



Features

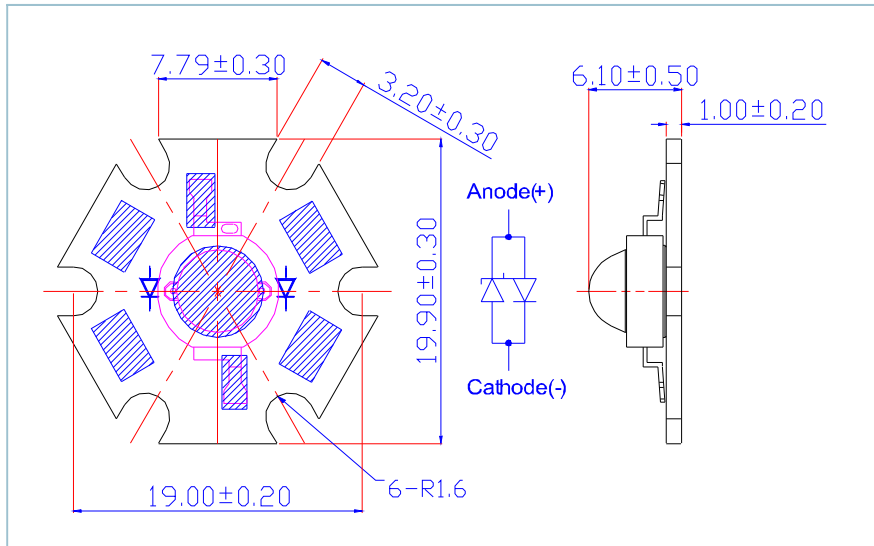
- Various colors
- High energy efficiency
- Low voltage
- Suitable for all SMT assembly methods
- Long operating life

Typical Applications

- Effect and accent lighting: display cases, front panels
- Architectural lighting: flood lights, stairway lighting, garden lighting
- Room lighting: contour lighting, chandeliers, pendants, coves
- Specialty lighting: security lighting, portable flashlight, reading lamps

Package Outlines

Lambertian



Notes:

1. All dimensions are in mm.
2. Drawings are not to scale.
3. It is strongly recommended that the temperature of lead be not higher than 55°C .

Absolute Maximum Ratings

Parameter	Symbol	Rating	Units
DC Forward Current	I_F	350	mA
Peak pulse current;(tp ≤ 100 s, Duty cycle=0.25)	I_{pulse}	500	mA
Reverse Voltage	V_R	5	V
Reverse Current($V_R=5V$)	I_R	50	μA
LED junction Temperature (at 350 mA)	T_j	125	°C
Operating Temperature	T_{opr}	-30 ~ +110	°C
Storage Temperature	T_{stg}	-40 ~ +120	°C
Manual Soldering Time at 260°C(Max.)	T_{sol}	5	seconds

Luminous Flux Characteristics at $I_F=350mA(T_a=25°C, T_{opr}=100ms)$:

Lens Item	Part Name	Color	Flux			Units
			Min.	Typ.	Max.	
Lambertian	VAOL-SW1xAx-SA	White	70.3	90.0	--	lm
	VAOL-SX1xAx-SA	Warm White	63.0	80.0	--	lm
	VAOL-SR1xAx-SA	Red	30.0	50.0	--	lm
	VAOL-SO1xAx-SA	Red Orange	33.3	55.0	--	lm
	VAOL-SA1xAx-SA	Amber	30.0	50.0	--	lm
	VAOL-ST1xAx-SA	True Green	70.3	90.0	--	lm
	VAOL-SB1xAx-SA	Blue	20.3	35.0	--	lm

Forward Voltage Characteristics at $I_F=350\text{mA}$ ($T_a=25^\circ\text{C}$, $T_{opr}=100\text{ms}$):

