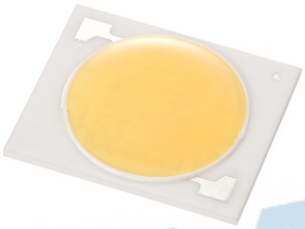
DATASHEET

JU2024

炬

36V/35W Series



Introduction

Everlight`s COB Series is a ceramic substrate based LED achieving high efficiency while maintaining high CRI at Energy Star / ANSI color temperature ranges.

Features

- High Power COB & High CRI LED
- Multi-Chip Solution
- Dimension:20 mm x 24 mm x 1.6 mm
- Main Parameters: Luminous Flux, Forward Voltage , Chromaticity and Color Rendering Index
- RoHS compliant
- Energy Star / ANSI Compliant Binning Structure
- Typical Viewing Angle: 115°

Applications

- Replacement Bulb
- Indoor General Lighting
- Recessed Can Lighting

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Product Nomenclature

The product name is designated as below:

JU2024-CDEFGHJ-KLMNP-QRST

Family name
JU2024

Designation:

CD = lighting color and wavelength [1]
EF = color bin or CCT bin
G = internal code
HJ = min. luminous flux (lm) or radiation power (mW) performance
KL = forward voltage bin[2]
M = internal code
NP = power consumption[3]
Q= internal code
R= Dam Diameter[4]
S= internal code
T=Type of Package[5]

Notes

1. Table of lighting color and wavelength

Symbol	Color	CCT range	Color Rendering Index
GT	Cool-White	4745~7050K	>65
KT	Cool-White	4745~7050K	>80
LM	Warm-White	2580~3710K	>70
	Neutral-White	3710K-4745K	
KM	Warm White	2580~3710K	>80
	Neutral-White	3710K-4745K	

2. Table of forward voltage bin

Symbol	Description
36	36V Input Voltage

3. Power consumption:

Symbol	Description
35	35W

4. Dam Diameter:

Symbol	Description
G	16.0-16.9mm

5. Table of packaging types:

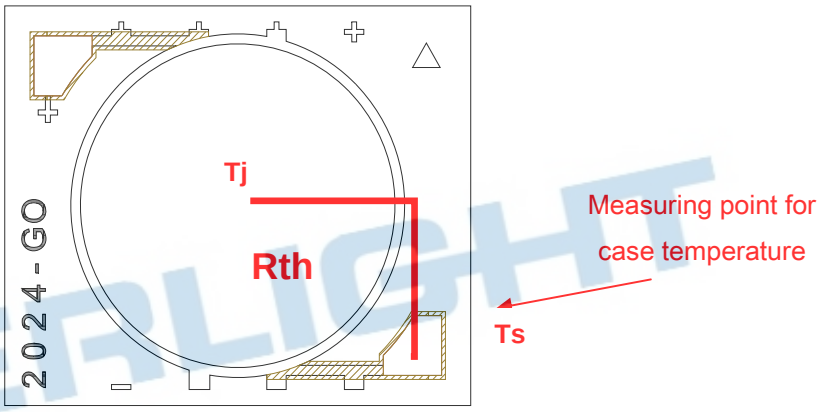
Symbol	Description
T	Tray

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Absolute Maximum Ratings

Parameter	Symbol	Ratings	Unit
Max. DC Forward Current (mA)	I_F	1300	mA
Max. Pulse Forward Current (mA)	I_P	1800	mA
Power Dissipation	Pd	50	W
Thermal Resistance	R_{th}	1.3	°C/W
Max. Junction Temperature	T_J	120	°C
Operating Temperature	T_{Opr}	-40 ~ +85	°C
Storage Temperature	T_{Stg}	-40 ~ +85	°C



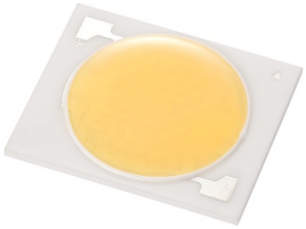
Notes:

1. For optimal performance, Everlight recommends 950mA operation.
2. tp ≦100ms, Duty cycle = 25%
3. The JU2024 36V/35W series LEDs are not designed for reverse bias use.
4. Power dissipation and forward current are the value when the module temperature is set lower than the rating by using an adequate heat sink.

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PN of the JU2024 Series : White LEDs



Order Code of JU2024	Minimum Luminous Flux (lm)	Typical Luminous Flux (lm)	CCT (K)	Forward Voltage (V)	Forward Current (mA)	CRI (min.)
JU2024-KM277S7-36A35-3G0T	3400	3890	27K-1~27K-4	33.0~39.0	950	80
JU2024-KM307S8-36A35-3G0T	3600	4070	30K-1~30K-4	33.0~39.0	950	80
JU2024-KM407S9-36A35-3G0T	3800	4315	40K-1~40K-4	33.0~39.0	950	80
JU2024-KT507M1-36A35-3G0T	4000	4435	50K-1~50K-4	33.0~39.0	950	80
JU2024-KT577M1-36A35-3G0T	4000	4485	57K-1~57K-4	33.0~39.0	950	80
JU2024-KT657M1-36A35-3G0T	4000	4485	65K-1~65K-4	33.0~39.0	950	80

