

CUSTOMER _____

CUSTOMER' S P/N _____

DESCRIPTION SMD Power Inductor

SGTE PART NO. GPSR-AP1770-680MS

SAMPLE NO. S20121501 REVISION NO. A0 DATE 2020/12/15

SPECIFICATION FOR APPROVAL

FULLY APPROVED	REVISE APPROVED

SGTE 感通科技

深圳感通科技有限公司（大陸工廠）

GANTONG TECHNOLOGY (SHENZHEN) CO., LTD.

深圳市平湖街道平湖村萬福路26號

No.26 Wan fu Road, Ping hu Village. Ping hu town, Shenzhen City.

Tel: 0755-28457600

Fax: 0755-28452952

感通科技有限公司（台灣辦事處）

臺北縣汐止市新台5路一段77號10樓之7

10F~7, NO.77, Sec.1, Hsin Tai 5 Road, Shi-chi City,Taipei.

Tel: 886-2-8698-2341

Fax:886-2-8698-2342

納美科技股份有限公司（香港辦事處）

LAPEE TECHNOLOGY LIMITED

香港九龍尖沙嘴加連威老道嘉蘭圍5-11號利時商業大廈17樓1713室

Room 1713 17/F, Rise Commercial Bldg5-11 Granville Cri cuit, Granville Rd, TSim Sha Tsui., Kln

Tel: 852-25301111

Fax: 852-25371111

<http://www.sgte.cn>

**RoHS
COMPLIANT**

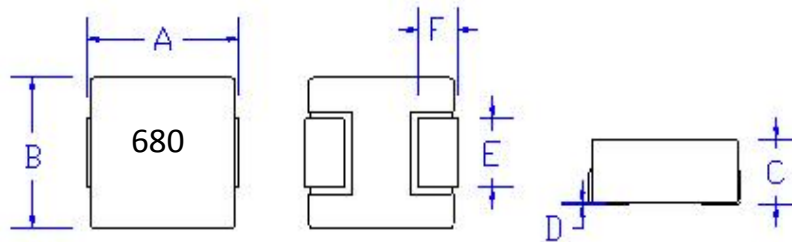
[illegible]

SPECIFICATION

**RoHS
COMPLIANT**

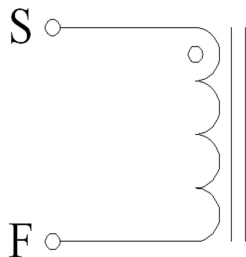
Customers Part Number	Item Name	Date	
	SMD Power Inductor	2020/12/15	
Gan Tong Part NO.	Sample NO.	Revision No.	A0
GPSR-AP1770-680MS	S20121501	Page	1-5

MECHANICAL & DIMENSIONS

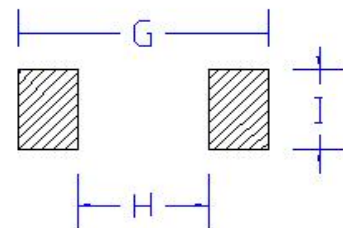


A	18.5 Max
B	17.0±0.5
C	7.0 Max
D	≤0.3
E	12.0±0.5
F	2.8±1.0
G	18.8 REF
H	10.0 REF
I	12.8 REF

Connection



Recommended Land Pattern



ELECTRICAL REQUIREMENTS:

PARAMETER	SPECIFICATION	CONDITION	TEST INSTRUMENTS
L	68± 20% uH	100KHz/1V	■LCR Agilent4284A / Chroma 11300
DCR	95.0 Max mΩ	@ 25℃	■CH16502 IMPEDANCE METER
I-sat	6.0 A mps	≧ 65%L0A	■A4284A+A42841A LCR METER
Irms	4.8 A mps	ΔT ≤ 40℃	■Chroma /11300+3302+1320+1320S

- I rms: The value of DC current when product temperature rise is ΔT40℃
- I sat: The value of DC current when the inductance decreases 35% of its initial value.
- All test Data is referenced to 25℃ ambient.
- Operating Temperature Range: -25℃ to +125℃.

