

CUSTOMER _____

CUSTOMER'S P/N _____

DESCRIPTION _____ POWER INDUCTOR _____

SGTE PART NO. _____ GPDB1312-100M03 _____

SAMPLE NO. S11022503 REVISION NO. D DATE 25-Feb-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

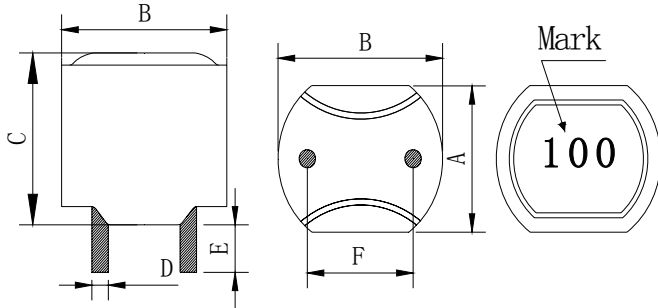
APPROVED BY	CHECKED BY	DRAWING BY
<i>Jesse</i> 2/25	<i>Tony</i> 2/25	<i>Lily</i> 2/25

SPECIFICATION

**RoHS
COMPLIANT**

Customers Part Number	Item Name	Date
	Power Inductor	25-Feb-11
Gan Tong Part NO.	Sample NO.	Page
GPDB1312-100M03	S11022503	1-8

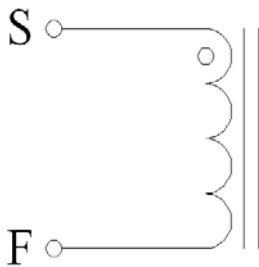
External Dimensions Unit (mm)



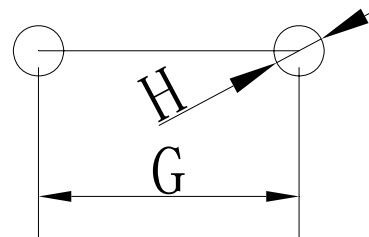
A	12.4± 0.5 (mm)
B	13.4± 0.5 (mm)
C	17.5Max (mm)
D	1.0± 0.1 (mm)
E	3.4± 0.5 (mm)
F	7.5± 0.5 (mm)
G	7.5± 0.5(mm)
H	1.2 (ref)

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	14A	100KHz/1V	LCR Meter Agilent/4284A+42841A or Chroma /11300+3302+1320+1320S
I sat	Amps	20A	100KHz/1V	

- 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	25-Feb-11	
Gan Tong Part NO.	Sample NO.	Revision No.	Page
GPDB1312-100M03	S11022503	D	2-8

Electrical Characteristic

Item	LOA	DCR	I rms	I sat
Specification	10uH	11m Ω	14Amps	20Amps
Tolerance	$\pm 20\%$	Max	$\Delta T \leq 40^{\circ}\text{C}$	$L \geq 65\%$
1	8.68	8.13	28.6 $^{\circ}\text{C}$	86.3%
2	8.51	8.10		
3	8.59	8.20		
4	9.04	8.08		
5	8.92	8.24		
6	8.97	8.17		
7	8.98	8.09		
8	9.16	8.12		
9	8.59	8.09		
10	8.78	8.14		
\bar{X}	8.82	8.14		
σ	0.21	0.05		

External Dimensions

Item	A	B	C	D	E	F
Specification	12.4	13.4	17.5	1.0	3.4	7.5
Tolerance	± 0.5 (mm)	± 0.5 (mm)	Max (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 $^{\circ}\text{C}$. Humidity 60 \pm 10%

