

CUSTOMER \_\_\_\_\_

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

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

SGTE PART NO. \_\_\_\_\_ GPDB1312-820MT \_\_\_\_\_

SAMPLE NO. S20040203 REVISION NO. A DATE 2020.04.02

## SPECIFICATION FOR APPROVAL

FULLY APPROVED	REVISE APPROVED

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# SPECIFICATION

RoHS  
COMPLIANT

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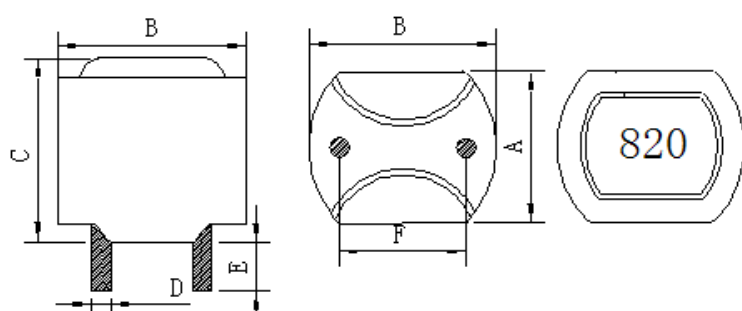
黄荣英

# SPECIFICATION

**RoHS  
COMPLIANT**

Customers Part Number	Item Name	Date
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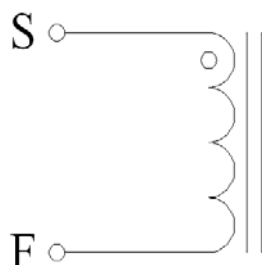
## External Dimensions Unit (mm)



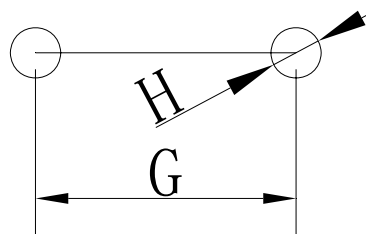
A	12.2± 0.5 (mm)
B	13.2± 0.5 (mm)
C	17.0 Max (mm)
D	0.6± 0.1 (mm)
E	3.4± 0.5 (mm)
F	7.5± 0.5 (mm)
G	7.5 (ref)
H	1.0 (ref)

Coating: Gray

## Connection



## Recommended Land Pattern



## Electrical Specification

Measurement Item	Unit Tolerance	Specification	Test Frequency	Test Instrument
L	uH (±20%)	82.0uH ±20%	100KHz/1V	LCR Meter Agilent/4284A or Chroma /11300
DCR	mΩ	103mΩ (Max)		Chroma /16502
I rms	Amps	4A	100KHz/1V	LCR Meter Agilent/4284A+42841A
I sat	Amps	6A	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

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## Electrical Characteristic

Item	L0A	DCR	I rms	I sat
Specification	82.0uH	103.0m $\Omega$	4Amps	6Amps
Tolerance	$\pm 20\%$	Max	$\Delta T \leq 40^{\circ}\text{C}$	$L \geq 65\%$
1	80.130	79.50	36.8 $^{\circ}\text{C}$	87.8%
2	78.330	79.48		
3	77.540	79.41		
4	79.490	79.40		
5	79.510	79.45		
6	79.710	79.42		
7	78.890	79.41		
8	78.540	79.43		
9	78.670	79.42		
10	79.450	79.41		
$\bar{X}$	79.026	79.43		
$\sigma$	0.73	0.03		

## External Dimensions

Item	A	B	C	D	E	F
Specification	12.20	13.20	17.0	0.6	3.4	7.5
Tolerance	$\pm 0.5$ (mm)	$\pm 0.5$ (mm)	Max (mm)	$\pm 0.1$ (mm)	$\pm 0.5$ (mm)	$\pm 0.5$ (mm)
1	12.25	13.24	15.06	0.57	3.34	7.51
2	12.23	13.27	15.28	0.61	3.35	7.46
3	12.25	13.23	15.16	0.58	3.43	7.56
4	12.25	13.24	15.08	0.58	3.35	7.53
5	12.24	13.25	15.17	0.61	3.41	7.56
6	12.23	13.27	15.09	0.59	3.45	7.53
7	12.25	13.26	15.21	0.57	3.44	7.55
8	12.21	13.22	15.20	0.60	3.42	7.52
9	12.23	13.25	15.22	0.61	3.41	7.55
10	12.21	13.24	15.19	0.63	3.44	7.56
$\bar{X}$	12.24	13.25	15.17	0.60	3.40	7.53
$\sigma$	0.01	0.02	0.07	0.02	0.04	0.03

Inductance measured at 100KHz/1Vrms.

