

## MT-18AA-XXX-H-1204-B2 COB Series Datasheet

### Applications

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

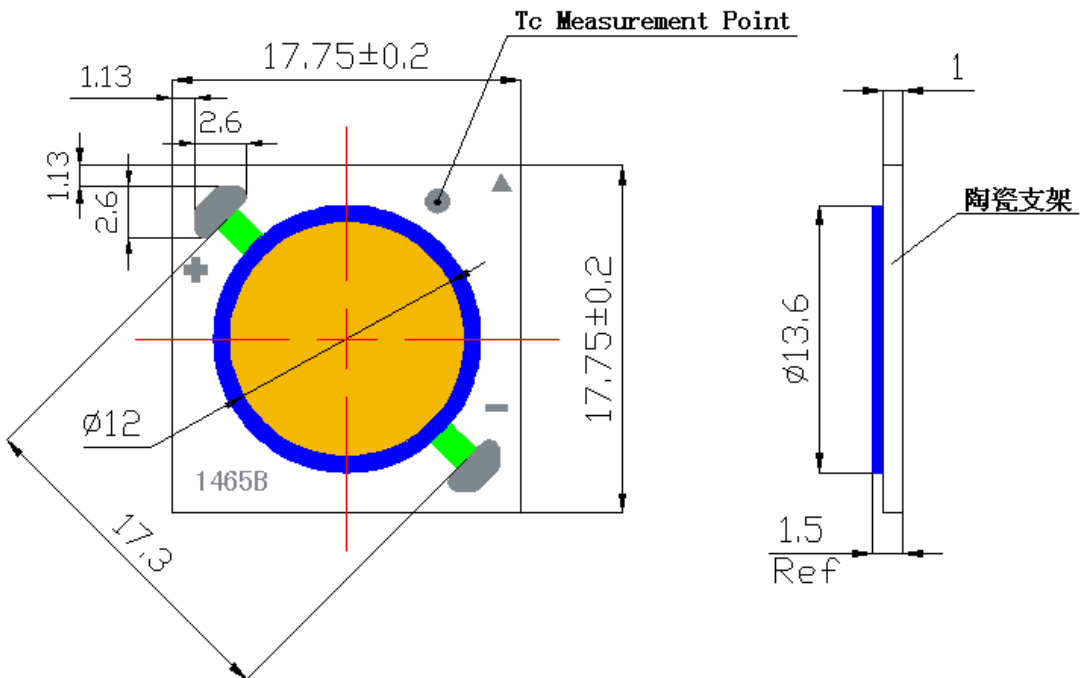


### Naming Conventions

MT-18AA - 270 - H - 1204 - B2  
 (1)            (2)    (3)    (4)

- (1) COB Series
- (2) CCT Range:2700K
- (3) CRI Range:>80
- (4) Chip Array: 12 series, 4 parallel

### Package Dimensions



1. All dimensions in millimeters.
2. Tolerance is +/-0.3mm 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	900	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	85	°C
LED Junction Temperature	Tj	140	°C
Temperature of central silicon Surface	Ts	130@IRDA Test	°C

