

CUSTOMER \_\_\_\_\_

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

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

SGTE PART NO. \_\_\_\_\_ GTCD1312-100MT \_\_\_\_\_

SAMPLE NO. S11010302 REVISION NO. C DATE 03-Jan-11

## SPECIFICATION FOR APPROVAL

FULLY APPROVED	REVISE APPROVED

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# SPECIFICATION

**RoHS  
COMPLIANT**

## INDEX

### COVER PAGE

■ SHAPE & DIMENSION.....	1-8
■ ELECTRICAL CHARACTERISTICS AND EXTERNAL TEST REPORT.....	2-8
■ ELECTRICAL CHARACTERISTICS.....	3-8
■ ELECTRICAL CHARACTERISTICS.....	4-8
■ ELECTRICAL CHARACTERISTICS.....	5-8
■ PACKING FOR SPECIFICATION.....	6-8
■ GENERAL CHARACTERISTICS.....	7-8
■ THE CONDITION OF REFLOW.....	8-8

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1/03

1/03

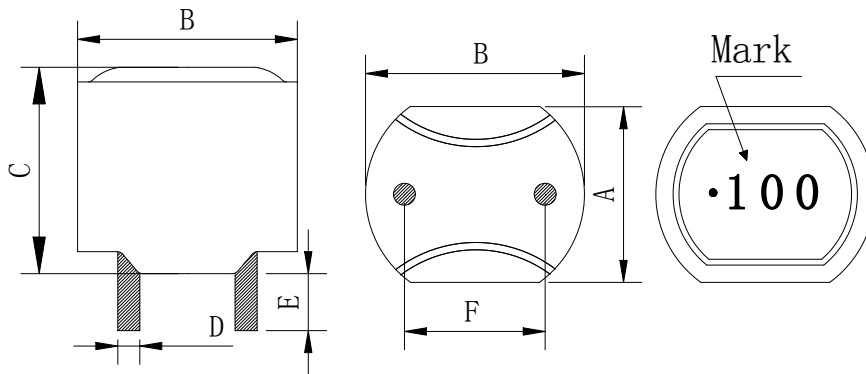
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# SPECIFICATION

**RoHS  
COMPLIANT**

Customers Part Number	Item Name	Date
	Power Inductor	03-Jan-11
Gan Tong Part NO.	Sample NO.	Page
GTCD1312-100MT	S11010302	1-8

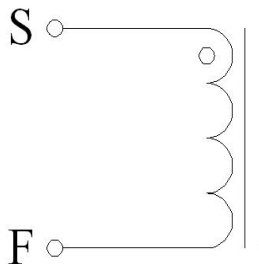
## External Dimensions Unit (mm)



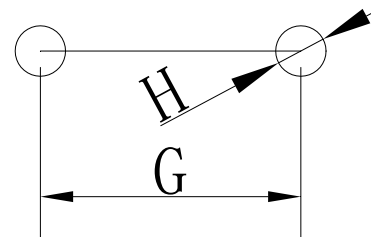
A	12.4± 0.5 (mm)
B	13.4± 0.5 (mm)
C	15.5± 1.0 (mm)
D	1.0± 0.1 (mm)
E	3.4± 0.5 (mm)
F	7.5± 0.5 (mm)
G	7.5± 0.5(mm)
H	1.2 (ref)

Coating:Black

## Connection



## Recommended Land Pattern



## Electrical Specification

Measurement Item	Unit Tolerance	Specification	Test Frequency	Test Instrument
L	uH (±20%)	10uH ±20%	100KHz/1V	LCR Meter Agilent/4284A or Chroma /11300
DCR	mΩ	11mΩ (Max)		Chroma /16502
I rms	Amps	10A	100KHz/1V	LCR Meter Agilent/4284A+42841A
I sat	Amps	13A	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**

Customers Part Number	Item Name	Date	
	Power Inductor	03-Jan-11	
Gan Tong Part NO.	Sample NO.	Revision No.	Page
GTCD1312-100MT	S11010302	C	2-8