Electrical specifications at 25 $^{\circ}\text{C}$ . Humidity 60 $\pm$ 10%

# ELECTRICAL CHARACTERISTICS

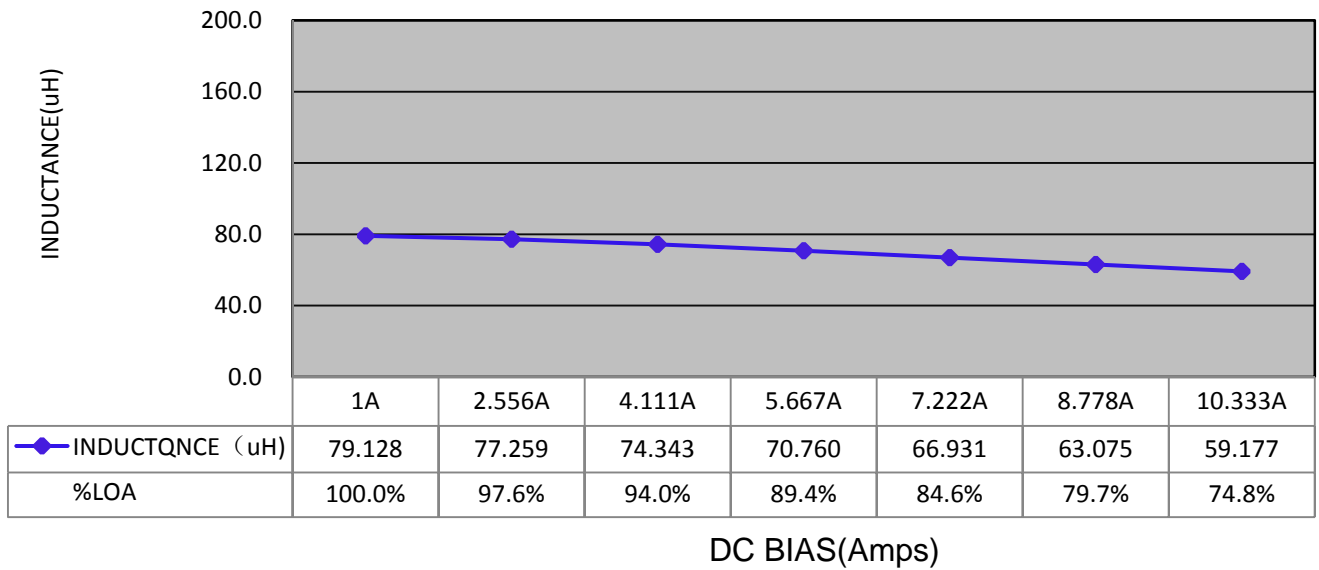
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## Inductance VS DC current

IDC	L	%LOA				
1A	79.128	100%				
2.556A	77.259	97.6%				
4.111A	74.343	94.0%				
5.667A	70.760	89.4%				
7.222A	66.931	84.6%				
8.778A	63.075	79.7%				
10.333A	59.177	74.8%				

CONDITTON: 100KHZ/1.0Vrms



# ELECTRICAL CHARACTERISTICS

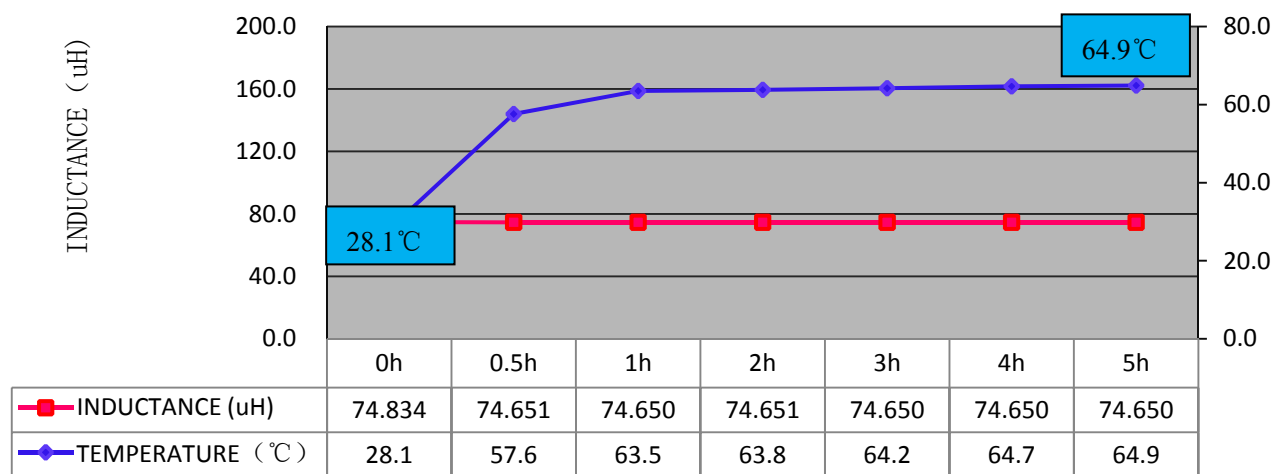
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## DC current VS Temperature

