

CUSTOMER \_\_\_\_\_

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

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

SGTE PART NO. \_\_\_\_\_ GPDB1312-150M \_\_\_\_\_

SAMPLE NO. S09092501 REVISION NO. A DATE 25-Sep-09

## SPECIFICATION FOR APPROVAL

FULLY APPROVED	REVISE APPROVED

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# SPECIFICATION

**RoHS  
COMPLIANT**

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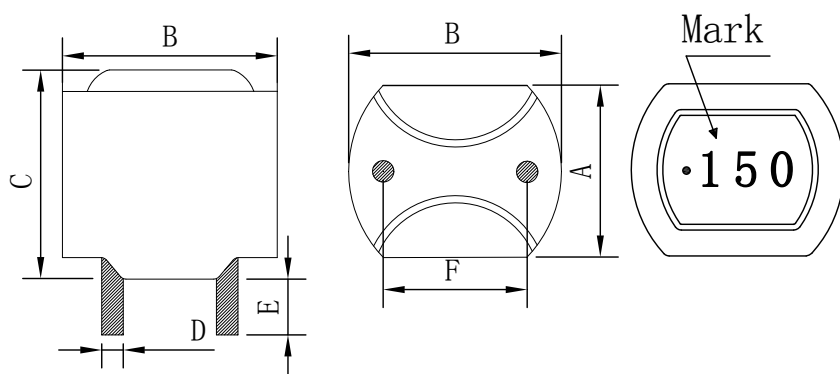
APPROVED BY	CHECKED BY	DRAWING BY
<b>Jesse</b>  9/25	<b>Gary</b>  9/25	<b>Lisa</b>  9/25

# SPECIFICATION

**RoHS  
COMPLIANT**

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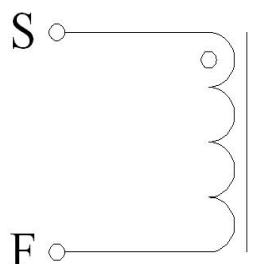
## External Dimensions Unit (mm)



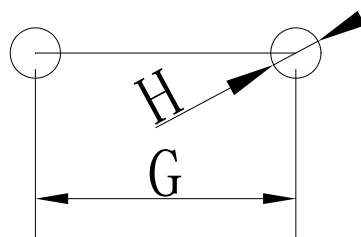
A	12.4± 0.5 (mm)
B	13.4± 0.5 (mm)
C	16.5 Max (mm)
D	0.8± 0.1 (mm)
E	3.4± 0.5 (mm)
F	7.5± 0.5 (mm)
G	7.5 (ref)
H	1.2 (ref)

Coating:Black

## Connection



## Recommended Land Pattern



## Electrical Specification

Measurement Item	Unit Tolerance	Specification	Test Frequency	Test Instrument
L	uH (±20%)	15uH ±20%	100KHz/1V	LCR Meter Agilent/4284A or Chroma /11300
DCR	mΩ	20mΩ (Max)		Chroma /16502
I rms	Amps	9A	100KHz/1V	LCR Meter Agilent/4284A+42841A
I sat	Amps	12A	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	15uH	20mΩ	9Amps	12Amps
Tolerance	±20%	Max	$\Delta T \leq 40^{\circ}\text{C}$	$L \geq 65\%$
1	14.17	13.75	37.8°C	90.8%
2	14.28	13.72		
3	14.23	13.74		
4	14.56	13.71		
5	14.10	13.70		
6	14.19	13.75		
7	14.22	13.74		
8	14.30	13.72		
9	14.56	13.71		
10	14.55	13.76		
$\bar{X}$	14.32	13.73		
$\sigma$	0.17	0.02		

## External Dimensions

Item	A	B	C	D	E	F
Specification	12.40	13.40	16.5	0.8	3.4	7.5
Tolerance	± 0.5 (mm)	± 0.5 (mm)	Max (mm)	± 0.1 (mm)	± 0.5 (mm)	± 0.5 (mm)
1	12.22	13.22	15.40	0.77	3.41	7.78
2	12.19	13.20	15.39	0.76	3.39	7.69
3	12.22	13.23	15.47	0.77	3.45	7.75
4	12.18	13.21	15.48	0.78	3.30	7.76
5	12.21	13.22	15.50	0.79	3.38	7.72
6	12.22	13.23	15.39	0.77	3.38	7.73
7	12.17	13.24	15.41	0.77	3.39	7.69
8	12.18	13.19	15.38	0.76	3.36	7.68
9	12.22	13.22	15.29	0.76	3.39	7.70
10	12.20	13.19	15.30	0.78	3.40	7.72
$\bar{X}$	12.20	13.22	15.40	0.77	3.39	7.72
$\sigma$	0.02	0.02	0.07	0.01	0.04	0.03

Inductance measured at 100KHz/1Vrms.

