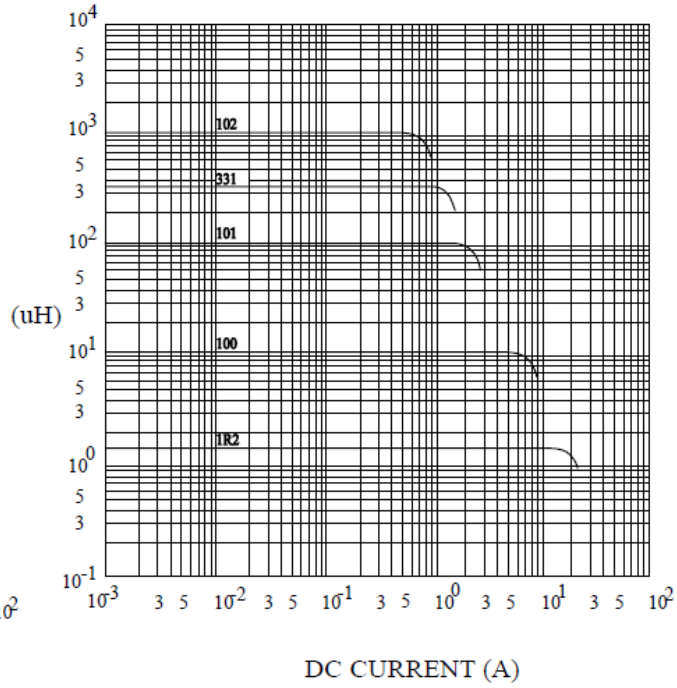
@ TEMP. RISE VS. DC SUPERPOSITION RESPONSE CURVE



@ 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.

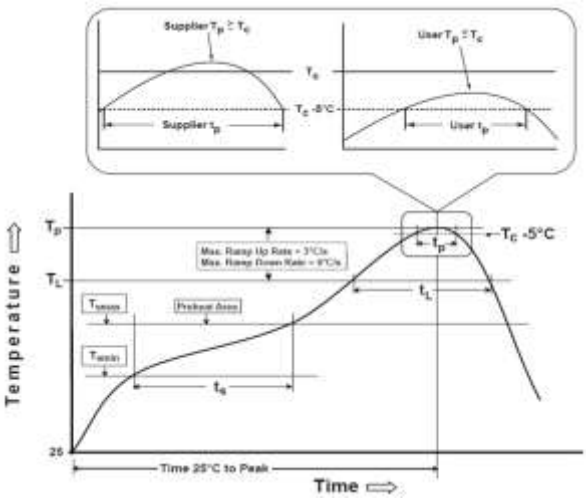
(b) 350°C tip temperature (Max.)

(c) Never contact the ceramic with the iron tip

(d) 1.0mm tip diameter (Max.)

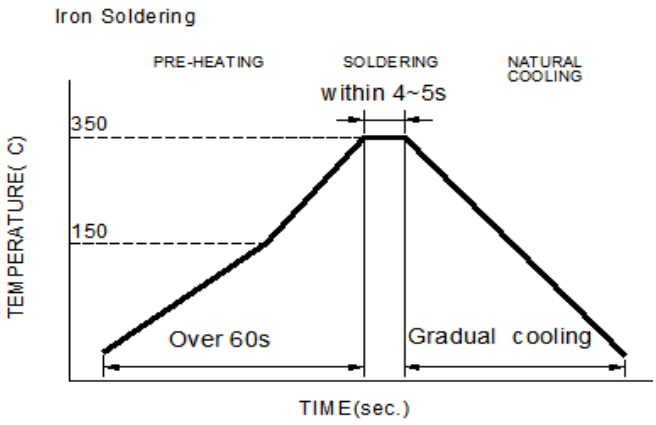
(e) Use a 20 watt soldering iron with tip diameter of 1.0mm

(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.**

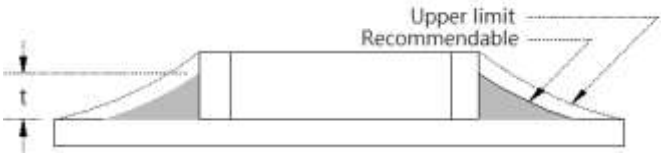
Table (1.2) Package Thickness/Volume and Classification Temperature (T_c)

	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.

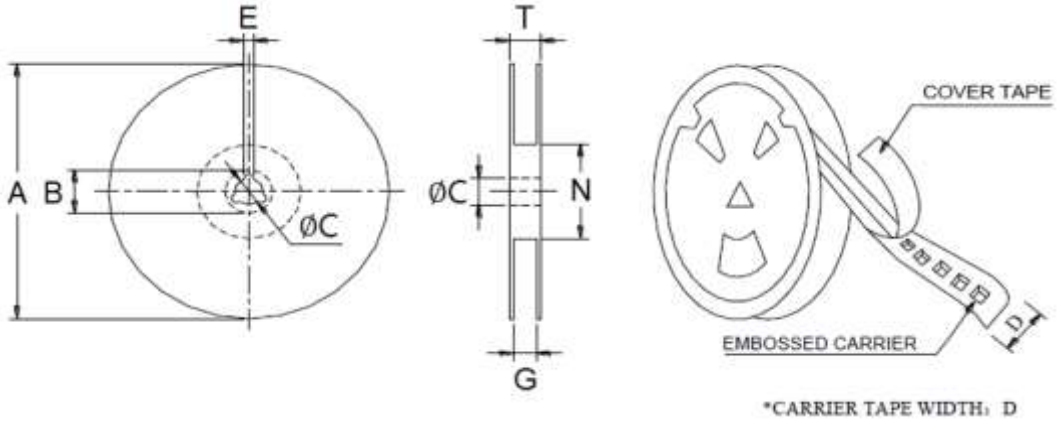
8-3. Soldering Volume

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.



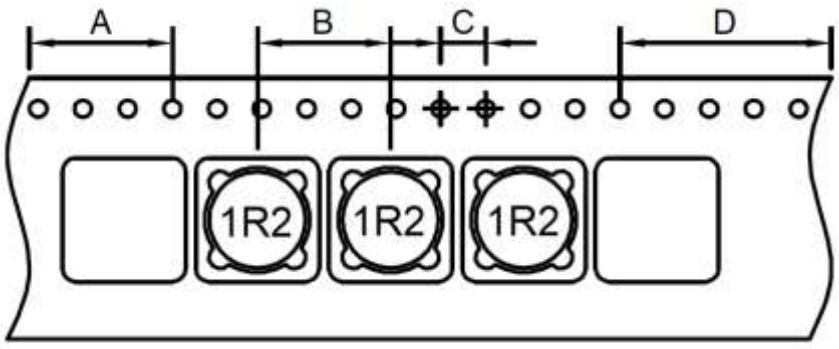
9. Packaging Information

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	100.0 Min	30.4 Ref

9-2. Tape Dimension (Unit: mm)



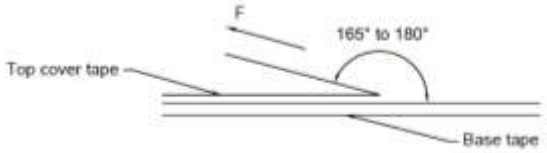
A	B	C	D
200	16	4	400

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)	QTY(PCS)	G.W(Kg)	SIZE(cm)
400	2,100	1,600	11.9	36x35.5x14.3

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.