

CUSTOMER \_\_\_\_\_

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

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

SGTE PART NO. \_\_\_\_\_ GPDC1010-470M01 \_\_\_\_\_

SAMPLE NO.: S10052702 REVISION NO. A DATE 27-May-10

## 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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5/27

5/27

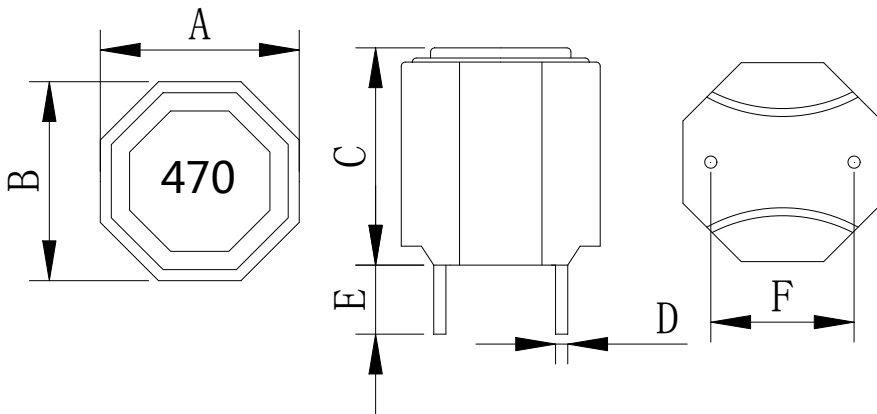
5/27

# SPECIFICATION

**RoHS  
COMPLIANT**

Customers Part Number	Item Name	Date
	Power Inductor	27-May-10
Gan Tong Part NO.	Sample NO.	Page
GPDC1010-470M01	S10052702	1-8

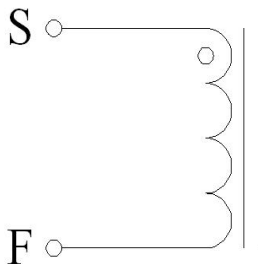
**External Dimensions Unit (mm)**



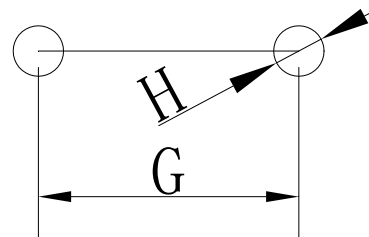
A	10.0± 0.5 (mm)
B	10.0± 0.5 (mm)
C	14.0Max (mm)
D	0.55± 0.1 (mm)
E	3.4± 0.5 (mm)
F	6.0± 0.5 (mm)
G	6.0± 0.5(mm)
H	0.95 (ref)

Coating:Black

**Connection**



**Recommended Land Pattern**



**Electrical Specification**

Measurement Item	Unit Tolerance	Specification	Test Frequency	Test Instrument
L	uH (±20%)	47uH ±20%	100KHz/1V	LCR Meter Agilent/4284A or Chroma /11300
DCR	mΩ	79mΩ (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	27-May-10	
Gan Tong Part NO.	Sample NO.	Revision No.	Page
GPDC1010-470M01	S10052702	A	2-8

## Electrical Characteristic

Item	L0A	DCR	I rms	I sat
Specification	47 uH	79mΩ	4Amps	7Amps
Tolerance	±20%	Max	$\Delta T \leq 40^{\circ}\text{C}$	$L \geq 65\%$
1	44.47	60.59	24.5°C	81.4%
2	43.73	60.61		
3	45.16	60.47		
4	44.78	60.49		
5	46.19	60.52		
6	45.16	60.57		
7	43.47	60.53		
8	44.86	60.60		
9	44.35	60.56		
10	45.10	60.58		
$\bar{X}$	44.73	60.55		
$\sigma$	0.74	0.05		

## External Dimensions

Item	A	B	C	D	E	F
Specification	10.0	10.0	14.0	0.55	3.4	6.0
Tolerance	± 0.5 (mm)	± 0.5 (mm)	Max (mm)	± 0.1 (mm)	± 0.5 (mm)	± 0.5 (mm)
1	10.11	10.06	12.38	0.54	3.58	6.19
2	10.06	10.07	12.65	0.56	3.49	6.10
3	10.13	10.10	12.37	0.55	3.53	6.09
4	10.10	10.12	12.20	0.54	3.67	6.27
5	10.09	10.10	12.32	0.57	3.60	6.30
6	10.07	10.06	12.30	0.58	3.65	6.24
7	10.06	10.08	12.64	0.54	3.59	6.17
8	10.09	10.08	12.58	0.56	3.57	6.18
9	10.07	10.07	12.55	0.54	3.62	6.15
10	10.06	10.06	12.16	0.55	3.68	6.21
$\bar{X}$	10.08	10.08	12.42	0.55	3.60	6.21
$\sigma$	0.02	0.02	0.17	0.01	0.06	0.06

Inductance measured at 100KHz/1Vrms.