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

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Product Binning

Luminous Flux Bins

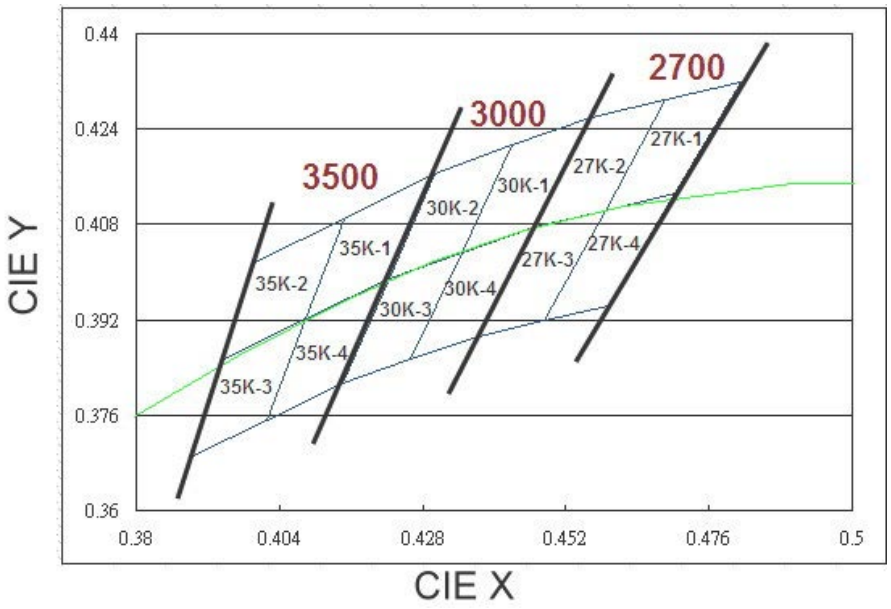
Group	Bin	Minimum Photometric Flux (lm)	Maximum Photometric Flux (lm)
S	7	3400	4300
	8	3600	4500
	9	3800	4700
M	1	4000	4900

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Warm-White Bin Structure



Warm-White Bin Coordinates

2700K

Bin	CIE X	CIE Y
27K-1	0.4582	0.4099
	0.4687	0.4289
	0.4813	0.4319
	0.4700	0.4126
Reference Range: 2580~2718K		

Bin	CIE X	CIE Y
27K-2	0.4465	0.4071
	0.4562	0.4260
	0.4687	0.4289
	0.4582	0.4099
Reference Range: 2718~2869K		

Bin	CIE X	CIE Y
27K-4	0.4483	0.3919
	0.4582	0.4099
	0.4700	0.4126
	0.4593	0.3944
Reference Range: 2580~2718K		

Bin	CIE X	CIE Y
27K-3	0.4373	0.3893
	0.4465	0.4071
	0.4582	0.4099
	0.4483	0.3919
Reference Range: 2580~2718K		

3000K

Bin	CIE X	CIE Y
30K-1	0.4342	0.4028
	0.4430	0.4212
	0.4562	0.4260
	0.4465	0.4071
Reference Range: 2870~3000K		

Bin	CIE X	CIE Y
30K-2	0.4221	0.3984
	0.4299	0.4165
	0.4430	0.4212
	0.4342	0.4028
Reference Range: 3000~3220K		

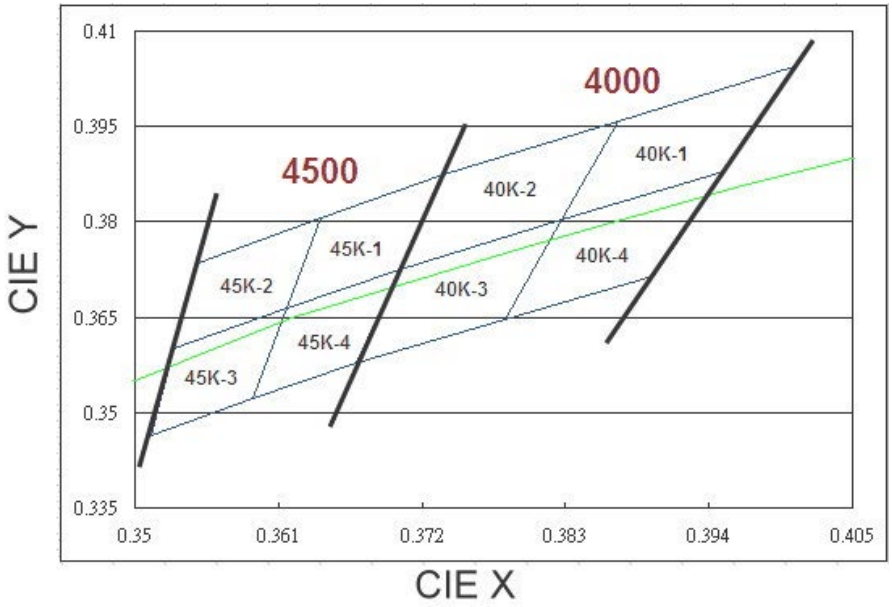
Bin	CIE X	CIE Y
30K-4	0.4259	0.3853
	0.4342	0.4028
	0.4465	0.4071
	0.4373	0.3893
Reference Range: 2870~3000K		

Bin	CIE X	CIE Y
30K-3	0.4147	0.3814
	0.4221	0.3984
	0.4342	0.4028
	0.4259	0.3853
Reference Range: 3000~3220K		

