BRIGHTEK

BRIGHTEK (EUROPE) LIMITED

Brighten Up The World With LED !

ISO/TS 16949:2009 BS EN ISO 14001:2004 QC 080000 IECQ HSPM

PRODUCT DATASHEET

ATTENTION
OBSERVE PRECAUTIONS FOR HANDLING ELECTROSTATIC SENSITIVE DEVICES

- ► COB Module
- ► 13.5x13.5x1.4mm
- ► Warm White 3000K

Release Date: 17 April 2025 Version: A1.1

N0W63M12

1A1A COB Module

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RoHS Compliant

FEATURES:

- **Package:** Top View COB Light Engine Module
- **Forward Current:** 220~400mA
- **Forward Voltage (typ.):** 35.1V
- **Luminous Flux (typ.):** 900lm@220mA
- **Colour:** Warm White
- **Colour Temperature (CCT):** 3000K
- **Viewing Angle:** 120°
- **Materials:**
  - Die: InGaN
  - Resin: Silicon (Yellow Diffused)
  - Package: MCPCB
- **Operating Temperature:** -40~+100°C
- **Storage Temperature:** -40~+120°C
- **Grouping Parameters:**
  - Forward Voltage
  - Luminous Flux
  - CIE Chromaticity
- **MSL Level:** 3 according to J-STD020
- **Packing:** 80pcs/tray; 400pcs/carton

APPLICATIONS:

- Commercial Lighting
- Tunnel Light
- Spotlight
- General Lighting

CHARACTERISTICS:

Absolute Maximum Characteristics (T_a=25°C)

Parameter	Symbol	Ratings	Unit
DC Forward Current	I_F	400	mA
Power Dissipation	P_D	14.24	W
Junction Temperature *	T_j	125	°C
Operating Temperature	T_{OPR}	-40~+100	°C
Storage Temperature	T_{STG}	-40~+120	°C
Thermal Resistance	R_{thj-sp}	1.0	°C/W
Colour Rendering Index (CRI)	R9	min.83	---
	Ra	min.95	

* Rth j-sp is the thermal resistance from LED junction to solder point on MCPCB with electrical power.

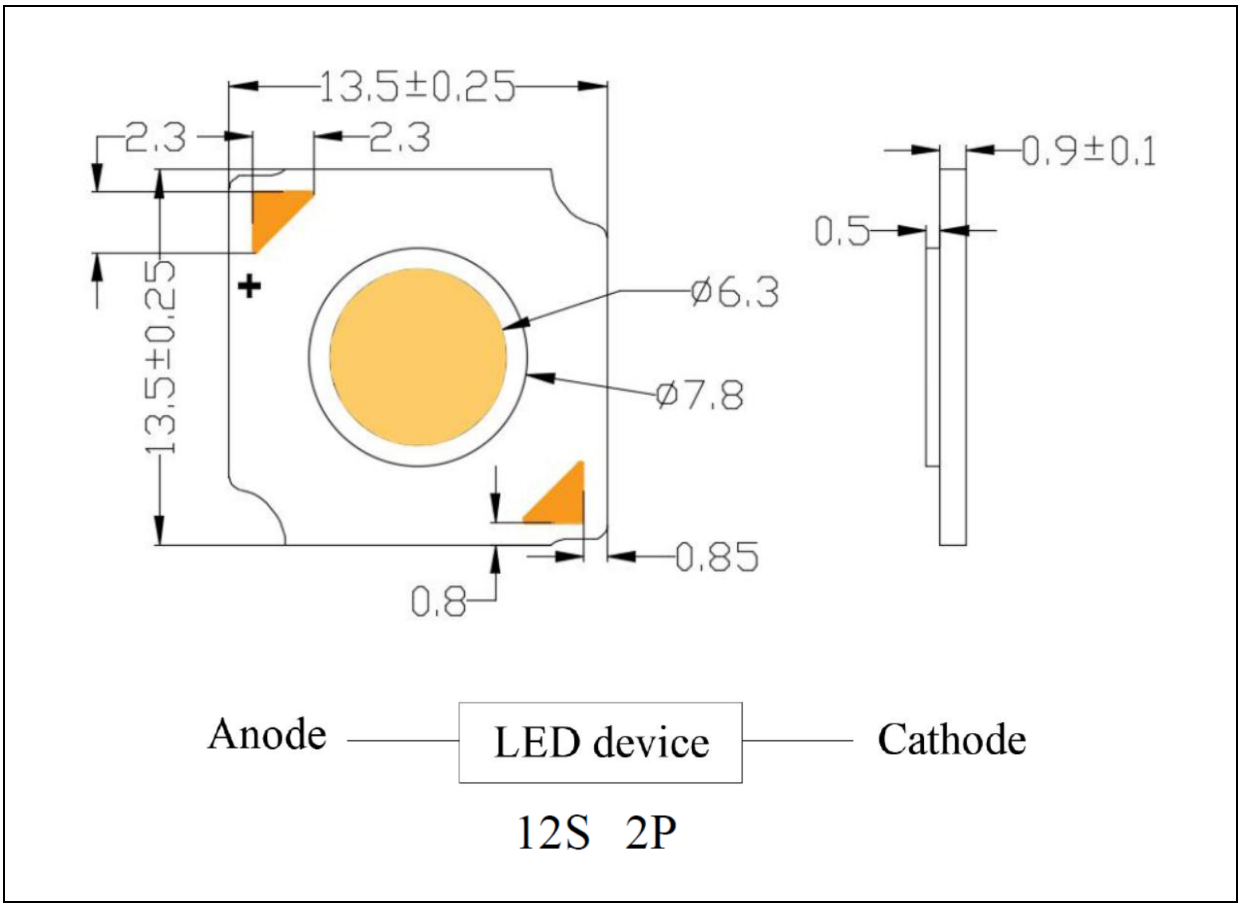
Electrical & Optical Characteristics (T_a=25°C)