## Electrical Characteristic

Item	L0A	DCR	I rms	I sat
Specification	10uH	11mΩ	10Amps	13Amps
Tolerance	±20%	Max	ΔT ≤ 40°C	L ≥ 65%
1	9.57	8.28	17.2°C	92.9%
2	9.28	8.29		
3	9.43	8.23		
4	9.39	8.34		
5	8.87	8.27		
6	9.56	8.30		
7	9.72	8.26		
8	9.64	8.28		
9	9.51	8.29		
10	9.06	8.26		
$\bar{X}$	9.40	8.28		
σ	0.25	0.03		

## External Dimensions

Item	A	B	C	D	E	F
Specification	12.4	13.4	15.5	1.0	3.4	7.5
Tolerance	± 0.5 (mm)	± 0.5 (mm)	± 1.0 (mm)	± 0.1 (mm)	± 0.5 (mm)	± 0.5 (mm)
1	12.26	13.24	15.56	1.00	3.52	7.66
2	12.27	13.22	15.51	0.98	3.49	7.55
3	12.29	13.27	15.18	1.02	3.57	7.61
4	12.26	13.26	15.56	1.01	3.46	7.63
5	12.25	13.24	15.23	0.99	3.59	7.57
6	12.28	13.25	15.66	0.97	3.60	7.60
7	12.27	13.23	15.68	1.03	3.40	7.68
8	12.24	13.27	15.37	1.00	3.48	7.49
9	12.26	13.25	15.29	1.01	3.51	7.58
10	12.25	13.26	15.48	0.99	3.53	7.51
$\bar{X}$	12.26	13.25	15.45	1.00	3.52	7.59
σ	0.01	0.02	0.17	0.02	0.06	0.06

Inductance measured at 100KHz/1Vrms.

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

# ELECTRICAL CHARACTERISTICS

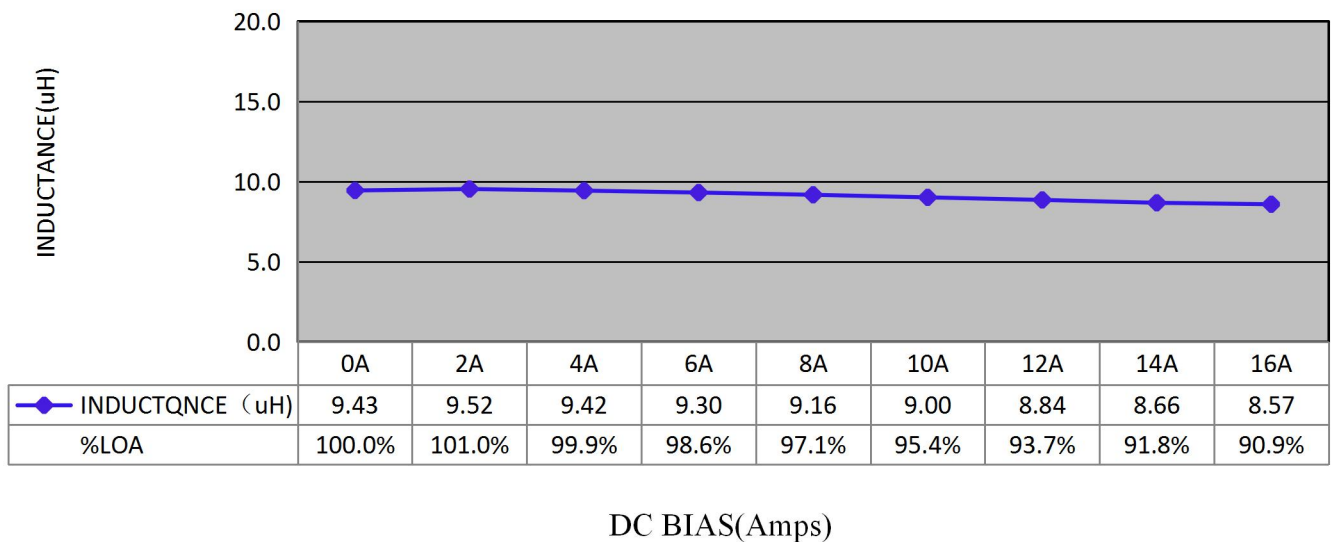
**RoHS  
COMPLIANT**

Customers Part Number	Item Name	Date
	Power Inductor	03-Jan-11
Gan Tong Part NO.	Sample NO.	Page
GTCD1312-100MT	S11010302	3-8

