

# NMOP-10118-Y

## SURFACE MOUNT LED TAPE AND REEL

### Features:

1. Top view LED.
2. white SMT package.
3. Leadframe package with individual 2 pin.
4. Wide viewing angle.
5. Soldering methods:IR reflow soldering.
6. Feature of the device:more light due to higher optical efficiency;extremely wide viewing angle; ideal for backlighting and coupling in light guide.

### Description

The NMOP-10118-Y SMD has wide viewing angle and optimized light coupling by inter reflector,The low current requirement makes this device ideal for portable equipment or any other application where power is at a premium.

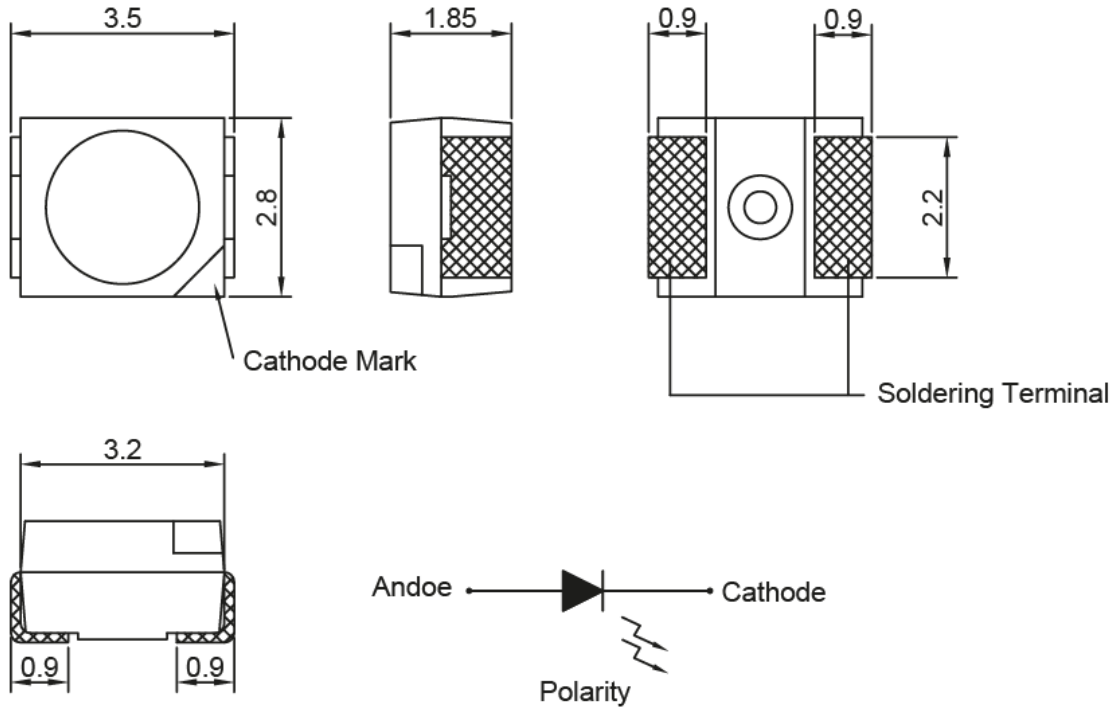
### Applications

1. Telecommunication: indicator and backlighting in telephone and fax.
2. Indicators.
3. Switch lights.

### Device Selection Guide

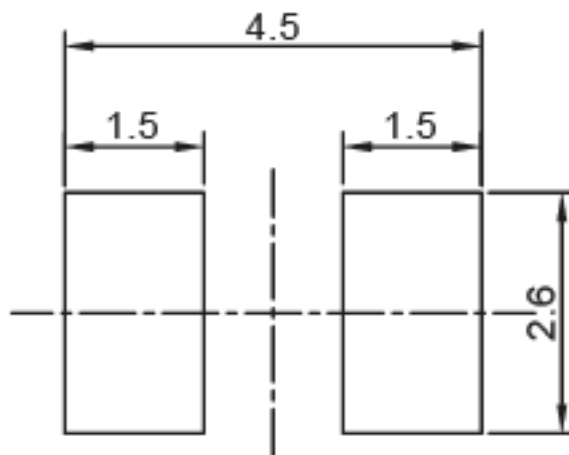
Part No	Material	Color	
		Emitted	Lens
NMOP-10118-Y	GaAsP/GaP	Yellow	Water Clear

## Package Outline Dimensions



Note : 1. All dimension are in millimeter tolerance is  $\pm 0.2\text{mm}$  unless otherwise noted.  
 2. Specifications are subject to change without notice.

