

0805 Package Chip LED

Features

- Package in 8mm tape on 7" diameter reel
- Compatible with automatic placement equipment
- Compatible with infrared and vapor phase reflow solder process
- Mono-color type
- RoHS compliance



QSLP2QF2



Applications

- Automotive: Backlighting in dashboards and switch
- Telecommunication: indicator and backlighting in telephone and fax
- Flat backlight for LCD, switches and symbols
- General Use

Descriptions

- This SMD Taping is much smaller than leaded components, thus enable smaller board higher packing density, reduced storage space and finally smaller equipment to be obtained.
- Light weight makes them ideal for miniature applications

Device Selection Guide

| Part No. | Chip | | Lens Color |
|---------------|----------|---------------|-------------|
| | Material | Emitted Color | |
| TSP2-QF2012A3 | AlGaInP | Hyper Red | Water Clear |

Absolute Maximum Ratings (Ta=25°C)

| Parameter | Symbol | Value | Unit |
|---|----------------------------|---------------------|------|
| Reverse Voltage | V_R | 5 | V |
| Forward Current | I_F | 25 | mA |
| Peak Forward Current (Duty 1/10 @1KHz) | I_{F(Peak)} | 160 | mA |
| Power Dissipation | P_d | 60 | mW |
| Electrostatic Discharge | ESD | 2000 | V |
| Soldering Temperature | T_{so} | 260 (for 5 seconds) | °C |
| Operating Temperature | T_{opr} | -40 ~ +85 | °C |
| Storage Temperature | T_{stg} | -40 ~ +90 | °C |

Electro-Optical Characteristics (Ta=25°C)

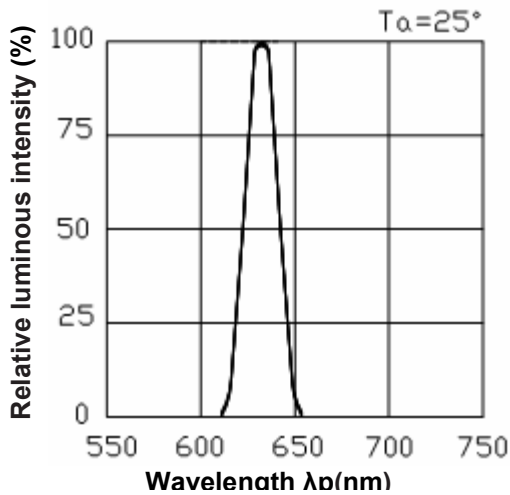
| Parameter | Symbol | Min. | Typ. | Max. | Unit | Condition |
|------------------------------|-------------------------|------|------|------|------|----------------------|
| Luminous Intensity | I_v | 17 | 42 | ---- | mcd | I _F =20mA |
| Viewing Angle | 2θ_{1/2} | ---- | 140 | ---- | deg | |
| Peak Wavelength | λ_p | ---- | 632 | ---- | nm | |
| Dominant wavelength | λ_d | ---- | 624 | ---- | nm | |
| Spectrum Radiation Bandwidth | Δλ | ---- | 20 | ---- | nm | |
| Forward Voltage | V_F | ---- | 2.0 | 2.4 | V | |
| Reverse Current | I_R | ---- | ---- | 10 | μA | V _R =5V |

Notes:

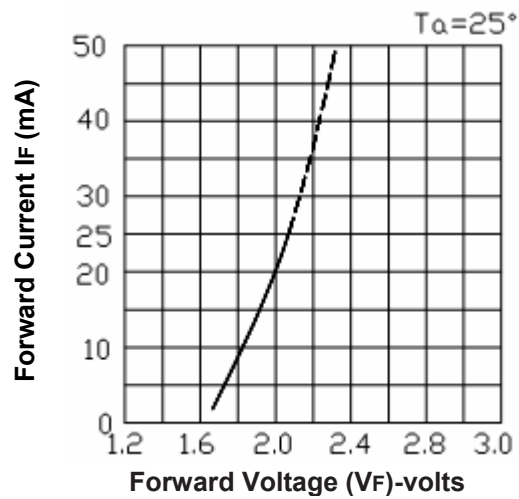
1. Tolerances Unless Dimension ± 0.1mm
2. Angle ± 0.5°

