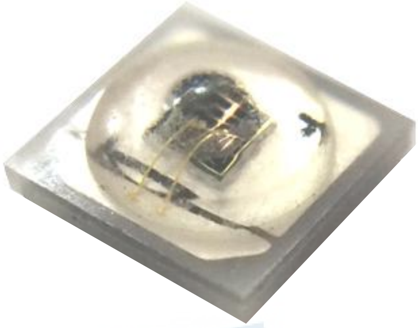
EVERLIGHT

DATASHEET

Technical Data Sheet

High Power Infrared LED

HIR-C19D-1N150/L649-P03/TR



Features

- Small package with high efficiency
- Peak wavelength λp =850 nm
- Soldering methods: SMT
- Thermal resistance (junction to lead): 18K/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.

Description

- HIR-C19D-1N150/L649-P03/TR series is an infrared emitting diode in miniature SMD package which is molded in a water clear silicone with spherical top view lens.
- The device is spectrally matched with silicon photo diode, Phototransistor.

Applications

- CCD Camera
- Infrared applied system

Device Selection Guide

LED Part No.	Chip Material	Lens Color
HIR-C19D-1N150/L649-P03/TR	GaAlAs	Water clear

Absolute Maximum Ratings (T_A=25˚C)

Parameter	Symbol	Rating	Unit
Continuous Forward Current	I_F	1500	mA
Peak Forward Current *1	I_{FP}	5000	mA
Reverse Voltage	V_R	5	V
Operating Temperature	T_{opr}	-40~ +125	°C
Storage Temperature	T_{stg}	-40 ~ +125	°C
Junction temperature	T_j	115	°C
Thermal resistance (junction to lead frame)	$R_{th(j-L)}$	18	K /W
Power Dissipation @I_F=700mA	P_d	3	W

Notes:

*1. I_{FP} Conditions--Pulse Width≦100μs and Duty≦1%

*2. Note: We suggest that customer should add the heat sink with HIR-C19D-1N150/L649-P03/TR to exclude the heat.

Electro-Optical Characteristics (T_A=25˚C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
Total Radiated Power	Po	--	400	--	mW	I_F=350 mA
		--	780	--		I_F=700 mA
		900	1100	--		I_F=1 A
Radiant Intensity	I_E	--	100	--	mW/sr	I_F=350 mA
		--	200	--		I_F=700 mA
		230	270	--		I_F=1 A
Peak Wavelength	λ_P	--	850	--	nm	I_F=350 mA
Spectral Bandwidth	Δλ	--	25	--	nm	I_F=350 mA
Forward Voltage	V_F	--	2.65	--	V	I_F=350 mA
		--	2.90	--		I_F=700 mA
		--	3.10	--		I_F=1 A
			3.80	3.90		I_F=5 A *3
Reverse Current	I_R	--	--	10	μA	V_R=5 V
View Angle	$2\theta_{1/2}$	--	150	--	deg	I_F=20 mA

Notes:

