



LIGITEK

LIGITEK ELECTRONICS CO.,LTD.  
Property of Ligitek Only

LED SMD



Lead-Free Parts

**LG-170SEF-DT**

**DATA SHEET**

DOC. NO : QW0905-LG-170SEF-DT

REV. : A

DATE : 05 - Sep - 2006



### Features:

1. Package in 8.0mm carrier tape on 7" diameter reel.
2. Compatible with automatic placement equipment.
3. Compatible with reflow solder process.

### Descriptions:

1. The LG-170 SMD Taping is much smaller than lead frame type components, thus enable smaller board size, higher packing density, reduced storage space and finally smaller equipment to be obtained.
2. Besides, lightweight makes them ideal for miniature applications. etc.

### Applications:

1. Automotive : backlighting in dashboard and switch.
2. Telecommunication : indicator and backlighting in telephone and fax.
3. Flat backlight for LCD, switch and symbol
4. General use.

### Device Selection Guide:

| PART NO      | MATERIAL | COLOR   |                |
|--------------|----------|---------|----------------|
|              |          | Emitted | Lens           |
| LG-170SRF-DT | AlGaInP  | Orange  | White Diffused |



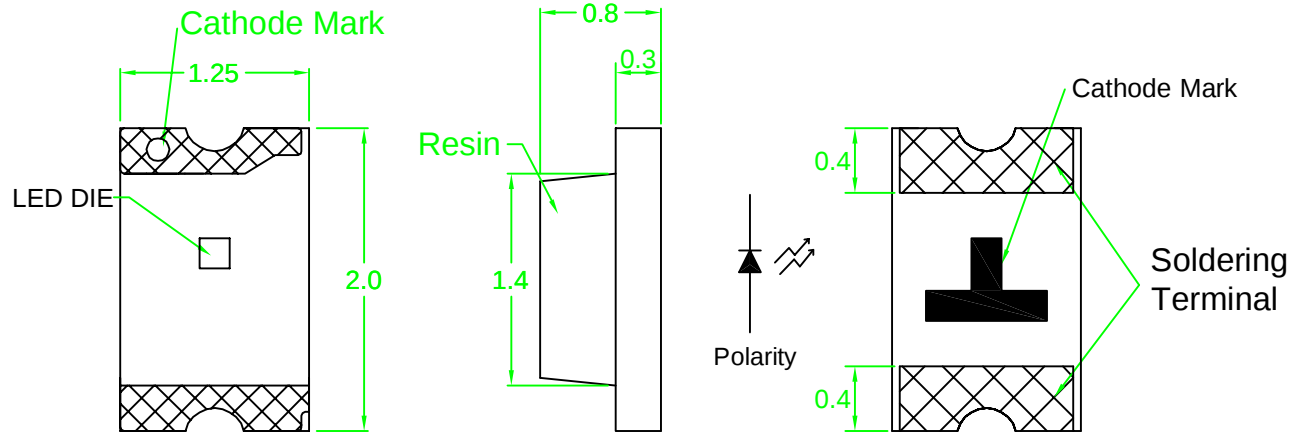
LIGITEK

LIGITEK ELECTRONICS CO.,LTD.  
Property of Ligitek Only

PART NO. LG-170SEF-DT

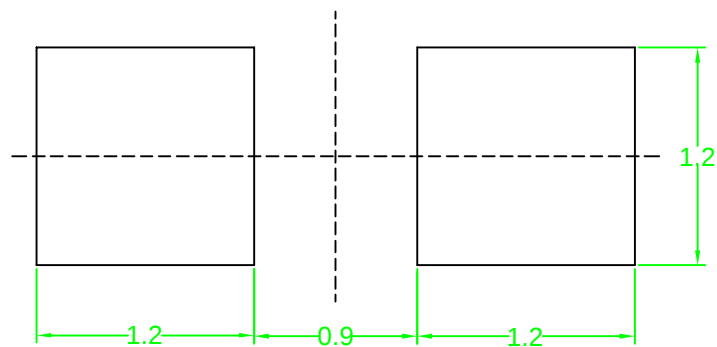
Page 2/10

## Package Dimensions



Note : 1.All dimension are in millimeter tolerance is  $\pm 0.1\text{mm}$  unless otherwise noted.  
2.Specifications are subject to change without notice.