Typical Electro-Optical Characteristics Curves

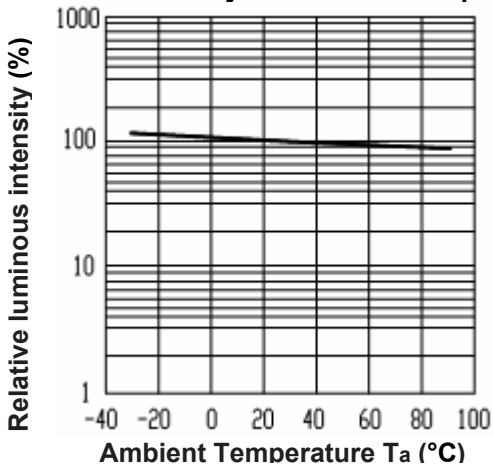
Spectrum Distribution



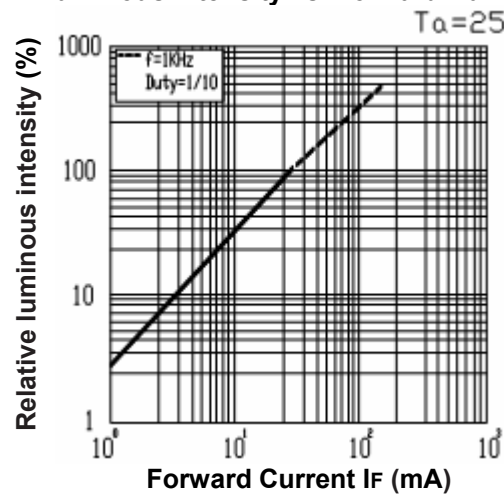
Forward Current vs. Forward Voltage



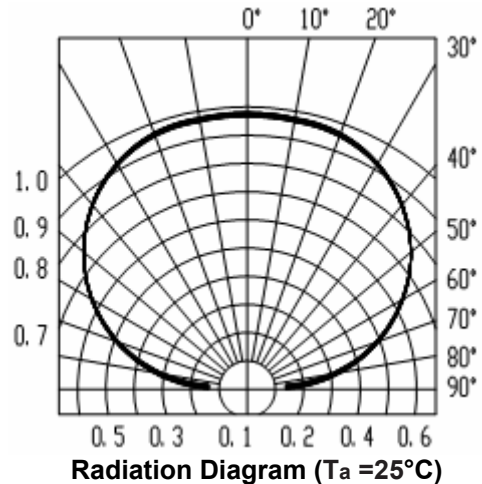
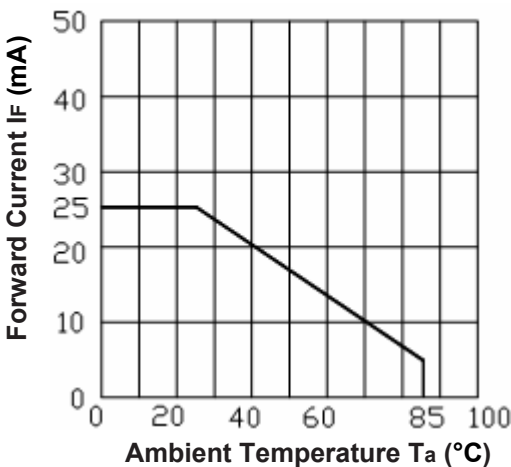
Luminous Intensity vs. Ambient Temperature



Luminous Intensity vs. Forward Current



Forward Current Derating Curve



Reliability Test Items and Conditions

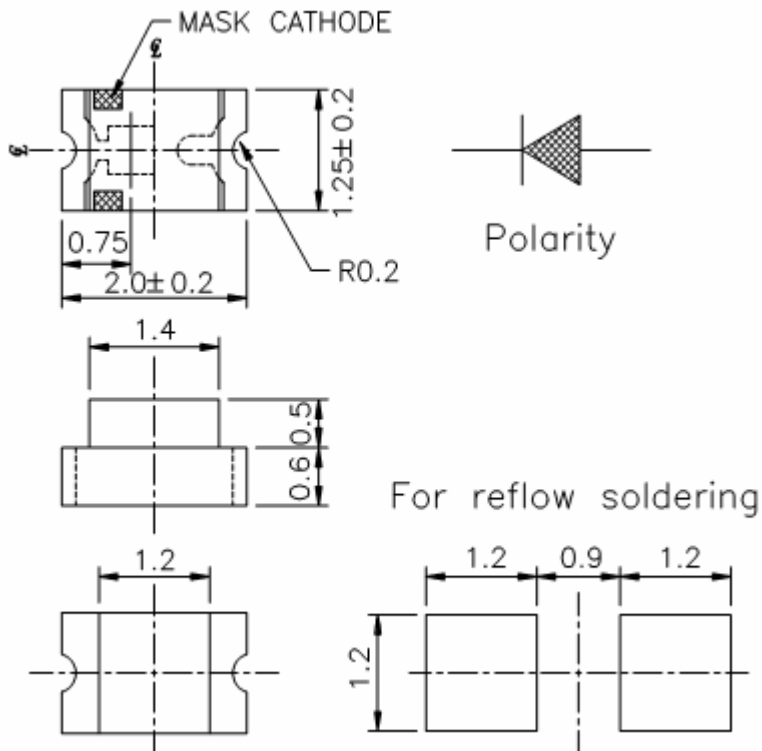
The reliability of products shall be satisfied with items listed below.

