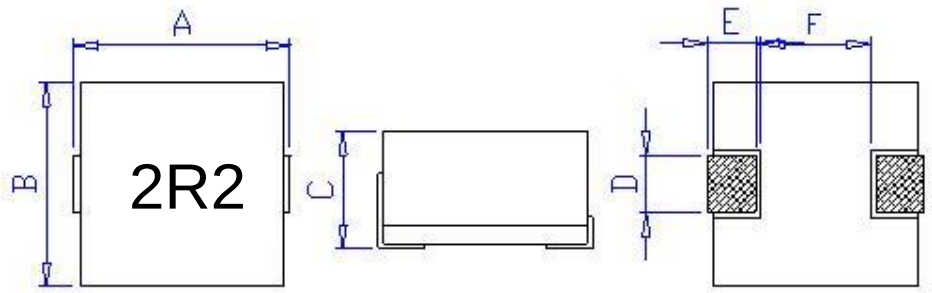
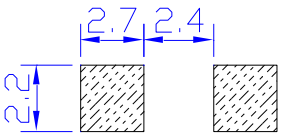
Brightek (Europe) Limited

SPECIFICATION

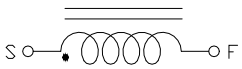
HF COMPLIANT

1.Mechanical & Dimensions





PCB Layout



Equivalent Circuit

(UNIT: mm)

A	6.9 ± 0.3
B	6.9 ± 0.3
C	3.8+0.2-0.3
D	1.2 ± 0.3
E	1.8 ± 0.3
F	2.5 ± 0.3

REMARK

(1)MARKING WHITE:

2.Electrical Requirements

PARAMETER	SPECIFICATION		CONDITION	TEST INSTRUMENTS
L0	2.2 ± 20%	uH	100KHz/1.0V	■CH-1062A LCR METER
DCR	11.4 ± 10%	mohm	@20℃	■CH-16502 IMPEDANCE METER
I-sat	12 (TYP)	Amps	≥70%L0	■CH-3302 LCR METER + CH-1320 BIAS
I-DC	9 (MAX)	Amps	ΔT≤40℃	■DIGITAL THERMOMTER: DM6801A

3.Temperature Reting

Operating	-40℃~ 150℃

4.Product Identification

SC - 0704 - 2R2 M

A B C D

A : Series Name.
B : Dimension.
C : Inductance. (for example 2R2=2.2 uH)
D : Inductance Tolerance. (for example M=±20%)

5.Testing Data

PARAMETER	L0	DCR	I-sat	I-DC	
UNIT	uH	mohm	Amps	Amps	
SPECIFICATION	2.2 ± 20%	11.4 ± 10%	12 (TYP)	9 (MAX)	
CONDITION	100KHz/1.0V	@20℃	≥70%L0	ΔT≤40℃	
1	2.25	11.80	OK	OK	
2	2.35	11.70			
3	2.37	11.50			
4	2.36	11.70			
5	2.42	11.60			
6	2.34	11.50			
7	2.22	11.40			
8	2.18	11.80			
9	2.15	11.70			
10	2.25	11.90			
MEAN	2.29	11.66			
R	0.27	0.50			

