

CUSTOMER \_\_\_\_\_

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

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

SGTE PART NO. \_\_\_\_\_ GPDB1312-6R8M \_\_\_\_\_

SAMPLE NO. S11121601 REVISION NO. A DATE 23-Dec-11

## SPECIFICATION FOR APPROVAL

FULLY APPROVED	REVISE APPROVED

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# SPECIFICATION

RoHS  
COMPLIANT

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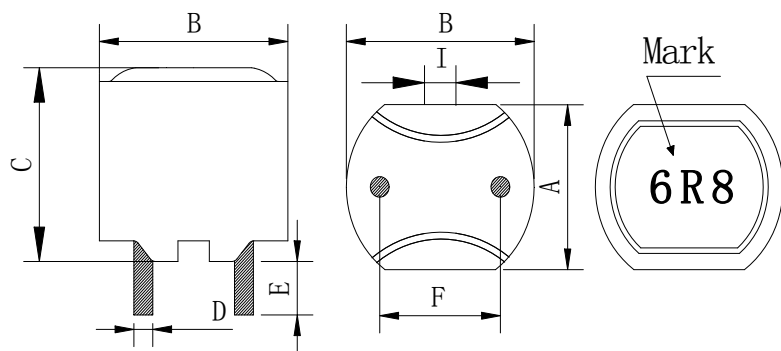
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# SPECIFICATION

**RoHS  
COMPLIANT**

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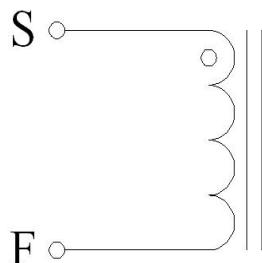
## External Dimensions Unit (mm)



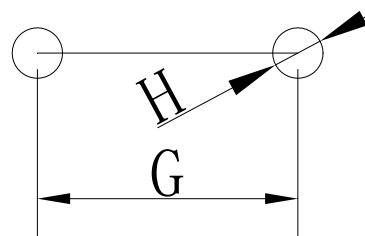
A	12.4± 0.5 (mm)
B	13.4± 0.5 (mm)
C	17.5 Max (mm)
D	1.1± 0.1 (mm)
E	3.4± 0.5 (mm)
F	7.5± 0.5 (mm)
G	7.5 (ref)
H	1.5 (ref)

Coating:Black

## Connection



## Recommended Land Pattern



## Electrical Specification

Measurement Item	Unit Tolerance	Specification	Test Frequency	Test Instrument
L	uH (±20%)	6.8uH ±20%	100KHz/1V	LCR Meter Agilent/4284A or Chroma /11300
DCR	mΩ	10mΩ (Max)		Chroma /16502
I rms	Amps	14A	100KHz/1V	LCR Meter Agilent/4284A+42841A
I sat	Amps	20A	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	LOA	DCR	I rms	I sat
Specification	6.8uH	10mΩ	14Amps	20Amps
Tolerance	±20%	Max	ΔT ≤ 40°C	L ≥ 65%
1	6.826	6.16	24.4°C	88.1%
2	6.934	6.15		
3	6.665	6.18		
4	6.822	6.20		
5	6.756	6.28		
6	6.731	6.19		
7	6.829	6.17		
8	6.884	6.22		
9	6.970	6.19		
10	6.529	6.20		
$\bar{X}$	6.795	6.19		
$\sigma$	0.09	0.03		

## External Dimensions

Item	A	B	C	D	E	F
Specification	12.40	13.40	17.5	1.1	3.4	7.5
Tolerance	± 0.5 (mm)	± 0.5 (mm)	Max (mm)	± 0.1 (mm)	± 0.5 (mm)	± 0.5 (mm)
1	12.38	13.37	15.43	1.11	3.61	7.52
2	12.41	13.35	15.41	1.09	3.52	7.62
3	12.45	13.42	15.37	1.10	3.44	7.59
4	12.39	13.41	15.53	1.07	3.49	7.49
5	12.37	13.39	15.33	1.08	3.45	7.45
6	12.46	13.35	15.21	1.12	3.52	7.62
7	12.50	13.45	15.30	1.14	3.62	7.58
8	12.49	13.46	15.42	1.09	3.53	7.57
9	12.38	13.41	15.39	1.09	3.59	7.44
10	12.36	13.40	15.38	1.10	3.56	7.55
$\bar{X}$	12.42	13.40	15.38	1.10	3.53	7.54
$\sigma$	0.05	0.04	0.09	0.02	0.06	0.06

