

CUSTOMER \_\_\_\_\_

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

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

SGTE PART NO. \_\_\_\_\_ GPDC1010-220M02 \_\_\_\_\_

SAMPLE NO.: S10052703 REVISION NO. A DATE 27-May-10

## SPECIFICATION FOR APPROVAL

FULLY APPROVED	REVISE APPROVED

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# SPECIFICATION

**RoHS  
COMPLIANT**

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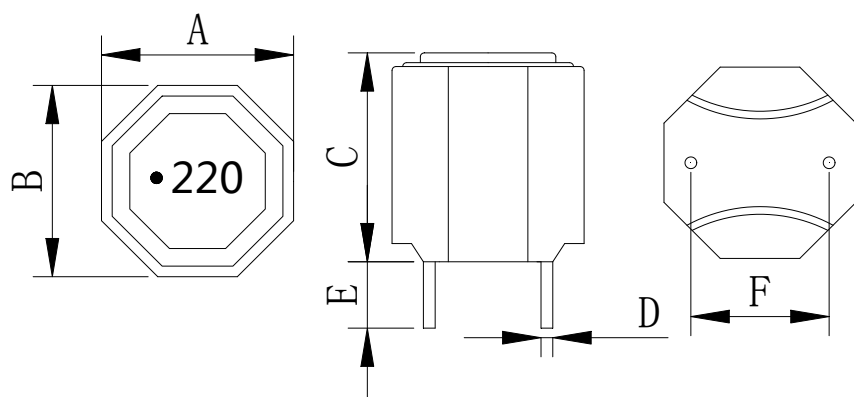
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# SPECIFICATION

**RoHS  
COMPLIANT**

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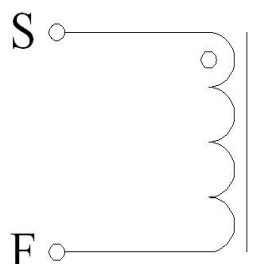
## External Dimensions Unit (mm)



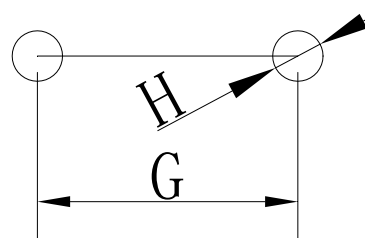
A	10.0± 0.5 (mm)
B	10.0± 0.5 (mm)
C	14.0Max (mm)
D	0.6± 0.1 (mm)
E	3.4± 0.5 (mm)
F	6.0± 0.5 (mm)
G	6.0± 0.5(mm)
H	1.05 (ref)

Coating: Black

## Connection



## Recommended Land Pattern



## Electrical Specification

Measurement Item	Unit Tolerance	Specification	Test Frequency	Test Instrument
L	uH (±20%)	22uH ±20%	100KHz/1V	LCR Meter Agilent/4284A or Chroma /11300
DCR	mΩ	55mΩ (Max)		Chroma /16502
I rms	Amps	4A	100KHz/1V	LCR Meter Agilent/4284A+42841A
I sat	Amps	6A	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

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## Electrical Characteristic

Item	L0A	DCR	I rms	I sat
Specification	22 uH	55mΩ	4Amps	8Amps
Tolerance	±20%	Max	$\Delta T \leq 40^{\circ}\text{C}$	$L \geq 65\%$
1	22.11	34.25	7.7°C	81.3%
2	22.57	33.97		
3	21.91	34.16		
4	22.22	34.32		
5	22.15	34.41		
6	21.84	34.19		
7	22.48	33.85		
8	22.56	34.21		
9	21.88	34.31		
10	21.94	34.27		
$\bar{X}$	22.17	34.19		
$\sigma$	0.27	0.16		

