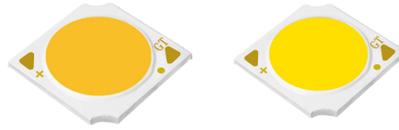


GT-COB1313-1-XX



Product Description

Getian COB series (Mirror-surface aluminum base), large luminous area with circular chip array design, is widely applied to high-end professional commercial lighting with ultimate high light efficacy, CRI and heat conduction. Its light efficacy is up to 170 lm/w. CRI can go up to 98 with smooth and cozy light quality which brings great experience of light. This series is optimized for down light, par light, spot light, track light and projector lamp etc, which effectively replaces 50-500W commercial halogen lamp and incandescent lamp, etc.

Features

- high luminous efficacy 170lm/w
- mirror-surface aluminum base
- high intensity circular chip array
- RoHS compliant, LM80, EN62471
- > 50000 hrs
- super high CRI
- Mac Adam 3 or 5 steps available
- smooth light quality

Application

- Indoor commercial lighting;
- down light, spot light, par light, etc.

Table of Content

Characteristics.....	2
Coding Rules.....	2
Specifications.....	3
Specifications.....	4
Spectral Features.....	5
Typical Spatial Distribution	6
Electrical Features	6
Mechanical Dimensions.....	7
CIE Diagram	8
Reliability Tests	9
Packaging	10
Notes	11



Characteristics

Characteristics	Unit	Min	Typical	Max
Dimension L*W	mm		13.5*13.5	
Diameter of Luminous Area Φ	mm		11.2	
Beam Angle θ	deg.		120	
Correlated Color Temperature CCT	k	2550	3000	5000
Luminous Efficacy	lm/w	90		180
Color Rendering Index CRI	Ra	70	80	98
MacAdam Ellipse SDCM	step	3		5
Operating Temperature Top	°C	-40		+75
Storage Temperature Tst	°C	-40		+85
Testing Point Tc	°C			75
Junction Temperature Tj	°C			125
Reverse Current (Vr=5V) Ir	mA			1
ESD (HBM)	V			2000
Hand Soldering (Lead-Free) ST	°C			350

Coding Rules

Model	GT	COB	1313-1	XX	X	X	X	X	XX
Code	GT	COB	Type	Emitting Color	Chip Size	Chip QTY	Beam Angle	Power	Brightness Grade
Meaning	Getian	COB Series	1313-1	W2: 2550-2850 W3: 2850-3150 W35: 3350-3650 W4: 3800-4200	1 2 3	12: 12EA 24: 24EA 36: 36EA 48: 48EA	0:120°	3: 3.1W 6: 6.2W 9: 9.4W 12: 12.5W	100: 100-110 110: 110-120 120: 120-130 140: 140-150 150: 150-160 160: 160-170

Specifications (Tc = 25°C)

Standard If: 90mA Typical Vf: 34.8V Power: 3.1W Max Current: 180mA Pulse Current: 230mA Thermal Resistance: 4.2°C/W						
Color	CCT (K)	CRI		34-41V @90mA lm/w	Part Number	@180mA lm/w
		Min Ra	Min R9			
Warm White	2700	80	0	130-140	GT-COB1313-1W221203130	110-120
		90	50	100-110	GT-COB1313-1W221203100	80-90
	3000	80	0	140-150	GT-COB1313-1W321203140	120-130
		90	50	110-120	GT-COB1313-1W321203110	90-100
	3500	80	0	150-160	GT-COB1313-1W3521203150	130-140
		90	50	120-130	GT-COB1313-1W3521203120	100-110
Neutral White	4000	80	0	150-160	GT-COB1313-1W421203150	130-140
		90	50	120-130	GT-COB1313-1W421203120	100-110

