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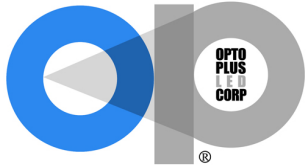
Opto Plus LED Corp
OPS-L1616F0
Top View Chip LED

● **EDIT HISTORY**

Version A : Mar. 14, 2024

Preliminary Spec.

Confidential Document



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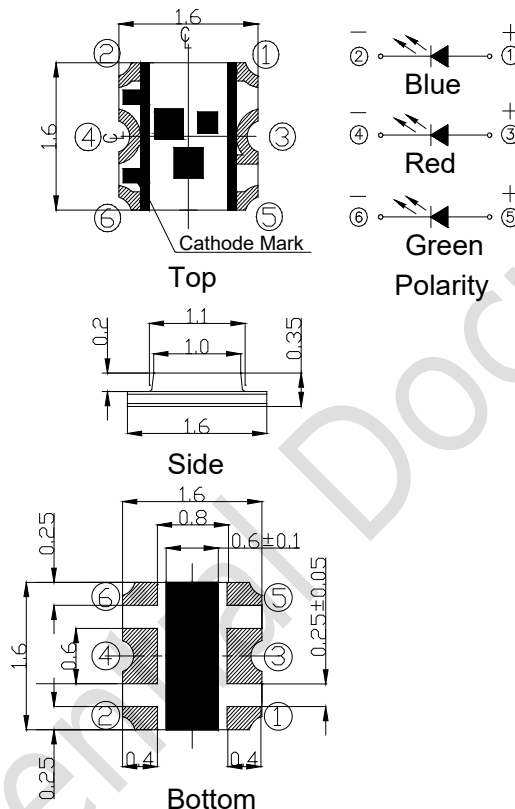
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● FEATURES

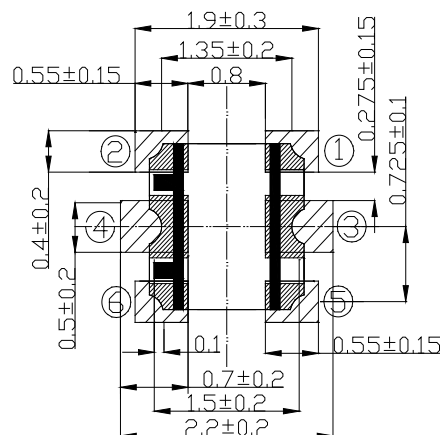
- 1.6 x 1.6 x 0.35 Top View Chip LED
- Wide viewing angle.
- Low power consumption.
- RoHS compliant.

● PACKAGE DIMENSIONS

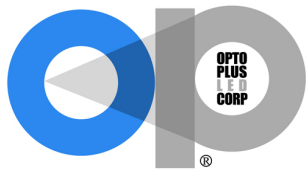


Unit:mm Tolerance: +/-0.1

● SOLDERING PATTERN



Suggested pad dimension is just for reference only.
Please modify the pad dimension based on individual need



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ABSOLUTE MAXIMUM RATING AT Ta=25°C

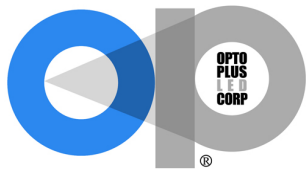
Parameter	Symbol	Maximum Rating			Unit
		R	G	B	
Power dissipation	P _{AD}	60	95	95	mW
Forward Current	I _F	25			mA
Peak current per dice (duty cycle 1/10, 1kHz)	I _{PF}	60	100	100	mA
Electrostatic Discharge(HBM)	ESD	2000	150	150	V
Reverse voltage	V _R	5			V
Operating temperature	T _{OPR}	-40 to +85			°C
Storage temperature	T _{STG}	-40 to +90			°C
Soldering Temperature	T _{sol}	Reflow Soldering : 260 °C for 10 sec. Hand Soldering : 350 °C for 3 sec.			