## Recommended Soldering Pad Dimensions



Note : The tolerances unless mentioned is  $\pm 0.1\text{mm}$ , Angle  $\pm 0.5^\circ$ . Unit=mm.

**Absolute Maximum Ratings at Ta=25**

| Parameter                               | Symbol | Ratings   | UNIT |
|-----------------------------------------|--------|-----------|------|
| Power Dissipation                       | PD     | 78        | mW   |
| Peak Forward Current<br>Duty 1/10@10KHz | IFP    | 90        | mA   |
| Forward Current                         | IF     | 30        | mA   |
| Reverse Current @5V                     | Ir     | 10        | μ A  |
| Electrostatic Discharge                 | ESD    | 2000      | V    |
| Operating Temperature                   | Topr   | -40 ~ +85 |      |
| Storage Temperature                     | Tstg   | -40 ~ +90 |      |

**Typical Electrical & Optical Characteristics (Ta=25 )**

| Items                    | Symbol         | Min. | Typ. | Max. | UNIT | CONDITION |
|--------------------------|----------------|------|------|------|------|-----------|
| Luminous Intensity       | Iv             | 80   | 150  | ---- | mcd  | IF=20mA   |
| Peak Wavelength          | λ P            | ---- | 610  | ---- | nm   | IF=20mA   |
| Dominant Wavelength      | λ D            | ---- | 605  | ---- | nm   | IF=20mA   |
| Spectral Line Half-Width | λ              | ---- | 17   | ---- | nm   | IF=20mA   |
| Forward Voltage          | V <sub>F</sub> | 1.7  | ---- | 2.6  | V    | IF=20mA   |
| Viewing Angle            | 2 θ 1/2        | ---- | 150  | ---- | deg  | IF=20mA   |

Note : 1.The forward voltage data did not including ±0.1V testing tolerance.  
2. The luminous intensity data did not including ±15% testing tolerance.



