

Technical Data Sheet

High Power Infrared LED

IR-SSA-N120/L873-P03/TR

Features

- Small package with high efficiency
- Peak wavelength $\lambda_p = 940$ nm
- Soldering methods: SMT
- Thermal resistance (junction to lead): 13k/W.
- Pb free
- Compliance with EU REACH
- Compliance Halogen Free(Br < 900ppm, Cl < 900ppm, Br+Cl < 1500ppm)
- The product itself will remain within RoHS compliant version.
- ESD : 8kV

Description

- IR-SSA-N120/L873-P03/TR series is an infrared emitting diode in miniature SMD package which is molded in a water clear silicone.
- The device is spectrally matched with silicon photo diode and phototransistor.

Applications

- Infrared applied system

Device Selection Guide

LED Part No.	Chip Material	Lens Color
IR-SSA-N120/L873-P03/TR	GaAlAs	Water clear

Absolute Maximum Ratings ($T_A=25^{\circ}\text{C}$)

Parameter	Symbol	Rating	Unit
Continuous Forward Current	I_F	1000	mA
Reverse Voltage	V_R	5	V
Operating Temperature	T_{opr}	-40 ~ +100	$^{\circ}\text{C}$
Storage Temperature	T_{stg}	-40 ~ +100	$^{\circ}\text{C}$
Junction temperature	T_j	145	$^{\circ}\text{C}$
Thermal resistance (junction to lead frame)	$R_{th(j-L)}$	13	K /W
Power Dissipation @ $I_F=1000\text{mA}$	P_d	3.65	W

Notes: We suggest that customer should add the heat sink with IR-SSA-N120/L873-P03/TR to exclude the heat.

Electro-Optical Characteristics ($T_A=25^{\circ}\text{C}$)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
Total Radiated Power	P_o	350	450	600	mW	$I_F=350\text{ mA}$
		600	805	1050		$I_F=700\text{ mA}$
		800	1050	1400		$I_F=1\text{ A}$
Radiant Intensity	I_E	--	135	--	mW/sr	$I_F=350\text{ mA}$
		--	250	--		$I_F=700\text{ mA}$
		--	315	--		$I_F=1\text{ A}$
Peak Wavelength	λ_P	--	940	--	nm	$I_F=350\text{ mA}$
Spectral Bandwidth	$\Delta\lambda$	--	25	--	nm	$I_F=350\text{ mA}$
Forward Voltage	V_F	2.70	2.85	3.00	V	$I_F=350\text{ mA}$
		3.05	3.20	3.35		$I_F=700\text{ mA}$
		3.35	3.50	3.65		$I_F=1\text{ A}$
Reverse Current	I_R	--	--	10	μA	$V_R=5\text{ V}$
View Angle	$2\theta_{1/2}$	--	120	--	deg	$I_F=20\text{ mA}$
Temperature coefficient of voltage	TC_V	--	-2.54	--	mV/K	$I_F=1000\text{ mA}$
Temperature coefficient of brightness	TC_I	--	0.03	--	%/K	$I_F=1000\text{ mA}$
Temperature coefficient of wavelength	TC_λ	--	0.03	--	nm/K	$I_F=1000\text{ mA}$