ELECTRICAL - OPTICAL CHARACTERISTICS AT Ta=25°C

Characteristic	Symbol	Condition	Code	Min.	Typ.	Max	Unit
Forward voltage	V _F	I _F =10mA	R	-	3.3	3.9	V
			G	-	2.7	3.3	
			B	-	2.7	3.3	
Reverse current	I _R	V _R =5V	R	-	-	10	μA
			G	-	-	50	
			B	-	-	50	
Peak wavelength	λ _P	I _F =10mA	R	-	632	-	nm
			G	-	518	-	
			B	-	468	-	
Dominant wavelength	λ _D		R	614	-	618	nm
			G	515	-	530	
			B	465	-	475	
Luminous intensity	I _V		R	45-	-	112	mcd
			G	112	-	225	
			B	28.5	-	72.0	
Spectral radiation bandwidth	Δλ		R	-	20	-	nm
			G	-	35	-	
			B	-	25	-	
Viewing Angle	2θ1/2				-	120	-

Note:

1. Tolerance of Luminous Intensity: ±11%
2. Tolerance of Dominant Wavelength: ±1nm
3. Tolerance of Forward Voltage: ±0.1V
4. RA Test @5mA.



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● R: Luminous Intensity (IV) BIN: (mcd)

Bin Code	Min	Max	Condition
P11	45	50	10 mA
P12	50	57	
P21	57	64	
P22	64	72	
Q11	72	80	
Q12	80	90	
Q21	90	100	
Q22	100	112	

● G: Luminous Intensity (IV) BIN: (mcd)

Bin Code	Min	Max	Condition
R1	112	140	10 mA
R2	140	180	
S1	180	225	

● B: Luminous Intensity (IV) BIN: (mcd)

Bin Code	Min	Max	Condition
N1	28.5	36.0	10 mA
N2	36.0	45.0	
P1	45.0	57.0	
P2	57.0	72.0	

● Forward Voltage (Vf) Bin :

Bin Code	Min	Max	Condition
15	2.7	2.85	10 mA
16	2.85	3.0	
17	3.0	3.15	
18	3.15	3.3	

● Dominant Wavelength(Wd) Bin(nm):

Bin Code	Min	Max	Condition
W	515	520	10 mA
X	520	525	
Y1	525	527.5	
Y2	527.5	530	

Note:

