

**5026**

CUSTOMER \_\_\_\_\_

CUSTOMER'S P/N \_\_\_\_\_

DESCRIPTION \_\_\_\_\_ POWER INDUCTOR \_\_\_\_\_

SGTE PART NO. \_\_\_\_\_ GPDB1312-680M \_\_\_\_\_

SAMPLE NO. S09111901 REVISION NO. A DATE 19-Nov-09

## SPECIFICATION FOR APPROVAL

FULLY APPROVED	REVISE APPROVED

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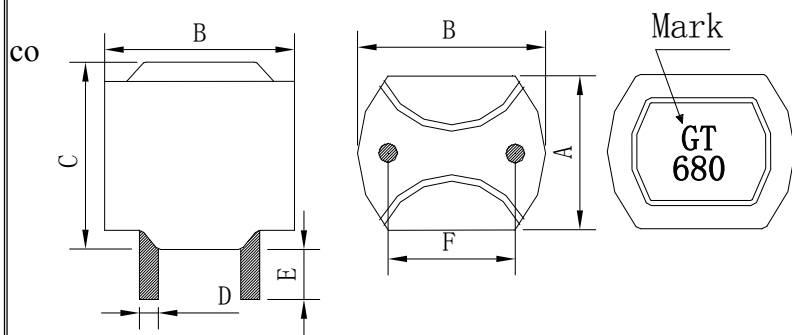
APPROVED BY	CHECKED BY	DRAWING BY
		<b>Lisa</b>  11/19

# SPECIFICATION

**RoHS  
COMPLIANT**

Customers Part Number	Item Name	Date
	Power Inductor	19-Nov-09
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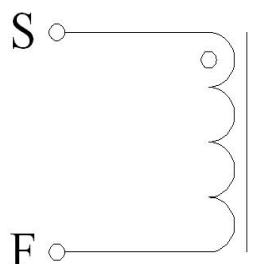
## External Dimensions Unit (mm)



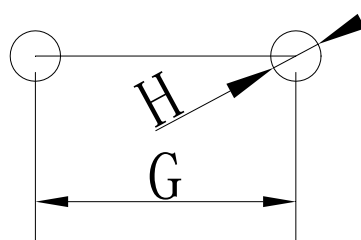
A	12.2± 0.5 (mm)
B	13.2± 0.5 (mm)
C	18.0 Max (mm)
D	0.65± 0.1 (mm)
E	3.4± 0.5 (mm)
F	7.5± 0.5 (mm)
G	7.5 (ref)
H	1.05 (ref)

Coating: Black

## Connection



## Recommended Land Pattern



## Electrical Specification

Measurement Item	Unit Tolerance	Specification	Test Frequency	Test Instrument
L	uH (±20%)	68. 0uH ±20%	100KHz/1V	LCR Meter Agilent/4284A or Chroma /11300
DCR	mΩ	60mΩ (Max)		Chroma /16502
I rms	Amps	2A	100KHz/1V	LCR Meter Agilent/4284A+42841A
I sat	Amps	3A	100KHz/1V	or 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

# TEST REPORT

**RoHS  
COMPLIANT**

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## Electrical Characteristic

Item	L0A	DCR	I rms	I sat
Specification	68.0uH	60.0mΩ	2Amps	3Amps
Tolerance	±20%	Max	ΔT ≤ 40°C	L ≥ 65%
1	66.160	57.06	14.5°C	96.5%
2	65.570	57.11		
3	67.340	57.20		
4	66.510	57.08		
5	64.890	57.16		
6	67.340	57.01		
7	68.020	57.22		
8	67.300	56.89		
9	65.440	57.32		
10	65.720	57.24		
$\bar{X}$	66.429	57.13		
σ	0.98	0.12		

