

CUSTOMER \_\_\_\_\_

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

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

SGTE PART NO. \_\_\_\_\_ GPDC1010-100M03 \_\_\_\_\_

SAMPLE NO. S10091001 REVISION NO. A DATE 10-Sep-10

## SPECIFICATION FOR APPROVAL

| FULLY APPROVED | REVISE APPROVED |
|----------------|-----------------|
|                |                 |

**SGTE 感通科技**

深圳感通科技有限公司 (大陸工廠)

GANTONG TECHNOLOGY (SHENZHEN) CO., LTD.

深圳市平湖街道平湖村萬福路 26 號

No.26 Wan fu Road, Ping hu Village. Ping hu town, Shenzhen City.

Tel: 0755-28457600

Fax: 0755-28452952

感通科技有限公司 (台灣辦事處)

臺北縣汐止市新台 5 路一段 77 號 10 樓之 7

10F~7, NO.77, Sec.1, Hsin Tai 5 Road, Shi-chi City, Taipei.

Tel: 886-2-8698-2341

Fax: 886-2-8698-2342

納美科技股份有限公司 (香港辦事處)

LAPEE TECHNOLOGY LIMITED

香港九龍尖沙嘴加連威老道嘉蘭圍 5-11 號利時商業大廈 17 樓 1713 室

Room 1713 17/F, Rise Commercial Bldg5-11 Granville Cri cuit, Granville Rd, TSim Sha Tsui., Kln

Tel: 852-25301111

Fax: 852-25371111

<http://www.szgte.com>

# SPECIFICATION

**RoHS  
COMPLIANT**

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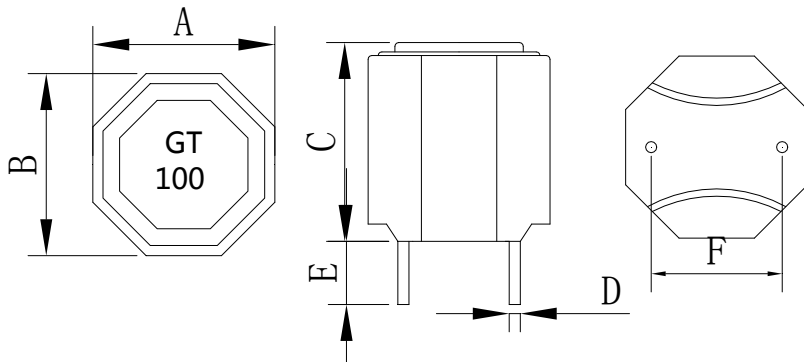
| APPROVED BY          | CHECKED BY          | DRAWING BY          |
|----------------------|---------------------|---------------------|
| <b>Jesse</b><br>9/10 | <b>Tony</b><br>9/10 | <b>Lily</b><br>9/10 |

# SPECIFICATION

**RoHS  
COMPLIANT**

|                       |                |           |
|-----------------------|----------------|-----------|
| Customers Part Number | Item Name      | Date      |
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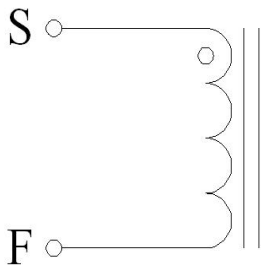
## External Dimensions Unit (mm)



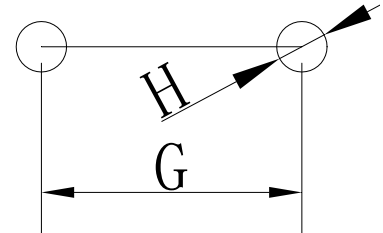
|   |                |
|---|----------------|
| A | 10.0± 0.5 (mm) |
| B | 10.0± 0.5 (mm) |
| C | 10.5Max (mm)   |
| D | 0.6± 0.1 (mm)  |
| E | 3.4± 0.5 (mm)  |
| F | 5.0± 0.5 (mm)  |
| G | 5.0± 0.5(mm)   |
| H | 0.8 (ref)      |