Lens Item	Part Name	Color	V_F			Units
			Min.	Typ.	Max.	
	VAOL-SW1xAx-SA	White	3.1	--	4.3	V
	VAOL-SX1xAx-SA	Warm White	3.1	--	4.3	V
	VAOL-SR1xAx-SA	Red	2.0	--	3.0	V
	VAOL-SO1xAx-SA	Red Orange	2.0	--	3.0	V
	VAOL-SA1xAx-SA	Amber	2.0	--	3.0	V
	VAOL-ST1xAx-SA	True Green	2.8	--	4.0	V
	VAOL-SB1xAx-SA	Blue	3.1	--	4.3	V

Wavelength or Color Temperature Characteristics at $I_F=350\text{mA}$ ($T_a=25^\circ\text{C}$, $T_{opr}=100\text{ms}$):

Lens Item	Part Name	Color	λ_d/CCT			Units
			Min.	Typ.	Max.	
	VAOL-SW1xAx-SA	White	5000	--	8000	K
	VAOL-SX1xAx-SA	Warm White	2800	--	3800	K
	VAOL-SR1xAx-SA	Red	620	--	630	nm
	VAOL-SO1xAx-SA	Red Orange	610	--	620	nm
	VAOL-SA1xAx-SA	Amber	585	--	595	nm
	VAOL-ST1xAx-SA	True Green	515	--	535	nm
	VAOL-SB1xAx-SA	Blue	460	--	475	nm

Temperature Coefficient of Forward Voltage & Thermal Resistance Junction to Board Characteristics at $I_F=350\text{mA}$ ($T_a=25^\circ\text{C}$):

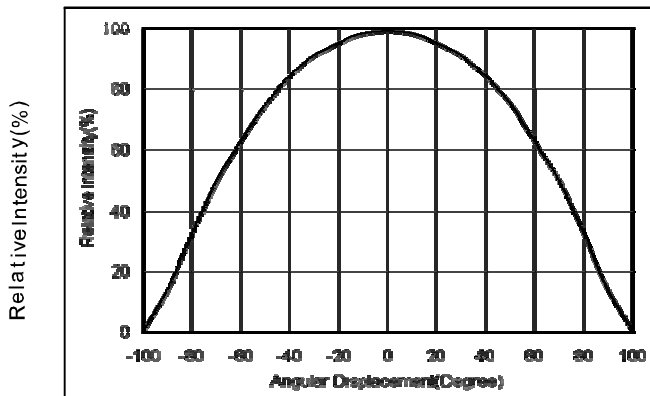
Lens Item	Part Name	Color	$\Delta V_F/\Delta T$		$R\theta_{J-B}$	
			Typ.	Units	Typ.	Units
	VAOL-SW1xAx-SA	White	-2	$\text{mV}/^\circ\text{C}$	20	$^\circ\text{C}/\text{W}$
	VAOL-SX1xAx-SA	Warm White	-2	$\text{mV}/^\circ\text{C}$	20	$^\circ\text{C}/\text{W}$
	VAOL-SR1xAx-SA	Red	-2	$\text{mV}/^\circ\text{C}$	20	$^\circ\text{C}/\text{W}$
	VAOL-SO1xAx-SA	Red Orange	-2	$\text{mV}/^\circ\text{C}$	20	$^\circ\text{C}/\text{W}$
	VAOL-SA1xAx-SA	Amber	-2	$\text{mV}/^\circ\text{C}$	20	$^\circ\text{C}/\text{W}$
	VAOL-ST1xAx-SA	True Green	-2	$\text{mV}/^\circ\text{C}$	20	$^\circ\text{C}/\text{W}$
	VAOL-SB1xAx-SA	Blue	-2	$\text{mV}/^\circ\text{C}$	20	$^\circ\text{C}/\text{W}$

Emission Angle Characteristics at $I_F=350mA(T_a=25^\circ C)$:

Part Name	Color	2θ (Typ.)	Units
VAOL-SW1xAx-SA	White	130	Degrees
VAOL-SX1xAx-SA	Warm White	130	Degrees
VAOL-SR1xAx-SA	Red	120	Degrees
VAOL-SO1xAx-SA	Red Orange	120	Degrees
VAOL-SA1xAx-SA	Amber	120	Degrees
VAOL-ST1xAx-SA	True Green	150	Degrees
VAOL-SB1xAx-SA	Blue	150	Degrees