## Recommended Soldering Pad Dimensions



Note : The tolerances unless mentioned is  $\pm 0.1\text{mm}$ , Angle  $\pm 0.5$ . Unit=mm.

## Absolute Maximum Ratings at Ta=25° C

Parameter	Symbol	Ratings	UNIT
Forward Current	IF	25	mA
Peak forward current Duty 1/11@10KHz	I <sub>FP</sub>	80	mA
Power Dissipation	PD	48	mW
Reverse Current @5V	I <sub>r</sub>	10	μA
Electrostatic Discharge	ESD	2000	V
Operating Temperature	T <sub>opr</sub>	-40 ~ +85	°C
Storage Temperature	T <sub>stg</sub>	-40 ~ +100	°C

## Typical Electrical & Optical Characteristics (Ta=25° C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
Luminous Intensity	I <sub>v</sub>	0.32	0.8	---	mcd	IF=2mA
Dominant Wavelength	λ <sub>D</sub>	580	---	595	nm	
Spectrum Line Half-Width	Δλ	---	35	---	nm	
Forward Voltage	V <sub>F</sub>	1.6	---	2.4	V	
Viewing Angle	2θ <sub>1/2</sub>	120			deg	

Note :

1. The forward voltage data did not including ±0.1V testing tolerance.
2. The luminous intensity data did not including ±15% testing tolerance.
3. The dominant wavelength data did not including ±1nm testing tolerance

## Luminous Intensity Classification

BIN CODE	Iv(mcd) at 2mA	
	Min.	Max.
C	0.25	0.5
D	0.5	0.8
E	0.8	1.25
F	1.25	2

## Dominant Wavelength Classification

BIN CODE	$\lambda_D$ (nm)at 2mA	
	Min.	Max.
13	580	583
14	583	585
15	585	587
16	587	589
17	589	592
18	592	595