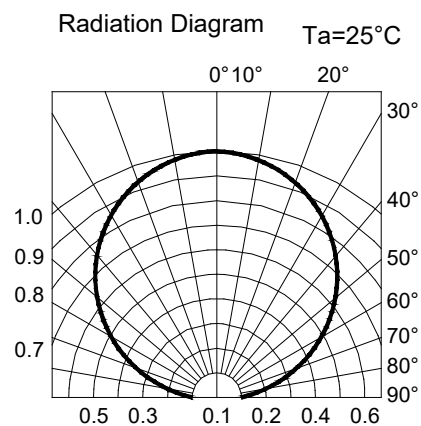
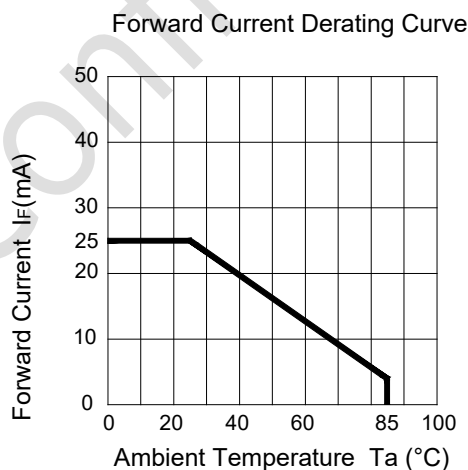
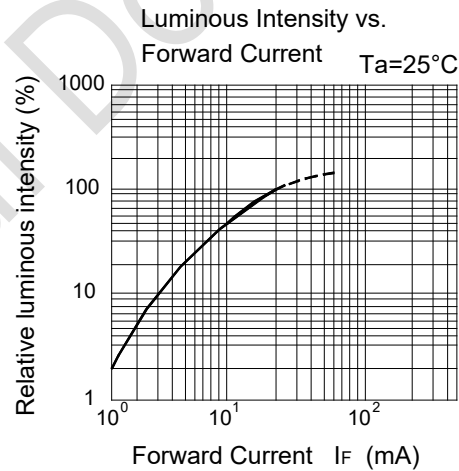
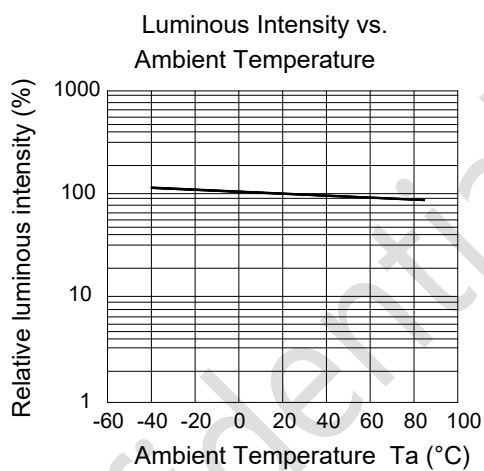
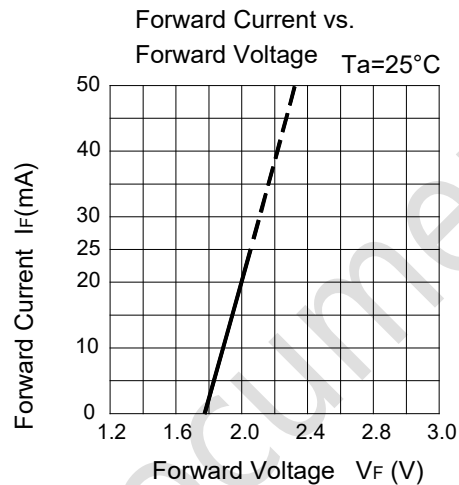
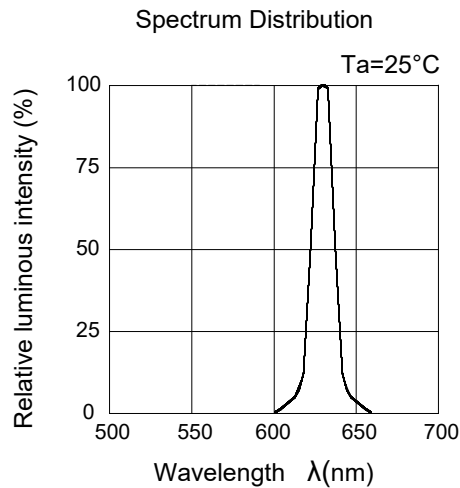
- 1.Tolerance of Luminous Intensity $\pm 11\%$
- 2.Tolerance of Dominant Wavelength $\pm 1\text{nm}$
- 3.Tolerance of Forward Voltage $\pm 0.05\text{V}$

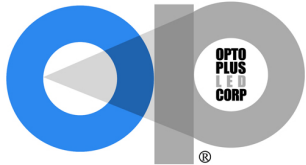
Opto Plus LED Corp. 7F-3, No.496, Bannan Road, Jhonghe Dist., New Taipei City 235, Taiwan (R.O.C)
Website: www.opledtw.com E-mail: sales@opledtw.com Tel: 886-2-2222-5698 Fax: 886-2-2222-2566

Disclaimer:
Subject to change without notice

R: CURVE

Typical Electro-optical Characteristic Curves
(25 °C Free Air Temperature Unless Otherwise Specified)