Typical Radiation Pattern for

Lambertian



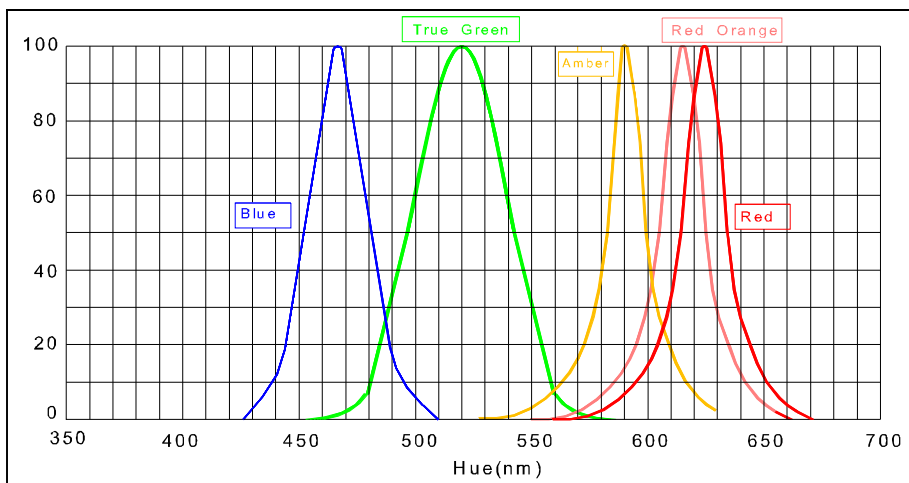
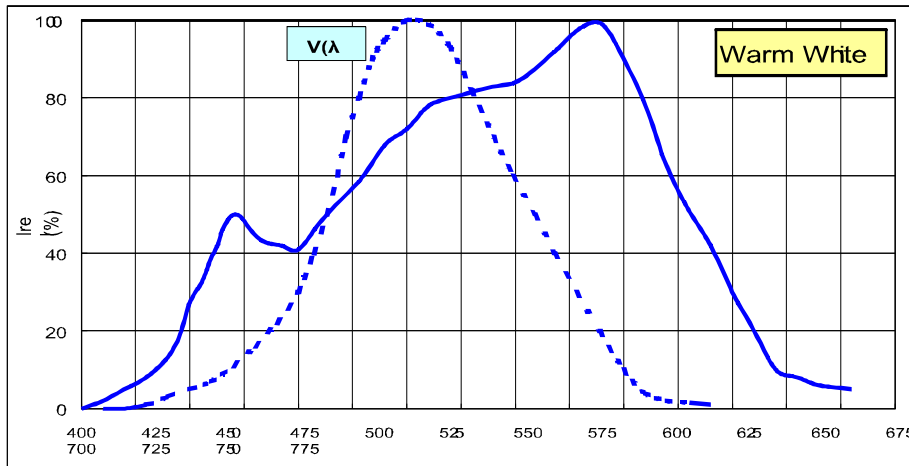
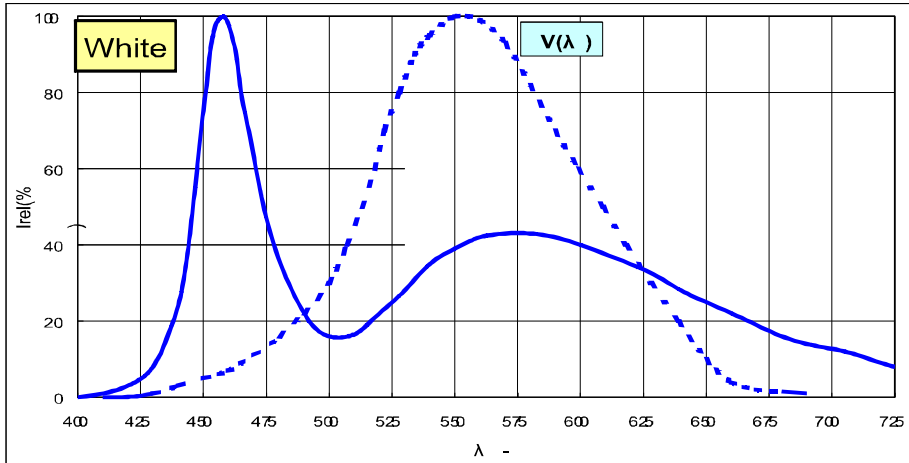
Specific binning requirements- please contact our home office

