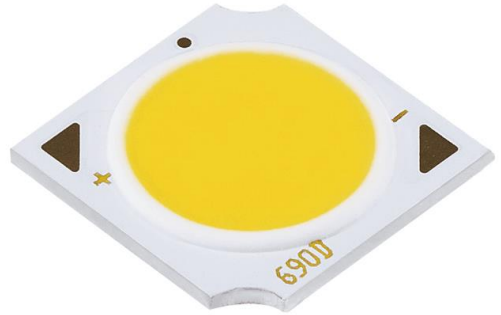


## MC-13AA-XXX-S-1203-C COB Series Datasheet

### Applications

- Spot lighting
- Down lighting
- Recessed fixtures
- Can lighting



### Naming Conventions

MC-13AA - XXX - S - 1203 - C  
 (1)        (2)        (3)        (4)

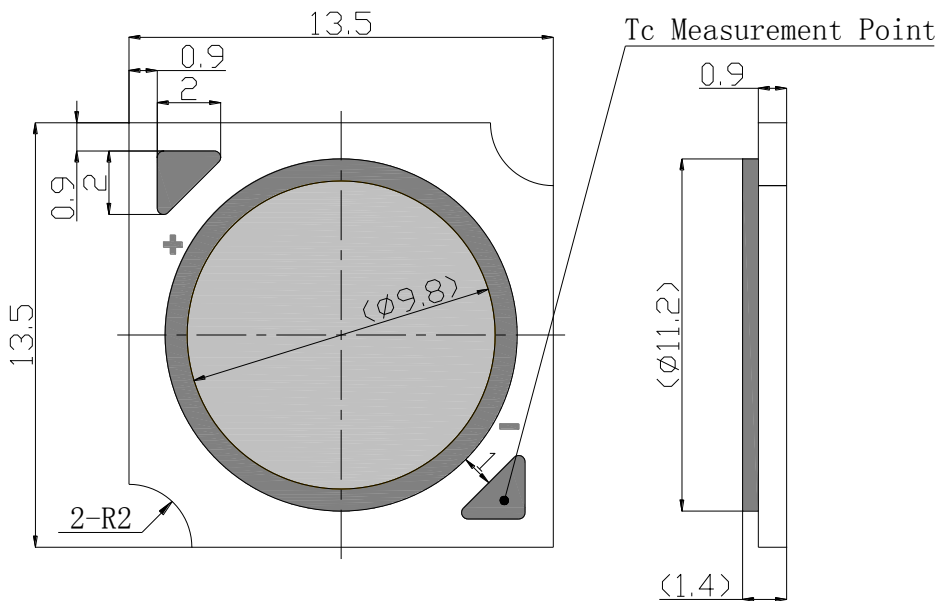
(1) COB Series

(2) CCT Range

(3) CRI Range

(4) Chip Array: 12 series, 3 parallel

### Package Dimensions



1. All dimensions in millimeters.
2. Tolerance is  $\pm 0.3$ mm unless otherwise noted.
3. The information in this document is subject to change without notice.

### Absolute Maximum Ratings

Item	Symbol	Absolute Maximum Rating	Unit
Forward current	If	360	mA
Reverse Current	Ir	1	mA
Operating Temperature	Topr	-30~85	°C
Storage Temperature	Tstg	-40~100	°C
Hand soldering condition	Tsld	3.5sec@350°C	sec
Case Temperature	Tc	100	°C
LED Junction Temperature	Tj	125	°C
Temperature of central silicon Surface	Ts	125@IRDA Test	°C

