OptoSupply
Light It Up

3.5x2.8x1.9mm Infrared SMD LED

OSI3NAS1C1A

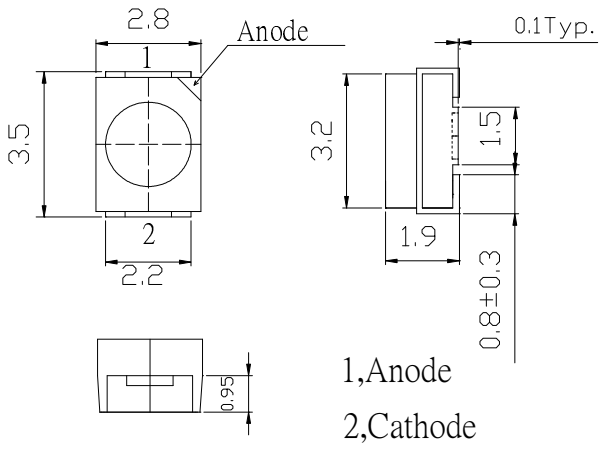
▪Features

- High Radiant Power PLCC2 Top SMD LEDs
- 3.5x2.8x1.9mm Standard Directivity
- Superior Weather-resistance
- UV Resistant Epoxy
- Water Clear Type

▪Applications

- Automatic Control System
- Photo Detector
- Computer I/O Peripheral

▪Outline Dimension

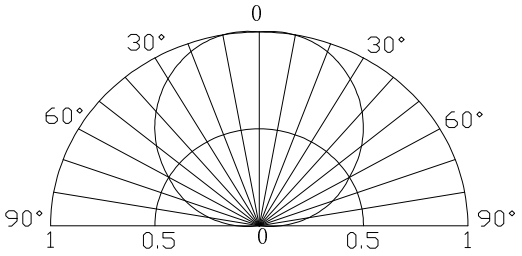


▪Absolute Maximum Rating (Ta=25℃)

Item	Symbol	Value	Unit
DC Forward Current	I_F	100	mA
Pulse Forward Current*	I_{FP}	200	mA
Reverse Voltage	V_R	5	V
Power Dissipation	P_D	180	mW
Operating Temperature	Topr	-30 ~ +85	℃
Storage Temperature	Tstg	-40~ +100	℃
Lead Soldering Temperature	Tsol	260℃/5sec	-

*Pulse width Max.10ms Duty ratio max 1/10

▪Directivity



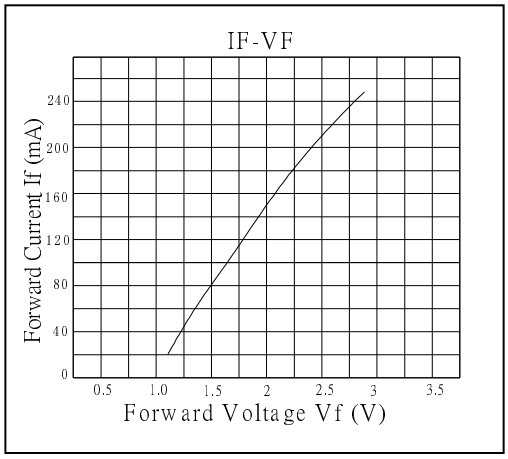
▪Electrical -Optical Characteristics (Ta=25℃)