Note

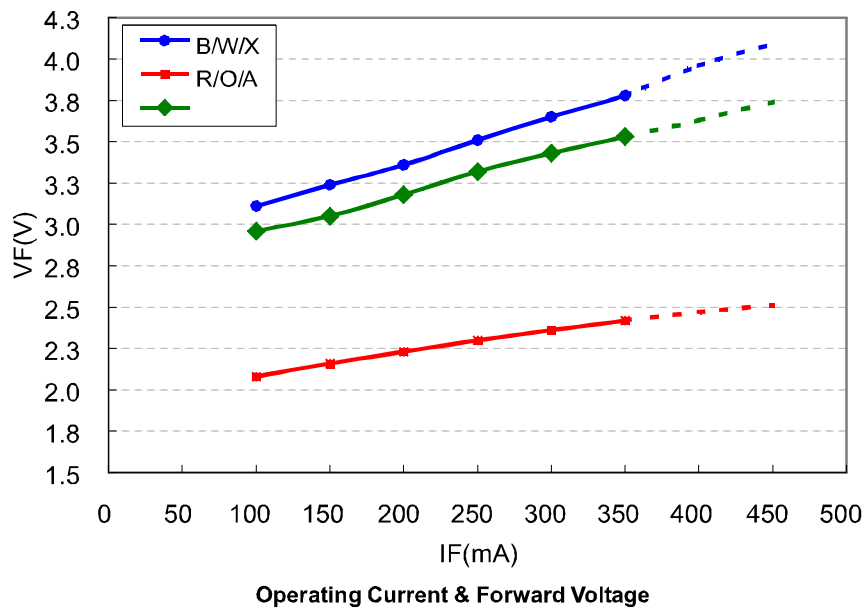
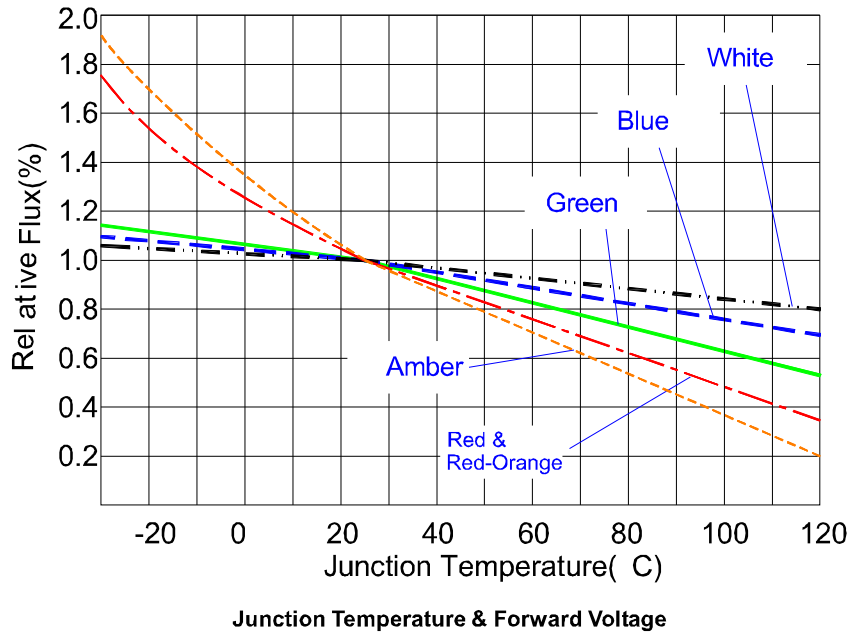
1. Flux is measured with an accuracy of $\pm 10\%$.
2. CCT selection acc. to CCT groups and an accuracy of $\pm 200K$
3. Forward Voltage is measured with an accuracy of $\pm 0.1V$
4. Wavelength is measured with an accuracy of $\pm 0.5nm$
5. All white 、 warm white 、 True green and blue emitters are built with InGaN
6. All red 、 red-orange and amber emitters are built with AlGaInP