Standard If: 180mA Typical Vf: 34.8V Power:6.2W Max Current: 360mA Pulse Current: 460mA Thermal Resistance: 2.4°C/W						
Color	CCT (K)	CRI		34-41V @180mA lm/w	Part Number	@360mA lm/w
		Min Ra	Min R9			
Warm White	2700	80	0	130-140	GT-COB1313-1W22406130	110-120
		90	50	100-110	GT-COB1313-1W22406100	80-90
	3000	80	0	140-150	GT-COB1313-1W322406140	120-130
		90	50	110-120	GT-COB1313-1W322406110	90-100
	3500	80	0	140-150	GT-COB1313-1W3522406140	120-130
		90	50	110-120	GT-COB1313-1W3522406110	90-100
Neutral White	4000	80	0	150-160	GT-COB1313-1W422406150	130-140
		90	50	120-130	GT-COB1313-1W422406120	100-110

Notes:

Above charts include the most regular specs for cob led series for reference. Please consult sales representative for specs that are not listed or please visit www.getiangroup.com.

Machine Tolerance $\pm 3\%$ on luminous flux.

Specifications (Tc = 25°C)

Standard If: 270mA Typical Vf: 34.8V Power: 9.4W Max Current: 540mA Pulse Current: 690mA Thermal Resistance: 1.7°C/W

Color	CCT (K)	CRI		34-41V @270mA lm/w	Part Number	@540mA lm/w
		Min Ra	Min R9			
Warm White	2700	80	0	130-140	GT-COB1313-1W223609130	110-120
		90	50	100-110	GT-COB1313-1W223609100	80-90
	3000	80	0	140-150	GT-COB1313-1W323609140	120-130
		90	50	110-120	GT-COB1313-1W323609110	90-100
	3500	80	0	140-150	GT-COB1313-1W3523609140	120-130
		90	50	110-120	GT-COB1313-1W3523609110	90-100
Neutral White	4000	80	0	150-160	GT-COB1313-1W423609150	130-140
		90	50	120-130	GT-COB1313-1W423609120	100-110

Standard If: 360mA Typical Vf: 34.8V Power: 12.5W Max Current: 720mA Pulse Current: 920mA Thermal Resistance: 1.4°C/W

Color	CCT (K)	CRI		34-41V @360mA lm/w	Part Number	@720mA lm/w
		Min Ra	Min R9			
Warm White	2700	80	0	130-140	GT-COB1313-1W2248012130	110-120
		90	50	100-110	GT-COB1313-1W2248012100	80-90
	3000	80	0	130-140	GT-COB1313-1W3248012130	110-120
		90	50	110-120	GT-COB1313-1W3248012110	90-100
	3500	80	0	140-150	GT-COB1313-1W35248012140	120-130
		90	50	110-120	GT-COB1313-1W35248012110	90-100
Neutral White	4000	80	0	140-150	GT-COB1313-1W4248012140	120-130
		90	50	110-120	GT-COB1313-1W4248012110	90-100

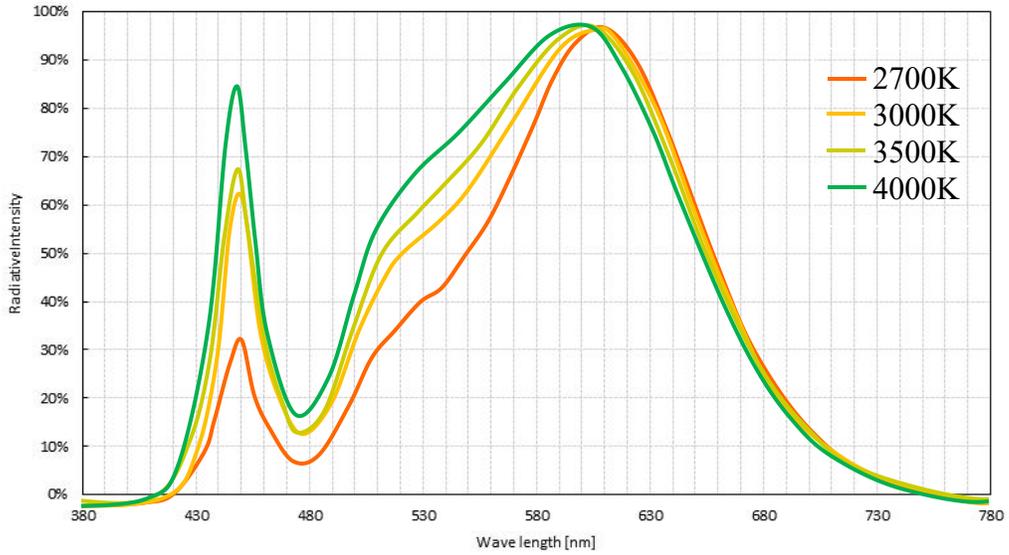
Notes:

 Above charts include the most regular specs for cob led series for reference. Please consult sales representative for specs that are not listed or please visit www.getiangroup.com.