Typical Electro-Optical Characteristics Curves

Fig.1

Forward Current vs. Forward Voltage

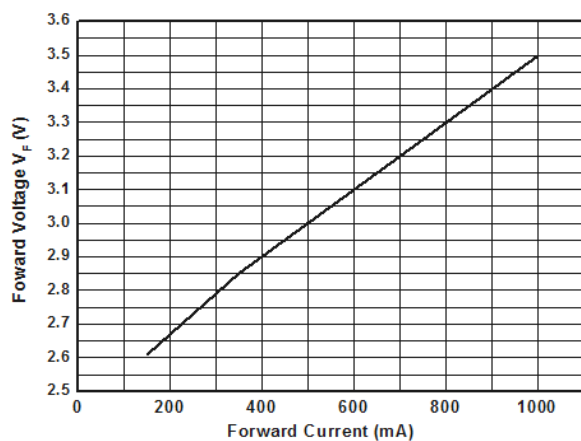


Fig.2

Forward Current vs. Intensity

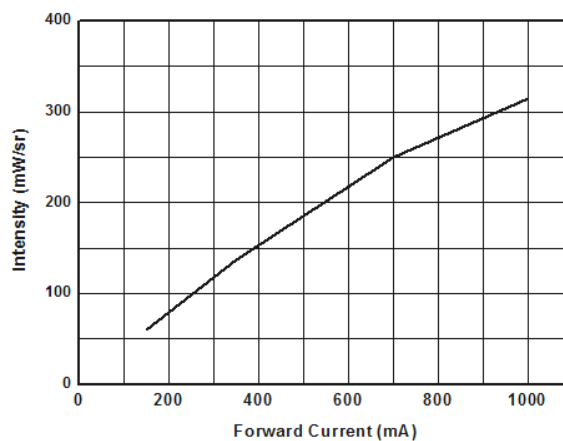


Fig.3

Forward Current vs. Total Power

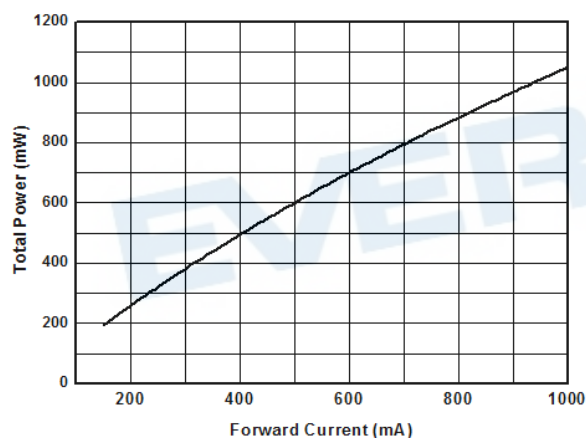


Fig.4

Relative Radiant Intensity vs. Angular Displacement

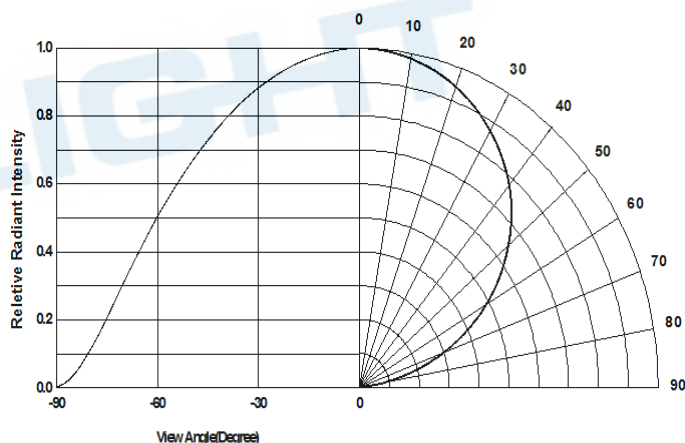