# ELECTRICAL CHARACTERISTICS

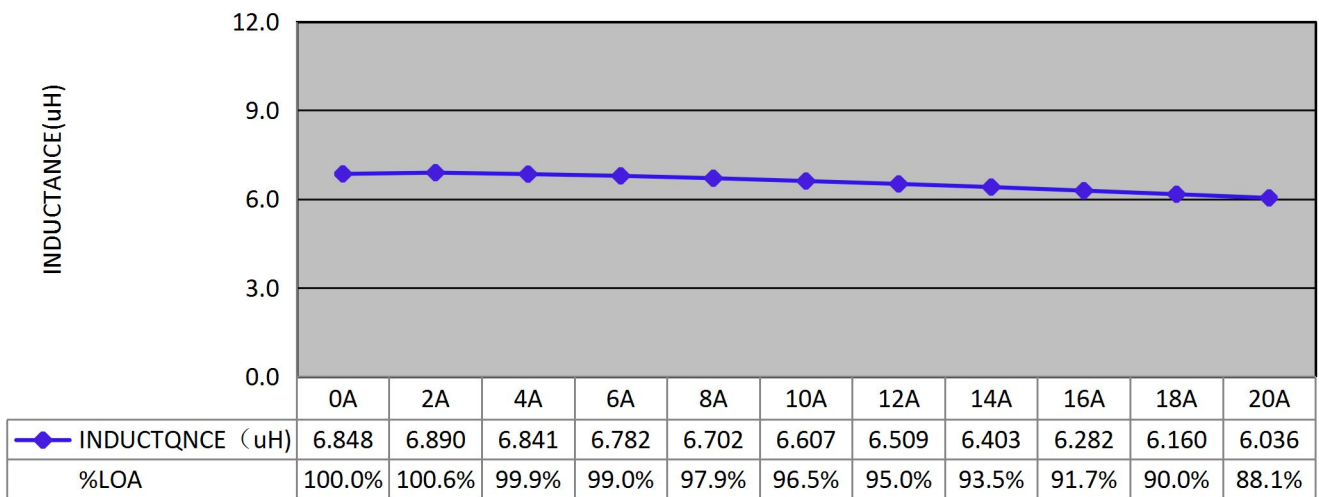
**RoHS  
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## Inductance VS DC current

IDC	L	%LOA				
0A	6.848	100.0%				
2A	6.890	100.6%				
4A	6.841	99.9%				
6A	6.782	99.0%				
8A	6.702	97.9%				
10A	6.607	96.5%				
12A	6.509	95.0%				
14A	6.403	93.5%				
16A	6.282	91.7%				
18A	6.160	90.0%				
20A	6.036	88.1%				

CONDITTON: 100KHZ/1.0Vrms



# ELECTRICAL CHARACTERISTICS

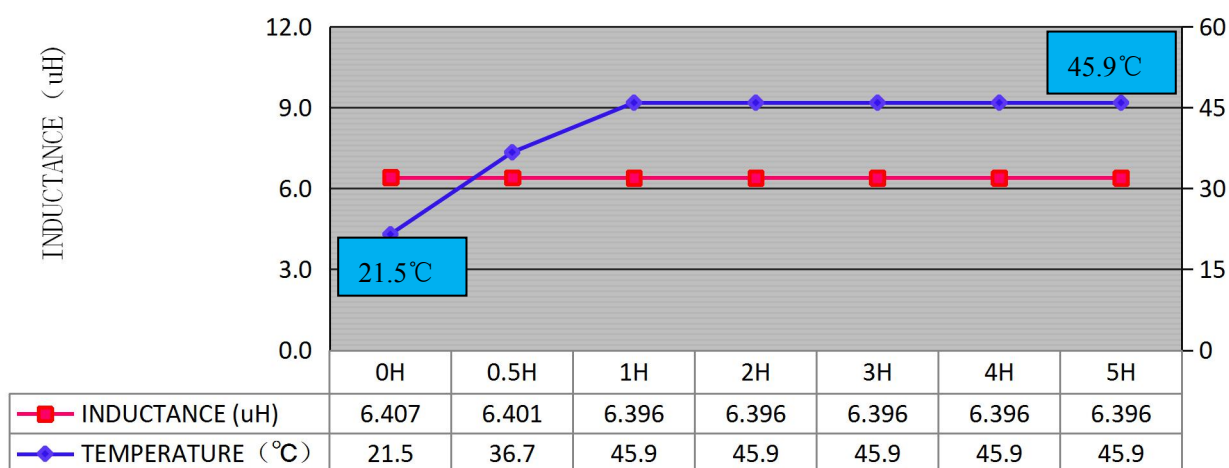
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## DC current VS Temperature

