

### NIR-C19M-A30/L659-P03/TR

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<input type="checkbox"/>	MASS PRODUCTION
<input checked="" type="checkbox"/>	<b>PRELIMINARY</b>
<input type="checkbox"/>	CUSTOMER DESIGN
DEVICE NO. : DIR-000XXXX	
PAGE : 8	

<b>Revised record</b>		
REV.	DESCRIPTION	RELEASE DATE
1	New spec	2015.12.15

EVERLIGHT

DATASHEET

## Technical Data Sheet

### High Power Infrared LED

### NIR-C19M-A30/L659-P03/TR



#### Features

- IR lightsource with high efficiency
- Double stack emitter
- Peak wavelength  $\lambda_p=810\text{nm}$
- Soldering methods : SMT
- Pb free
- The product itself will remain within RoHS compliant version.
- Narrow half angle (+/- 15°)

#### Description

- NIR-C19M-A30/L659-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 photodiode, Phototransistor.

#### Applications

- Infrared Illumination
- Infrared applied system

### Device Selection Guide

LED Part No.	Chip Material
NIR-C19M-A30/L659-P03/TR	GaAlAs

### Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Rating	Unit
Continuous Forward Current	I <sub>F</sub>	500	mA
Peak Forward Current*1	IFP	1.0	A
Reverse Voltage	VR	5	V
Operating Temperature	Topr	-40~ +85	°C
Storage Temperature	Tstg	-40 ~ +100	°C
Junction temperature	Tj	115	°C
Thermal resistance (junction to leadframe)	Rth(j-L)	TBD	°C/W
Power Dissipation @IF=500mA	Pd	1	W

Notes: \*1:I<sub>FP</sub> Conditions--Pulse Width ≤ 100μs and Duty ≤ 1%.

\*2We suggest that customer should add the heat sink with NIR-C19M-A30/L659-P03/TR to exclude the heat.

### Electro-Optical Characteristics (Ta=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
Total Radiated Power (Pulse Mode) (IF = 1 A, tp = 10 ms)	Po	--	200	--	mW	IF=350mA
		--	600	--		IF=1000mA
Total Radiated Power (Pulse Mode) (IF = 1 A, tp = 100 μs)	Po	--	680	--		
Radiant Intensity (Pulse Mode)	I <sub>E</sub>	--	1800	--	mW/sr	IF=1000mA
Peak Wavelength	λ <sub>p</sub>	--	810	--	nm	IF=1000mA
Spectral Bandwidth	Δλ	--	30	--	nm	IF=1000mA
Forward Voltage	V <sub>F</sub>	--	3.2	--	V	IF=1000mA
Reverse Current	I <sub>R</sub>	--	--	10	μA	VR=5V
View Angle	2θ1/2	--	30	--	deg	IF=20mA