## Characteristics (Tc=25°C)

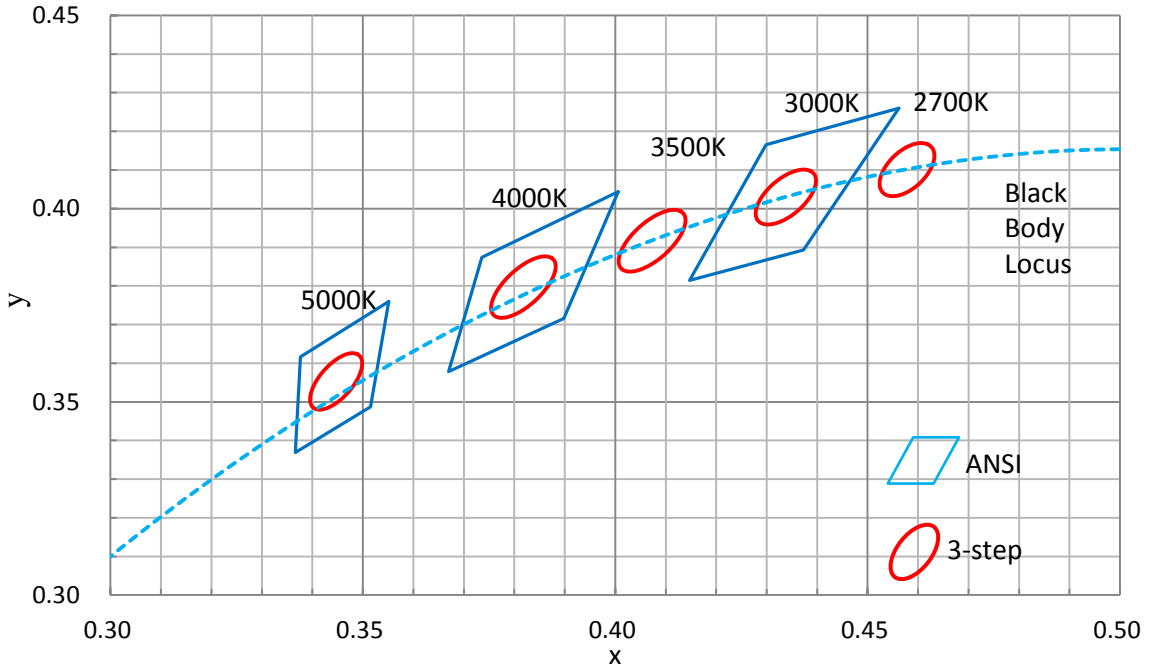
Part Number	Nominal CCT	CRI(Ra)		Luminous flux (lm)		Forward Current (mA)	Voltage (V)			Thermal Resistance Rj-c (°C/W)
		Min.	Typ.	Min.	Typ.		Min.	Typ.	Max.	
MT-18AA-270-H-1204-B2	2700K	80	82	1600		450	33.6		40.8	1.1
MT-18AA-300-H-1204-B2	3000K	80	82	1650		450				
MT-18AA-350-H-1204-B2	3500K	80	82	1680		450				
MT-18AA-400-H-1204-B2	4000K	80	82	1715		450				
MT-18AA-500-H-1204-B2	5000K	80	82	1780		450				

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=450mA)

X-y chart CIE1931



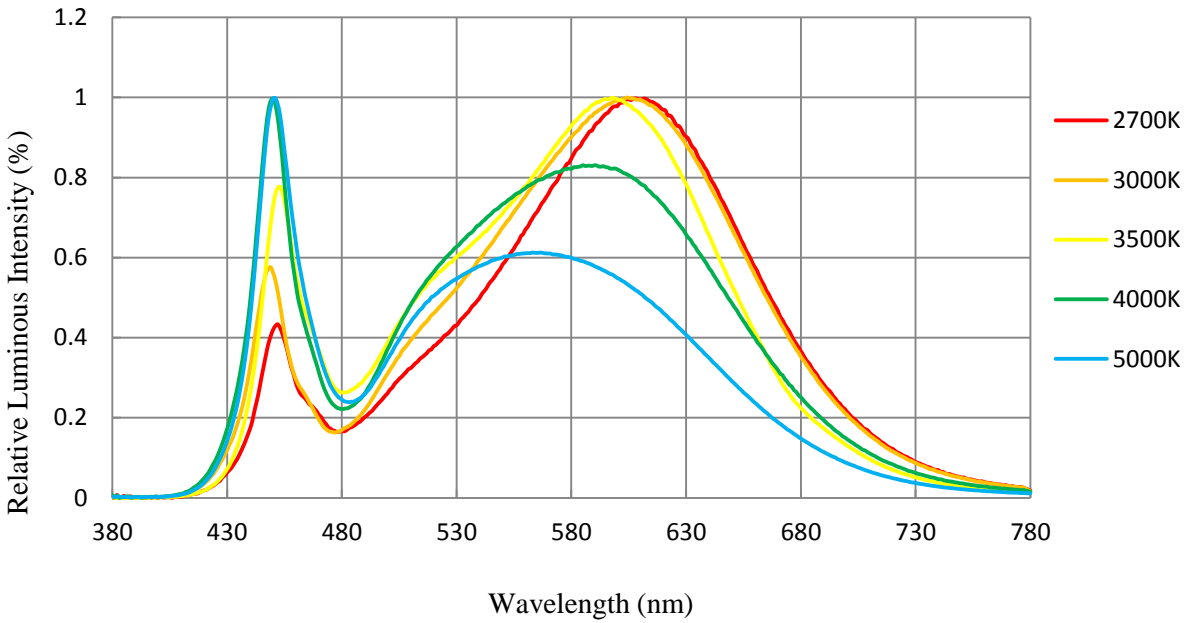
Bin Code	Nominal CCT	Center Point		Oval parameter		
		x	y	a	b	Theta°
273	2700K (3-step)	0.4578	0.4101	0.00774	0.00411	57.28
303	3000K (3-step)	0.4338	0.403	0.00834	0.00408	53.17
353	3500K (3-step)	0.4073	0.3917	0.00951	0.00417	52.93
403	4000K (3-step)	0.3818	0.3797	0.0094	0.004	54
503	5000K (3-step)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

