

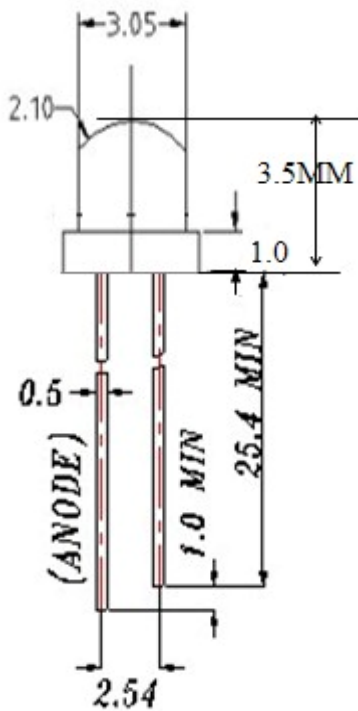
Green 3mm Water Clear short

## DATA SHEET

### Features

- **Pb free product—RoHS compliant**
- **Low power consumption,High efficiency**
- **Wide viewing angle, High intensity**
- **I.C. compatible/low current requirement**
- **Versatile mounting on p.c. board or pannel**
- **General purpose leads**

### Package Dimension:



### Notes:

- 1.All dimensions are in millimeters .
- 2.Tolerance is  $\pm 0.20\text{mm}$  unless otherwise noted.
- 3.Protruded resin under flange is 1.0mm max
- 4.Lead spacing is measured where the leads emerge from the package.
5. Caution in ESD:

Static Electricity and surge damages the LED. It is recommend to use a wrist band or anti-electrostatic glove when handling the LED. All devices, equipment and machinery must be properly grounded.

Absolute maximum Ratings at Ta=25°C

Parameter	Symbol	Rating	Unit
Forward Current	I <sub>F</sub>	30	mA
Operating	T <sub>opr</sub>	-40 to +85	°C
Storage Temperature	T <sub>stg</sub>	-40 to +100	°C
Electrostatic Discharge	ESD	2000	V
Soldering	T <sub>sol</sub>	260 ± 5	°C
Power Dissipation	P <sub>d</sub>	120	mW
Peak Forward Current	I <sub>F</sub> (Peak)	100	mA
Reverse Voltage	V <sub>R</sub>	7	V

Note: \*1:I<sub>F</sub>P Conditions --Pulse Width ≤ 1msec and Duty ≤ 1/10.

\*2:Soldering time ≤ 5 seconds.

### Electro-Optical Characteristics (Ta=25°C)

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit
Forward Voltage	V <sub>F</sub>	I <sub>F</sub> = 20 mA	/	3,1	3,2	V
Reverse Current	I <sub>R</sub>	V <sub>R</sub> = 7 V	/	/	2	μA
Luminous Intensity	I <sub>v</sub>	I <sub>F</sub> = 20 mA	1500	1800	/	mcd
Viewing Angle	2θ <sub>1/2</sub>	I <sub>F</sub> = 20 mA	/	100	/	deg
Peak Wavelength	λ <sub>p</sub>	I <sub>F</sub> = 20 mA	/	522	/	nm
Dominant Wavelength	λ <sub>d</sub>	I <sub>F</sub> = 20 mA	/	525	/	nm
Spectrum Radiation Bandwidth	Δλ	I <sub>F</sub> = 20 mA	/	26	/	nm

Reliability test items and conditions:

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NO	Item	Test Conditions	Test Hours/Cycl	Sample size	Ac/Re
1	Solder Heat	TEMP : 260°C ± 5 °C	SEC	76 PCS	0/1
2	Temperature Cycle	H : +100°C 15min ∫ 5 min L : -40°C 15min	300 CYCLES	76 PCS	0/1
3	Thermal Shock	H : +100°C 5min ∫ 10 sec L : -10°C 5min	300 CYCLES	76 PCS	0/1
4	High Temperature Storage	TEMP : 100°C	1000 HRS	76 PCS	0/1
5	Low Temperature Storage	TEMP : -40°C	1000 HRS	76 PCS	0/1
6	DC Operating Life	TEMP : 25°C	1000 HRS	76 PCS	0/1
7	High Temperature/ High	85°C / 85% RH	1000 HRS	76 PCS	0/1

\*Iv: BRIGHTNESS ATTENUATE DIFFERENCE(1000hrs) < 3%

\*VF: FORWARD VOLTAGE DIFFERENCE < 3%

**Precautions for use:**

**1. Storage**

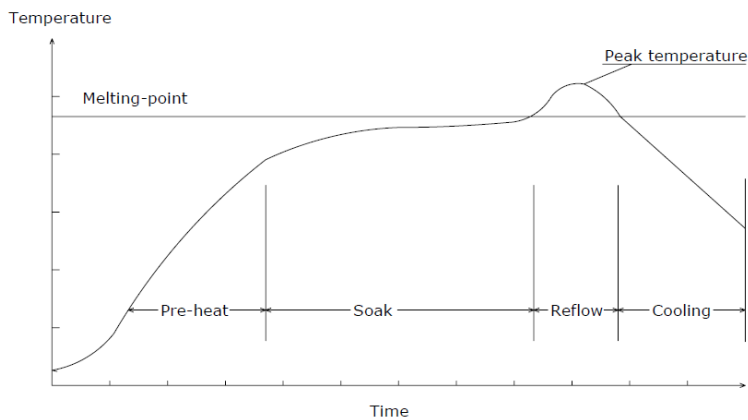
Store the LED between 10 and 35C° ambient temperature.

**2. Soldering**

(1) Manual soldering with a soldering Iron

Use a soldering iron of less than 25 watts is recommended . The iron temperature must be kept below 315°C. And soldering time no more than 2 seconds. The epoxy resin of an LED should not contact the tip of the soldering iron. No mechanical stress should be exerted on the resin portion of an LED during soldering. Handling of an LED should be done only when the package has been cooled down to below 40°C

(1) Reflow soldering Temperature profile



Solder=Sn63-Pb37	Solder= Pb-Free
Average ramp-up rate:4°C/sec.max	Average ramp-up rate:4°C/sec.max
Peak preheat temperature:100-150°C	Peak preheat temperature:100-150°C
preheat time:100seconds.max	preheat time:100seconds.max
ramp-down rate:6°C/sec.max	ramp-down rate:6°C/sec.max
Peak temperature:230°C	Peak temperature:250°C
Time within 5°C of actual peak temperature=10 sec. max	Time within 5°C of actual peak temperature=10 sec. max
Duration above 183°C is 80 sec. max	Duration above 217°C is 80 sec. max

The LED should not be modified after soldering. If modification cannot be avoided, the modification must be pre-qualified to avoid damage to the LEDs. Reflow soldering should not be done more than one time No stress should be exerted on the package during soldering.

**3. Static Electricity**

Static Electricity and surge voltage damage the LEDs. So it is recommended that an ESD wrist band, ESD shoe strap or an anti-electrostatic glove be used when handling the LEDs. All devices, equipment and machinery must be properly grounded

**4. Others**

Reverse voltage should not exceed the absolute maximum rating on the data sheet.

The colour of the LEDs is changed slightly an operating current and thermal. This device should not be used in any type of fluid such as water, oil, organic solvent and etc When washing is required, IPA (Isopropyl Alcohol) should be used. The influence of ultrasonic cleaning on the leds depends on factors such as ultrasonic power and the way. High-brightness LED light may injure human eyes. Avoid looking directly into lighted LED. The appearance and specifications of the product may be modified for improvement without notice.