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

# ELECTRICAL CHARACTERISTICS

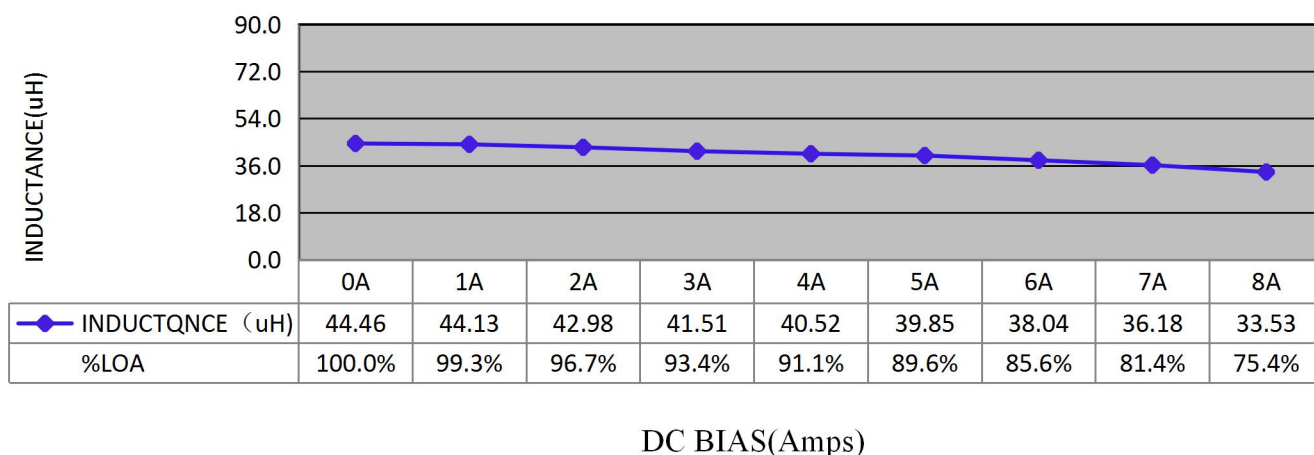
**RoHS  
COMPLIANT**

Customers Part Number	Item Name	Date
	Power Inductor	27-May-10
Gan Tong Part NO.	Sample NO.	Page
GPDC1010-470M01	S10052702	3-8

## Inductance VS DC current

IDC	L	%LOA				
0A	44.46	100.0%				
1A	44.13	99.3%				
2A	42.98	96.7%				
3A	41.51	93.4%				
4A	40.52	91.1%				
5A	39.85	89.6%				
6A	38.04	85.6%				
7A	36.18	81.4%				
8A	33.53	75.4%				

CONDITTON: 100KHZ/1.0Vrms



# ELECTRICAL CHARACTERISTICS

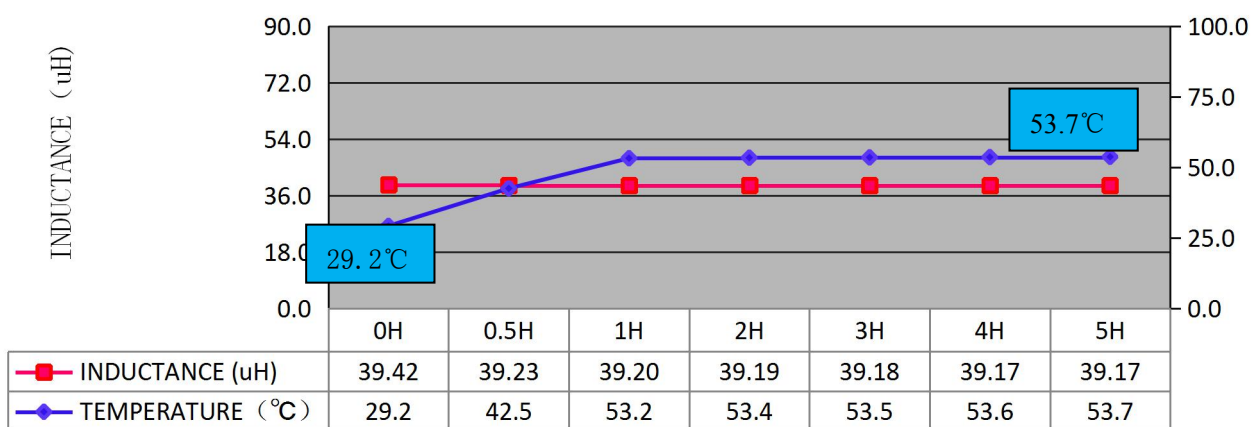
RoHS  
COMPLIANT

Customers Part Number	Item Name	Date
	Power Inductor	27-May-10
Gan Tong Part NO.	Sample NO.	Page
GPDC1010-470M01	S10052702	4-8

