

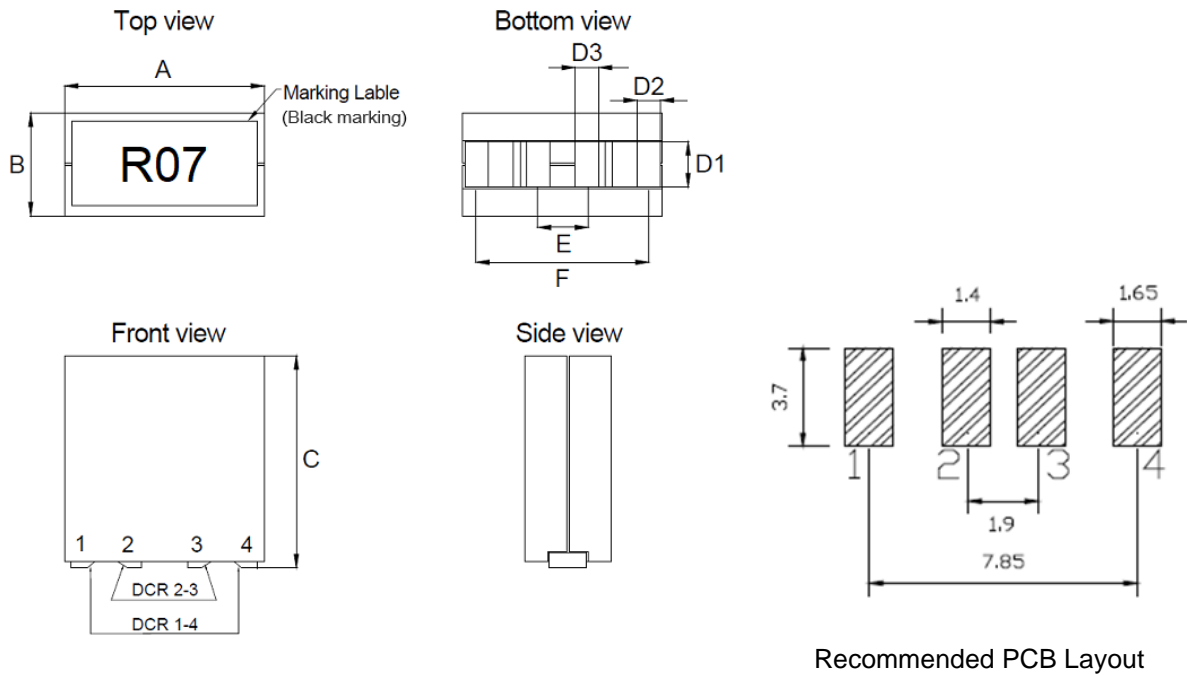
1. Part No. Expression

S M F 0 9 0 6 1 0 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)

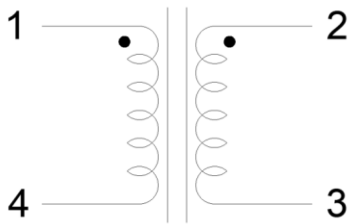


- Note:
1. The above PCB layout reference only.
 2. Marking: Inductance Code
 3. Flatness of PAD surface 0.1mm Max.

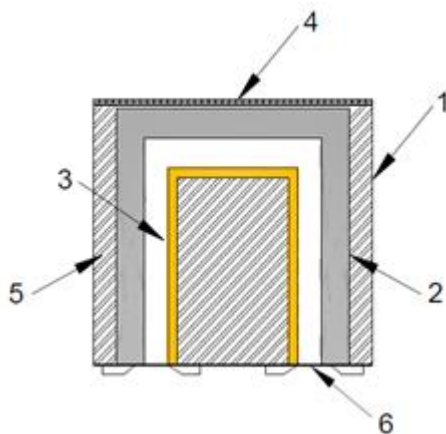
A	B	C	D1	D2	D3	E	F
9.30±0.30	6.10±0.30	10.20±0.3	3.20±0.30	1.15±0.30	0.60±0.30	2.20±0.30	7.85±0.30

