CUSTOMER _____

CUSTOMER' S P/N _____

DESCRIPTION SMD Power Inductor

SGTE PART NO. GPSR-AP1770-4R7MS

SAMPLE NO. S19030601 REVISION NO. A0 DATE 2019-3-6

SPECIFICATION FOR APPROVAL

FULLY APPROVED	REVISE APPROVED

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SPECIFICATION

RoHS COMPLIANT

Customers Part Number	Item Name	Date	
	SMD Power Inductor	2019-3-6	
Gan Tong Part NO.	Sample NO.	Revision No.	A0
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Version	Change history	Before the change	After the change	Release date
A0	NEW	—	—	2019-3-6

DRAWN BY	CHECKED BY	APPROVED BY
陈海星	刘俊良	田一

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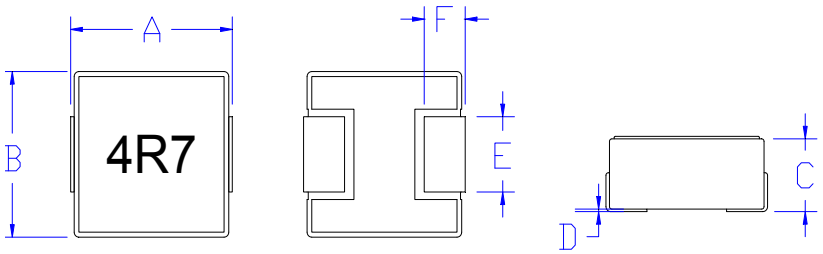
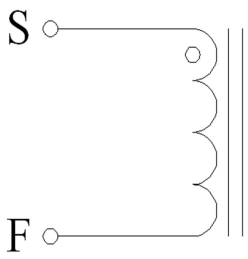
MECHANICAL & DIMENSIONS

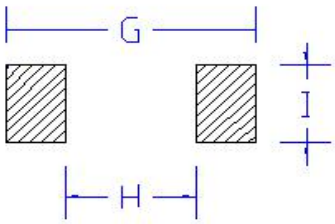


A	18.25±0.5
B	17.0±0.3
C	7.0 Max
D	≤0.3
E	12.0±0.5
F	3.3±0.5
G	18.8 REF
H	10.0 REF
I	12.8 REF

Connection



Recommended Land Pattern



ELECTRICAL REQUIREMENTS:

PARAMETER	SPECIFICATION		CONDITION	TEST INSTRUMENTS
L	4.7± 20%	uH	100KHz/1V	■LCR Agilent4284A / Chroma 11300
DCR	5.5max	mΩ	@ 25℃	■CH16502 IMPEDANCE METER
I-sat	32	A mps	≧65%L0A	■A4284A+A42841A LCR METER
Irms	15.0	A mps	ΔT ≦40℃	■Chroma /11300+3302+1320+1320S

·I rms: Current that causes a 40℃ temperature rise from 25℃ ambient.

·I sat: DC current at which the inductance drops 35% from it' s value without current.

·All test Data is referenced to 25℃ ambient.

·Operating Temperature Range: -25℃ to +125℃.

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Electrical Characteristic :

PARAMETER	L	DCR	I-sat	Irms	
UNIT	uH	mΩ	A mps	A mps	
SPECIFICATION	4.7± 20%	5.5max	32	15	
CONDITION	100KHz/1V	@ 25℃	≧65%L0A	ΔT ≦40℃	
1	4.81	4.71	72.3%	32.6℃	
2	4.75	4.75			
3	4.74	4.73			
4	4.68	4.76			
5	4.82	4.72			
6	4.86	4.74			
7	4.76	4.76			
8	4.77	4.71			
9	4.78	4.75			
10	4.87	4.73			
MEAN	4.78	4.7			
R	0.19	0.05			

External Dimensions:

NO	A	B	C	D	E	F		
	18.25±0.5	17.0±0.3	7.0 Max	≤0.3	12.0±0.5	3.3±0.5		
1	18.32	17.05	6.84	0.13	12.05	3.21		
2	18.27	17.01	6.82	0.15	12.03	3.25		
3	18.34	17.03	6.78	0.15	12.05	3.21		
4	18.32	17.02	6.79	0.16	12.06	3.26		
5	18.26	17.01	6.83	0.15	12.03	3.34		
6	18.28	17.03	6.85	0.16	12.08	3.28		
7	18.31	17.04	6.85	0.16	12.05	3.29		
8	18.35	17.03	6.82	0.15	12.05	3.31		
9	18.33	17.02	6.84	0.14	12.06	3.34		
10	18.34	17.03	6.86	0.15	12.05	3.33		
MEAN	18.31	17.03	6.36	0.15	12.05	3.28		
R	0.09	0.04	0.08	0.03	0.05	0.13		

Inductance measured at 100KHz/1Vrms..