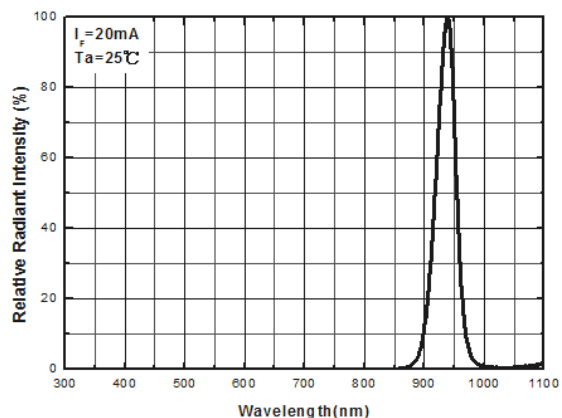
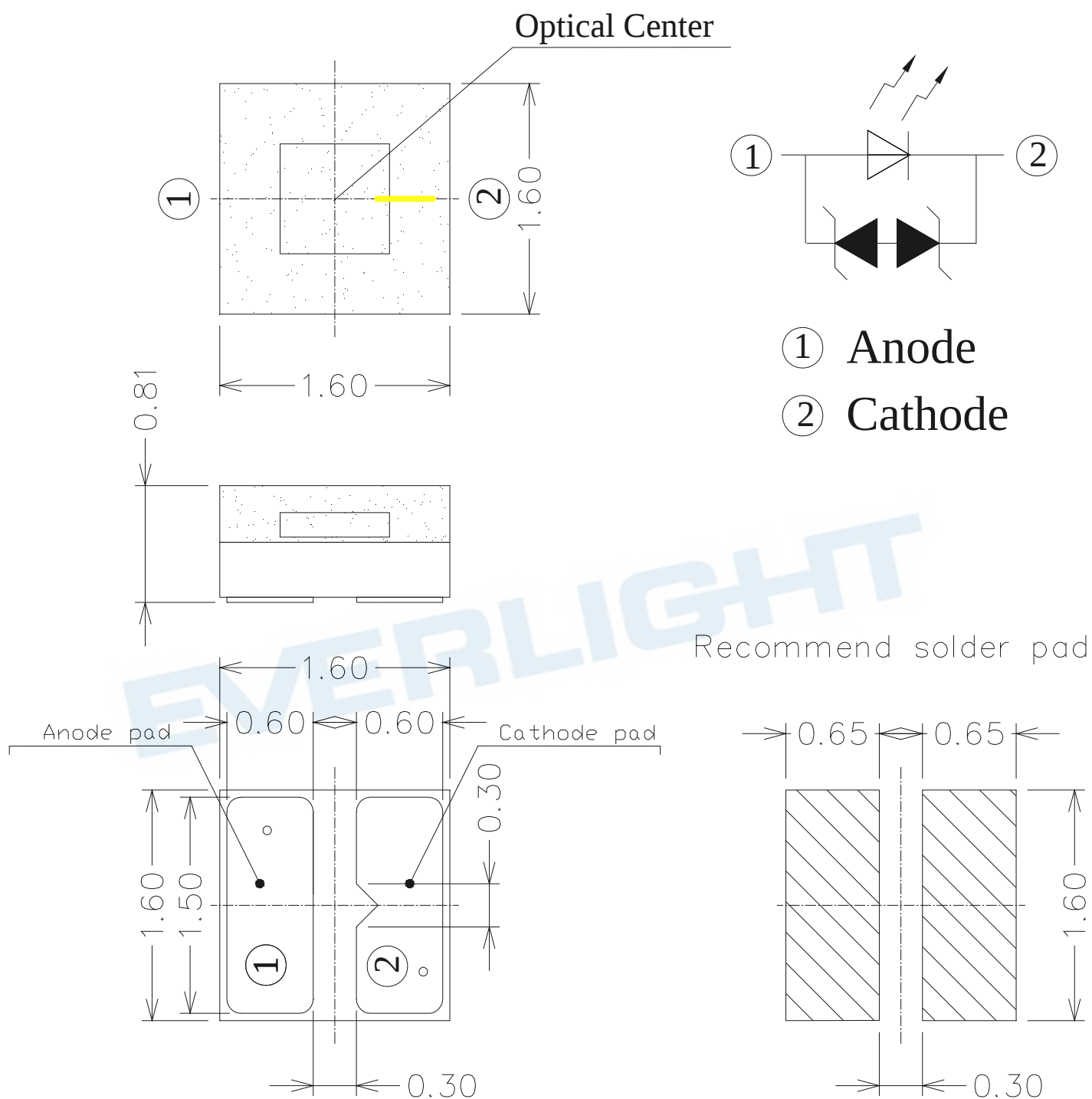


Fig.5

Spectral Distribution



Package Dimension



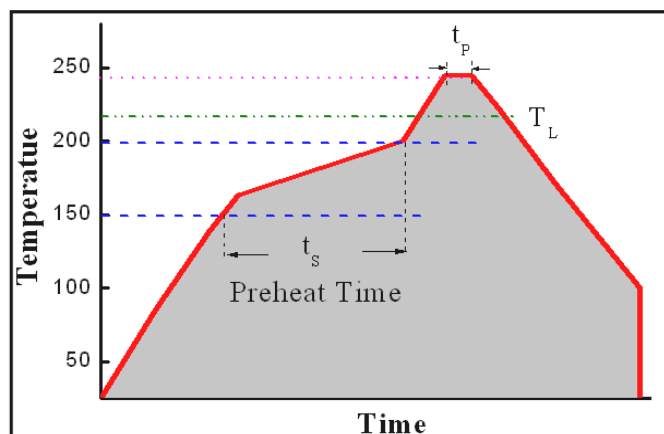
1. Dimensions are in millimeters.
2. Tolerances unless mentioned are $\pm 0.1\text{mm}$.
3. Do not handle the device by the lens. Incorrect force applied to the lens may lead to the failure of devices.