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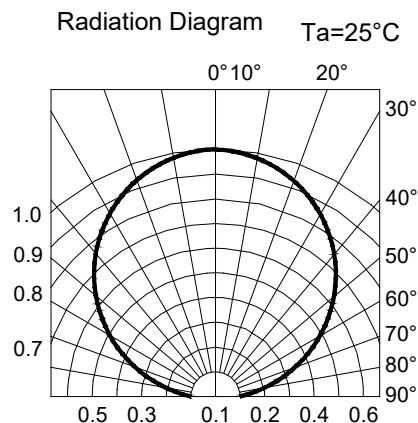
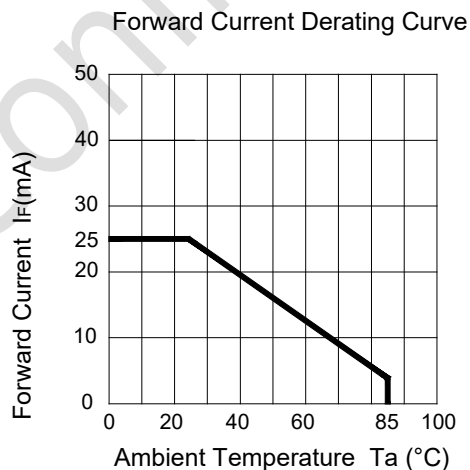
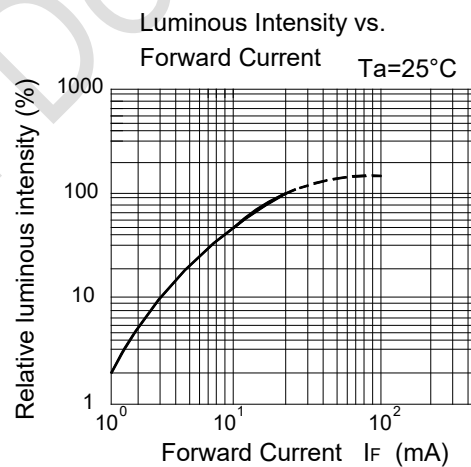
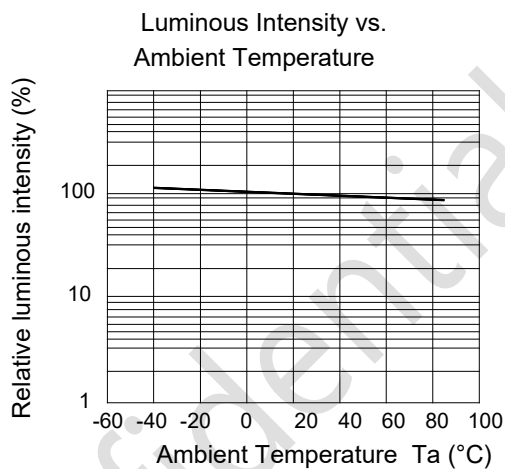
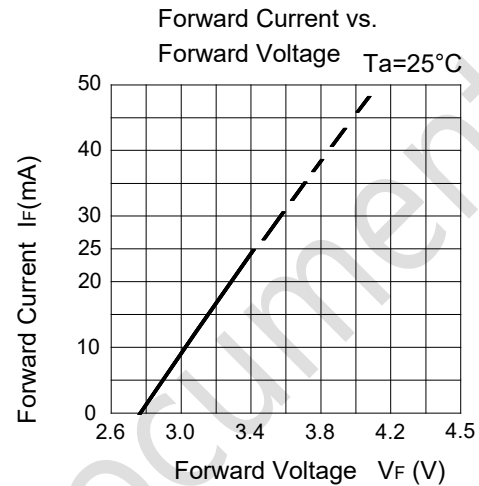
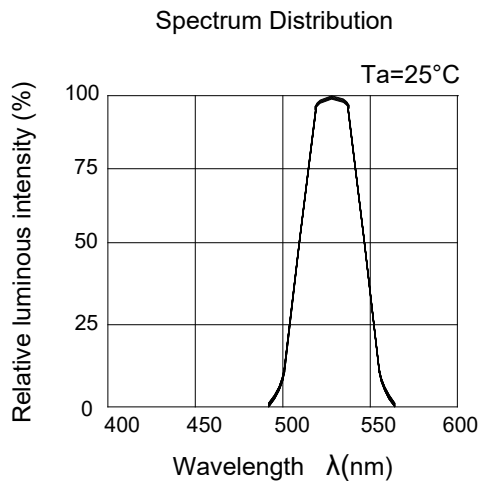
