

**0002**

CUSTOMER \_\_\_\_\_

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

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

SGTE PART NO. \_\_\_\_\_ GPDC1010-100M \_\_\_\_\_

SAMPLE NO. S09031301 REVISION NO. A DATE 13-Mar-09

## SPECIFICATION FOR APPROVAL

FULLY APPROVED	REVISE APPROVED

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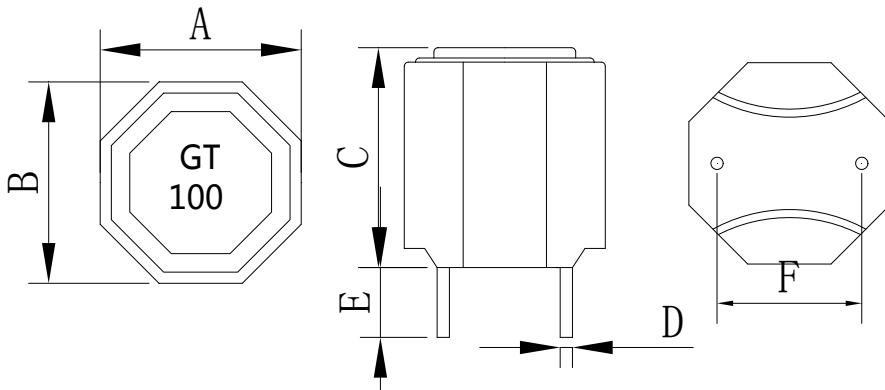
APPROVED BY	CHECKED BY	DRAWING BY
		<b>Lisa</b>  6/19

# SPECIFICATION

**RoHS  
COMPLIANT**

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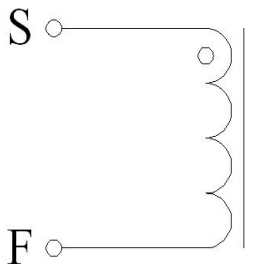
**External Dimensions Unit (mm)**



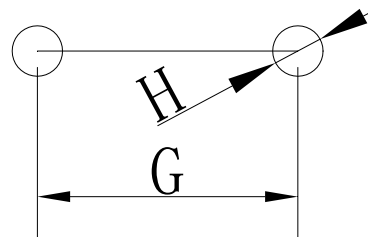
A	10.3± 0.5 (mm)
B	10.3± 0.5 (mm)
C	11.0Max (mm)
D	0.6± 0.1 (mm)
E	3.4± 0.5 (mm)
F	6.0± 0.5 (mm)
G	6.0± 0.5(mm)
H	1.0 (ref)

Coating:Black

**Connection**



**Recommended Land Pattern**



**Electrical Specification**

Measurement Item	Unit Tolerance	Specification	Test Frequency	Test Instrument
L	uH (±20%)	10.0uH ±20%	100KHz/1V	LCR Meter Agilent/4284A or Chroma /11300
DCR	mΩ	25mΩ (Max)		Chroma /16502
I rms	Amps	5A	100KHz/1V	LCR Meter Agilent/4284A+42841A
I sat	Amps	7A	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	10.0uH	25mΩ	5Amps	7Amps
Tolerance	±20%	Max	$\Delta T \leq 40^{\circ}\text{C}$	$L \geq 65\%$
1	10.81	18.58	24.7°C	92.7%
2	10.82	18.98		
3	10.76	18.64		
4	10.68	18.74		
5	10.73	18.69		
6	10.88	18.78		
7	10.63	18.42		
8	10.75	18.75		
9	10.66	18.38		
10	10.85	18.42		
$\bar{X}$	10.76	18.64		
$\sigma$	0.08	0.18		

## External Dimensions

Item	A	B	C	D	E	F
Specification	10.3	10.3	11.0	0.6	3.4	6.0
Tolerance	± 0.5 (mm)	± 0.5 (mm)	Max (mm)	± 0.1 (mm)	± 0.5 (mm)	± 0.5 (mm)
1	10.23	10.21	7.65	0.58	3.43	6.07
2	10.31	10.25	7.75	0.59	3.44	6.08
3	10.32	10.25	7.83	0.57	3.54	6.09
4	10.32	10.25	7.74	0.58	3.36	6.09
5	10.21	10.22	7.69	0.59	3.37	6.07
6	10.31	10.22	7.85	0.59	3.46	6.09
7	10.23	10.21	7.67	0.59	3.44	6.08
8	10.25	10.20	7.72	0.58	3.43	6.09
9	10.28	10.23	7.64	0.59	3.42	6.07
10	10.30	10.25	7.73	0.58	3.47	6.07
$\bar{X}$	10.28	10.23	7.73	0.58	3.44	6.08
$\sigma$	0.04	0.02	0.07	0.01	0.05	0.01

Inductance measured at 100KHz/1Vrms.