## DC current VS Temperature

Time	L ( $\mu$ H )	T ( $^{\circ}$ C )	$\Delta$ T( $^{\circ}$ C )			
0h	39.42	29.2				
0.5h	39.23	42.5	13.3			
1h	39.20	53.2	24.0			
2h	39.19	53.4	24.2			
3h	39.18	53.5	24.3			
4h	39.17	53.6	24.4			
5h	39.17	53.7	24.5			

CONDITTON: Load 4A



Inductance VS Temperature

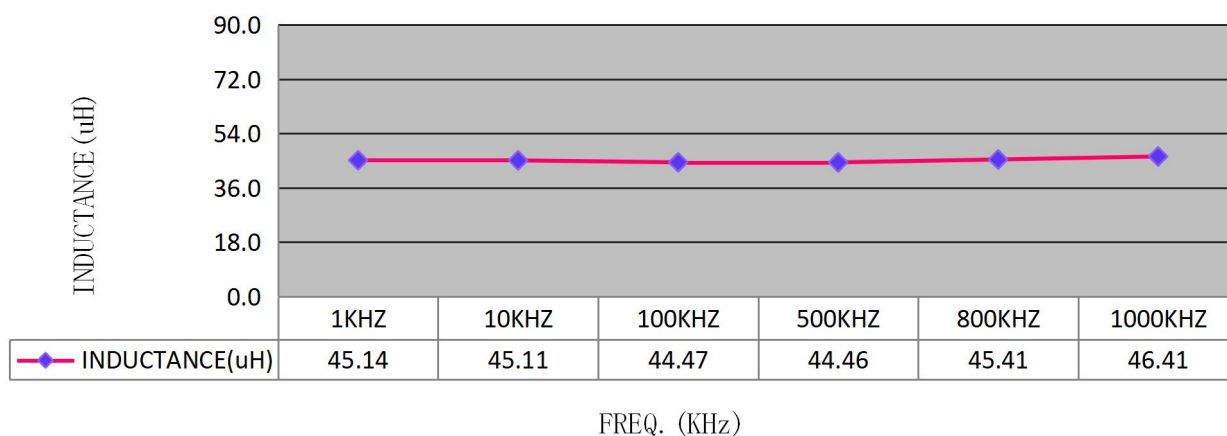
# ELECTRICAL CHARACTERISTICS

RoHS  
COMPLIANT

Customers Part Number	Item Name	Date
	Power Inductor	27-May-10
Gan Tong Part NO.	Sample NO.	Page
GPDC1010-470M01	S10052702	5-8

## Inductance VS Frequency

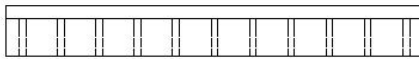
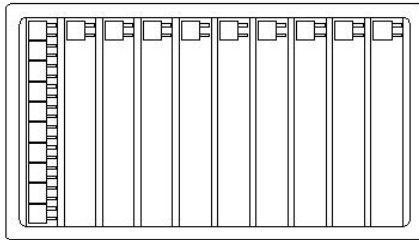
FREQ.	L ( $\mu$ H )					
1KHZ	45.14					
10KHZ	45.11					
100KHZ	44.47					
500KHZ	44.46					
800KHZ	45.41					
1000KHZ	46.41					



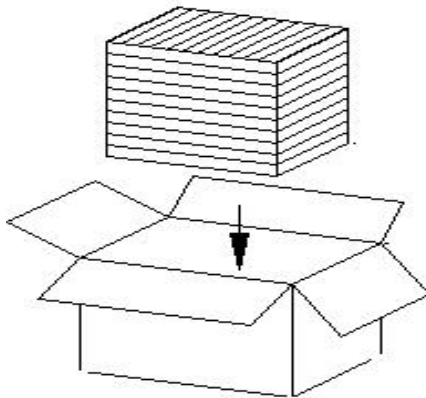
# PACKING FOR SPECIFICATION

**RoHS  
COMPLIANT**

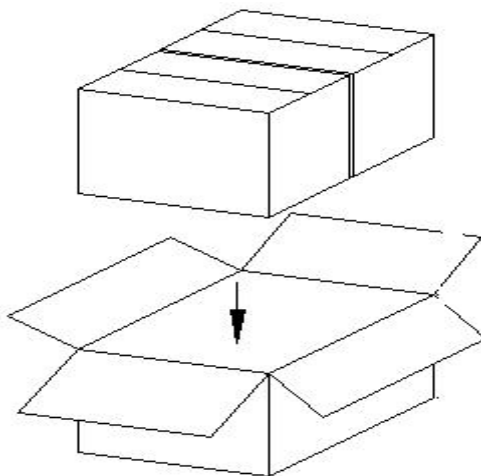
Customers Part Number	Item Name	Date
	Power Inductor	27-May-10
Gan Tong Part NO.	Sample NO.	Page
GPDC1010-470M01	S10052702	6-8