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

# ELECTRICAL CHARACTERISTICS

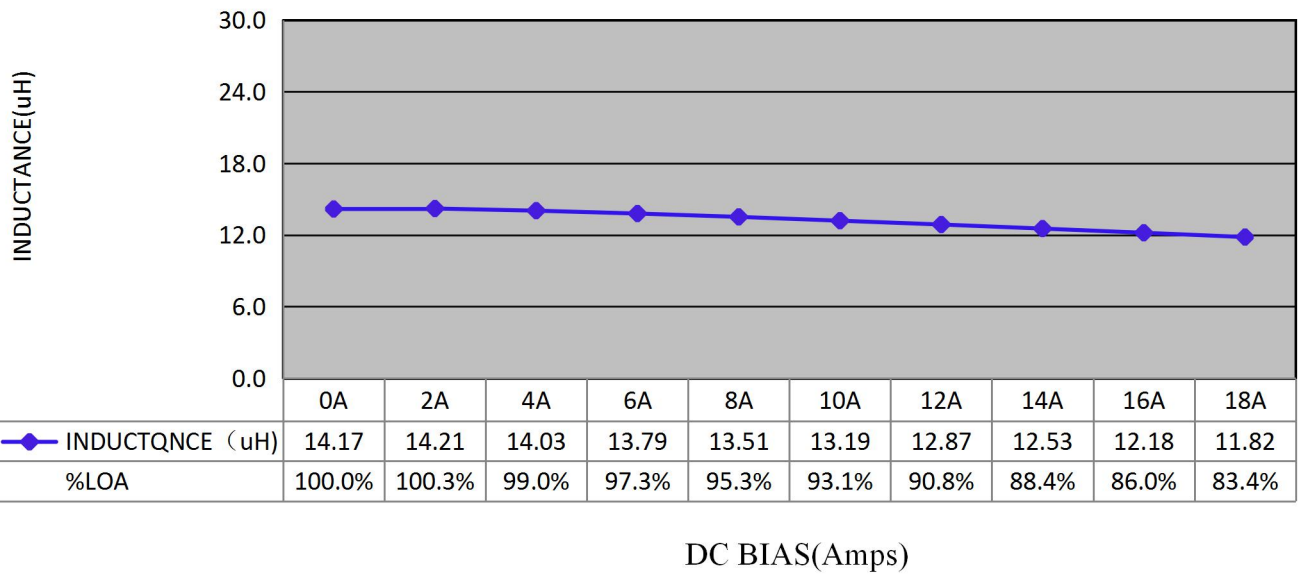
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## Inductance VS DC current

IDC	L	%LOA				
0A	14.17	100%				
2A	14.21	100.3%				
4A	14.03	99.0%				
6A	13.79	97.3%				
8A	13.51	95.3%				
10A	13.19	93.1%				
12A	12.87	90.8%				
14A	12.53	88.4%				
16A	12.18	86.0%				
18A	11.82	83.4%				

CONDITION: 100KHZ/1.0Vrms AMBIENT: 20°C, 69.8%



# ELECTRICAL CHARACTERISTICS

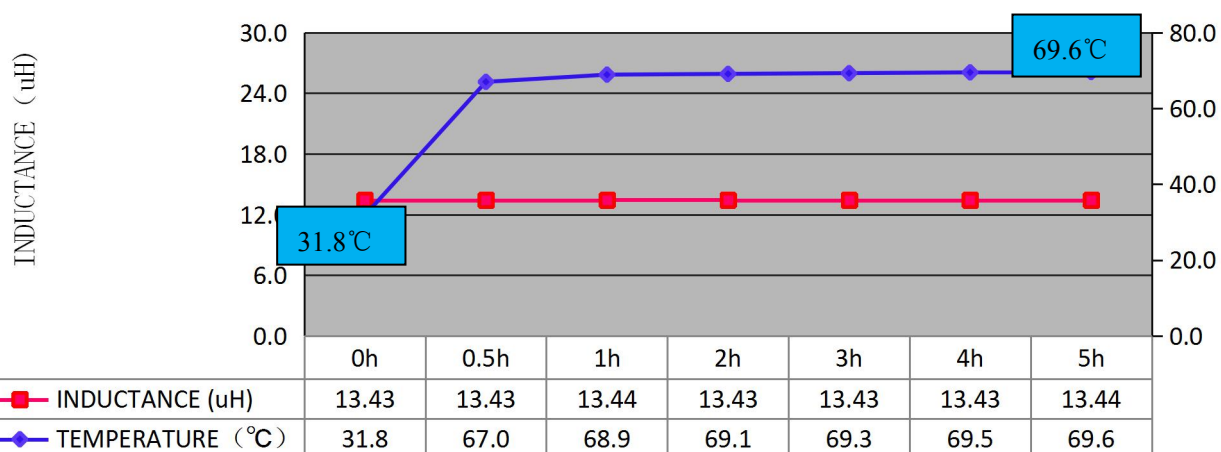
**RoHS  
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## DC current VS Temperature

