

CUSTOMER _____

CUSTOMER' S P/N _____

DESCRIPTION _____ SMD Power Inductor _____

SGTE PART NO. _____ GPSR1335-R22MS _____

SAMPLE NO. S14112501 REVISION NO. A1 DATE 2014/11/25

SPECIFICATION FOR APPROVAL

FULLY APPROVED	REVISE APPROVED

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SPECIFICATION

**RoHS
COMPLIANT**

Customers Part Number	Item Name	Date	
	SMD Power Inductor	2014/11/25	
Gan Tong Part NO.	Sample NO.	Revision No.	A1
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Version	Change history	Before the change	After the change	Release date
A1	NEW	—	—	2014/11/25

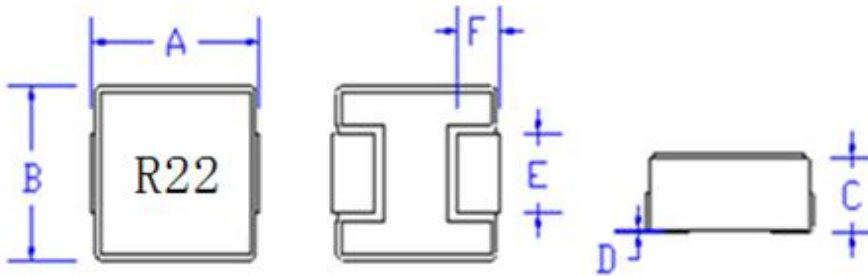
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SPECIFICATION

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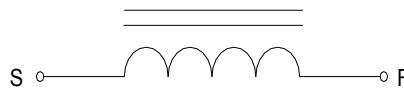
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MECHANICAL & DIMENSIONS



(UNIT: mm)	
A	13.45 ± 0.5
B	12.6 ± 0.5
C	3.5 ± 0.3
D	≤ 0.3
E	4.0 ± 0.5
F	2.0 ± 0.5

CIRCUIT



ELECTRICAL REQUIREMENTS:

PARAMETER	SPECIFICATION	CONDITION	TEST INSTRUMENTS
L	$0.22 \pm 20\%$ uH	100KHz/1V	■ LCR Agilent4284A / Chroma 11300
DCR	0.60max mΩ	@ 25°C	■ CH16502 IMPEDANCE METER
I-sat	54.0 A mps	$\cong 65\%L0A$	■ A4284A+A42841A LCR METER
I rms	30.0 A mps	$\Delta T \cong 40^\circ C$	■ Chroma /11300+3302+1320+1320S

- I rms: Current that causes a 40°C temperature rise from 25°C ambient.
- I sat: DC current at which the inductance drops 35% from it' s value without current.
- All test Data is referenced to 25°C ambient.
- Operating Temperature Range: -25°C to +125°C.

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Electrical Characteristic :

PARAMETER	L	DCR	I-sat	I _{rms}	
UNIT	uH	mΩ	A mps	A mps	
SPECIFICATION	0.22± 20%	0.60max	54.0	30.0	
CONDITION	100KHz/1V	@ 25°C	≧ 65%LOA	ΔT ≧ 40°C	
1	0.23	0.48	82.30%	35°C	
2	0.22	0.50			
3	0.23	0.48			
4	0.21	0.49			
5	0.21	0.49			
6	0.23	0.48			
7	0.22	0.48			
8	0.22	0.48			
9	0.23	0.48			
10	0.21	0.49			
MEAN	0.22	0.49			
R	0.02	0.02			

External Dimensions:

NO	A	B	C	D	E	F		
	13.45± 0.5	12.6± 0.5	3.5± 0.3	≤0.3	4.0± 0.5	2.0± 0.5		
1	13.58	12.65	3.62	0.11	3.99	2.00		
2	13.56	12.71	3.56	0.19	4.01	2.10		
3	13.63	12.68	3.60	0.11	4.00	2.10		
4	13.65	12.68	3.57	0.18	4.00	2.00		
5	13.59	12.70	3.59	0.15	4.01	2.00		
6	13.57	12.67	3.57	0.14	4.01	2.10		
7	13.65	12.67	3.59	0.11	3.99	2.00		
8	13.58	12.70	3.61	0.16	3.98	2.30		
9	13.58	12.68	3.62	0.11	4.01	2.10		
10	13.62	12.68	3.58	0.19	4.01	2.10		
MEAN	13.60	12.68	3.59	0.15	4.00	2.08		
R	0.09	0.06	0.06	0.08	0.03	0.30		

Inductance measured at 100KHz/1V_{rms}..