PET Size : 175\*159\*19mm  
Quantity : 130PCS/PET



Small box Size : 324\*178\*114 mm  
Quantity : 10PET/Small box  
1 Small box/650PCS



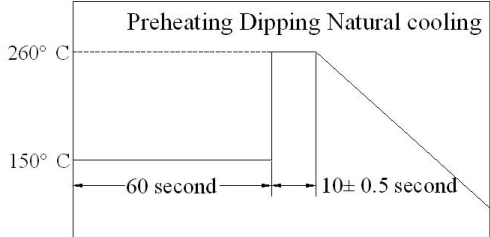
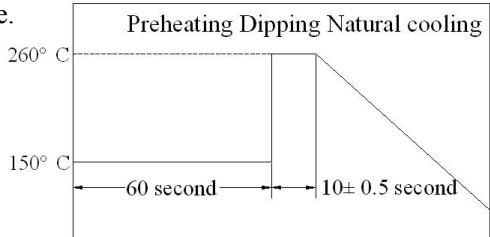
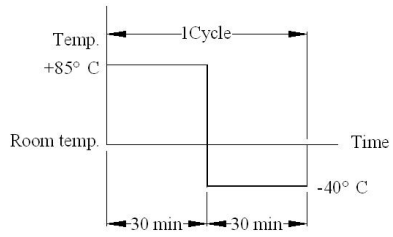
Big box Size : 386\*338\*132 mm  
Quantity : 2 Small box/Big box  
1 Big box/1300PCS



# GENERAL CHARACTERISTICS

Gan Tong Part NO.: GPDC1010-470M01

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: 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

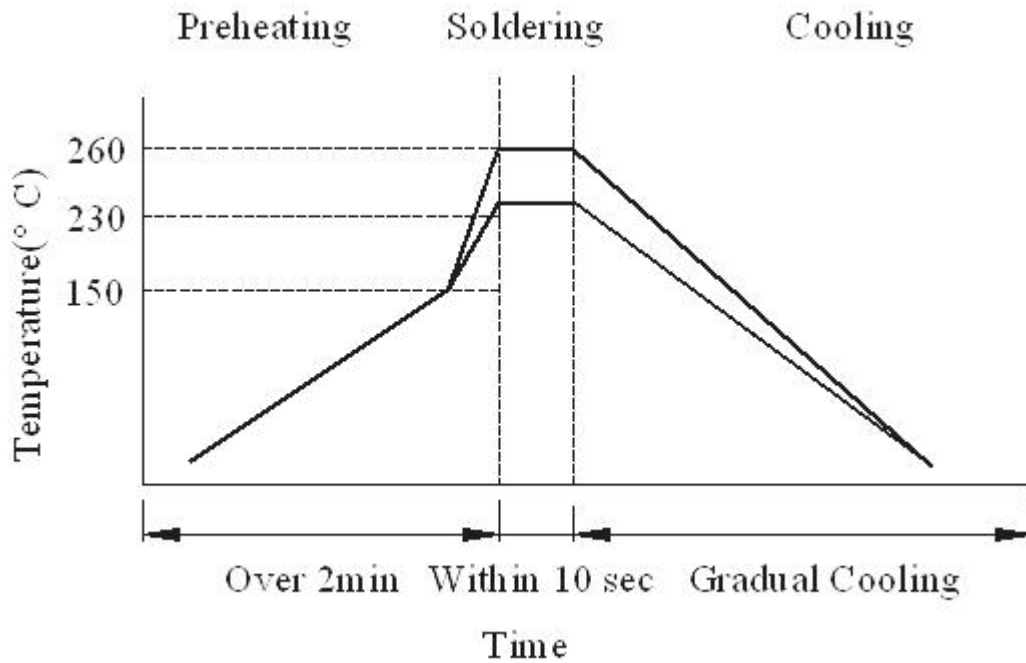
RoHS  
COMPLIANT

Gan Tong Part NO. : GPDC1010-470M01

PAGE :

8-8

## Wave Soldering



## Hand soldering