Coating:Black

## Connection



## Recommended Land Pattern



## Electrical Specification

| Measurement Item | Unit Tolerance | Specification | Test Frequency | Test Instrument                          |
|------------------|----------------|---------------|----------------|--|
| L                | uH (±20%)      | 10.0uH ±20%   | 100KHz/1V      | LCR Meter Agilent/4284A or Chroma /11300 |
| DCR              | mΩ             | 25mΩ (Max)    |                | Chroma /16502                            |
| I rms            | Amps           | 5A            | 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**

|                       |                |              |      |
|-----------------------|----------------|--------------|------|
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|                       | Power Inductor | 10-Sep-10    |      |
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## Electrical Characteristic

| Item          | L0A    | DCR   | I rms                              | I sat         |
|---------------|--------|-------|------------------------------------|---------------|
| Specification | 10.0uH | 25mΩ  | 5Amps                              | 7Amps         |
| Tolerance     | ±20%   | Max   | $\Delta T \leq 40^{\circ}\text{C}$ | $L \geq 65\%$ |
| 1             | 10.20  | 18.25 | 15.0°C                             | 86.2%         |
| 2             | 10.19  | 18.33 |                                    |               |
| 3             | 10.60  | 18.27 |                                    |               |
| 4             | 10.12  | 18.28 |                                    |               |
| 5             | 9.91   | 18.30 |                                    |               |
| 6             | 10.27  | 18.27 |                                    |               |
| 7             | 10.30  | 18.50 |                                    |               |
| 8             | 10.34  | 18.32 |                                    |               |
| 9             | 10.24  | 18.61 |                                    |               |
| 10            | 10.32  | 18.40 |                                    |               |
| $\bar{X}$     | 10.25  | 18.35 |                                    |               |
| $\sigma$      | 0.17   | 0.11  |                                    |               |

## External Dimensions

| Item          | A          | B          | C        | D          | E          | F          |
|---------------|------------|------------|----------|------------|------------|------------|
| Specification | 10.0       | 10.0       | 10.0     | 0.6        | 3.4        | 5.0        |
| Tolerance     | ± 0.5 (mm) | ± 0.5 (mm) | Max (mm) | ± 0.1 (mm) | ± 0.5 (mm) | ± 0.5 (mm) |
| 1             | 10.17      | 10.09      | 8.96     | 0.60       | 3.58       | 5.29       |
| 2             | 10.07      | 10.06      | 8.84     | 0.62       | 3.57       | 5.17       |
| 3             | 10.09      | 10.08      | 8.85     | 0.58       | 3.51       | 5.17       |
| 4             | 10.11      | 10.11      | 8.75     | 0.59       | 3.60       | 5.13       |
| 5             | 10.12      | 10.10      | 8.90     | 0.62       | 3.63       | 5.14       |
| 6             | 10.11      | 10.10      | 8.91     | 0.58       | 3.56       | 5.14       |
| 7             | 10.13      | 10.12      | 8.99     | 0.59       | 3.60       | 5.13       |
| 8             | 10.12      | 10.11      | 8.74     | 0.59       | 3.48       | 5.17       |
| 9             | 10.11      | 10.11      | 8.89     | 0.57       | 3.49       | 5.18       |
| 10            | 10.11      | 10.08      | 8.92     | 0.58       | 3.48       | 5.14       |
| $\bar{X}$     | 10.11      | 10.10      | 8.88     | 0.59       | 3.55       | 5.17       |
| $\sigma$      | 0.03       | 0.02       | 0.04     | 0.02       | 0.03       | 0.04       |

Inductance measured at 100KHz/1Vrms.

