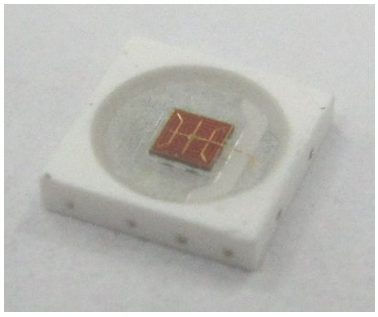
EVERLIGHT AMERICAS

DATASHEET

SMD ▪ HP
EAHP3535XRA0



Features

- Top view white LED
- High luminous intensity output
- Typical Viewing Angle:120°
- Pb-free
- RoHS compliant

Description

The Everlight Americas EAHP3535XRA0 package has high efficacy, mid power consumption, wide viewing angle and a compact form factor. These features make this package an ideal LED for all lighting applications.

Applications

- General lighting
- Decorative and Entertainment Lighting
- Indicators
- Illumination

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Issue No: DHE-0002950

LifecyclePhase: Approved
Expired Period: Forever

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Absolute Maximum Ratings

Parameter	Symbol	Ratings	Unit
Max. DC Forward Current (mA)	I_F	350	mA
Max. Peak Pulse Current (mA)	I_{Pulse}	400[1]	mA
Power Dissipation	Pd	1	W
Thermal Resistance	R_{th}	15	°C/W
Max. Junction Temperature	T_J	115	°C
Operating Temperature	T_{Opr}	-40 ~ +85	°C
Storage Temperature	T_{Stg}	-40 ~ +100	°C
Max. Soldering Temperature	T_{Sol}	260	°C
Max. Allowable Reflow Cycles	n/a	2	cycles

Notes: Duty cycle = 1/10@1KHZ

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Electro-Optical Characteristics

Order Code	Minimum Luminous Flux (lm)	Typical Luminous Flux (lm)	CCT (K) Wavelength (nm)	Forward Voltage (V)	Current (mA)
EAHP3535XRA0	33	39	620-630	1.75-2.75	350

Notes:

1. Luminous flux measurement tolerance: ±10%.
2. The data of luminous flux measured at thermal pad=25℃
3. Typical luminous flux or light output performance is operated within the condition guided by this datasheet.

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Luminous Flux Bins of Product Binning

Group	Bin	Minimum Photometric Flux (lm)	Maximum Photometric Flux (lm)
E	1	4	5
	2	5	6
	3	6	8
	4	8	10
	5	10	13
	6	13	17
	7	17	20
	8	20	23
	9	23	27
F	1	27	33
	2	33	39
	3	39	45
	4	45	52
	5	52	60
	6	60	70
	7	70	80
	8	80	90
	9	90	100

Group	Bin	Minimum Photometric Flux (lm)	Maximum Photometric Flux (lm)
J	1	100	110
	2	110	120
	3	120	130
	4	130	140
	5	140	150
	6	150	160
	7	160	180
	8	180	200
	9	200	225
K	1	225	250
	2	250	275
	3	275	300
	4	300	325
	5	325	350
	6	350	375
	7	375	400
	8	400	425
	9	425	450

Radiometric Power Bins

Group	Bin	Minimum Radiometric Power(mW)	Maximum Radiometric Power(mW)
Q	1	0	25
	2	25	50
	3	50	75
	4	75	100
	5	100	125
	6	125	175
	7	175	225
	8	225	275
	9	275	350

Group	Bin	Minimum Radiometric Power(mW)	Maximum Radiometric Power(mW)
R	1	350	425
	2	425	500
	3	500	600
	4	600	700
	5	700	800
	6	800	900
	7	900	1000
	8	1000	1300
	9	1300	1600

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Color Bins

Group	Bin	Minimum Dominant Wavelength (nm)	Maximum Dominant Wavelength (nm)
R (Red)	3	610	615
	4	615	620
	5	620	625
	6	625	630
	7	630	635
	8	635	640
	9	640	645

1. Dominant / Peak wavelength measurement tolerance: ±1nm.
2. Dominant / Peak wavelength bins are defined at I_F=350 mA operation.

