

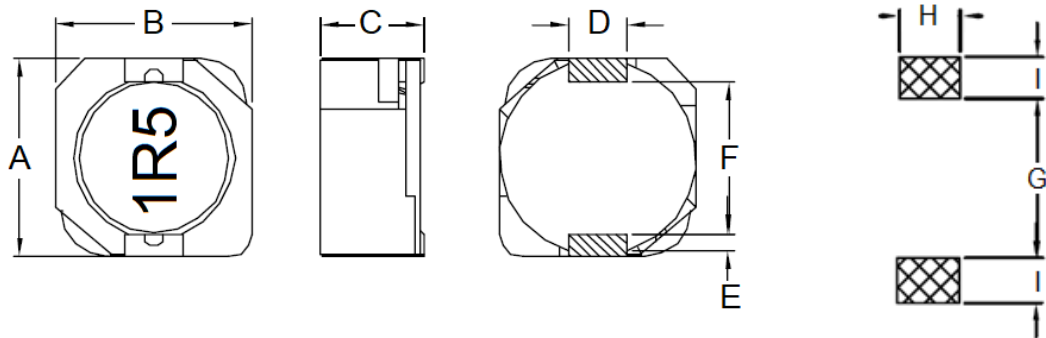
## 1. Part No. Expression

**S D C 1 0 0 3 1 R 5 Y W 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)



Recommended PCB Layout

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

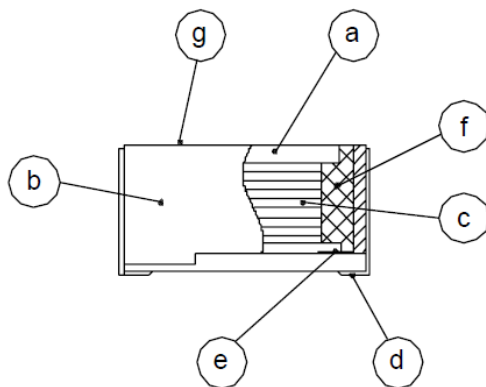
A	B	C	D	E
10.3±0.3	10.0±0.3	3.8±0.2	3.0±0.1	1.2±0.2
F	G	H	I	-
7.6±0.3	7.3 Ref	3.2 Ref	1.8 Ref	-

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

### 3. Schematic



### 4. Material List



- (a) Core
- (b) Core
- (c) Wire
- (d) Terminal
- (e) Adhesive
- (f) Adhesive
- (g) 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 approximately  $\Delta T$  of 40°C.
- (e) Saturation Current (Isat) will cause inductance L0 to drop 35% 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