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

# ELECTRICAL CHARACTERISTICS

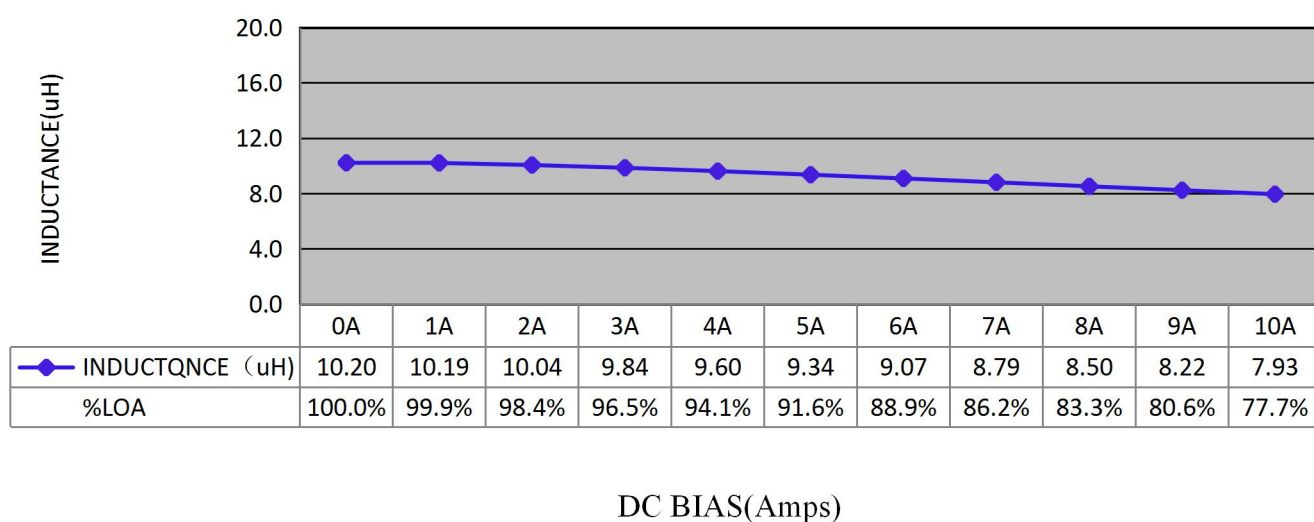
**RoHS  
COMPLIANT**

|                       |                |           |
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## Inductance VS DC current

| IDC | L     | %LOA   |  |  |  |  |
|-----|-------|--------|--|--|--|--|
| 0A  | 10.20 | 100.0% |  |  |  |  |
| 1A  | 10.19 | 99.9%  |  |  |  |  |
| 2A  | 10.04 | 98.4%  |  |  |  |  |
| 3A  | 9.84  | 96.5%  |  |  |  |  |
| 4A  | 9.60  | 94.1%  |  |  |  |  |
| 5A  | 9.34  | 91.6%  |  |  |  |  |
| 6A  | 9.07  | 88.9%  |  |  |  |  |
| 7A  | 8.79  | 86.2%  |  |  |  |  |
| 8A  | 8.50  | 83.3%  |  |  |  |  |
| 9A  | 8.22  | 80.6%  |  |  |  |  |
| 10A | 7.93  | 77.7%  |  |  |  |  |
|     |       |        |  |  |  |  |