ELECTRICAL CHARACTERISTICS

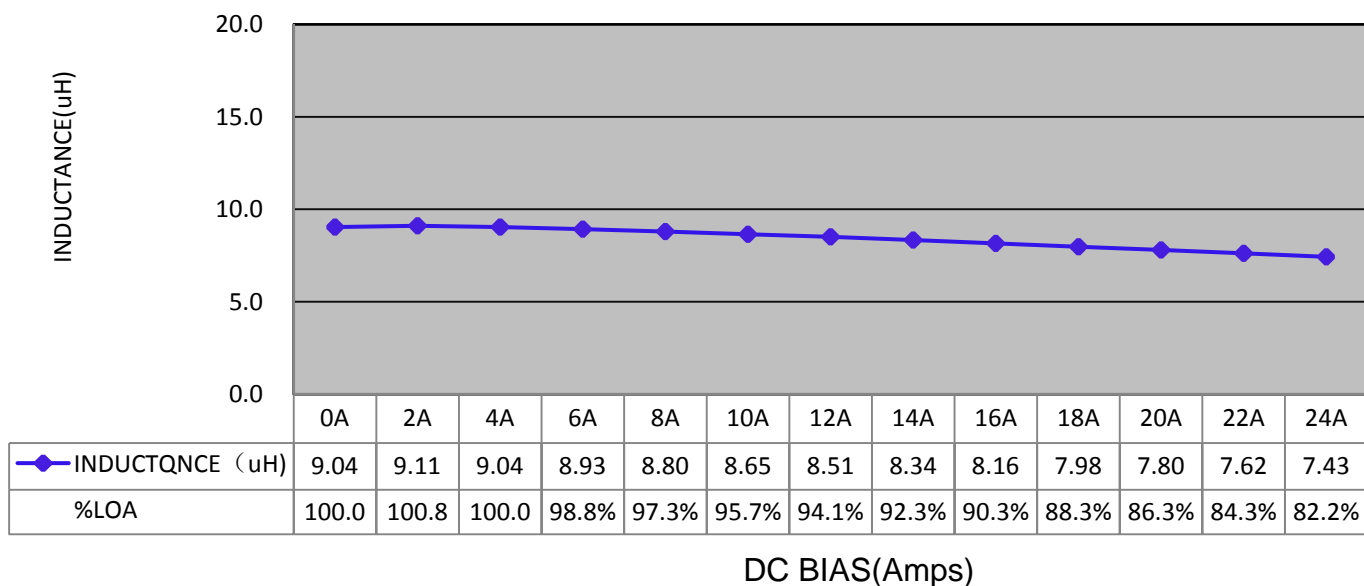
**RoHS
COMPLIANT**

Customers Part Number	Item Name	Date
	Power Inductor	25-Feb-11
Gan Tong Part NO.	Sample NO.	Page
GPDB1312-100M03	S11022503	3-8

Inductance VS DC current

IDC	L	%LOA				
0A	9.04	100.0%				
2A	9.11	100.8%				
4A	9.04	100.0%				
6A	8.93	98.8%				
8A	8.80	97.3%				
10A	8.65	95.7%				
12A	8.51	94.1%				
14A	8.34	92.3%				
16A	8.16	90.3%				
18A	7.98	88.3%				
20A	7.80	86.3%				
22A	7.62	84.3%				
24A	7.43	82.2%				