### Characteristics (Tc=25°C)

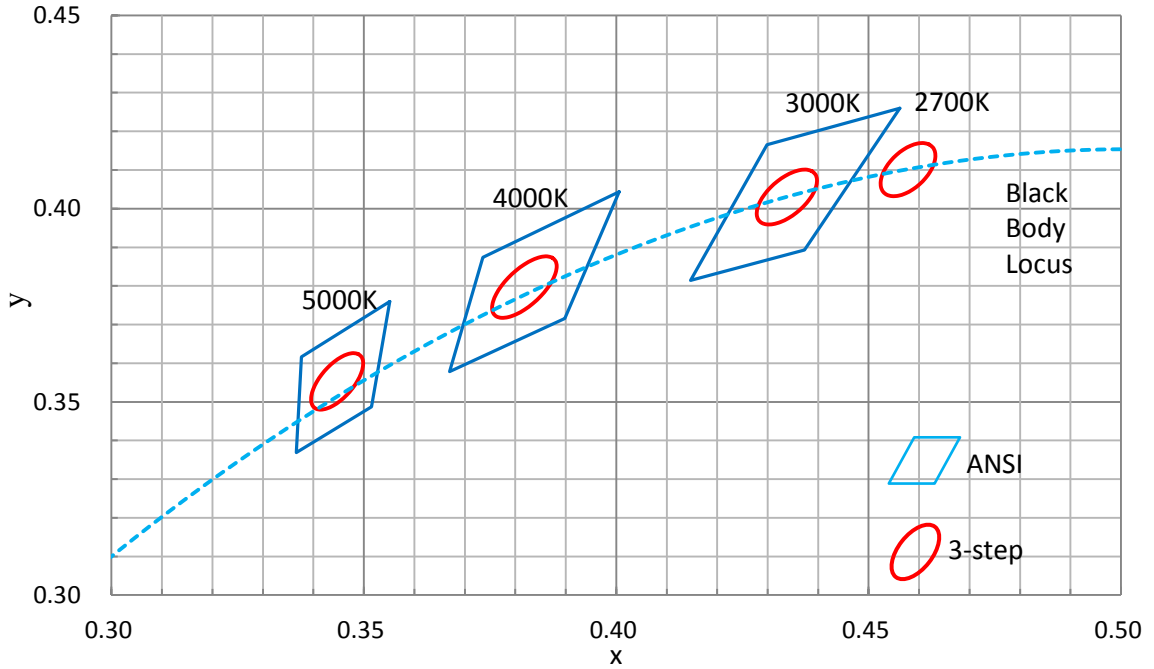
Part Number	Nominal CCT	CRI(Ra)		Luminous flux (lm)		Forward Current (mA)	Voltage (V)			Thermal Resistance Rj-c (°C/W)
		Min.	Typ.	Min.	Typ.		Min.	Typ.	Max.	
MC-13AA-270-S-1203-C	2700K	90		880		270	33.6		40.8	2.1
MC-13AA-300-S-1203-C	3000K	90		920		270				
MC-13AA-400-S-1203-C	4000K	90		950		270				
MC-13AA-500-S-1203-C	5000K	90		980		270				

Notes:

1. Luminous flux is measured with an accuracy of +/- 5 %.
2. CRI is measured with an accuracy of +/- 1
3. Some color and CRI bins may have limited availability, please contact us before ordering.
4. All measurements were made under the standardized environment of Shineon.

Chromaticity Characteristics (Tc=25°C, If=270mA)