Electrical specifications at 25±5℃. Humidity 60±10%

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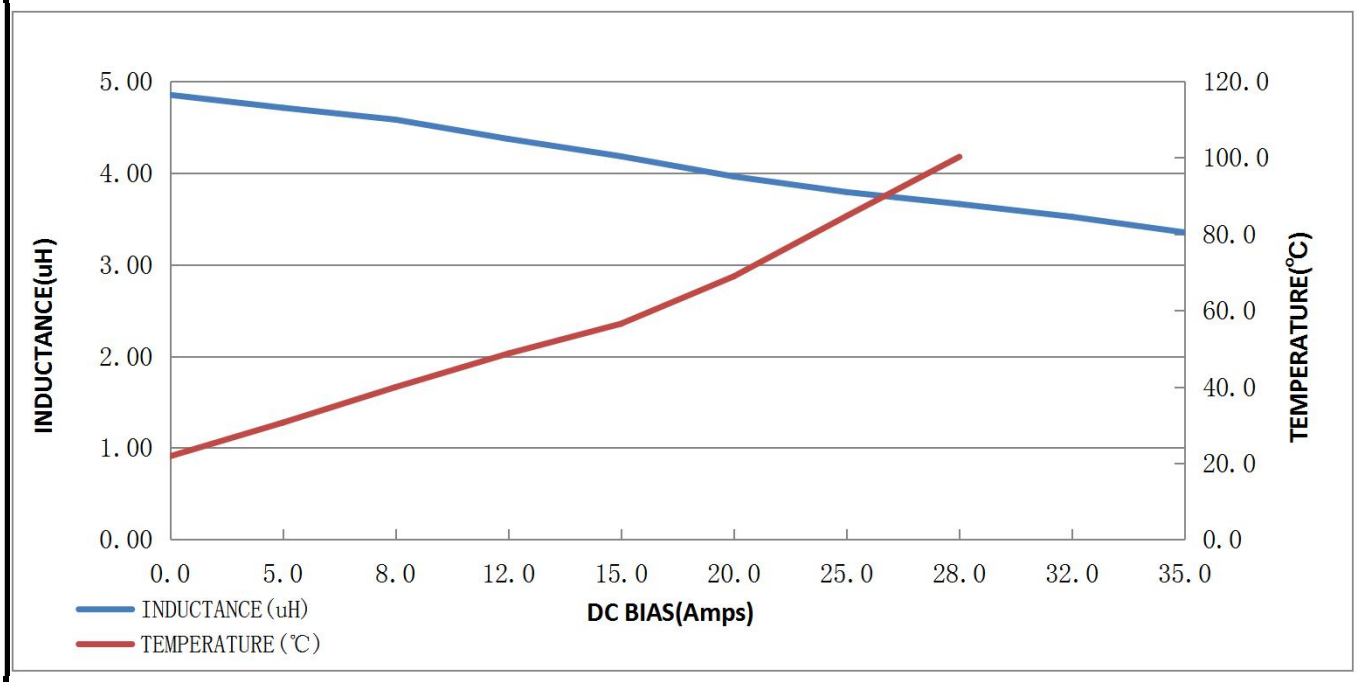
INDUCTANCE (uH) / TEMPERATURE RISE(°C) VS DC BIAS (Amps)

IDC	L(uH)	L/LoA (%)	T(℃)	△T(℃)		
0.0 A	4.85	100.00%	21.8	0.0		
5.0 A	4.71	97.11%	30.6	8.8		
8.0 A	4.58	94.43%	39.9	18.1		
12.0 A	4.37	90.10%	48.7	26.9		
15.0 A	4.18	86.19%	56.5	34.7		
20.0 A	3.96	81.65%	68.9	47.1		
25.0 A	3.79	78.14%	84.7	62.9		
28.0 A	3.66	75.46%	100.2	78.4		
32.0 A	3.52	72.58%				
35.0 A	3.4	69.07%				



