

CUSTOMER \_\_\_\_\_

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

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

SGTE PART NO. \_\_\_\_\_ GPDC1010-330M05 \_\_\_\_\_

SAMPLE NO.: S13102901 REVISION NO. A DATE 29-Oct-13

## 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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**Tianyi**

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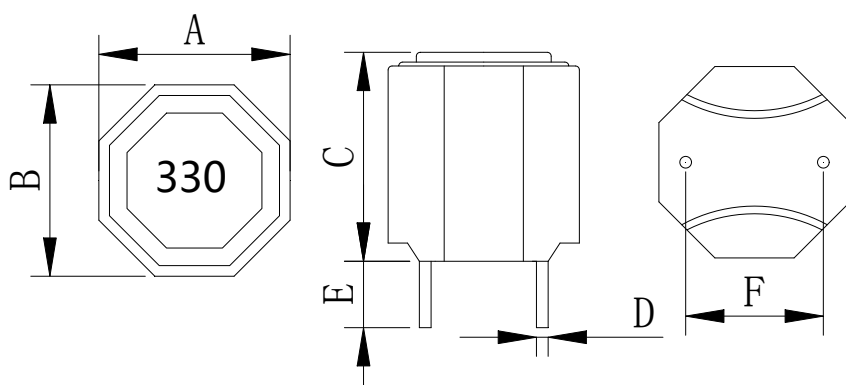
10/29

# SPECIFICATION

**RoHS  
COMPLIANT**

Customers Part Number	Item Name	Date
	Power Inductor	29-Oct-13
Gan Tong Part NO.	Sample NO.	Page
GPDC1010-330M05	S13102901	1-8

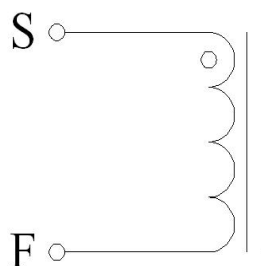
### External Dimensions Unit (mm)



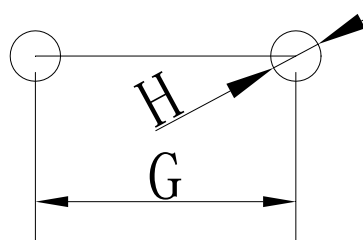
A	10.0± 0.5 (mm)
B	10.0± 0.5 (mm)
C	12.0Max (mm)
D	0.6± 0.1 (mm)
E	3.4± 0.5 (mm)
F	6.0± 0.5 (mm)
G	6.0± 0.5(mm)
H	1.0 (ref)

Coating:Black

### Connection



### Recommended Land Pattern



### Electrical Specification

Measurement Item	Unit Tolerance	Specification	Test Frequency	Test Instrument
L	uH (±20%)	33.0uH ±20%	100KHz/1V	LCR Meter Agilent/4284A or Chroma /11300
DCR	mΩ	56.0mΩ (Max)		Chroma /16502
I rms	Amps	4A	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

Customers Part Number	Item Name	Date	
	Power Inductor	29-Oct-13	
Gan Tong Part NO.	Sample NO.	Revision No.	Page
GPDC1010-330M05	S13102901	A	2-8

## Electrical Characteristic

Item	L0A	DCR	I rms	I sat
Specification	33.0uH	56.0m $\Omega$	4Amps	7Amps
Tolerance	$\pm 20\%$	Max	$\Delta T \leq 40^{\circ}\text{C}$	$L \geq 65\%$
1	31.42	42.70	17.3 $^{\circ}\text{C}$	79.6%
2	32.50	42.76		
3	32.71	42.81		
4	32.52	42.94		
5	31.53	42.61		
6	33.22	42.53		
7	31.39	42.35		
8	31.42	42.86		
9	31.06	42.14		
10	32.90	42.59		
$\bar{X}$	32.07	42.82		
$\sigma$	0.74	0.16		

## External Dimensions

Item	A	B	C	D	E	F
Specification	10.0	10.0	12.0	0.6	3.4	5.8
Tolerance	$\pm 0.5$ (mm)	$\pm 0.5$ (mm)	Max (mm)	$\pm 0.1$ (mm)	$\pm 0.5$ (mm)	$\pm 0.5$ (mm)
1	10.07	10.09	10.82	0.58	3.69	6.03
2	10.04	10.16	10.93	0.64	3.71	5.96
3	10.10	10.11	10.85	0.57	3.73	6.03
4	10.10	10.14	10.83	0.61	3.64	6.08
5	10.07	10.09	10.79	0.60	3.59	6.02
6	10.09	10.07	10.86	0.59	3.50	6.05
7	10.06	10.10	10.82	0.59	3.61	5.98
8	10.06	10.08	10.74	0.59	3.57	6.00
9	10.09	10.09	10.77	0.60	3.49	6.11
10	10.09	10.08	10.84	0.58	3.53	6.05
$\bar{X}$	10.08	10.10	10.83	0.60	3.61	6.03
$\sigma$	0.02	0.03	0.05	0.02	0.08	0.04

Inductance measured at 100KHz/1Vrms.