Parameter	Symbol	Values			Unit	Test Condition
		Min.	Typ.	Max.		
Forward Voltage	V_F	33.0	35.1	---	V	I_F=220mA
Luminous Flux	Φ_V	837	900	990	lm	I_F=220mA
Chromaticity Coordinates	X	---	0.4338	---	---	I_F=220mA
	Y	---	0.4030	---		
Colour Temperature	CCT	---	3000	---	K	I_F=220mA
Viewing Angle	$2\theta_{1/2}$	---	120	---	deg	I_F=220mA

1. Luminous flux (Φ_V) ±10%, Forward Voltage (V_F) ±0.1V, CRI ±2

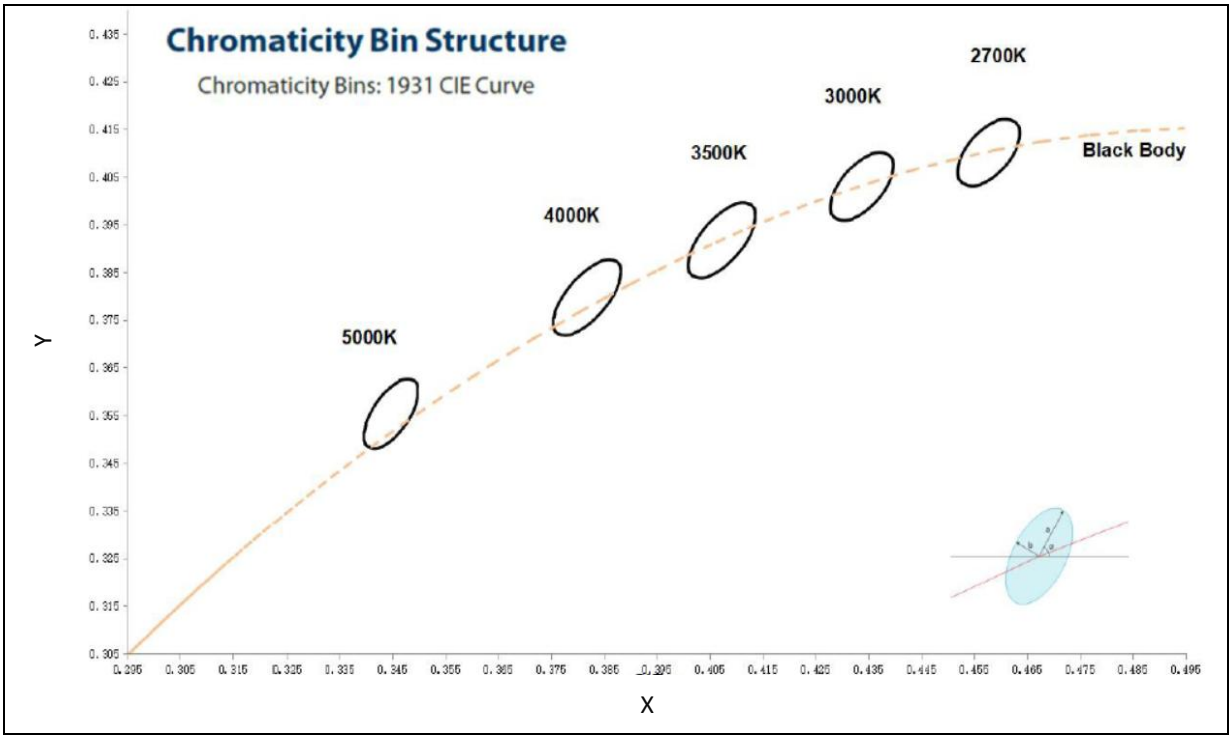
OUTLINE DIMENSION:

Package Dimension:

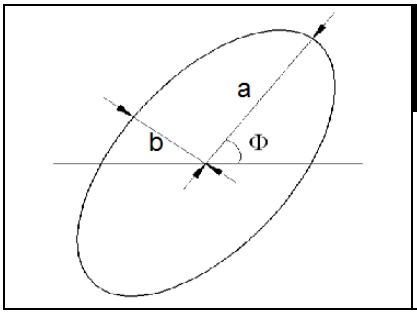


1. All dimensions are in millimetre (mm).
2. Tolerance ±0.2mm, unless otherwise noted.

CIE CHROMATICITY DIAGRAM:



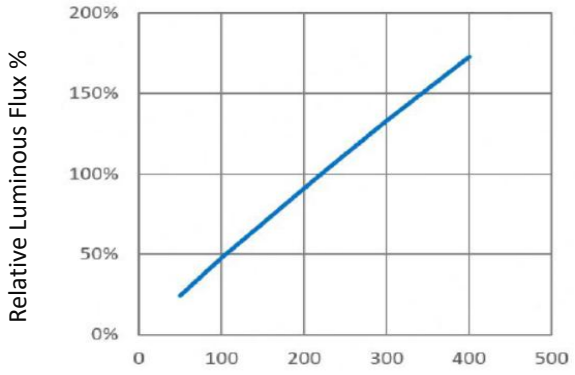
Chromaticity Coordinates Classifications (I_F = 220mA):



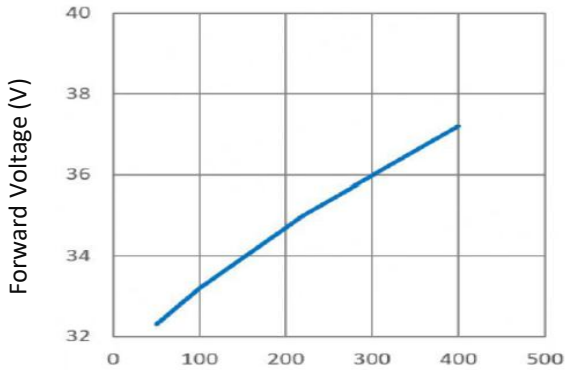
Code	Centre		Radius		Angle
	X	Y	a	b	Φ
30M3 (3-STEP)	0.4338	0.4030	0.008340	0.004080	53.20

ELECTRO-OPTICAL CHARACTERISTICS:

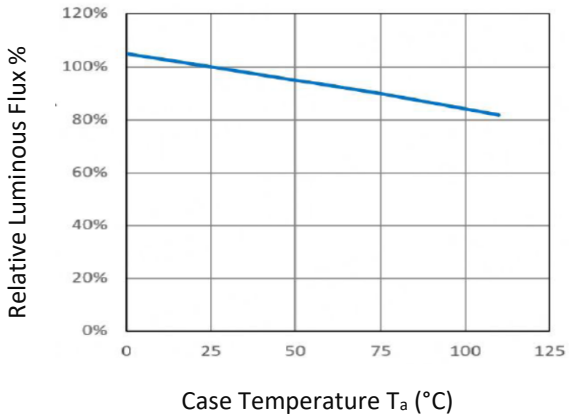
Relative Luminous Flux v.s. Forward Current