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

# ELECTRICAL CHARACTERISTICS

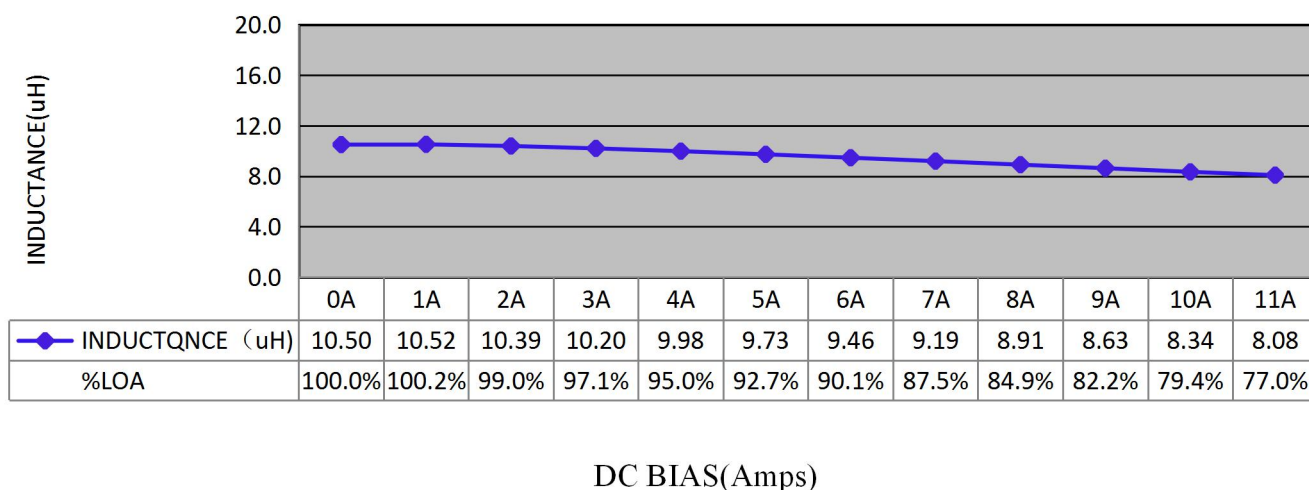
**RoHS  
COMPLIANT**

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## Inductance VS DC current

IDC	L	%LOA				
0A	10.50	100%				
1A	10.52	100.2%				
2A	10.39	99.0%				
3A	10.20	97.1%				
4A	9.98	95.0%				
5A	9.73	92.7%				
6A	9.46	90.1%				
7A	9.19	87.5%				
8A	8.91	84.9%				
9A	8.63	82.2%				
10A	8.34	79.4%				
11A	8.08	77.0%				

CONDITTON: 100KHZ/1.0Vrms



DC BIAS(Amps)

# ELECTRICAL CHARACTERISTICS

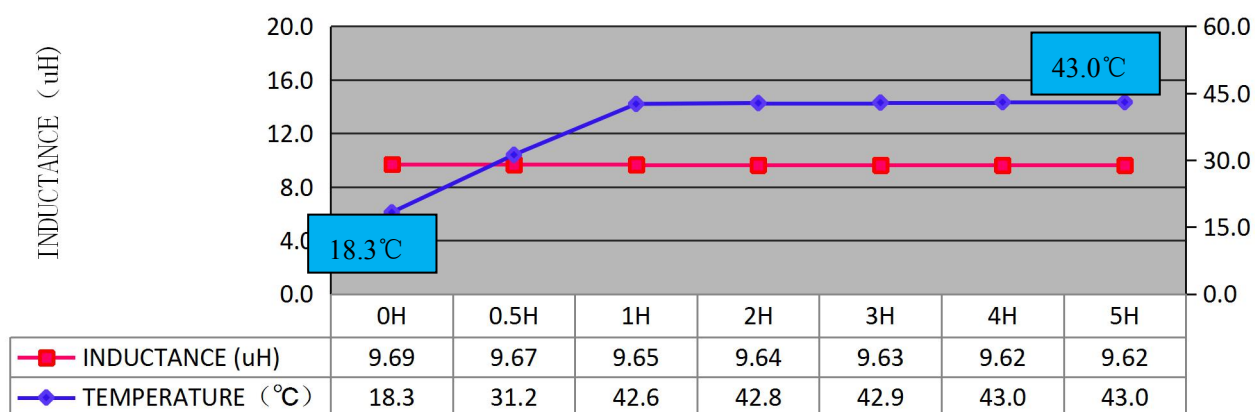
RoHS  
COMPLIANT

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## DC current VS Temperature