## Typical Electro-Optical Characteristics Curve

### SEF CHIP

Fig.1 Forward current vs. Forward Voltage

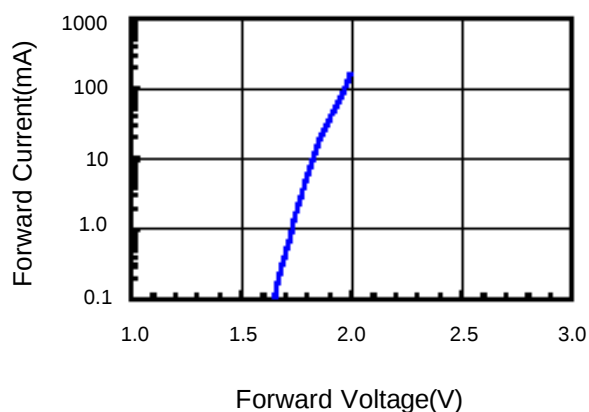


Fig.2 Relative Intensity vs. Forward Current

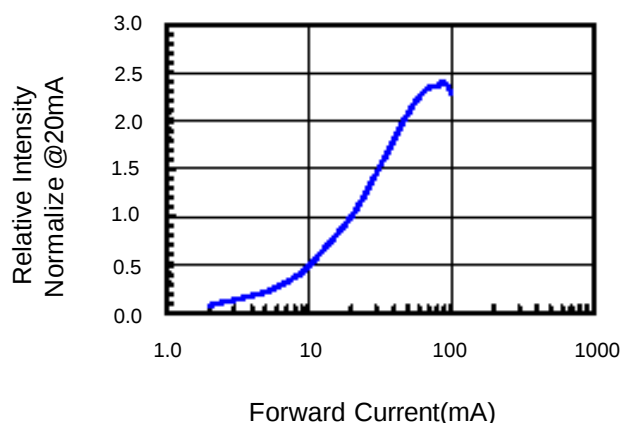


Fig.3 Forward Voltage vs. Temperature

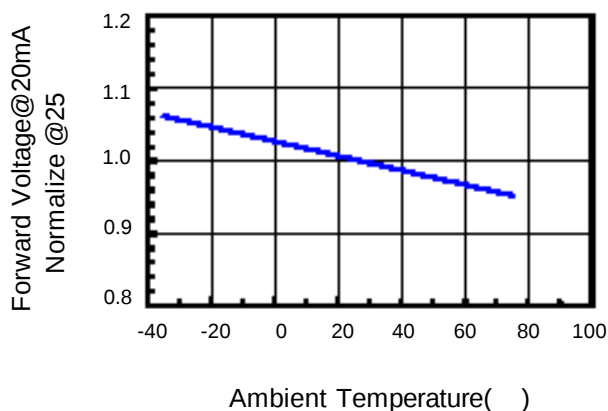


Fig.4 Relative Intensity vs. Temperature

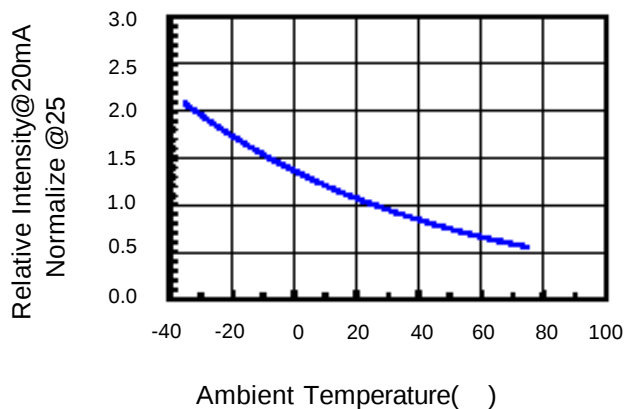


Fig.5 Relative Intensity vs. Wavelength

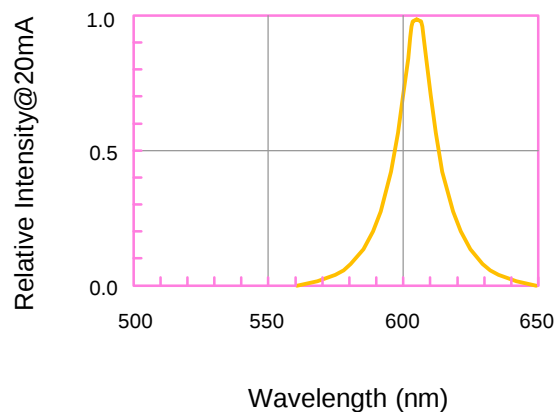
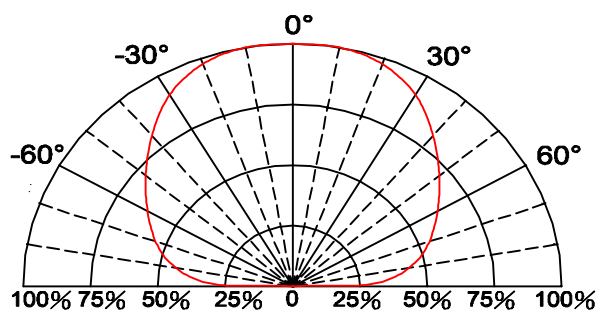
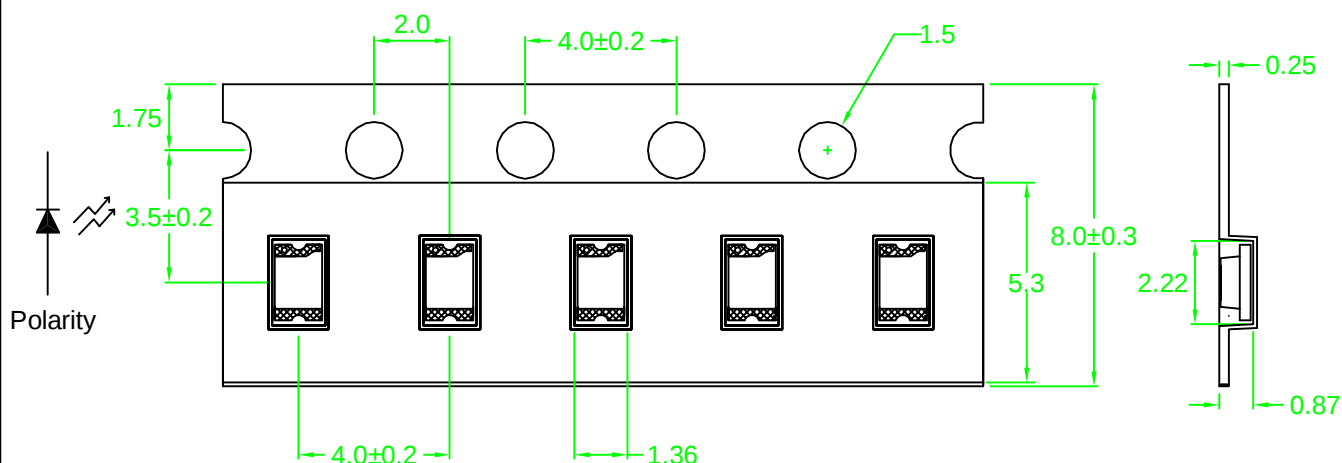