Time	L (μH)	T (°C)	ΔT(°C)			
0H	74.834	28.1				
0.5H	74.651	57.6	29.5			
1H	74.650	63.5	35.4			
2H	74.651	63.8	35.7			
3H	74.650	64.2	36.1			
4H	74.650	64.7	36.6			
5H	74.650	64.9	36.8			

CONDITTON: Load 4A



Inductance VS Temperature

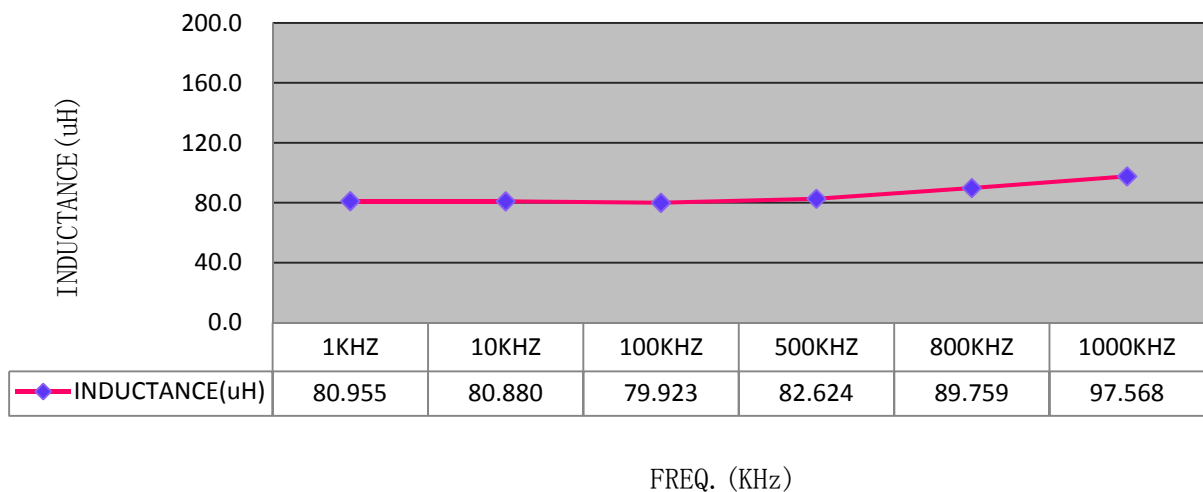
# ELECTRICAL CHARACTERISTICS

**RoHS  
COMPLIANT**

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	Power Inductor	2020.04.02
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## Inductance VS Frequency

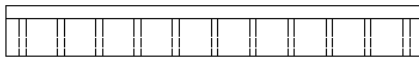
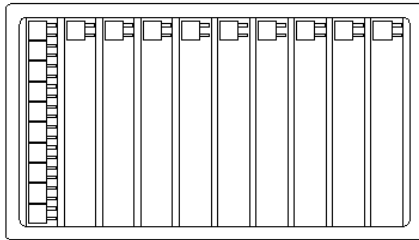
FREQ.	L (μH)					
1KHZ	80.955					
10KHZ	80.880					
100KHZ	79.923					
500KHZ	82.624					
800KHZ	89.759					
1000KHZ	97.568					



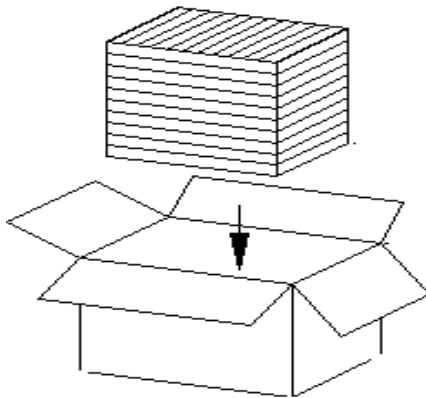
# PACKING FOR SPECIFICATION

**RoHS  
COMPLIANT**

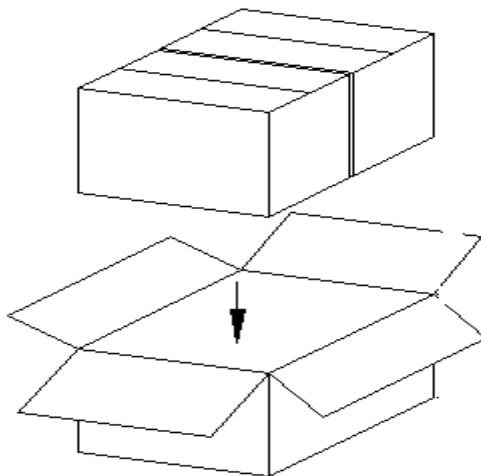
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PET Size : 175\*159\*19mm  
Quantity : 50PCS/PET