Forward Voltage Bins

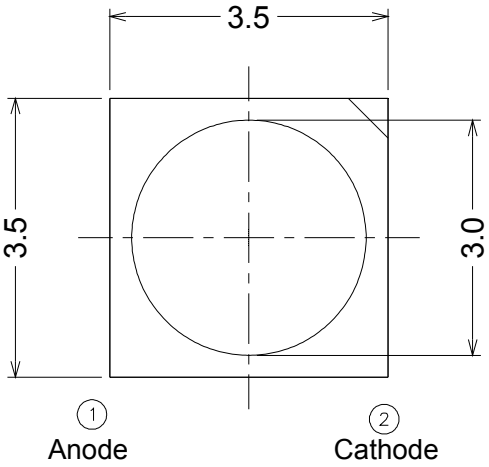
Bin		Minimum Forward Voltage (V)	Maximum Forward Voltage (V)
U1		1.75	2.05
U2		2.05	2.35
U3		2.35	2.65
U4	1	2.65	2.75
	2	2.75	2.85
	3	2.85	2.95
V1		2.95	3.25
V2		3.25	3.55
V3		3.55	3.85

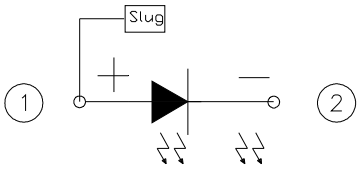
Notes:

1. Forward voltage measurement tolerance: ±0.1V.
2. Forward voltage bins are defined at I_F=350mA operation.

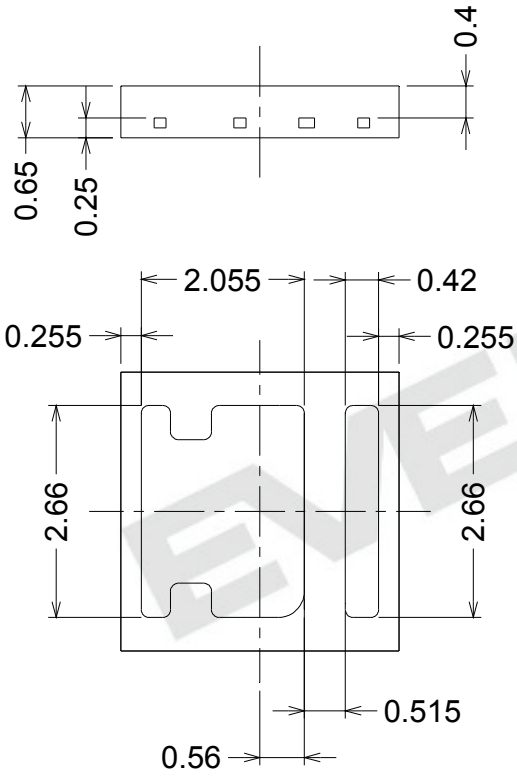
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Mechanical Dimension