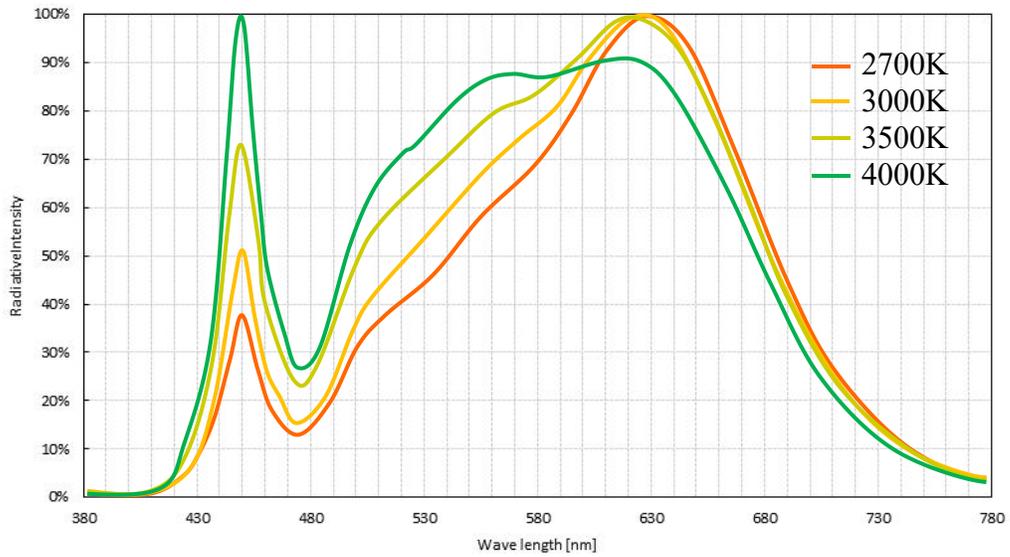
Machine Tolerance ±3% on luminous flux.

Spectral Features (Tc = 25°C)

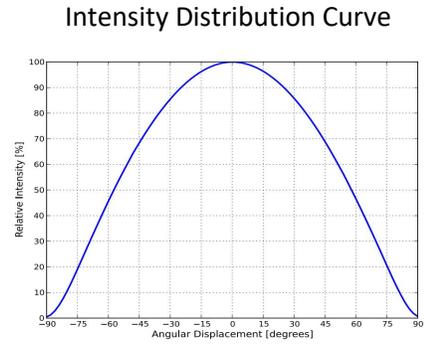
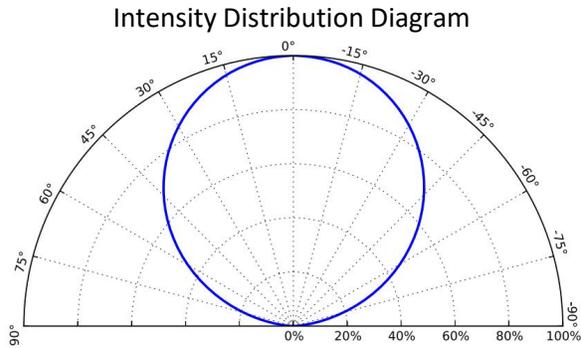
CRI(Ra) 80Min



