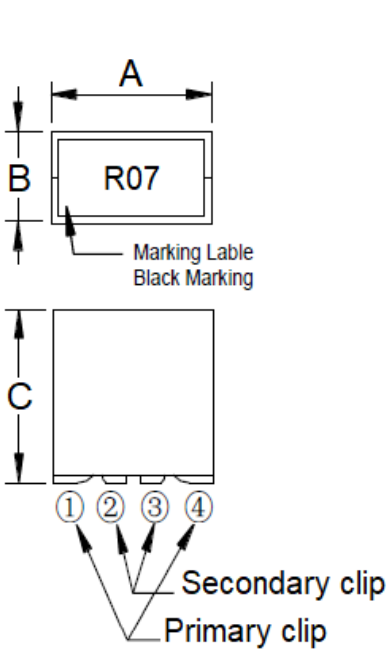
1. Part No. Expression

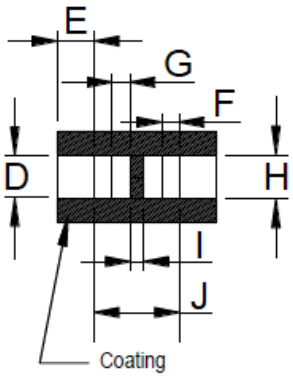
S M F 1 2 0 6 1 2 R 0 7 L Z F

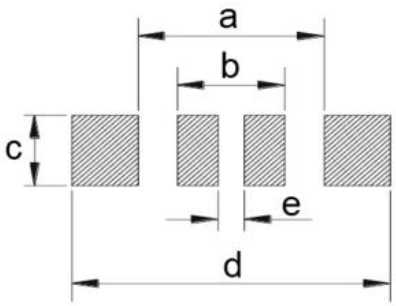
(a) (b) (c) (d) (e) (f)

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

2. Configuration & Dimensions (Unit: mm)







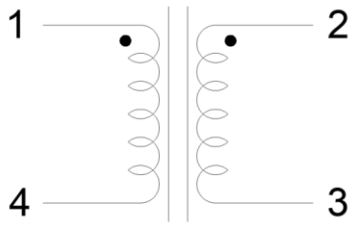
Recommended PCB Layout

Note:
1. Marking: Inductance (Please refer to Electrical Characteristics table)
2. PAD surface flatness 0.1 mm max.
3. Before soldering, be sure to preheat components. The recommended preheating condition is 150°C for 3 minutes.

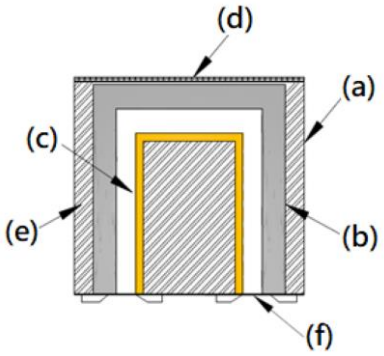
A	B	C	D	E	F	G	H
12.00 Max	See Electrical Characteristics	12.00 Max	2.40±0.20	3.10±0.20	0.90±0.20	1.05±0.20	2.50 Typ
I	J	a	b	c	d	e	-
1.40±0.20	5.30±0.20	7.10 Ref	4.10 Ref	3.10 Ref	12.15 Ref	1.00 Ref	-

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

3. Schematic



4. Material List



(a) Core
(b) Clip
(c) Wire
(d) Tape
(e) Glue
(f) Coating

5. General Specifications

(a) Operating Temp.: -40°C to +125°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 approximately ΔT of 40°C.
(d) Isat1: is the DC current which causes the inductance drop to Li at +25°C.
(e) Isat2: is the DC current which causes the inductance drop to Li at +100°C.
(f) Rated Current: The lower value of Isat and Irms.
(g) Operating Voltage: 50V_{DC} Typ
(h) Storage Condition (Component in its packaging)
  i) Temperature: -10°C to +40°C
  ii) Humidity: Less than 70% RH