Time	L ( $\mu$ H )	T ( $^{\circ}$ C )	$\Delta$ T( $^{\circ}$ C )			
0h	9.69	18.3				
0.5h	9.67	31.2	12.9			
1h	9.65	42.6	24.3			
2h	9.64	42.8	24.5			
3h	9.63	42.9	24.6			
4h	9.62	43.0	24.7			
5h	9.62	43.0	24.7			

CONDITTON: Load 5A



Inductance VS Temperature

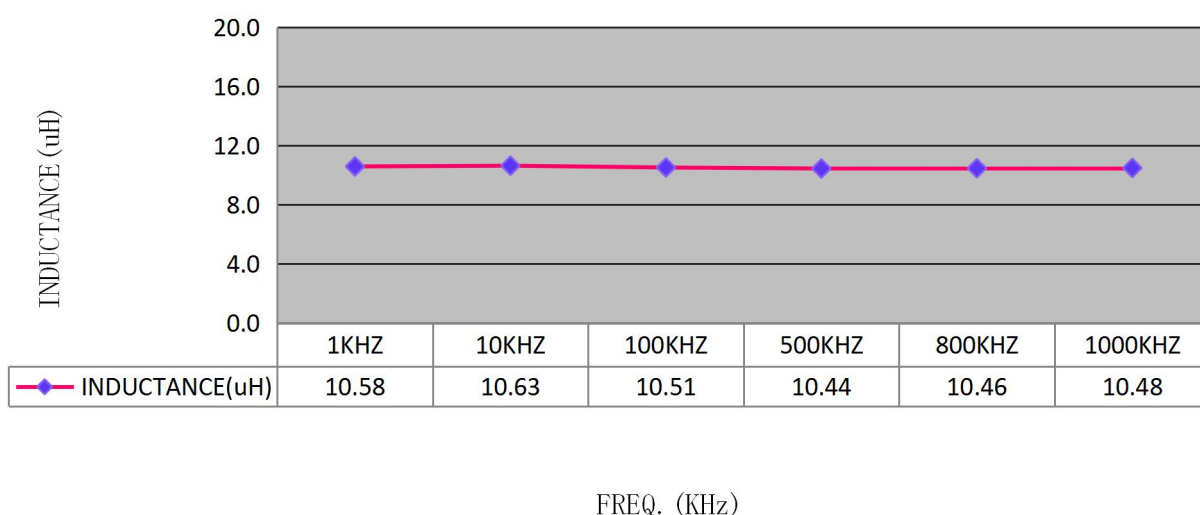
# ELECTRICAL CHARACTERISTICS

**RoHS  
COMPLIANT**

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	Power Inductor	13-Mar-09
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## Inductance VS Frequency

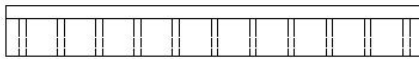
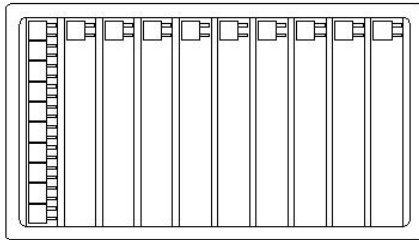
FREQ.	L ( $\mu$ H)					
1KHZ	10.58					
10KHZ	10.63					
100KHZ	10.51					
500KHZ	10.44					
800KHZ	10.46					
1000KHZ	10.48					