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



# ELECTRICAL CHARACTERISTICS

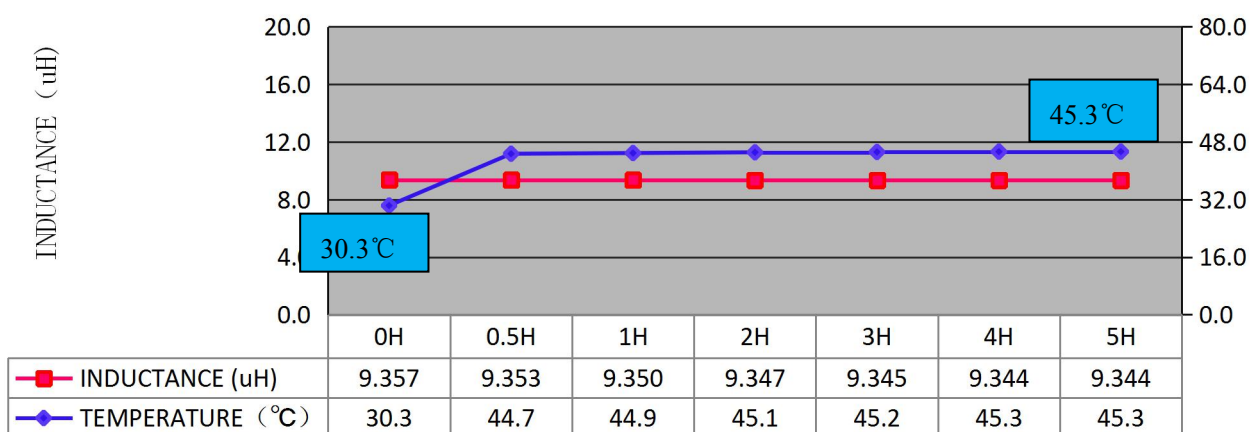
RoHS  
COMPLIANT

|                       |                |           |
|-----------------------|----------------|-----------|
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## DC current VS Temperature

| Time | L ( $\mu$ H ) | T ( $^{\circ}$ C ) | $\Delta$ T( $^{\circ}$ C ) |  |  |  |
|------|---------------|--------------------|----------------------------|--|--|--|
| 0h   | 9.357         | 30.3               |                            |  |  |  |
| 0.5h | 9.353         | 44.7               | 14.4                       |  |  |  |
| 1h   | 9.350         | 44.9               | 14.6                       |  |  |  |
| 2h   | 9.347         | 45.1               | 14.8                       |  |  |  |
| 3h   | 9.345         | 45.2               | 14.9                       |  |  |  |
| 4h   | 9.344         | 45.3               | 15.0                       |  |  |  |
| 5h   | 9.344         | 45.3               | 15.0                       |  |  |  |
|      |               |                    |                            |  |  |  |
|      |               |                    |                            |  |  |  |
|      |               |                    |                            |  |  |  |
|      |               |                    |                            |  |  |  |
|      |               |                    |                            |  |  |  |

CONDITION: Load 5A AMBIENT: 20 $^{\circ}$ C, 69.8%



Inductance VS Temperature

# ELECTRICAL CHARACTERISTICS

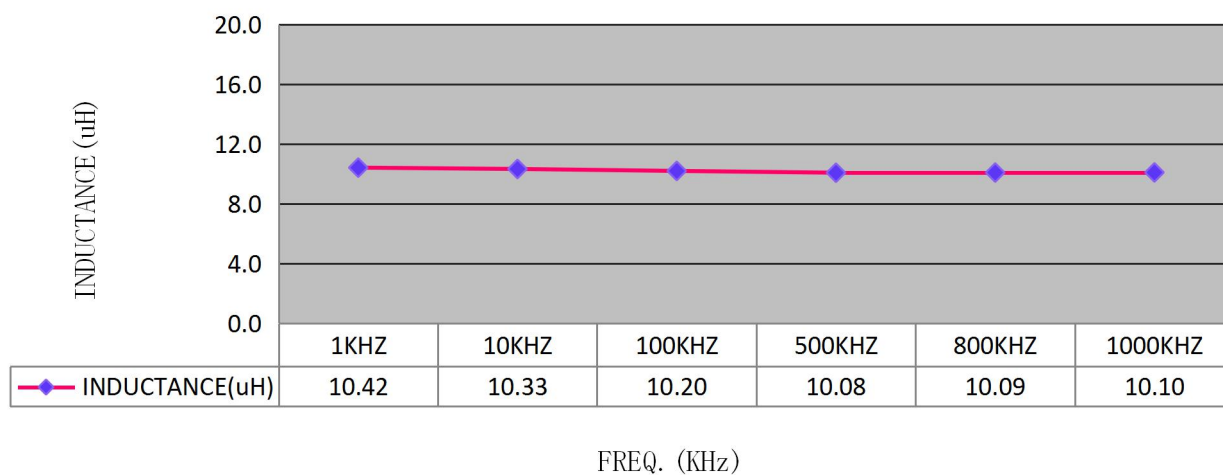
**RoHS  
COMPLIANT**

|                       |                |           |
|-----------------------|----------------|-----------|
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|                       | Power Inductor | 10-Sep-10 |
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## Inductance VS Frequency

