

CUSTOMER \_\_\_\_\_

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

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

SGTE PART NO. \_\_\_\_\_ GPDE1616-330M \_\_\_\_\_

SAMPLE NO. S11052401 REVISION NO. A DATE 24-May-11

## SPECIFICATION FOR APPROVAL

FULLY APPROVED	REVISE APPROVED

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# SPECIFICATION

**RoHS  
COMPLIANT**

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5/24

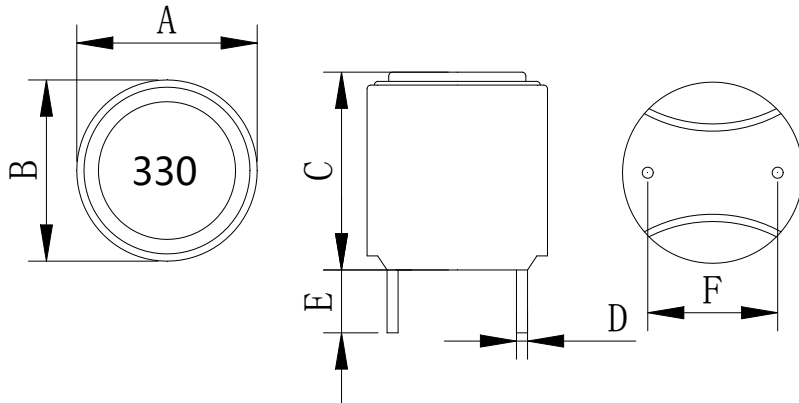
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# SPECIFICATION

**RoHS  
COMPLIANT**

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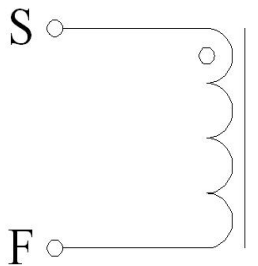
**External Dimensions Unit (mm)**



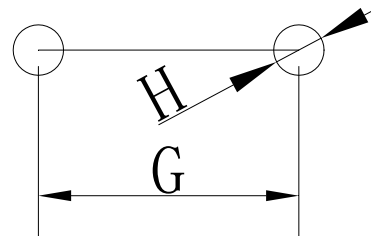
A	16.0± 0.5 (mm)
B	16.0± 0.5 (mm)
C	15.0 Max (mm)
D	1.1± 0.1 (mm)
E	3.4± 0.5 (mm)
F	12± 0.5 (mm)
G	12± 0.5(mm)
H	1.2 (ref)

Coating:Black

**Connection**



**Recommended Land Pattern**



**Electrical Specification**

Measurement Item	Unit Tolerance	Specification	Test Frequency	Test Instrument
L	uH (±20%)	33uH ±20%	100KHz/1V	LCR Meter Agilent/4284A or Chroma /11300
DCR	mΩ	25mΩ (Max		Chroma /16502
I rms	Amps	10A	100KHz/1V	LCR Meter Agilent/4284A+42841A
I sat	Amps	16A	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

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## Electrical Characteristic

Item	L0A	DCR	I rms	I sat
Specification	33uH	25mΩ	10Amps	16Amps
Tolerance	±20%	Max	$\Delta T \leq 40^{\circ}\text{C}$	$L \geq 65\%$
1	34.16	18.30	30.7°C	81.5%
2	33.50	18.41		
3	33.81	19.08		
4	33.96	18.69		
5	33.67	18.21		
6	33.34	18.36		
7	32.98	18.79		
8	33.15	18.62		
9	33.45	18.47		
10	34.02	18.45		
$\bar{X}$	33.60	18.54		
$\sigma$	0.36	0.25		

## External Dimensions

Item	A	B	C	D	E	F
Specification	16.0	16.0	15.0	1.1	3.4	12.0
Tolerance	± 0.5 (mm)	± 0.5 (mm)	Max (mm)	± 0.1 (mm)	± 0.5 (mm)	± 0.5 (mm)
1	16.12	16.12	13.74	1.10	3.68	12.08
2	16.23	16.23	13.77	1.15	3.56	12.05
3	16.18	16.18	13.74	1.12	3.48	12.06
4	16.20	16.20	13.76	1.10	3.55	12.01
5	16.09	16.09	13.80	1.09	3.60	12.07
6	16.14	16.14	13.71	1.16	3.61	12.08
7	16.22	16.22	13.77	1.13	3.59	12.05
8	16.17	16.17	13.73	1.12	3.56	12.00
9	16.10	16.10	13.81	1.10	3.50	12.02
10	16.16	16.16	13.70	1.12	3.61	12.03
$\bar{X}$	16.16	16.16	13.75	1.12	3.57	12.05
$\sigma$	0.05	0.05	0.03	0.02	0.05	0.03

Inductance measured at 100KHz/1Vrms.

