

specification for approval

(Customer):

(customer part no):

(customer part no):

(Product name): LED 5mm red diffused

(Product Model): IE-5R4UD-D12

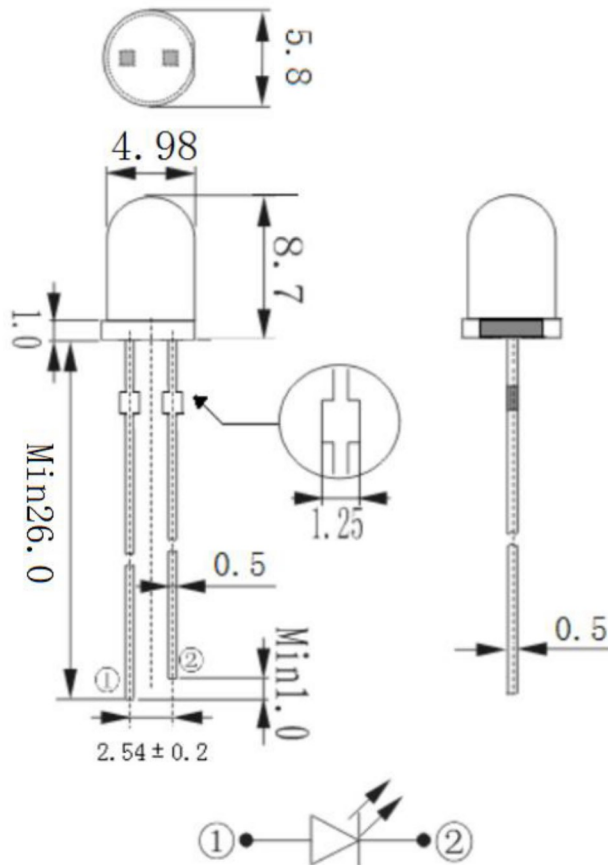


ATTENTION
 OBSERVE PRECAUTIONS
 FOR HANDLING
 ELECTROSTATIC
 DISCHARGE
 SENSITIVE
 DEVICES

Features

- $\phi 5$ LAMP LED
- Long life-solid state reliability
- Low power consumption
- IDEAL FOR BACKLIGHT AND INDICATOR.

Package Dimensions



Tolerance Grade	Dimension Tolerance (UNIT:mm)			
	0.5~3	3~6	6~30	30~120
	± 0.1	± 0.2	± 0.3	± 0.5
CHIP Emitting Color	Red	Lens Color	Color Diffused	

■ Absolute Maximum Rating

Item	Symbol	Value	Unit
Forward Current	IF	30	mA
Peak Forward Current*	IFP	100	mA
Reverse Voltage	VR	6	V
Power Dissipation	PD	60	mW
Electrostatic discharge (HBM)	ESD	1000	V
Operation Temperature	Topr	-25~+85	°C
Storage Temperature	Tstg	-40~+85	°C
Lead Soldering Temperature*	Tsol	Max. 265°C for 3sec Max.	--

*IFP Conditions: F=1KHZ, Duty cycle 1/10

*Tsol Conditions: 1.5mm from the base of the epoxy bulb

■ Typical Optical/ Electrical Characteristics Ta=25°C

Item	Symbol	Condition	Min.	Typ.	Max.	Unit
Luminous Intensity	Iv	IF=20mA	3000	4300	6300	mcd
Forward Voltage	VF		1.6	2.0	2.4	V
Viewing Angle	2θ 1/2		--	30	--	deg
Dominant Wavelength	λD		618	--	630	nm
Reverse Current	IR	Vr=5V	--	--	10	uA

