



Halogen Free

SM6827A Series



1. Features of SM6827A series:

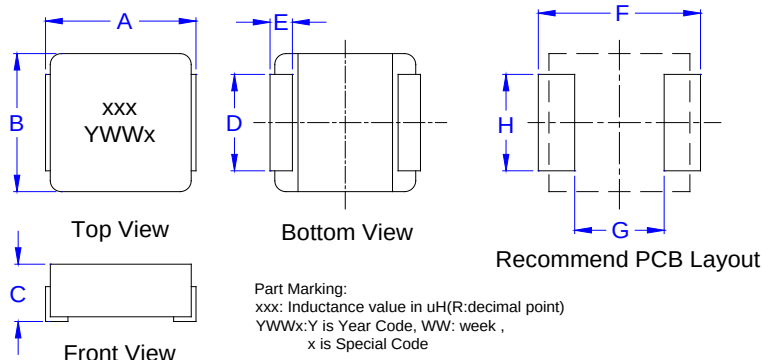
- 17.45 x 17.15mm Foot Print , 7.00mm Max. height SMD Power Inductor for high frequency application. Operating frequency up to 5MHz.
- Inductance range from 0.47uH to 100.0 uH. Custom values are welcomed.
- High saturation current characteristics by distributed gapped metal dust core.
- Ideal for portable device, Pad, E-reader and high density DC to DC Converter.
- Operating Temperature Range: -55°C to 155°C .
- T & R Qty: 200 pcs , 13" Reel and Plastic tape: 24mm wide, 24mm pocket spacing.



2. Electrical Characteristics of SM6827A series:

ITG Part Number	Inductance ¹ (uH) ± 20%	DCR (mΩ) Typ. @25°C	DCR (mΩ) Max. @25°C	Saturation Current ² Isat (A) Typ. @25°C	Heat Rating Current ³ Irms (A) Typ. @25°C
SM6827A-R47MHF	0.47	0.78	0.90	85.50	57.00
SM6827A-R68MHF	0.68	1.05	1.21	80.00	47.00
SM6827A-1R0MHF	1.00	1.30	1.50	62.00	42.00
SM6827A-2R2MHF	2.20	2.15	2.50	34.00	29.00
SM6827A-3R3MHF	3.30	2.79	2.93	27.00	24.50
SM6827A-4R7MHF	4.70	4.12	4.72	24.00	22.00
SM6827A-6R8MHF	6.80	6.55	7.55	22.00	17.00
SM6827A-8R2MHF	8.20	8.10	8.70	20.00	16.00
SM6827A-100MHF	10.00	9.30	10.00	18.00	15.00
SM6827A-150MHF	15.00	16.50	17.50	14.50	11.00
SM6827A-220MHF	22.00	20.50	23.00	12.00	10.00
SM6827A-330MHF	33.00	35.10	37.00	10.00	9.50
SM6827A-470MHF	47.00	41.00	47.00	7.50	6.50
SM6827A-680MHF	68.00	66.00	73.00	6.50	5.20
SM6827A-101MHF	100.00	95.00	110.00	4.50	5.00

3. Mechanical Dimensions of SM6827A series (unit: mm):



Pad Dimension	SM6827A
F	20.07 Typ.
G	12.42 Typ.
H	12.32 Typ.

Type	A	B	C	D	E
SM6827A	17.15 ± 0.30	17.15 Max.	7.00 Max.	11.94 ± 0.30	2.11 ± 0.30

● New York 1 914 347 2474 ● Taipei 886 2 2698 8669 ● Kaohsiung 886 7 350 2275

● Japan 81 568 85 2830 ● Shenzhen 86 755 8418 6263 ● Shanghai 86 21 5424 5141 ● Hong Kong 852 9688 9767