SPECIFICATION

RoHS
COMPLIANT

Customers Part Number	Item Name	Date	
	SMD Power Inductor	2020/12/15	
Gan Tong Part NO.	Sample NO.	Revision No.	A0
GPSR-AP1770-680MS	S20121501	Page	2-5

Electrical Characteristic :

PARAMETER	L	DCR	I-sat	Irms	
UNIT	uH	mΩ	A mps	A mps	
SPECIFICATION	68± 20%	95.0 Max	6.0	4.8	
CONDITION	100KHz/1V	@ 25℃	≥ 65%L0A	ΔT ≤ 40℃	
1	69.7	73.8	69.8%	34.2℃	
2	68.9	73.6			
3	67.5	73.4			
4	69.2	73.6			
5	66.7	73.5			
6					
7					
8					
9					
10					
MEAN	68.40	73.6			
R	3.00	0.40			

External Dimensions:

NO	A	B	C	D	E	F		
	18.5 Max	17.0±0.5	7.0 Max	≤0.3	12.0±0.5	2.8±1.0		
1	18.22	17.11	6.81	0.11	12.11	3.35		
2	18.24	17.09	6.79	0.09	12.05	3.31		
3	18.19	17.11	6.81	0.13	12.10	3.36		
4	18.24	17.07	6.80	0.11	12.08	3.28		
5	18.23	17.08	6.83	0.08	12.06	3.31		
6								
7								
8								
9								
10								
MEAN	18.22	17.09	6.36	0.10	12.08	3.32		
R	0.05	0.04	0.04	0.05	0.06	0.08		

Inductance measured at 100KHz/1Vrms..

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

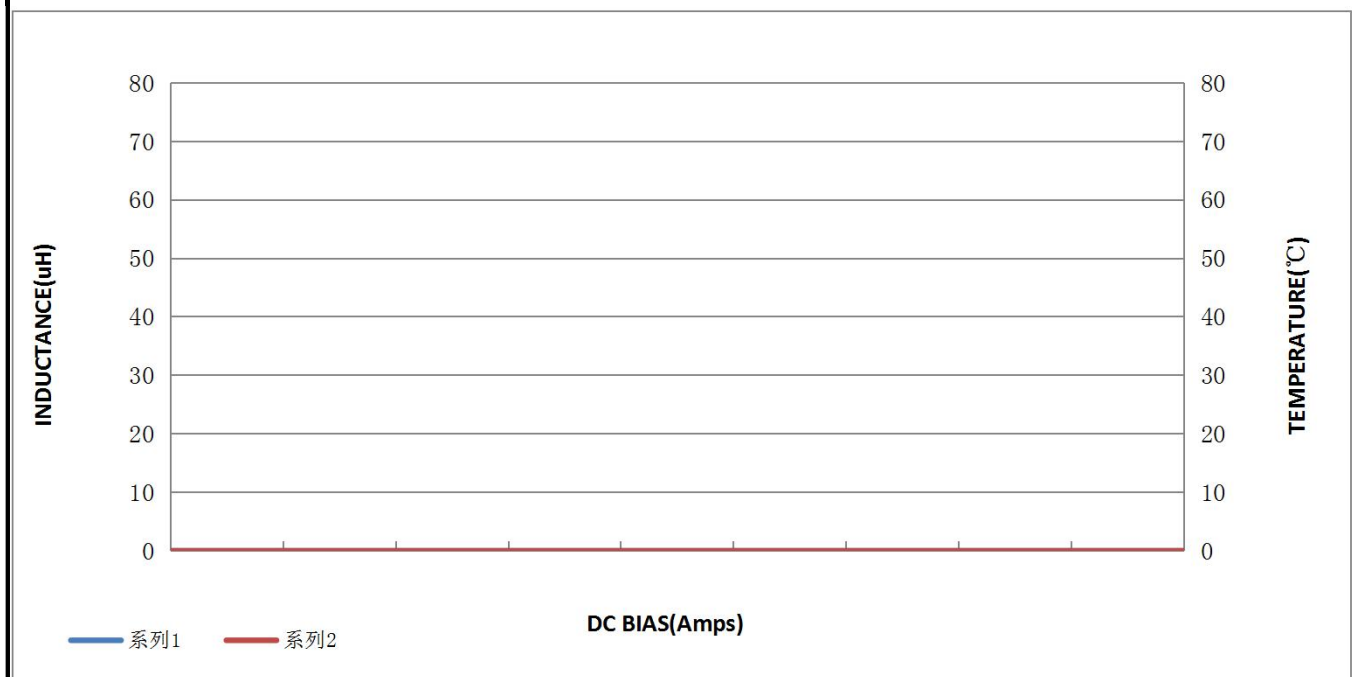
SPECIFICATION

RoHS
COMPLIANT

Customers Part Number	Item Name	Date	
	SMD Power Inductor	2020/12/15	
Gan Tong Part NO.	Sample NO.	Revision No.	A0
GPSR-AP1770-680MS	S20121501	Page	3-5