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

# ELECTRICAL CHARACTERISTICS

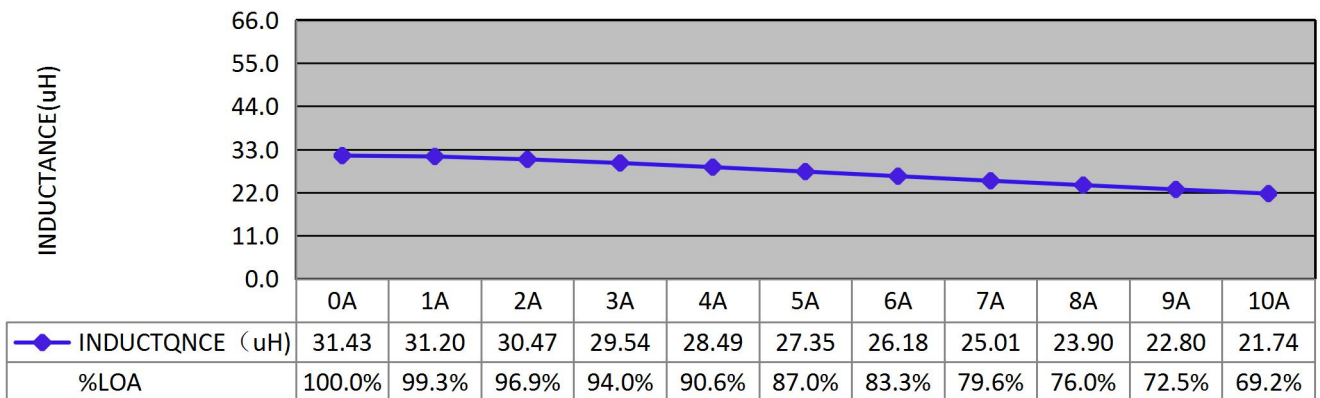
**RoHS  
COMPLIANT**

Customers Part Number	Item Name	Date
	Power Inductor	29-Oct-13
Gan Tong Part NO.	Sample NO.	Page
GPDC1010-330M05	S13102901	3-8

## Inductance VS DC current

IDC	L	%LOA				
0A	31.43	100.0%				
1A	31.20	99.3%				
2A	30.47	96.9%				
3A	29.54	94.0%				
4A	28.49	90.6%				
5A	27.35	87.0%				
6A	26.18	83.3%				
7A	25.01	79.6%				
8A	23.90	76.0%				
9A	22.80	72.5%				
10A	21.74	69.2%				

CONDITION: 100KHZ/1.0Vrms



DC BIAS(Amps)

# ELECTRICAL CHARACTERISTICS

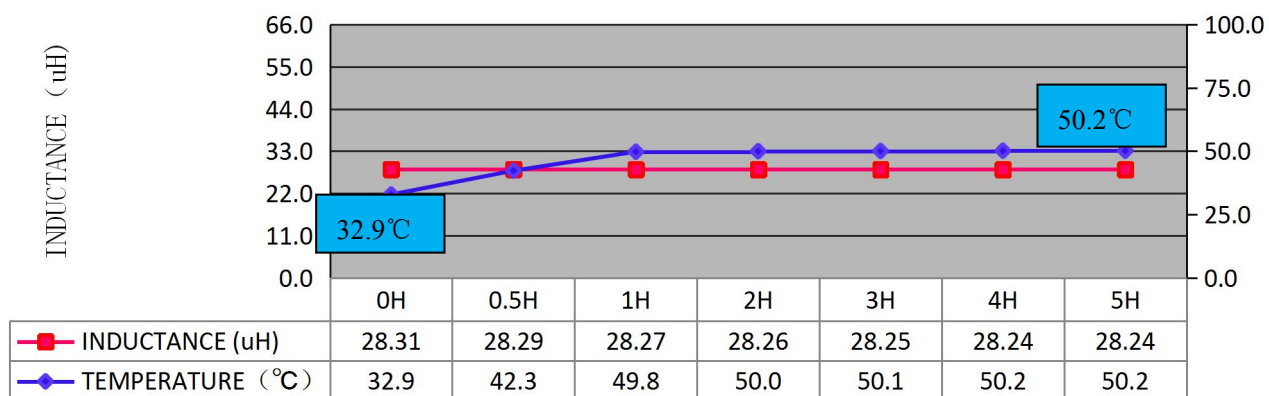
RoHS  
COMPLIANT

Customers Part Number	Item Name	Date
	Power Inductor	29-Oct-13
Gan Tong Part NO.	Sample NO.	Page
GPDC1010-330M05	S13102901	4-8

