

ATTENTION
 OBSERVE PRECAUTIONS
 FOR HANDLING
 ELECTROSTATIC
 DISCHARGE
 SENSITIVE
 DEVICES

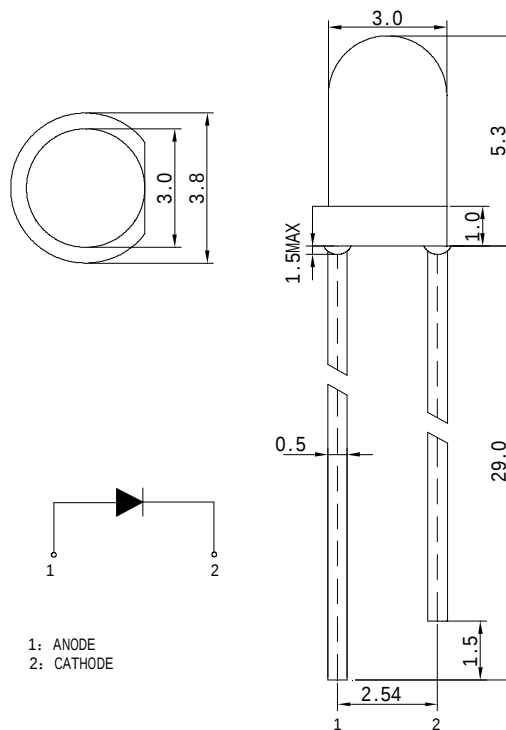
Features

- $\phi 3$ LAMP LED
- LOW POWER CONSUMPTION.
- CABINED VIEWING ANGLE.
- IDEAL FOR BACKLIGHT AND INDICATOR.
- PACKAGE: 1000PCS / BAG.

HL-304U38FC-R



Package Dimensions



Description

This devices are made with TS AlGaInP.

Tolerance Grade	Dimension Tolerance (UNIT:mm)			
	0.5~3	3~6	6~30	30~120
	± 0.1	± 0.2	± 0.3	± 0.5
Chip		Lens Color		
Material	Emitting Color	Water Clear		
AlGaInP	Red			

■ Absolute Maximum Rating

Item	Symbol	Value	Unit
Forward Current	I_F	20	mA
Peak Forward Current*	I_{FP}	100	mA
Reverse Voltage	V_R	5	V
Power Dissipation	P_D	80	mW
Electrostatic discharge	E_{SD}	1000	V
Operation Temperature	T_{opr}	-30~+80	°C
Storage Temperature	T_{stg}	-30~+80	°C
Lead Soldering Temperature*	T_{sol}	Max. 260°C for 5sec Max.	

* I_{FP} Conditions: Pulse Width $\leq 10\text{msec}$

* T_{sol} Conditions: 3mm from the base of the epoxy bulb

■ Typical Optical/ Electrical Characteristics $T_a=25^\circ\text{C}$

Item	Symbol	Condition	Rank	Min.	Typ.	Max.	Unit
Luminous Intensity	I_v	$I_F=20\text{mA}$	X	3770		4900	mcd
			Y	4900		6370	mcd
			Z	6370		8280	mcd
			Z1	8280		10750	mcd
Forward Voltage	V_F			1.8	2.2	2.6	V
Viewing Angle	$2\theta\ 1/2$			--	25	--	deg
Prpcp Wavelength	λ_D			620	--	630	nm
Recommend Forward Current	$I_{F(\text{rec})}$	--		--	--	20	mA
Reverse Current	I_R	$V_R=5\text{V}$		--	--	20	μA

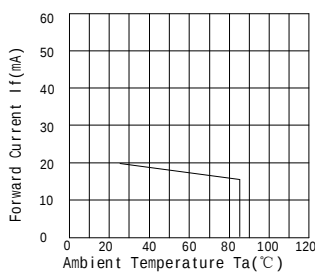
Notes:

Tolerance : $V_F \pm 0.1\text{V}$, $\lambda_d \pm 2\text{ nm}$, $I_V(\phi V) \pm 15\%$, $2\theta\ 1/2 \pm 15\%$