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

IDC	L(uH)	L/L0A (%)	T(°C)	ΔT(°C)		
0.0 A	68.6	100.00%	19.6	0.0		
1.0 A	66.7	97.23%	25.3	5.7		
2.0 A	64.7	94.31%	31.8	12.2		
3.0 A	61.8	90.09%	38.7	19.1		
4.0 A	57.7	84.11%	47.1	27.5		
5.0 A	53.4	77.84%	56.4	36.8		
6.0 A	48.7	70.99%	65.5	45.9		
7.0 A	43.8	63.85%	75.8	56.2		
8.0 A	39.2	57.14%	86.9	67.3		
9.0 A	35.1	51.17%	98.4	78.8		

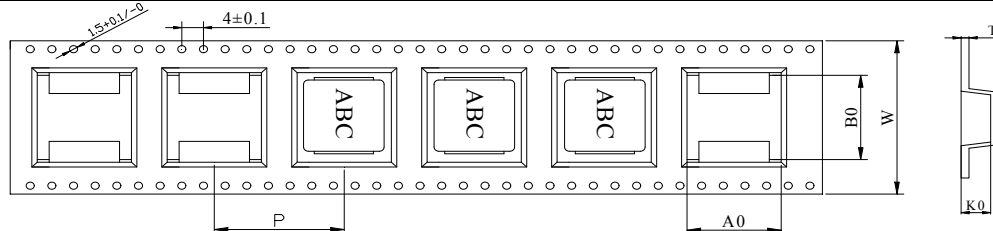


SPECIFICATION

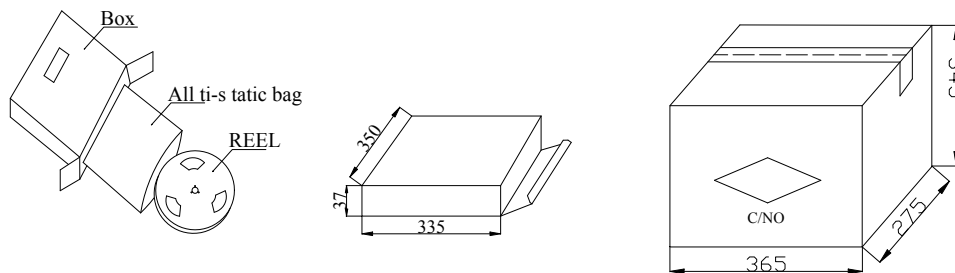
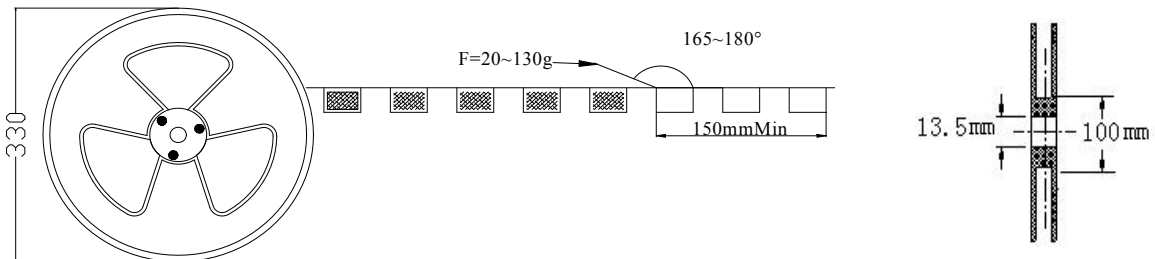
RoHS
COMPLIANT

Customers Part Number	Item Name	Date	
	SMD Power Inductor	2020/12/15	
Gan Tong Part NO.	Sample NO.	Revision No.	A0
GPSR-AP1770-680MS	S20121501	Page	4-5

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		Outer Carton			
Reel size	Quantity/Reel	Inside the box size	Quantity	Carton size	Quantity
Φ 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 from 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.