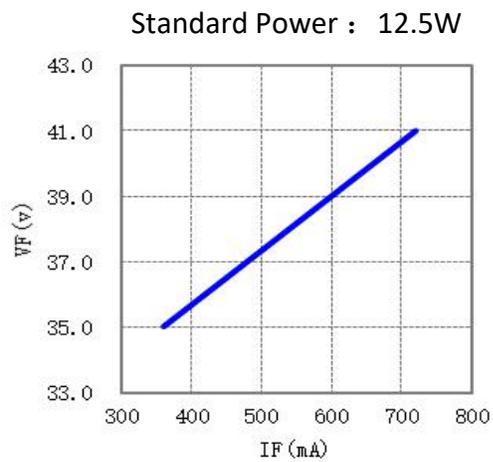
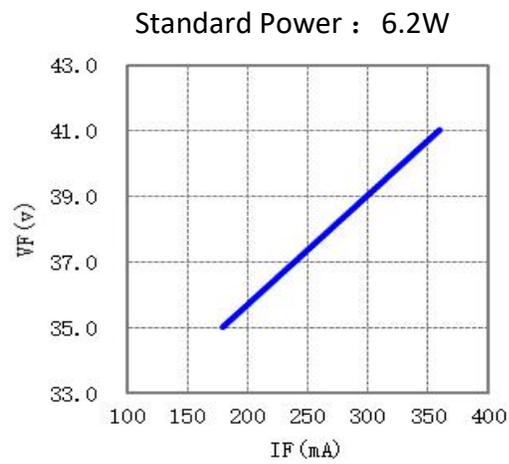
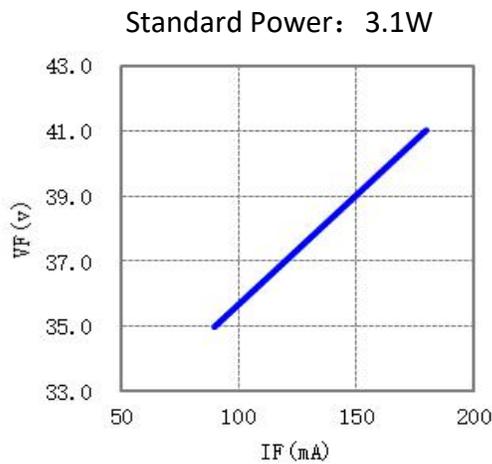
CRI(Ra) 90Min