## Inductance VS DC current

IDC	L	%LOA				
0A	9.43	100.0%				
2A	9.52	101.0%				
4A	9.42	99.9%				
6A	9.30	98.6%				
8A	9.16	97.1%				
10A	9.00	95.4%				
12A	8.84	93.7%				
14A	8.66	91.8%				
16A	8.57	90.9%				

CONDITTON: 100KHZ/1.0Vrms



# ELECTRICAL CHARACTERISTICS

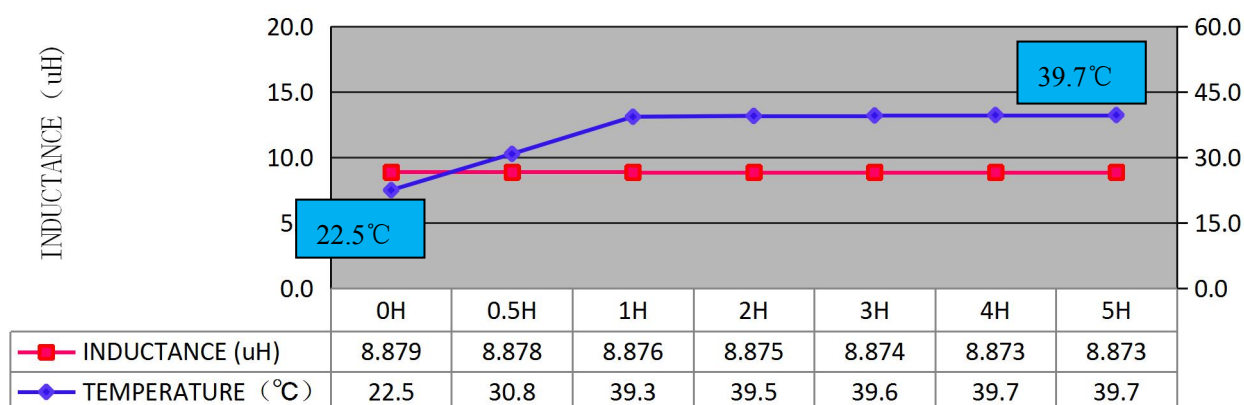
RoHS  
COMPLIANT

Customers Part Number	Item Name	Date
	Power Inductor	03-Jan-11
Gan Tong Part NO.	Sample NO.	Page
GTCD1312-100MT	S11010302	4-8

## DC current VS Temperature

Time	L ( $\mu$ H )	T ( $^{\circ}$ C )	$\Delta$ T( $^{\circ}$ C )			
0h	8.879	22.5				
0.5h	8.878	30.8	8.3			
1h	8.876	39.3	16.8			
2h	8.875	39.5	17.0			
3h	8.874	39.6	17.1			
4h	8.873	39.7	17.2			
5h	8.873	39.7	17.2			

