

CUSTOMER _____

CUSTOMER' S P/N _____

DESCRIPTION DIP Power Inductor

SGTE PART NO. GPDB1312-220M02

SAMPLE NO. S15112801 REVISION NO. A0 DATE 2015/11/28

SPECIFICATION FOR APPROVAL

FULLY APPROVED	REVISE APPROVED

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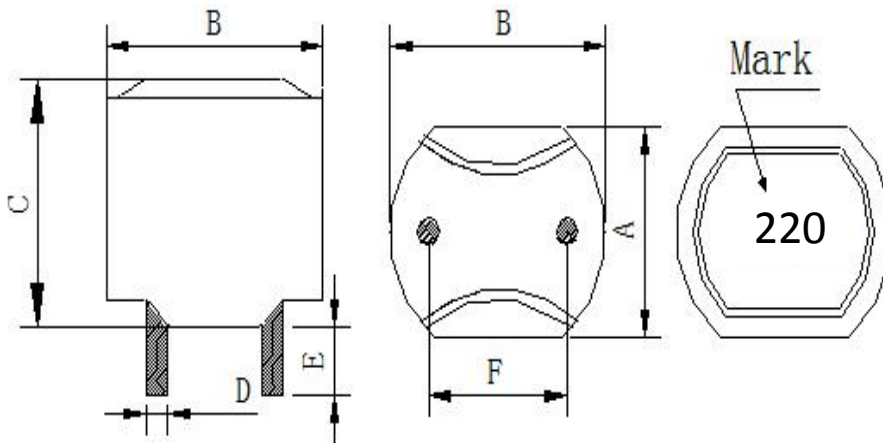
<http://www.szgte.com>

SPECIFICATION

RoHS
COMPLIANT

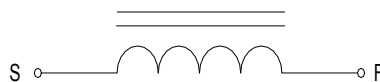
Customers Part Number	Item Name	Date	
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MECHANICAL & DIMENSIONS



(UNIT: mm)	
A	12.4 ± 0.5
B	13.4 ± 0.5
C	16.0 MAX
D	1.0 ± 0.1
E	3.4 ± 0.5
F	7.5 ± 0.5

CIRCUIT



ELECTRICAL REQUIREMENTS:

PARAMETER	SPECIFICATION	CONDITION	TEST INSTRUMENTS
L	22.0 ± 20% uH	100KHz/1V	■ LCR Agilent4284A / Chroma 11300
DCR	17.0 max mΩ	@ 25°C	■ CH16502 IMPEDANCE METER
I-sat	16.0 A mps	≧ 65%L0A	■ A4284A+A42841A LCR METER
Irms	8.0 A mps	ΔT ≤ 40°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	Irms	
UNIT	uH	mΩ	A mps	A mps	
SPECIFICATION	22.0 ± 20%	17.0 max	16.0	8.0	
CONDITION	100KHz/1V	@ 25°C	≧ 65%L0A	ΔT ≦ 40°C	
1	22.14	14.02	69.38%	26°C	
2	21.95	13.96			
3	21.80	13.89			
4	22.39	13.75			
5	22.56	14.11			
6	21.93	14.06			
7	22.56	14.16			
8	22.18	13.98			
9	22.16	13.86			
10	22.67	14.18			
MEAN	22.23	14.00			
R	0.87	0.43			

External Dimensions:

NO	A	B	C	D	E	F		
	12.4± 0.5	13.4± 0.5	16.0 MAX	1.0± 0.1	3.4± 0.5	7.5± 0.5		
1	12.59	13.61	15.45	1.03	3.50	7.50		
2	12.55	13.58	15.55	1.01	3.40	7.55		
3	12.50	13.60	15.48	1.00	3.50	7.49		
4	12.58	13.55	15.49	1.01	3.50	7.50		
5	12.57	13.56	15.47	1.03	3.40	7.50		
6	12.55	13.58	15.46	1.00	3.60	7.48		
7	12.55	13.58	15.48	1.00	3.50	7.49		
8	12.53	13.58	15.45	0.98	3.50	7.50		
9	12.51	13.56	15.52	1.01	3.50	7.51		
10	12.57	13.60	15.47	1.00	3.40	7.50		
MEAN	12.55	13.58	15.48	1.01	3.48	7.50		
R	0.09	0.06	0.10	0.05	0.20	0.07		

Inductance measured at 100KHz/1Vrms..