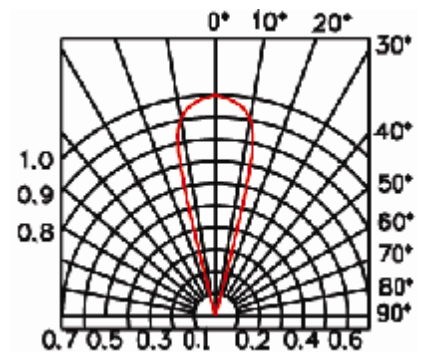
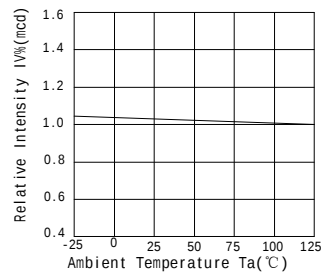
Reliability Performance Test Items And Result

Test Classification	Test Item	Test Conditions	Test Duration	Sample Size	AC/RE
Life Test	Room Temperature DC Operating Life Test	$T_a=25^{\circ}\text{C}\pm 5^{\circ}\text{C}$, $I_F=20\text{mA}$	1000 hrs	22 pcs	0/1
Environment Test	Thermal Shock Test	$100^{\circ}\text{C}\pm 5^{\circ}\text{C}$ 5min $\uparrow \downarrow$ $-40^{\circ}\text{C}\pm 5^{\circ}\text{C}$ 5min.	100 cycles	22 pcs	0/1
	Temperature Cycle Test	$100^{\circ}\text{C}\pm 5^{\circ}\text{C}$ 30min $\uparrow \downarrow$ 5min $-40^{\circ}\text{C}\pm 5^{\circ}\text{C}$ 30min.	100 cycles	22 pcs	0/1
	High Temperature & High Humidity Test	$85^{\circ}\text{C}\pm 5^{\circ}\text{C}/85\% \text{ RH}$ $I_F=5\text{mA}$	1000 hrs	22 pcs	0/1
	High Temperature Storage	$T_a=100^{\circ}\text{C}\pm 5^{\circ}\text{C}$	1000 hrs	22 pcs	0/1
	Low Temperature Storage	$T_a=-40^{\circ}\text{C}\pm 5^{\circ}\text{C}$	1000 hrs	22 pcs	0/1
Mechanical Test	Resistance to Soldering Heat	Temp= 260°C max T=5sec max	1times	22 pcs	0/1
	Lead Integrity	Load $2.5\text{N}(0.25\text{kgf})$ $0^{\circ} \sim 90^{\circ} \sim 0^{\circ}$	3times	22 pcs	0/1

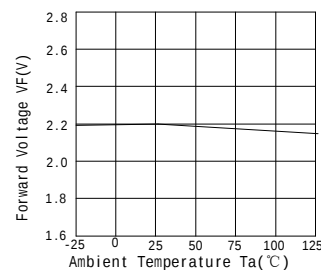
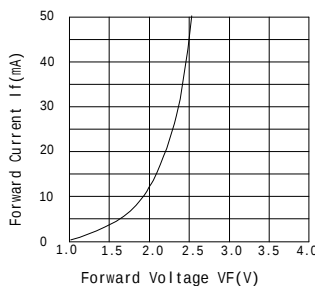
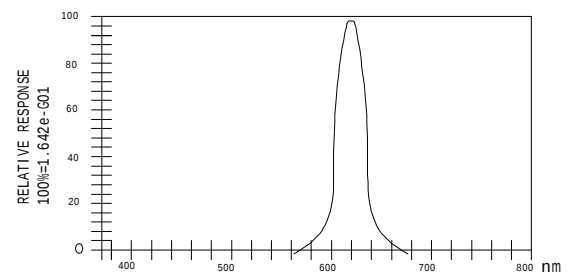
Forward Current vs. Ambient Temperature



Relative Intensity vs. Ambient Temperature



Forward Current vs. Forward Voltage


 Luminous Spectrum($T_a=25^{\circ}\text{C}$) SPECTRAL RADIANCE




Soldering:

1. Manual Of Soldering

The temperature of the iron tip should not be higher than 300°C and Soldering within 3 seconds per solder-land is to be observed.

2. DIP soldering (Wave Soldering):

Preheating: 120°C~150°C, within 120~180 sec.

Operation heating: 245°C ± 5°C within 5 sec. 260°C (Max)

Gradual Cooling (Avoid quenching).