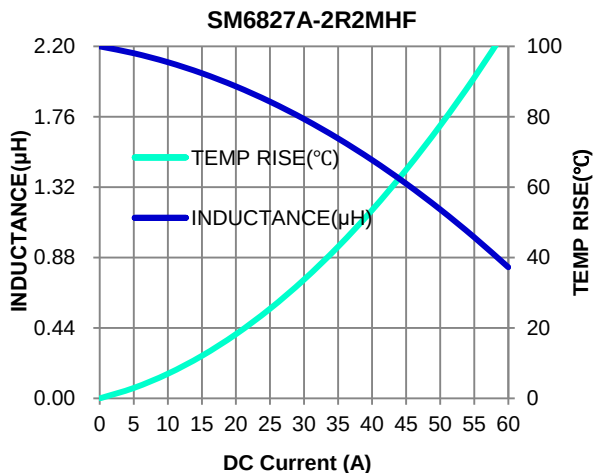
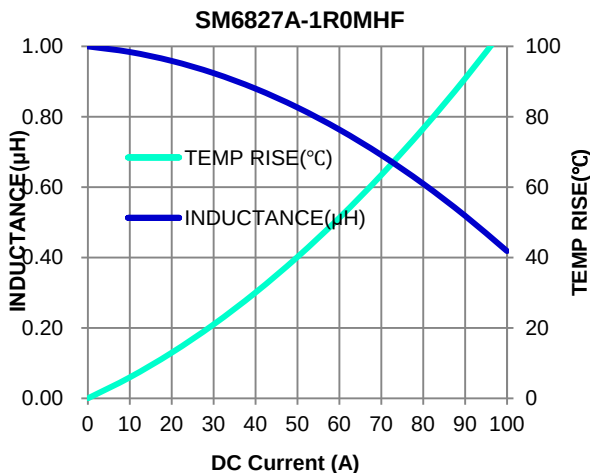
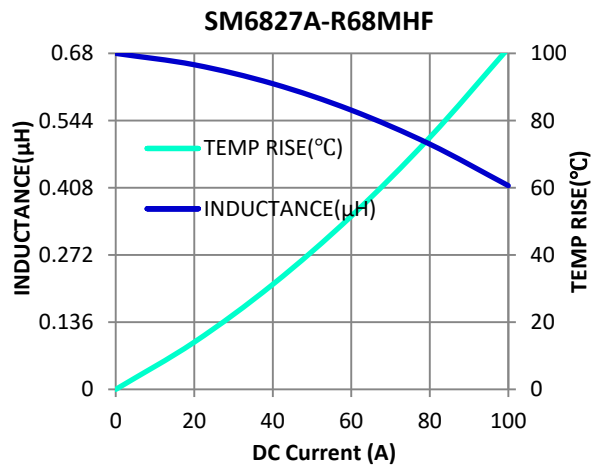
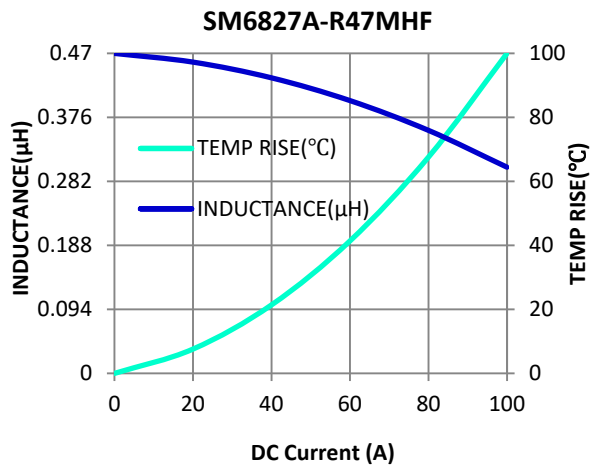
● sales@ITG-Electronics.com ● www.ITG-Electronics.com Revision A.2 : May 23, 2018

*Due to continuous product improvement, all specifications are subject to change without prior notice. Kindly contact an ITG field application engineer or a sales representative prior to purchase.