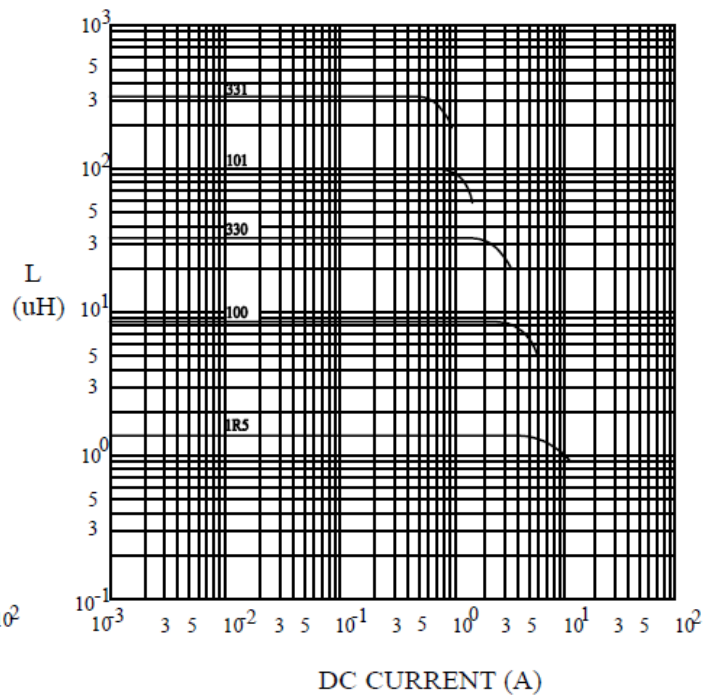
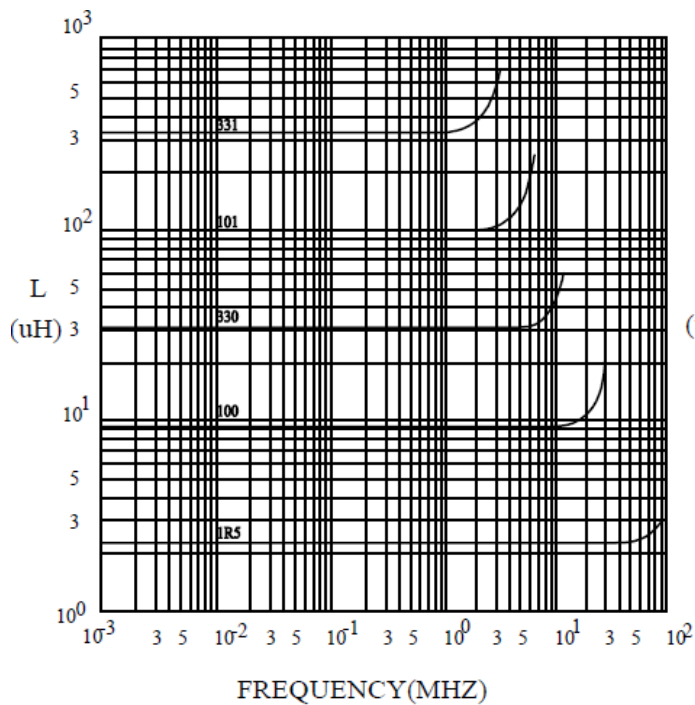
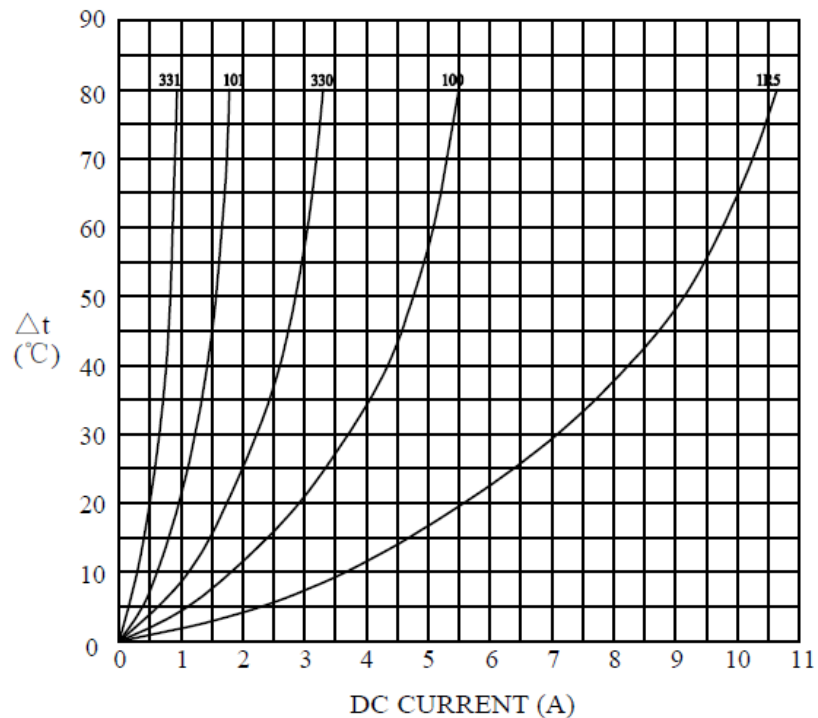
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## 6. Electrical Characteristics