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

# ELECTRICAL CHARACTERISTICS

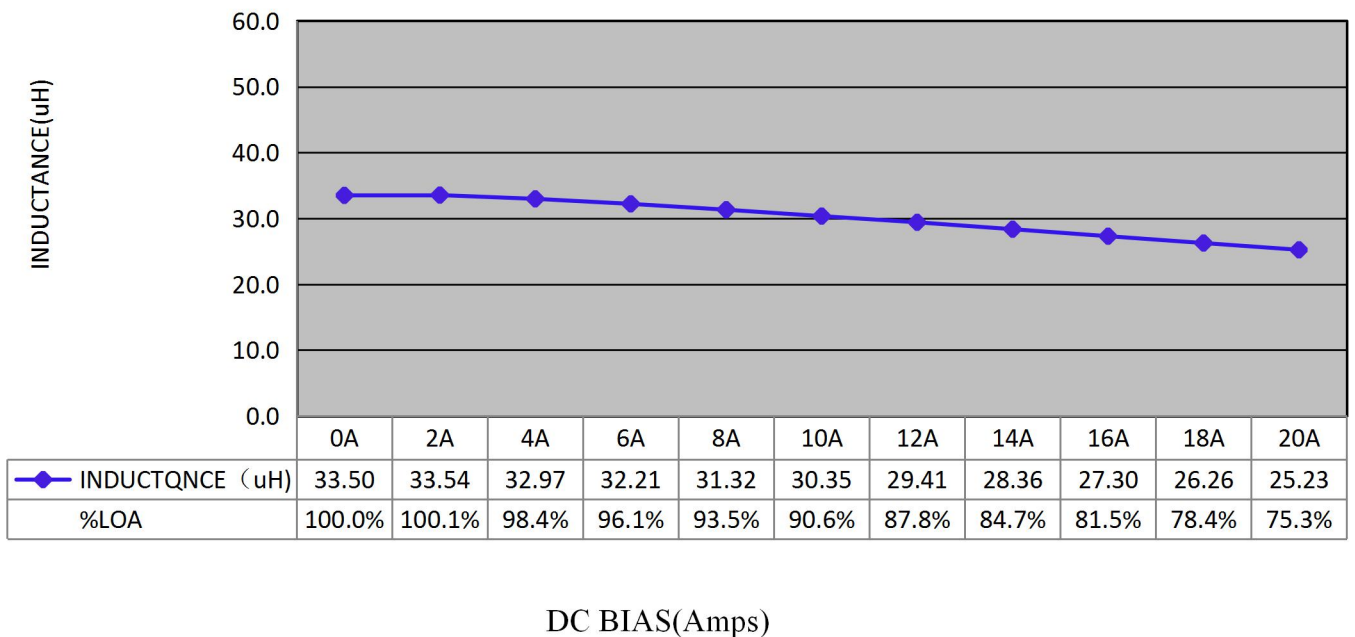
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## Inductance VS DC current

IDC	L	%LOA				
0A	33.50	100.0%				
2A	33.54	100.1%				
4A	32.97	98.4%				
6A	32.21	96.1%				
8A	31.32	93.5%				
10A	30.35	90.6%				
12A	29.41	87.8%				
14A	28.36	84.7%				
16A	27.30	81.5%				
18A	26.26	78.4%				
20A	25.23	75.3%				

CONDITTON: 100KHZ/1.0Vrms



# ELECTRICAL CHARACTERISTICS

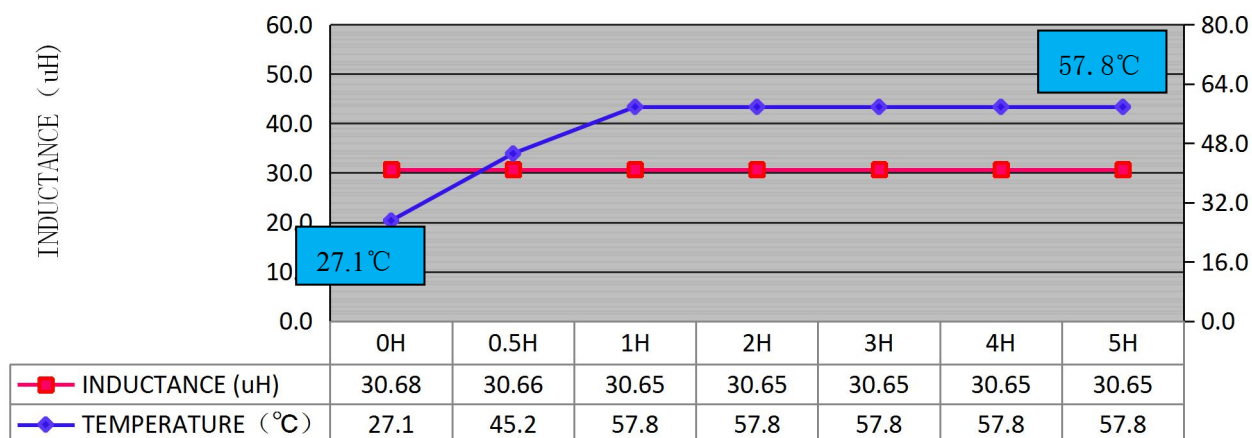
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## DC current VS Temperature