*3. I_{FP} Conditions--Pulse Width≦100μs and Duty≦1%

Typical Electro-Optical Characteristics Curves

Fig.1

Forward Current vs. Forward Voltage

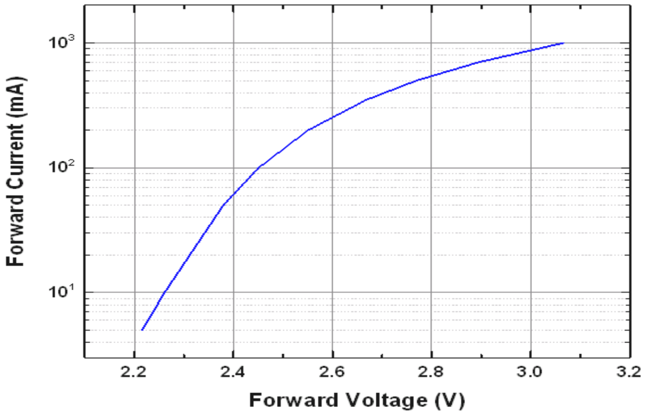


Fig.2

Forward Current vs. Intensity

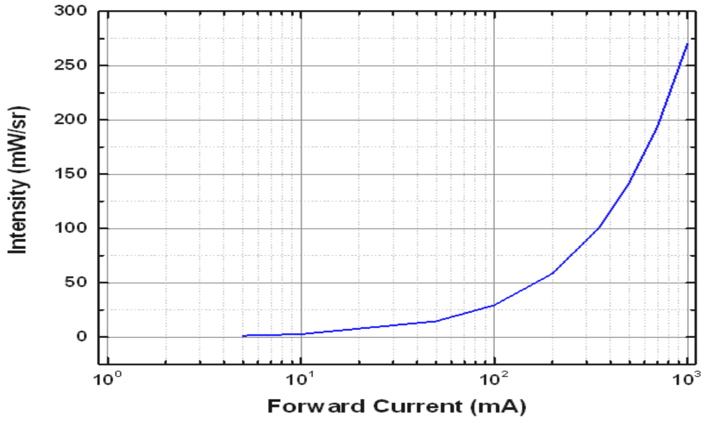


Fig.3

Forward Current vs. Total Power

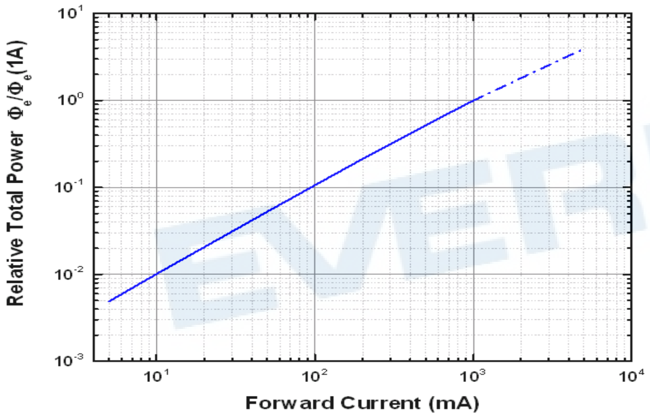


Fig.4

Relative Radiant Intensity vs. Angular Displacement

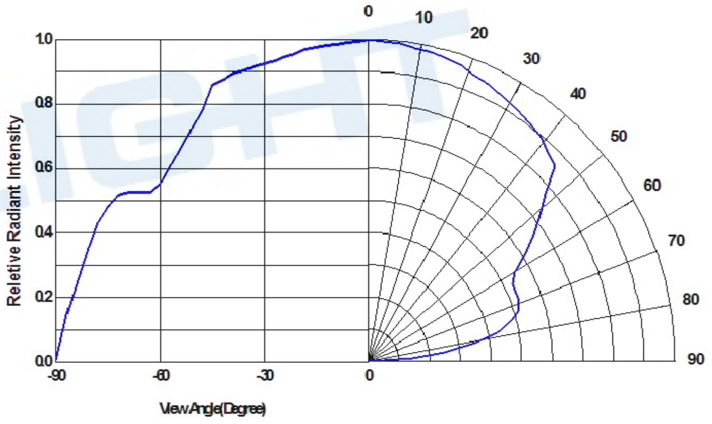
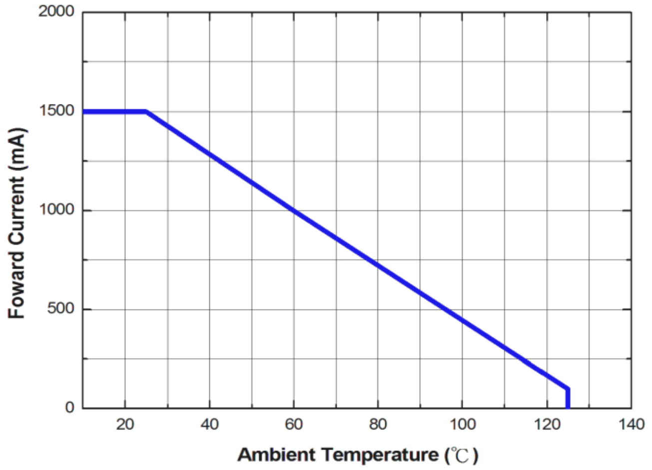


Fig.5

Forward Current vs. Ambient Temperature



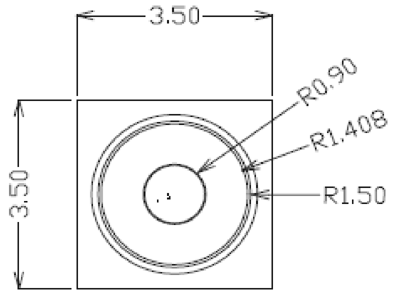
Bin Code List

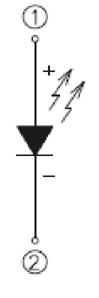
Radiated Power Condition: I_F=1000mA Unit：mW