## DC current VS Temperature

Time	L ( $\mu$ H )	T ( $^{\circ}$ C )	$\Delta$ T( $^{\circ}$ C )			
0h	28.31	32.9				
0.5h	28.29	42.3	9.4			
1h	28.27	49.8	16.9			
2h	28.26	50.0	17.1			
3h	28.25	50.1	17.2			
4h	28.24	50.2	17.3			
5h	28.24	50.2	17.3			

CONDITION: Load 4A



Inductance VS Temperature

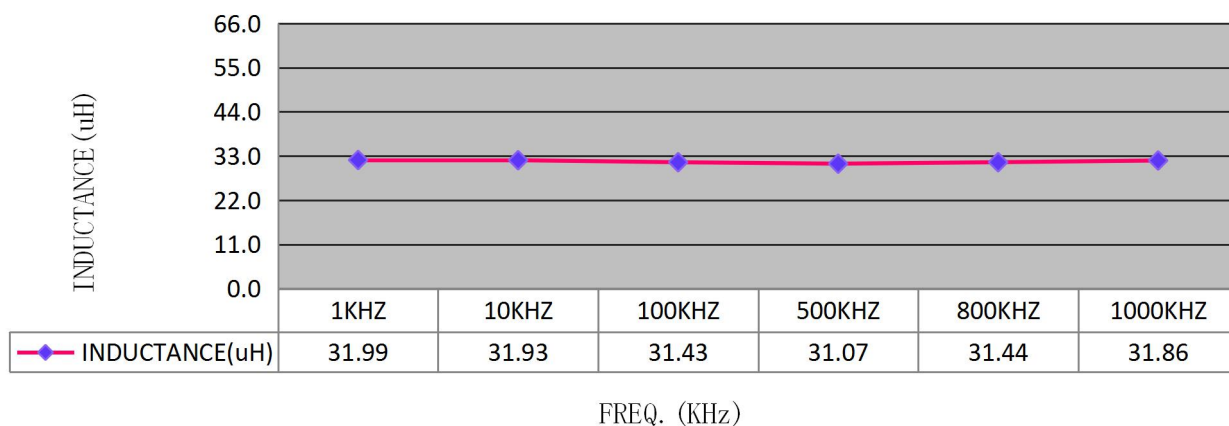
# ELECTRICAL CHARACTERISTICS

**RoHS  
COMPLIANT**

Customers Part Number	Item Name	Date
	Power Inductor	29-Oct-13
Gan Tong Part NO.	Sample NO.	Page
GPDC1010-330M05	S13102901	5-8

## Inductance VS Frequency

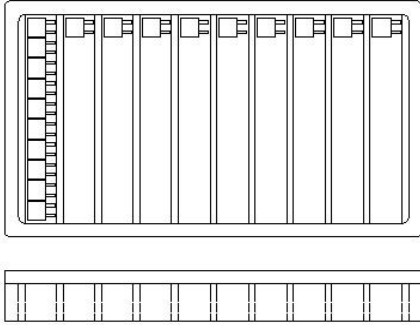
FREQ.	L ( $\mu$ H )					
1KHZ	31.99					
10KHZ	31.93					
100KHZ	31.43					
500KHZ	31.07					
800KHZ	31.44					
1000KHZ	31.86					



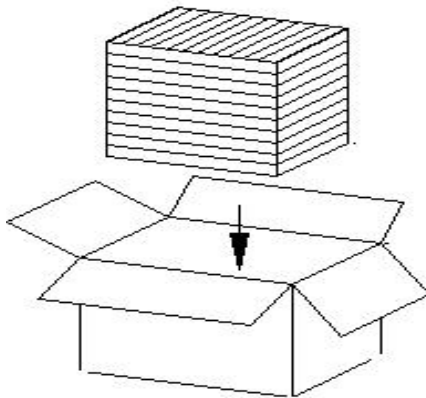
# PACKING FOR SPECIFICATION

**RoHS  
COMPLIANT**

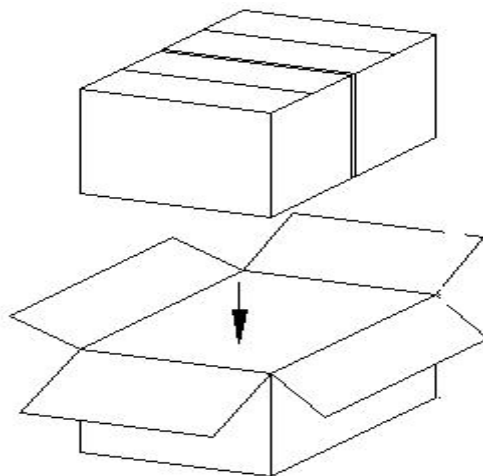
Customers Part Number	Item Name	Date
	Power Inductor	29-Oct-13
Gan Tong Part NO.	Sample NO.	Page
GPDC1010-330M05	S13102901	6-8