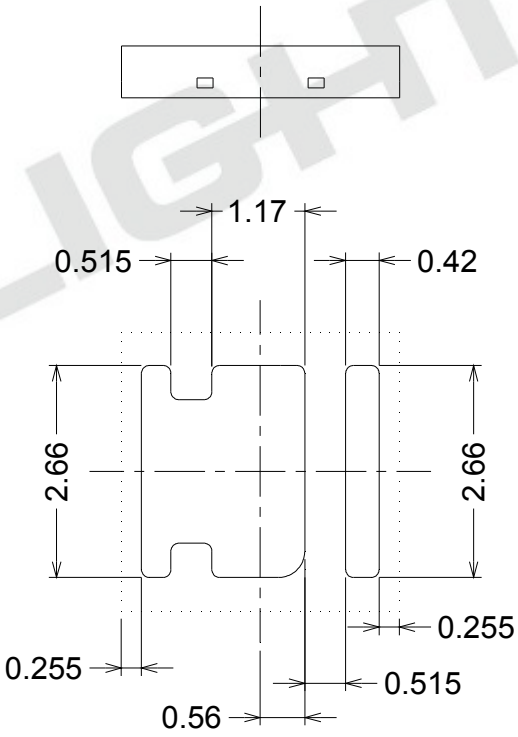




Polarity



Bot. view



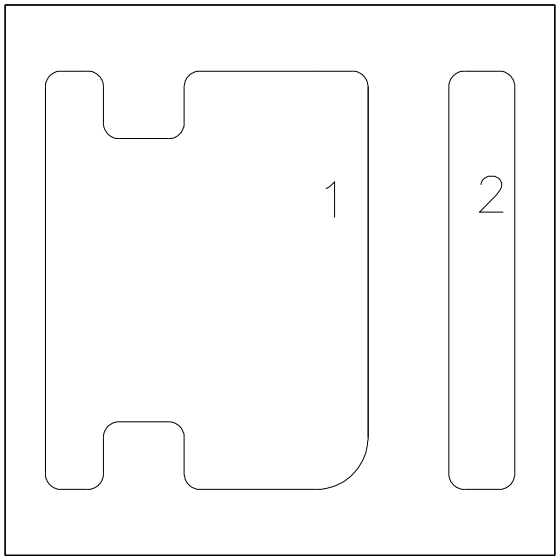
Soldering patterns

Notes:

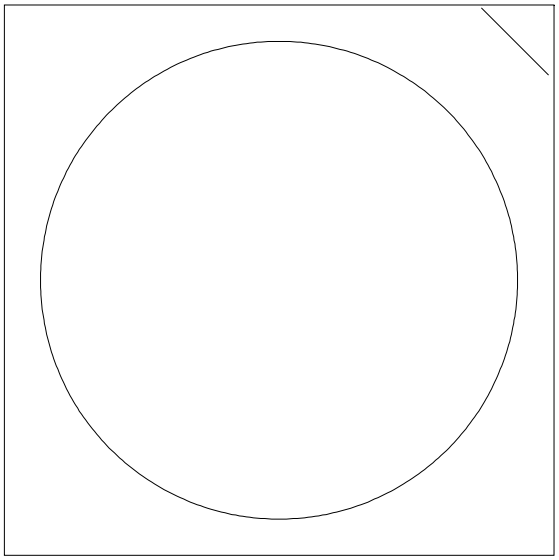
1. Dimensions are in millimeters.
2. Tolerances unless mentioned are ± 0.2mm.
3. The thermal pad is electrically unity from the Anode and contact pads.
4. Do not handle the device by the lens. Incorrect force applied to the lens may lead to the failure of devices.

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Pad Configuration



BOTTOM VIEW



TOP VIEW

PAD	FUNCTION
1	ANODE
2	CATHODE

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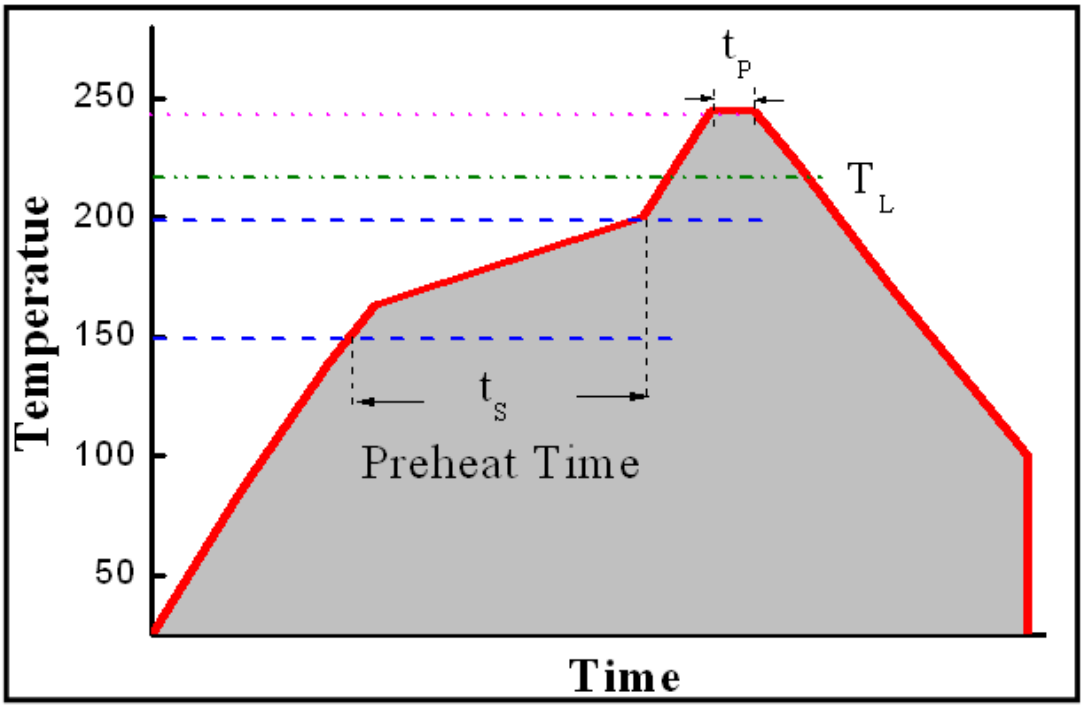
LifecyclePhase: Approved
Expired Period: Forever