Notes

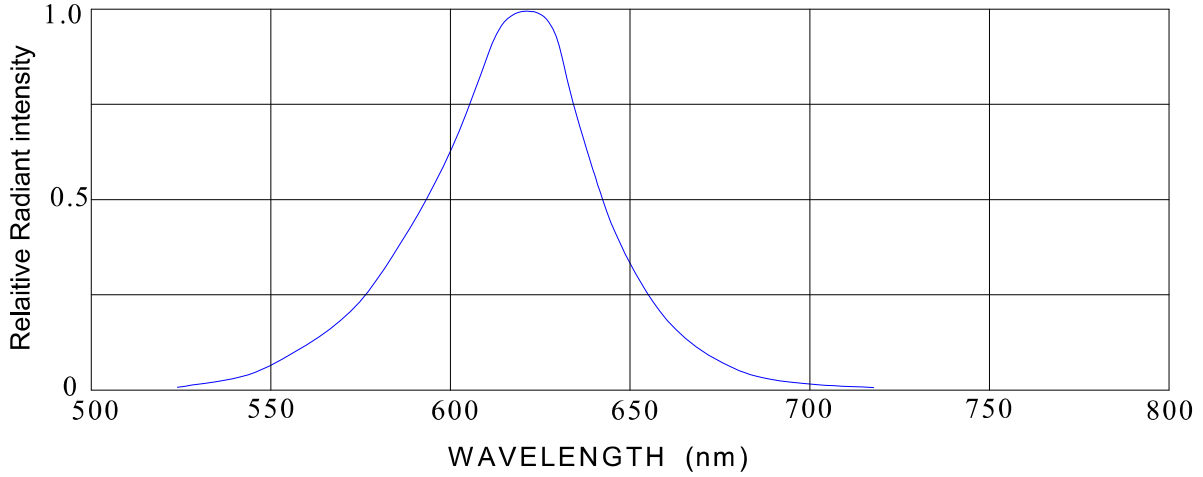
Tolerance : $V_F \pm 0.1V$, $\lambda d \pm 2 \text{ nm}$, $I_V(\phi V) \pm 15\%$

■ Reliability Performance

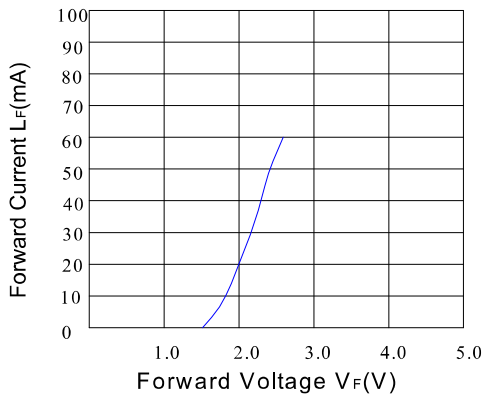
Test Items And Result

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 ↑ ↓ $-40^\circ\text{C} \pm 5^\circ\text{C}$ 5min.	100 cycles	22 pcs	0/1
	Temperature Cycle Test	$100^\circ\text{C} \pm 5^\circ\text{C}$ 30min ↑ ↓ 5min $-40^\circ\text{C} \pm 5^\circ\text{C}$ 30min.	100 cycles	22 pcs	0/1
	High Temperature & High Humidity Test	$85^\circ\text{C} \pm 5^\circ\text{C}/85\% \text{ RH}$ $I_F = 20\text{mA}$	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	1 times	22 pcs	0/1
	Lead Integrity	Load 2.5N(0.25kgf) $0^\circ \sim 90^\circ \sim 0^\circ$	3 times	22 pcs	0/1
Salt Spray Test	Salt Spray Experiment	$T_a = 35^\circ\text{C}$ Spray quantity(ml/80cm ² /H)1.0~2.0ml Concentration(NaCl)5%	0 hrs	22 pcs	0/1

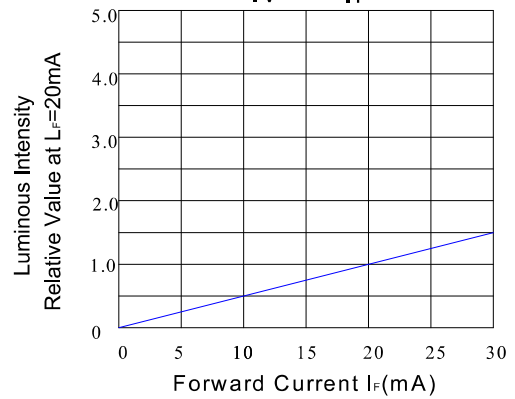
RELATIVE INTENSITY VS WAVELENGTH



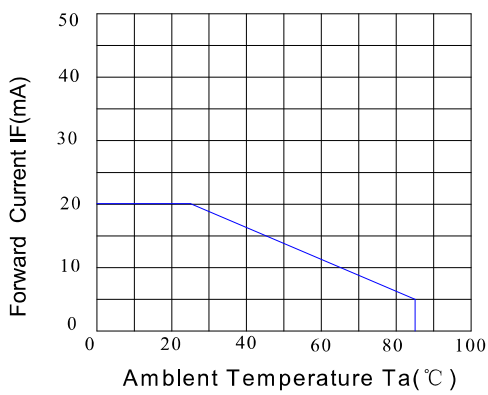
$I_F \sim V_F$



$I_v \sim I_F$



$I_F \sim T_a$



$I_v \sim T_a$