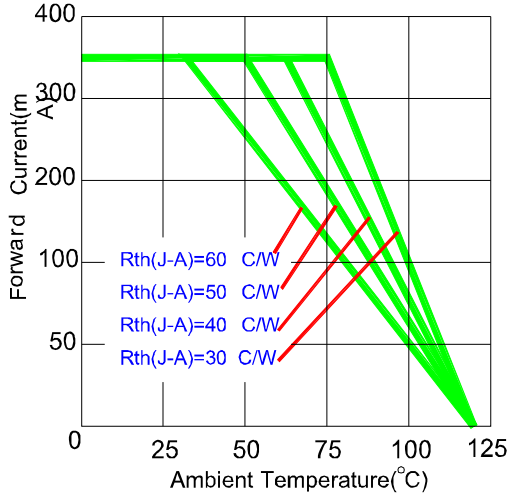
Electrical & Optical Curves-Spectrum



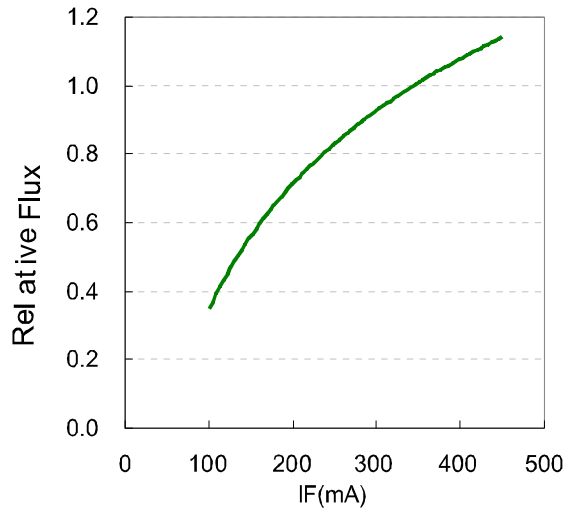
Typical Optical and Electrical Curves



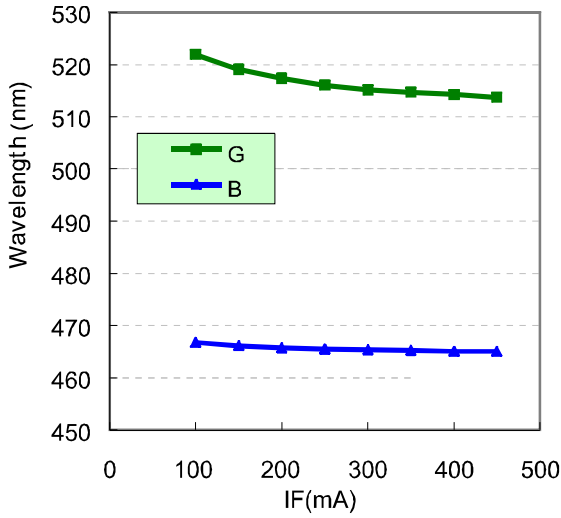
Typical Optical and Electrical Curves



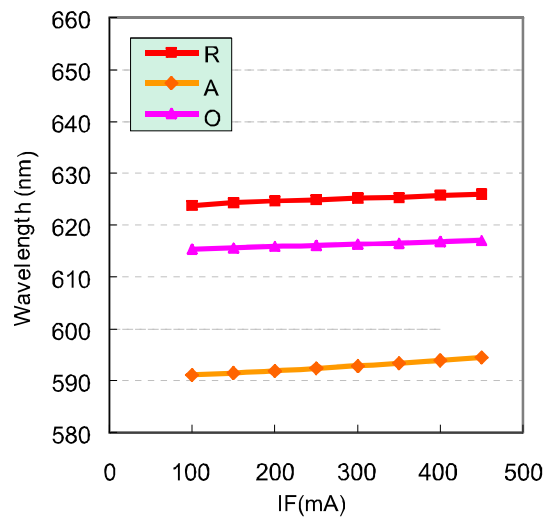
Operating Current & Ambient Temperature



Forward Current & Luminous Flux



Forward Current & Wavelength



Package Specifications

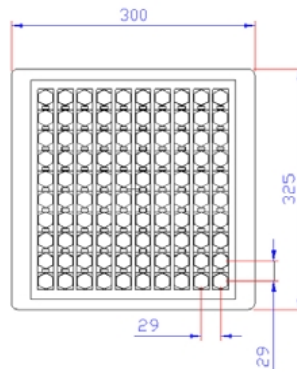