Fig.6 Directive Radiation



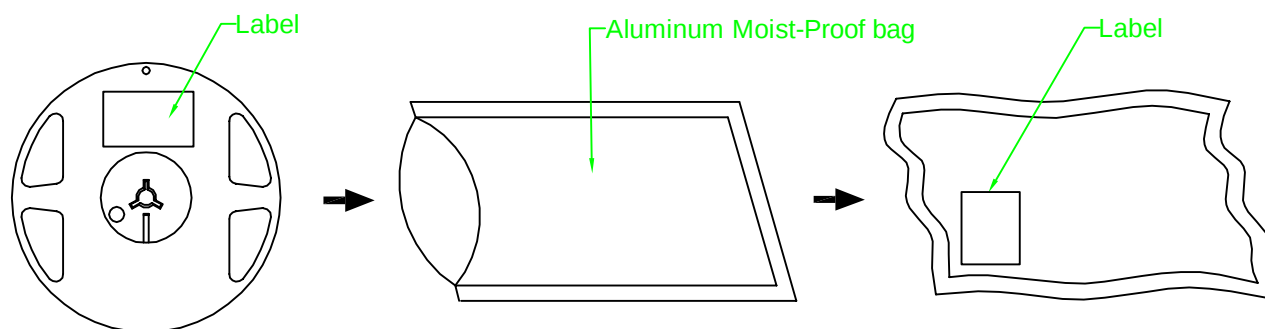


## Carrier Tape Dimensions



Note : The tolerances unless mentioned is  $\pm 0.1\text{mm}$ , Angle  $\pm 0.5^\circ$ . Unit=mm.

## Packing Specifications



| Part No.     | Description         | Quantity/Reel |
|--------------|---------------------|---------------|
| LG-170SEF-DT | 8.0mm tape, 7" reel | 4000 devices  |

## Label Explanation

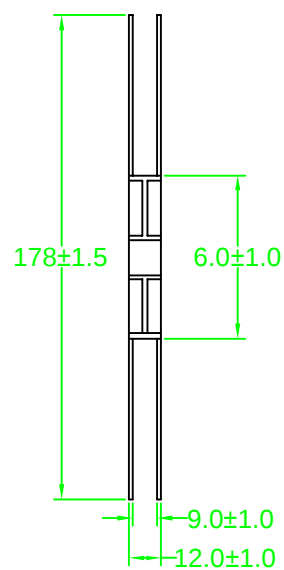
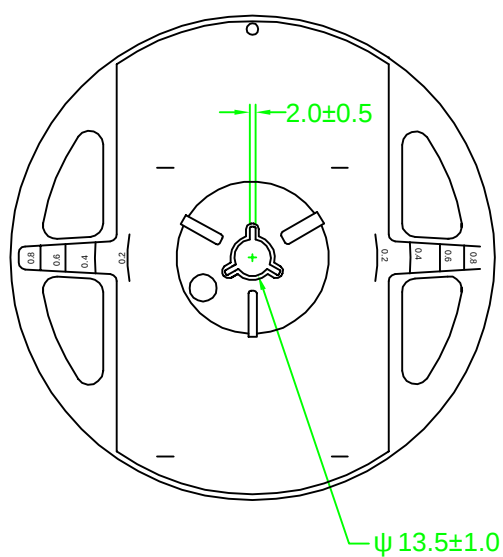
|                                                                                   |  |                                               |                                                                                   |
|-----------------------------------------------------------------------------------|--|-----------------------------------------------|-----------------------------------------------------------------------------------|
|  |  | 立碁電子工業股份有限公司<br>LIGITEK ELECTRONICS CO., LTD. |  |
| PART NO. : LG-170SEF-DT                                                           |  |                                               |                                                                                   |
| LOT NO. : GS1-680080                                                              |  |                                               |                                                                                   |
| Q'TY(PCS) : 4000 PCS                                                              |  |                                               |                                                                                   |
| BIN/HUE : R/22                                                                    |  |                                               |                                                                                   |
|                                                                                   |  | 1.8 - 2.0                                     |                                                                                   |