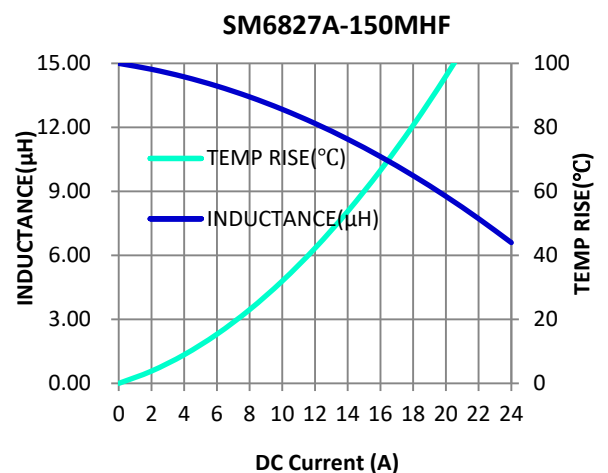
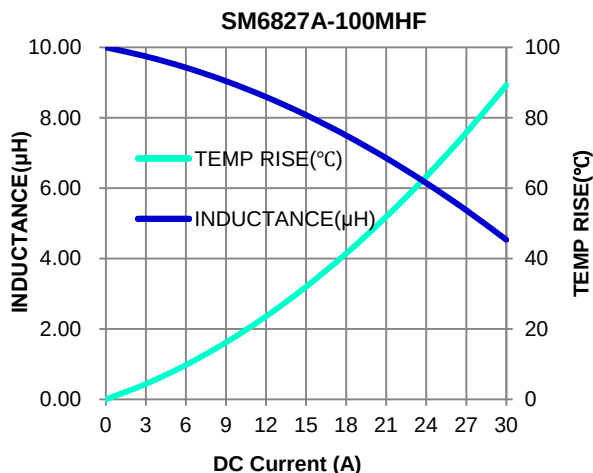
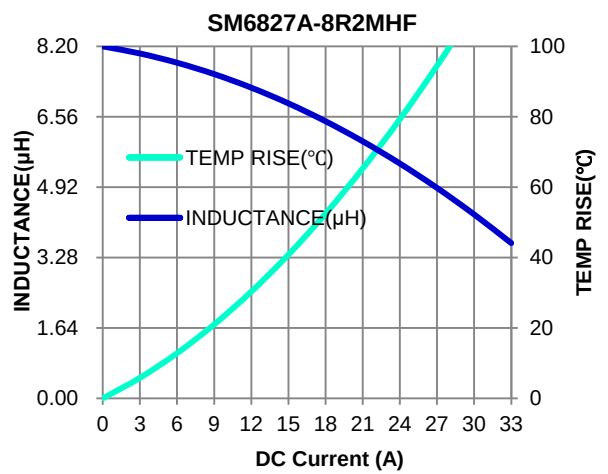
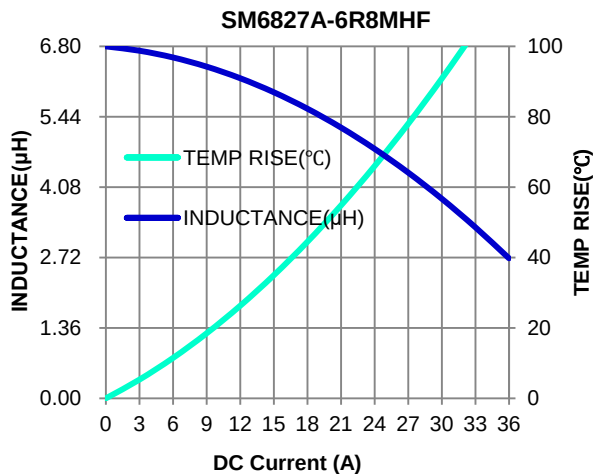
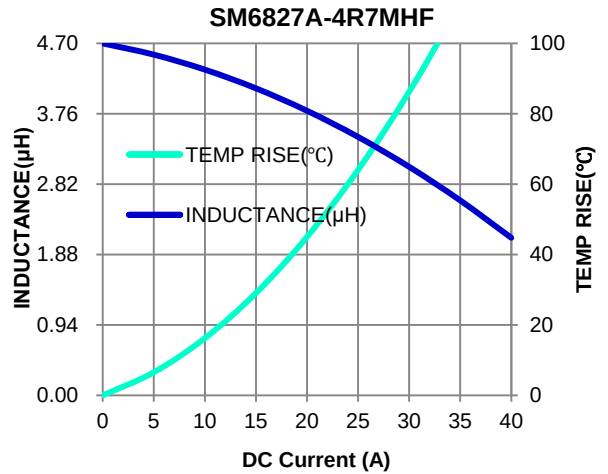
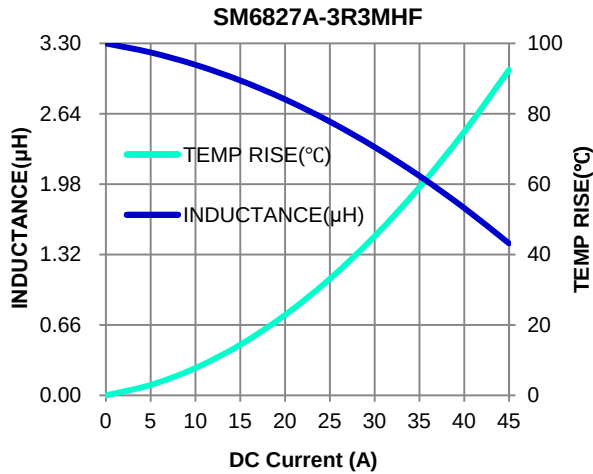
Notes:

1. Test conditions: 100KHz, 1.0V, 25°C ambient temperature .
2. Isat: DC current that causes inductance to drop 30%(Typ.) from OCL (Ta=25°C).
3. Irms: DC current for an approximate temperature rise of 40°C without core loss. Derating is necessary for AC currents. PCB pad layout, trace thickness and width, air-flow and proximity of other heat generating components will affect the temperature rise. It is recommended the part temperature not exceed 155° C under worst case operating conditions as verified in the end application.

