

**ATTENTION**  
OBSERVE PRECAUTIONS  
FOR HANDLING  
ELECTROSTATIC  
DISCHARGE  
SENSITIVE  
DEVICES

HL-503S42FC-1.7



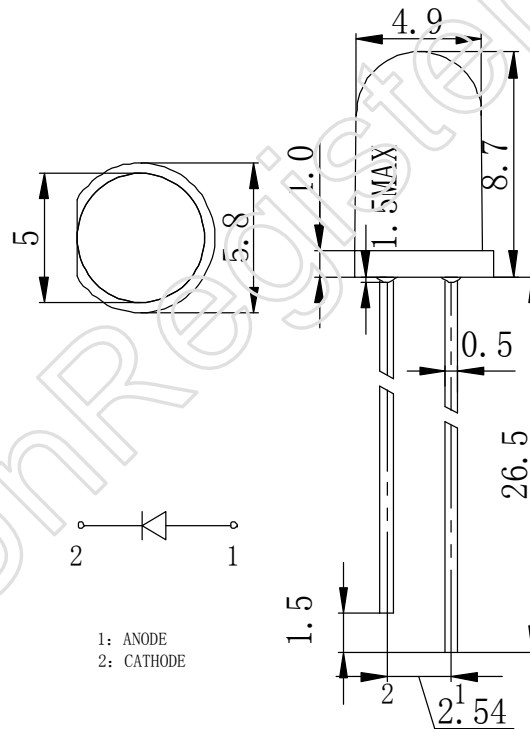
**Features**

- $\phi 5$  LAMP LED
- LOW POWER CONSUMPTION.
- WIND VIEWING ANGLE.
- IDEAL FOR BACKLIGHT AND INDICATOR.
- PACKAGE: 1000PCS / BAG.

**Package Dimensions**

**Description**

This devices are made with TS GaAs



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		
GaAs	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  $\leq 10$ 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	$I_v$	$I_F=20\text{mA}$	P	460		600	mcd
			Q	600		780	mcd
			R	780		1015	mcd
Forward Voltage	$V_F$			1.8	2.2	2.6	V
Viewing Angle	$2\theta\ 1/2$			--	60	--	deg
Dominant Wavelength	$\lambda_D$			620	--	630	nm
Recommend Forward Current	$I_F(\text{rec})$	--		--	--	20	mA
Reverse Current	$I_R$	$V_R=5\text{V}$		--	--	20	$\mu\text{A}$

Notes:

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

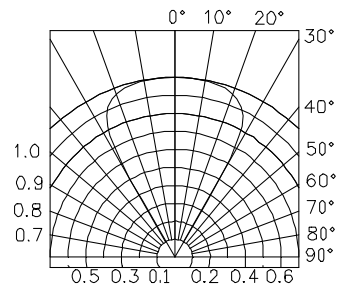
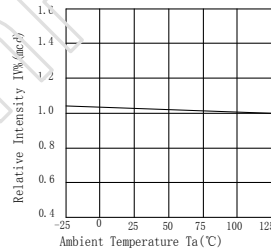
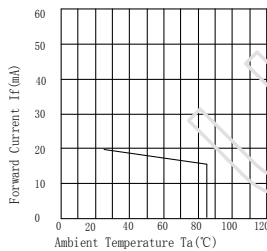


■ Reliability Performance

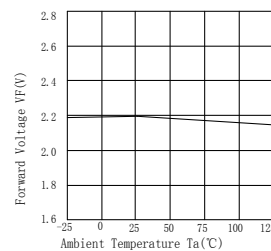
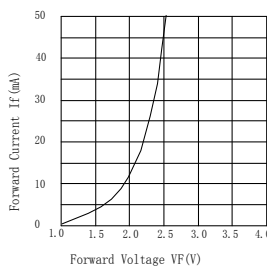
Test Items And Result

Test Classification	Test Item	Test Conditions	Test Duration	Sample Size	AC/RE
Life Test	Room Temperature DC Operating Life Test	Ta=25°C±5°C, If=20mA	1000 hrs	22 pcs	0/1
Environment Test	Thermal Shock Test	100°C±5°C 5min ↑ ↓ -40°C±5°C 5min.	100 cycles	22 pcs	0/1
	Temperature Cycle Test	100°C±5°C 30min ↑ ↓5min -40°C±5°C 30min.	100 cycles	22 pcs	0/1
	High Temperature & High Humidity Test	85°C ±5°C/85% RH If=5mA	1000 hrs	22 pcs	0/1
	High Temperature Storage	Ta=100°C ±5°C	1000 hrs	22 pcs	0/1
	Low Temperature Storage	Ta=-40°C ±5°C	1000 hrs	22 pcs	0/1
Mechanical Test	Resistance to Soldering Heat	Temp=260°C max T=5sec max	1 times	22 pcs	0/1
	Lead Integrity	Load 2.5N(0.25kgf) 0° ~ 90° ~ 0°	3 times	22 pcs	0/1

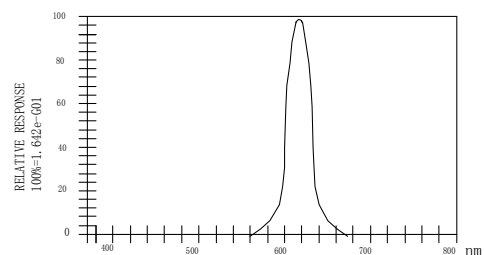
Forward Current vs. Ambient Temperature      Relative Intensity vs. Ambient Temperature



Forward Current vs. Forward Voltage



Luminous Spectrum (Ta=25°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).