CONDITTON: 100KHZ/1.0Vrms



ELECTRICAL CHARACTERISTICS

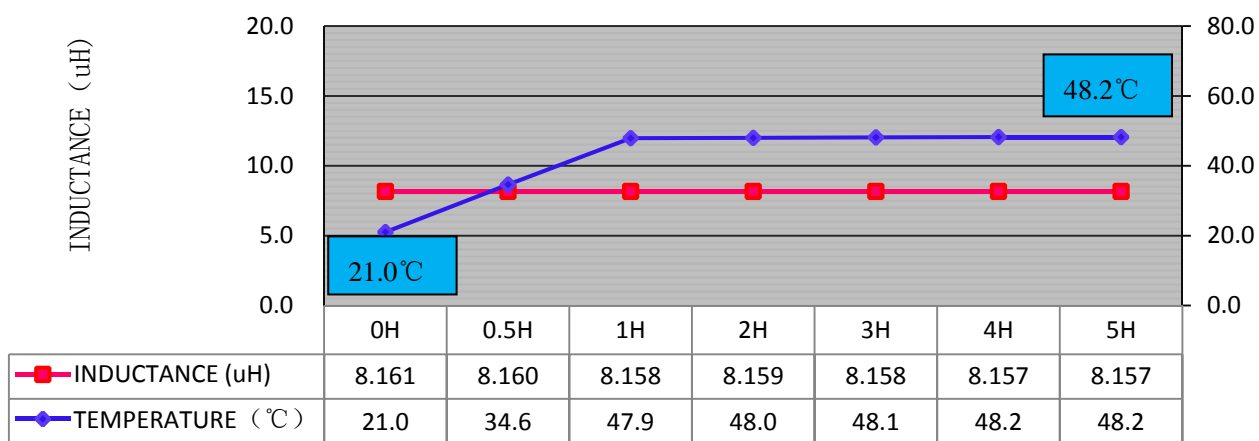
RoHS
COMPLIANT

Customers Part Number	Item Name	Date
	Power Inductor	25-Feb-11
Gan Tong Part NO.	Sample NO.	Page
GPDB1312-100M03	S11022503	4-8

DC current VS Temperature

Time	L (μ H)	T ($^{\circ}$ C)	Δ T($^{\circ}$ C)			
0h	8.161	21.0				
0.5h	8.160	34.6	13.6			
1h	8.158	47.9	26.9			
2h	8.159	48.0	27.0			
3h	8.158	48.1	27.1			
4h	8.157	48.2	27.2			
5h	8.157	48.2	27.2			

CONDITTON: Load 16A



Inductance VS Temperature

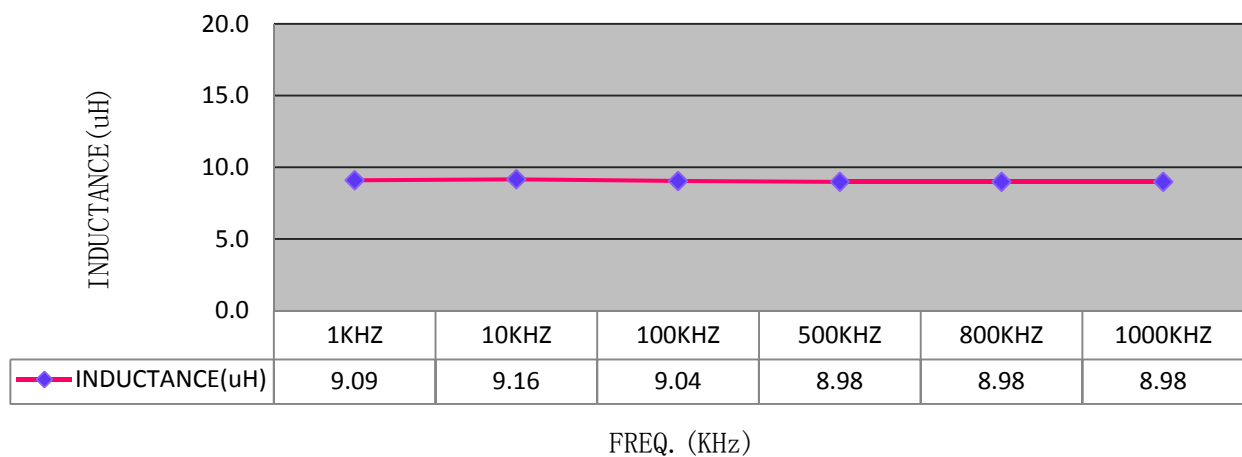
ELECTRICAL CHARACTERISTICS

**RoHS
COMPLIANT**

Customers Part Number	Item Name	Date
	Power Inductor	25-Feb-11
Gan Tong Part NO.	Sample NO.	Page
GPDB1312-100M03	S11022503	5-8