Time	L ( $\mu$ H)	T ( $^{\circ}$ C)	$\Delta$ T( $^{\circ}$ C)			
0H	13.43	31.8				
0.5H	13.43	67.0	35.2			
1H	13.44	68.9	37.1			
2H	13.43	69.1	37.3			
3H	13.43	69.3	37.5			
4H	13.43	69.5	37.7			
5H	13.43	69.6	37.8			

CONDITION: Load 9A AMBIENT: 20 $^{\circ}$ C, 69.8%



Inductance VS Temperature

# ELECTRICAL CHARACTERISTICS

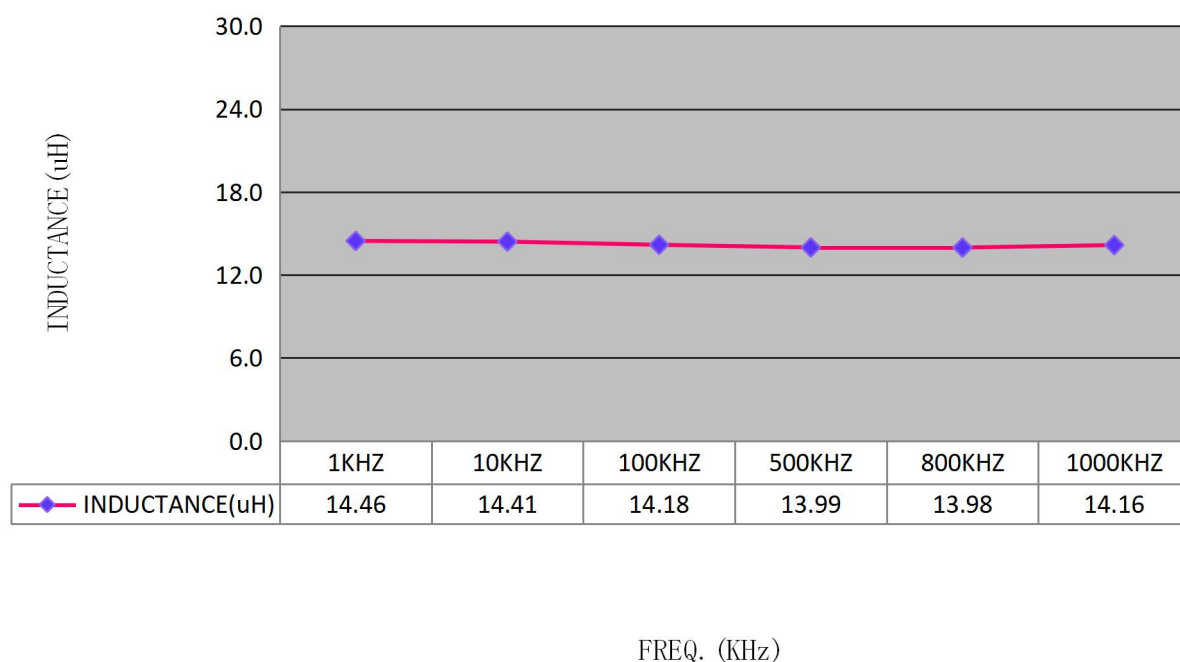
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Customers Part Number	Item Name	Date
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## Inductance VS Frequency

FREQ.	L (μH)					
1KHZ	14.46					
10KHZ	14.41					
100KHZ	14.18					
500KHZ	13.99					
800KHZ	13.98					
1000KHZ	14.16					

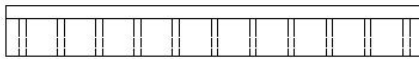
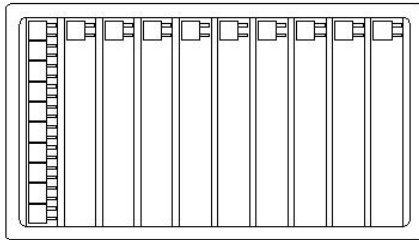
AMBIENT: 20°C, 69.8%