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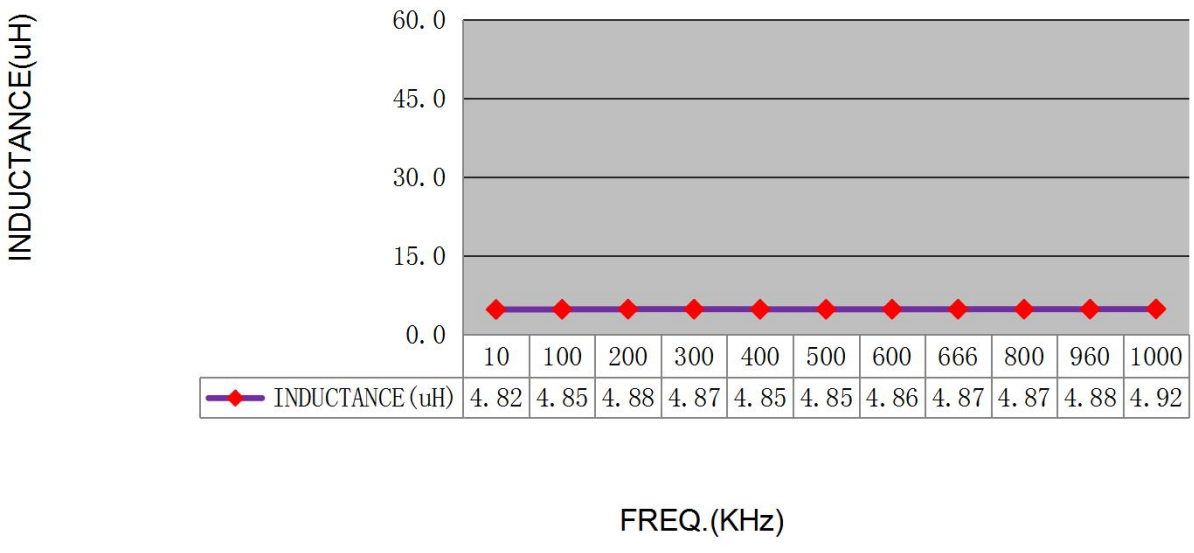
INDUCTANCE (uH) / TEMPERATURE RISE(°C) VS DC BIAS (Amps)

FREQ.	L(uH)					
10 KHz	4.82					
100 KHz	4.85					
200 KHz	4.88					
300 KHz	4.87					
400 KHz	4.85					
500 KHz	4.85					
600 KHz	4.86					
666 KHz	4.87					
800 KHz	4.87					
960 KHz	4.88					
1000 KHz	4.92					



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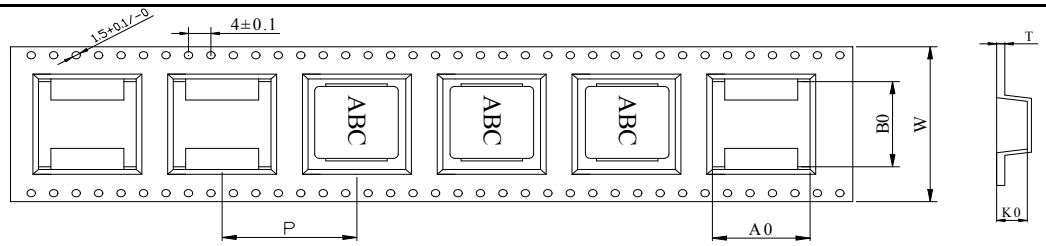
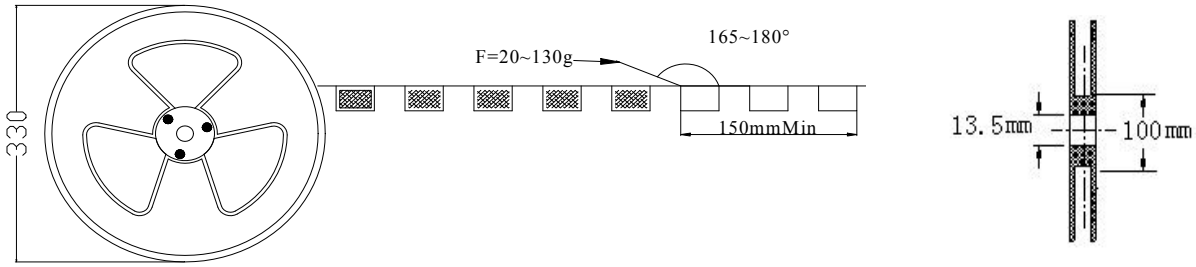
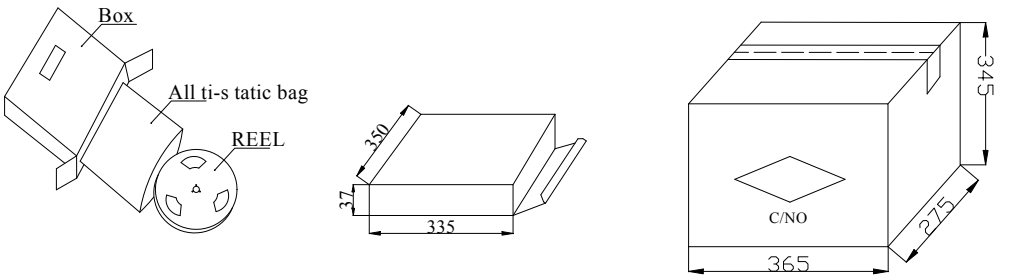
PACKAGING