6.Ambient Condition

TEMPERATURE	25 ± 5℃	HUMIDITY	60 ± 10%

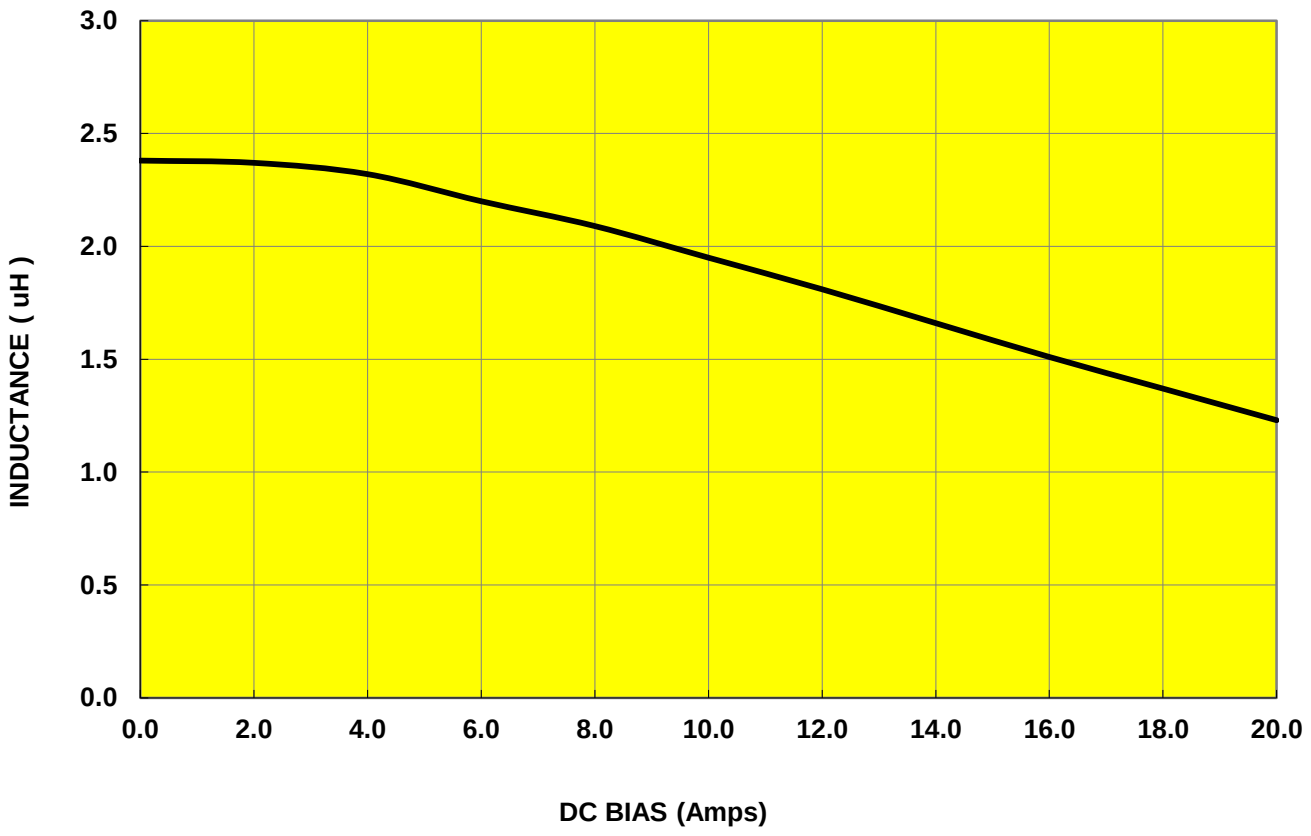
7.Test Data

NO	A	B	C	D	E	F		
	6.9 ± 0.3	6.9 ± 0.3	3.8+0.2-0.3	1.2 ± 0.3	1.8 ± 0.3	2.5 ± 0.3		
1	6.92	6.93	3.72	1.15	1.68	2.42		
2	6.90	6.95	3.63	1.20	1.72	2.49		
3	6.95	6.88	3.78	1.18	1.75	2.45		
4	6.90	6.92	3.82	1.17	1.80	2.47		
5	6.88	6.97	3.65	1.16	1.78	2.53		
6	6.85	6.90	3.72	1.19	1.82	2.44		
7	6.92	6.88	3.77	1.15	1.85	2.57		
8	6.99	6.92	3.79	1.20	1.77	2.53		
9	6.95	6.93	3.90	1.17	1.62	2.46		
10	6.97	6.90	3.78	1.20	1.75	2.55		
MEAN	6.92	6.92	3.76	1.18	1.75	2.49		
R	0.14	0.09	0.27	0.05	0.23	0.15		

8. Inductance (uH) vs DC Bias (Amps)

PART NO.	SC-0704-2R2M					
0.0 A	2.38	% L0				
2.0 A	2.37	99.58%				
4.0 A	2.32	97.48%				
6.0 A	2.20	92.44%				
8.0 A	2.09	87.82%				
10.0 A	1.95	81.93%				
12.0 A	1.81	76.05%				
14.0 A	1.66	69.75%				
16.0 A	1.51	63.45%				
18.0 A	1.37	57.56%				
20.0 A	1.23	51.68%				

