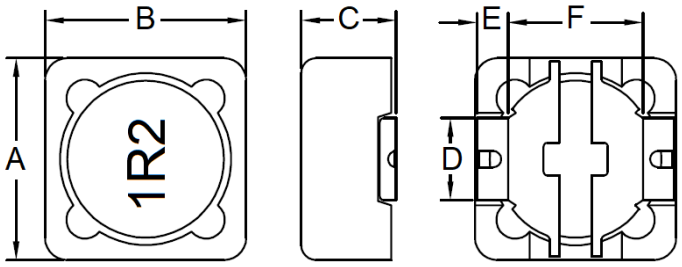
1. Part No. Expression

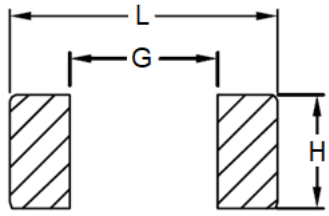
S D C 1 2 0 7 1 R 2 Y F

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

(a) Series Code
(b) Dimension Code
(c) Inductance Code
(d) Tolerance Code
(e) Packaging Code

2. Configuration & Dimensions (Unit: mm)



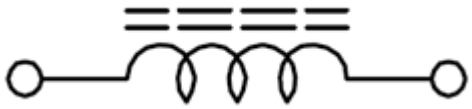


Recommended PCB Layout

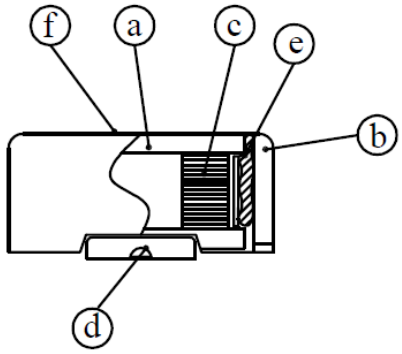
Note: 1. The above PCB layout reference only.
2. Marking: Inductance Code

A	B	C	D	E
12.5±0.3	12.5±0.3	8.0 Max	5.0 Ref	2.2 Ref
F	G	H	L	-
7.6 Ref	7.0 Ref	5.4 Ref	12.8 Ref	-

3. Schematic



4. Material List



(a) Core
(b) Core
(c) Wire
(d) Clip
(e) Adhesive
(f) Ink

5. General Specifications

(a) Operating Temp.: -40°C to +85°C (including self-temperature rise)
(b) Storage Temp.: -40°C to +85°C (on board)
(c) All test data referenced to 25°C ambient.
(d) Heat Rated Current (Irms) will cause the coil temperature rise approximately ΔT 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

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

6. Electrical Characteristics

Part Number	Inductance (uH) @0A	Test Frequency	DCR (mΩ) Max	IDC (A) Max	Marking
SDC12071R2YF	1.20	1V/100KHz	7.0	9.80	1R2
SDC12072R4YF	2.40	1V/100KHz	11.5	8.00	2R4
SDC12072R7YF	2.70	1V/100KHz	11.5	8.00	2R7
SDC12073R5YF	3.50	1V/100KHz	13.5	7.50	3R5
SDC12073R9YF	3.90	1V/100KHz	13.5	7.50	3R9
SDC12074R7YF	4.70	1V/100KHz	15.8	6.80	4R7
SDC12076R1YF	6.10	1V/100KHz	17.6	6.60	6R1
SDC12077R6YF	7.60	1V/100KHz	20.0	5.90	7R6
SDC1207100MF	10.0	1V/1KHz	21.6	5.40	100
SDC1207120MF	12.0	1V/1KHz	24.3	4.90	120
SDC1207150MF	15.0	1V/1KHz	27.0	4.50	150
SDC1207180MF	18.0	1V/1KHz	39.2	3.90	180
SDC1207220MF	22.0	1V/1KHz	43.3	3.60	220
SDC1207270MF	27.0	1V/1KHz	45.9	3.40	270
SDC1207330MF	33.0	1V/1KHz	64.8	3.00	330
SDC1207390MF	39.0	1V/1KHz	72.9	2.75	390
SDC1207470MF	47.0	1V/1KHz	100	2.50	470
SDC1207560MF	56.0	1V/1KHz	110	2.35	560
SDC1207680MF	68.0	1V/1KHz	140	2.10	680
SDC1207820MF	82.0	1V/1KHz	160	1.95	820
SDC1207101MF	100	1V/1KHz	220	1.70	101
SDC1207121MF	120	1V/1KHz	250	1.60	121
SDC1207151MF	150	1V/1KHz	280	1.42	151
SDC1207181MF	180	1V/1KHz	350	1.30	181

Note:

Tolerance Code: M=±20%, Y=±30%

Part Number	Inductance (uH) @0A	Test Frequency	DCR (mΩ) Max	IDC (A) Max	Marking
SDC1207221MF	220	1V/1KHz	390	1.16	221
SDC1207271MF	270	1V/1KHz	560	1.06	271
SDC1207331MF	330	1V/1KHz	640	0.95	331
SDC1207391MF	390	1V/1KHz	700	0.88	391
SDC1207471MF	470	1V/1KHz	980	0.79	471
SDC1207561MF	560	1V/1KHz	1070	0.73	561
SDC1207681MF	680	1V/1KHz	1460	0.67	681
SDC1207821MF	820	1V/1KHz	1640	0.60	821
SDC1207102MF	1000	1V/1KHz	1820	0.55	102

Note:

Tolerance Code: M=±20%, Y=±30%

7. 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.

7-1. IR Soldering Reflow

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

7-2. 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.