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Neutral-White Bin Structure



Neutral-White Bin Coordinates

4000K

Bin	CIE X	CIE Y
40K-1	0.3825	0.3798
	0.3869	0.3958
	0.4006	0.4044
	0.3950	0.3875
Reference Range: 3710~3967K		

Bin	CIE X	CIE Y
40K-2	0.3702	0.3722
	0.3736	0.3874
	0.3869	0.3958
	0.3825	0.3798
Reference Range: 3967~4259K		

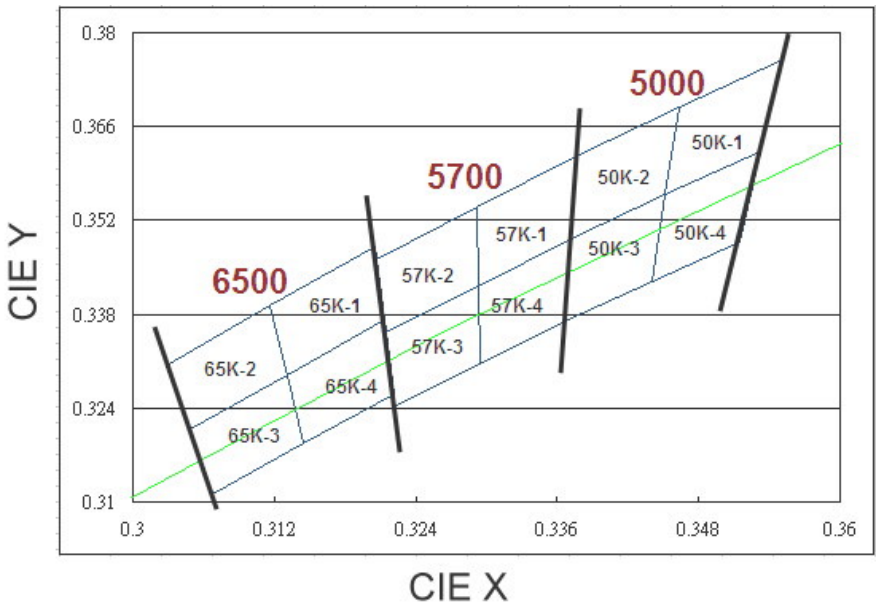
Bin	CIE X	CIE Y
40K-4	0.3783	0.3646
	0.3825	0.3798
	0.3950	0.3875
	0.3898	0.3716
Reference Range: 3710~3967K		

Bin	CIE X	CIE Y
40K-3	0.3670	0.3578
	0.3702	0.3722
	0.3825	0.3798
	0.3783	0.3646
Reference Range: 3967~4259K		

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Cool-White Bin Structure



Cool-White Bin Coordinates

5000K

Bin	CIE X	CIE Y
50K-1	0.3463	0.3687
	0.3551	0.3760
	0.3533	0.3620
	0.3451	0.3554
Reference Range: 4743~5011K		

Bin	CIE X	CIE Y
50K-2	0.3376	0.3616
	0.3463	0.3687
	0.3451	0.3554
	0.3371	0.3490
Reference Range: 5013~5308K		

Bin	CIE X	CIE Y
50K-4	0.3451	0.3554
	0.3533	0.3620
	0.3515	0.3487
	0.3440	0.3427
Reference Range: 4743~5011K		

Bin	CIE X	CIE Y
50K-3	0.3371	0.3490
	0.3451	0.3554
	0.3440	0.3427
	0.3366	0.3369
Reference Range: 5013~5308K		

5700K

Bin	CIE X	CIE Y
57K-1	0.3290	0.3538
	0.3376	0.3616
	0.3371	0.3490
	0.3290	0.3417
Reference Range: 5308~5643K		

Bin	CIE X	CIE Y
57K-2	0.3207	0.3462
	0.3290	0.3538
	0.3290	0.3417
	0.3215	0.3350
Reference Range: 5643~6017K		

Bin	CIE X	CIE Y
57K-4	0.3290	0.3417
	0.3371	0.3490
	0.3366	0.3369
	0.3290	0.3300
Reference Range: 5308~5643K		

Bin	CIE X	CIE Y
57K-3	0.3215	0.3350
	0.3290	0.3417
	0.3290	0.3300
	0.3222	0.3243
Reference Range: 5643~6017K		

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6500K

Bin	CIE X	CIE Y
65K-1	0.3115	0.3391
	0.3205	0.3481
	0.3213	0.3373
	0.3130	0.3290
Reference Range: 6018~6493K		

Bin	CIE X	CIE Y
65K-2	0.3028	0.3304
	0.3115	0.3391
	0.3130	0.3290
	0.3048	0.3207
Reference Range: 6487~7042K		

Bin	CIE X	CIE Y
65K-4	0.3130	0.3290
	0.3213	0.3373
	0.3221	0.3261
	0.3144	0.3186
Reference Range: 6018~6493K		

Bin	CIE X	CIE Y
65K-3	0.3048	0.3207
	0.3130	0.3290
	0.3144	0.3186
	0.3068	0.3113
Reference Range: 6487~7042K		

Notes:

1. Color coordinates measurement allowance : ±0.01.

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Forward Voltage Bins

Bin	Minimum Forward Voltage (V)	Maximum Forward Voltage (V)
W4	33.0	39.0

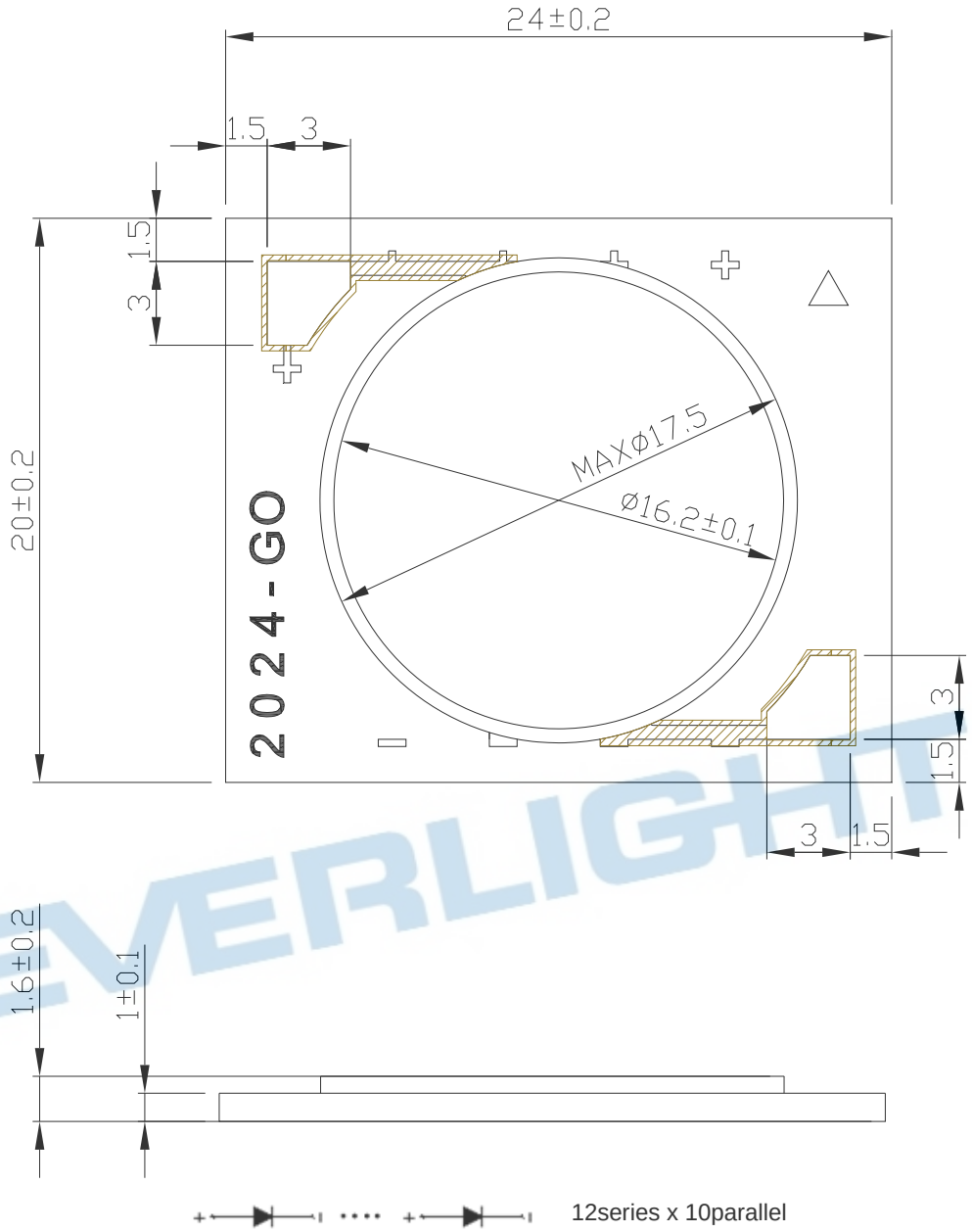
Notes:

1. Forward voltage measurement tolerance: ±2%.
2. Forward voltage bins are defined at I_F=950mA operation.
3. Other Forward Voltage bins for White LEDs available upon request. Please contact your local Everlight sales office.

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Mechanical Dimension



12series x 10parallel

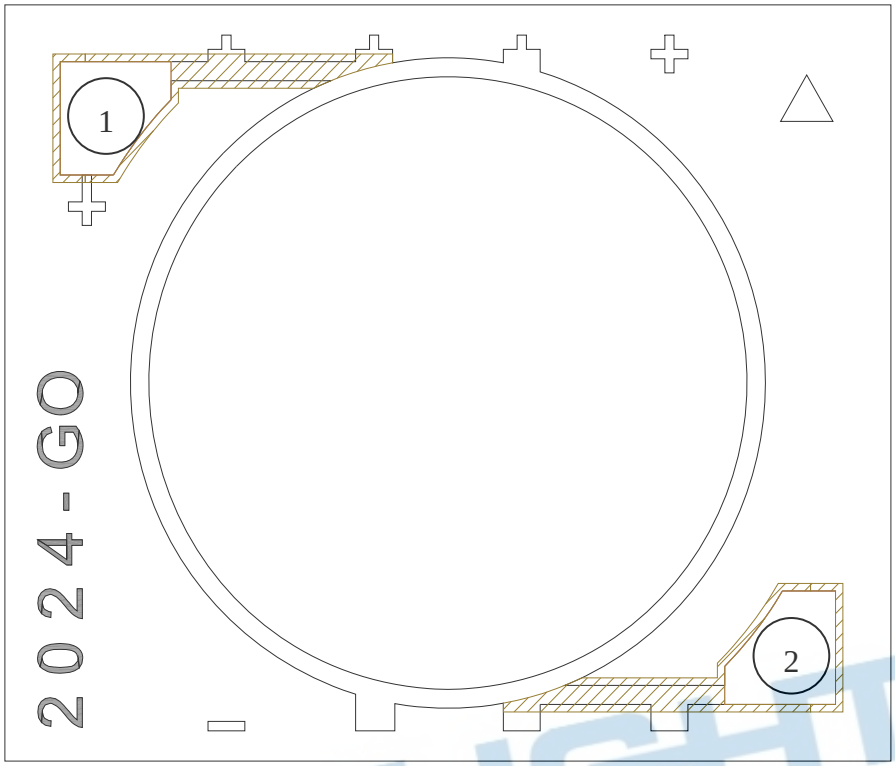
Note:

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

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Pad Configuration



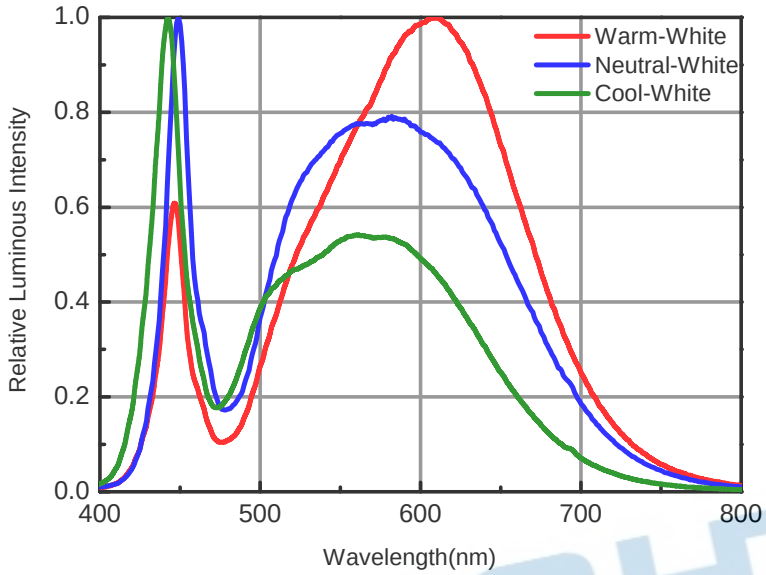
PAD	FUNCTION
1	ANODE
2	CATHODE

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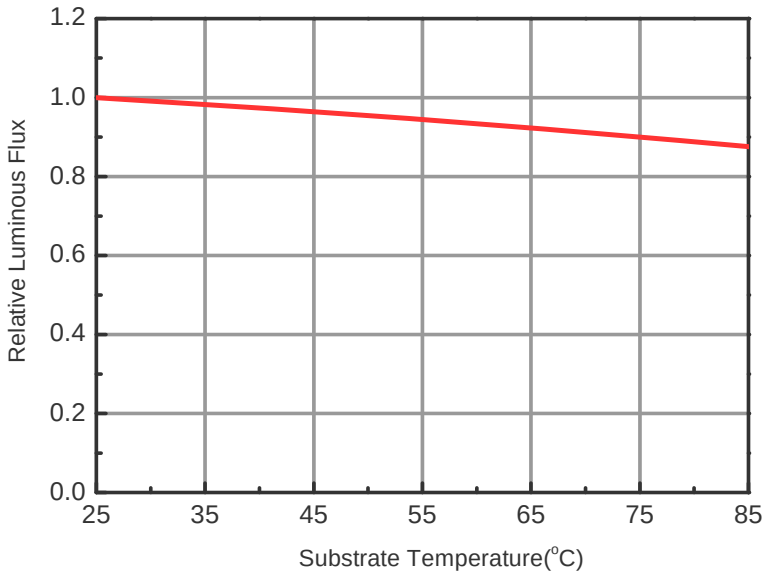
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Typical Electro-Optical Characteristic Curve