Part Number	Inductance (uH) @0A ±30%	Test Frequency	DCR (mΩ) Max	Irms (A) Max	Isat (A) Max
SDC10031R5YWF	1.5	1.0V/100KHz	8.10	10.00	6.80
SDC10032R5YWF	2.5	1.0V/100KHz	10.0	7.50	6.10
SDC10033R8YWF	3.8	1.0V/100KHz	13.0	6.00	5.20
SDC10035R2YWF	5.2	1.0V/100KHz	22.0	5.50	4.60
SDC10037R0YWF	7.0	1.0V/100KHz	27.0	4.80	4.30
SDC1003100YWF	10.0	1.0V/100KHz	35.0	4.40	3.80
SDC1003150YWF	15.0	1.0V/100KHz	50.0	3.60	3.20
SDC1003220YWF	22.0	1.0V/100KHz	73.0	2.90	2.50
SDC1003330YWF	33.0	1.0V/100KHz	93.0	2.30	2.10
SDC1003470YWF	47.0	1.0V/100KHz	128	2.10	1.80
SDC1003680YWF	68.0	1.0V/100KHz	213	1.50	1.50
SDC1003820YWF	82.0	1.0V/100KHz	283	1.45	1.24
SDC1003101YWF	100.0	1.0V/100KHz	304	1.35	1.20
SDC1003151YWF	150	1.0V/100KHz	506	1.15	1.00
SDC1003221YWF	220	1.0V/100KHz	756	0.92	0.80
SDC1003331YWF	330	1.0V/100KHz	1090	0.70	0.70

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## 7. Characteristics Curves



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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

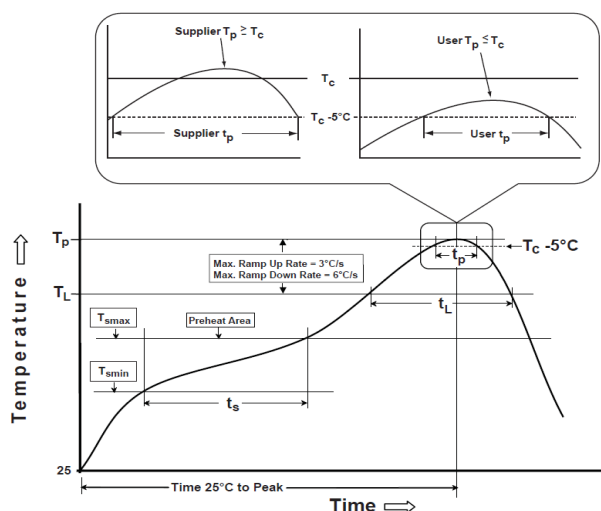
Recommended temperature profiles for lead free re-flow soldering in Figure 1, Table 1.1 & 1.2 (J-STD-020E).

### 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).

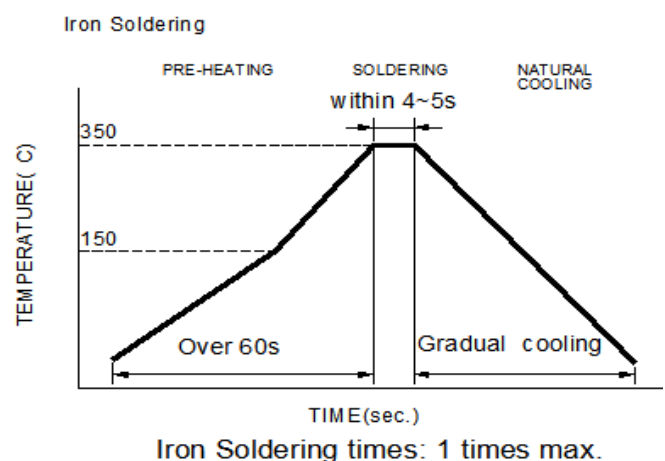
Note:

- 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<sub>p</sub>**: maximum peak package body temperature, **T<sub>c</sub>**: the classification temperature.