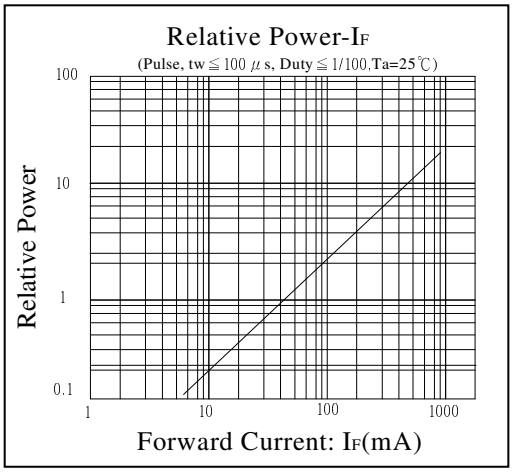
Item	Symbol	Condition	Min.	Typ.	Max.	Unit
DC Forward Voltage	V_F	I_F=100mA	-	1.6	1.8	V
DC Reverse Current	I_R	V_R=5V	-	-	10	μA
Peak Wavelength	λ_p	I_F=100mA	-	850	-	nm
Radiant Power	P_O	I_F=100mA	27	-	-	mW
Radiant Intensity	Ie	I_F=100mA	30	40	-	mW/Sr
50% Power Angle	$2\theta_{1/2}$	I_F=100mA	-	120	-	deg

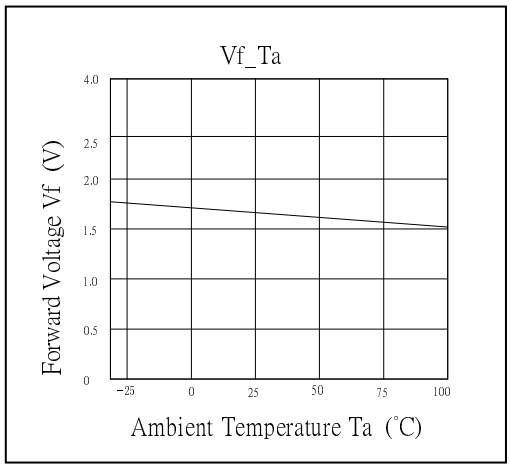
*1 Tolerance of peak wavelength is ±1nm
*2 Tolerance of Radiant Power is ±15%