Bin Number	F	G	H
Min	640	800	1000
Max	1000	1260	1600

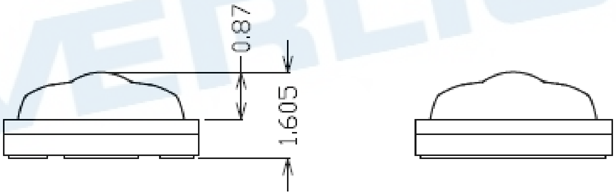
Including test tolerance ±10%

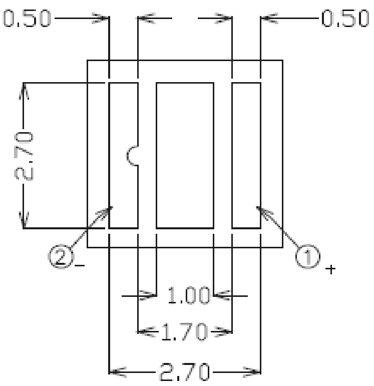
Package Dimension



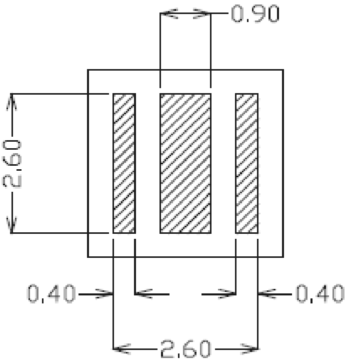


Polarity





Bot. view

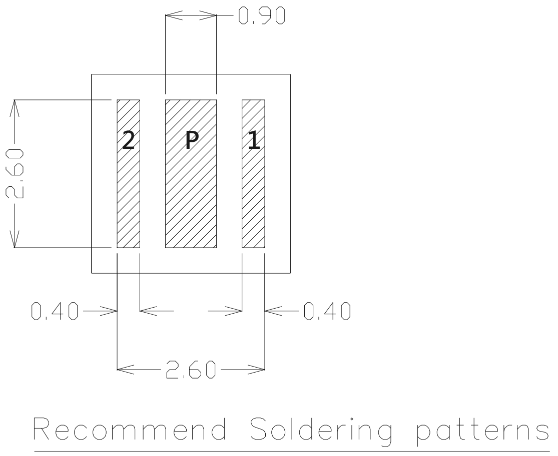


Recommend Soldering patterns

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

Pad Configuration

Pad	1	2	P
Function	Anode	Cathode	Thermal Pad

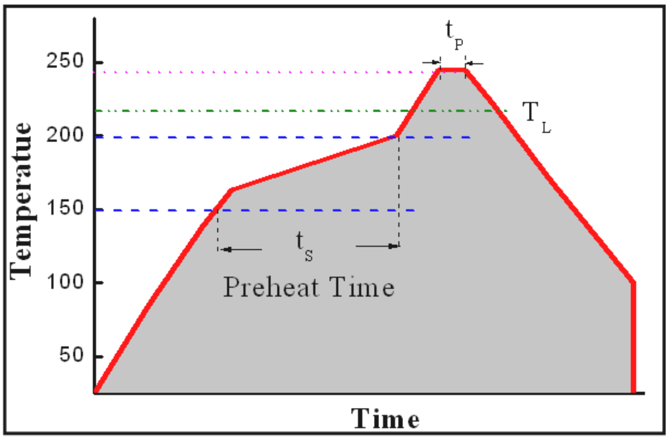


Reflow Soldering Characteristics

For Reflow Process

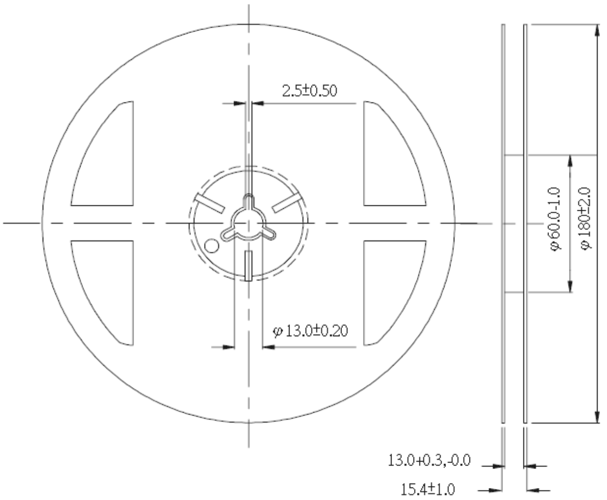
1. C19 series are suitable for SMT processes.
2. Curing of glue in oven must be according to standard operation flow processes.