CONDITTON: Load 10A



Inductance VS Temperature

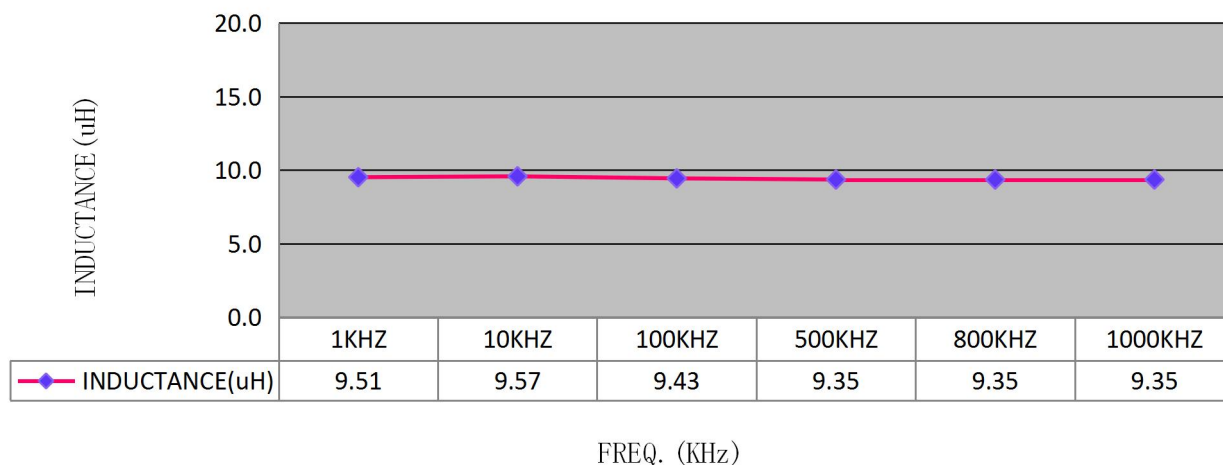
# ELECTRICAL CHARACTERISTICS

**RoHS  
COMPLIANT**

Customers Part Number	Item Name	Date
	Power Inductor	03-Jan-11
Gan Tong Part NO.	Sample NO.	Page
GTCD1312-100MT	S11010302	5-8

## Inductance VS Frequency

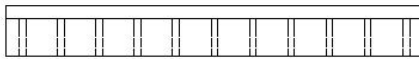
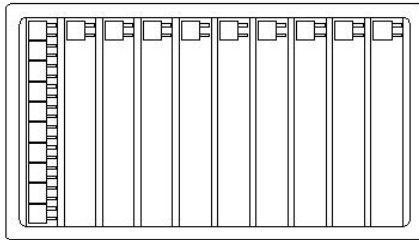
FREQ.	L ( $\mu$ H )					
1KHZ	9.51					
10KHZ	9.57					
100KHZ	9.43					
500KHZ	9.35					
800KHZ	9.35					
1000KHZ	9.35					



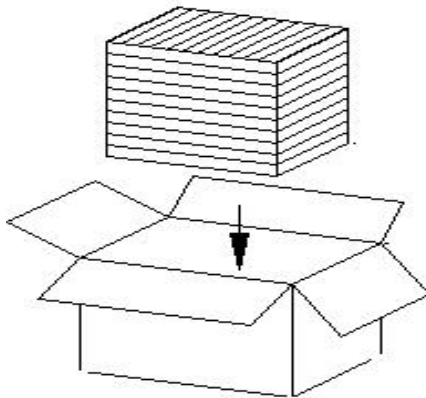
# PACKING FOR SPECIFICATION

**RoHS  
COMPLIANT**

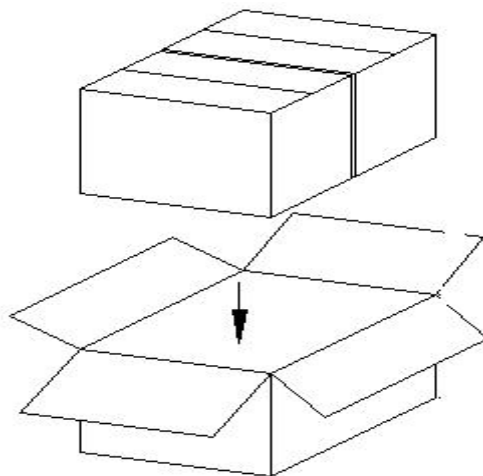
Customers Part Number	Item Name	Date
	Power Inductor	03-Jan-11
Gan Tong Part NO.	Sample NO.	Page
GTCD1312-100MT	S11010302	6-8