X-y chart CIE1931

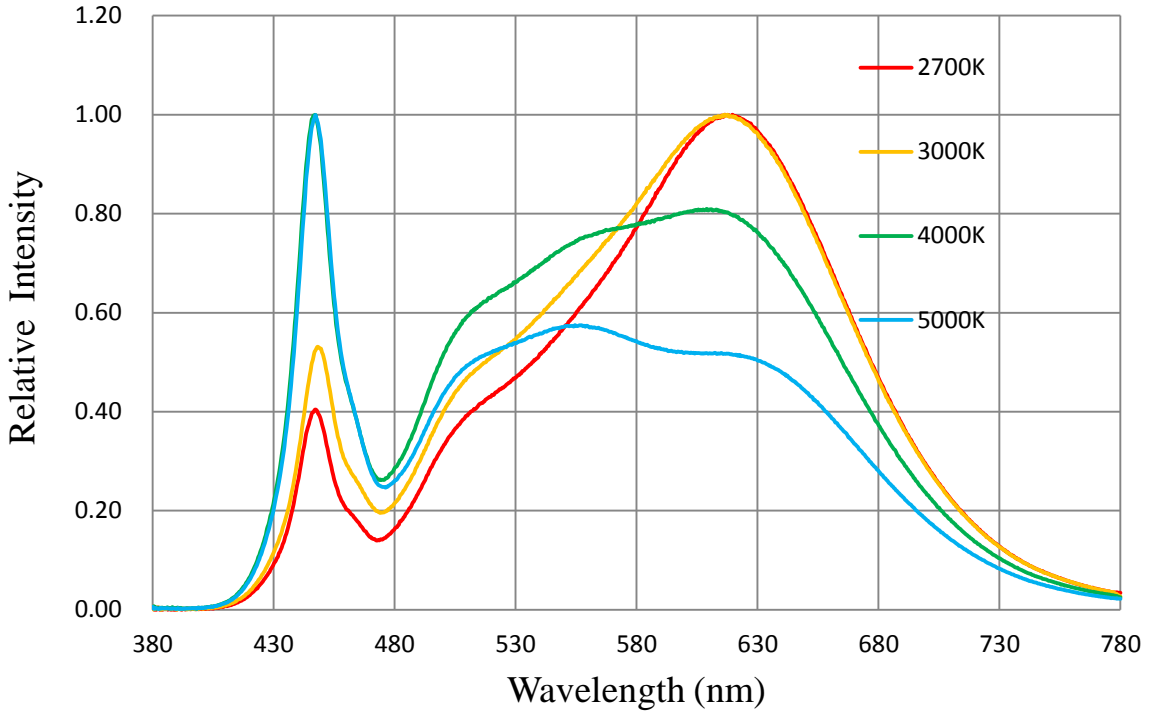


Bin Code	Nominal CCT	Center Point		Oval parameter		
		x	y	a	b	Theta°
273	2700K (3-step)	0.4578	0.4101	0.00774	0.00411	57.28
303	3000K (3-step)	0.4338	0.403	0.00834	0.00408	53.17
353	3500K (3-step)	0.4073	0.3917	0.00951	0.00417	52.93
403	4000K (3-step)	0.3818	0.3797	0.0094	0.004	54
503	5000K (3-step)	0.3447	0.3553	0.00822	0.00354	59.62

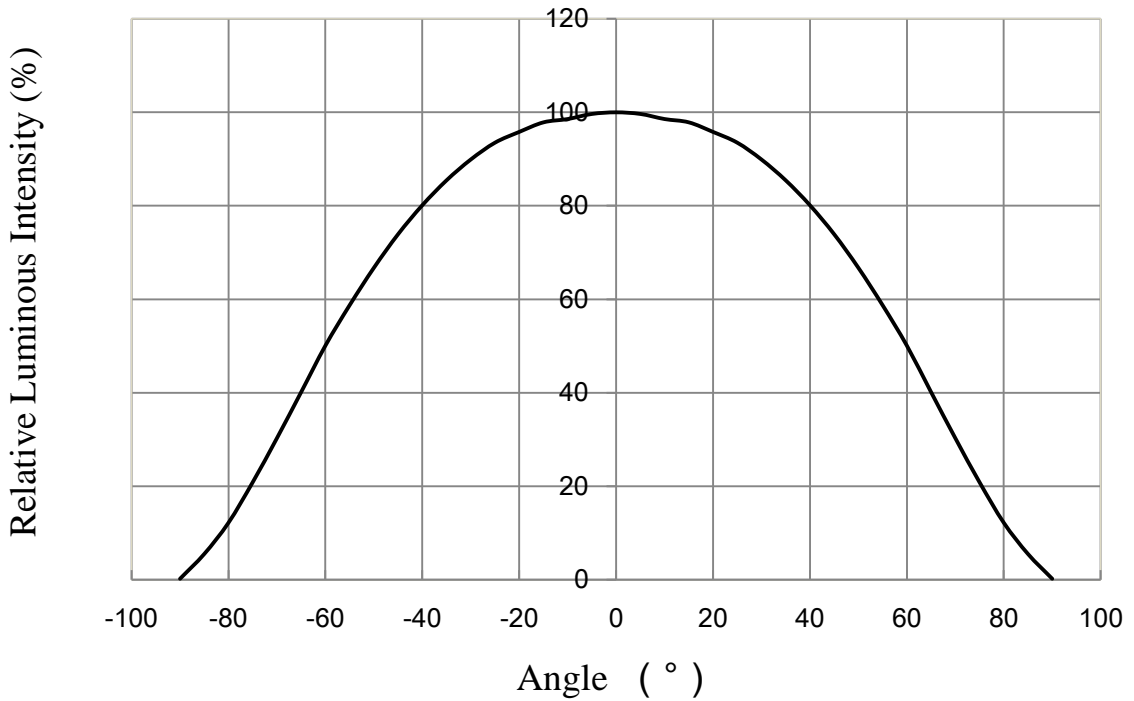
Notes:

1. The chromaticity center refers to ANSI C78.377:2008
2. 5% tolerance for luminous intensity may be caused by measurement inaccuracy.
3. Measurement Uncertainty of the Forward Voltage : +/- 3%.
4. Chromaticity coordinate bins are measured with an accuracy of +/- 0.005.

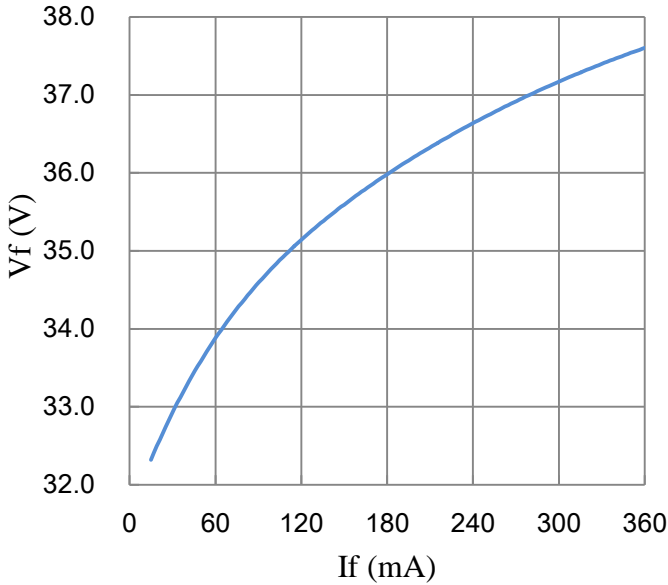
Typical Relative Spectral Power Distribution (Tc=25°C, If=270mA)



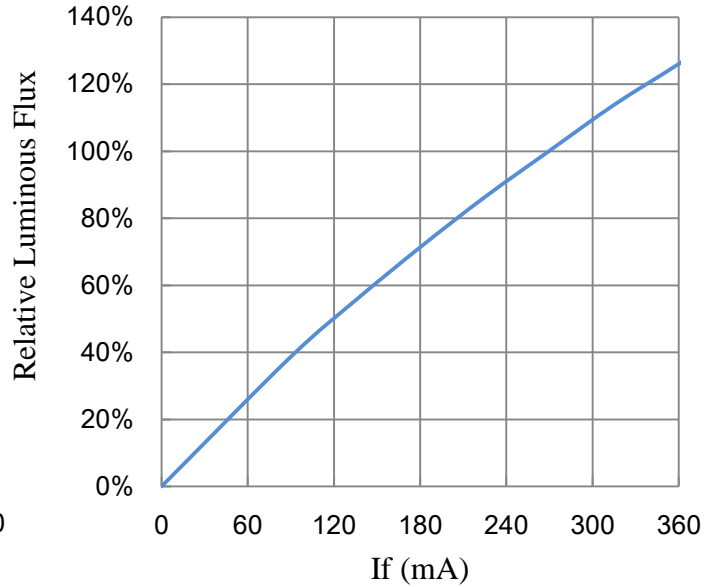
Typical Spatial Distribution (Tc=25°C, If=270mA)