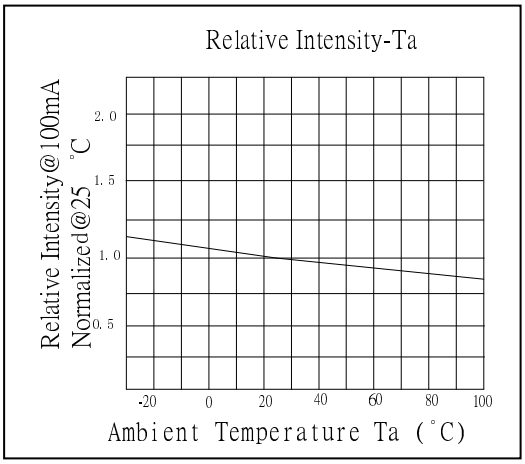
AlGaAs LED

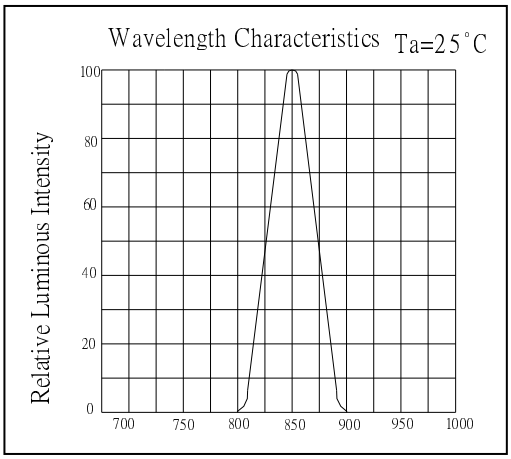
TYPICAL ELECTRICAL/OPTICAL CHARACTERISTIC CURVES

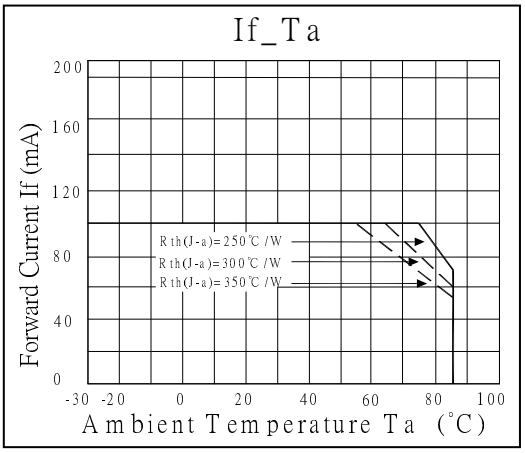












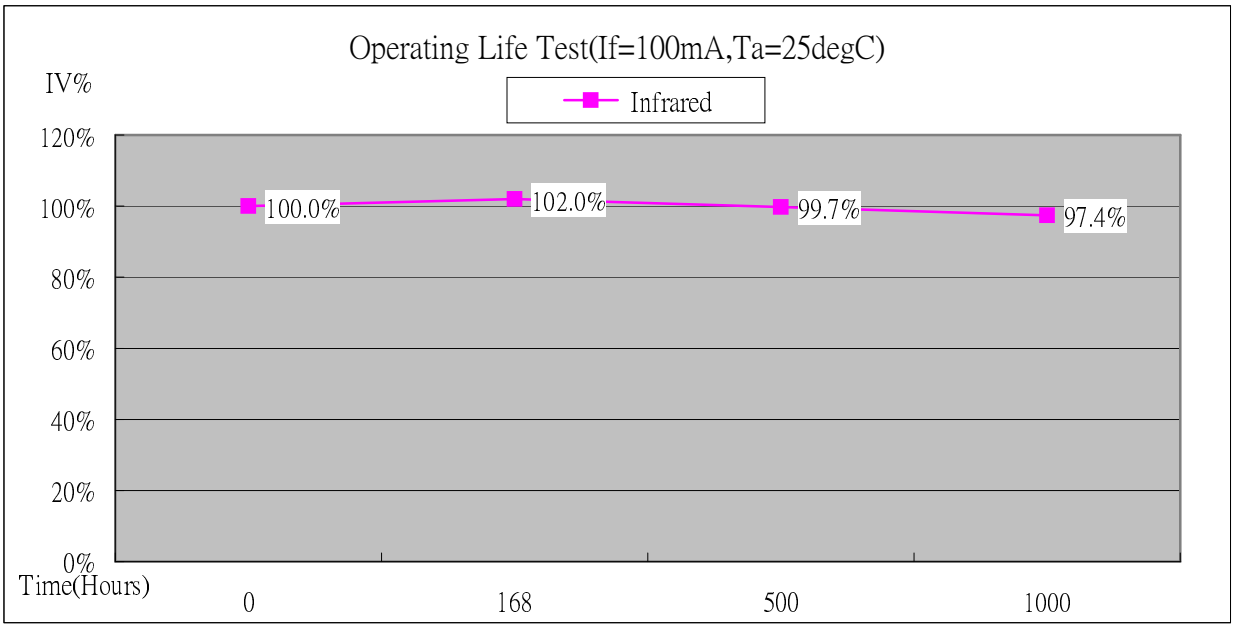
RELIABILITY TEST REPORT

CLASSIFICATION	TEST ITEM	TEST CONDTION
ENDURANCE TEST	OPERATION LIFE	If:20mA Ta:25+5 TEST TIME=1000HRS(-24HRS,+72HRS)
	HIGH TEMPERTURE HIGH HUMIDITY STORAGE	R.H:90~95% Ta:65+5℃ TEST TIME=240HRS(+2HRS)
	HIGH TEMPERTURE STORAGE	Ta:105±5℃ TEST TIME=500HRS(-24HRS,+48HRS)
	LOW TEMPERTURE STORAGE	Ta:-55±5℃ TEST TIME=500HRS(-24HRS,+48HRS)
ENVIRONMENTAL TEST	TEMPERTURE CYCLING	105℃~25℃~-55℃~25℃ 60min 10min 60min 10min 20cycles
	THERMAL SHOCK	105℃~-55℃ 10min 10min 10cycles
	SOLDER RESISTANCE	Ta:260±5℃ TEST TIME=10±1sec
	SOLDERABILITY	Ta:230±5℃ TEST TIME=5±1sec