## External Dimensions

Item	A	B	C	D	E	F
Specification	12.20	13.20	18.0	0.65	3.4	7.5
Tolerance	± 0.5 (mm)	± 0.5 (mm)	Max (mm)	± 0.1 (mm)	± 0.5 (mm)	± 0.5 (mm)
1	12.25	13.26	16.76	0.67	3.54	7.56
2	12.26	13.29	16.79	0.65	3.48	7.54
3	12.24	13.24	16.84	0.64	3.52	7.51
4	12.30	13.29	16.91	0.66	3.58	7.53
5	12.27	13.26	16.74	0.64	3.55	7.62
6	12.22	13.26	16.85	0.63	3.47	7.6
7	12.24	13.27	16.99	0.65	3.50	7.58
8	12.26	13.25	16.64	0.66	3.52	7.64
9	12.28	13.26	16.89	0.66	3.46	7.57
10	12.25	13.26	16.76	0.64	3.49	7.55
$\bar{X}$	12.26	13.26	16.82	0.65	3.51	7.57
σ	0.02	0.01	0.09	0.01	0.04	0.04

Inductance measured at 100KHz/1Vrms.

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

# ELECTRICAL CHARACTERISTICS

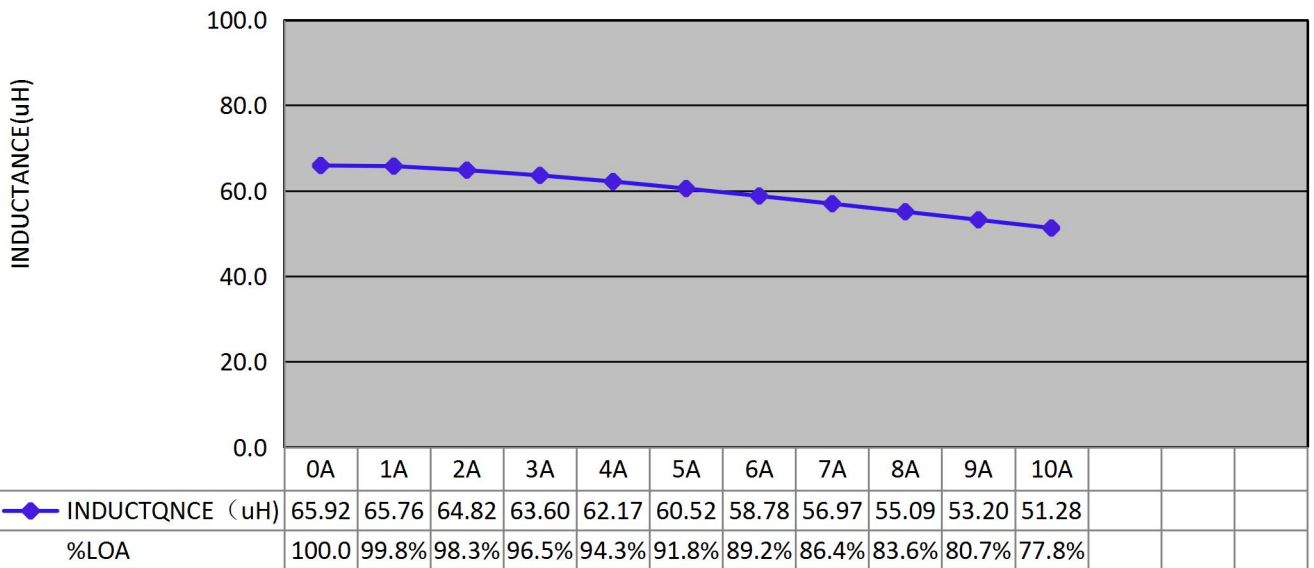


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## Inductance VS DC current

IDC	L	%LOA				
0A	65.92	100%				
1A	65.76	99.8%				
2A	64.82	98.3%				
3A	63.60	96.5%				
4A	62.17	94.3%				
5A	60.52	91.8%				
6A	58.78	89.2%				
7A	56.97	86.4%				
8A	55.09	83.6%				
9A	53.20	80.7%				
10A	51.28	77.8%				

CONDITTON: 100KHZ/1.0V<sub>rms</sub>



DC BIAS(Amps)