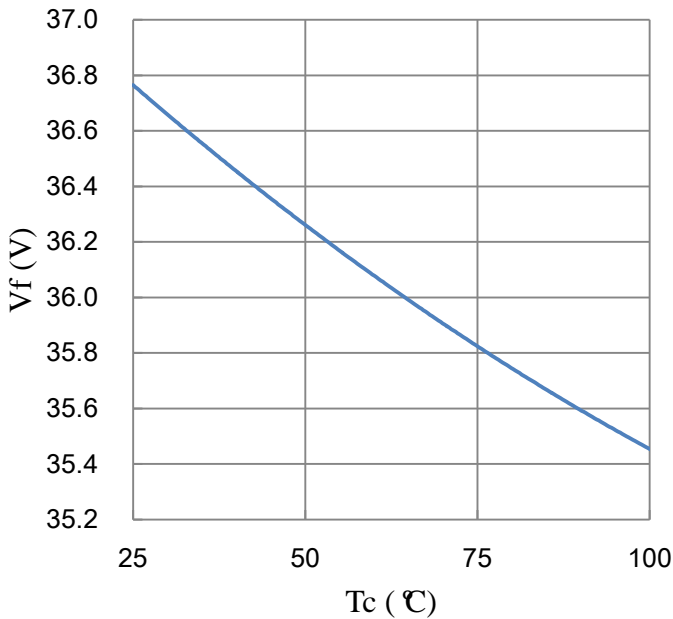
**Forward Current vs. Forward Voltage**  
( $T_c=25^\circ\text{C}$ )



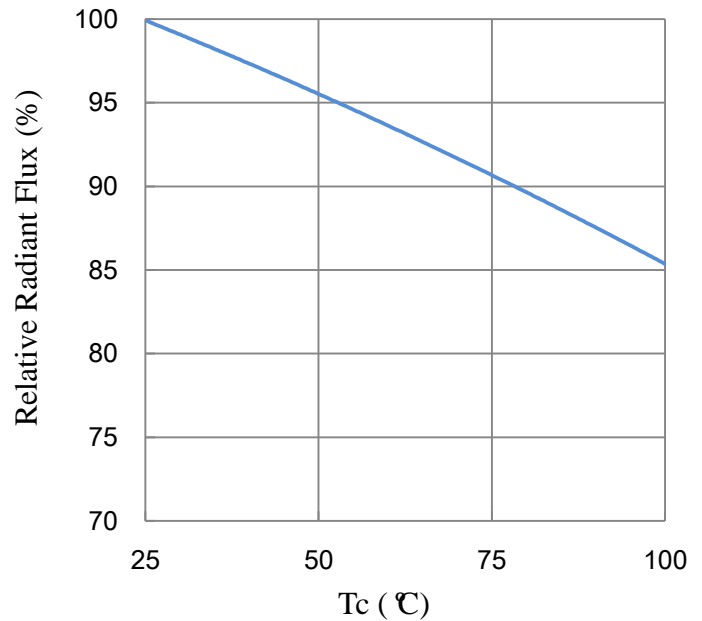
**Forward Current vs. Relative Luminous Flux**  
( $T_c=25^\circ\text{C}$ )