# Typical Electro-Optical Characteristics Curve

Y CHIP

Fig.1 Forward current vs. Forward Voltage

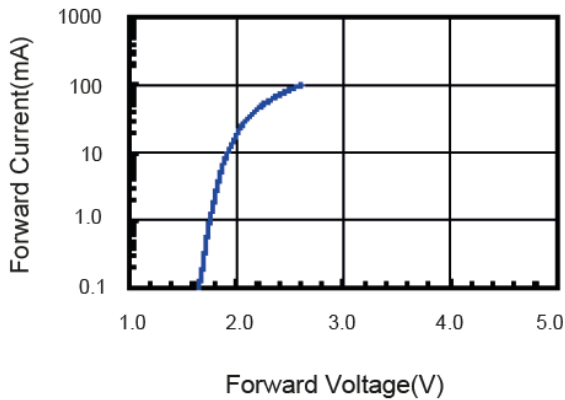


Fig.2 Relative Intensity vs. Forward Current

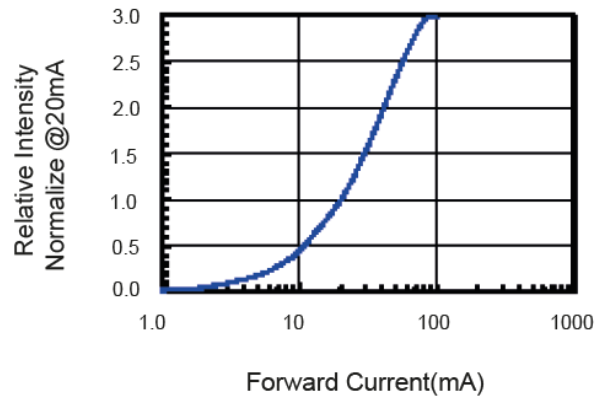


Fig.3 Forward Voltage vs. Temperature

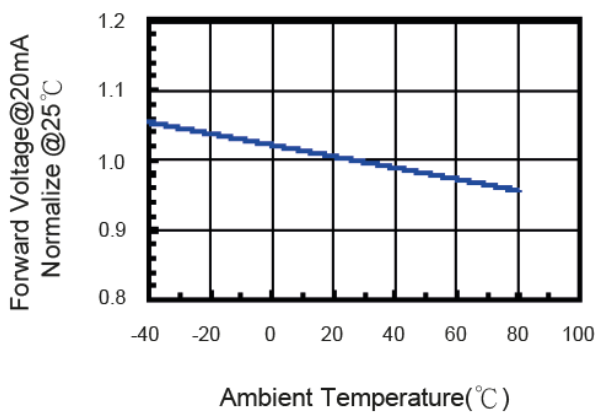


Fig.4 Relative Intensity vs. Temperature

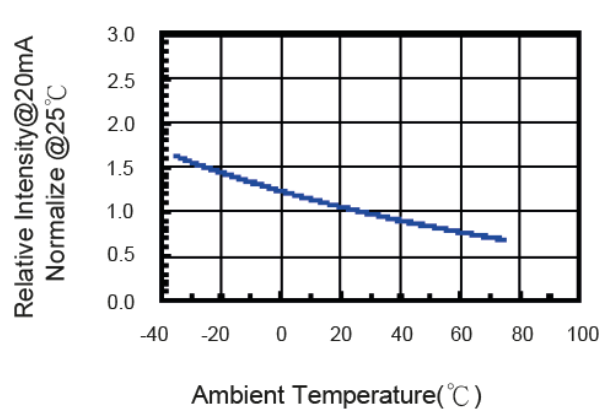


Fig.5 Relative Intensity vs. Wavelength

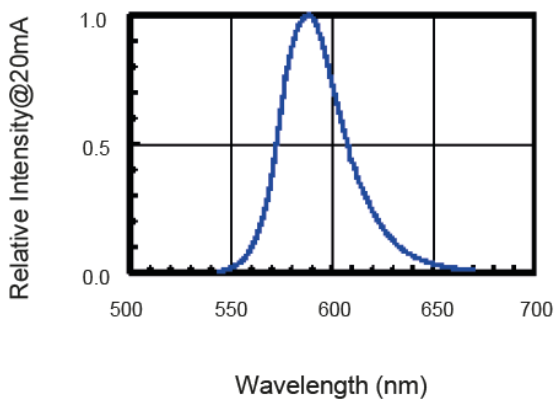
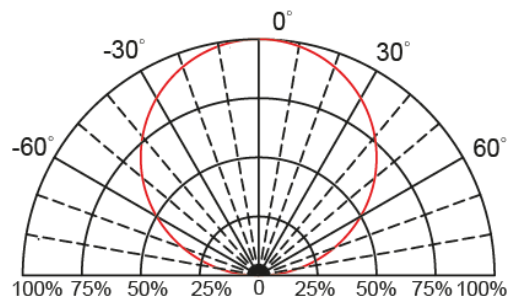
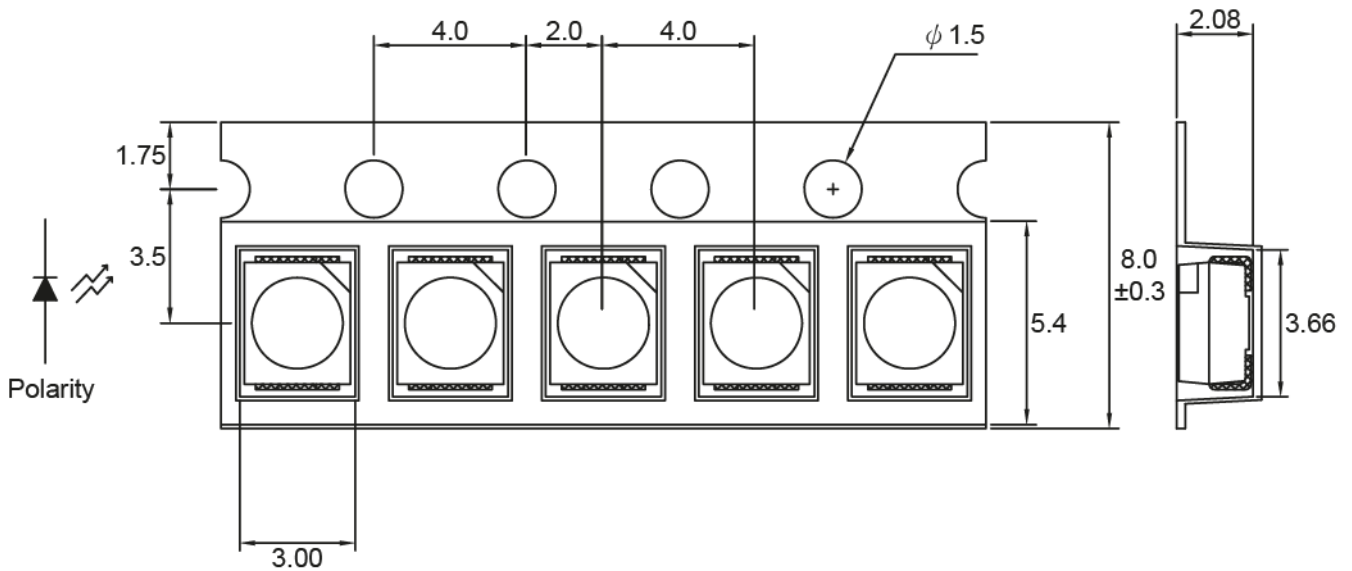