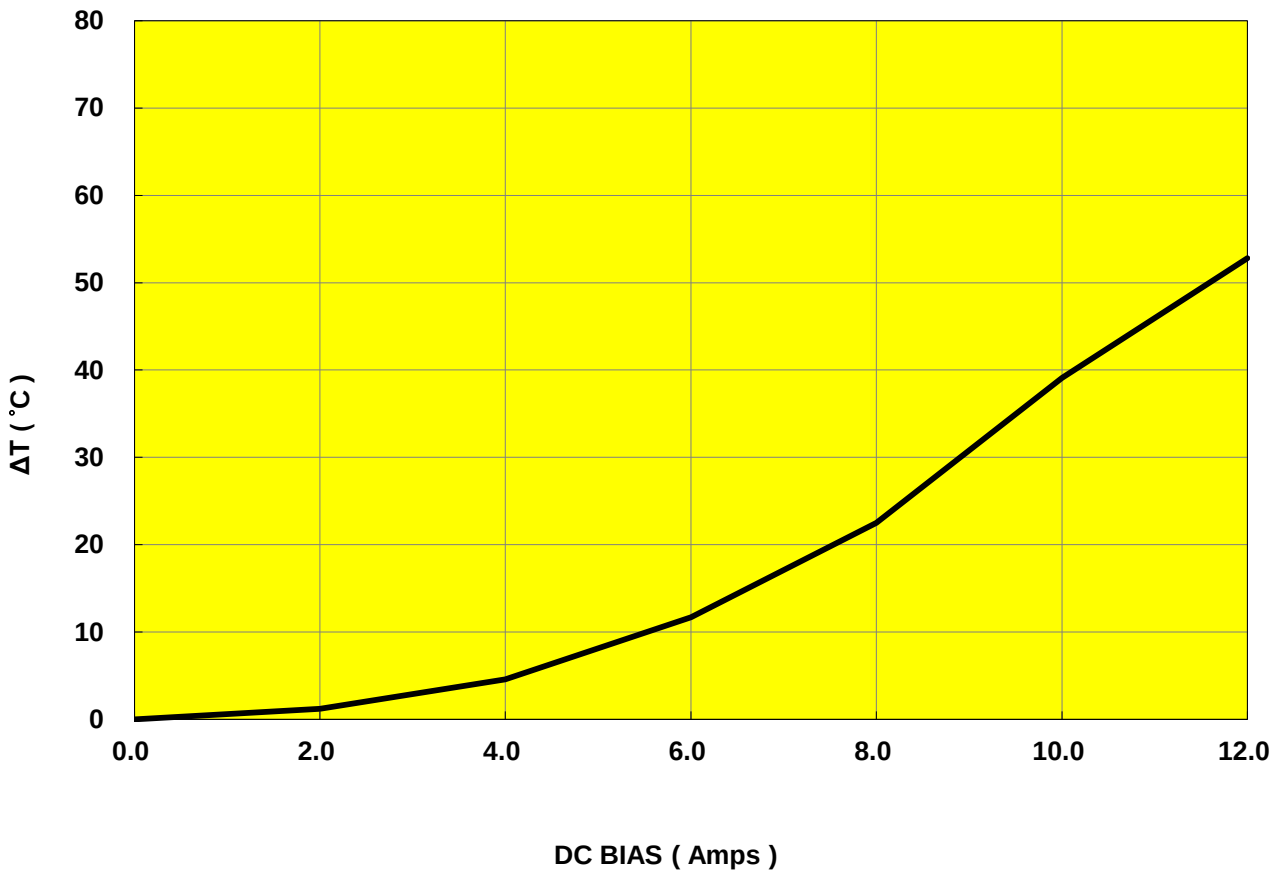
CONDITION: 100KHz , 1.0Vrms



9. Temperature rise ΔT (°C) VS DC Bias (Amps)

PART NO.	SC-0704-2R2M					
0.0 A	0	0 Minuties				
2.0 A	1.2	5 Minuties				
4.0 A	4.6	10 Minuties				
6.0 A	11.7	15 Minuties				
8.0 A	22.5	20 Minuties				
10.0 A	39.1	25 Minuties				
12.0 A	52.8	30 Minuties				