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

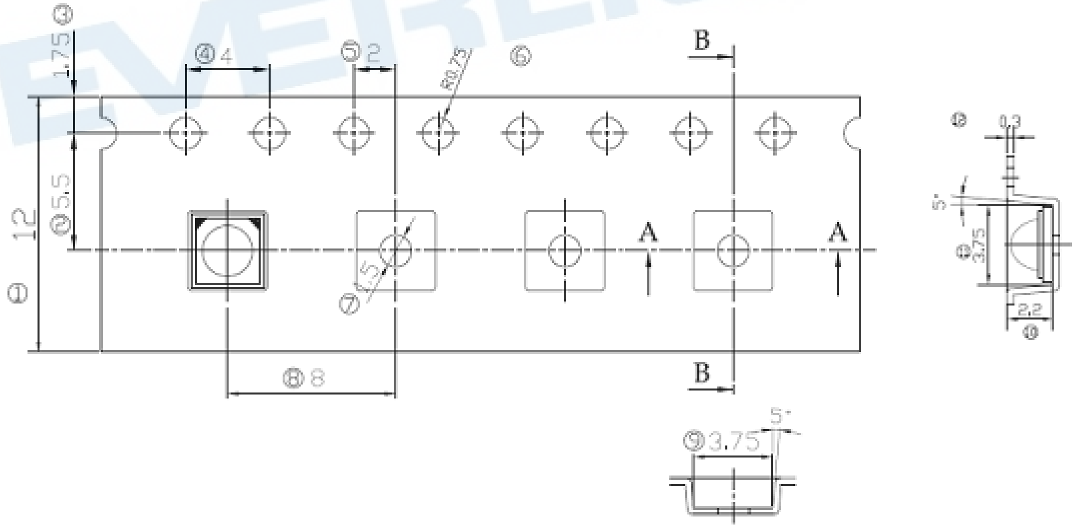


Note:

1. Dimensions are in millimeters
2. The tolerances unless mentioned is ±0.1mm

Carrier Tape Dimensions:

Loaded quantity 400 pcs per reel.

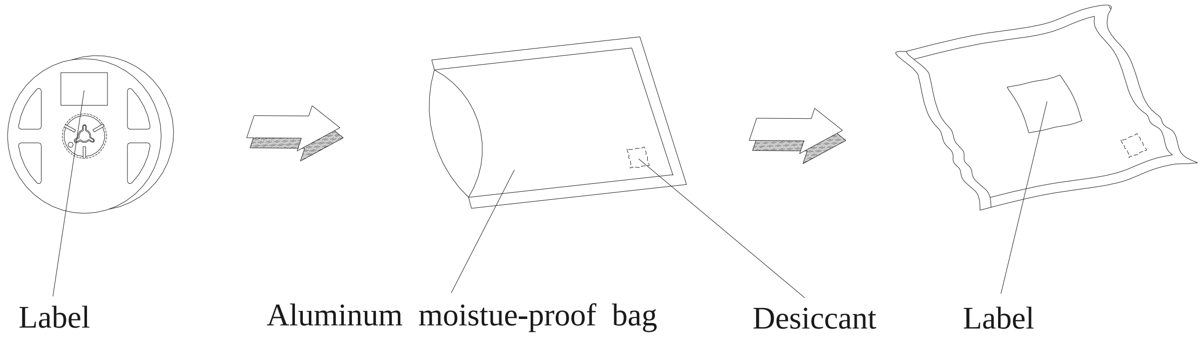


Note:

1. Dimensions are in millimeters

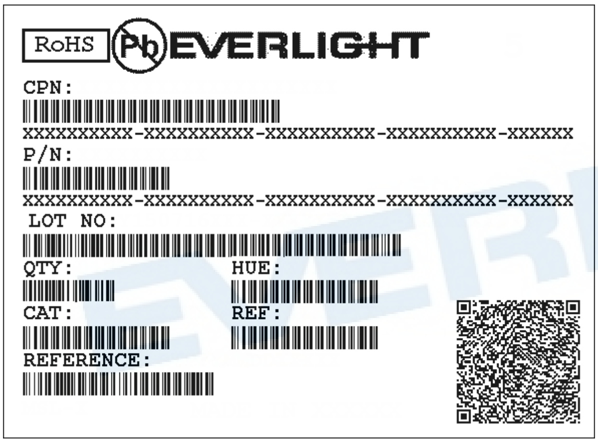
2. The tolerances unless mentioned is ±0.1mm

Moisture Resistant Packaging



Moisture Resistant Packing Materials

Label Form Specification



RoHS Pb EVERLIGHT

CPN:

XXXXXXXXXX-XXXXXXXXXX-XXXXXXXXXX-XXXXXXXXXX-XXXXXX

P/N:

XXXXXXXXXX-XXXXXXXXXX-XXXXXXXXXX-XXXXXXXXXX-XXXXXX

LOT NO:

QTY:

HUE:

CAT:

REF:

REFERENCE:

- 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.
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