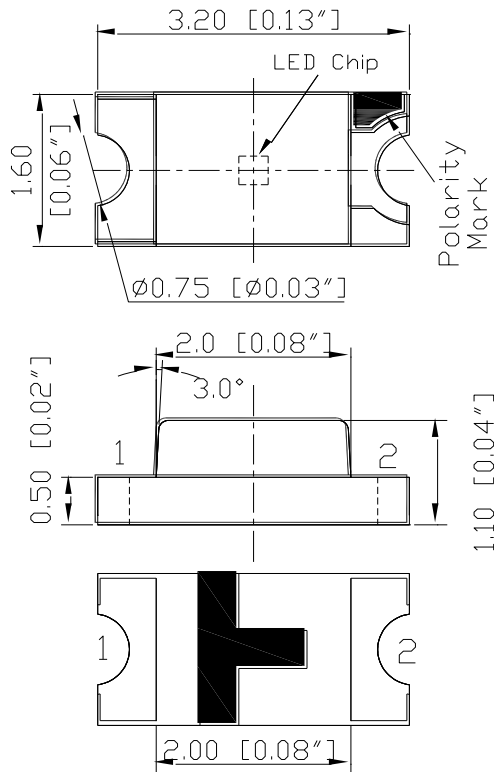


SURFACE MOUNT LED LAMPS

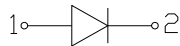
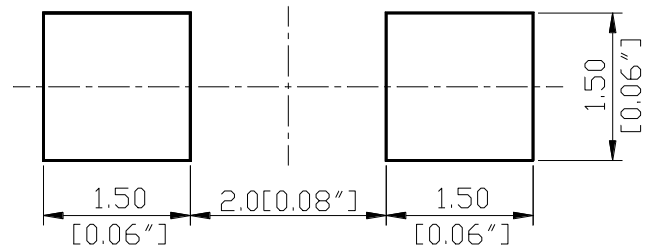
S150 Series SMD Chip LED Lamps


Part Number: N0A24S29

Package outlines



RECOMMEND PAD LAYOUT





ATTENTION
OBSERVE PRECAUTIONS
FOR HANDLING
ELECTROSTATIC
SENSITIVE DEVICES

| ITEM | MATERIALS |
|-----------------------|-------------------|
| Resin (mold) | Epoxy |
| Bonding Wire | Ø 25 µm Au |
| Lens color | Water transparent |
| Printed circuit board | BT (white) |
| Dice | AlGaInP/GaAs |
| Emitted color | Amber |

NOTES:

1. All dimensions are in millimeters (inches);
2. Tolerances are $\pm 0.1\text{mm}$ (0.004inch) unless otherwise noted.

| Rev : | Date | Drawn by : | Checked by : | Approved by : |
|-------|------------|------------|--------------|---------------|
| A | 2010/10/12 | 李梅英 | 許媚鳳 | 黃靜文 |

SURFACE MOUNT LED LAMPS

Part Number: N0A24S29

Absolute maximum ratings

(T_A=25°C)

| Parameter | Symbol | Value | Unit |
|--|------------------|----------|------|
| Forward current | I _f | 30 | mA |
| Reverse voltage | V _r | 5 | V |
| Power dissipation | P _d | 75 | mW |
| Operating temperature range | T _{op} | -40 ~+80 | °C |
| Storage temperature range | T _{stg} | -40 ~+85 | °C |
| Peak pulsing current (1/8 duty f=1kHz) | I _{fp} | 125 | mA |

Electro-optical characteristics

(T_A=25°C)

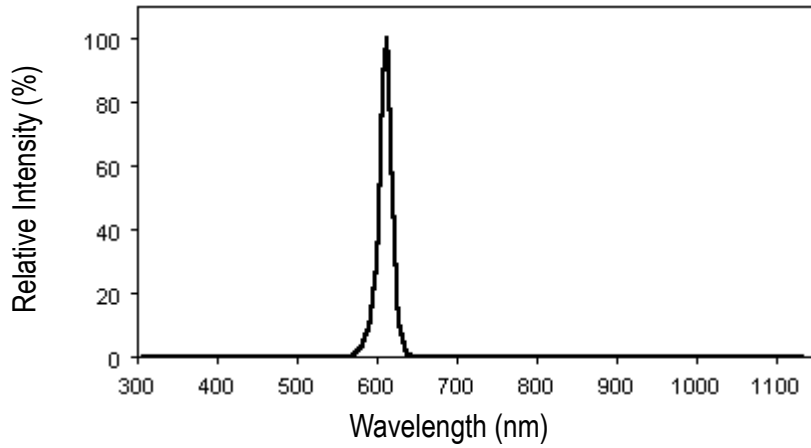
| Parameter | Test Condition | Symbol | Value | | | Unit |
|-------------------------------------|----------------------|-------------------|-------|-----|-----|------|
| | | | Min | Typ | Max | |
| Wavelength at peak emission | I _f =20mA | λ _{peak} | -- | 610 | -- | nm |
| Spectral half bandwidth | I _f =20mA | Δλ | -- | 17 | -- | nm |
| Dominant wavelength | I _f =20mA | λ _{dom} | 600 | -- | 610 | nm |
| Forward voltage | I _f =20mA | V _f | 1.7 | -- | 2.5 | V |
| Luminous intensity | I _f =20mA | I _v | 80 | 130 | -- | mcd |
| Viewing angle at 50% I _v | I _f =10mA | 2θ _{1/2} | -- | 140 | -- | Deg |
| Reverse current | V _r =5V | I _r | -- | -- | 10 | μA |