Relative Spectral Distribution
@ Substrate Temperature = 25℃

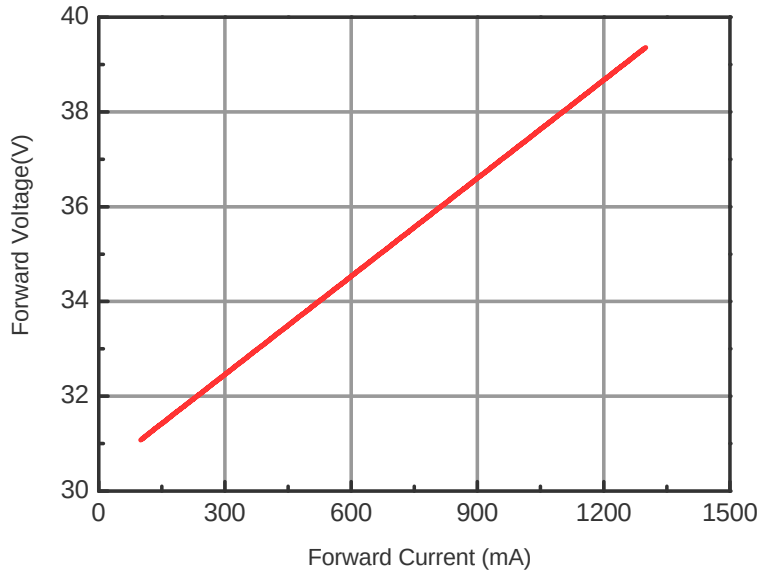


Relative Luminous Flux vs. Substrate Temperature
@Forward Current = 950mA

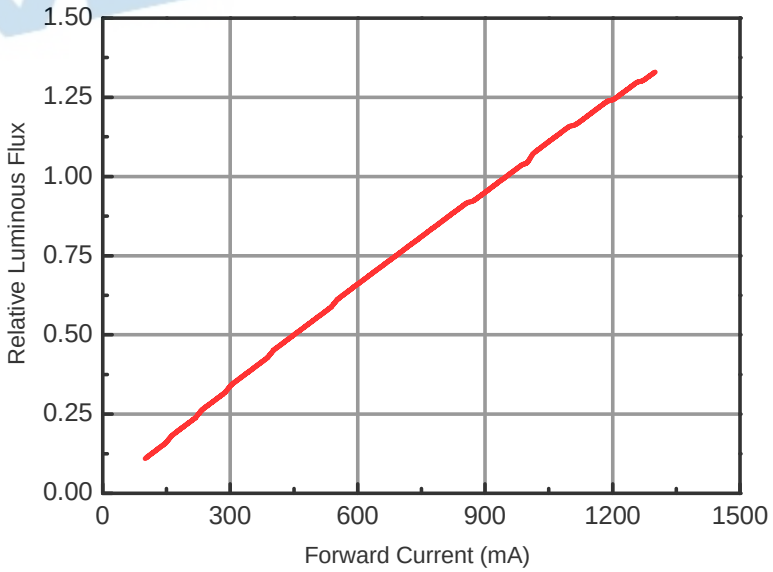


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Version: Release Date: 08/21/2015 此版本由 Everlight 正式發行

Forward Voltage vs. Forward Current
@ Substrate Temperature = 25℃

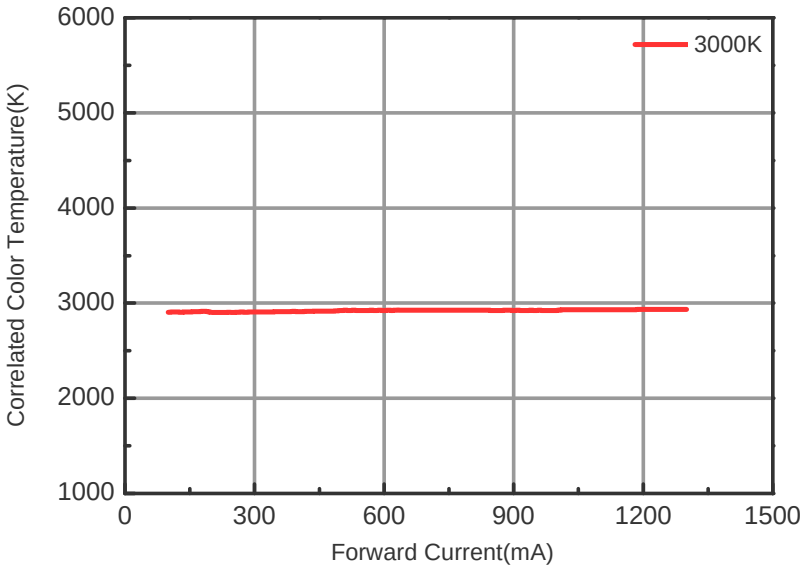


Relative Luminous Flux vs. Forward Current
@ Substrate Temperature = 25℃

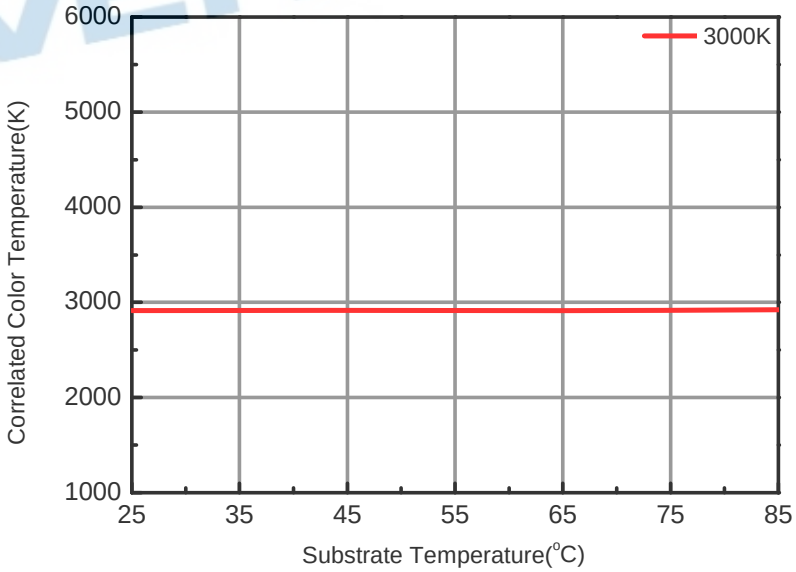


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Correlated Color Temperature vs. Forward Current
@ Substrate Temperature = 25℃