| FREQ.   | L ( $\mu$ H ) |  |  |  |  |  |
|---------|---------------|--|--|--|--|--|
| 1KHZ    | 10.42         |  |  |  |  |  |
| 10KHZ   | 10.33         |  |  |  |  |  |
| 100KHZ  | 10.20         |  |  |  |  |  |
| 500KHZ  | 10.08         |  |  |  |  |  |
| 800KHZ  | 10.09         |  |  |  |  |  |
| 1000KHZ | 10.10         |  |  |  |  |  |
|         |               |  |  |  |  |  |
|         |               |  |  |  |  |  |
|         |               |  |  |  |  |  |
|         |               |  |  |  |  |  |
|         |               |  |  |  |  |  |

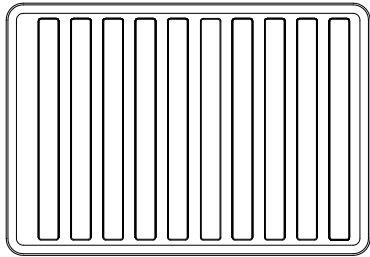
AMBIENT: 20°C, 69.8%



# PACKING FOR SPECIFICATION

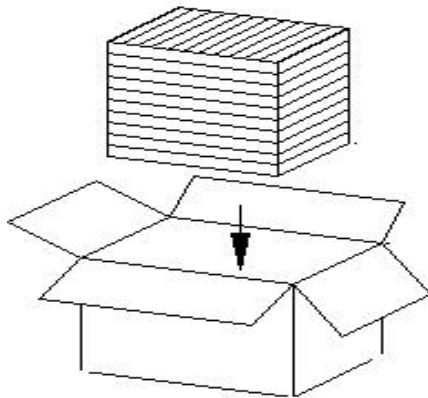
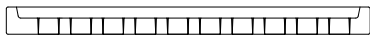
**RoHS  
COMPLIANT**

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|-----------------------|----------------|-----------|
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PET Size : 215\*148 \*16 (C) mm

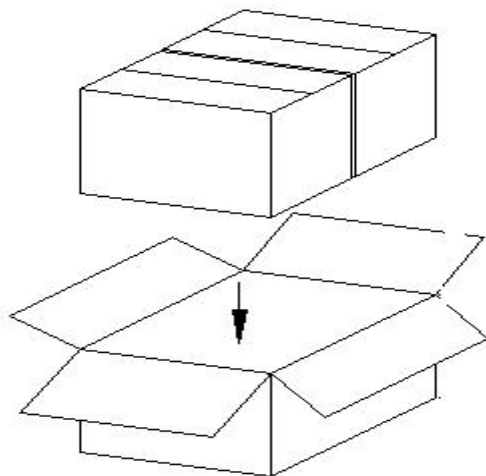
Quantity : 110PCS/PET



Small box Size : 238\*156\*165 mm

Quantity : 10PET/Small box

1 Small box/1100PCS



Big box Size : 328\*251\*175 mm

Quantity : 2 Small box/Big box

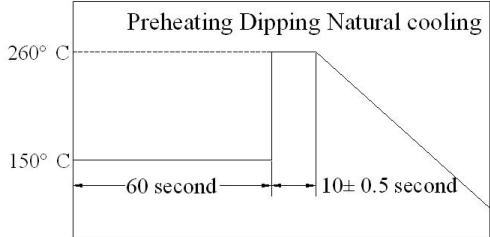
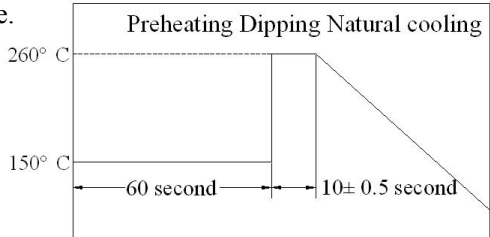
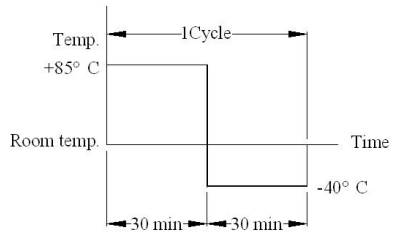
1 Big box/2200PCS