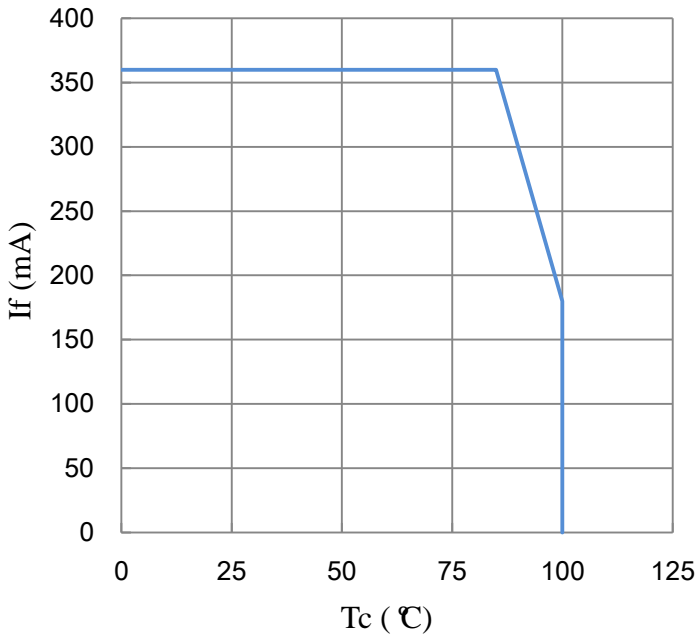
**Case Temperature vs. Forward Voltage**  
( $I_f=270\text{mA}$ )



**Case Temperature vs. Relative Radiant Flux**  
( $I_f=270\text{mA}$ )



### Case Temperature vs. Allowable Forward Current



## Reliability

### (1)Details of the tests

No.	Test Item	Reference Standard	Test Condition	Test Duration	Defective	Sample Size
1	High Temperature Operating Life	JESD22-A108	Ta=85℃, Typical IF	1000hr	0	10
2	Low Temperature Operating Life	JESD22-A108	Ta=-40℃, Typical IF	1000hr	0	10
3	Temperature Shock	MIL-STD-202G Method 107G	-40℃ ∞ 100℃	100cycles	0	10
4	High Temperature Storage	JESD22-A103	100℃	1000hr	0	10
5	Temperature Humidity Storage	JEITA ED-4701 100 103	60℃, 90%RH	1000hr	0	10

### (2)Judgment Criteria of Failure for Reliability Test

(Ta=25℃)

NO.	Measuring Item	Symbol	Measuring Condition	Judgment Criteria for Failure
1	Forward Voltage	Vf	If=270mA	>U X 1.1
2	Total Luminous Flux	∅v	If=270mA	<S X 0.85

Notes:

U defines the upper limit of the specified characteristics. S defines the initial value.

PACKING

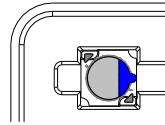
COB 13AA



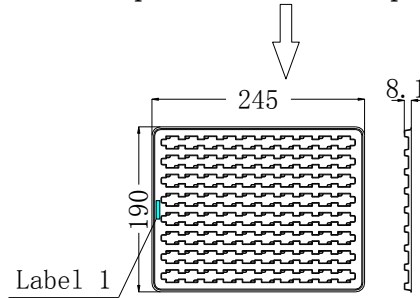
Protective film on LES



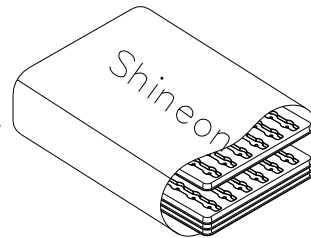
COB 13AA



80pcs of device per tray



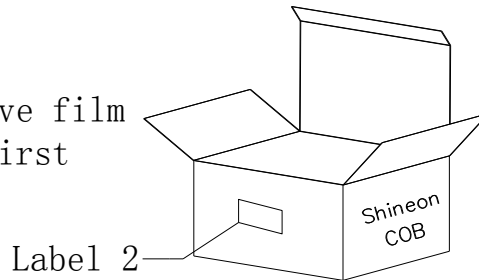
6 trays in an anti-static bag, with one empty tray on top. The set of 6 trays is packed up with a vacuum bag.



7 bags per box

Notes:

Remove the protective film before use in the first time.



2800 pcs of device per box