Notes:

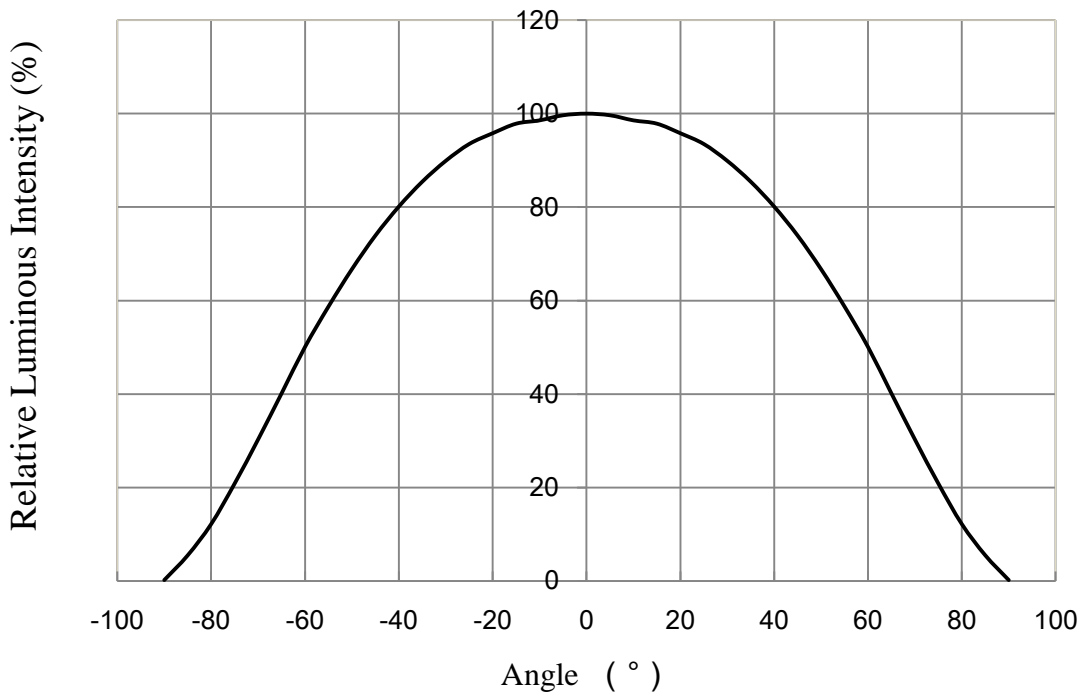
1. The chromaticity center refers to ANSI C78.377:2008
2. 5% tolerance for luminous intensity may be caused by measurement inaccuracy.
3. Measurement Uncertainty of the Forward Voltage : +/- 3%.
4. Chromaticity coordinate bins are measured with an accuracy of +/- 0.005.