PET Size :215\*148\*16(C) mm  
Quantity : 110PCS/PET



Small box Size : 238\*156\*165 mm  
Quantity : 10PET/Small box  
1Small box/1100PCS



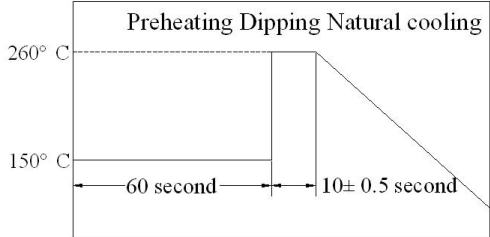
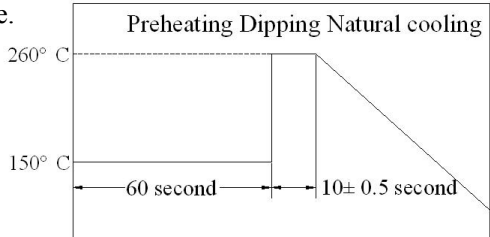
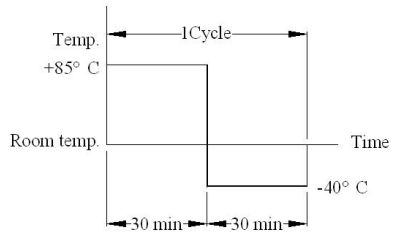
Big box Size : 328\*251\*175 mm  
Quantity : 2 Small box/Big box  
1 Big box/2200PCS



# GENERAL CHARACTERISTICS

Gan Tong Part NO.: GPDC1010-330M05

PAGE : 7-8

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

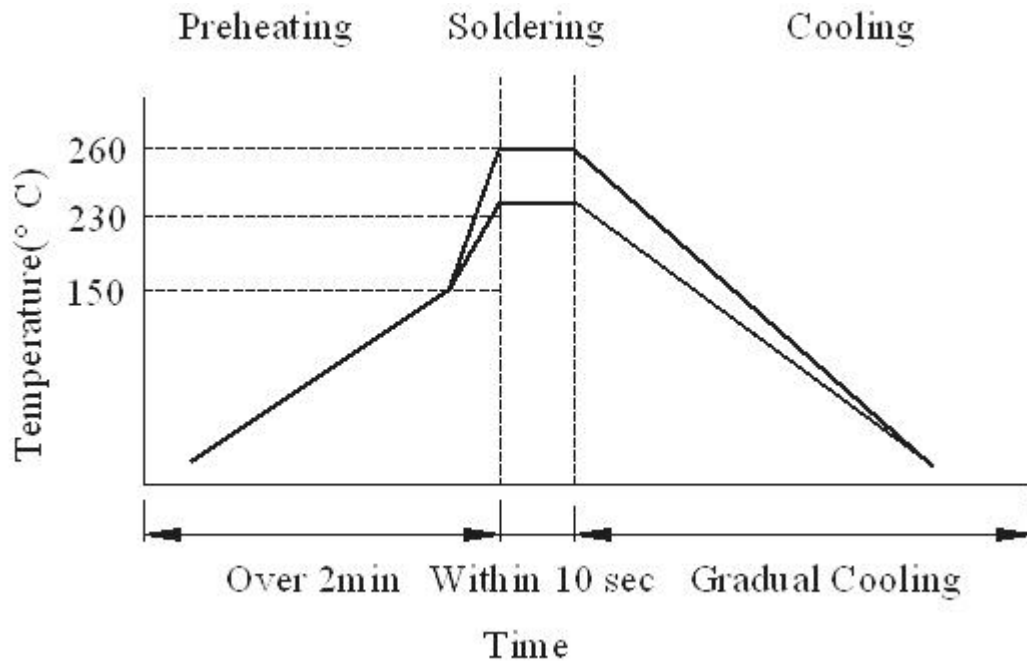
RoHS  
COMPLIANT

Gan Tong Part NO. : GPDC1010-330M05

PAGE :

8-8

## Wave Soldering



## Hand soldering