BIN : Luminous Intensity

HUE : Dominant Wavelength

1.8 - 2.0 : Forward Voltage

## Reel Dimensions





LIGITEK

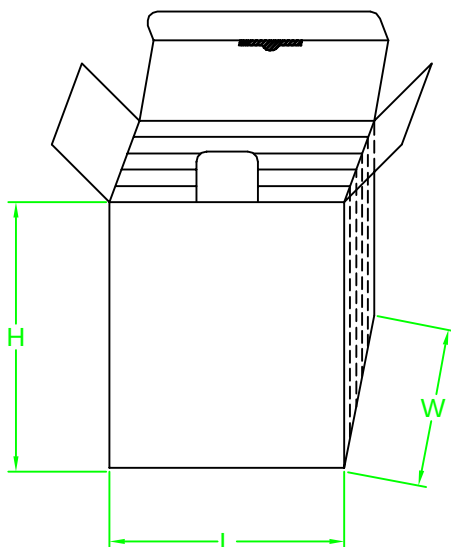
LIGITEK ELECTRONICS CO.,LTD.  
Property of Ligitek Only

PART NO. LG-170SEF-DT

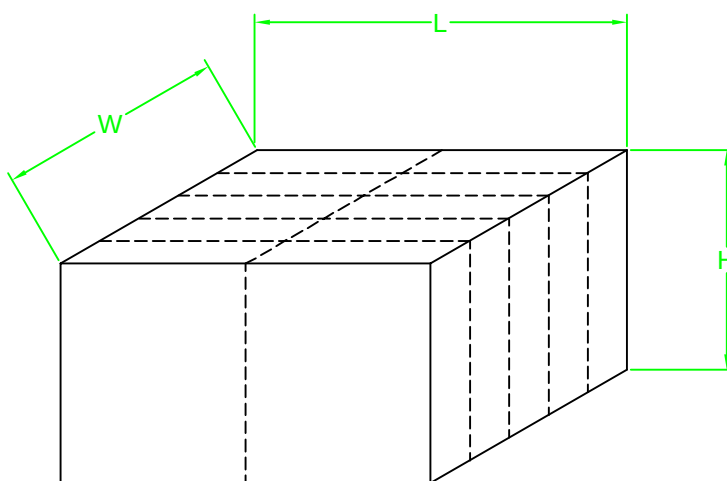
Page 7/10

## Box Explanation

1. 5 BAG / INNER BOX
2. INNER BOX SIZE : L X W X H 23cm X 8.5cm x 26cm

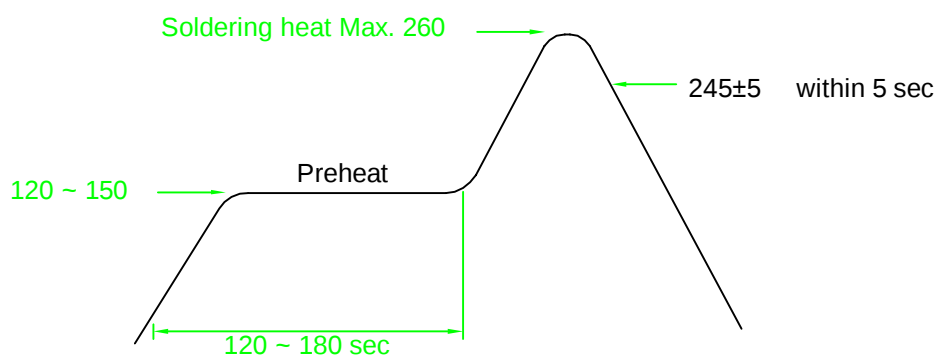
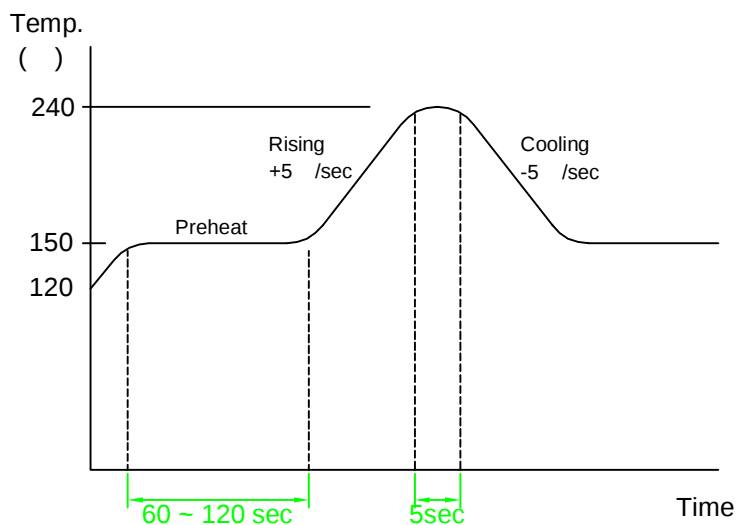
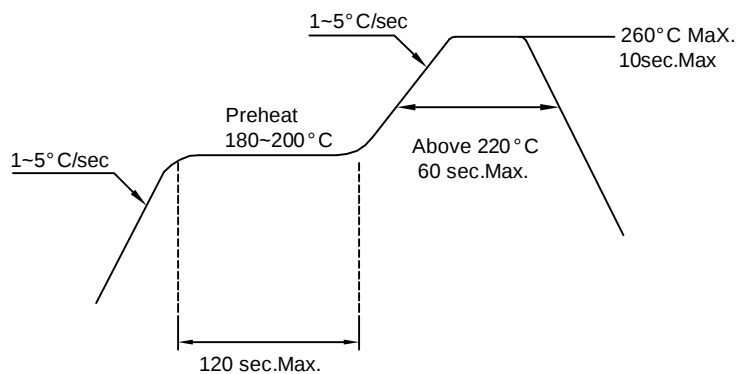


3. 10 INNER BOXES / CARTON
4. CARTON SIZE : L X W X H 49cm X 46cm x 29cm



**Recommended Soldering Conditions****1. Hand Solder**

Basic spec is 280 3 sec one time only.

**2. Wave Solder****3-1. LEAD Reflow Solder****3-2 PB-Free Reflow Solder**

Note: 1.Wave solder and reflow soldering should not be made more than one time.  
2.You can just only select one of the soldering conditions as above.

**Precautions For Use:****Storage time:**

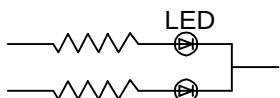
- 1.The operation of Temperatures and RH are : 5 ~35 ,RH60%.
- 2.Once the package is opened, the products should be used within a week.  
Otherwise, they should be kept in a damp proof box with descanting agent.  
Considering the tape life, we suggest our customers to use our products within a year(from production date).
- 3.If opened more than one week in an atmosphere 5 ~ 35 ,RH60%,  
they should be treated at 60 ±5 fo r 15hrs.

**Drive Method:**

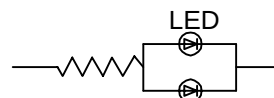
LED is a current operated device, and therefore, requirer some kind of current limiting incorporated into the driver circuit. This current limiting typically takes the form of a current limiting resistor placed in series with the LED.

Consider worst case voltage variations than could occur across the current limiting resistor. The forward current should not be allowed to change by more than 40 % of its desired value.

Circuit model A



Circuit model B



(A) Recommended circuit.

(B) The difference of brightness between LED could be found due to the VF-IF characteristics of LED.

**Cleaning:**

Use alcohol-based cleaning solvents such as isopropyl alcohol to clean the LED.