Time	L ( $\mu\text{H}$ )	T ( $^{\circ}\text{C}$ )	$\Delta\text{T} (^{\circ}\text{C})$			
0H	30.68	27.1				
0.5H	30.66	45.2	18.1			
1H	30.65	57.8	30.7			
2H	30.65	57.8	30.7			
3H	30.65	57.8	30.7			
4H	30.65	57.8	30.7			
5H	30.65	57.8	30.7			

CONDITTON: Load 10A



Inductance VS Temperature

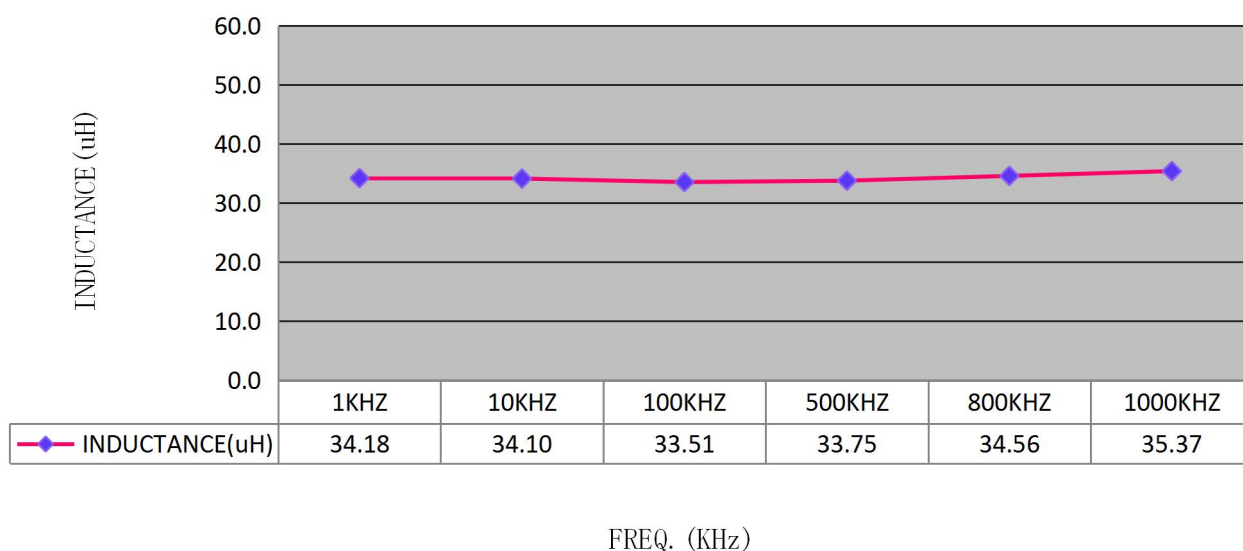
# ELECTRICAL CHARACTERISTICS

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## Inductance VS Frequency

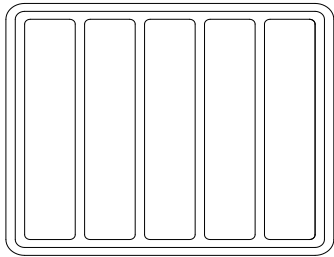
FREQ.	L (μH)					
1KHZ	34.18					
10KHZ	34.10					
100KHZ	33.51					
500KHZ	33.75					
800KHZ	34.56					
1000KHZ	35.37					