For user (customer) **T<sub>p</sub>** should be equal to or less than **T<sub>c</sub>**.

\*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 ( $T_c$ )**

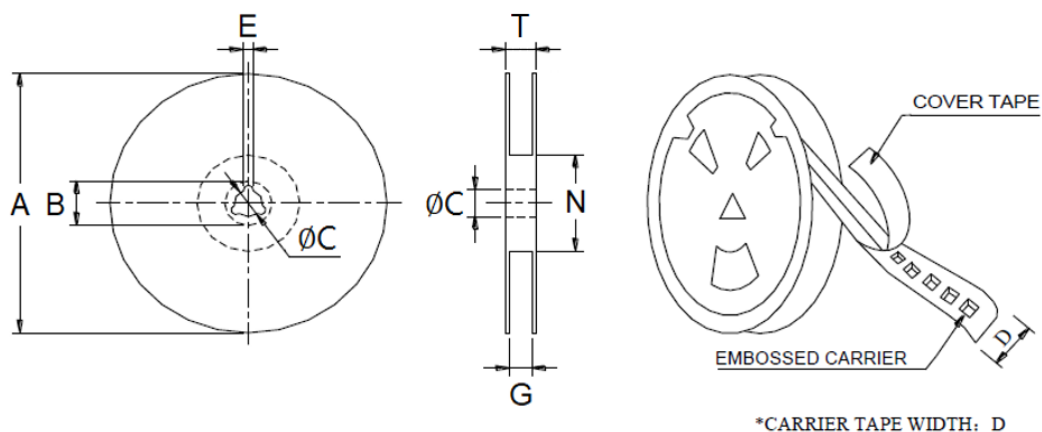
	Package Thickness	Volume mm <sup>3</sup> <350	Volume mm <sup>3</sup> 350-2000	Volume mm <sup>3</sup> >2000
PB-Free Assembly	<1.6mm	260°C	260°C	260°C
	1.6-2.5mm	260°C	250°C	245°C
	≥2.5mm	250°C	245°C	245°C

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

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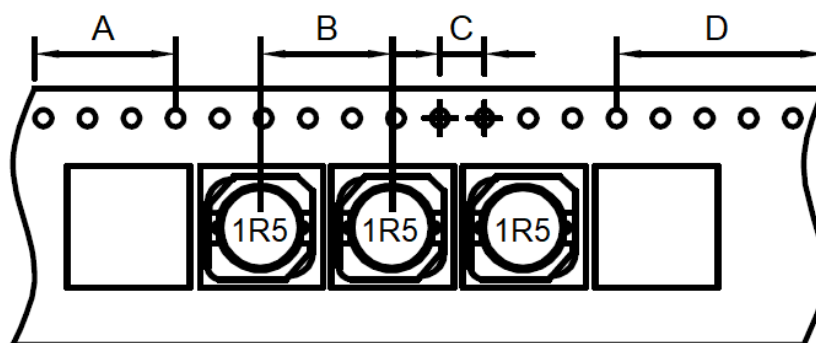
## 9. Packaging Information

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



Type	A	B	C	D	E	G	N	T
13"x24mm	330.0	21.0 Ref	13.0 Ref	24.0	2.0 Ref	26.0 Max	100.0 Min	30.4

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



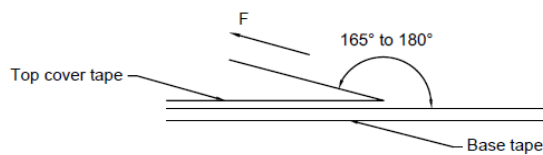
A	B	C	D
200	16	4	400

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

INNER : REEL		OUTER : CARTON		
QTY(PCS)	G.W(gw)	QTY(PCS)	G.W(Kg)	SIZE(cm)
600	900	2,400	7.10	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) 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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