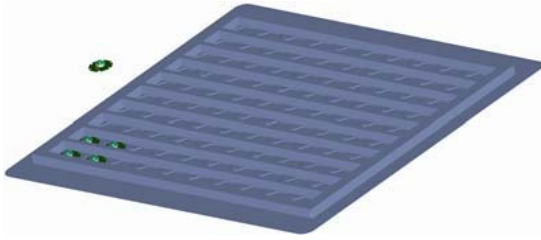


Figure 1: Tray

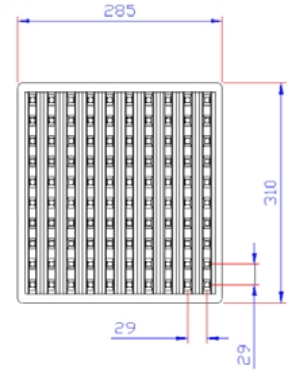


Figure 2: Cover

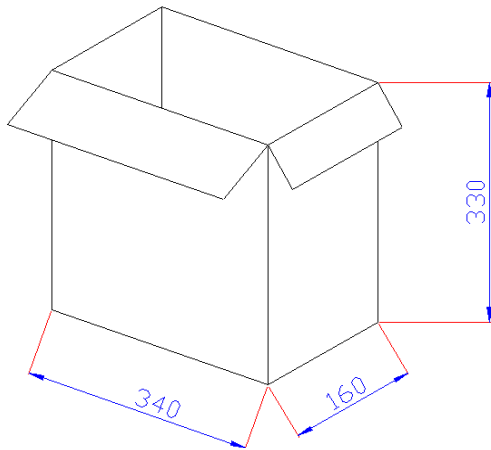


Figure 3: Inner box

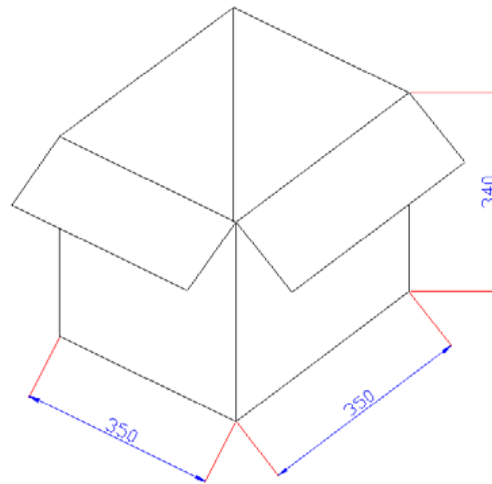


Figure 4: Outer box

Note

1. All dimensions are in mm.
2. There are 100pcs stars in a tray.(Tray+Cover)
3. There are 10 trays in an inner box.
4. There are 2 inner boxes in an outer box.

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