A0	B0	K0	T	P	W	Unit
17.3	18.75	7.3	0.4	24	32	mm





Packaging Quantity

Unit: mm

Inner Carton		Quter Carton			
Reel size	Quantity/Reel	Inside the box size	Quantity	Carton size	Quantity
¢330	300pcs	350*335*37	300pcs	365*345*290	1800pcs

Storage

1. Temperature and humidity conditions: Less than 40℃ and 70% 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.

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SOLDRING CONDITIONS

Figure 1. Re-flow Soldering

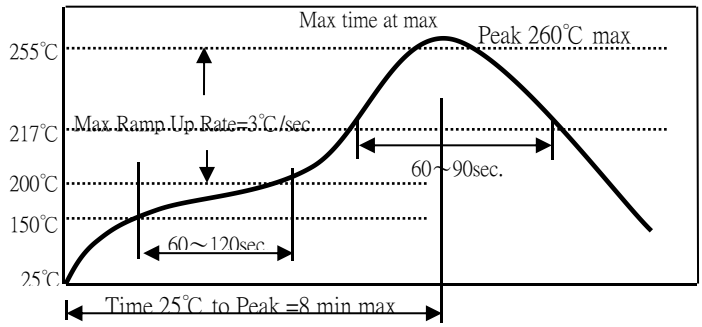
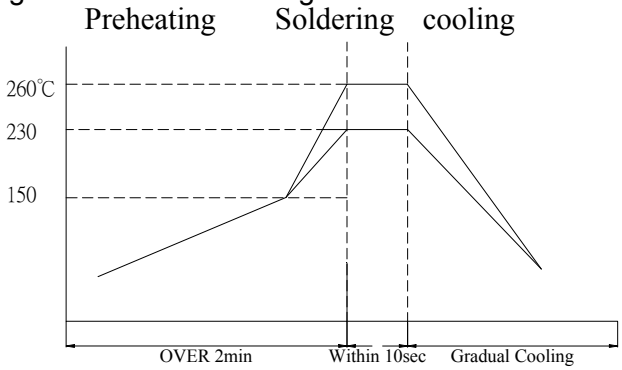
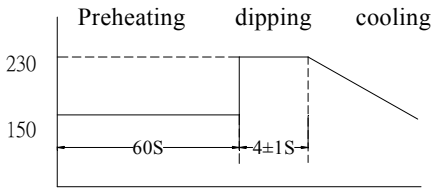
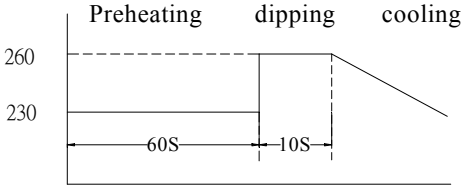


Figure 2. Wave Soldering



Soldering Iron: temperature 350℃±10℃ , dwell time shall be less than 3 sec.

Reliability and Testing Conditions/Sureface Mount Type Power Inductors

Item	Specification	Conditions
Solderbility	More than 90% of the terminal electrode should be covered with solder.	
Solder Heat Resistance	Inductance within ±20% of initial value and appearance shall not break.	
Heat resistance	Inductance within ±20% of initial value. No disconnection or short circuit. Appearance shall not break.	After 500±12 hours in 145±5℃ and 2 hour drying under normal condition.
Cold resistance	Inductance within ±20% of initial value. No disconnection or short circuit. Appearance shall not break.	After 500±12 hours in -40±2℃ and 2 hour drying under normal condition.
Thermal shock	Inductance within ±20% of initial value. No disconnection or short circuit. Appearance shall not break.	After 10 cycles of following condition.
Humidity Resistance	Inductance within ±20% of initial value. No disconnection or short circuit. Appearance shall not break.	After 500±12 hours in 40±2℃ and 90 to 95% humidity , and 2 hour drying under normal condition.
* Vibration Test	Inductance within ±20% 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.

Step	Temperature (℃)	Times (min.)
1	-40±2	30
2	Room Temperature	Within 3
3	145±5	30
4	Room Temperature	Within 3

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