JUDGMENT CRITERIA OF FAILURE FOR THE RELIABILITY

MEASURING ITME	SYMBOL	CONDITIONS	FAILURE
LUMINOUS INTENSITY	IV	IF=20mA	IV<0.5*INITIAL VALUE
FORWARD VOLTAGE	VF	IF=20mA	VF>1.2*INITIAL VALUE
REVERSE CURRENT	IR	Vr=5V	IR>2*SPEC

OPERATION LIFE TEST LUMINANCE RATE CURVE



*Burn-in condition: 100mA

*Projection of Statistical Average Light Output Degradation Performance for LED Technology Extrapolated from OptoSupply QA Dept. Test Data.

*According to OptoSupply outgoing Packaged Products Specification

*MTBF:50,000hrs, 90% Confidence (A Failure is Any LED Which is Open, shorted or fails to Emit Light)

*The Projected Data is Base on The Feature of LED Itself Under Normal Operation Conditions.

*Any Improper Circuit Design or External Factors Might Cause a Different Result.

Soldering Heat Reliability :

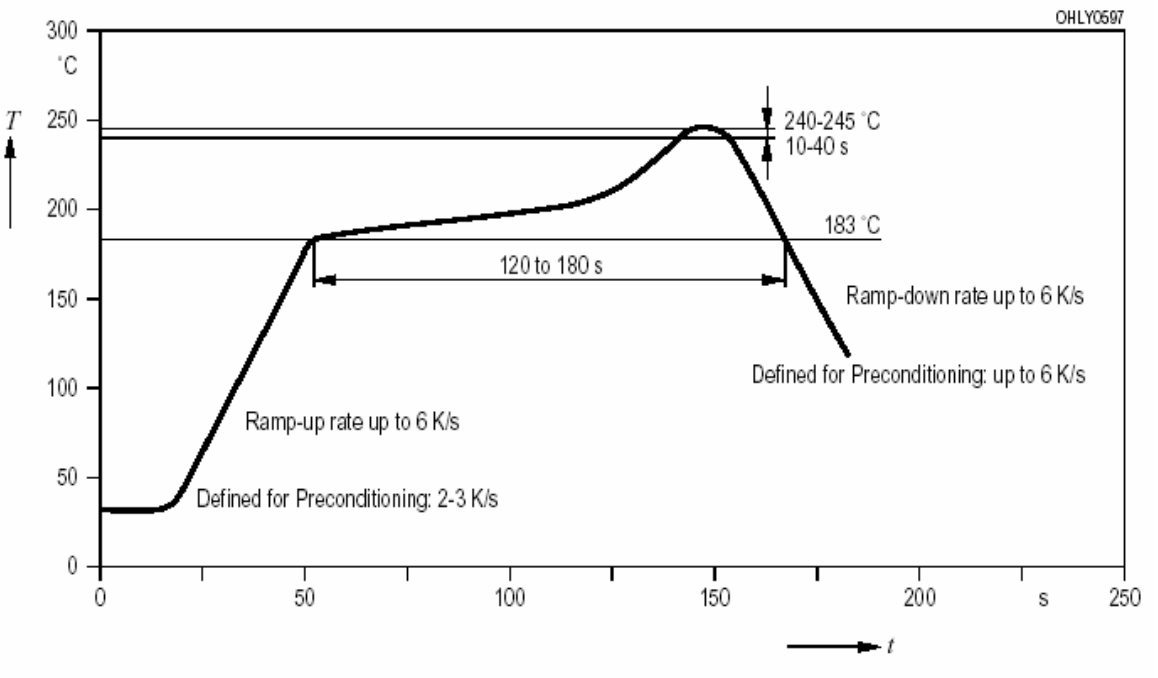
IR Reflow soldering Profile

· Reflow soldering should not be done more than two times.