CONDITION: 1.0Vrms(Test Condition:*Temperature:25±5℃)



10.Recommended Soldering Conditions

Figure 1. Re-flow Soldering

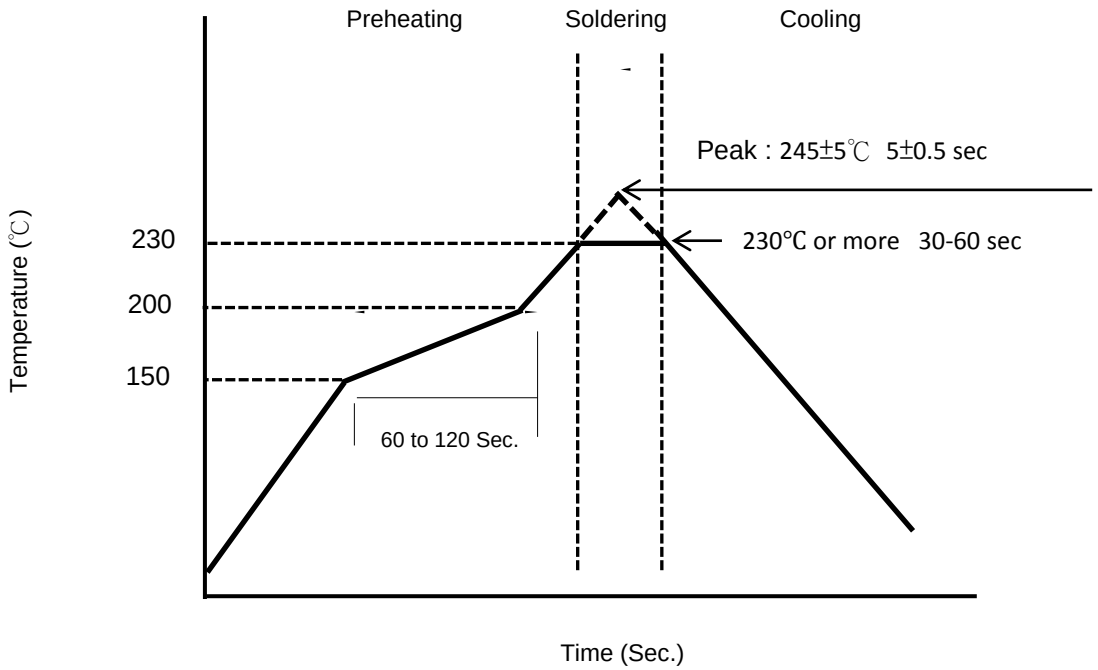