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

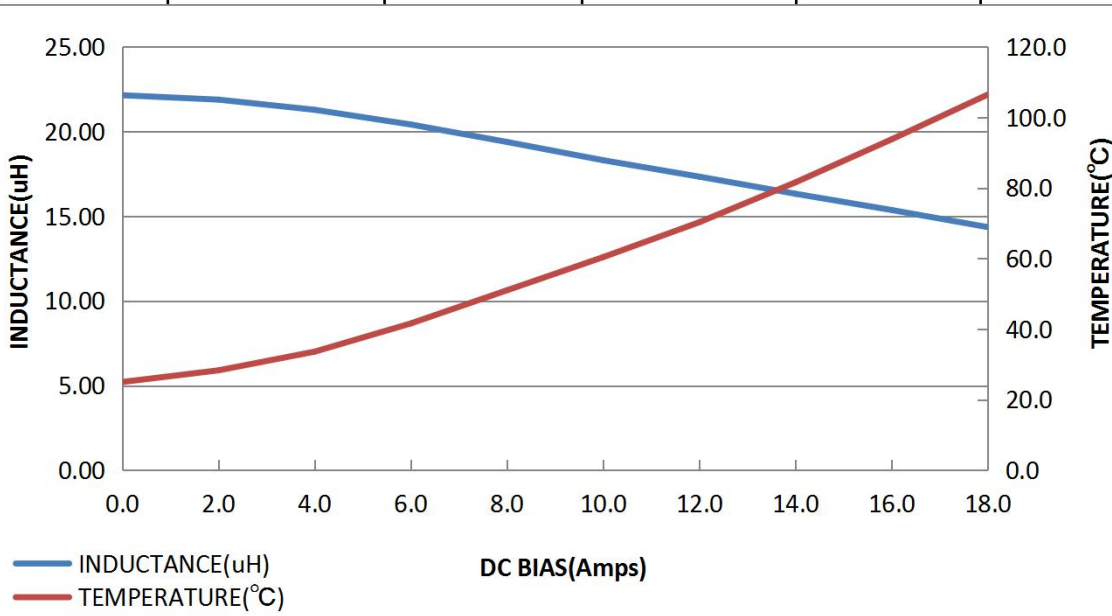
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INDUCTANCE (uH) / TEMPERATURE RISE(°C) VS DC BIAS (Amps)

IDC	L(uH)	L/LoA (%)	T(°C)	ΔT(°C)		
0.0 A	22.14	100.00%	25.0	0.0		
2.0 A	21.88	98.83%	28.3	3.3		
4.0 A	21.28	96.12%	33.6	8.6		
6.0 A	20.41	92.19%	41.6	16.6		
8.0 A	19.38	87.53%	51.0	26.0		
10.0 A	18.30	82.66%	60.4	35.4		
12.0 A	17.33	78.27%	70.3	45.3		
14.0 A	16.32	73.71%	81.6	56.6		
16.0 A	15.36	69.38%	93.8	68.8		

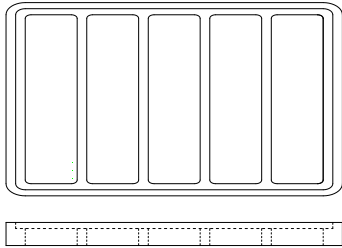


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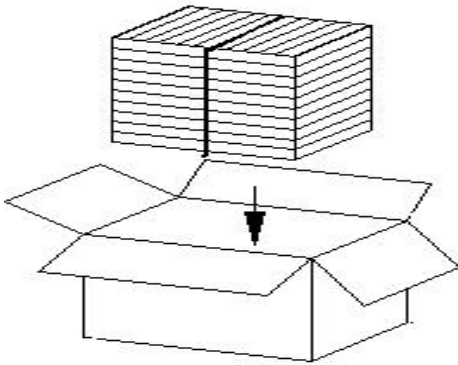
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PACKAGING



PET Size : 175*159 *19mm

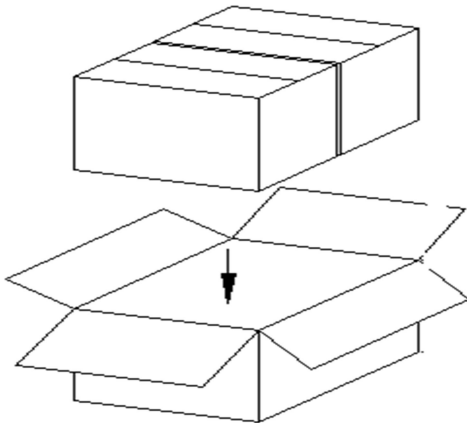
Quantity : 50PCS/PET



Small box Size : 328*178*114 mm

Quantity : 10PET/Small box

1Small box/500PCS



Big box Size : 386*338*132 mm

Quantity : 2 Small box/Big box

1 Big box/1000PCS

Storage

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

Figure 1. Re-flow Soldering

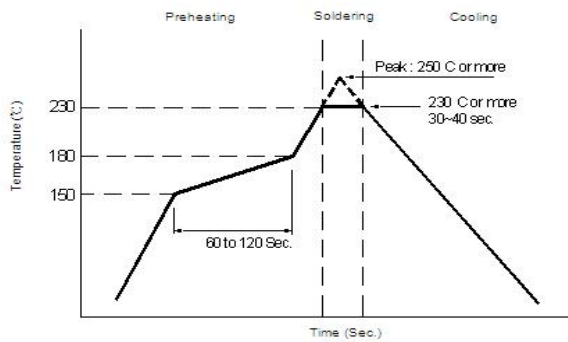
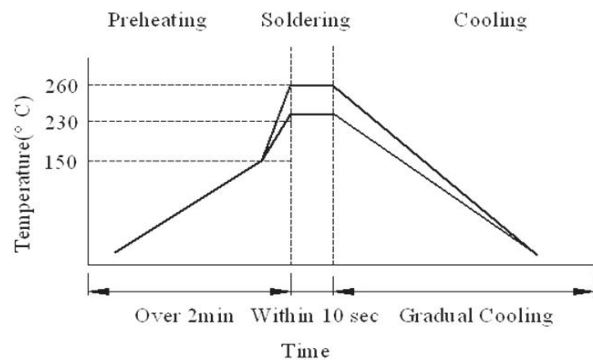


Figure 2. Wave Soldering



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" style="margin: 10px auto; border-collapse: collapse;"> <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 ($10 \sim 55 \sim 10\text{Hz}$) with 1.52mm P-P Amplitudes.															