# ELECTRICAL CHARACTERISTICS

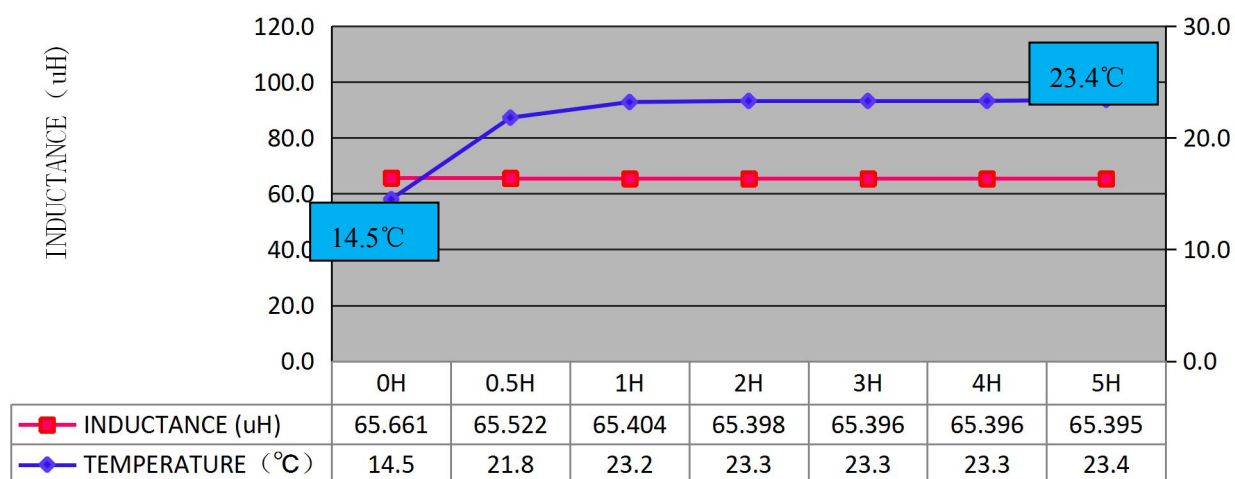
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COMPLIANT**

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## DC current VS Temperature

Time	L ( $\mu$ H)	T ( $^{\circ}$ C)	$\Delta$ T( $^{\circ}$ C)			
0H	65.661	14.5				
0.5H	65.522	21.8	7.3			
1H	65.404	23.2	8.7			
2H	65.398	23.3	8.8			
3H	65.396	23.3	8.8			
4H	65.396	23.3	8.8			
5H	65.395	23.4	8.9			