Confidence level: 90%,

LTPD: 10%

| No. | Items | Test Condition | Test Hours / Cycles | Sample Size | Ac/Re |
|-----|----------------------------------|---|---------------------|-------------|-------|
| 1 | Solder Heat | Temp.: 260°C ±5°C. | 5 Sec | 76 PCS. | 0/1 |
| 2 | Temperature Cycle | H: +85°C 30min ↓ 5 min L: -55°C 15min | 50 Cycles | 76 PCS. | 0/1 |
| 3 | Thermal Shock | H: +100°C 5min ↓ 10 sec L: -10°C 5min | 50 Cycles | 76 PCS. | 0/1 |
| 4 | High Temperature Storage | Temp: 100°C | 1000 Hrs. | 76 PCS. | 0/1 |
| 5 | Low Temperature Storage | Temp: -55°C | 1000 Hrs. | 76 PCS. | 0/1 |
| 6 | DC Operating Life | I _F = 20 mA | 1000 Hrs. | 76 PCS. | 0/1 |
| 7 | High Temperature / High Humidity | 85°C / 85%RH | 1000 Hrs. | 76 PCS. | 0/1 |

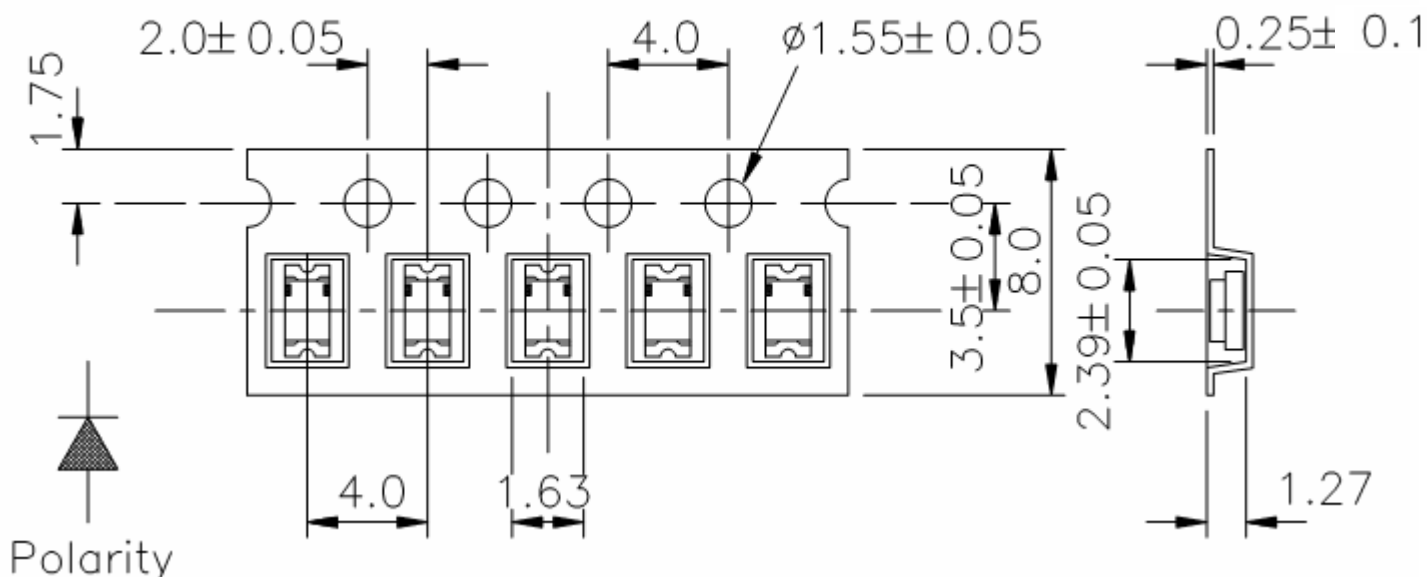
Package Dimensions (In mm)