### Bin Code List

Condition : I<sub>F</sub>=350mA

Unit : mW

Radiated Power

Bin Number	A	B	C	D	E
Min	120	170	218	264	305
Max	190	242	295	345	385

Including test tolerance ±10%

Typical Electro-Optical Characteristics Curves

Fig.1 Forward Current vs. Ambient Temperature

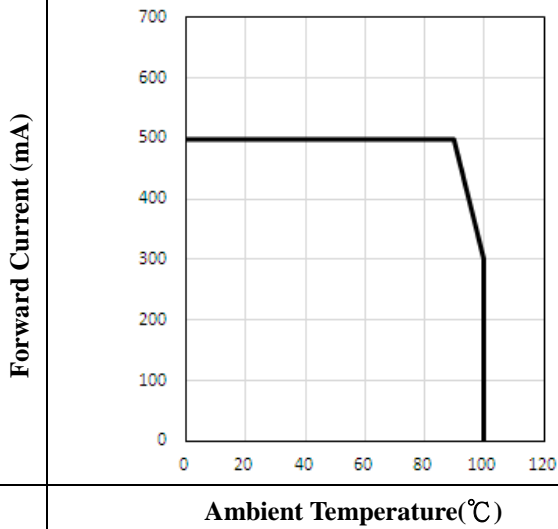


Fig.2 Spectral Distribution

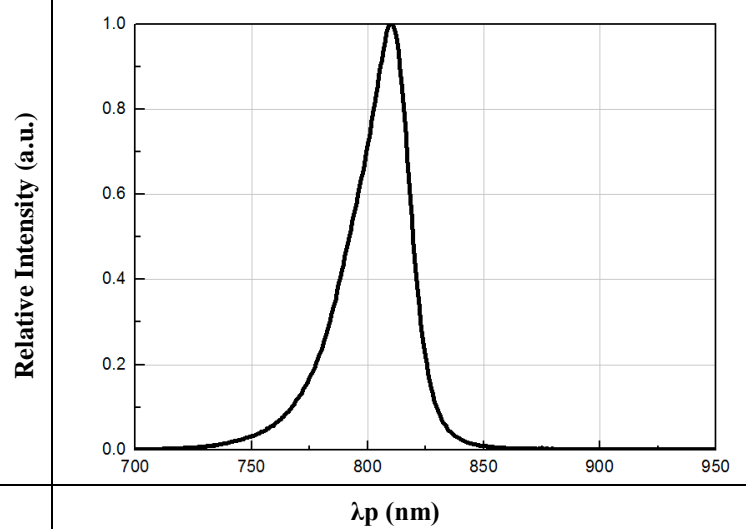


Fig.3 Radiant Intensity vs. Forward Current

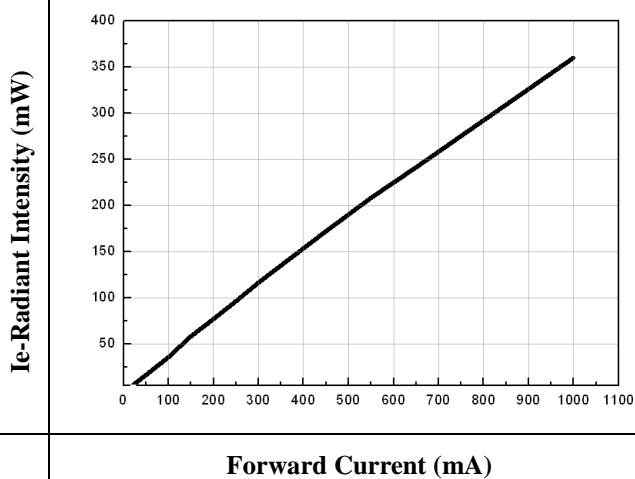


Fig.4 Relative Radiant Intensity vs. Angular Displacement

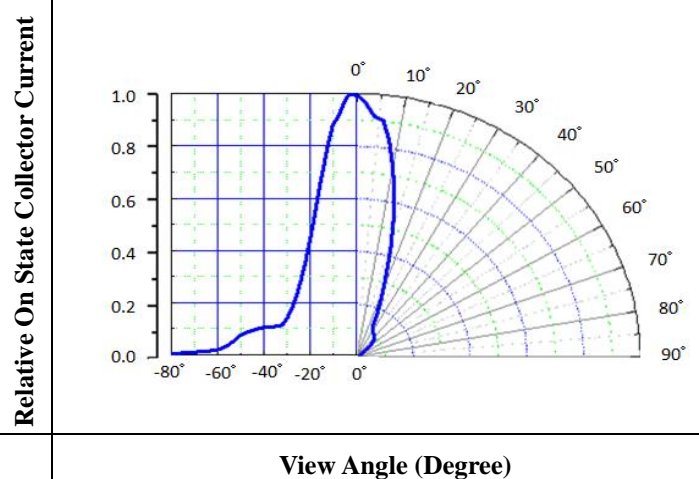