Fig.6 Directive Radiation

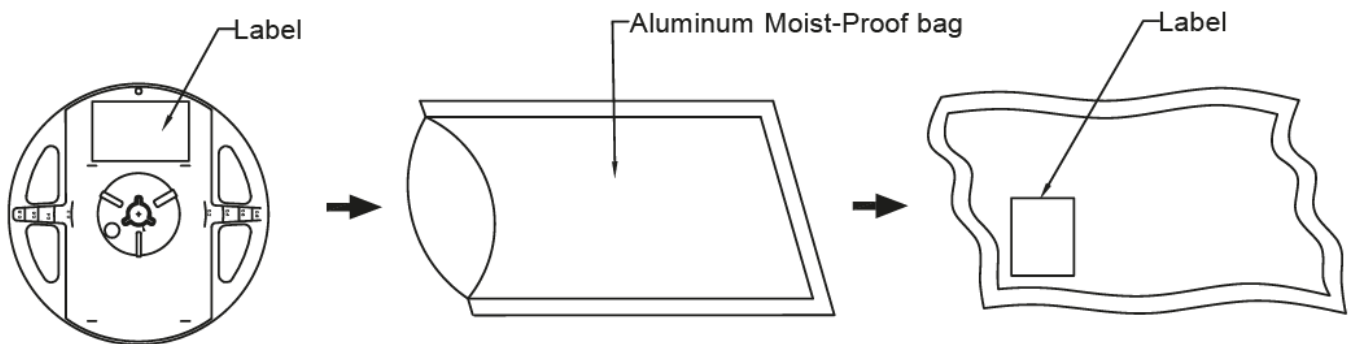


## Carrier Type Dimensions



Note : The tolerances unless mentioned is  $\pm 0.1$  mm, Unit=mm.

## Packing Specifications



Part No.	Description	Quantity/Reel
NMOP-10118-Y	8.0mm tape, 7" reel	2000 PCS

## Label Explanation




**Neumüller**  
 Elektronik GmbH  
www.neumueller.com

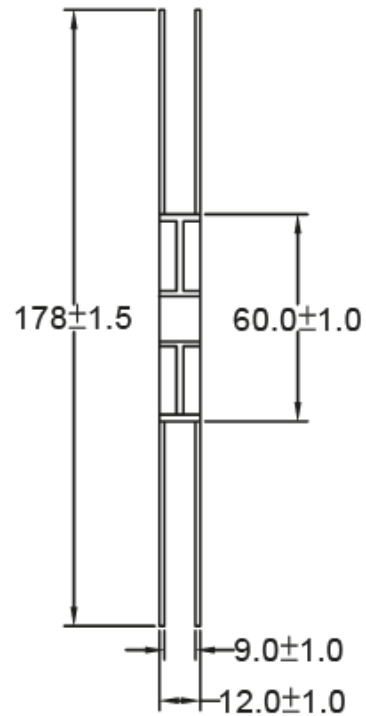
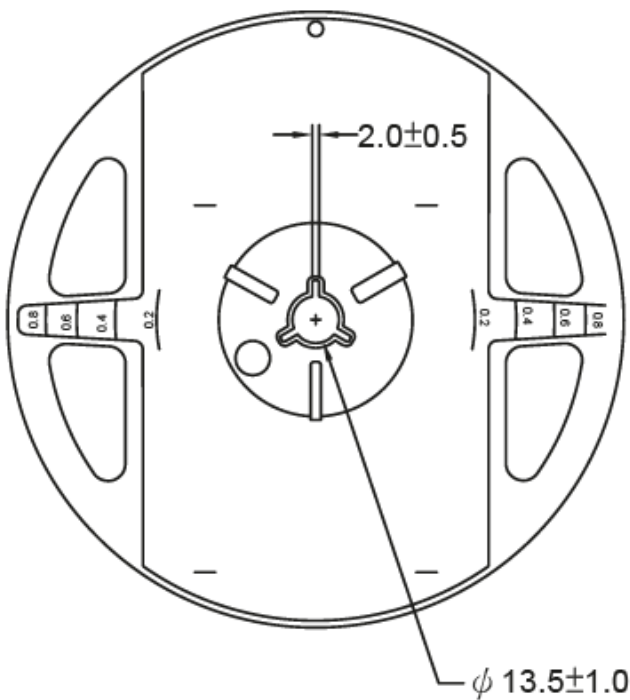
Typ / Part No. \_\_\_\_\_  
 Date Code / Rank \_\_\_\_\_  
 Menge / Quantity \_\_\_\_\_  
 Kunde / Customer \_\_\_\_\_