Reflow Soldering Characteristics

For Reflow Process

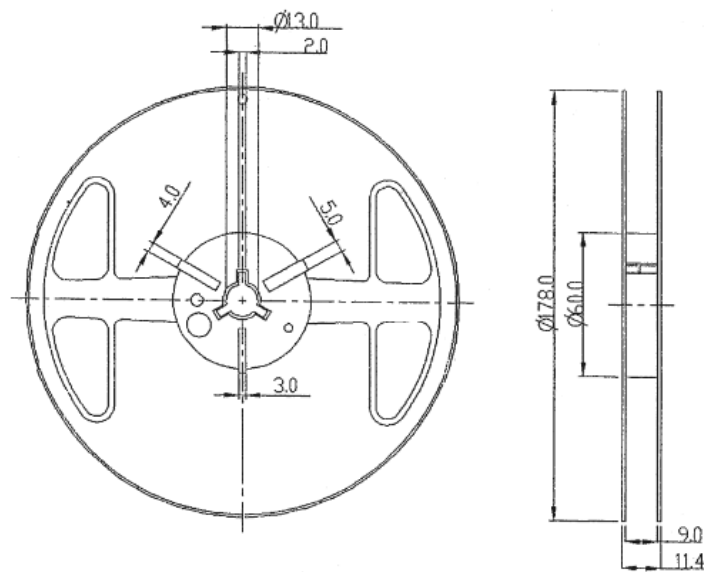
1. SSA series are suitable for SMT processes.
2. Curing of glue in oven must be according to standard operation flow processes.

Profile Feature	Lead Free Assembly	Unit
Ramp-Up Rate	2~3	°C/S
Preheat Temperature	150~200	°C
Preheat Time(t_s)	60~120	S
Liquid Temperature(T_L)	217	°C
Time maintained above T_L	60~90	S
Peak Temperature(T_P)	240+-5	°C
Peak Time (t_P)	Max 20	S
Ramp-Down Rate	3~5	°C/S



3. Reflow soldering should not be done more than twice.
4. In soldering process, stress on the LEDs during heating should be avoided.
5. After soldering, do not bend the circuit board.