# GENERAL CHARACTERISTICS

Gan Tong Part NO.: GPDC1010-100M03

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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.<br>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.<br>Inductance: within $\pm 20\%$ of initial value.<br>Preheat: $150^{\circ}\text{C}$ 60 seconds<br>Solder: (SnCu0.7)<br>Solder Temperature: $260\pm 5^{\circ}\text{C}$<br>Flux: Rosin.<br>Dip time: $10\pm 0.5$ seconds |    |
| Low temperature storage test              | 1. Appearance: No damage.<br>2. Inductance: within $\pm 20\%$ of initial value.<br>3. No disconnection or short circuit.   | Temperature: $-40^{\circ}\text{C}\pm 5^{\circ}\text{C}$ Time: $500\pm 12$ Hours<br>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<br>Recovery: 4to24hrs of recovery under the standard condition after the removal from test chamber.                               |
| Thermal Shock Test<br>(Temperature cycle) |  | $-40\pm 5^{\circ}\text{C}$ for 30 Minutes. $+85\pm 5^{\circ}\text{C}$ for 30 Minutes.<br>Total: 10 Cycles<br>              |
| Humidity load life test                   |  | Temperature: $40\pm 5^{\circ}\text{C}$ Humidity: 90-95%<br>Time: $500\pm 12$ Hours Load: Allowed DC current<br>Recovery: 4to24hrs of recovery under the standard condition after the removal from test chamber. |

# THE CONDITION OF REFLOW

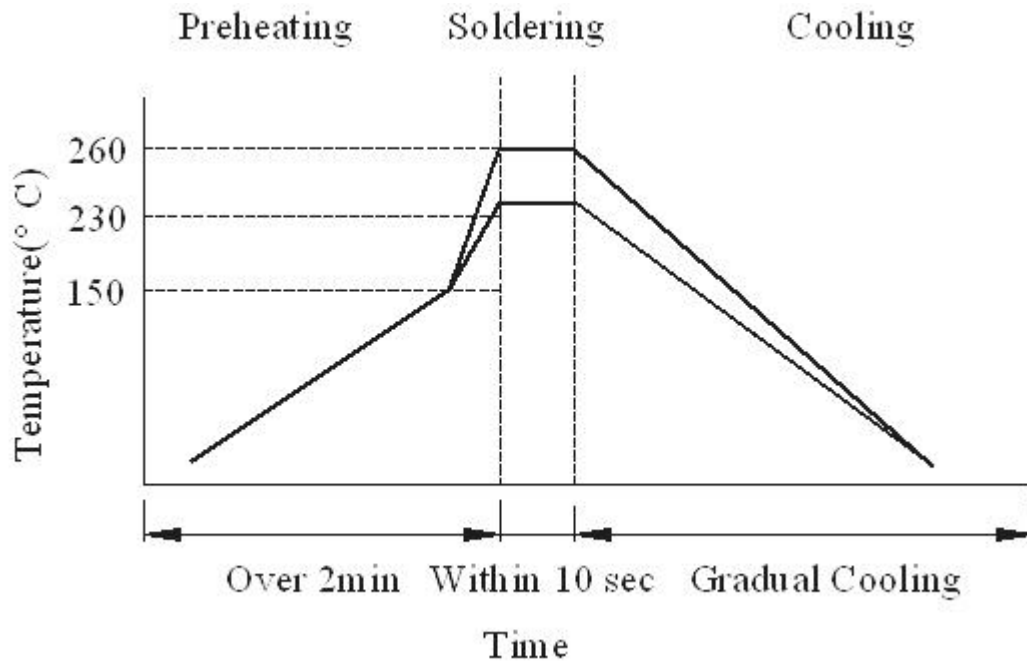
RoHS  
COMPLIANT

Gan Tong Part NO. : GPDC1010-100M03

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## Wave Soldering



## Hand soldering