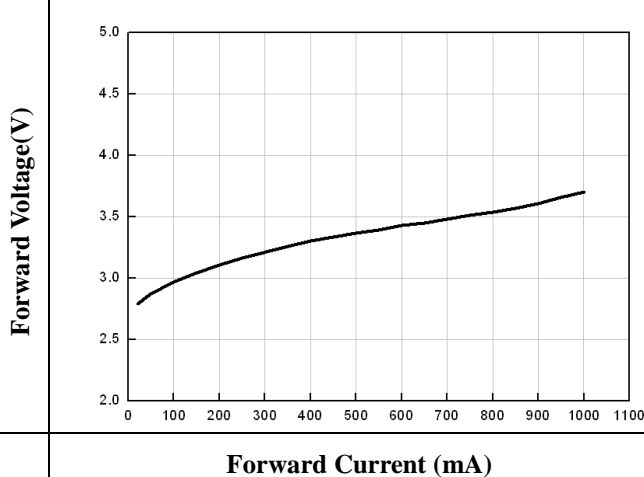
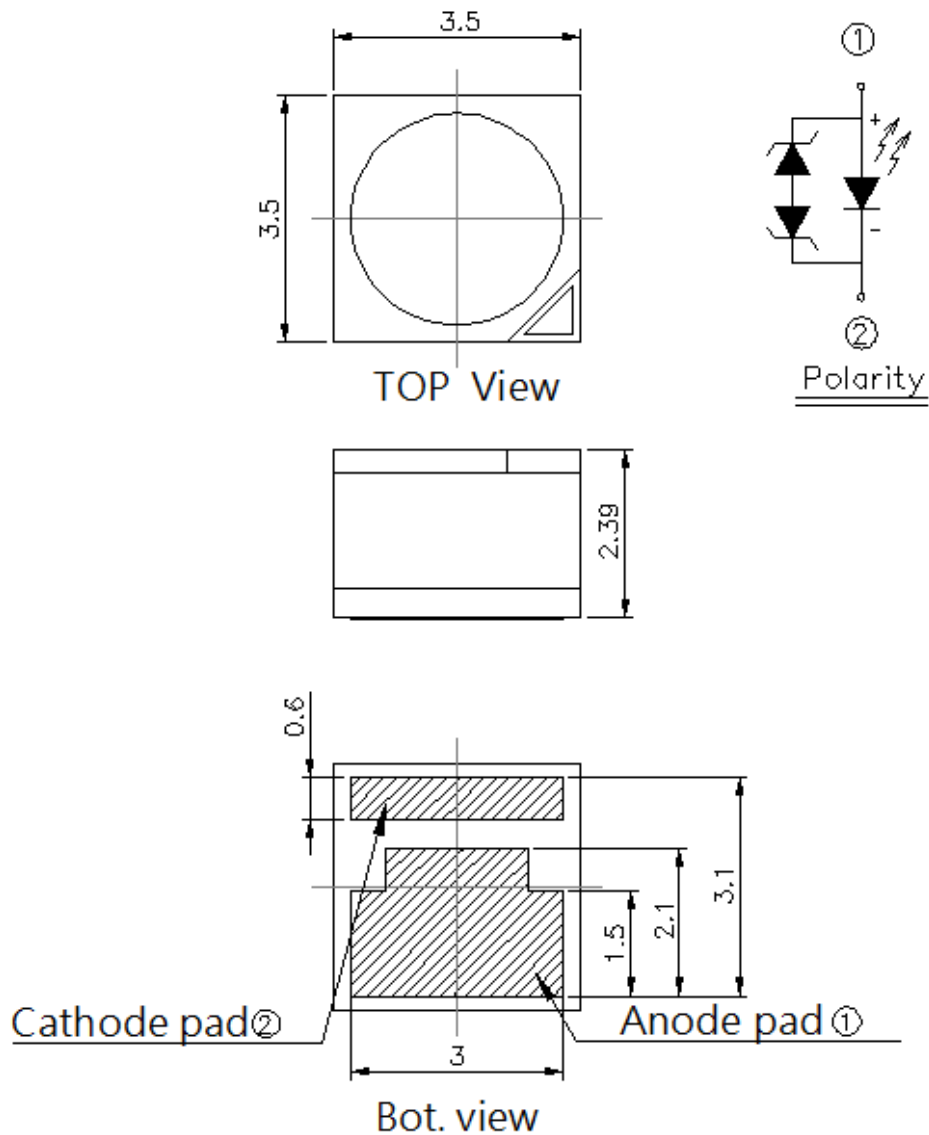


Fig.5 Forward Voltage vs. Forward Current



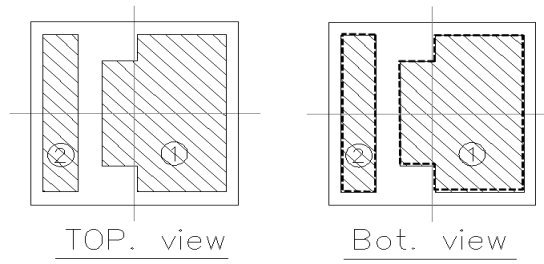
## Package Dimension



Note:

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

## Pad Configuration

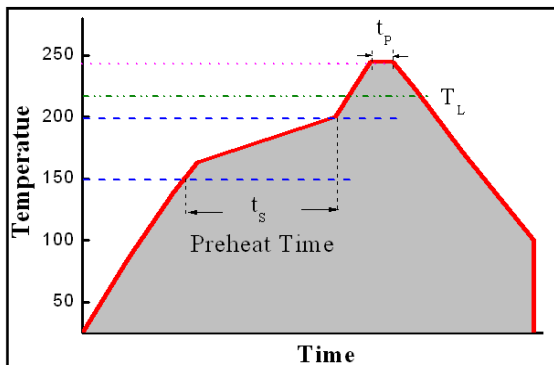


PAD	FUNCTION
1	ANODE
2	CATHODE

## Reflow Soldering Characteristics

For Reflow Process

- C19M series are suitable for SMT processes.
- Curing of glue in oven must be according to standard operation flow processes.