BIN : Luminous Intensity

HUE : Dominant Wavelength

VF: Forward Voltage

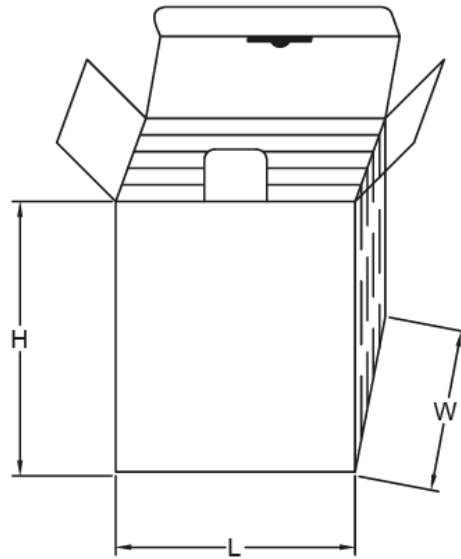
## Reel Dimensions



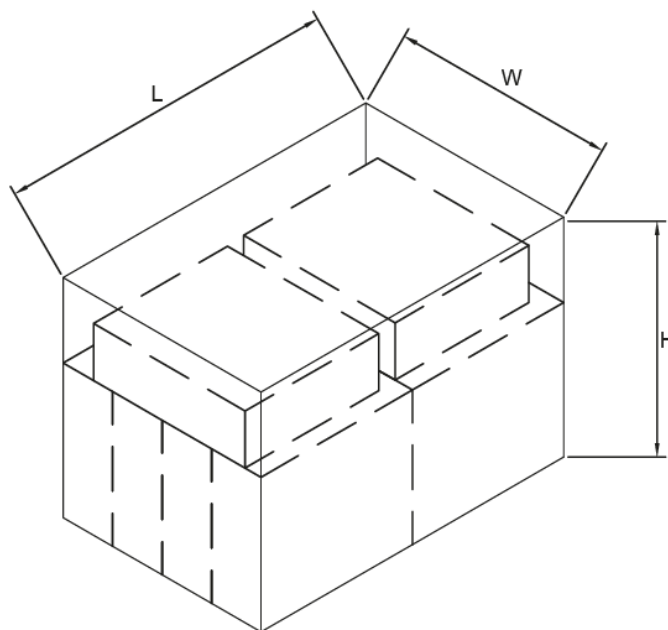
**NMOP-10118-Y**

## Box Explanation

1. 5 BAG / INNER BOX
2. INNER BOX SIZE : L X W X H 23cm X 8.5cm x 26cm



3. 10 INNER BOXES / CARTON
4. CARTON SIZE : L X W X H 58cm X 34cm x 35cm



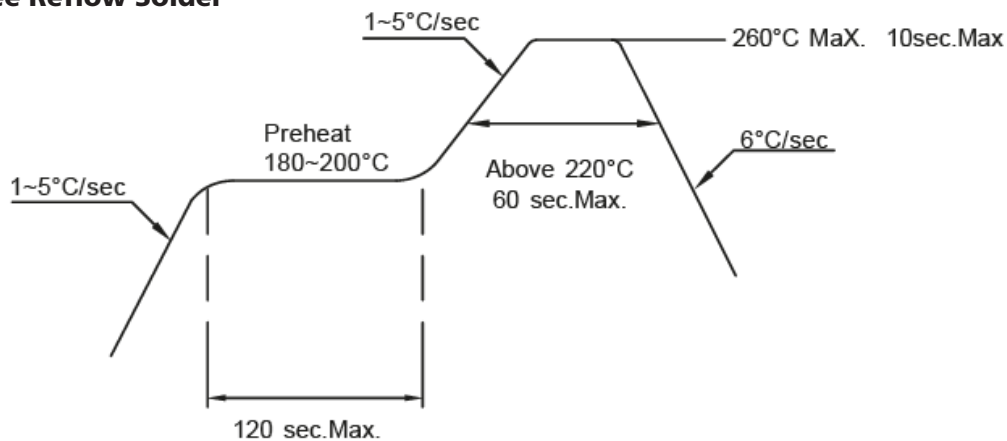


## Recommended Soldering Conditions

### 1. Hand Solder

Basic spec is  $\leq 320^{\circ}\text{C}$  3 sec one time only.

### 2. PB-Free Reflow Solder



Note:

1. Reflow soldering should not be done more than two times.
2. When soldering, do not put stress on the LEDs during heating.
3. After soldering, do not warp the circuit board.

## Precautions For Use:

### Storage time:

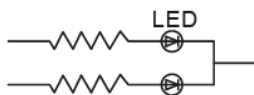
- 1.The operation of Temperatures and RH are : 5°C ~35°C ,RH60%.
- 2.Once the package is opened, the products should be used within a week. Otherwise, they should be kept in a damp proof box with desiccating agent. Considering the tape life, we suggest our customers to use our products within a year(from production date).
- 3.If opened more than one week in an atmosphere 5°C ~ 35°C ,RH60%, they should be treated at 60 ±5 for 15hrs

### Drive Method:

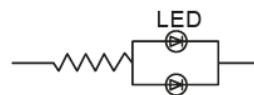
LED is a current operated device, and therefore, requires some kind of current limiting incorporated into the driver circuit. This current limiting typically takes the form of a current limiting resistor placed in series with the LED.

Consider worst case voltage variations than could occur across the current limiting resistor. The forward current should not be allowed to change by more than 40% of its desired value.