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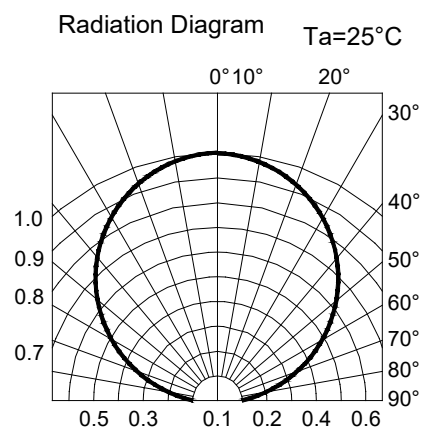
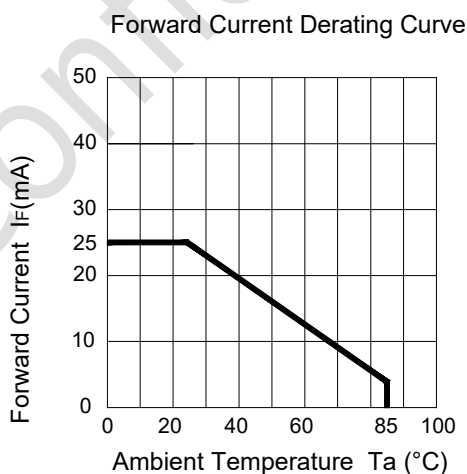
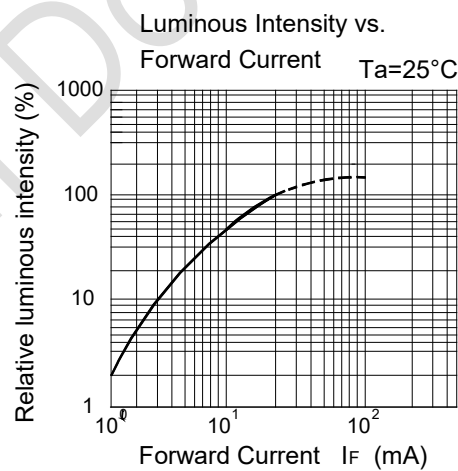
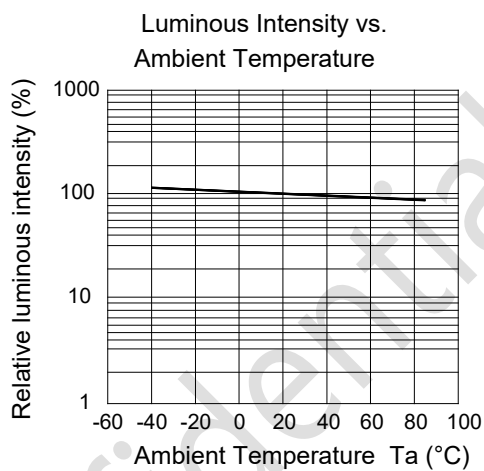
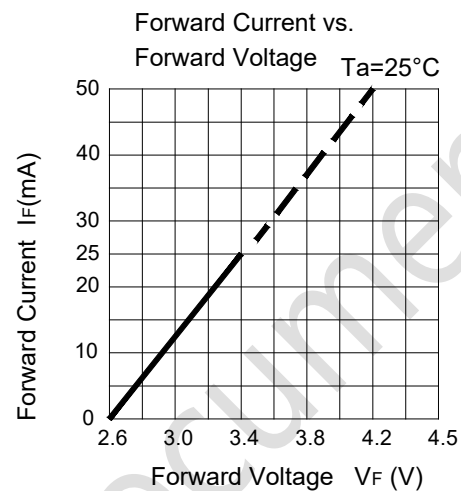
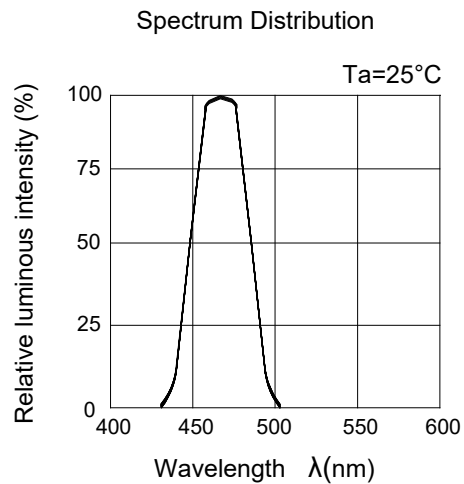
G: CURVE