**ESD(Electrostatic Discharge):**

Static Electricity or power surge will damage the LED. Use of a conductive wrist band or anti-electrosatic glove is recommended when handing these LED. All devices, equipment and machinery must be properly grounded.



## Reliability Test:

| Classification     | Test Item                                   | Test Condition                                                                                              | Reference Standard                                                                                    |
|--------------------|---------------------------------------------|-------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|
| Endurance Test     | Operating Life Test                         | 1.Ta=Under Room Temperature As Per Data Sheet Maximum Rating.<br>2.If=20mA<br>3.t=1000 hrs (-24hrs, +72hrs) | MIL-STD-750D: 1026<br>MIL-STD-883D: 1005<br>JIS C 7021: B-1                                           |
|                    | High Temperature Storage Test               | 1.Ta=105 ±5<br>2.t=1000 hrs (-24hrs, +72hrs)                                                                | MIL-STD-883D:1008<br>JIS C 7021: B-10                                                                 |
|                    | Low Temperature Storage Test                | 1.Ta=-40 ±5<br>2.t=1000 hrs (-24hrs, +72hrs)                                                                | JIS C 7021: B-12                                                                                      |
|                    | High Temperature High Humidity Storage Test | 1.Ta=65 ±5<br>2.RH=90 %~95 %<br>3.t=1000hrs ±2hrs                                                           | MIL-STD-202F:103B<br>JIS C 7021: B-11                                                                 |
| Environmental Test | Thermal Shock Test                          | 1.Ta=105 ±5 & -40 ±5<br>(10min) (10min)<br>2.total 10 cycles                                                | MIL-STD-202F: 107D<br>MIL-STD-750D: 1051<br>MIL-STD-883D: 1011                                        |
|                    | Solderability Test                          | 1.T.Sol=235 ±5<br>2.Immersion time 2 ±0.5sec<br>3.Coverage 95% of the dipped surface                        | MIL-STD-202F: 208D<br>MIL-STD-750D: 2026<br>MIL-STD-883D: 2003<br>IEC 68 Part 2-20<br>JIS C 7021: A-2 |
|                    | Temperature Cycling                         | 1.105 ~ 25 ~ -55 ~ 25<br>30mins 5mins 30mins 5mins<br>2.10 Cycles                                           | MIL-STD-202F: 107D<br>MIL-STD-750D: 1051<br>MIL-STD-883D: 1010<br>JIS C 7021: A-4                     |
|                    | IR Reflow                                   | 1.T=260 °C Max. 10sec.Max.<br>2. 6 Min                                                                      | MIL-STD-750D:2031.2<br>J-STD-020                                                                      |



**Стандарт  
Электрон  
Связь**

Мы молодая и активно развивающаяся компания в области поставок электронных компонентов. Мы поставляем электронные компоненты отечественного и импортного производства напрямую от производителей и с крупнейших складов мира.

Благодаря сотрудничеству с мировыми поставщиками мы осуществляем комплексные и плановые поставки широчайшего спектра электронных компонентов.

Собственная эффективная логистика и склад в обеспечивает надежную поставку продукции в точно указанные сроки по всей России.

Мы осуществляем техническую поддержку нашим клиентам и предпродажную проверку качества продукции. На все поставляемые продукты мы предоставляем гарантию .

Осуществляем поставки продукции под контролем ВП МО РФ на предприятия военно-промышленного комплекса России , а также работаем в рамках 275 ФЗ с открытием отдельных счетов в уполномоченном банке. Система менеджмента качества компании соответствует требованиям ГОСТ ISO 9001.

Минимальные сроки поставки, гибкие цены, неограниченный ассортимент и индивидуальный подход к клиентам являются основой для выстраивания долгосрочного и эффективного сотрудничества с предприятиями радиоэлектронной промышленности, предприятиями ВПК и научно-исследовательскими институтами России.

С нами вы становитесь еще успешнее!

**Наши контакты:**

**Телефон:** +7 812 627 14 35

**Электронная почта:** [sales@st-electron.ru](mailto:sales@st-electron.ru)

**Адрес:** 198099, Санкт-Петербург,  
Промышленная ул, дом № 19, литера Н,  
помещение 100-Н Офис 331