Reflow Soldering Characteristics

For Reflow Process

a. 3535 series are suitable for SMT processes.

b. Curing of glue in oven must be according to standard operation flow processes.



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

c. Reflow soldering should not be done more than twice.

d. In soldering process, stress on the LEDs during heating should be avoided.

e. After soldering, do not bend the circuit board.

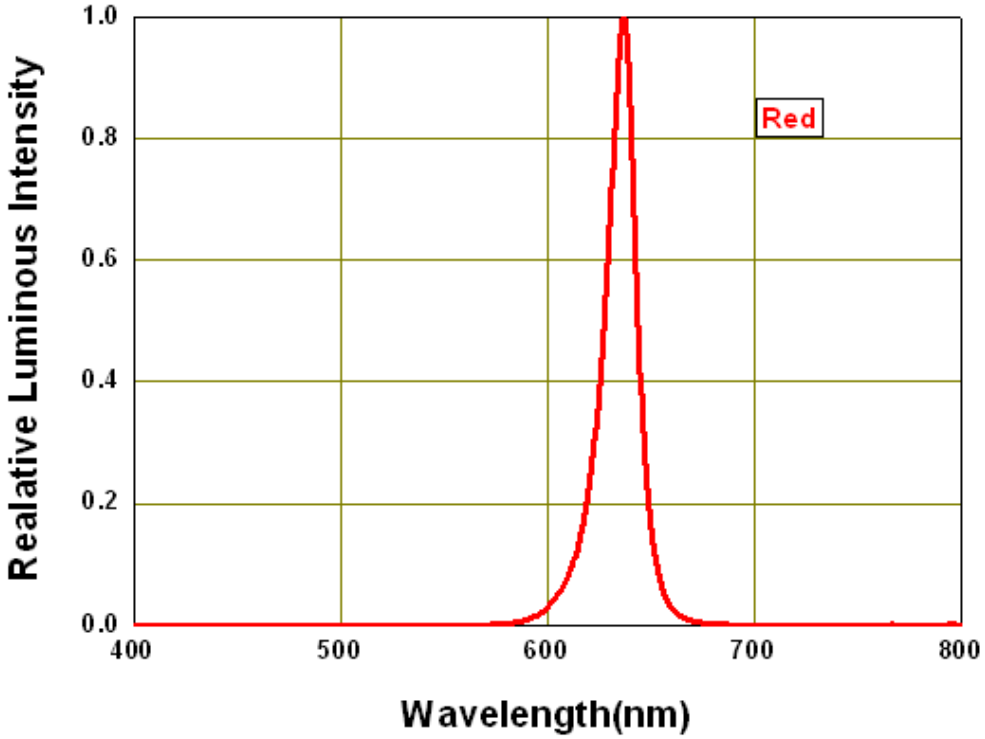
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Wavelength Characteristics

