

CUSTOMER _____

CUSTOMER' S P/N _____

DESCRIPTION DIP Power Inductor

SGTE PART NO. GPDC1010-6R8M

SAMPLE NO. S14120301 REVISION NO. A1 DATE 2014/12/3

SPECIFICATION FOR APPROVAL

FULLY APPROVED	REVISE APPROVED

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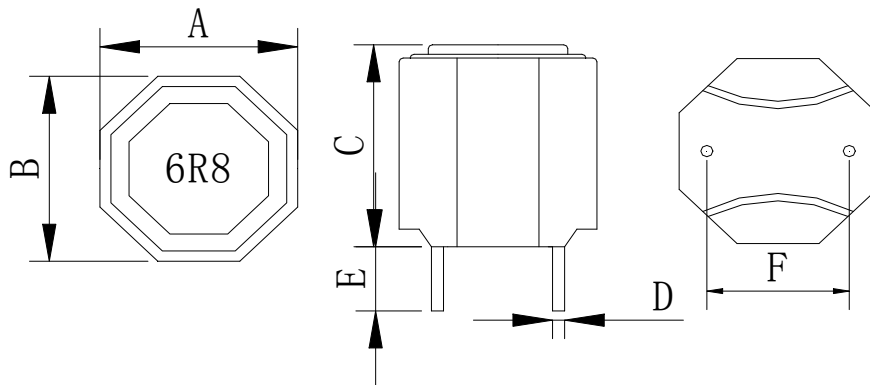
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SPECIFICATION

RoHS
COMPLIANT

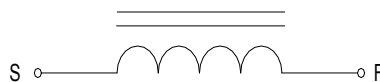
Customers Part Number	Item Name	Date	
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MECHANICAL & DIMENSIONS



(UNIT: mm)	
A	10.0 ± 0.5
B	10.0 ± 0.5
C	10.0 MAX
D	0.6 ± 0.1
E	3.5 ± 0.5
F	6.0 ± 0.5

CIRCUIT



ELECTRICAL REQUIREMENTS:

PARAMETER	SPECIFICATION	CONDITION	TEST INSTRUMENTS
L	$6.8 \pm 20\%$ uH	100KHz/1V	■ LCR Agilent4284A / Chroma 11300
DCR	18 max mΩ	@ 25°C	■ CH16502 IMPEDANCE METER
I-sat	10.8 A mps	$\cong 65\%L0A$	■ A4284A+A42841A LCR METER
Irms	7.2 A mps	$\Delta T \leq 40^\circ C$	■ 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	Irms	
UNIT	uH	mΩ	A mps	A mps	
SPECIFICATION	6.8± 20%	18 max	10.8	7.2	
CONDITION	100KHz/1V	@ 25°C	≧ 65%LOA	ΔT ≦ 40°C	
1	6.75	14.50	73.62%	28°C	
2	6.82	14.70			
3	6.78	14.60			
4	6.66	14.40			
5	6.76	14.70			
6	6.74	14.50			
7	6.80	14.50			
8	6.78	14.80			
9	6.74	14.50			
10	6.79	14.70			
MEAN	6.76	14.59			
R	0.16	0.40			

External Dimensions:

NO	A	B	C	D	E	F		
	10.0±0.5	10.0±0.5	10.0 MAX	0.6± 0.1	3.5± 0.5	6.0± 0.5		
1	10.15	10.15	9.25	0.59	3.50	6.10		
2	10.16	10.15	9.18	0.60	3.40	6.00		
3	10.18	10.17	9.24	0.58	3.50	6.10		
4	10.18	10.17	9.25	0.59	3.50	6.20		
5	10.16	10.17	9.19	0.59	3.40	6.10		
6	10.18	10.17	9.22	0.60	3.40	6.00		
7	10.14	10.15	9.26	0.60	3.50	6.10		
8	10.17	10.17	9.18	0.58	3.50	6.00		
9	10.15	10.16	9.18	0.58	3.50	6.00		
10	10.15	10.15	9.26	0.60	3.40	6.00		
MEAN	10.16	10.16	9.22	0.59	3.46	6.06		
R	0.04	0.02	0.08	0.02	0.10	0.20		

Inductance measured at 100KHz/1Vrms..