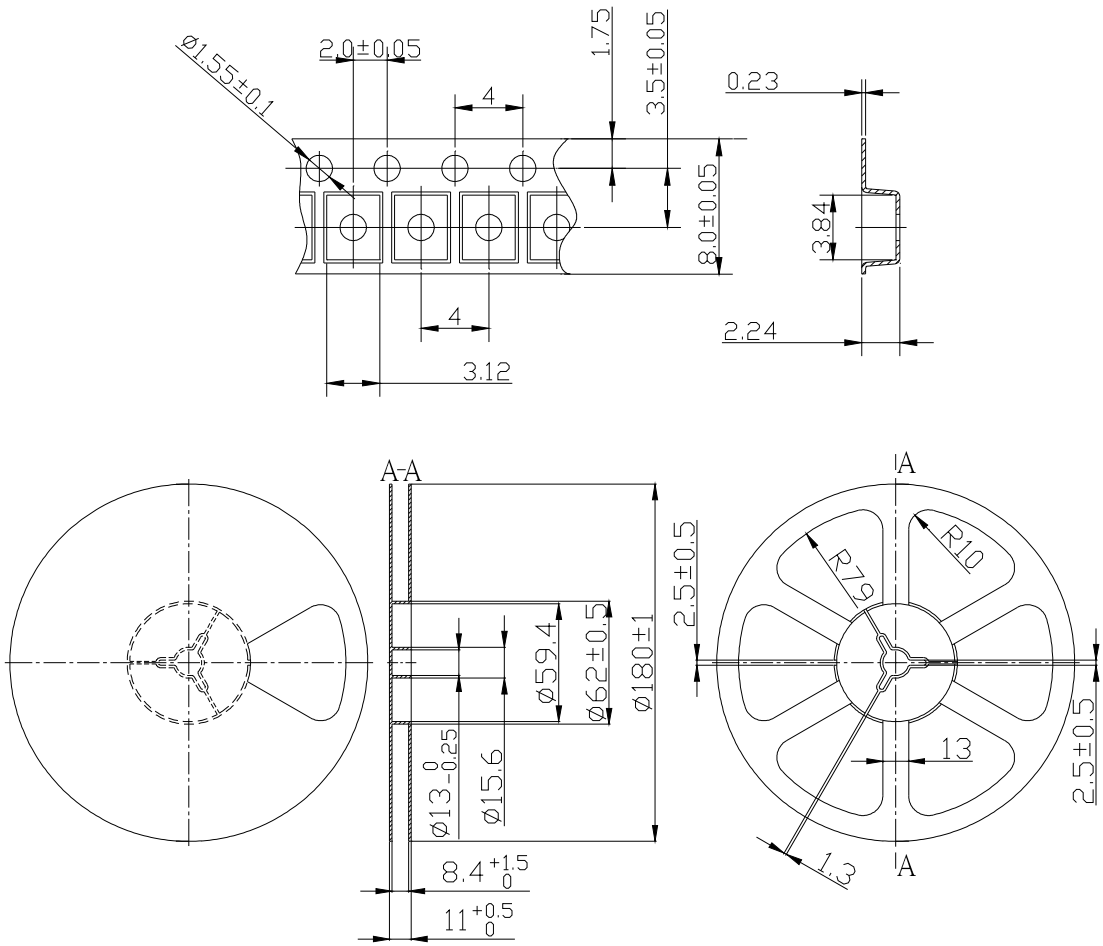
· When soldering, do not put stress on the LEDs during heating.

· After soldering, do not warp the circuit board.

· Repairing should not be done after the LEDs have been soldered. When repairing is unavoidable, a double-head soldering iron should be used. It should be confirmed beforehand whether the characteristics of the LEDs will or will not be damaged by repairing.



PACKING DIMENTIONS



Notes:

1. Unit: mm
2. 2000pcs/Reel