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

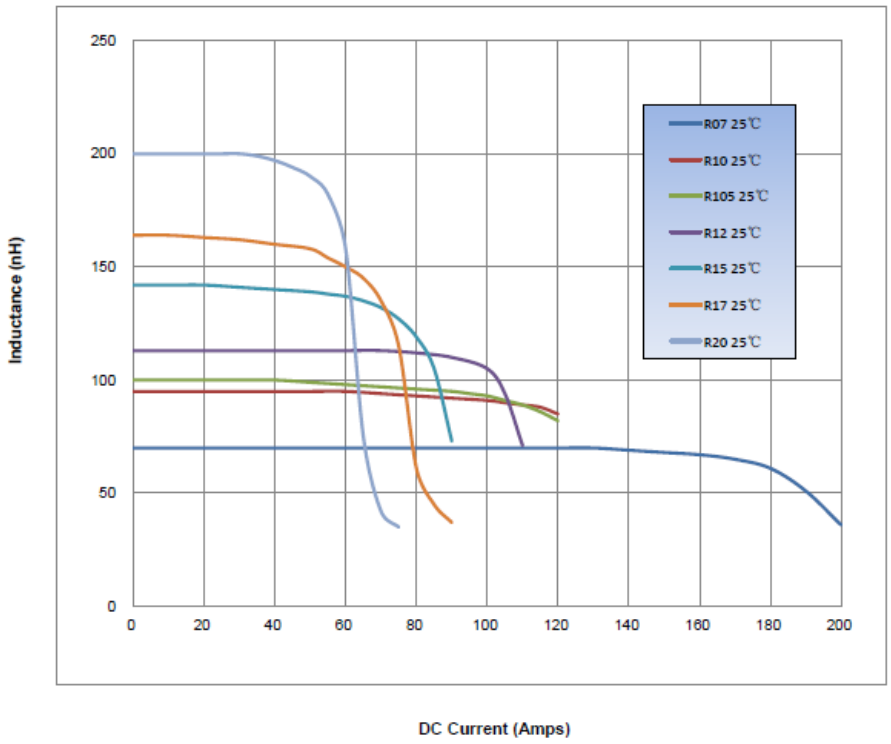
6. Electrical Characteristics

Part Number	Inductance (nH) 1-4/2-3 ±15%	Li (nH) Min	DCR (mΩ) ±10%		Isat (A) Typ		Irms (A) Typ	Leakage Inductance (nH) Typ	Coupling Coefficient Typ	Dimension B (mm) Max
			1-4	2-3	25°C	100°C				
SMF120612R07LZF	70.0	48	0.125	0.45 Max	160	140	70	17.0	0.90	6.2
SMF120612R10LZF	100.0	64	0.125	0.45 Max	125	105	70	17.0	0.91	6.2
SMF120612R105LZF	105.0	66	0.125	0.45 Max	120	100	70	17.0	0.91	6.0
SMF120612R12LZF	120.0	77	0.125	0.45 Max	100	90	70	17.0	0.92	6.0
SMF120612R15LZF	150.0	96	0.125	0.45 Max	80	70	70	17.0	0.93	6.0
SMF120612R17LZF	170.0	107	0.125	0.45 Max	70	55	70	17.0	0.94	6.0
SMF120612R20LZF	200.0	128	0.125	0.45 Max	50	40	70	17.0	0.95	6.0

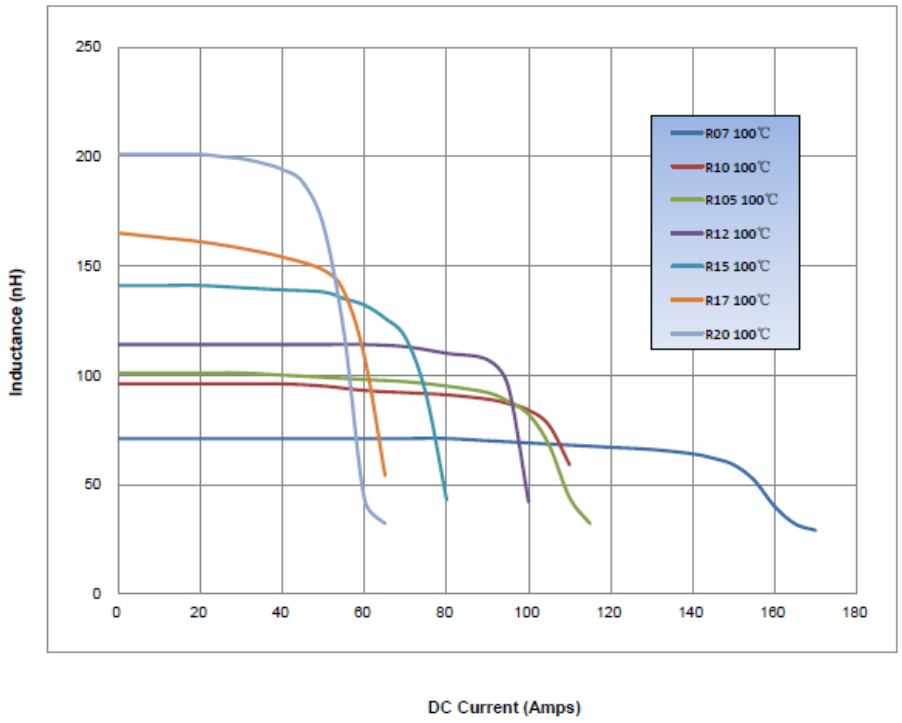
Notes:

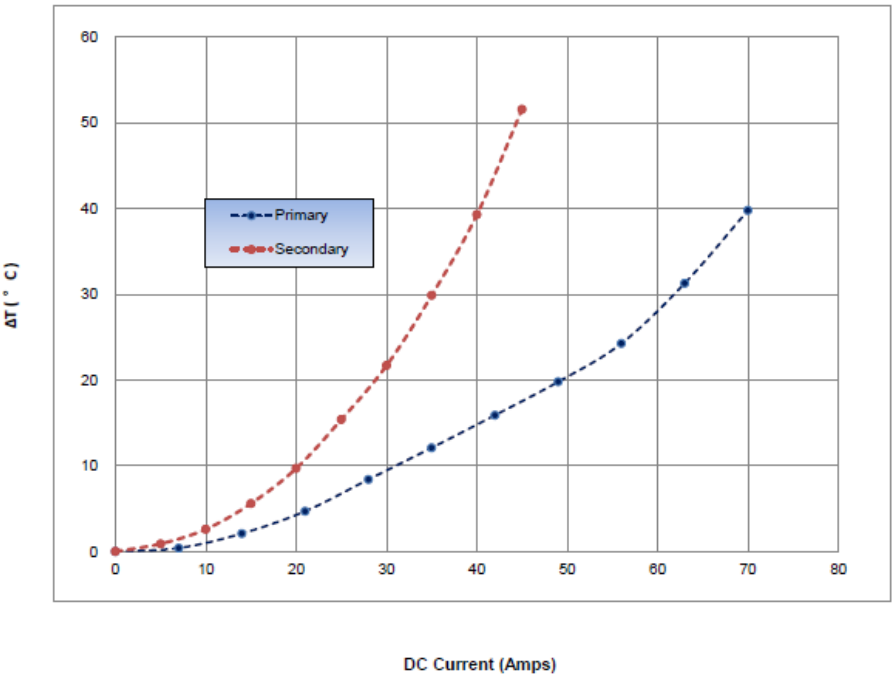
1. L@ 1.0V/100KHz, 0A, 25°C
2. L2 @ 1.0V/100KHz, I_{SAT}
3. Kps: Coupling Coefficient
4. Lk: Leakage inductance
5. Product weight: 3.67g

7. Characteristics Curve



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





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.

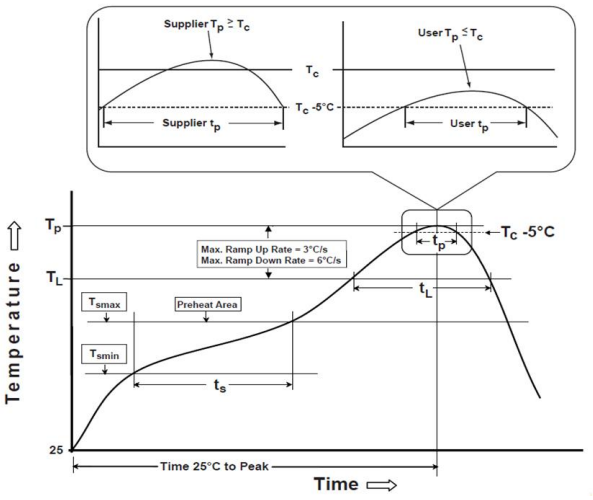
(b) 350°C tip temperature (Max.)

(c) Never contact the ceramic with the iron tip

(d) 1.0mm tip diameter (Max.)

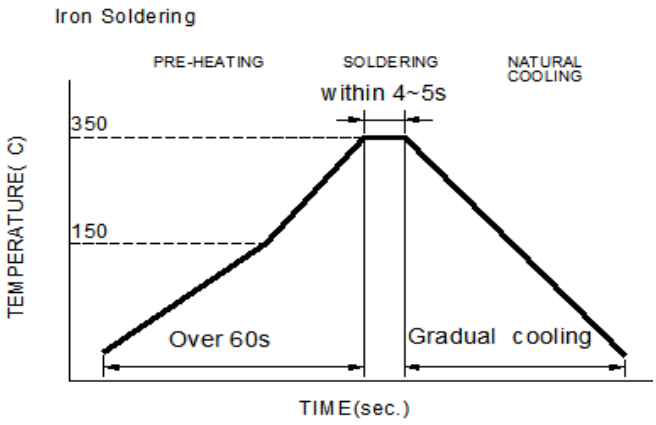
(e) Use a 20 watt soldering iron with tip diameter of 1.0mm