CONDITTON: Load 4A



Inductance VS Temperature

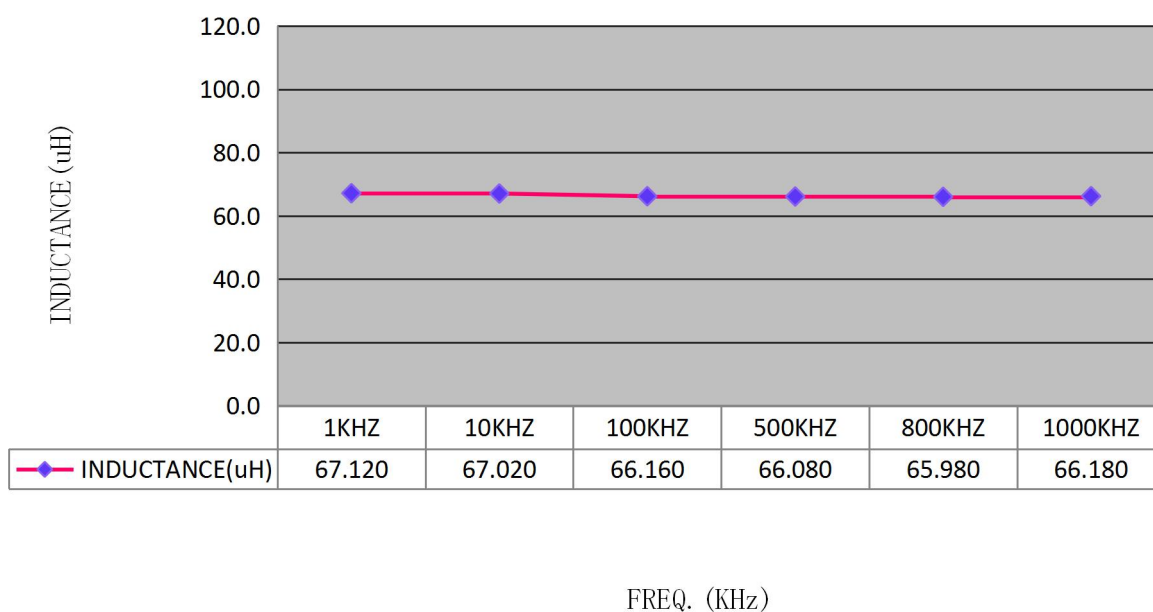
# ELECTRICAL CHARACTERISTICS

RoHS  
COMPLIANT

Customers Part Number	Item Name	Date
	Power Inductor	19-Nov-09
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## Inductance VS Frequency

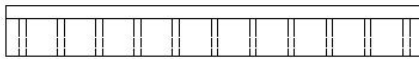
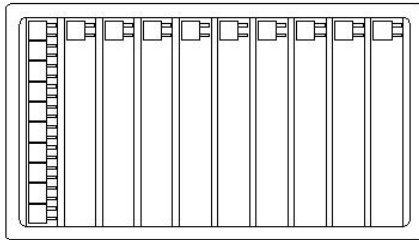
FREQ.	L (μH)					
1KHZ	67.12					
10KHZ	67.02					
100KHZ	66.16					
500KHZ	66.08					
800KHZ	65.98					
1000KHZ	66.18					



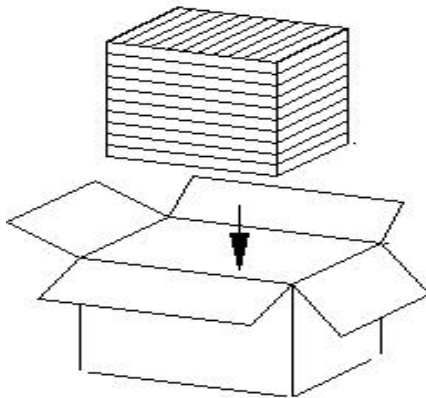
# PACKING FOR SPECIFICATION

**RoHS  
COMPLIANT**

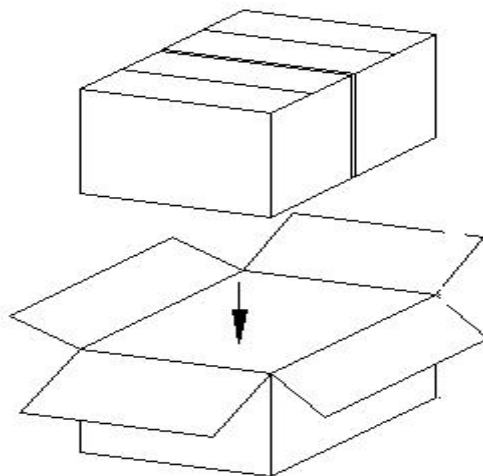
Customers Part Number	Item Name	Date
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PET Size : 175\*159\*19mm  
Quantity : 50PCS/PET



Small box Size : 324\*178\*114 mm  
Quantity : 10PET/Small box  
1 Small box/500PCS