## External Dimensions

Item	A	B	C	D	E	F
Specification	10.0	10.0	14.0	0.65	3.4	5.0
Tolerance	± 0.5 (mm)	± 0.5 (mm)	Max (mm)	± 0.1 (mm)	± 0.5 (mm)	± 0.5 (mm)
1	10.06	10.07	11.87	0.64	3.52	5.01
2	10.07	10.07	11.84	0.63	3.49	5.00
3	10.05	10.06	12.09	0.63	3.51	4.99
4	10.06	10.05	12.07	0.65	3.50	5.07
5	10.09	10.10	12.08	0.64	3.45	5.10
6	10.12	10.11	11.91	0.63	3.47	5.09
7	10.08	10.09	11.97	0.66	3.49	5.05
8	10.06	10.07	12.12	0.65	3.53	5.03
9	10.07	10.08	12.01	0.67	3.51	5.06
10	10.06	10.06	11.77	0.63	3.49	5.04
$\bar{X}$	10.07	10.08	11.97	0.64	3.50	5.04
$\sigma$	0.02	0.02	0.11	0.01	0.02	0.04

Inductance measured at 100KHz/1Vrms.

Electrical specifications at 25±5°C. Humidity 60±10%

# ELECTRICAL CHARACTERISTICS

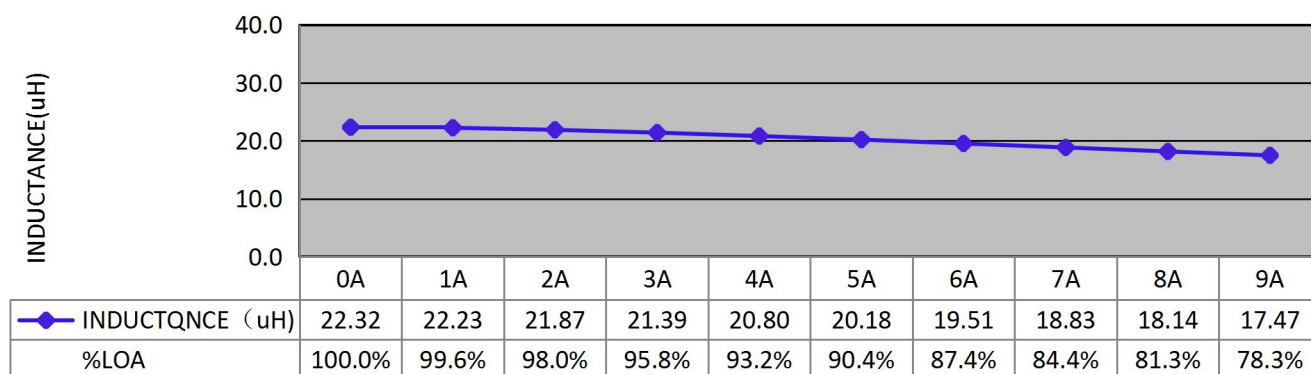
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COMPLIANT**

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## Inductance VS DC current

IDC	L	%LOA				
0A	22.32	100.0%				
1A	22.23	99.6%				
2A	21.87	98.0%				
3A	21.39	95.8%				
4A	20.80	93.2%				
5A	20.18	90.4%				
6A	19.51	87.4%				
7A	18.83	84.4%				
8A	18.14	81.3%				
9A	17.47	78.3%				

CONDITION: 100KHZ/1.0V<sub>rms</sub> AMBIENT: 20°C, 69.8%



DC BIAS(Amps)

# ELECTRICAL CHARACTERISTICS

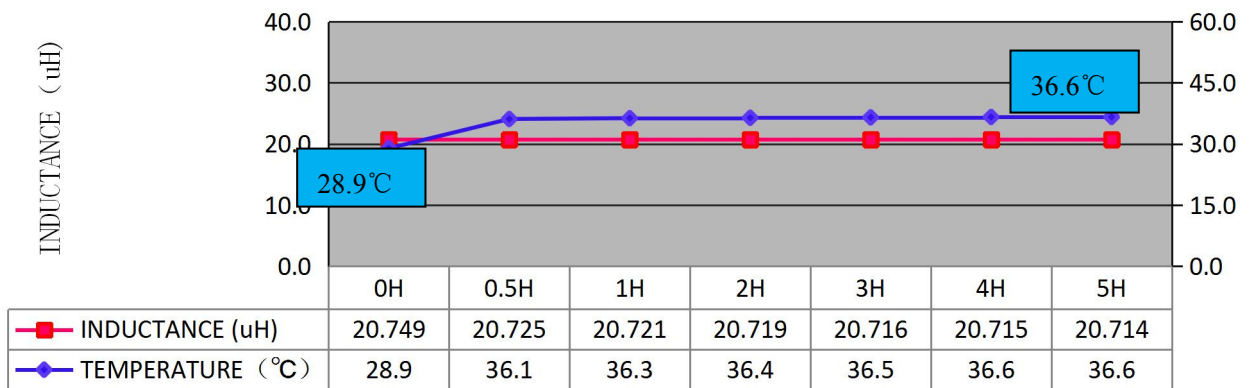
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## DC current VS Temperature