# PACKING FOR SPECIFICATION

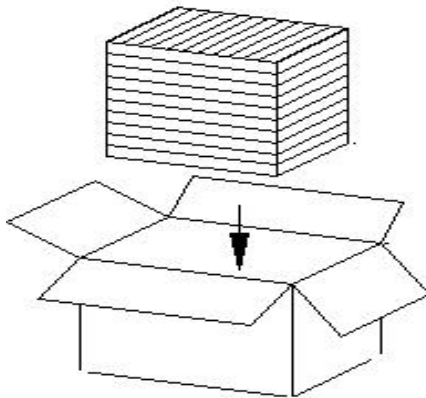
**RoHS  
COMPLIANT**

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

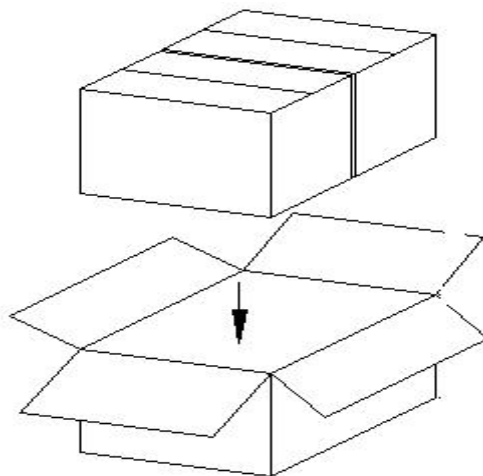
Quantity : 130PCS/PET



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

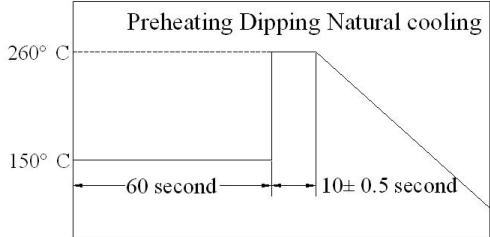
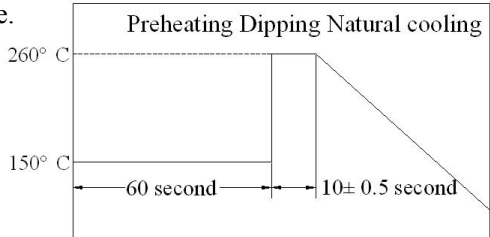
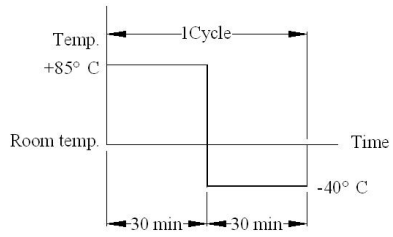
1 Big box/2600PCS



# 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

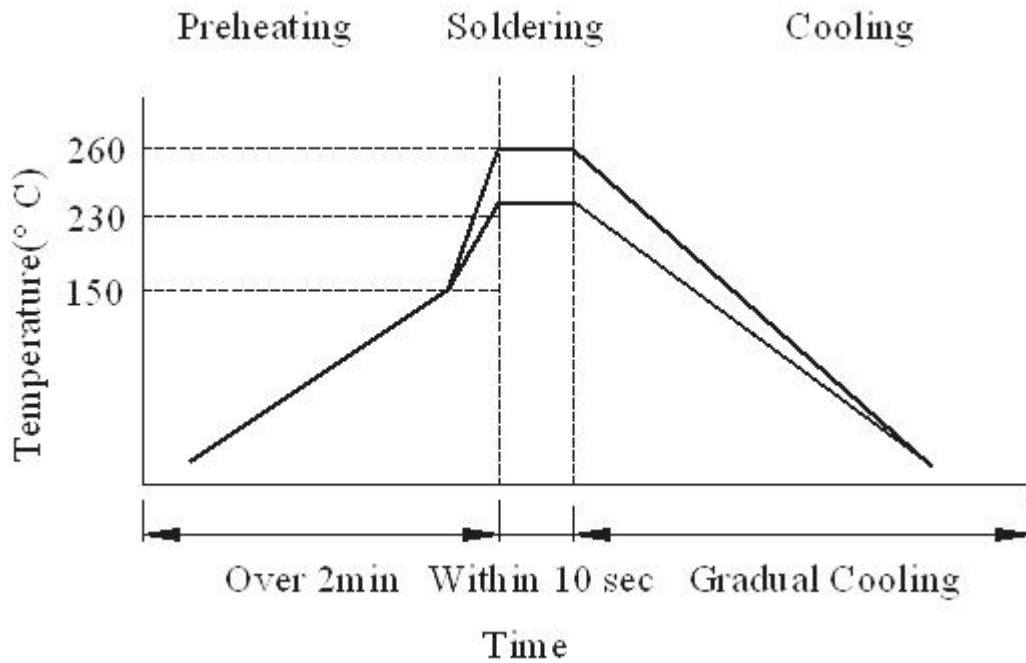
RoHS  
COMPLIANT

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## Wave Soldering



## Hand soldering