For Yellow, Red, Blue

Relative Spectral Distribution

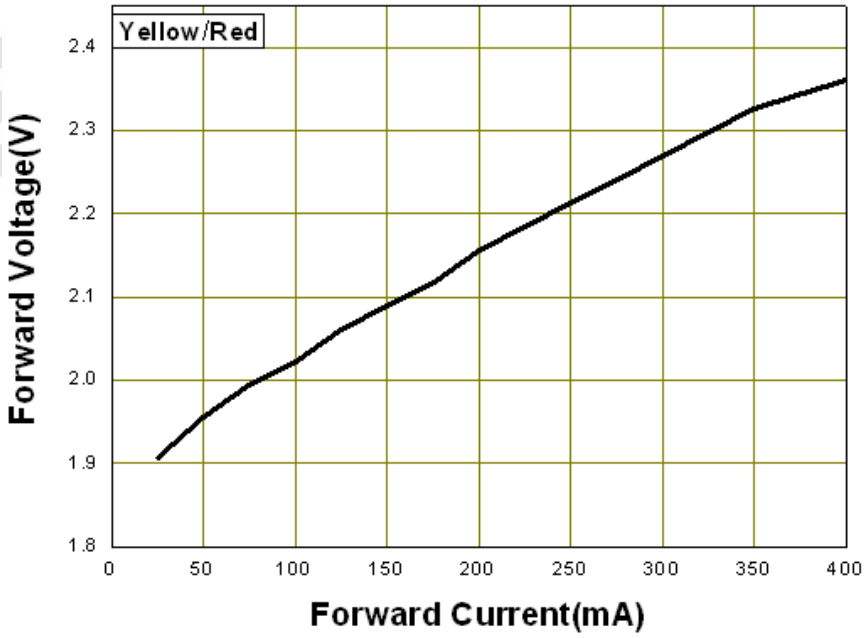
@ Solder Pad Temperature = 25℃



Typical Forward Current vs. Forward Voltage

For Yellow, Red, Blue

@ Solder Pad Temperature = 25℃

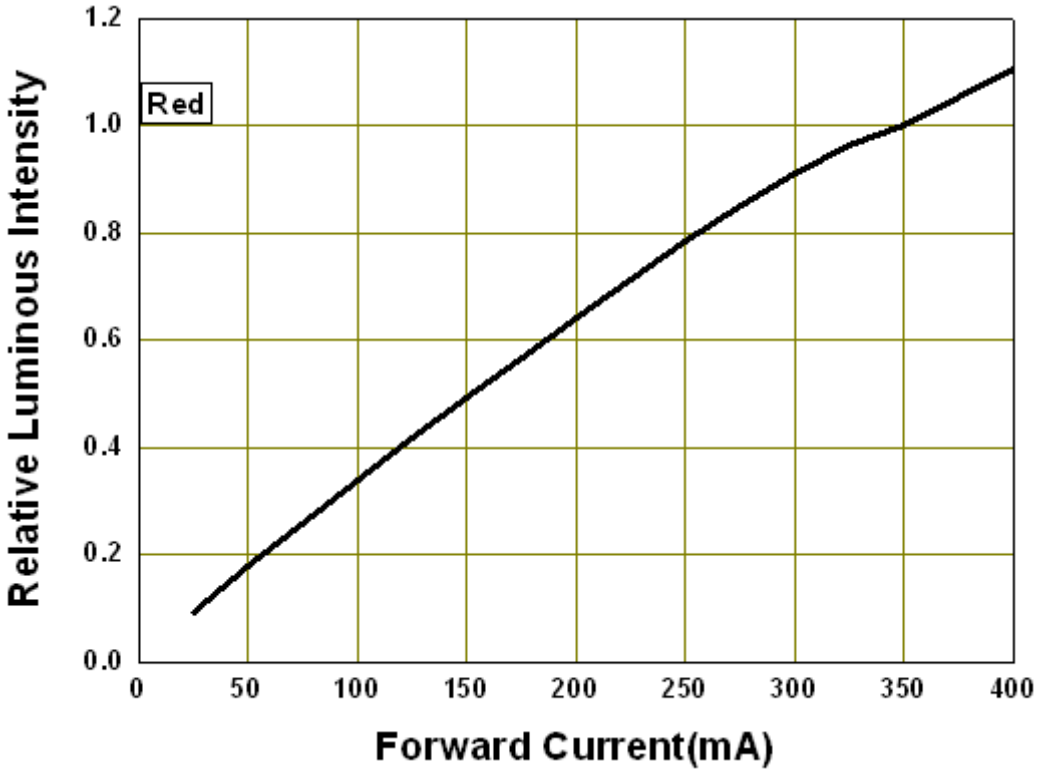


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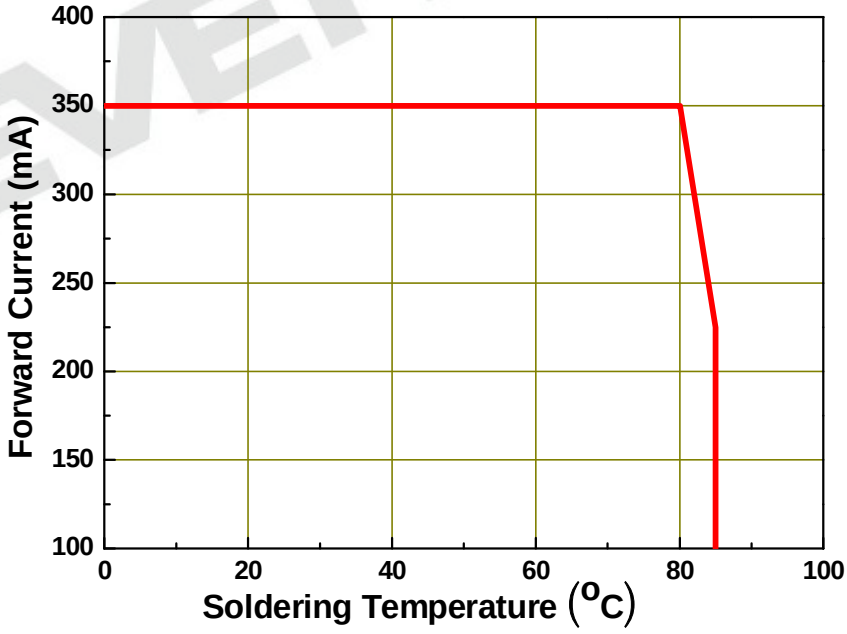
Typical Relative Luminous Flux V.S. Forward Current

For Cool-White ,Warm-White