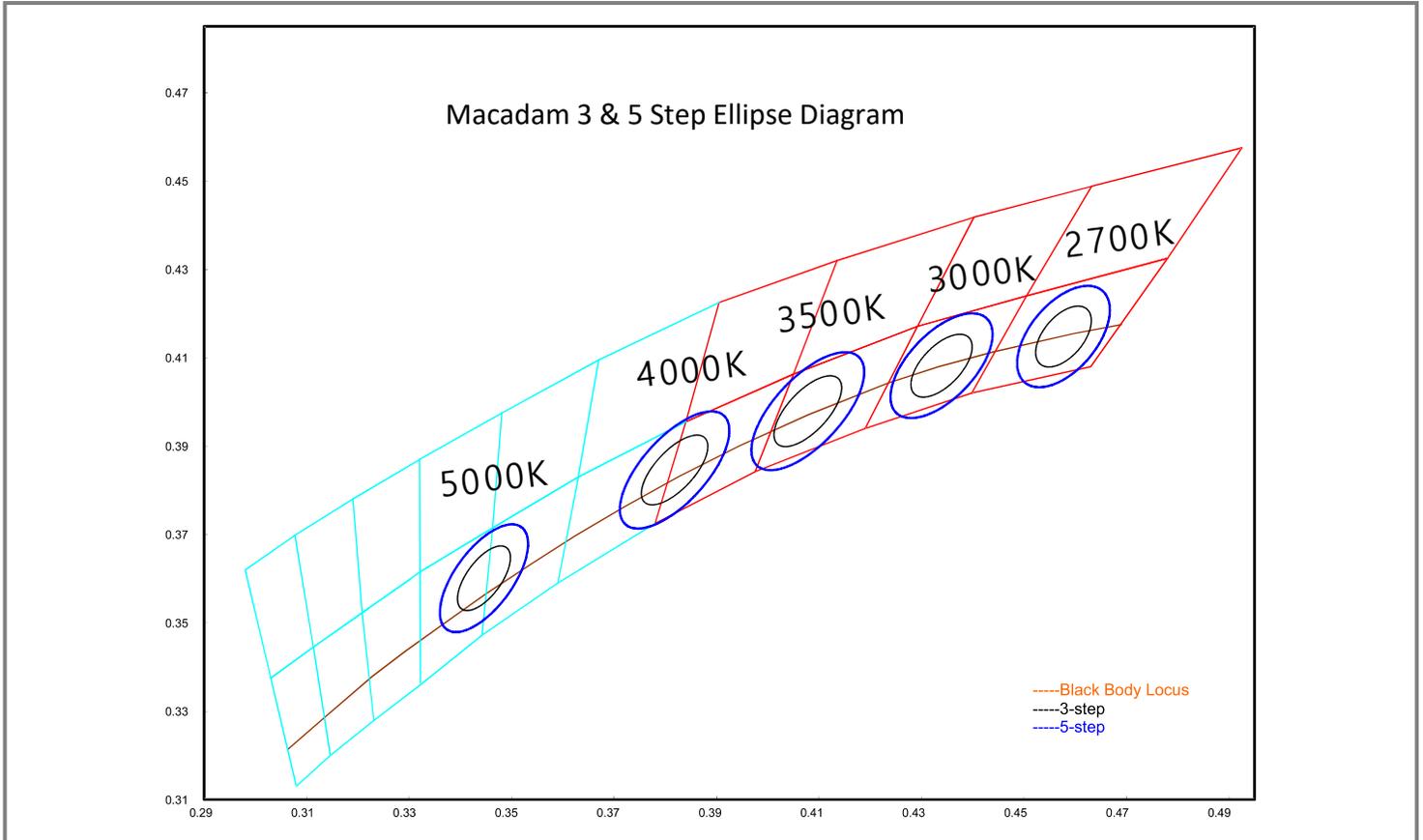


Typical Spatial Distribution (Tc = 25°C)



Electrical Features (Tc = 25°C)



CIE Diagram (1931CIE)


NOMINAL CCT	COLOR SPACE	CENTER POINT (cx, cy)	MAJOR AXIS, a	MINOR AXIS, b	ELLIPSE ROTATION ANGLE, θ
2700K	Single 3-step MacAdam ellipse	(0.4578, 0.4101)	0.00774	0.00411	57.28°
2700K	Single 5-step MacAdam ellipse	(0.4578, 0.4101)	0.01350	0.00700	53.70°
3000K	Single 3-step MacAdam ellipse	(0.4338, 0.4030)	0.00834	0.00408	53.22°
3000K	Single 5-step MacAdam ellipse	(0.4338, 0.4030)	0.01390	0.06800	53.22°
3500K	Single 3-step MacAdam ellipse	(0.4073, 0.3917)	0.00951	0.00417	52.97°
3500K	Single 5-step MacAdam ellipse	(0.4073, 0.3917)	0.01545	0.0690	54.00°
4000K	Single 3-step MacAdam ellipse	(0.3818, 0.3797)	0.00939	0.00402	54°
4000K	Single 5-step MacAdam ellipse	(0.3818, 0.3797)	0.01565	0.00670	53.72°
5000K	Single 3-step MacAdam ellipse	(0.3447, 0.3558)	0.00822	0.00354	59.62°
5000K	Single 5-step MacAdam ellipse	(0.3447, 0.3558)	0.01370	0.00590	59.62°

Reliability Tests

Test Items	Test Conditions
Aging Test	3.1W/IF=90mA 6.4W/IF=180mA 9.4W/IF=270mA 12.5W/IF=360mA Ta=25°C×1000hrs
Aging Test	3.1W/IF=90mA 6.4W/IF=180mA 9.4W/IF=270mA 12.5W/IF=360mA Ta=85°C×1000hrs
High Temperature Storage	100°C × 1000 hours
Low Temperature Storage	-40°C × 1000 hours
High Temp & Humidity	3.1W/IF=90mA 6.4W/IF=180mA 9.4W/IF=270mA 12.5W/IF=360mA 85°C, 85 %RH for 1000 hours
Temperature Shock	-40°C × 30 minutes – +100°C × 30 minutes, 100 cycle
ESD (HBM)	2000V HBM/Time