Inductance VS Frequency

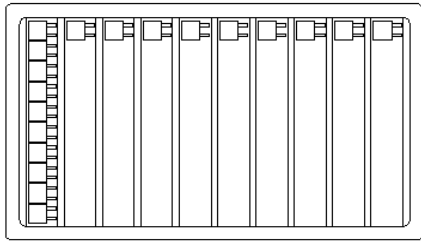
FREQ.	L (μ H)					
1KHZ	9.09					
10KHZ	9.16					
100KHZ	9.04					
500KHZ	8.98					
800KHZ	8.98					
1000KHZ	8.98					



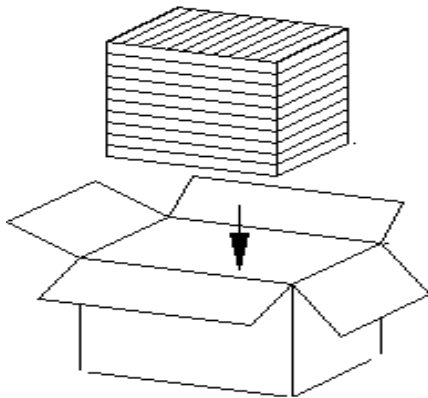
PACKING FOR SPECIFICATION

**RoHS
COMPLIANT**

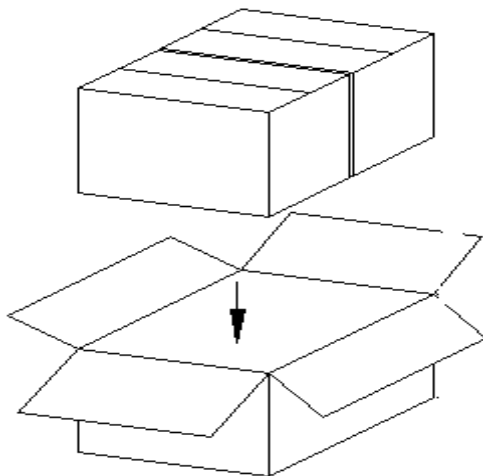
Customers Part Number	Item Name	Date
	Power Inductor	25-Feb-11
Gan Tong Part NO.	Sample NO.	Page
GPDB1312-100M03	S11022503	6-8



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



Small box Size : 324*178*114 mm
Quantity : 10PET/Small box
1Small box/500PCS



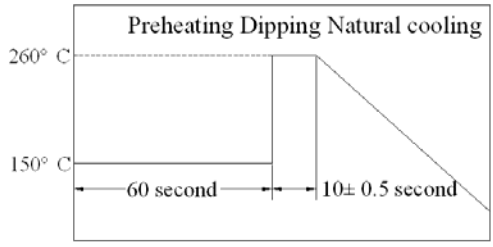
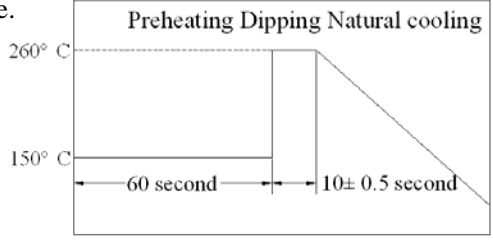
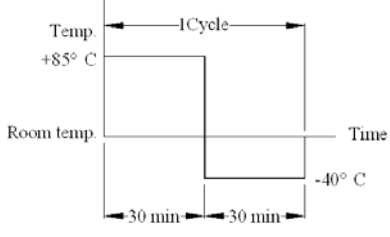
Big box Size : 386*338*132 mm
Quantity : 2 Small box/Big box
1 Big box/1000PCS

GENERAL CHARACTERISTICS

Gan Tong Part NO.: GPDB1312-100M03

PAGE :