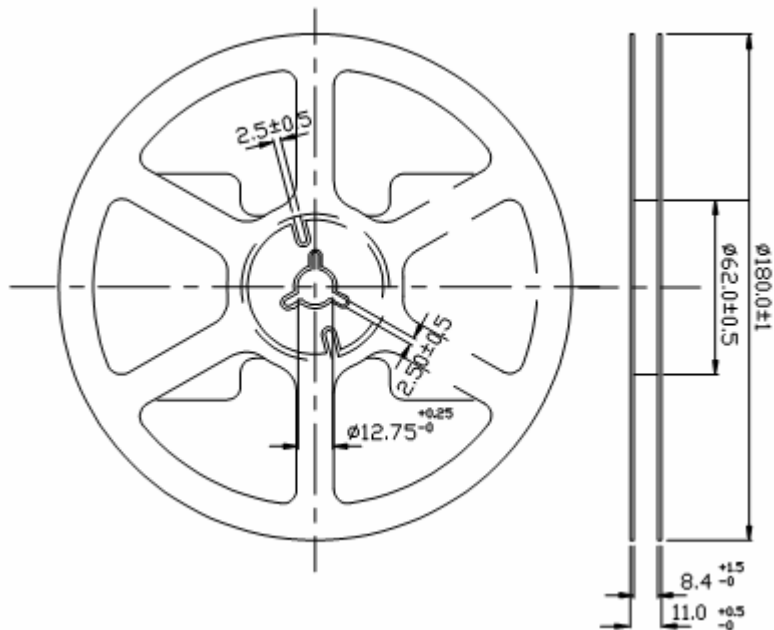
Note: The tolerances unless mentioned is ± 0.1 mm, Unit = mm

Carrier Tape Dimensions Loaded quantity 3000pcs per reel (In mm)

Progressive direction

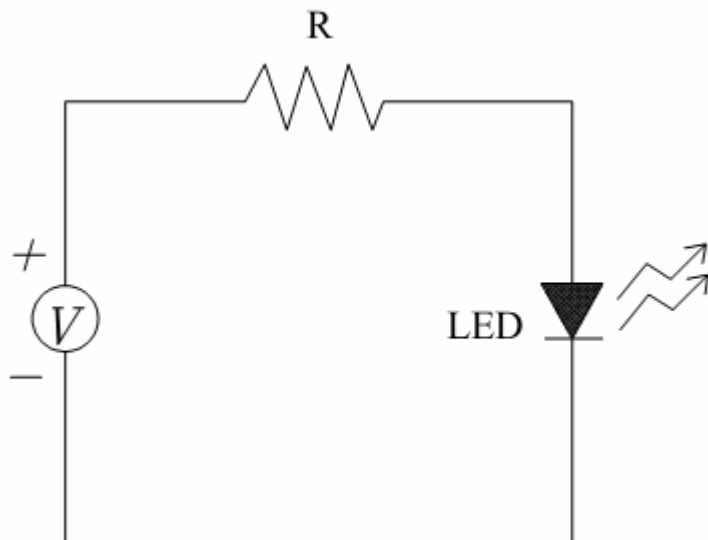


Reel Dimensions



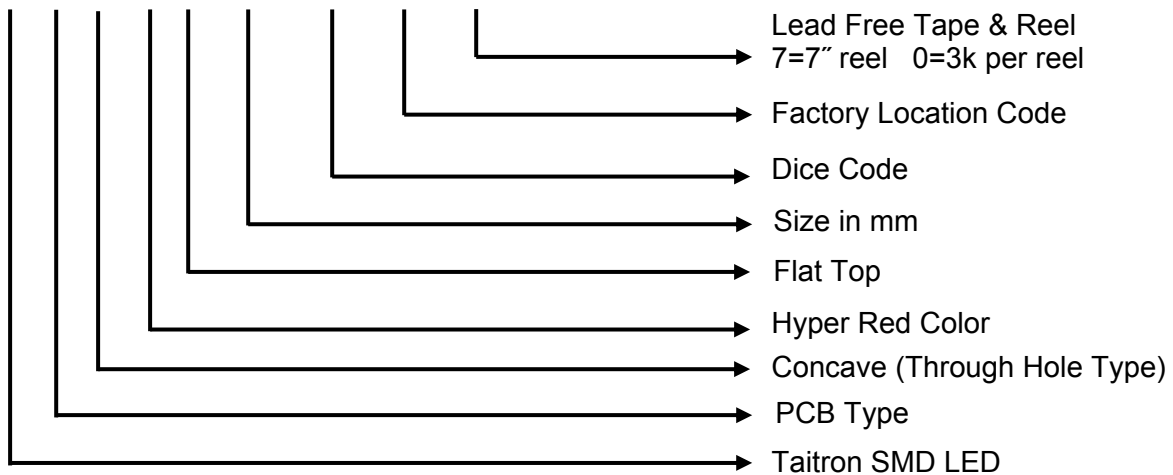
Note: The tolerances unless mentioned is $\pm 0.1\text{mm}$, Unit = mm

Test Circuit



Ordering Information

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