Criteria for Judging LED Failure(Tc=25°C)

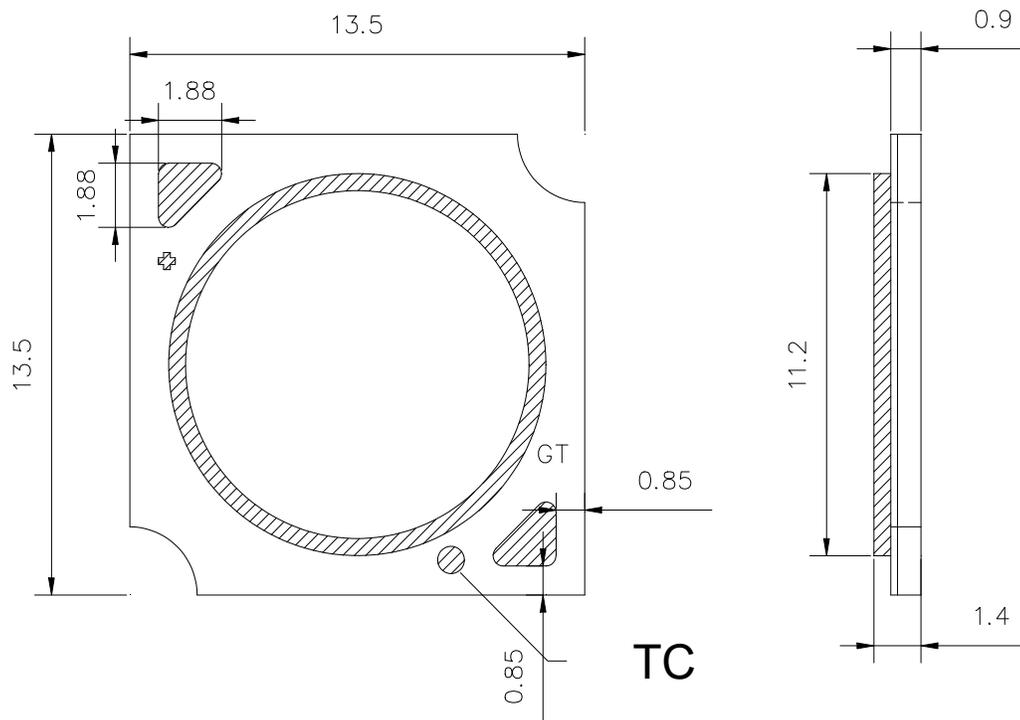
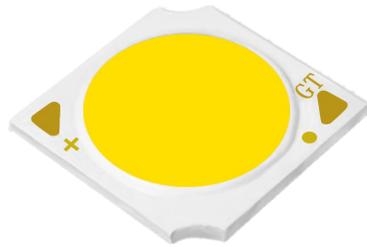
Items	Symbol	Test Conditions	Criteria for Judging LED Failure
Forward Voltage	V _F	3.1W/IF=90mA 6.4W/IF=180mA 9.4W/IF=270mA 12.5W/IF=360mA	>U × 1.1
Luminous Flux	φ _v	3.1W/IF=90mA 6.4W/IF=180mA 9.4W/IF=270mA 12.5W/IF=360mA	<S × 0.7

U refers to max value; S refers to initial value.