@ Solder Pad Temperature = 25℃



Forward Current Derating Curve

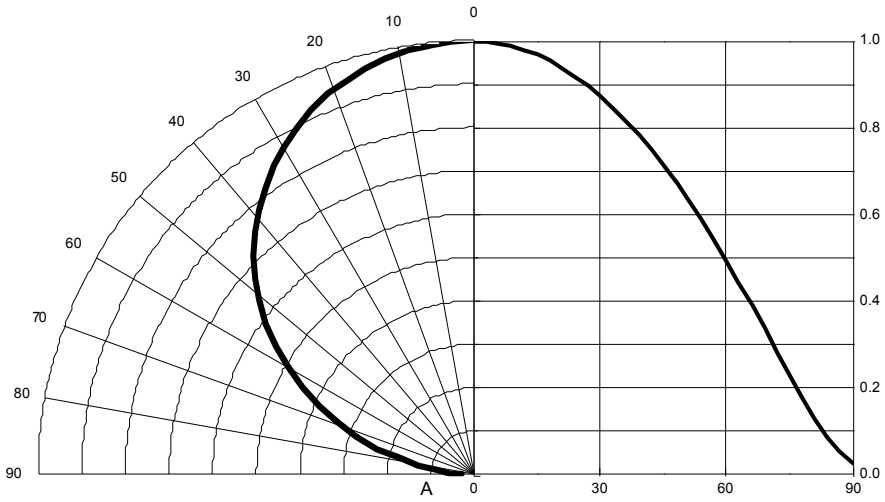
@ Junction Temperature <115℃



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Typical Radiation Patterns

3535 series: Typical Diagram Characteristics of Radiation for Yellow and Red



Notes:

1. $2\theta_{1/2}$ is the off axis angle from lamp centerline where the luminous intensity is 1/2 of the peak value.
2. View angle tolerance is ± 5° .