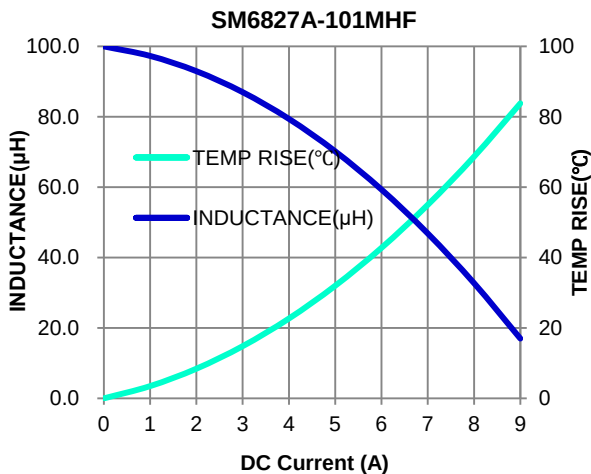
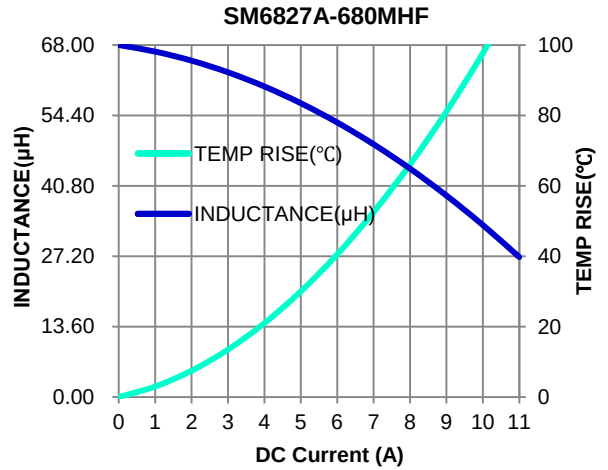
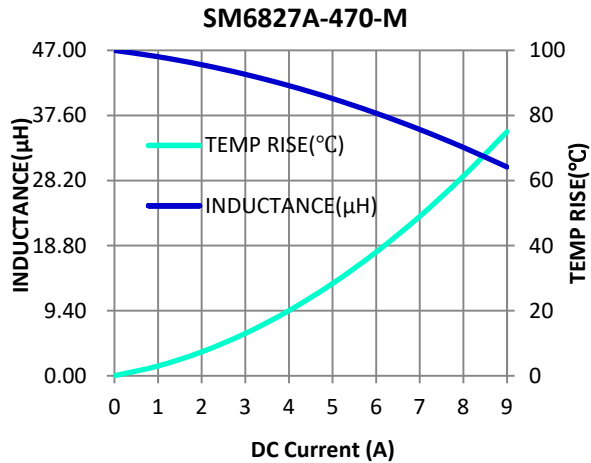
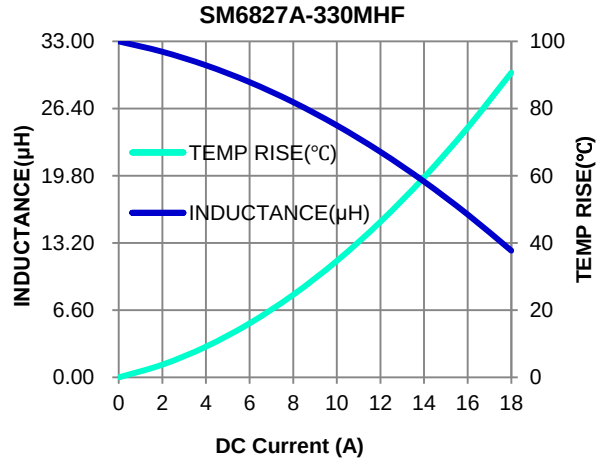
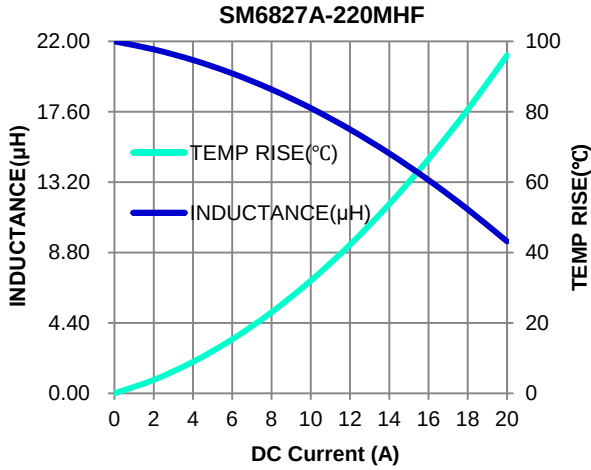
4. Inductance vs. Current vs. Temperature Rise Characteristics of SM6827A Series :