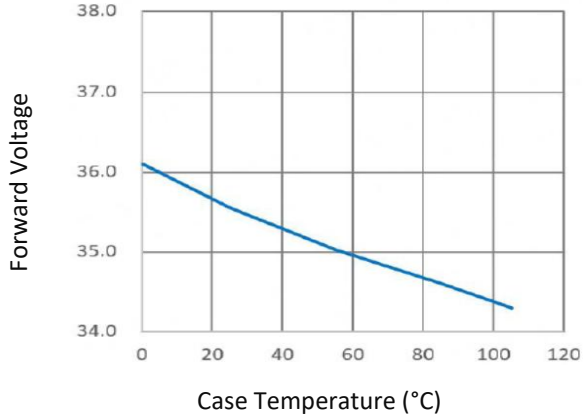
Forward Current v.s. Forward Voltage



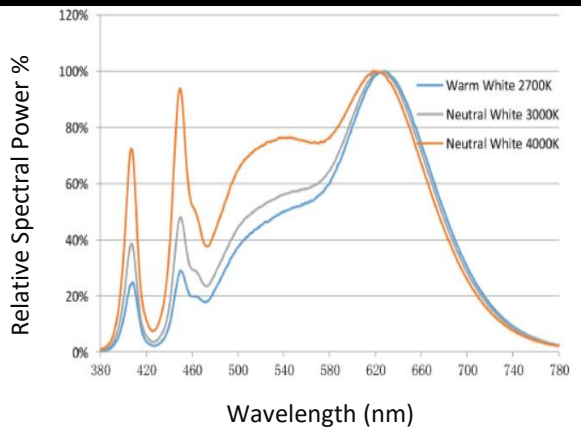
Relative Luminous Flux v.s. Case Temp.



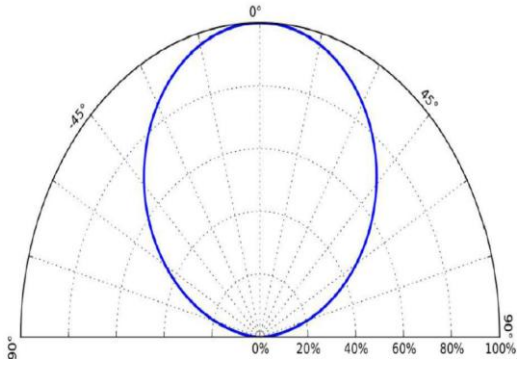
Forward Voltage v.s. Case Temp.



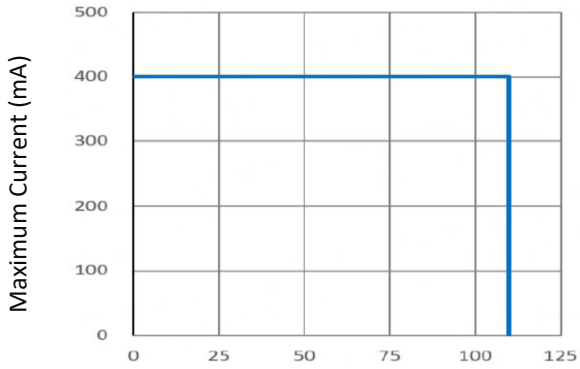
Relative Spectral Power v.s. Wavelength (curve shown 2700K/3000K/4000K CCT)



Directive Radiation



Forward Current Derating Curve



PRECAUTIONS OF USE:

Storage:

It is recommended to store the products in the following conditions:

- Humidity: 60% R.H. Max.
- Temperature: 5°C~30°C (41°F ~86°F).

Shelf life in sealed bag: 12 months at 5°C~30°C and <60% R.H.

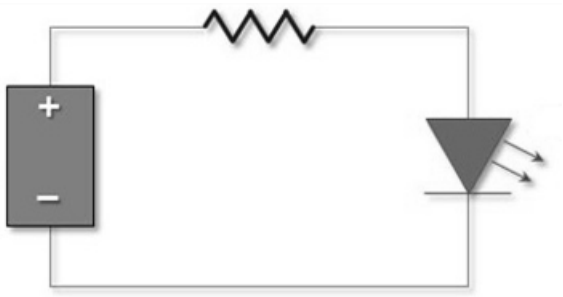
Once the package is opened, the products should be used within a week. Otherwise, they should be kept in a damp-proof box with descanting agent <10% R.H. and apply baking before use.

Thermal Management:

Thermal management is a key factor affecting the life of LEDs. The life span of LEDs will reduce with the increase of junction temperature. Please make sure that the temperature of Tj is lower than 125°C during application.

The silicone casting will begin to degrade at 180°C and shall be crake in a few days. Please avoid silicone surface temperature higher than 180°C.

Testing Circuit:



Must apply resistor(s) for protection (over current proof).

Chemical Corrosion:

COB is packaged with soft silicone. Its design is not waterproof, thus please do not dip the COB into water directly. Please avoid silicone contact with sulfur dioxide, sulfuric acid, concentrated hydrochloric acid, and keep dry and sealed during storage.

ESD (Electrostatic Discharge):

Static Electricity or power surge will damage the LED. Use of a conductive wrist band or anti-electrosatic glove is recommended when handing the LED all time. All devices, equipment, machinery, work tables, and storage racks must be properly grounded.

In the events of manual working in process, make sure the devices are well protected from ESD at any time.

REVISION RECORD:

Version	Date	Summary of Revision
A1.0	25/11/2022	Datasheet set-up.
A1.1	17/04/2025	Update specifications.