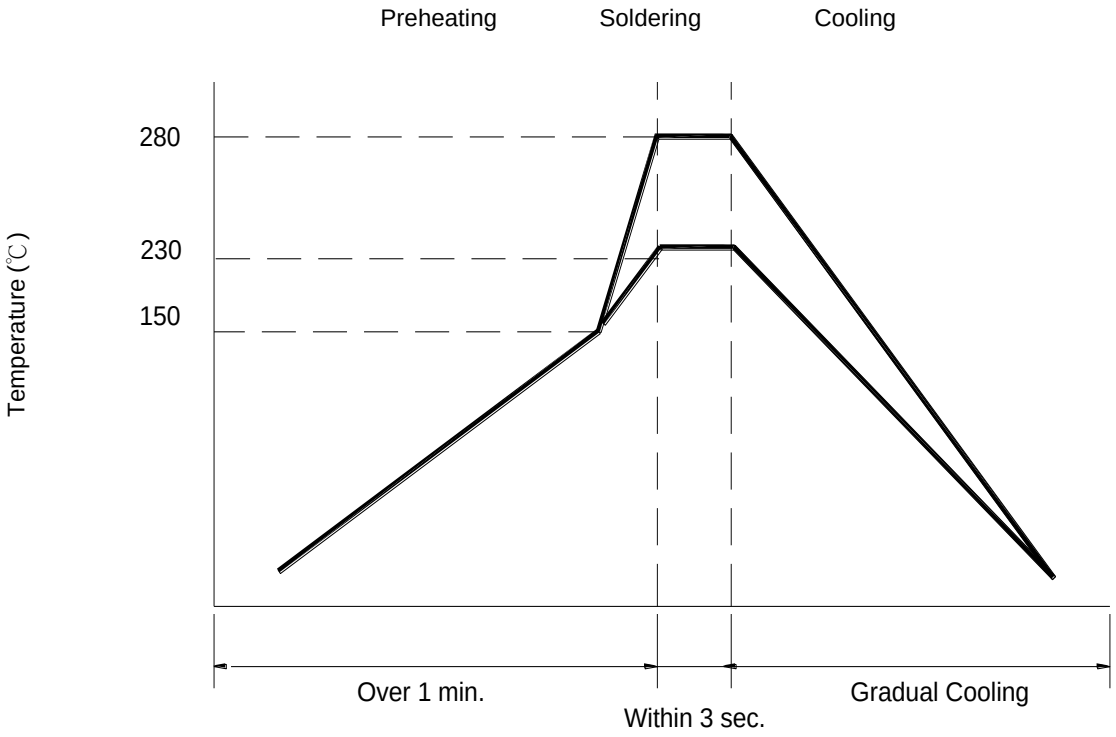
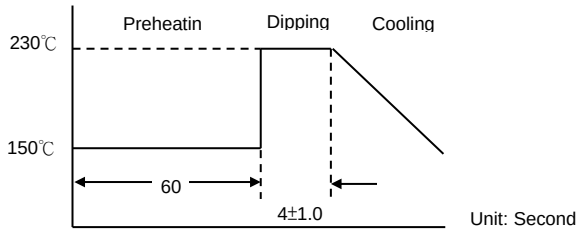
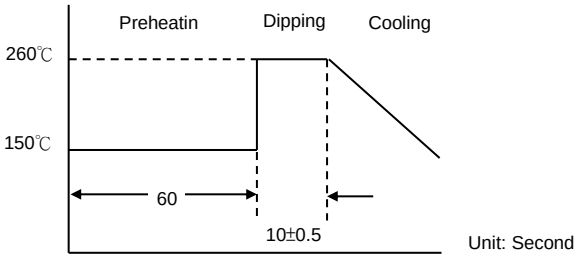