Time	L ( $\mu$ H )	T ( $^{\circ}$ C )	$\Delta$ T( $^{\circ}$ C )			
0h	20.749	28.9				
0.5h	20.725	36.1	7.2			
1h	20.721	36.3	7.4			
2h	20.719	36.4	7.5			
3h	20.716	36.5	7.6			
4h	20.715	36.6	7.7			
5h	20.714	36.6	7.7			

CONDITION: Load 4A AMBIENT: 20 $^{\circ}$ C, 69.8%



Inductance VS Temperature

# ELECTRICAL CHARACTERISTICS

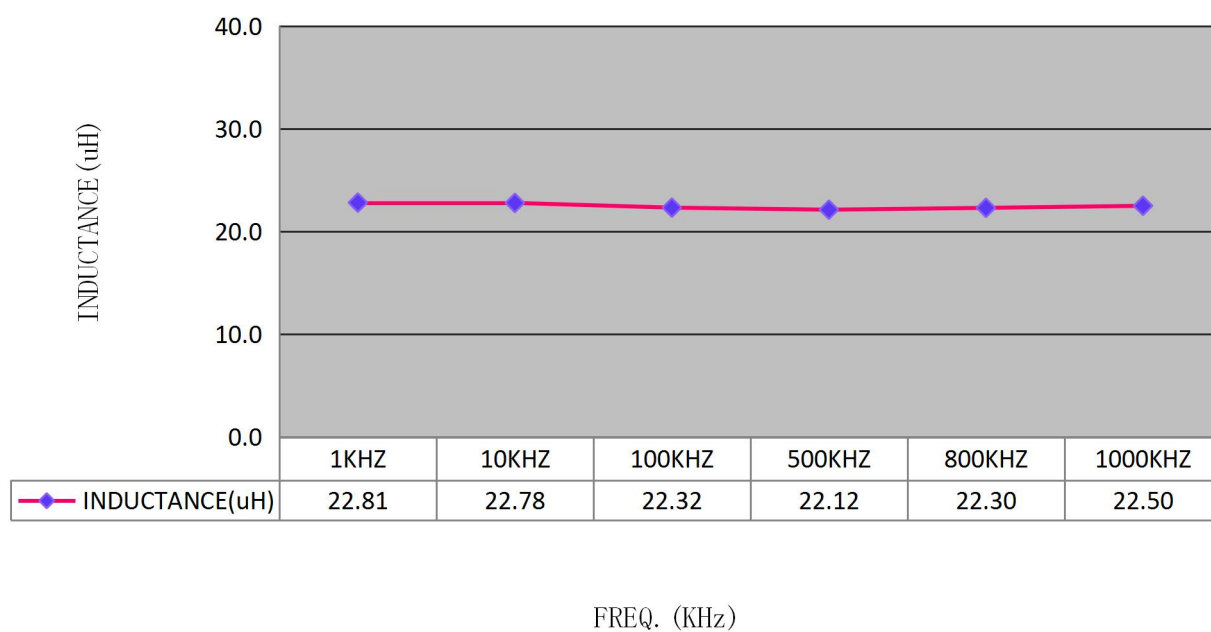
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Customers Part Number	Item Name	Date
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## Inductance VS Frequency

FREQ.	L ( $\mu$ H )					
1KHZ	22.81					
10KHZ	22.78					
100KHZ	22.32					
500KHZ	22.12					
800KHZ	22.30					
1000KHZ	22.50					