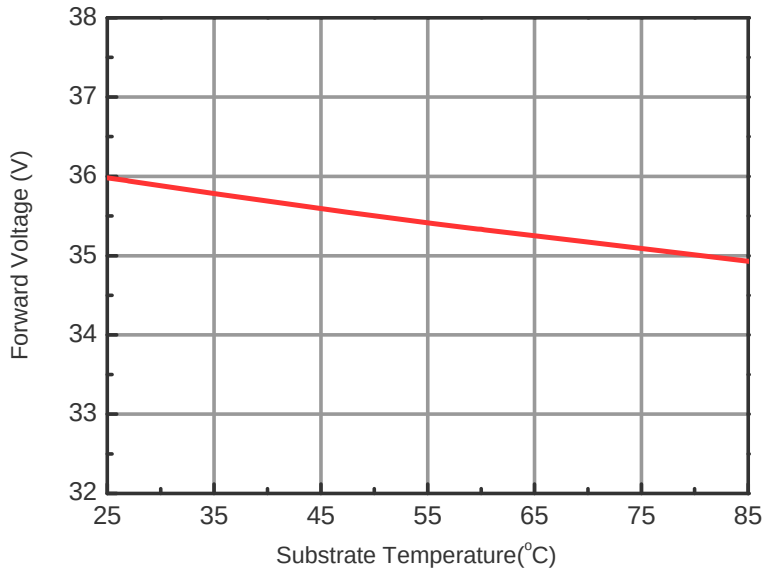


Correlated Color Temperature vs. Substrate Temperature
@ Forward Current = 950mA

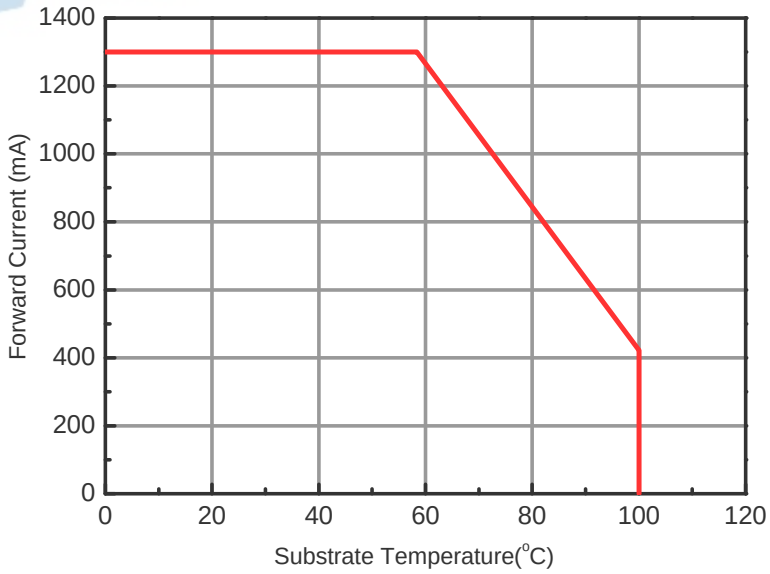


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Forward Voltage vs. Substrate Temperature
@ Forward Current = 950mA

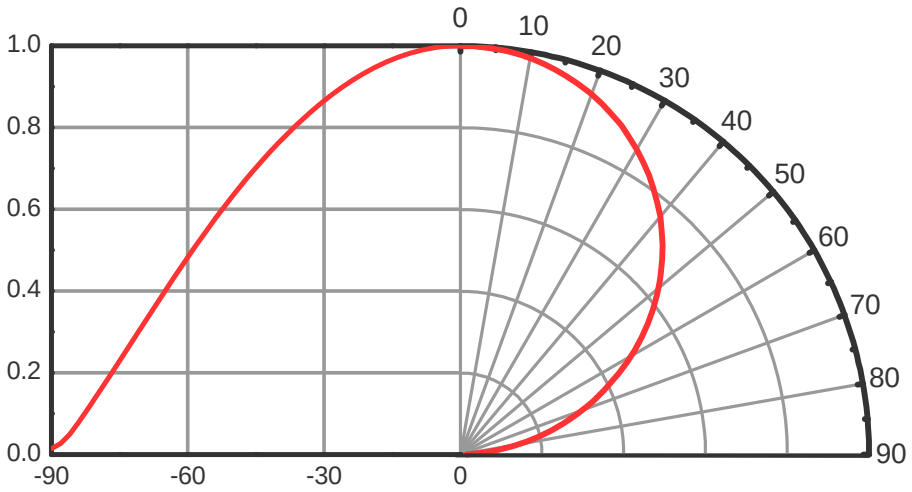


Forward Current Derating Curve
@ Junction Temperature <120℃



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Version Release Date:03/21/2016 此產品僅供參考使用(正式發行)

Typical Diagram Characteristics of Radiation Patterns



1. 2θ1/2 is the off axis angle from lamp centerline where the luminous intensity is 1/2 of the peak value.
2. Viewing angle tolerance is ± 5° .