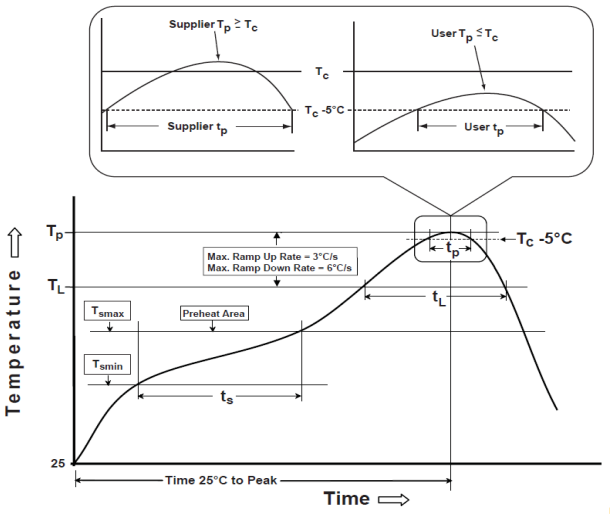
(b) 355°C tip temperature (Max.)

(c) Never contact the ceramic with the iron tip

(d) 1.0mm tip diameter (Max.)

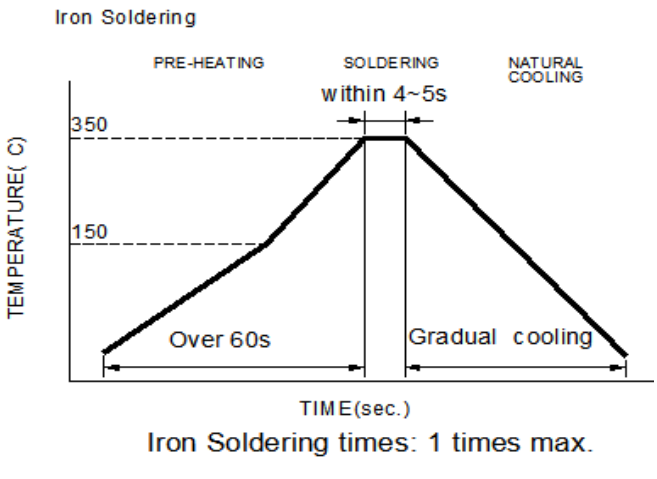
(e) Use a 20 watt soldering iron with tip diameter of 1.0mm

(f) Limit soldering time to 4~5 sec.



Reflow times: 3 times Max

Figure 1: IR Soldering Reflow



Soldering iron method: 350±5°C 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.**

*Tolerance for peak profile temperature (Tp) is defined as a supplier minimum and a user maximum.

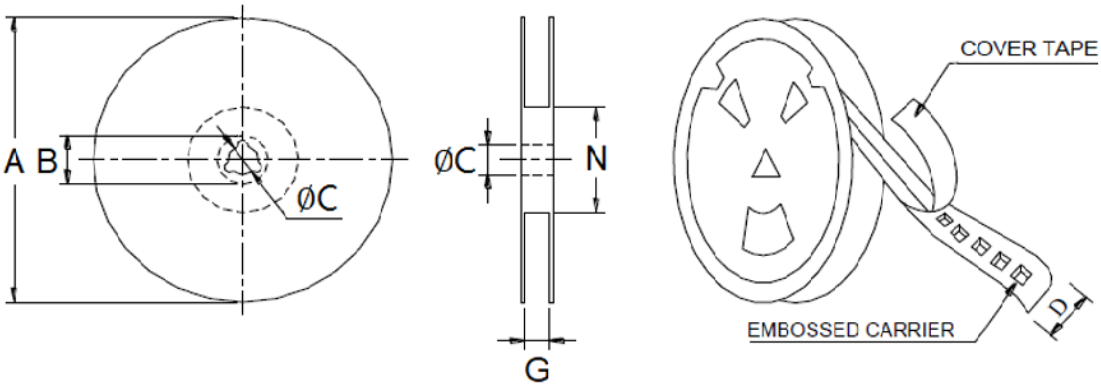
Table (1.2) Package Thickness/Volume and Classification Temperature (T_c)

	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.

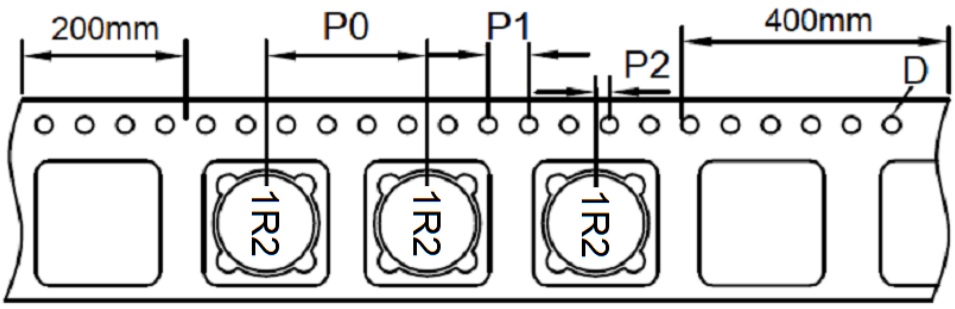
8. Packaging Information

8-1. Reel Dimension (Unit: mm)



Type	A	B	C	D	G	N
13”x24mm	330.0	21.0	13.0	24.0	24.5	100.0

8-2. Tape Dimension (Unit: mm)



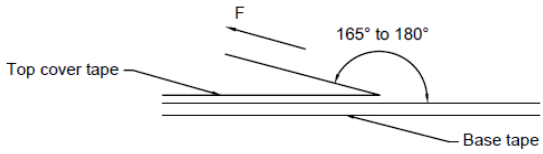
P0	P1	P2	D
16.00 Ref	4.00 Ref	2.00±0.10	1.50+0.25/-0.00

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

8-3. Packaging Quantity (Unit: Pcs)

Chip/Reel	450

8-4. 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.