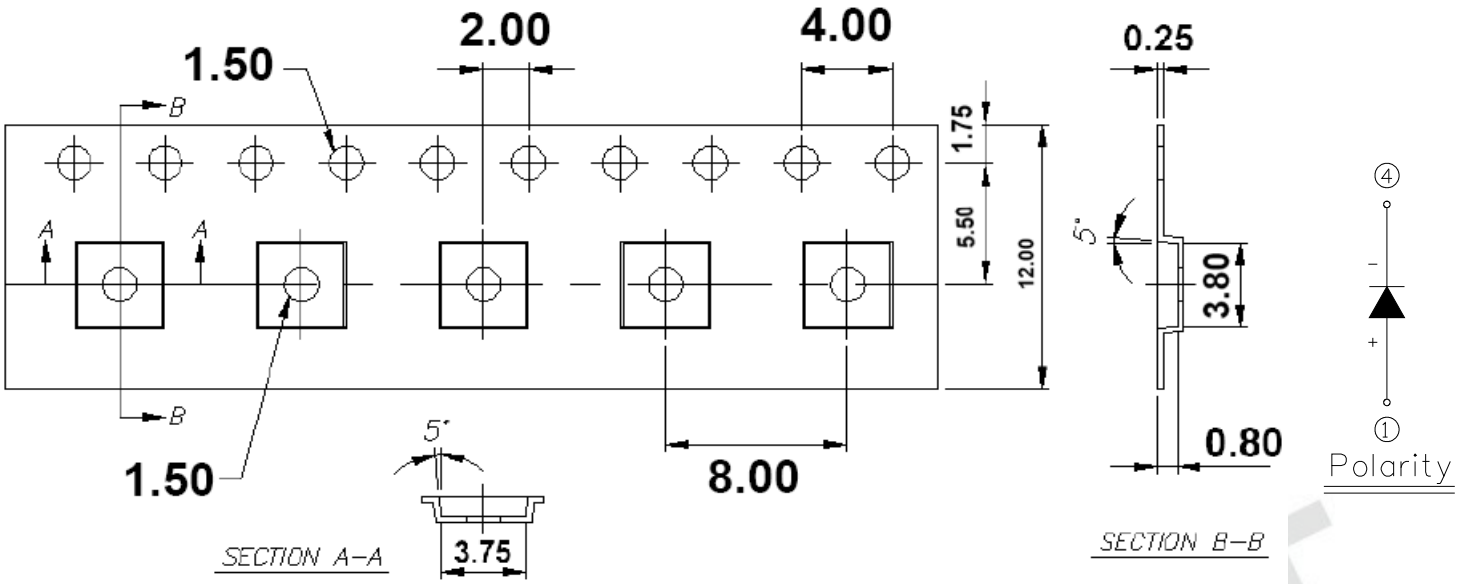
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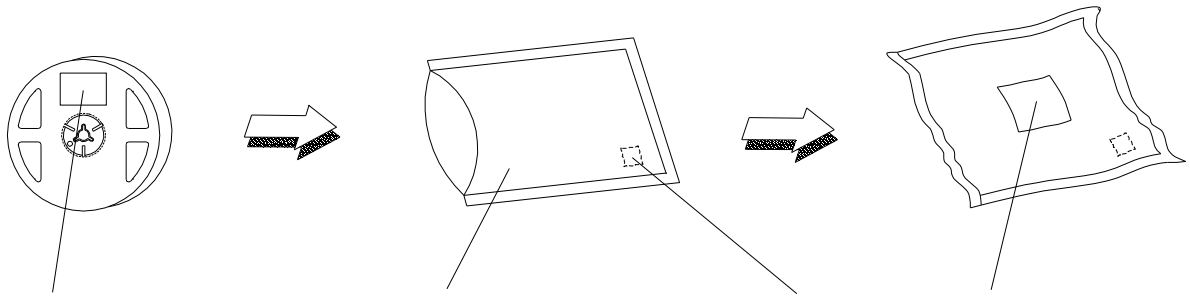
Emitter Tape Packaging

MOQ ≥2Kpcs, multiple of 400pcs per reel, max 2000pcs
MOQ <2Kpcs, multiple of 100pcs per reel, max 2000pcs



Notes:
1. Tolerance unless mentioned is ±0.1mm; Unit = mm
2. Minimum packing amount is 250/500/1000/2000 pcs per reel