Typical Relative Spectral Power Distribution (Tc=25°C, If=480mA)

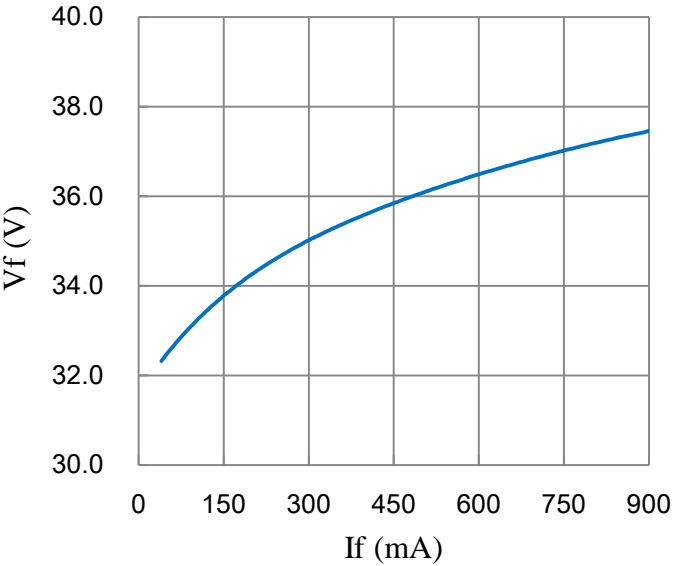
CRI(Ra)80min



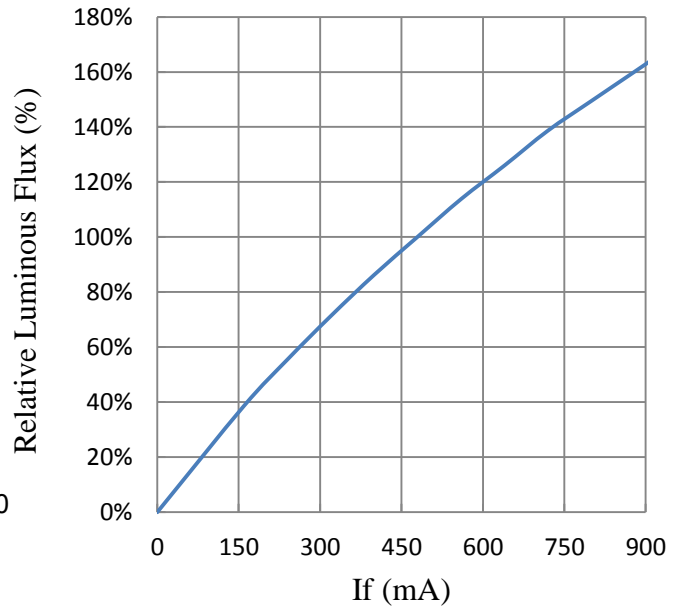
Typical Spatial Distribution (Tc=25°C, If=480mA)



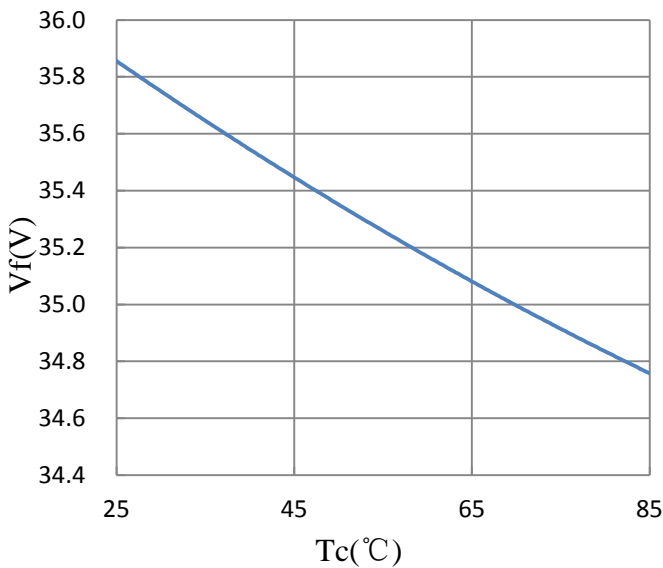
**Forward Current vs. Forward Voltage**  
( $T_c=25^\circ\text{C}$ )