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

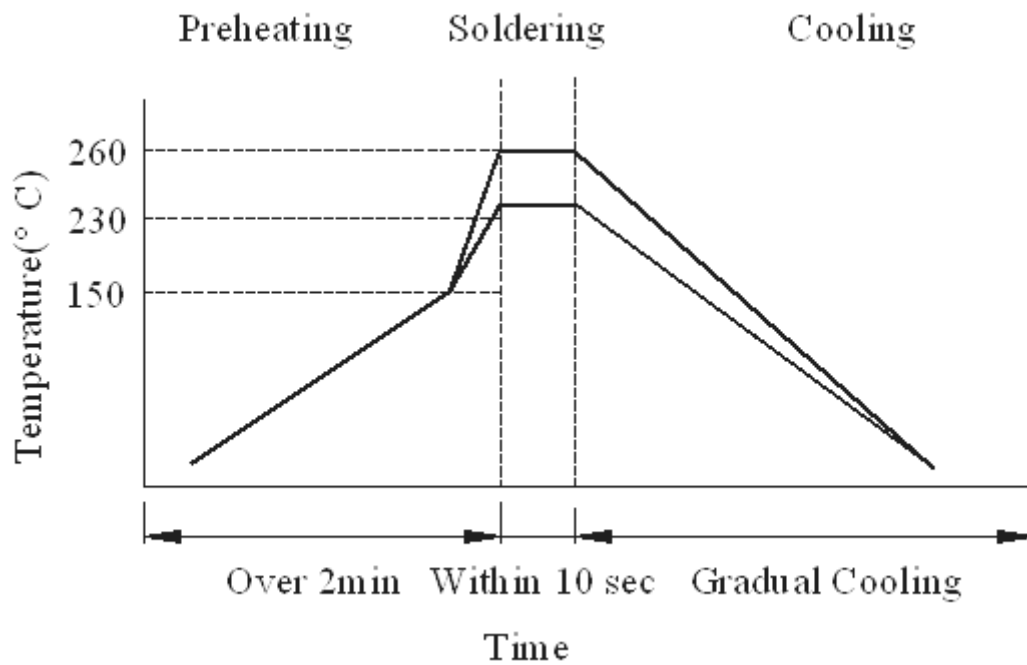
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Gan Tong Part NO. : GPDB1312-820MT

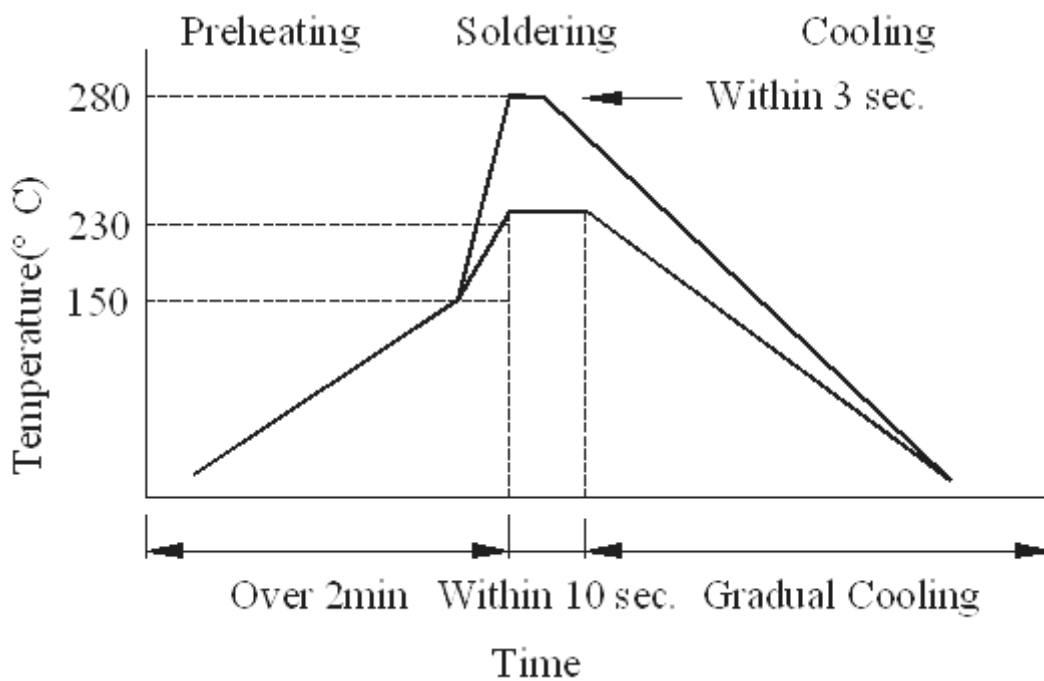
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## Wave Soldering



## Hand soldering



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