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

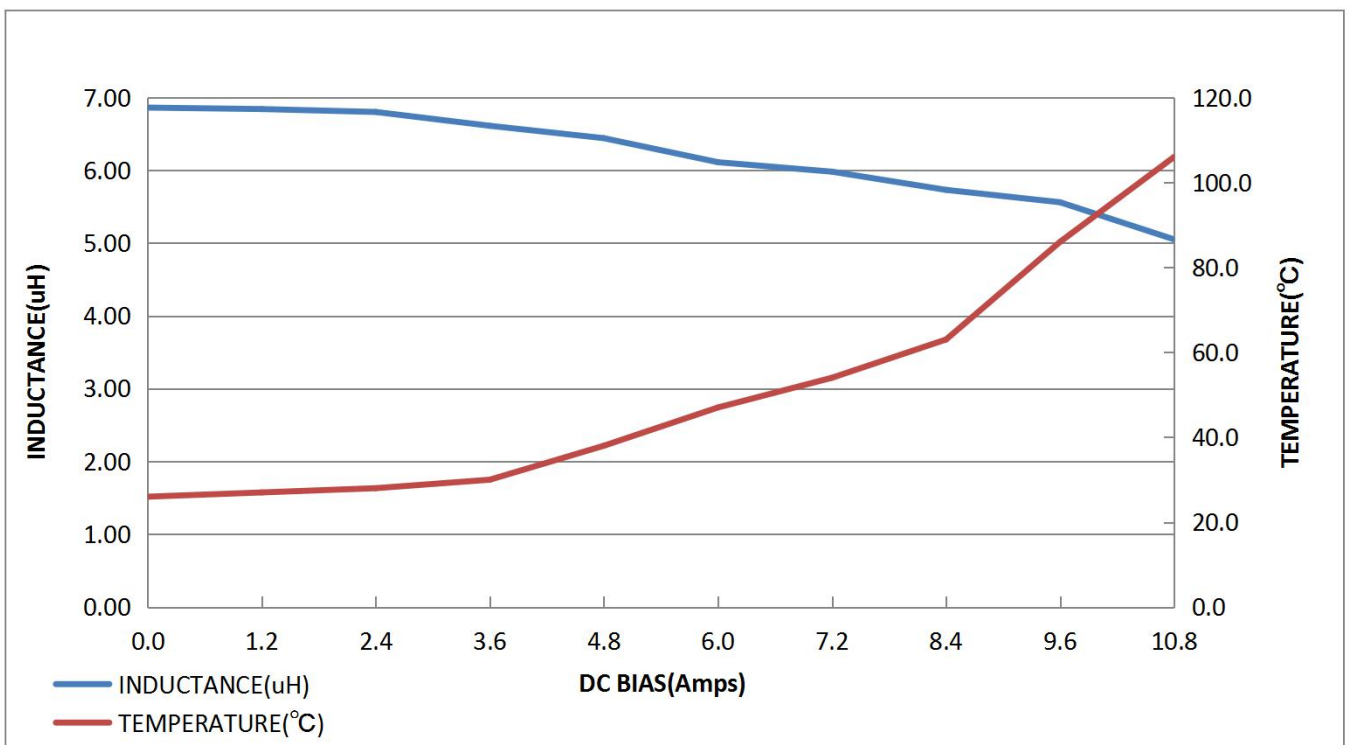
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INDUCTANCE (uH) / TEMPERATURE RISE(°C) VS DC BIAS (Amps)

IDC	L(uH)	L/LoA (%)	T(°C)	ΔT(°C)		
0.0 A	6.86	100.00%	26.0	0.0		
1.2 A	6.84	99.71%	27.0	1.0		
2.4 A	6.80	99.13%	28.0	2.0		
3.6 A	6.61	96.36%	30.0	4.0		
4.8 A	6.44	93.88%	38.0	12.0		
6.0 A	6.11	89.07%	47.0	21.0		
7.2 A	5.98	87.17%	54.0	28.0		
8.4 A	5.73	83.53%	63.0	37.0		
9.6 A	5.56	81.05%	86.0	60.0		
10.8 A	5.05	73.62%	106.0	80.0		