Package Dimensions

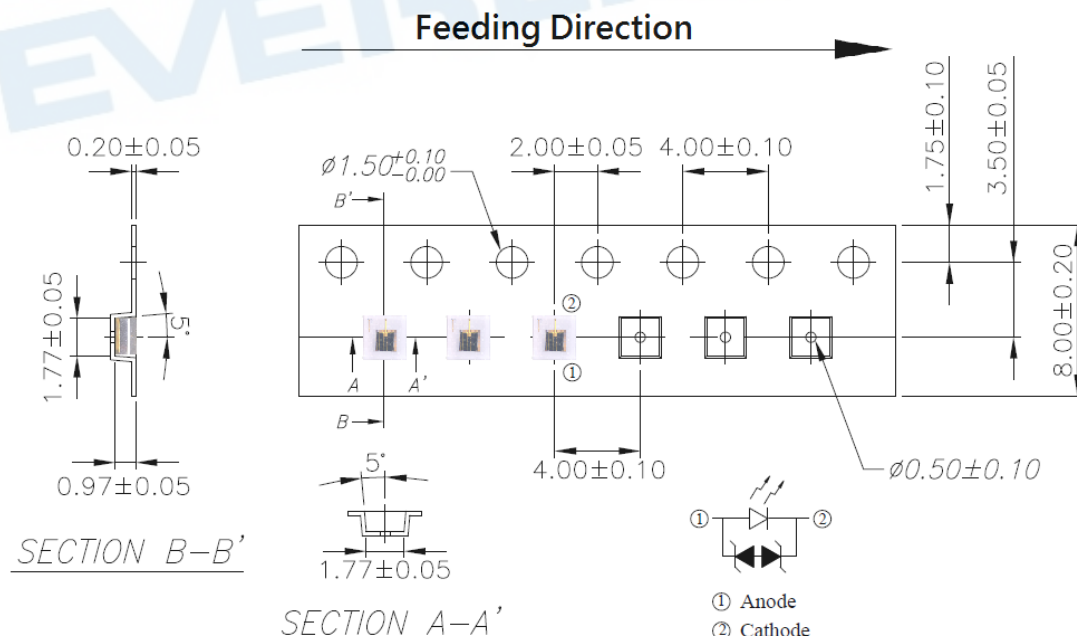


Note:

1. Dimensions are in millimeters
2. The tolerances unless mentioned is $\pm 0.1\text{mm}$

Carrier Tape Dimensions:

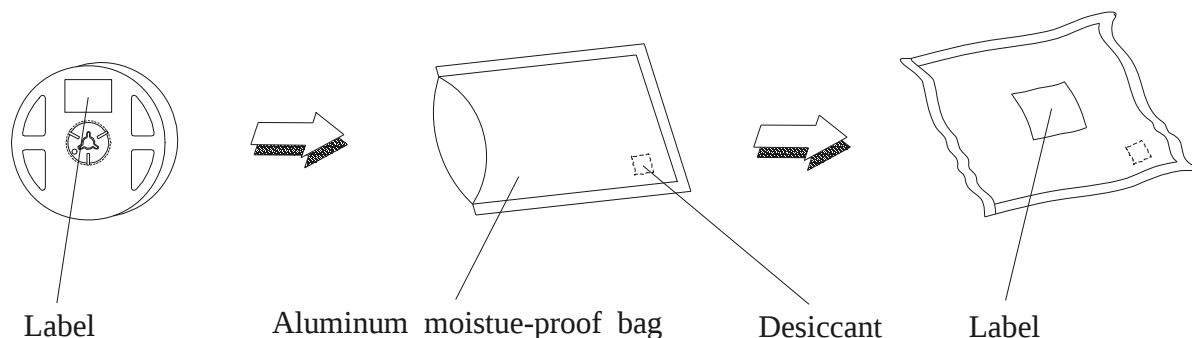
Loaded quantity 2000 pcs per reel.



Note:

1. Dimensions are in millimeters
2. The tolerances unless mentioned is $\pm 0.1\text{mm}$

Moisture Resistant Packaging



Moisture Resistant Packing Materials

Label Form Specification

RoHS	Pb	EVERLIGHT	5
CPN: XXXXXXXXXXXXXXXXXXXX			
XXXXXXXXXX-XXXXXXXXXX-XXXXXXXXXX-XXXXXXXXXX-XXXXXX			
P/N: XXXXXXXXXXXX			
XXXXXXXXXX-XXXXXXXXXX-XXXXXXXXXX-XXXXXXXXXX-XXXXXX			
LOT NO: Y150716XXX-XXXXXXXXXX-XXXXXXXXXX			
QTY: 0123456789 HUE: XXXXXXXXXXXX			
CAT: XXXXXXXXXXXX REF: XXXXXXXXXXXX			
REFERENCE: BTPYYMDDXXXXX			
MSL-X MADE IN XXXXXX			

- CPN: Customer's Product Number
- P/N: Product Number
- QTY: Packing Quantity
- CAT: Luminous Intensity Rank
- HUE: Dom. Wavelength Rank
- REF: Forward Voltage Rank
- LOT No: Lot Number
- X: Month
- Reference: Identify Label Number

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DISCLAIMER

1. EVERLIGHT reserves the right(s) on the adjustment of product material mix for the specification.
2. The product meets EVERLIGHT published specification for a period of twelve (12) months from date of shipment.
3. The graphs shown in this datasheet are representing typical data only and do not show guaranteed values.
4. When using this product, please observe the absolute maximum ratings and the instructions for using outlined in these specification sheets. EVERLIGHT assumes no responsibility for any damage resulting from the use of the product which does not comply with the absolute maximum ratings and the instructions included in these specification sheets.
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