Profile Feature	Lead Free Assembly
Ramp-Up Rate	2-3 °C/S
Preheat Temperature	150-200 °C
Preheat Time (t <sub>s</sub> )	60-120 S
Liquid Temperature (T <sub>L</sub> )	217 °C
Time maintained above T <sub>L</sub>	60-90 S
Peak Temperature (T <sub>P</sub> )	240±5 °C
Peak Time (t <sub>p</sub> )	Max 20 S
Ramp-Down Rate	3-5 °C/S

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

## Moisture Resistant Packing Materials Product Labeling



- CPN : Customer's Product Number
- P/N : Everlight Product Number
- QTY : Packing Quantity
- CAT : Luminous Flux (Brightness) Bin
- HUE : Color Bin
- REF : Forward Voltage Bin
- LOT No : Lot Number

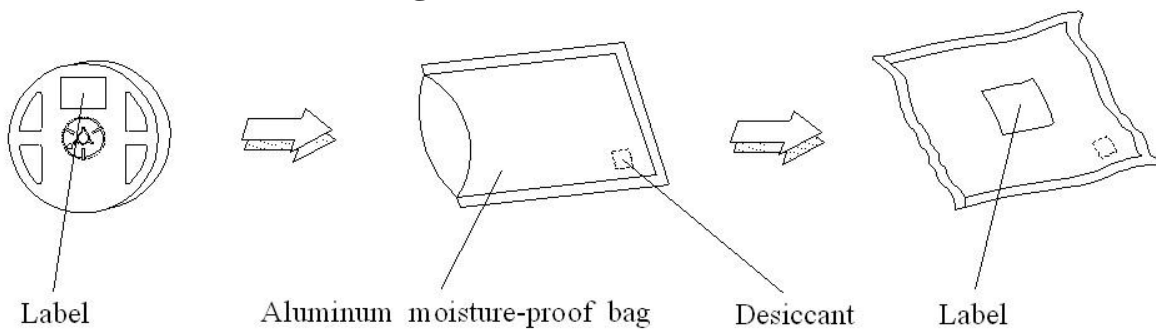
## Carrier Tape Dimensions: Loaded Quantity 1000 pcs Per Reel

TBD

Notes:

1. Dimensions are in millimeters.
2. Tolerances for fixed dimensions are  $\pm 0.1$ mm.

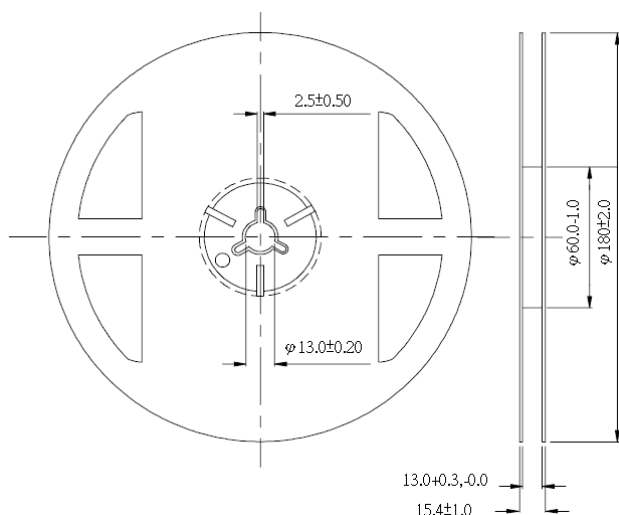
## Moisture Resistant Packing Process



Notes:

1. Dimensions are in millimeters.
2. Tolerances unless mentioned are  $\pm 0.1$ mm.

## Emitter Reel Dimensions



### Notes:

1. Dimensions are in millimeters.
2. Tolerances unless mentioned are  $\pm 0.1$ mm.

### Notes

1. Above specification may be changed without notice. EVERLIGHT will reserve authority on material change for above specification.
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