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

3. Schematic



4. Material List



- (1) Core
- (2) Clip
- (3) Wire
- (4) Tape
- (5) Glue
- (6) Coating

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 ΔT of 40°C.
- (e) I_{SAT1} : is the DC current which causes the inductance drop to L_i at +25°C.
 I_{SAT2} : is the DC current which causes the inductance drop to L_i at +100°C.
 I_{SAT3} : is the DC current which causes the inductance drop to L_i at +125°C.
- (f) Rated DC Current: The lower value of Irms and Isat.
- (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	L(nH) @0A 1-4/2-3 ±15%	Li (nH) Min	DCR (mΩ) ±10%		I _{rms} (A)		Isat 1 (A)	Isat 2 (A)	Isat 3 (A)	K _{ps} Typ	L _k (nH) Typ
			1-4	2-3	1-4	2-3	@25°C	@100°C	@125°C		
SMF090610R07LZF	70	47.6	0.125	0.330	75	40	140	116	109	0.92	8
SMF090610R10LZF	100	64	0.125	0.330	75	40	112	83	78	0.94	8
SMF090610R12LZF	120	77	0.125	0.330	75	40	93	67	63	0.95	8
SMF090610R15LZF	150	96	0.125	0.330	75	40	67	53	49	0.94	8
SMF090610R17LZF	170	107	0.125	0.330	75	40	56	48	45	0.96	8
SMF090610R18LZF	180	115	0.125	0.330	75	40	54	46	43	0.97	8
SMF090610R20LZF	200	128	0.125	0.330	75	40	52	42	39	0.97	8
SMF090610R22LZF	220	140	0.125	0.330	75	40	50	38	35	0.97	8

Test Frequency: 1.0V/100kHz

K_{ps}: Coupling Coefficient

L_k: Leakage inductance

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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

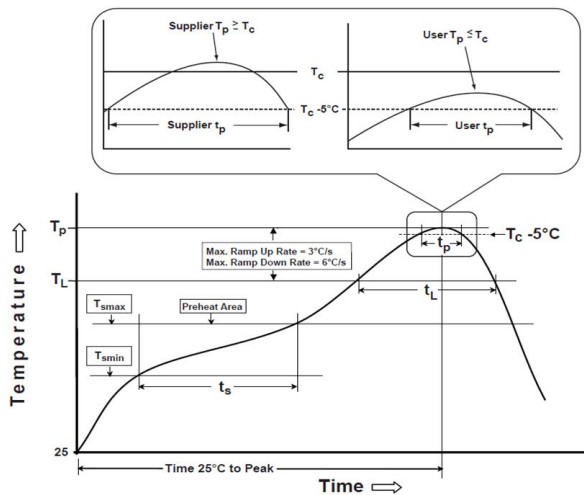
Recommended temperature profiles for lead free re-flow soldering in Figure 1, Table 1.1 & 1.2 (J-STD-020E).

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).

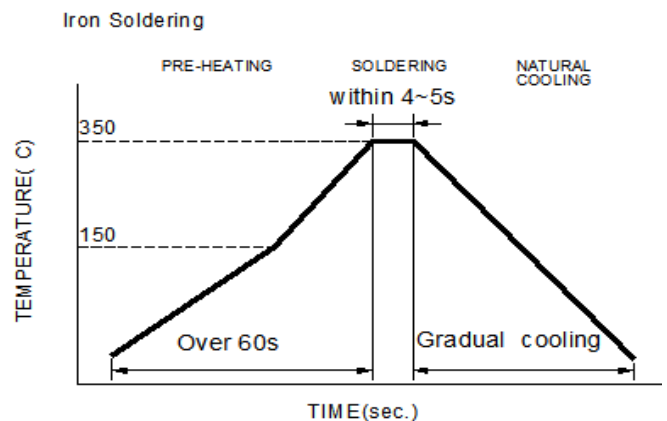
Note:

- (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



Iron Soldering times: 1 times max.