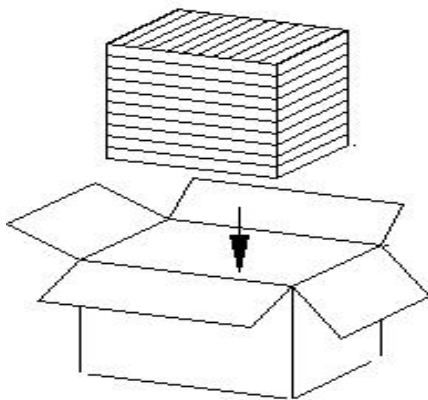
# PACKING FOR SPECIFICATION

**RoHS  
COMPLIANT**

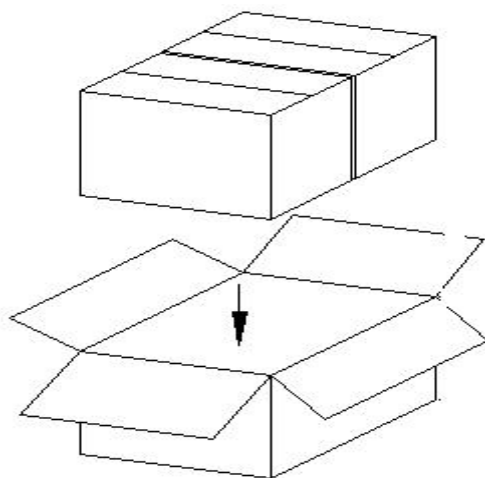
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PET Size : 175\*159\*19mm  
Quantity : 40PCS/PET



Small box Size : 324\*178\*114 mm  
Quantity : 10PET/Small box  
1 Small box/400PCS



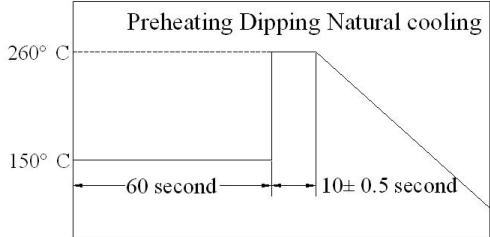
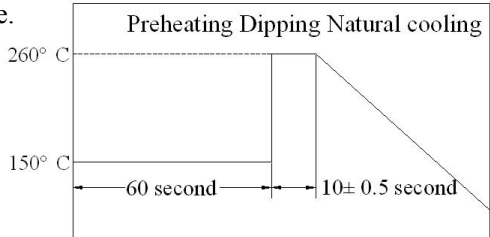
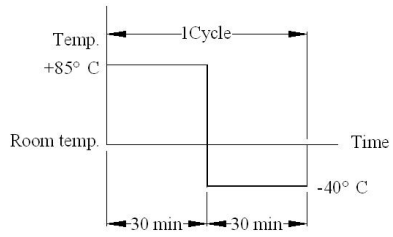
Big box Size : 386\*338\*132 mm  
Quantity : 2 Small box/Big box  
1 Big box/800PCS



# GENERAL CHARACTERISTICS

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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: 4 to 24 hours 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: 4 to 24 hours 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: 4 to 24 hours of recovery under the standard condition after the removal from test chamber.

# THE CONDITION OF REFLOW

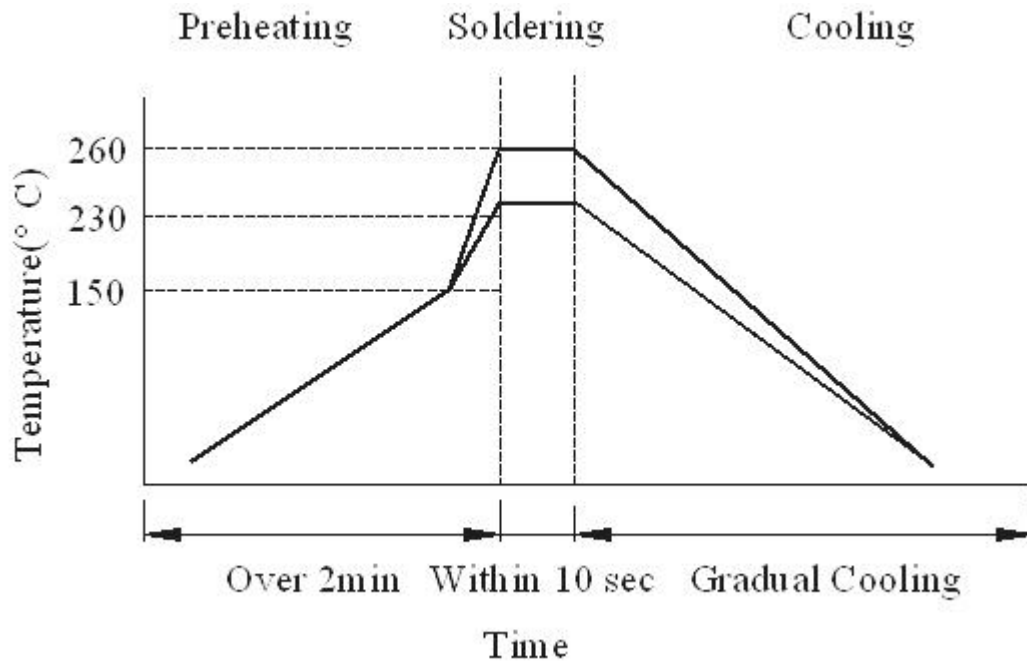
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## Wave Soldering



## Hand soldering