SURFACE MOUNT LED LAMPS

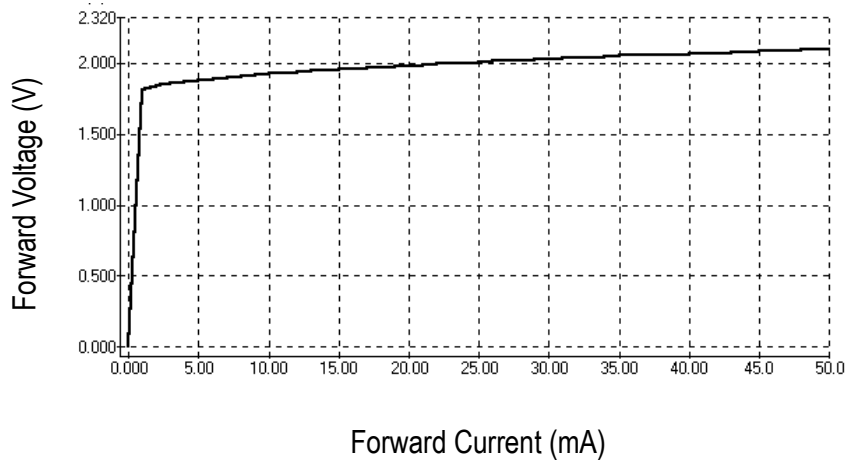
Part Number: N0A24S29

OPTICAL CHARACTERISTIC CURVES

Relative Intensity vs. Wavelength

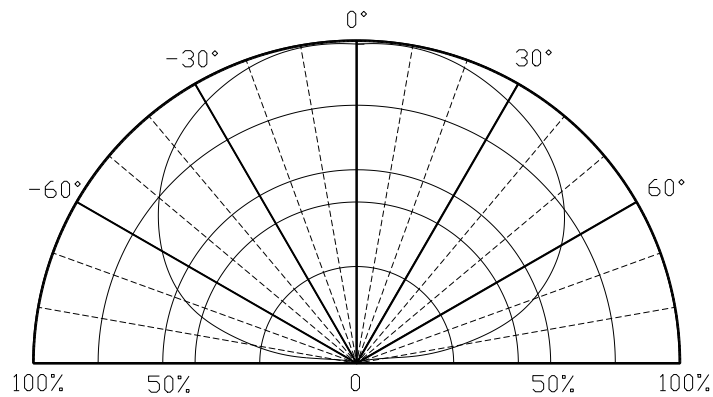


Forward Current vs. Forward Voltage



Forward Current (mA)

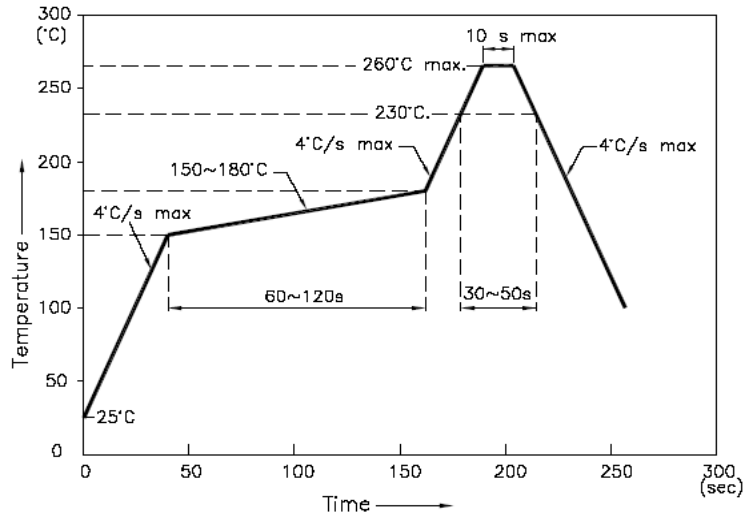
Directive Characteristics



SURFACE MOUNT LED LAMPS

Reflow Profile

■ Reflow Temp/Time



NOTES:

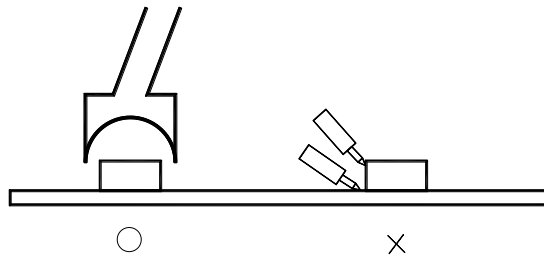
1. We recommend the reflow temperature $245^{\circ}\text{C} (\pm 5^{\circ}\text{C})$. the maximum soldering temperature should be limited to 260°C .
2. dont cause stress to the epoxy resin while it is exposed to high temperature.
3. Number of reflow process shall be 2 times or less.

■ Soldering iron

Basic spec is $\leq 5\text{sec}$ when 260°C . If temperature is higher, time should be shorter ($+10^{\circ}\text{C} \rightarrow -1\text{sec}$). Power dissipation of iron should be smaller than 20W, and temperatures should be controllable. Surface temperature of the device should be under 230°C .

■ Rework

1. Customer must finish rework within 5 sec under 260°C .
2. The head of iron can not touch copper foil
3. Twin-head type is preferred.

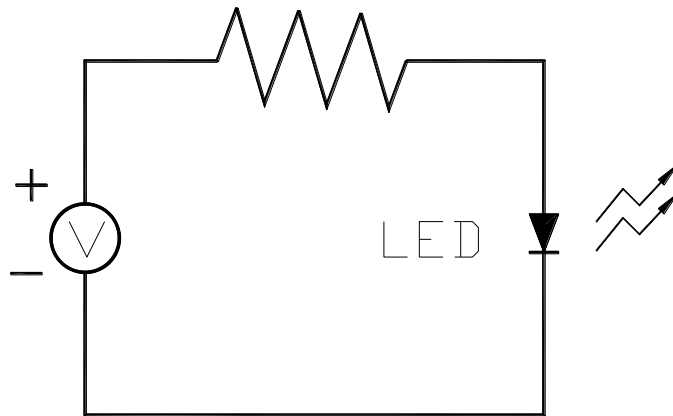


- Avoid rubbing or scraping the resin by any object, during high temperature, for example reflow, solder etc.

SURFACE MOUNT LED LAMPS

Test circuit and handling precautions

■ Test circuit



■ Handling precautions

1. Over-current-proof

Customer must apply resistors for protection; otherwise slight voltage shift will cause big current change (Burn out will happen).

2. Storage

2.1 It is recommended to store the products in the following conditions:

Humidity: 60% R.H. Max.

Temperature : 5°C~30°C(41°F~86°F)

2.2 Shelf life in sealed bag: 12 month at < 5°C~30°C and < 30% R.H. after the package is Opened, the products should be used within a week or they should be keeping to stored at ≤ 20 R.H. with zip-lock sealed.

3. Baking

It is recommended to baking before soldering when the pack is unsealed after 72hrs. The Conditions are as followings:

3.1 $60 \pm 3^\circ\text{C}$ x(12~24hrs) and < 5%RH, taped reel type

3.2 $100 \pm 3^\circ\text{C}$ x(45min~1hr), bulk type

3.3 $130 \pm 3^\circ\text{C}$ x(15~30min), bulk type

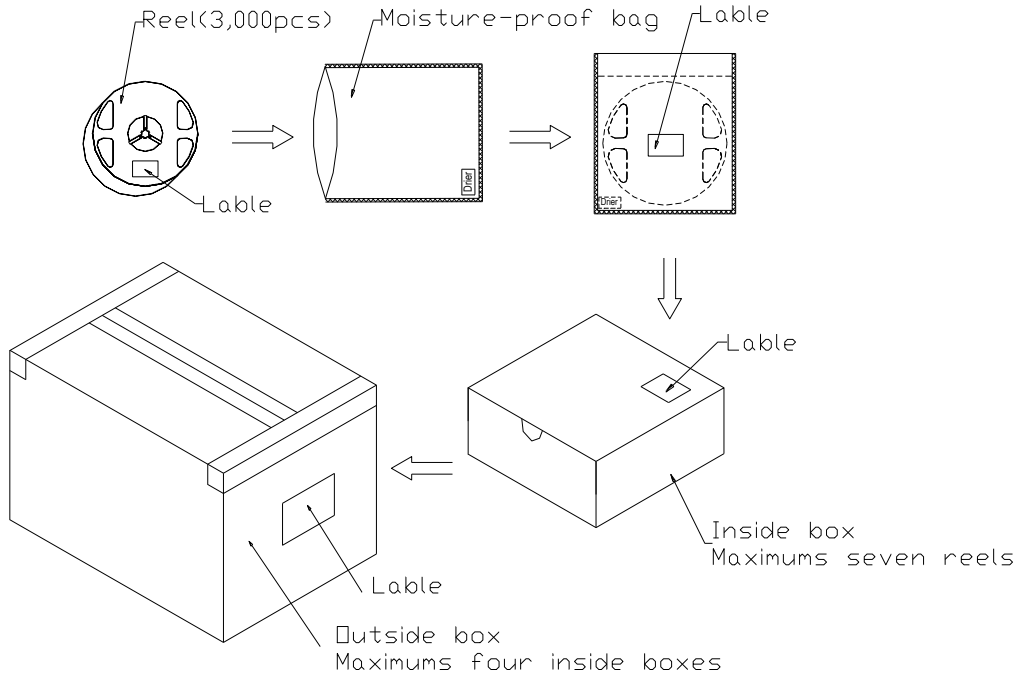
SURFACE MOUNT LED LAMPS

Test items and results of reliability

| Type | Test Item | Test Conditions | Note | Number of Damaged |
|------------------------|------------------------------|---|-----------|-------------------|
| Environmental Sequence | Temperature Cycle | -20°C 30min ↑ ↓ 80°C 30min | 100 cycle | 0/22 |
| | Thermal Shock | -20°C 15min ↑ ↓ 80°C 15min | 100 cycle | 0/22 |
| | High Humidity Heat Cycle | 30°C ↔ 65°C 90%RH 24hrs/1cycle | 10 cycle | 0/22 |
| | High Temperature Storage | T _a =80°C | 1000 hrs | 0/22 |
| | Humidity Heat Storage | T _a =60°C RH=90% | 1000 hrs | 0/22 |
| | Low Temperature Storage | T _a =-30°C | 1000 hrs | 0/22 |
| Operation Sequence | Life Test | T _a =25°C I _F =20mA | 1000 hrs | 0/22 |
| | High Humidity Heat Life Test | 60°C RH=90% I _F =10mA | 500 hrs | 0/22 |
| | Low Temperature Life Test | T _a =-20°C I _F =20mA | 1000 hrs | 0/22 |

S150 Series SMD Chip LED Lamps Packaging Specifications

- Packaging specifications



NOTES:

Reeled products (numbers of products are 3,000 pcs) packed in a seal off moisture-proof bag along with a desiccant one by one, Seven moisture-proof bag of maximums (total maximum number of products are 21,000 pcs) packed in an inside box (size: about 238mm x about 194mm x about 102mm) and four inside boxes of maximums are put in the outside box (size: about 410mm x about 254mm x about 229mm) Together with buffer material, and it is packed. (Part No., Lot No., quantity should appear on the label on the moisture-proof bag, part No. And quantity should appear on the label on the cardboard box.) The number of the loading steps of outside box (cardboard box) has it to three steps.

SURFACE MOUNT LED LAMPS

Part Number: N0A24S29

Forward Voltage Rank Combination (IF=20mA)

| Rank | Min. | Max. | Unit |
|------|------|------|------|
| □ | 1.7 | 2.5 | V |

Luminous Intensity Rank Combination (IF=20mA)

| Rank | Min. | Max. | Unit |
|------|------|------|------|
| I | 80 | 100 | mcd |
| J | 100 | 125 | |
| K | 125 | 160 | |
| L | 160 | 200 | |
| M | 200 | -- | |

Dominant wavelength Rank Combination (IF=20mA)

| Rank | Min. | Max. | Unit |
|------|------|------|------|
| p | 600 | 605 | nm |
| q | 605 | 610 | |

Group Name on Label (Example DATA: □Kq 20)

| DATA: □Kq 20 | Vf(V) | Iv (mcd) | λd (nm) | Test Condition |
|--------------|---------|----------|---------|----------------|
| □→K→q→20 | 1.7~2.5 | 125~160 | 605~610 | IF=20mA |

* NOTE:

1. The tolerance of luminous intensity (Iv) is $\pm 15\%$.
2. The tolerance of dominant wavelength is $\pm 1\text{nm}$.
3. This specification is preliminary.