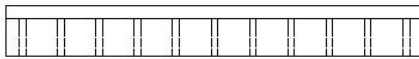
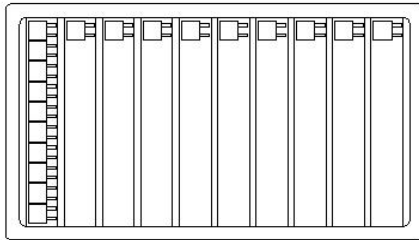
AMBIENT: 20°C, 69.8%



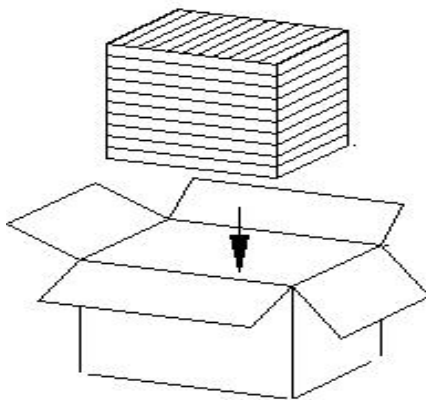
# PACKING FOR SPECIFICATION

**RoHS  
COMPLIANT**

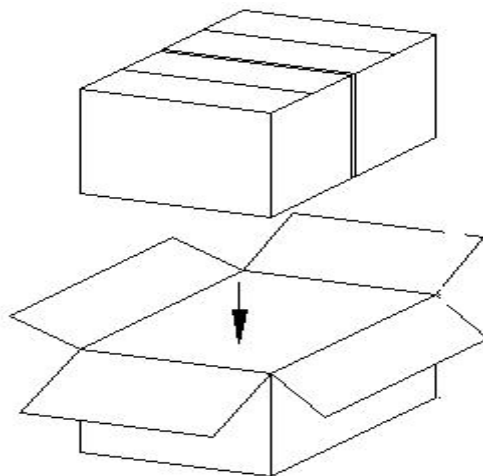
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PET Size : 175\*159\*19mm  
Quantity : 65PCS/PET



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



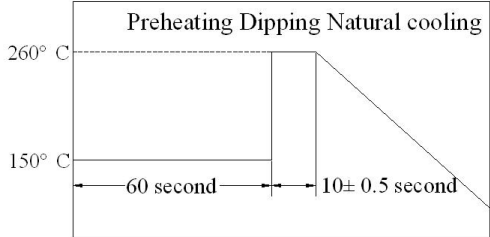
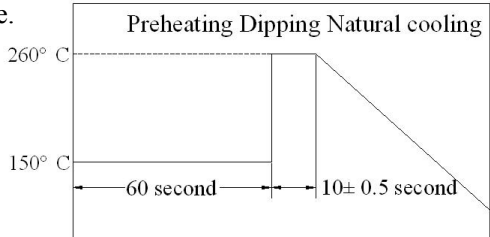
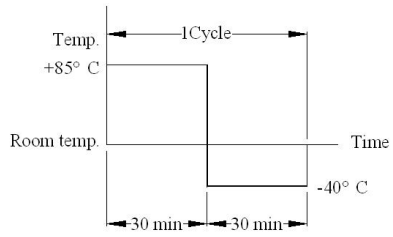
Big box Size : 386\*338\*132 mm  
Quantity : 2 Small box/Big box  
1 Big box/1300PCS



# GENERAL CHARACTERISTICS

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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