Moisture Resistant Packaging

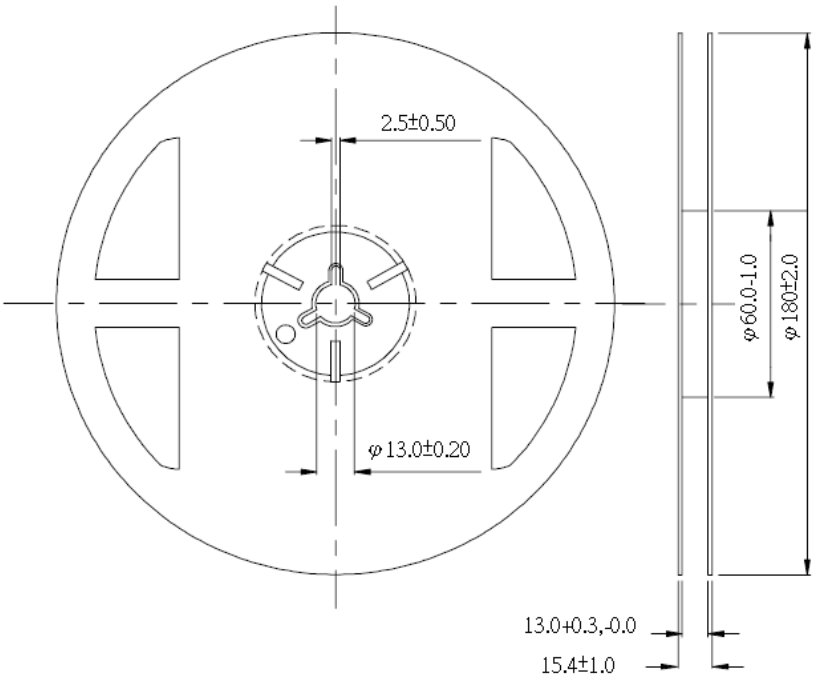


Label **Aluminum moisture-proof bag** **Desiccant** **Label**

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Expired Period: Forever

Emitter Reel Packaging
Reel Dimensions



Notes:

1. Dimensions are in millimeters.
2. Tolerances unless mentioned are ±0.1mm.

Product Labeling

Label Explanation

CPN: Customer Specification (when required)

P/N : Everlight Production Number

QTY: Packing Quantity

CAT: Luminous Flux (Brightness) Bin

HUE: Color Bin

REF: Forward Voltage Bin

LOT No: Lot Number

MADE IN TAIWAN: Production Place



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Reliability Data

Stress Test	Stress Condition	Stress Duration
Reflow	Tsol=260°C, 10sec	3 times
Thermal Shock	H：＋100°C 20min. '∫ 10sec. 'L：— 10°C 20min.	500,1000 Cycles
Power Temperature Cycle	H：＋85°C 15min. '∫ 5min. 'L：— 40°C 15min. IF=350mA	500,1000 Cycles
High Temperature/Humidity Operation	Ta=85°C , RH=85%, IF=225mA	1000hours
Room Temperature Operation Life	Ta=25°C, IF=350mA	1000hours
High Temperature Operation Life #1	Ta=55°C, IF=350mA	1000hours
High Temperature Operation Life #2	Ta=85°C, IF=225mA	1000hours
Low Temperature Operation Life	Ta=-40°C, IF=350mA	1000hours
Pulse	30ms ON/2500ms OFF / 30000 Cycles IF=400mA	30ms ON/2500ms OFF / 30000 Cycles

Failure Criteria:

1. LEDs are open or shorted
2. Im: luminous flux attenuate difference(1000hrs)>50%
3. VF: forward voltage difference(1000hrs)>20%

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Storage Conditions

- Before the package is opened: The LEDs should be stored at 30°C or less and 50%RH or less after being shipped from Everlight. The storage life is 6 months. If the LEDs are to be stored for more than 6 months, they should be stored in a sealed container with a nitrogen atmosphere and moisture absorbent material.
- After opening the package: The LED's should be stored under 30°C or less and 30%RH or less. The LED should be used within 168hrs (7days) after opening the package. If unused LEDs remain, they should be stored in moisture proof packages.
- Before using LEDs: The LEDs should be baked under the following conditions: pre-curing at 60±5°C for 24 hours.
- Do not stack assemblies containing Everlight XI3535 LEDs to prevent damage to the optical surface of LEDs. Forces applied to the optical surface may result in the surface being damaged.

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Revision History

Current version: 11.13.2015
Issue No: DHE-0002950
Version: 1
Created by: Justin Chen

Page	Subjects (major change in previous version)	Date of change

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