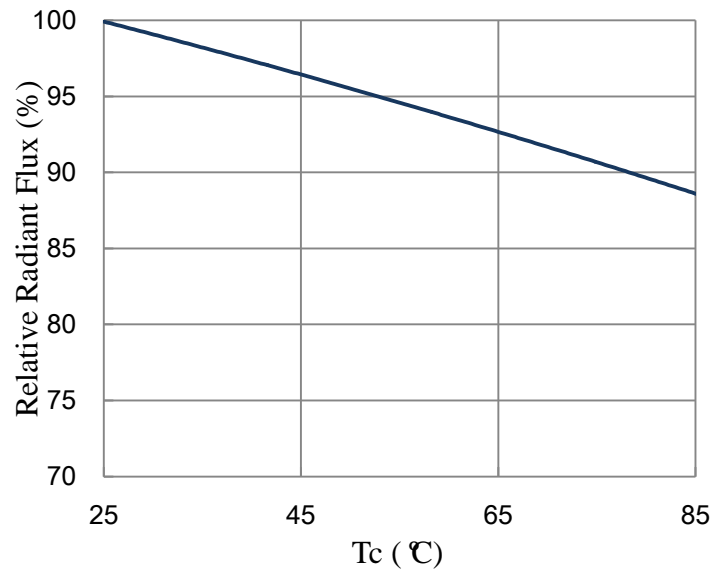
**Forward Current vs. Relative Luminous Flux**  
( $T_c=25^\circ\text{C}$ )



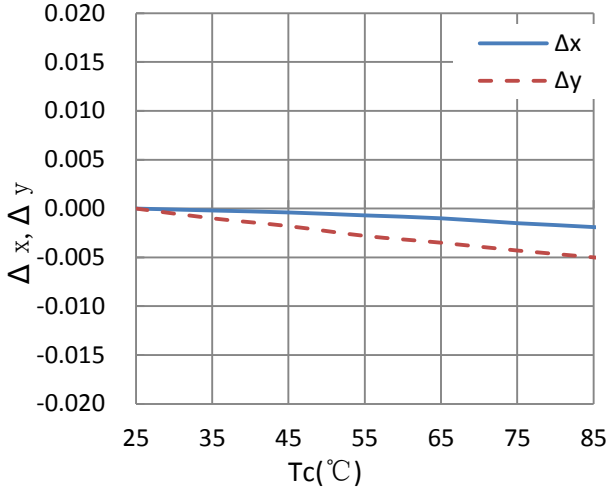
**Case Temperature vs. Forward Voltage**  
( $I_f=480\text{mA}$ )



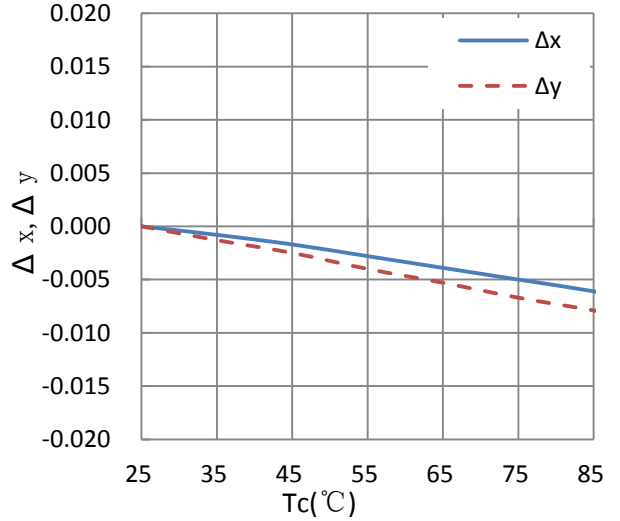
**Case Temperature vs. Relative Radiant Flux**  
( $I_f=480\text{mA}$ )