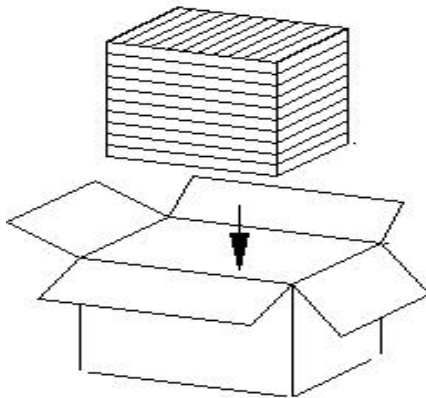
# PACKING FOR SPECIFICATION

**RoHS  
COMPLIANT**

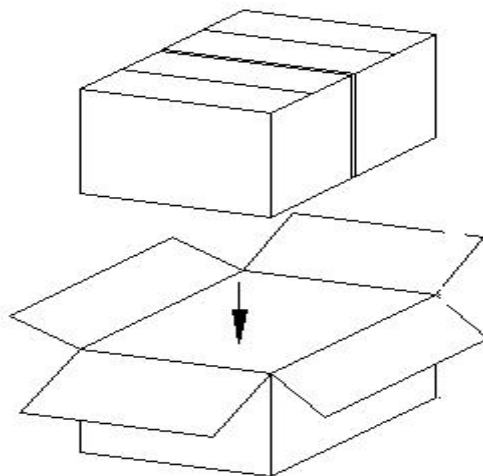
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PET Size : 175\*159\*19mm  
Quantity : 50PCS/PET



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



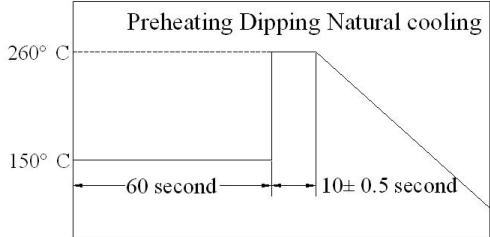
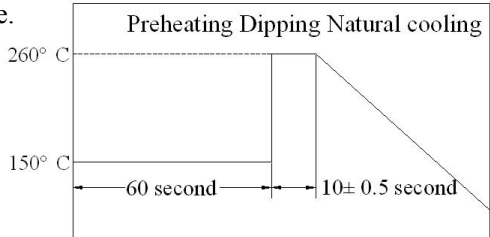
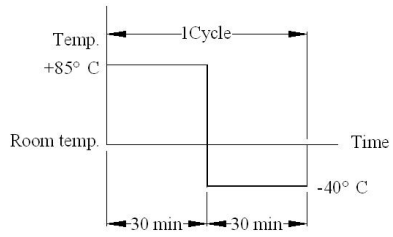
Big box Size : 386\*338\*132 mm  
Quantity : 2 Small box/Big box  
1 Big box/1000PCS



# GENERAL CHARACTERISTICS

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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

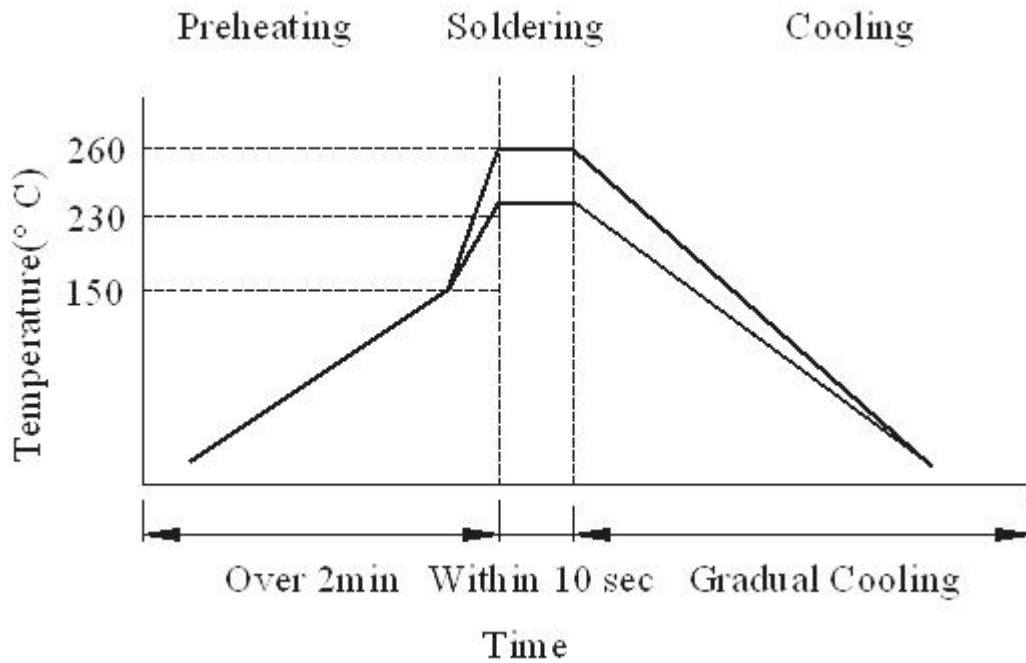
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## Wave Soldering



## Hand soldering