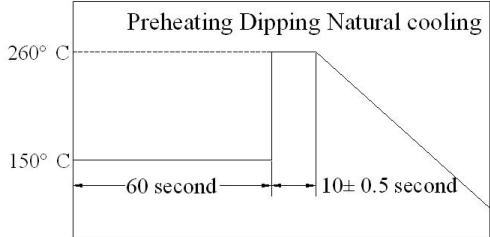
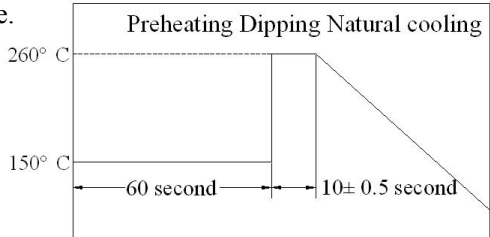
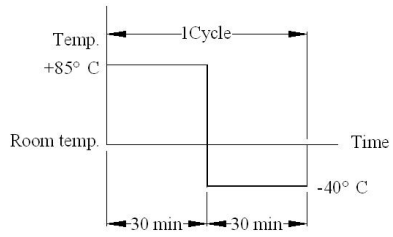
Big box Size : 386\*338\*132 mm  
Quantity : 2 Small box/Big box  
1 Big box/1000PCS



# GENERAL CHARACTERISTICS

Gan Tong Part NO.: GPDB1312-680M

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Item	Performance	Test Condition
<b>Mechanical Performance Test</b>		
Solder ability Test	<p>More than 90% of terminal electrode should be covered with solder.</p> <p>After fluxing, component shall be dipped in a melted solder bath at <math>260\pm 5^{\circ}\text{C}</math> for 10 seconds</p>	
Solder Heat Resistance	<p>Components should have not evidence of electrical and mechanical damage.</p> <p>Inductance: within <math>\pm 20\%</math> of initial value.</p> <p>Preheat: <math>150^{\circ}\text{C}</math> 60 seconds</p> <p>Solder: (SnCu0.7)</p> <p>Solder Temperature: <math>260\pm 5^{\circ}\text{C}</math></p> <p>Flux: Rosin.</p> <p>Dip time: <math>10\pm 0.5</math> seconds</p>	
Low temperature storage test	<p>1. Appearance: No damage.</p> <p>2. Inductance: within <math>\pm 20\%</math> of initial value.</p> <p>3. No disconnection or short circuit.</p>	<p>Temperature: <math>-40^{\circ}\text{C}\pm 5^{\circ}\text{C}</math> Time: <math>500\pm 12</math> Hours</p> <p>Recovery: 4to24hrs of recovery under the standard condition after the removal from test chamber.</p>
High temperature storage test		<p>Temperature: <math>85^{\circ}\text{C}\pm 5^{\circ}\text{C}</math> Time: <math>500\pm 2</math> Hours</p> <p>Recovery: 4to24hrs of recovery under the standard condition after the removal from test chamber.</p>
Thermal Shock Test (Temperature cycle)		<p><math>-40\pm 5^{\circ}\text{C}</math> for 30 Minutes. <math>+85\pm 5^{\circ}\text{C}</math> for 30 Minutes.</p> <p>Total: 10 Cycles</p> 
Humidity load life test		<p>Temperature: <math>40\pm 5^{\circ}\text{C}</math> Humidity: 90-95%</p> <p>Time: <math>500\pm 12</math> Hours Load: Allowed DC current</p> <p>Recovery: 4to24hrs of recovery under the standard condition after the removal from test chamber.</p>