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_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)

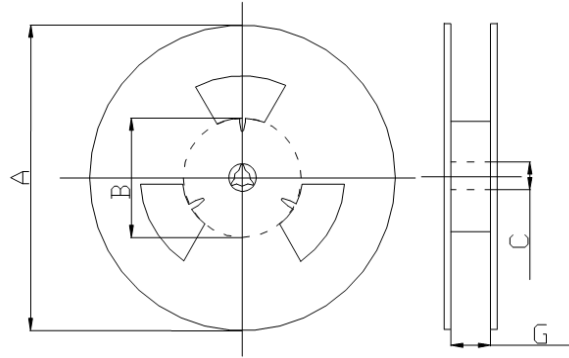
	Package Thickness	Volume mm ³ <350	Volume mm ³ 350-2000	Volume mm ³ >2000
PB-Free Assembly	<1.6mm	260°C	260°C	260°C
	1.6-2.5mm	260°C	250°C	245°C
	≥2.5mm	250°C	245°C	245°C

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

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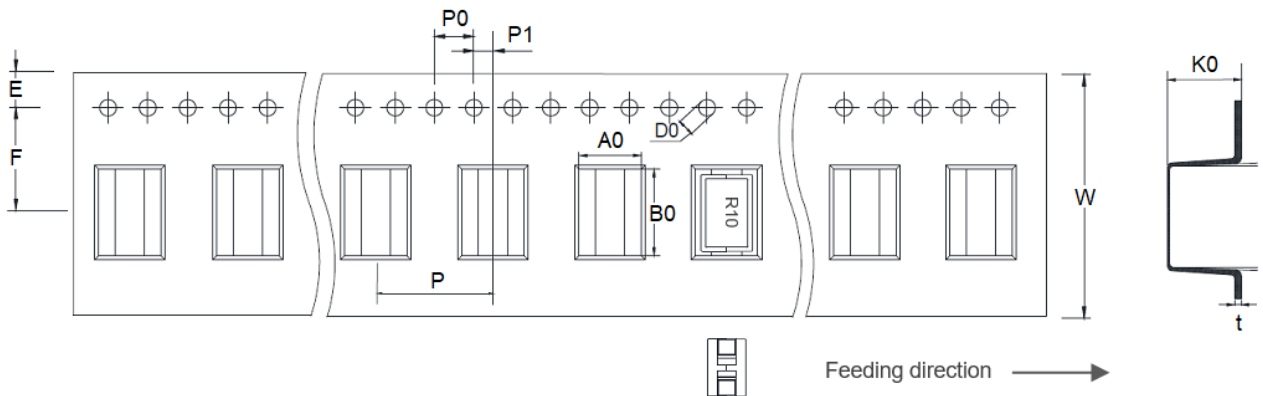
8. Packaging Information

8-1. Reel Dimension (Unit: mm)



Type	A	B	C	G
13"x24mm	330.0	100.0	13.5	24.5

8-2. Tape Dimension (Unit: mm)



B0	A0	K0	P	P0	P1
9.80±0.30	6.60±0.30	10.70±0.30	12.00±0.10	4.00±0.10	2.00±0.10
W	F	E	D0	t	-
24.00±0.30	11.50±0.10	1.75±0.10	1.50±0.10	0.50±0.05	-

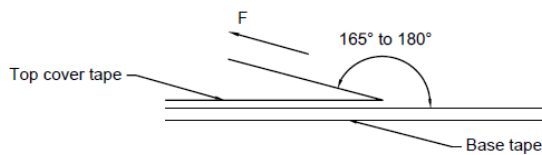
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8-3. Packaging Quantity (Unit: Pcs)

Chip/ Reel	500
Carton	4,000

Carton size: 352*352*358mm

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.

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