Circuit model A



Circuit model B



(A) Recommended circuit.

(B) The difference of brightness between LED could be found due to the VF-IF characteristics of LED.

### Cleaning:

Use alcohol-based cleaning solvents such as isopropyl alcohol to clean the LED.

### ESD(Electrostatic Discharge):

Static Electricity or power surge will damage the LED. Use of a conductive wrist band or anti-electrostatic glove is recommended when handling these LED. All devices, equipment and machinery must be properly grounded.

## Reliability Test:

(1) Test items and results

Classification	Test Item	Test Condition	Sample Size
Endurance Test	Operating Life Test	1. Ta=Under Room Temperature As Per Data Sheet Maximum Rating. 2. If=2mA 3. t=1000 hrs (-24hrs,+72hrs)	22
	High Temperature Storage Test	1. Ta=105°C±5°C 2. t=500 hrs	22
	Low Temperature Storage Test	1. Ta=-40°C±5°C 2. t=1000 hrs	22
	High Temperature High Humidity Storage Test	1. IR-Reflow In-Board, 2 Times 2. Ta=85°C±5°C 3. RH=90%~95% 4. t=500hrs.±2hrs.	22
Environmental Test	Thermal Shock Test	1. IR-Reflow In-Board, 2 Times 2. Ta=105°C±5°C & -40°C±5°C (30min)(30min) 3. total 100 cycles	22
	Reflow Soldering Test	1. T.Sol=260 ±5 2. Dwell Time= 10Max.	22
	Temperature Cycling	1. 105°C ~25°C ~ -40°C 30mins 15mins 30mins 2. 100 cycles	22

(2) Criteria for judging the damage

Item	Symbol	Test Conditions	Criteria for Judgement	
			Min.	Max.
Forward Voltage	Vf	If=2mA		U.S.L x1.2
Reverse Current	Ir	Vr=5V		U.S.L x2.0
Luminous Intensity	Iv	If=2mA	L.S.L x 0.5	

Note:

1. U.S.L.:Upper Standard Level.
2. L.S.L.:Lower Standard Level.