Typical Electro-optical Characteristic Curves
(25 °C Free Air Temperature Unless Otherwise Specified)



B: CURVE

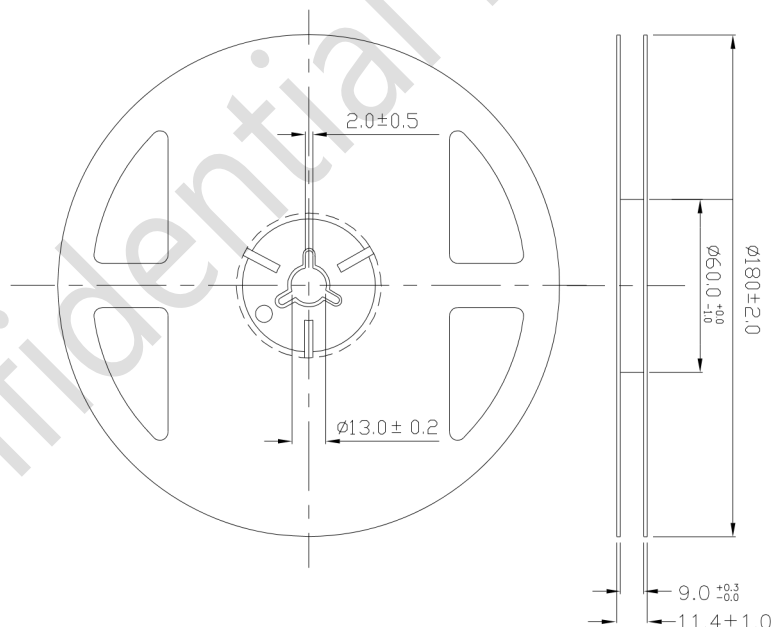
Typical Electro-optical Characteristic Curves (25 °C Free Air Temperature Unless Otherwise Specified)



Precaution for Use

1. The chips should not be used directly in any type of fluid such as water, oil, organic solvent, etc.
2. When the LEDs are illuminating, the maximum ambient temperature should be first considered before operation.
3. LEDs must be stored in a clean environment. A sealed container with a nitrogen atmosphere is necessary if the storage period is over 3 months after shipping.
4. The LEDs must be used within 4 weeks after unpacked. Unused products must be repacked in an anti-electrostatic package, folded to close any opening and then stored in a dry and cool space.
5. The appearance and specifications of the products may be modified for improvement without further notice.
6. The LEDs are sensitive to the static electricity and surge. It is strongly recommended to use a grounded wrist band and anti-electrostatic glove when handling the LEDs. If a voltage over the absolute maximum rating is applied to LEDs, it will damage LEDs. Damaged LEDs will show some abnormal characteristics such as remarkable increase of leak current, lower turn-on voltage and getting unlit at low current.