Time	L (μH)	T (°C)	ΔT(°C)			
0H	6.407	21.5				
0.5H	6.401	36.7	15.2			
1H	6.396	45.9	24.4			
2H	6.396	45.9	24.4			
3H	6.396	45.9	24.4			
4H	6.396	45.9	24.4			
5H	6.396	45.9	24.4			

CONDITTON: Load 10A



Inductance VS Temperature

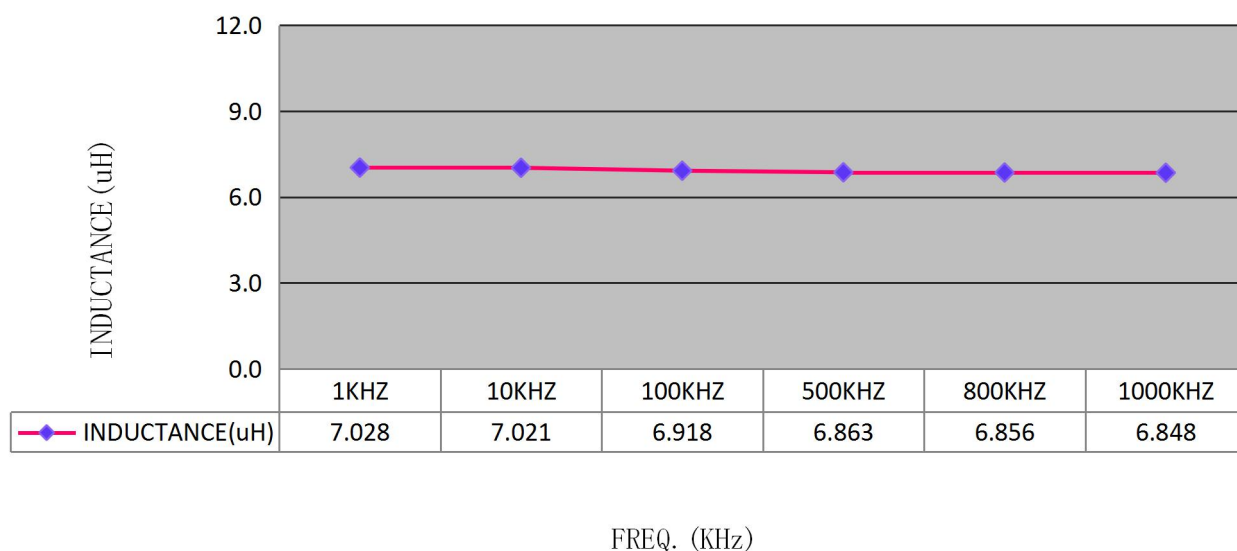
# ELECTRICAL CHARACTERISTICS

**RoHS  
COMPLIANT**

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## Inductance VS Frequency

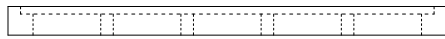
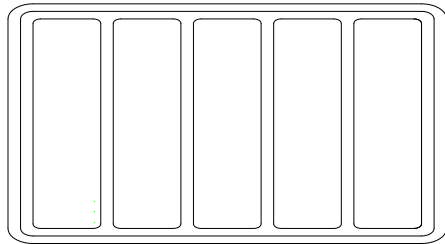
FREQ.	L (μH)					
1KHZ	7.028					
10KHZ	7.021					
100KHZ	6.918					
500KHZ	6.863					
800KHZ	6.856					
1000KHZ	6.848					