Electrical specifications at 25±5°C. Humidity 60±10%

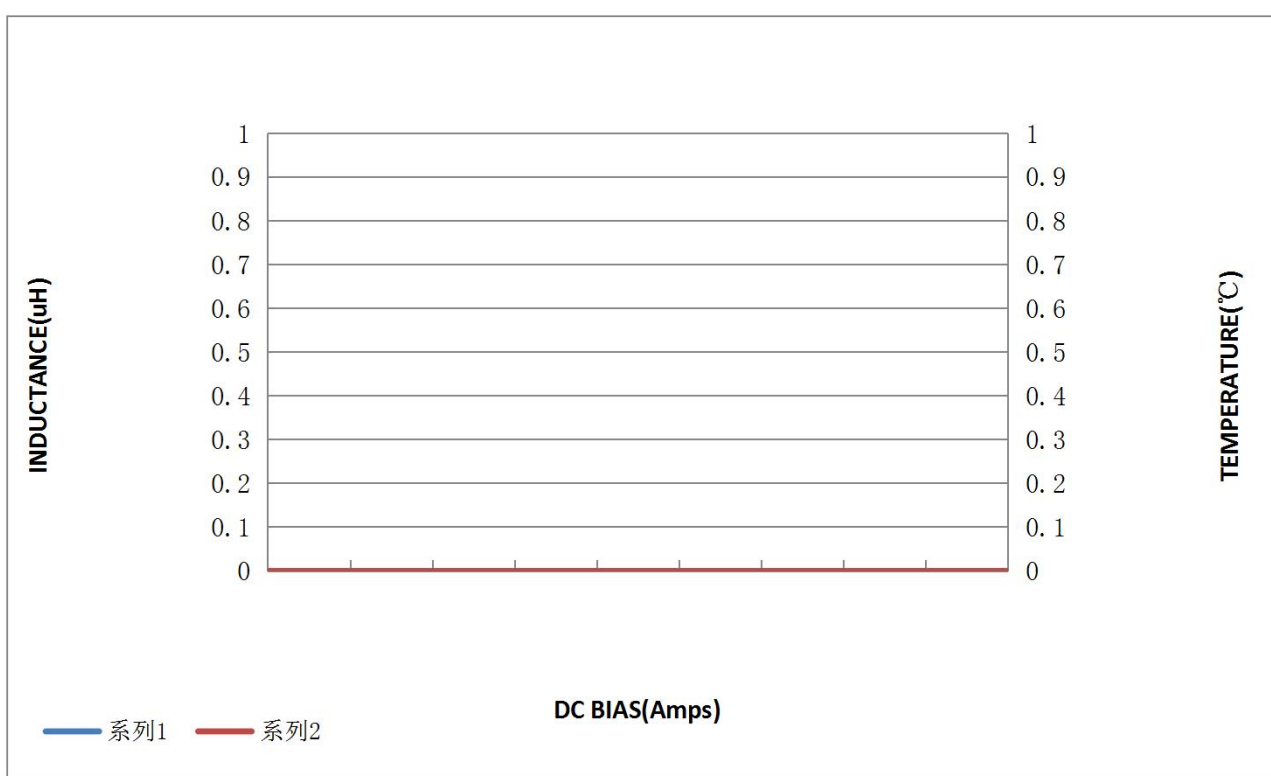
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INDUCTANCE (uH) / TEMPERATURE RISE(°C) VS DC BIAS (Amps)

IDC	L(uH)	L/LoA (%)	T(°C)	ΔT(°C)		
0.0 A	0.226	100.00%	27.0	0.0		
6.0 A	0.224	99.12%	30.0	3.0		
12.0 A	0.218	96.46%	36.0	9.0		
18.0 A	0.217	96.02%	45.0	18.0		
24.0 A	0.211	93.36%	52.0	25.0		
30.0 A	0.208	92.04%	62.0	35.0		
36.0 A	0.203	89.82%	86.0	59.0		
42.0 A	0.200	88.50%	103.0	76.0		
48.0 A	0.195	86.28%	128.0	101.0		
54.0 A	0.186	82.30%	169.0	142.0		