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Version: Release Date: 03/31/2015 此版本由 Application 工程發行

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

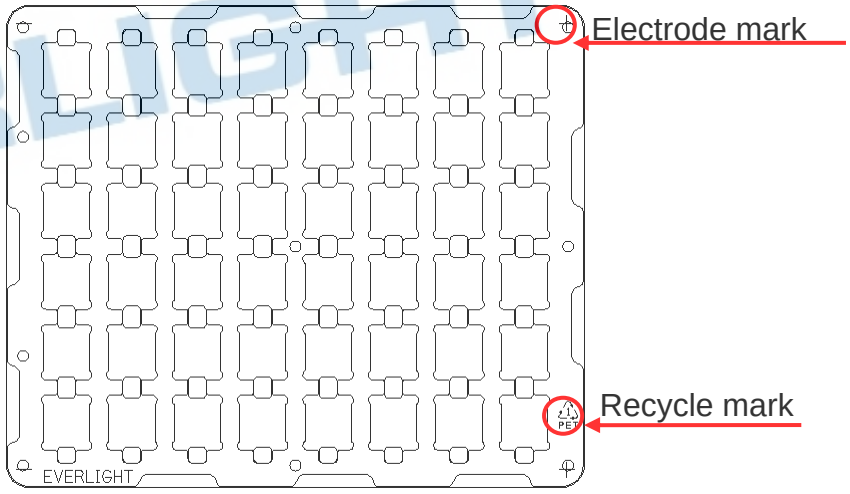
MADE IN TAIWAN: Production Place



Carrier Tray Specification

Loaded Quantity:48 PCS Per Tray





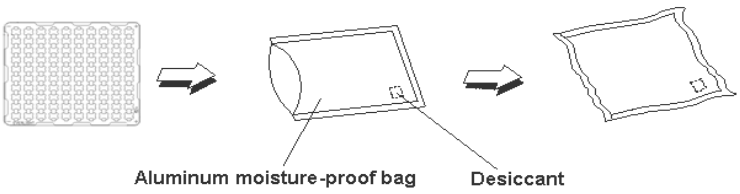
Notes:

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

LED Direction

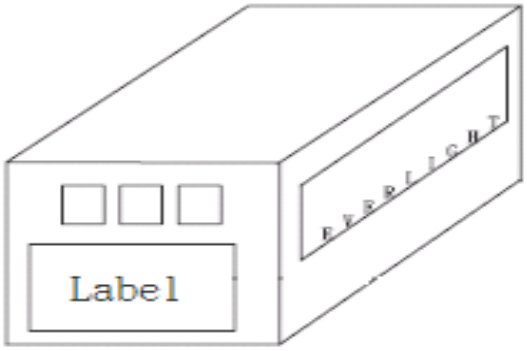
- The **Recycle mark** on the LEDs will be toward the **Anode mark** on the carrier tray.

Moisture Resistant Packaging



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Outside Carton



RoHS Pb EVERLIGHT 5
CPN: XXXXXXXXXXXXXXXXXXXX測試區
XXXXXXXXXX-XXXXXXXXXX-XXXXXXXXXX-XXXXXXXXXX-XXXXXX
P/N: XXXXXXXXXX
XXXXXXXXXX-XXXXXXXXXX-XXXXXXXXXX-XXXXXXXXXX-XXXXXX
LOT NO:Y150716XXX-XXXXXXXXXX-XXXXXXXXXX
QTY: 0123456789 HUE: XXXXXXXXXX
CAT: XXXXXXXXXX REF: XXXXXXXXXX
REFERENCE: BTPYYMMDDXXXXX
MADE IN TAIWAN

Packaging Quantity

- 48 PCS Per Tray
- 20 Trays Per Outside Carton

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Validity Period: Dec. 02/2015 此產品保證期限至2015年12月2日 (2015年12月發行)

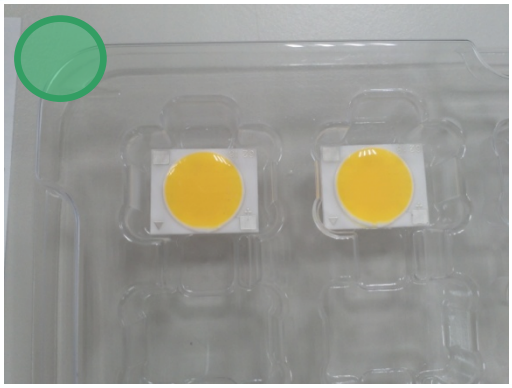
Precautions of Use

Over-Current-Proof

- Though the JU2024 has a conducted ESD protection mechanism, customers must not use the device in reverse and should apply resistors for extra protection. Otherwise slight voltage shift may cause significant current changes and burn out failure may happen.

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 and the storage life limit is 6 months. If the LEDs are stored for 6 months or more, they should be stored in a sealed container with a nitrogen atmosphere and moisture absorbent material.
- After opening the package: The LED 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, it should be stored in moisture proof packages.
- Do not stack assemblies.





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Handling

- Do not put mechanical stress on the LED.
- Never touch the optical surface with finger or sharp object. The LED surface could be soiled or damaged, which could affect the optical performance of the LED.
- In low-humidity work environment, please keep handling the LEDs with appropriate ESD grounding.
- It is recommended to handle the LED with powder-less latex gloves.

Manual Handling

- When handling the product, do not apply direct pressure on the optical surface.
- Do not touch the resin with tweezers to avoid scratching or other damage.



Thermal Management

- Sufficient thermal management must be implemented. Substrate of the positive in temperature must be kept under 85°C at the driving current of 950mA.Otherwise, the junction temperature of die may exceed the limit at high current driving conditions and the LEDs' lifetime may be decrease dramatically.

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Version: Release Date:03/31/2015 此產品僅供參考使用(正式發行)

Revision History

Current version: **2013/12/03**

Previous version: **N/A**

Device No. DHE-0002283

Rev. Ver. 5

Page	Subjects (major change in previous version)	Date of change
9	Create Cool-White	07.15.2014
19	Modify Label (Added QR code)	08.24.2015

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