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



Small box Size : 324\*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

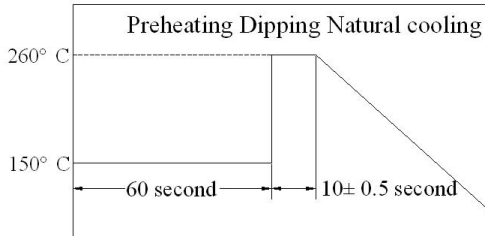
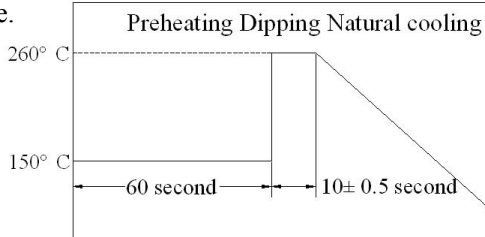
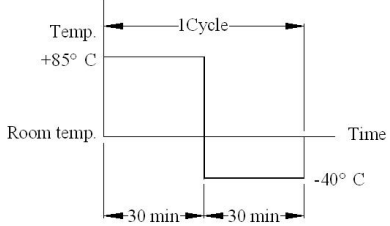


# GENERAL CHARACTERISTICS

Gan Tong Part NO.: GTCD1312-100MT

PAGE :

7-8

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: 4 to 24 hrs 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: 4 to 24 hrs 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: 4 to 24 hrs of recovery under the standard condition after the removal from test chamber.</p>

# THE CONDITION OF REFLOW

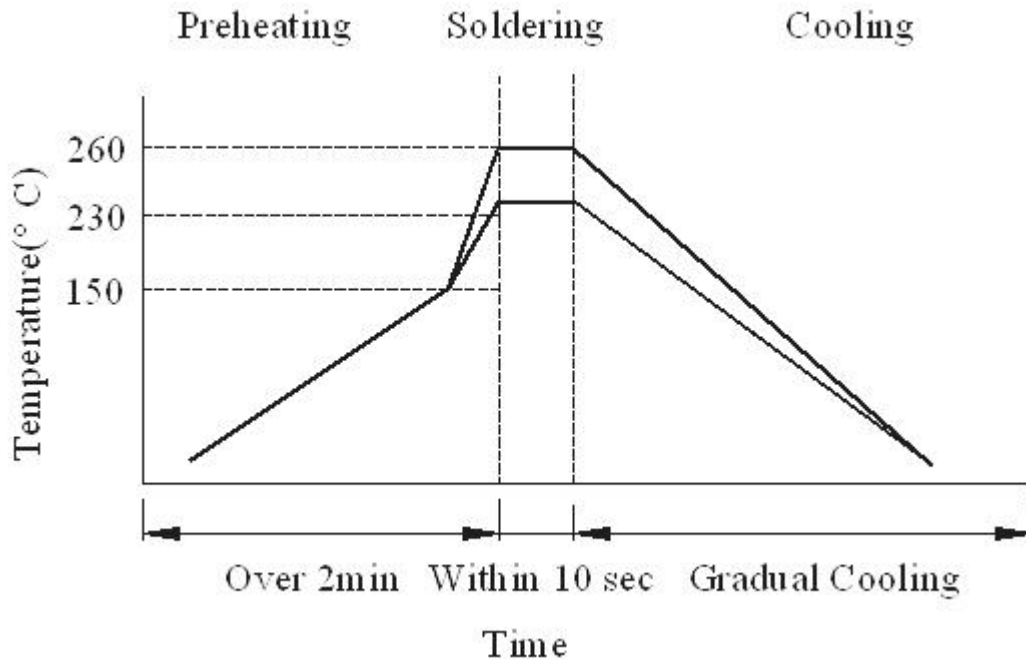
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COMPLIANT

Gan Tong Part NO. : GTCD1312-100MT

PAGE :

8-8

## Wave Soldering



## Hand soldering