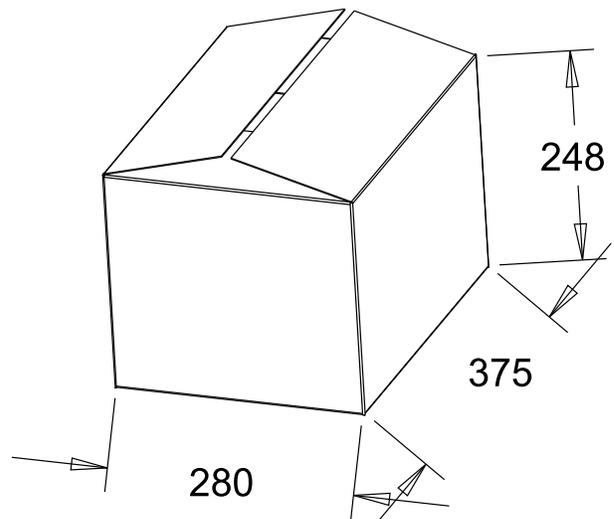
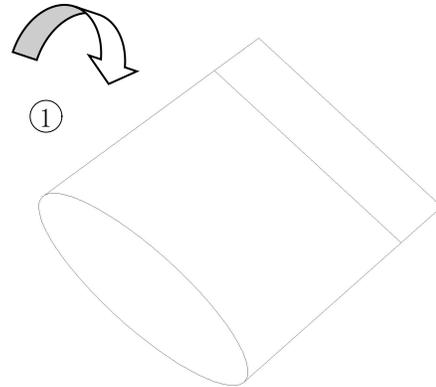
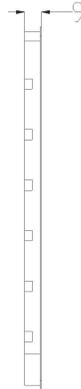
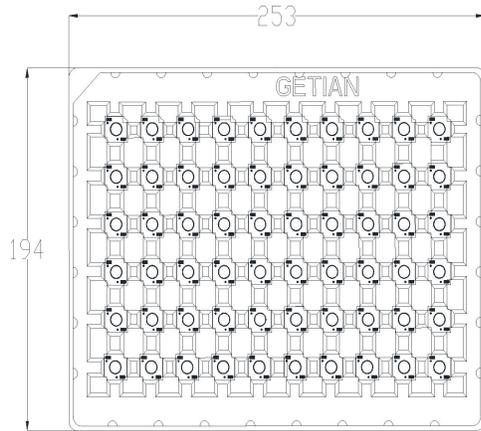
Notes: Judging criteria based on Tc=25°C

Dimensions (Unit:mm)

Tolerance +/-0.3mm



Packaging (Unit:mm)



Packaging Details

Tray:60pcs/Tray

Aluminum Foil Bag:540pcs/Bag

Carton: 3240pcs/carton

Notes

Product Specifications

This is a product family data sheet without extra emphasis on a specific model. The specifications in the document refers to its general value under certain test conditions. Please consult sales representative or technical people if encounters specs that are not listed. (Tolerance should be considered).

Operation Tips

1. Please do not press emitting surface;
2. Please do not pour out products from trays or overlay them;
3. Keep the power supply lines 2-3mm striped and tin immersed;
4. Do not touch the emitting surface or the white dam by the soldering iron during soldering process;
5. Soldering time should be less than 5 seconds.;
6. Keep the soldering point clean and neat with no bulge, bend or cold-joint.
7. Instant test time less than 3 seconds.
8. Recommend to use thermal grease with conductivity >2.5.
9. Please keep the thermal grease inclusion-free;
10. Thermal grease spreading area should be a bit larger than the led substrate;
11. Thermal grease evenly spread with thickness about 0.1mm;
12. Place led flatly and do no push from side in case grease scraped;
13. Lens cover should be 0.2mm diameter larger than the COB emitting surface.

Service Conditions

The products must be operated within the rated range of parameters. Constant current drivers are recommended.

ESD Protection

Statics or surge volt would cause LED failure. When using the products, we suggest wearing anti-static wrist strap or gloves. All devices, equipment and machinery must be grounded. Precautions should be taken to protect the products from the surge voltage generated by the devices. It is recommended to inspect each LED whether it is electrostatic damaged. Inspection can be done by a indicating lamp or low forward current test (suggest 90mA). The destroyed products shows different features, for example, the forward voltage becoming lower, or no light emission under low current.

Heat Dissipation

The thermal design of the end product is particularly important, please consider it seriously. Do avoid high temperature condensation on the product.

Cleaning

Recommend ethanol as the only clean solvent.

Others

The bright light emitted by LED may hurt the eyes. Do not look directly at the products when not wearing protective glasses. The strong irritant glare makes people feel uncomfortable and precautions should be taken during usage.