# THE CONDITION OF REFLOW

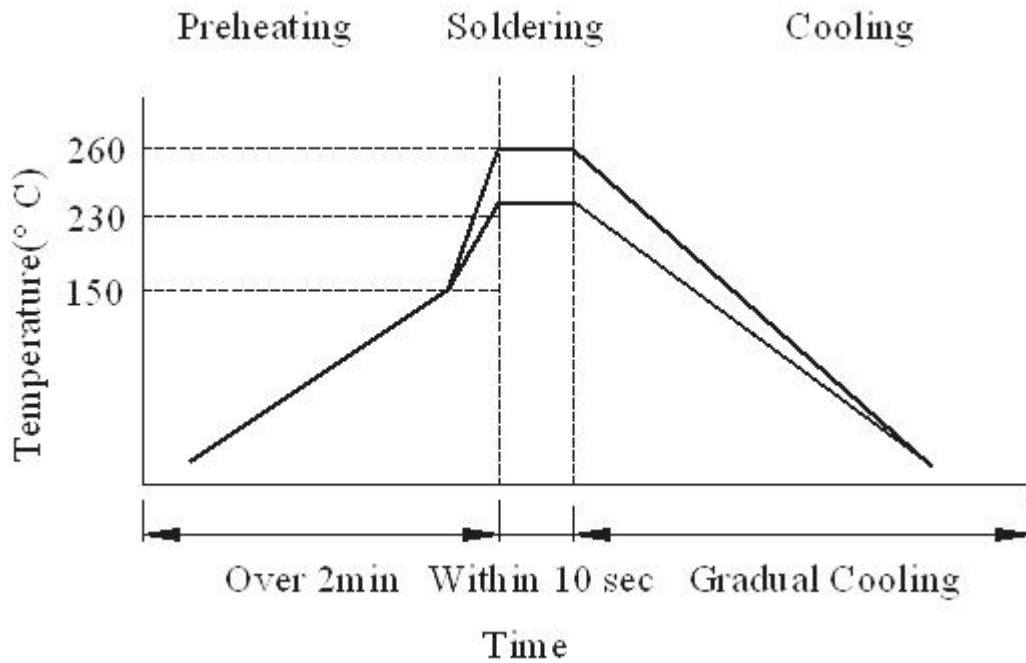
RoHS  
COMPLIANT

Gan Tong Part NO. : GPDB1312-680M

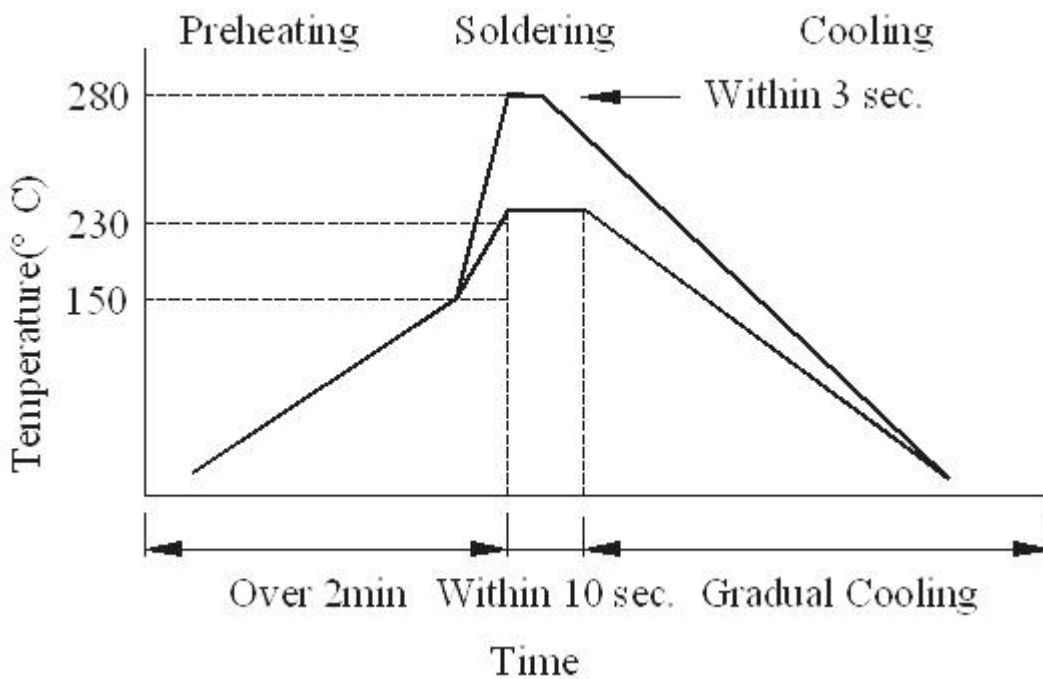
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## Wave Soldering



## Hand soldering



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