(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.**

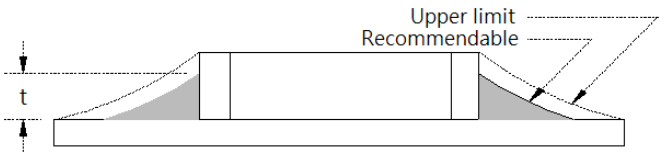
Table (1.2) Package Thickness/Volume and Classification Temperature (T_c)

	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

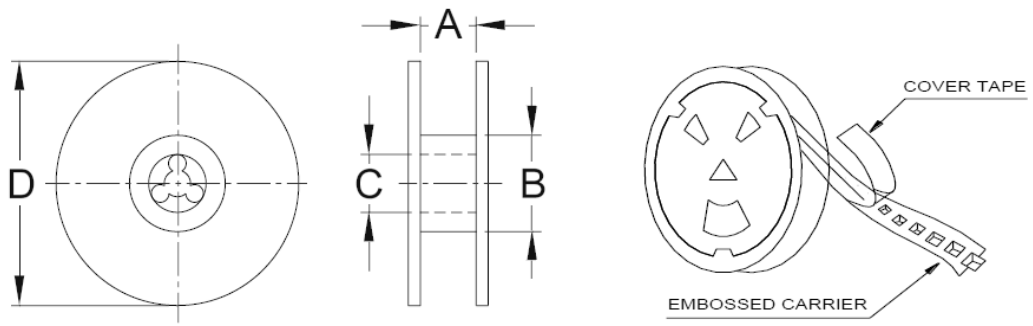
Accordingly increasing the solder volume, the mechanical stress to product is also increased. Exceeding solder volume may cause the failure of mechanical or electrical performance. Solder shall be used not to be exceeded as shown in the Figure below. Minimum fillet height = soldering thickness + 25% product height.



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

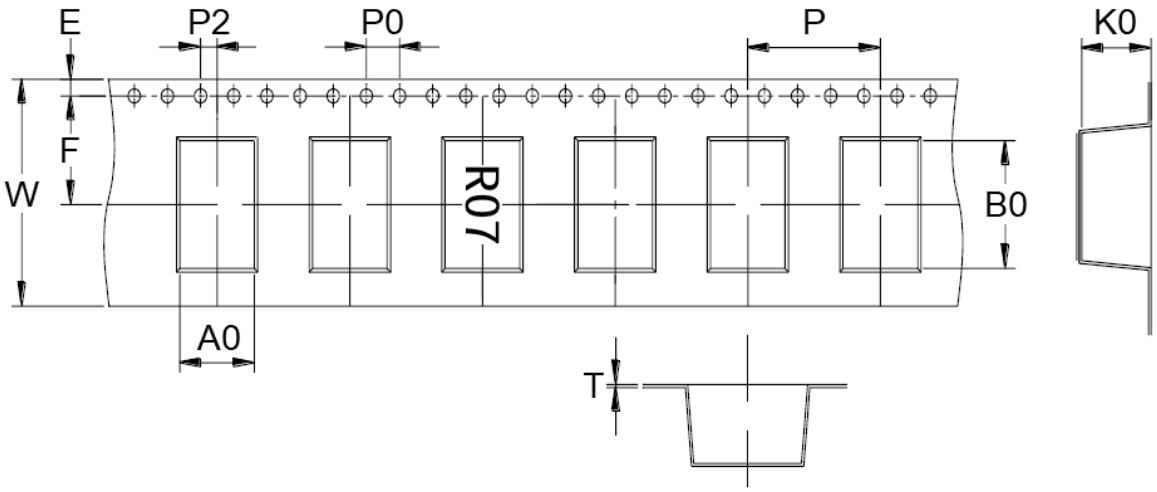
9. Packaging Information

9-1. Reel Dimension (Unit: mm)



Type	A	B	C	D
13”x24mm	24.5 Ref	100.0 Ref	13.0 Ref	330.0 Ref

9-2. Tape Dimension (Unit: mm)



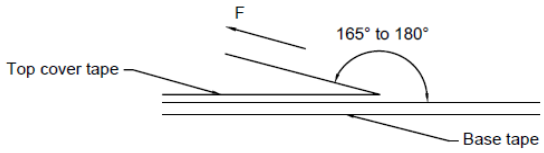
W	P	P0	P2	E	F
24.00±0.30	16.00±0.10	4.00 Ref	2.00 Ref	1.75 Ref	11.50 Ref
D0	T	A0	B0	K0	-
1.50 Ref	0.50±0.05	6.20±0.10	12.20±0.10	12.20±0.10	-

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

9-3. Packaging Quantity (Unit: Pcs)

Chip/ Reel	300
Inner Box	600
Outer Box	2,400

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.