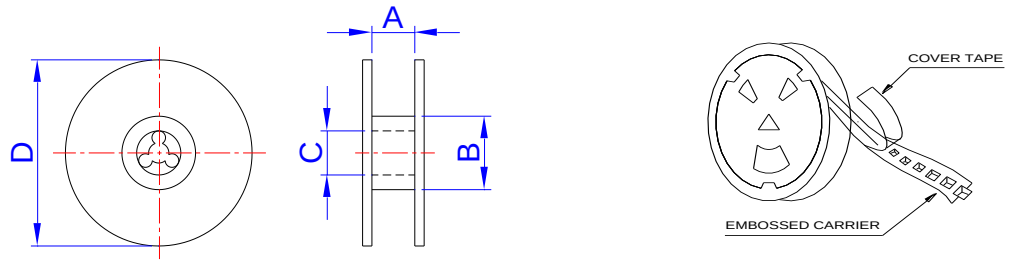
Figure 2. Hand Soldering



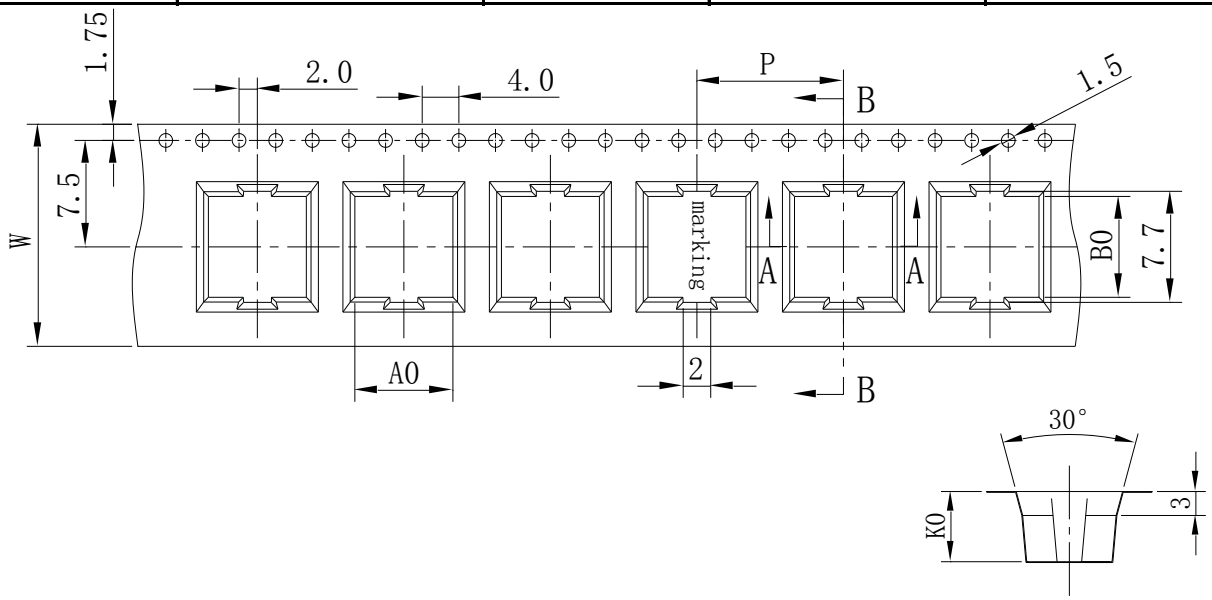
11.Reliability and Testing Conditions / Pin Type Power Inductors

Item	Specification	Conditions
Operating temperature range	-40℃ ~ +150℃	
Storage temperature and humidity range	25±5℃ , 70% RH Max	
Solderability	More than 90% of the terminal electrode should be covered with solder.	
Solder Heat Resistance	Inductance within ±20% of initial value. No disconnection or short circuit. The appearance shall not break.	
Heat resistance	Inductance within ±20% of initial value. No disconnection or short circuit. The appearance shall not break.	After 500 hours in 125±5℃ and 2 hour drying under normal condition.
Cold resistance	Inductance within ±20% of initial value. No disconnection or short circuit. The appearance shall not break.	After 500 hours in -40±5℃ and 2 hour drying under normal condition.
Thermal shock	Inductance within ±20% of initial value. No disconnection or short circuit. The appearance shall not break.	After 10 cycles of following condition. Step / Temperature (℃) / Times (min.) 1 / -40±5℃ / 30 2 / Room Temperature / Within 3 3 / 125±5℃ / 30 4 / Room Temperature / Within 3
Humidity Resistance	Inductance within ±20% of initial value. No disconnection or short circuit. The appearance shall not break.	After 500 hours in 40±2℃ and 90 to 95% humidity , and 2 hour drying under normal condition.
Vibration Test	Inductance within ±5% of initial value and appearance shall not break.	After vibration for 1hour, In each of three orientations at sweep vibration (10~55~10Hz) with 1.52mm P-P Amplitudes.

12. Packaging



Type	A(mm)	B(mm)	C(mm)	D(mm)
13" x 16mm	16.0 ± 0.5	100 ± 2	13.5 ± 0.5	330(REF)



Ao(mm)	Bo(mm)	Ko(mm)	P(mm)	T(mm)	W(mm)	PCS/REEL	IN BOX/PCS	OUT BOX/PCS
7.3±0.1	7.3±0.1	5.3±0.1	12.0±0.1	0.35±0.05	16.0±0.3	1000	2000	8000

Storage

1. Temperature and humidity conditions: Less than 25±5℃ and 65±5% RH.
2. Recommended products should be used within 6 months form the time of delivery.
3. The packaging material should be kept where no chlorine or sulfur exists in the air.

Transportation

1. Products should be handled with care to avoid damage or contamination from perspiration and skin oils.
2. The use of tweezers or vacuum pick up is strongly recommended for individual components.
3. Bulk handling should ensure that abrasion and mechanical shock are minimized.