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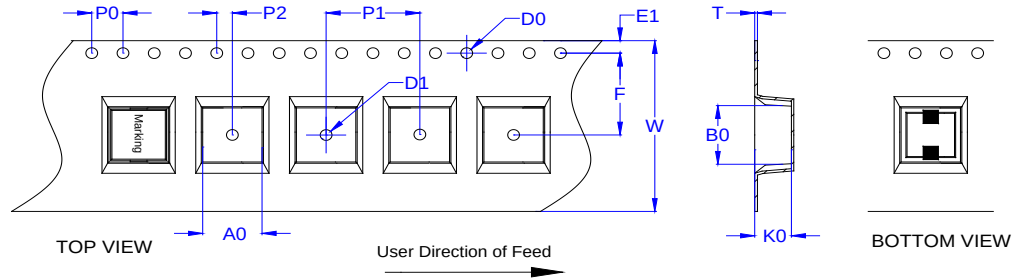


4. Inductance vs. Current vs. Temperature Rise Characteristics of SM6827A Series :



5. PACKAGE SPECIFICATION.(UNIT:mm):

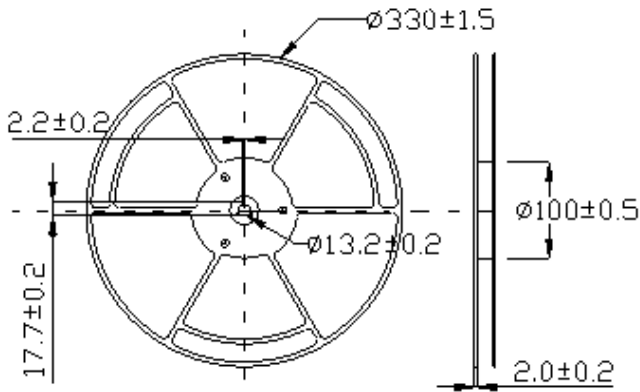
(1).ENCAPSULATION MODE:



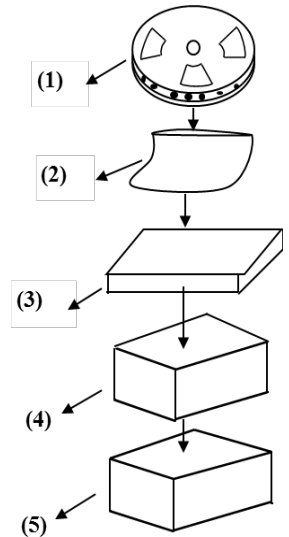
(2).DIMENSION(mm):

W	A0	B0	K0	P1	P0	P2	D0	D1	F	E1	T
24±0.30	17.45±0.10	17.8±0.10	7.30±0.15	24.0±0.10	4.0±0.10	2.0±0.10	1.5±0.10	1.5±0.10	11.5±0.10	1.75±0.10	0.50±0.05

(3).REEL SIZE:



(4).PACKAGE MODE:



(5).PACKAGING LIST:

No.	Packing Part	Dimension (mm)	Material	Quantity
1	Reel	330	Plastic	200Pcs / Reel
2	Bag	450 X 360 X 0.075	Plastic	1Reel / Bag
3	Small Box	340 X 335 X 45	Paper	1Bag / Small Box
4	Middle Box	356 X 350 X 226	Paper	4Small Boxes / Middle Box
5	Outer Box	378 X 362 X 252	Paper	1Middle Box / Outer Box