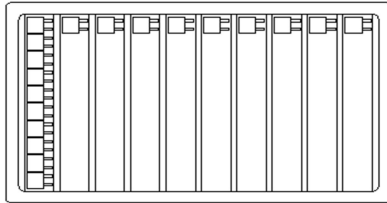


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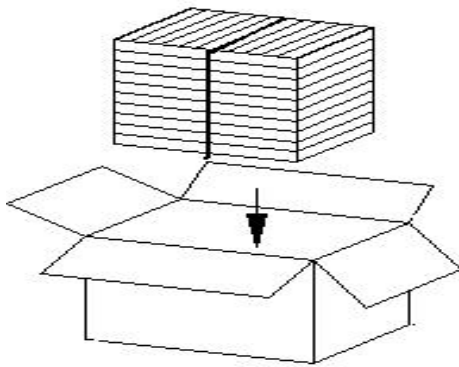
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PACKAGING



PET Size : 215*148 *16 (D) mm

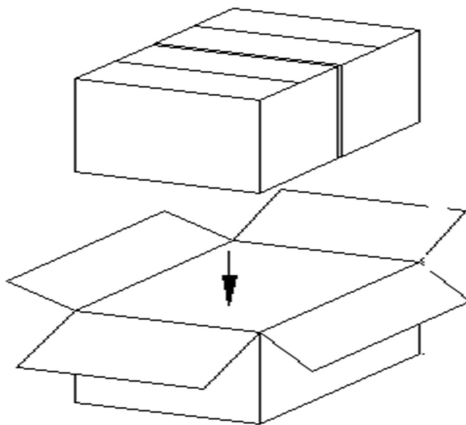
Quantity : 130PCS/PET



Small box Size : 238*156*165 mm

Quantity : 10PET/Small box

1Small box/1300PCS



Big box Size : 328*251*175 mm

Quantity : 2 Small box/Big box

1 Big box/2600PCS

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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SOLDRING CONDITIONS

Figure 1. Re-flow Soldering

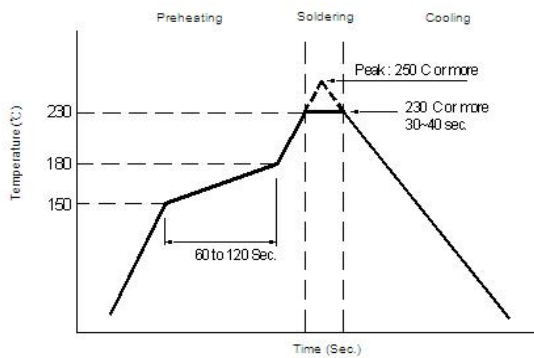
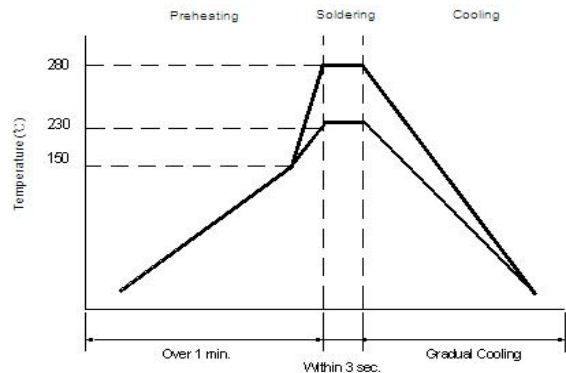


Figure 2. Hand Soldering



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 ±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°C 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°C 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. <table border="1" style="margin: 10px auto; border-collapse: collapse;"> <thead> <tr> <th>Step</th> <th>Temperature (°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 (°C)	Times (min.)	1	-40±2	30	2	Room Temperature	Within 3	3	145±5	30	4	Room Temperature	Within 3
Step	Temperature (°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 ±20% of initial value. No disconnection or short circuit. Appearance shall not break.	After 500±12 hours in 40±2°C 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.															

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