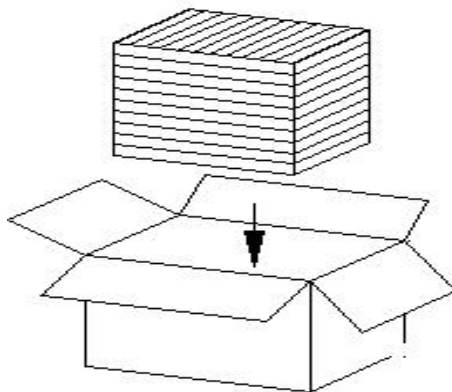
# PACKING FOR SPECIFICATION

RoHS  
COMPLIANT

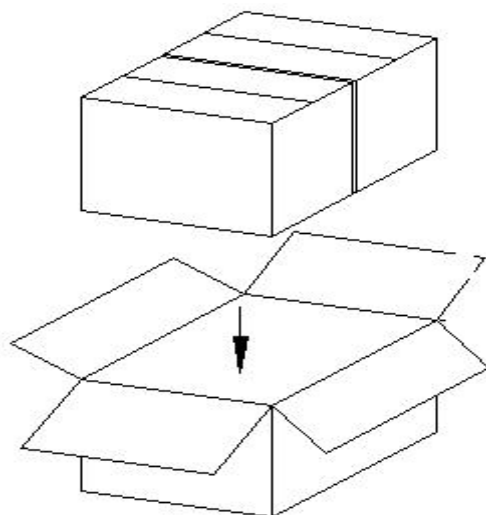
Customers Part Number	Item Name	Date
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PET Size : 175\*159\*19mm  
Quantity : 50PCS/PET



Small box Size : 328\*178\*114 mm  
Quantity : 10PET/Small box  
1Small box/500PCS



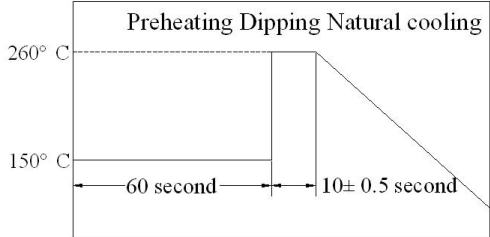
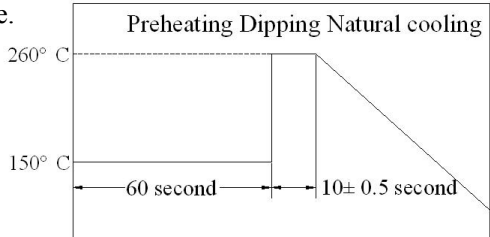
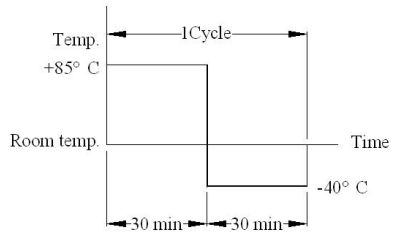
Big box Size : 386\*338\*132 mm  
Quantity : 2 Small box/Big box  
1 Big box/1000PCS



# GENERAL CHARACTERISTICS

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

# THE CONDITION OF REFLOW

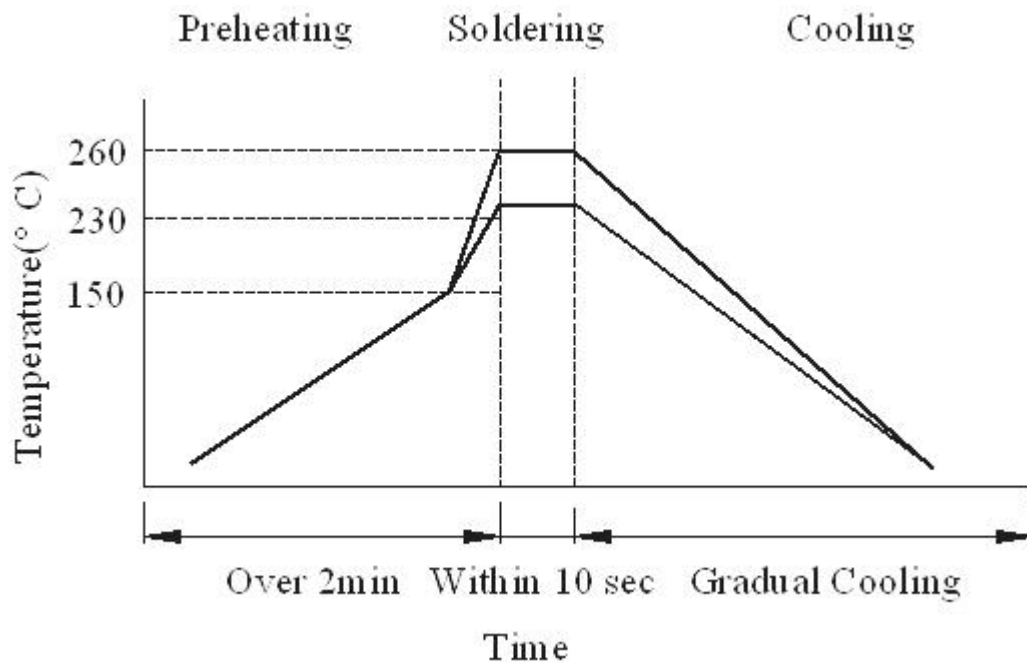
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## Wave Soldering



## Hand soldering