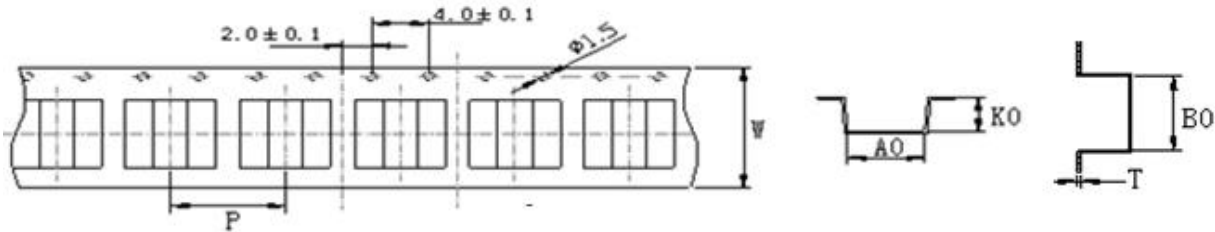


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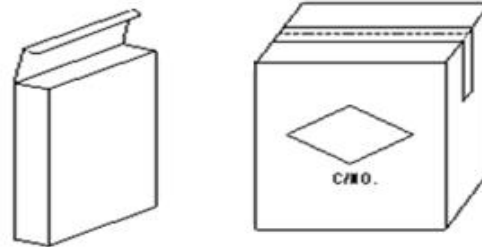
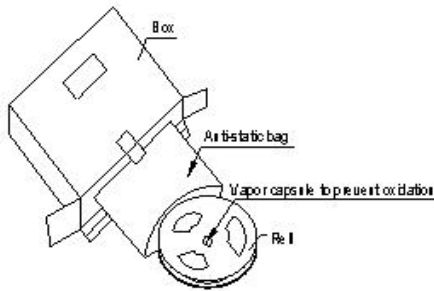
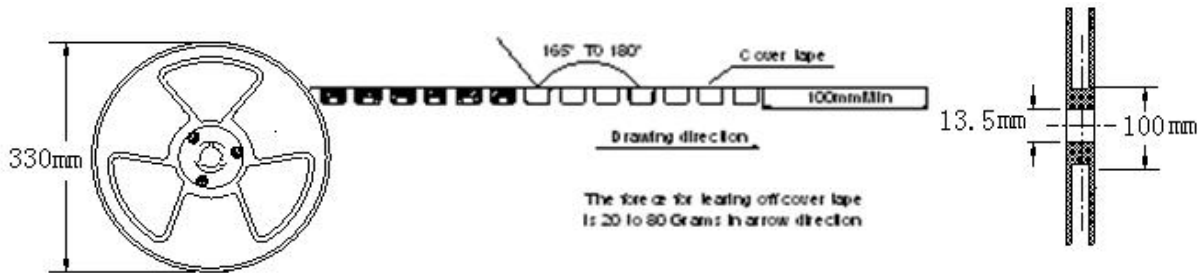
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PACKAGING



A0	B0	K0	T	P	W	Unit
12.8	13.7	3.7	0.5	20	24	mm



Packaging Quantity

Unit: mm				
Inner Carton		Outer Carton		
Reel size	Quantity/Reel	Inside the box size	Quantity	Carton size
$\text{Ø} 330$	800pcs	350*335*37	800pcs	365*345*290
				Quantity
				4800pcs

Storage

1. Temperature and humidity conditions: Less than 40°C 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

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

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SOLDERING CONDITIONS

Figure 1. Re-flow Soldering

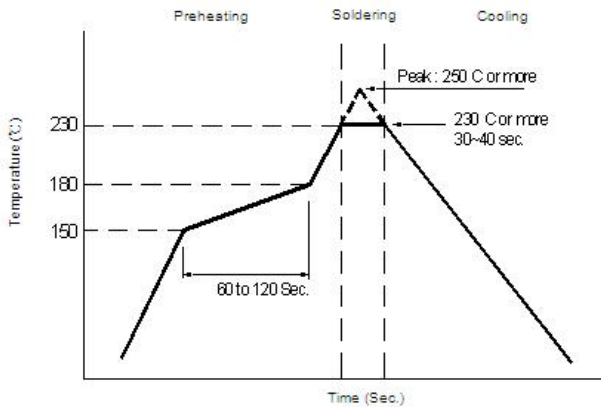
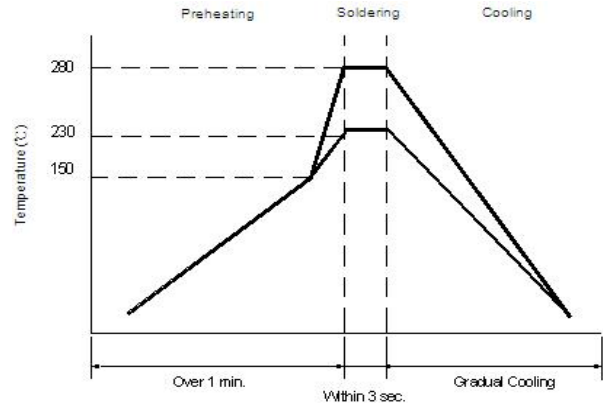


Figure 2. Hand Soldering



Reliability and Testing Conditions/Surface 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 $\pm 20\%$ 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 \pm 12 hours in 145 \pm 5 $^{\circ}$ 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 \pm 12 hours in -40 \pm 2 $^{\circ}$ 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" style="margin-left: auto; margin-right: auto; border-collapse: collapse;"> <thead> <tr> <th>Step</th> <th>Temperature ($^{\circ}$C)</th> <th>Times (min.)</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>-40\pm2</td> <td>30</td> </tr> <tr> <td>2</td> <td>Room Temperature</td> <td>Within 3</td> </tr> <tr> <td>3</td> <td>145\pm5</td> <td>30</td> </tr> <tr> <td>4</td> <td>Room Temperature</td> <td>Within 3</td> </tr> </tbody> </table>	Step	Temperature ($^{\circ}$ C)	Times (min.)	1	-40 \pm 2	30	2	Room Temperature	Within 3	3	145 \pm 5	30	4	Room Temperature	Within 3
Step	Temperature ($^{\circ}$ C)	Times (min.)															
1	-40 \pm 2	30															
2	Room Temperature	Within 3															
3	145 \pm 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 \pm 12 hours in 40 \pm 2 $^{\circ}$ 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.															

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