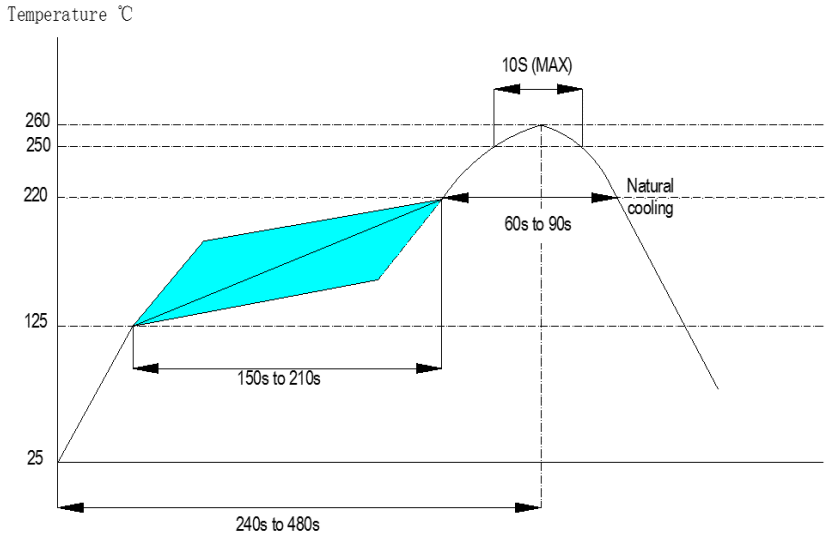
(6).WEIGHT: N.W: 11.4 g/pcs (APPROX), TOTAL 9.12 Kg(APPROX),G.W:TOTAL 14.42Kg (APPROX).

(7).Storage conditions: -40°C~85°C ,75%RH (Max.).

6.RELIABILITY TEST:

6.1 Mechanical Reliability		
Item	Specification and Requirement	Test Method
Solderability	The surface of terminal immersed shall be minimum of 95% covered with a new coating of solder	Solder heat proof: 1. Preheating: 160 ± 10 °C 2. Retention time: 245 ± 5 °C for 2 ± 0.5 seconds
Vibration	Inductance change: Within $\pm 10\%$ Without mechanical damage such as break	1. Vibration frequency: (10 Hz to 55 Hz to 10Hz) in 60 seconds as a period 2. Vibration time: Period cycled for 2 hours in each of 3 mutual perpendicular directions. 3. Amplitude: 1.5 mm max.
Shock	Inductance change: Within $\pm 10\%$ Without mechanical damage such as break	1. Peak value: 100 G 2. Duration of pulse: 11ms 3. 3 times in each positive and negative direction of 3 mutual perpendicular directions.
6.2 Endurance Reliability		
Thermal Shock	Inductance change: Within $\pm 10\%$ Without distinct damage in appearance	1. Repeat 100 cycles as follow: (-55 ± 2 °C; 30 ± 3 min) → (Room temp., 5 min) → ($+155 \pm 2$ °C, 30 ± 3 min) → (Room temp., 5 min) 2. Recovery: 48 ± 4 / -0 hours of recovery under the standard condition after the test.
High Temperature Resistance	Inductance change: Within $\pm 10\%$ Without distinct damage in appearance	1. Environment condition: 85 ± 2 °C Applied Current: Rated current 2. Duration: 1000 ± 4 / -0 hours
Humidity Resistance	Inductance change: Within $\pm 10\%$ Without distinct damage in appearance	1. Environment condition: 60 ± 2 °C Humidity: 90–95% Applied Current: Rated current 2. Duration: 1000 ± 4 / -0 hours
Low Temperature Store	Inductance change: Within $\pm 10\%$ Without distinct damage in appearance	Store temperature: -55 ± 2 °C, 1000 ± 4 / -0 hours
High Temperature Store	Inductance change: Within $\pm 10\%$ Without distinct damage in appearance	Store temperature: $+125 \pm 2$ °C, 1000 ± 4 / -0 hours

Soldering Reflow Chart

Stage	Precaution	Recommended temperature profile
Reflow soldering	Temperature profile can be referenced after confirming of adhesion , temperature of resistance to soldering heat , component size , soldering etc. sufficient . Note: please refer to the latest IPC/JEDEC J-STD-020: "Moisture/Reflow Sensitivity Classification for Nonhermetic Solid State Surface Mount Devices"	 Temperature °C 260 250 220 125 25 10s (MAX) 60s to 90s Natural cooling 150s to 210s 240s to 480s