Reel Dimension

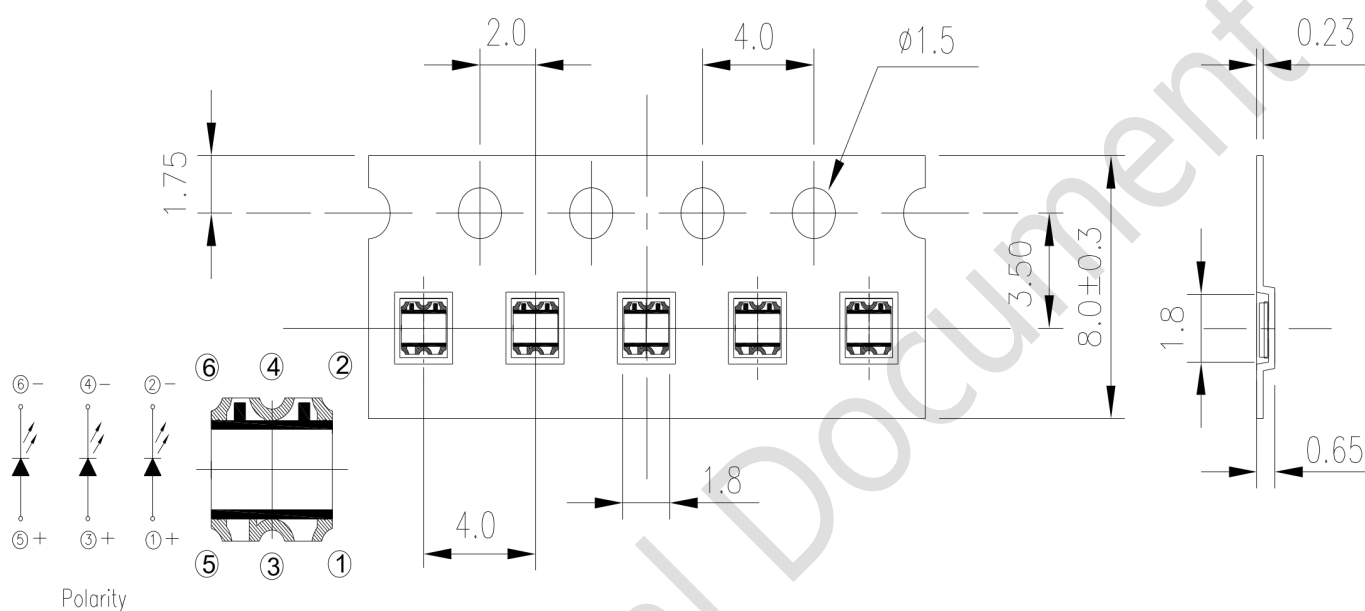




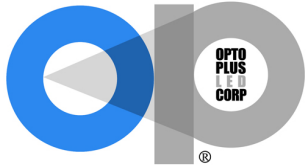
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Carrier Tape Dimensions: Loaded quantity 2000 PCS per reel

Progressive direction



Label Aluminum moisture-proof bag Desiccant Label



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Precautions For Use

Over-current-proof

Customer must apply resistors for protection, otherwise slight voltage shift will cause big current change (Burn out will happen).

1. Storage

1.1 Do not open moisture proof bag before the products are ready to use.

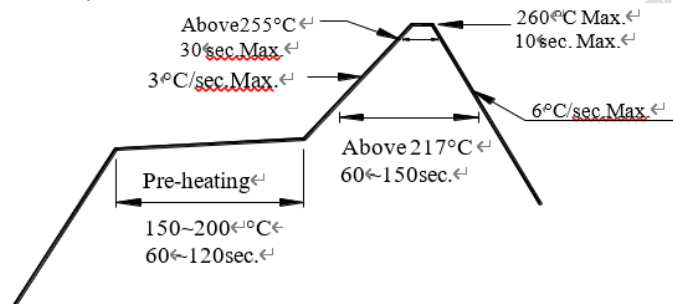
1.2 Before opening the package: The LEDs should be kept at 30°C or less and 90%RH or less.

1.3 After opening the package: The LED's floor life is 1 year under 30°C or less and 60% RH or less. If unused LEDs remain, it should be stored in moisture proof packages.

1.4 If the moisture absorbent material (silica gel) has faded away or the LEDs have exceeded the storage time, baking treatment should be performed using the following conditions. Baking treatment : 60±5°C for 24 hours.

2. Soldering Condition

2.1 Pb-free solder temperature profile



2.2 Reflow soldering should not be done more than two times.

2.3 When soldering, do not put stress on the LEDs during heating.

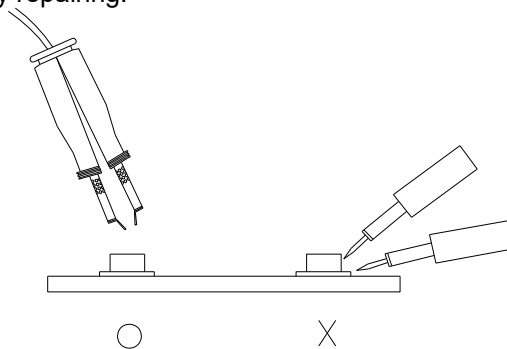
2.4 After soldering, do not warp the circuit board.

4. Soldering Iron

Each terminal is to go to the tip of soldering iron temperature less than 350°C for 3 seconds within once in less than the soldering iron capacity 25W. Leave two seconds and more intervals, and do soldering of each terminal. Be careful because the damage of the product is often started at the time of the hand solder.

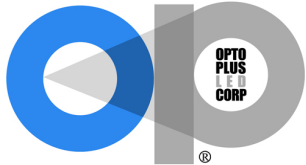
5. Repairing

Repair should not be done after the LEDs have been soldered. When repairing is unavoidable, a double-head soldering iron should be used (as below figure). It should be confirmed beforehand whether the characteristics of the LEDs will or will not be damaged by repairing.



Application Restrictions

High reliability applications such as military/aerospace, automotive safety/security systems, and medical equipment may require different product. If you have any concerns, please contact OP before using this product in your application. This specification guarantees the quality and performance of the product as an individual component. Do not use this product beyond the specification described in this document.



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