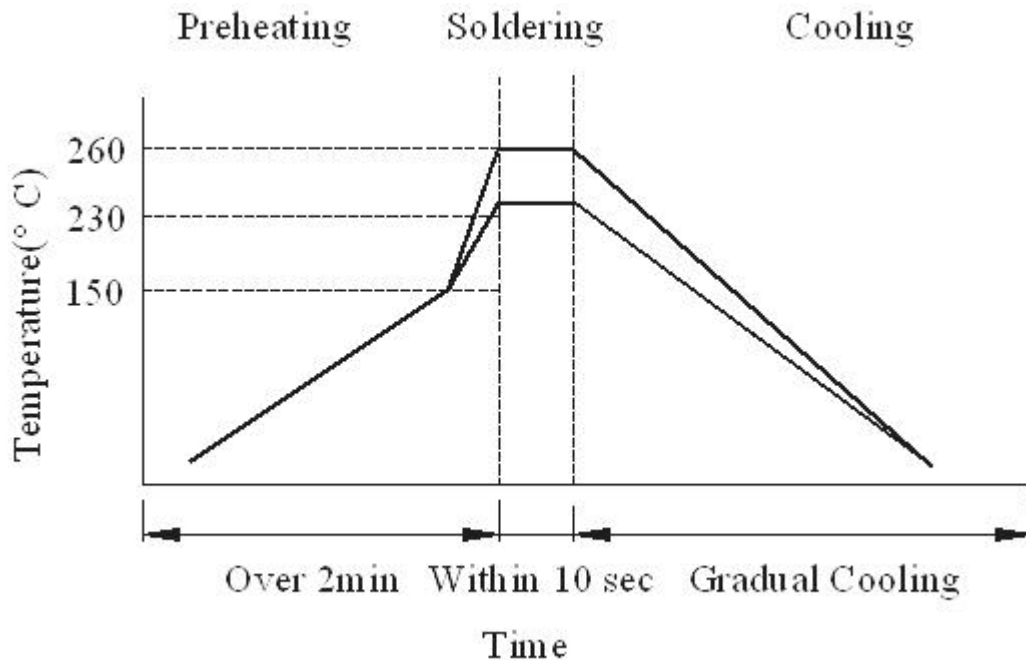
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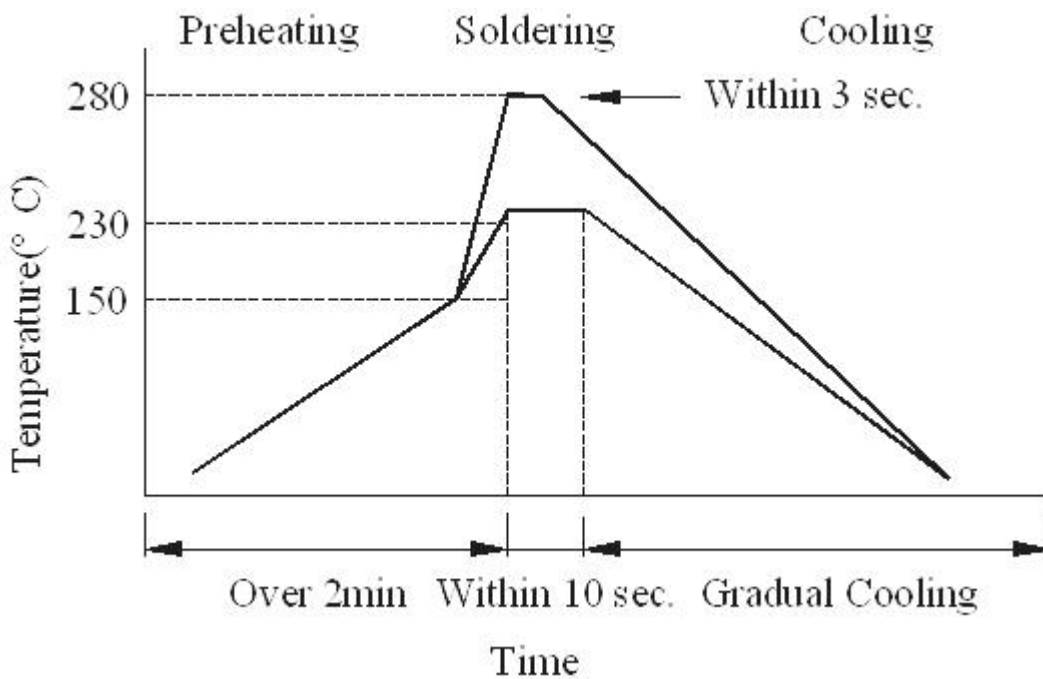
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## Wave Soldering



## Hand soldering



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