SPECIFICATION

**RoHS
COMPLIANT**

Customers Part Number	Item Name	Date	
	SMD Power Inductor	2020/12/15	
Gan Tong Part NO.	Sample NO.	Revision No.	A0
GPSR-AP1770-680MS	S20121501	Page	5-5

SOLDRING CONDITIONS

Figure 1. Re-flow Soldering

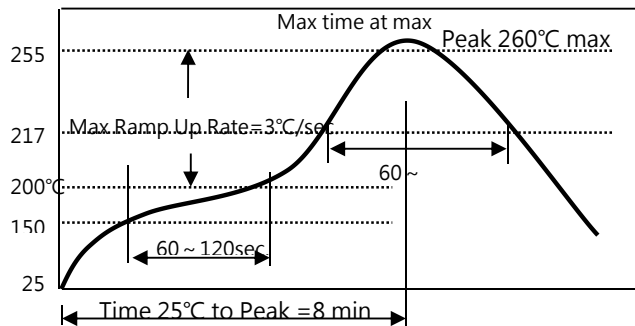
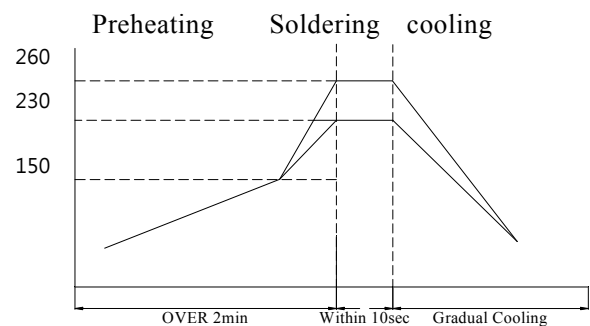


Figure 2. Wave Soldering



Soldering Iron: temperature $350^{\circ}\text{C} \pm 10^{\circ}\text{C}$, dwell time shall be less than 3 sec.

Reliability and Testing Conditions/Surface Mount Type Power Inductors

Item	Specification	Conditions															
Solderability	More than 90% of the terminal electrode should be covered with solder.																
Solder Heat Resistance	Inductance within $\pm 20\%$ of initial value and appearance shall not break.																
Heat resistance	Inductance within $\pm 20\%$ of initial value. No disconnection or short circuit. Appearance shall not break.	After 500 ± 12 hours in $145 \pm 5^{\circ}\text{C}$ and 2 hour drying under normal condition.															
Cold resistance	Inductance within $\pm 20\%$ of initial value. No disconnection or short circuit. Appearance shall not break.	After 500 ± 12 hours in $-40 \pm 2^{\circ}\text{C}$ and 2 hour drying under normal condition.															
Thermal shock	Inductance within $\pm 20\%$ of initial value. No disconnection or short circuit. Appearance shall not break.	After 10 cycles of following condition. <table border="1"> <thead> <tr> <th>Step</th><th>Temperature ($^{\circ}\text{C}$)</th><th>Times (min.)</th></tr> </thead> <tbody> <tr> <td>1</td><td>-40 ± 2</td><td>30</td></tr> <tr> <td>2</td><td>Room Temperature</td><td>Within 3</td></tr> <tr> <td>3</td><td>145 ± 5</td><td>30</td></tr> <tr> <td>4</td><td>Room Temperature</td><td>Within 3</td></tr> </tbody> </table>	Step	Temperature ($^{\circ}\text{C}$)	Times (min.)	1	-40 ± 2	30	2	Room Temperature	Within 3	3	145 ± 5	30	4	Room Temperature	Within 3
Step	Temperature ($^{\circ}\text{C}$)	Times (min.)															
1	-40 ± 2	30															
2	Room Temperature	Within 3															
3	145 ± 5	30															
4	Room Temperature	Within 3															
Humidity Resistance	Inductance within $\pm 20\%$ of initial value. No disconnection or short circuit. Appearance shall not break.	After 500 ± 12 hours in $40 \pm 2^{\circ}\text{C}$ and 90 to 95% humidity, and 2 hour drying under normal condition.															
* Vibration Test	Inductance within $\pm 20\%$ 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.															