7-8

Item	Performance	Test Condition
Mechanical Performance Test		
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 $260\pm 5^{\circ}\text{C}$ for 10 seconds</p>	
Solder Heat Resistance	<p>Components should have not evidence of electrical and mechanical damage.</p> <p>Inductance: within $\pm 20\%$ of initial value.</p> <p>Preheat: 150°C 60 seconds</p> <p>Solder: (SnCu0.7)</p> <p>Solder Temperature: $260\pm 5^{\circ}\text{C}$</p> <p>Flux: Rosin.</p> <p>Dip time: 10 ± 0.5 seconds</p>	
Low temperature storage test	<p>1. Appearance: No damage.</p> <p>2. Inductance: within $\pm 20\%$ of initial value.</p> <p>3.No disconnection or short circuit.</p>	<p>Temperature: $-40^{\circ}\text{C} \pm 5^{\circ}\text{C}$ Time: 500 ± 12 Hours</p> <p>Recovery: 4to24hrs of recovery under the standard condition after the removal from test chamber.</p>
High temperature storage test		<p>Temperature: $85^{\circ}\text{C} \pm 5^{\circ}\text{C}$ Time: 500 ± 2 Hours</p> <p>Recovery: 4to24hrs of recovery under the standard condition after the removal from test chamber.</p>
Thermal Shock Test (Temperature cycle)		<p>$-40\pm 5^{\circ}\text{C}$ for 30 Minutes. $+85\pm 5^{\circ}\text{C}$ for 30 Minutes.</p> <p>Total: 10 Cycles</p> 
Humidity load life test		<p>Temperature: $40\pm 5^{\circ}\text{C}$ Humidity: 90-95%</p> <p>Time: 500 ± 12 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

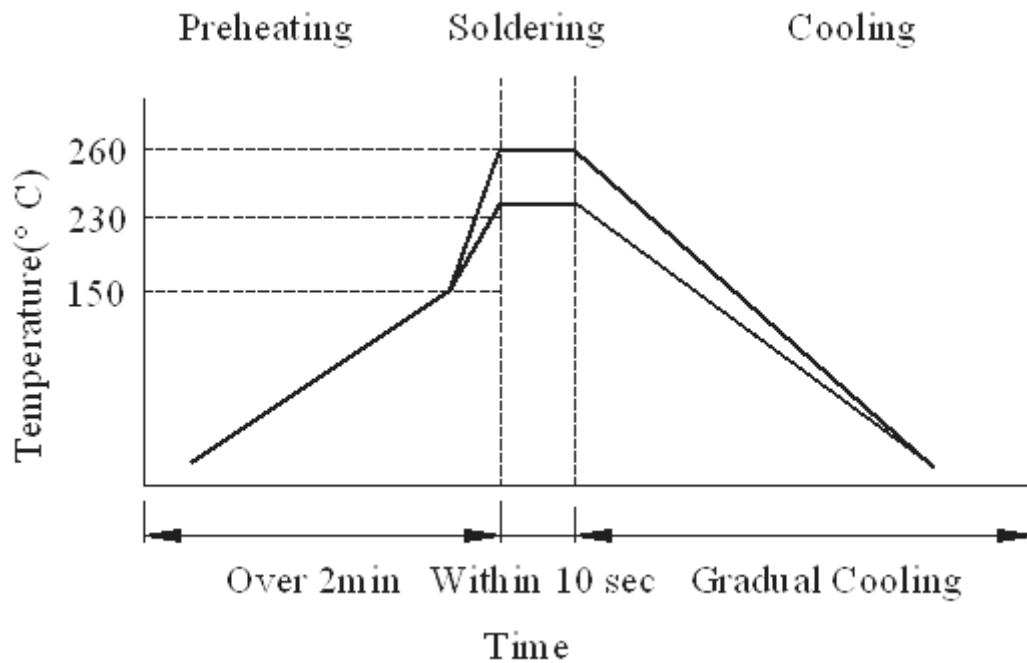
RoHS
COMPLIANT

Gan Tong Part NO. : GPDB1312-100M03

PAGE :

8-8

Wave Soldering



Hand soldering