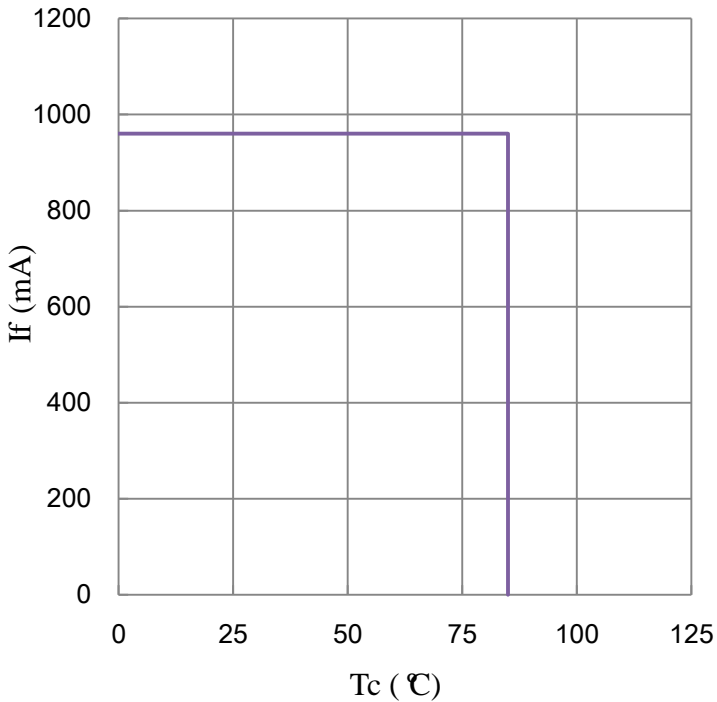
**Case Temperature vs. CIE-XY**  
(If=480mA, CCT=3000K, CRI=80)



**Case Temperature vs. CIE-xy**  
(If=480mA, CCT=5000K, CRI=80)



**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	Ts=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
6	Vibration	MIL-STD-202G Method 214	6.21Grms, 20-2000Hz 15 minutes in each direction(x,z,y)		0	5
7	Mechanical Shock	MIL-STD-202G Method 213	6 orientations x 5 pulses, Half-sine, 11ms duration, 50g peak acceleration		0	5

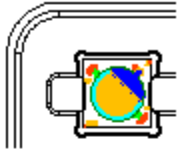
### (2)Judgment Criteria of Failure for Reliability Test

(Ta=25℃)

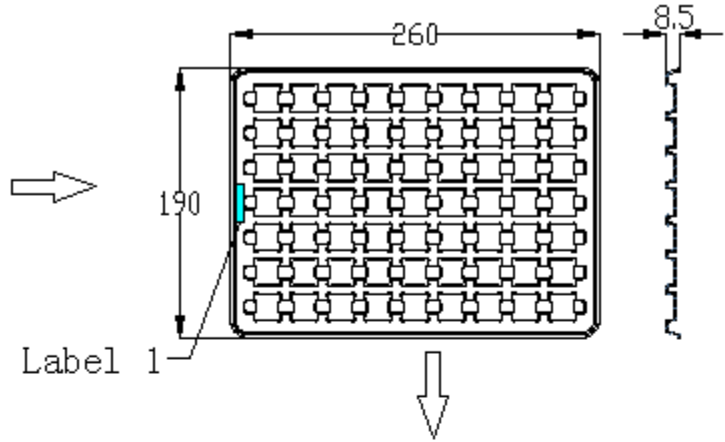
NO.	Measuring Item	Symbol	Measuring Condition	Judgment Criteria for Failure
1	Forward Voltage	Vf	IF=480mA	>U X 1.1
2	Total Luminous Flux	∅v	IF=480mA	<S X 0.85

PACKING

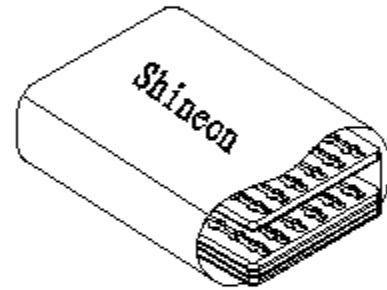
COB 18AA



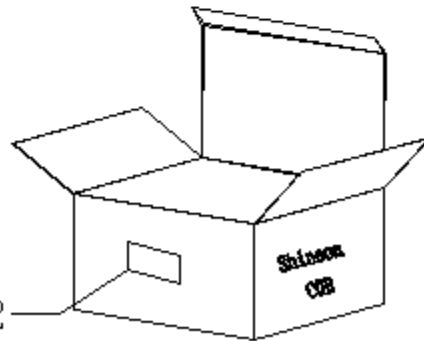
63 pcs of device  
per tray



21 trays in an anti-static  
bag, with one empty tray on  
top.  
The set of 21 trays is  
packed up with a vaccumed  
bag.



2 bags per box



2520 pcs of device per box