



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of "Quality Parts,Customers Priority,Honest Operation,and Considerate Service",our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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Features

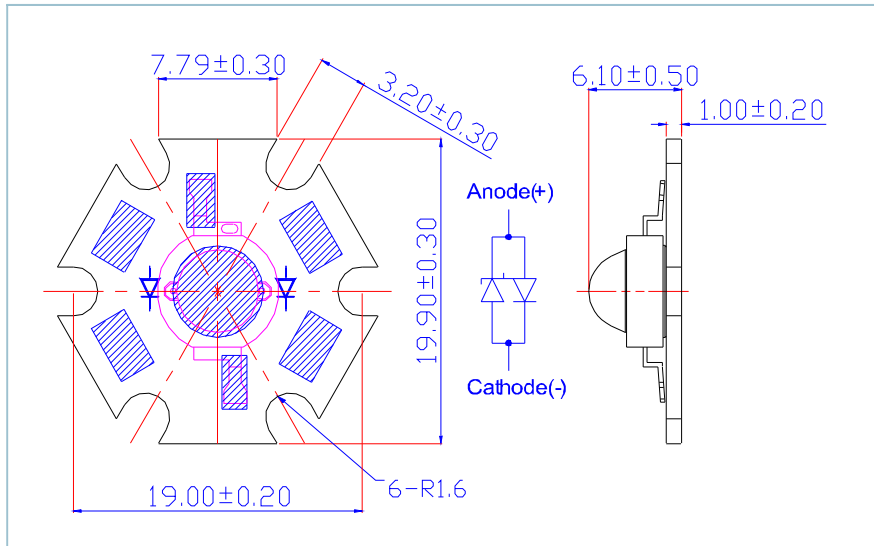
- Various colors
- High energy efficiency
- Low voltage
- Suitable for all SMT assembly methods
- Long operating life

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;(t _p ≤ 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 $I_F=350mA(T_a=25^\circ C, T_{opr}=100ms)$:

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

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 $I_F=350mA(T_a=25^\circ C)$:

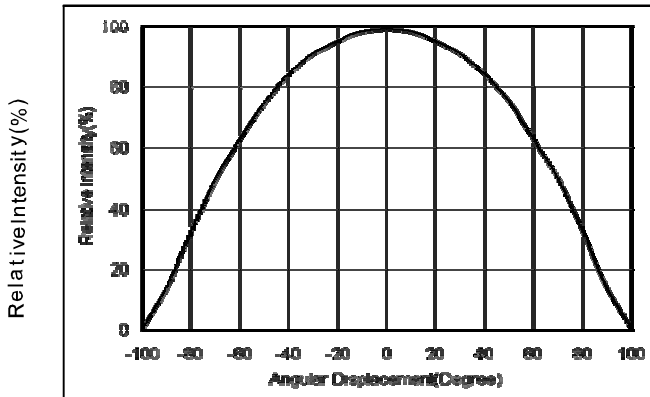
Lens Item	Part Name	Color	$\Delta V_F/\Delta T$		$R\theta_{J-B}$	
			Typ.	Units	Typ.	Units
	VAOL-SW1xAx-SA	White	-2	mV/°C	20	°C/W
	VAOL-SX1xAx-SA	Warm White	-2	mV/°C	20	°C/W
	VAOL-SR1xAx-SA	Red	-2	mV/°C	20	°C/W
	VAOL-SO1xAx-SA	Red Orange	-2	mV/°C	20	°C/W
	VAOL-SA1xAx-SA	Amber	-2	mV/°C	20	°C/W
	VAOL-ST1xAx-SA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

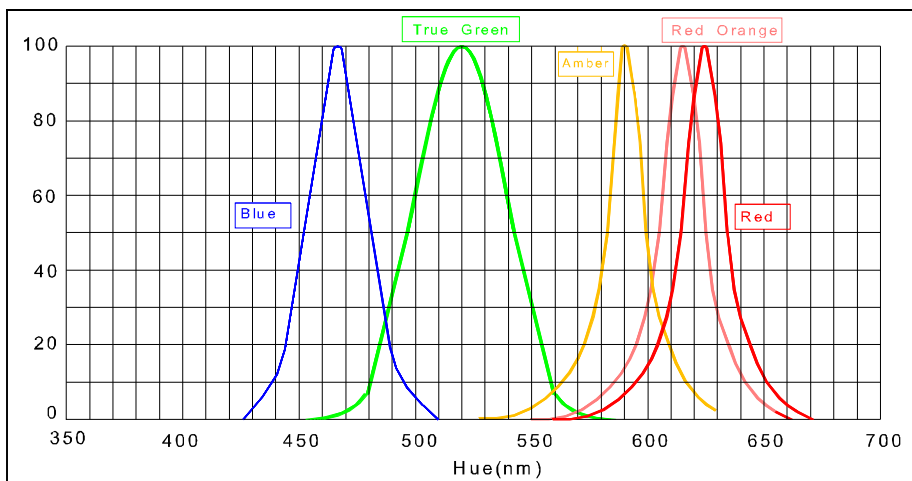
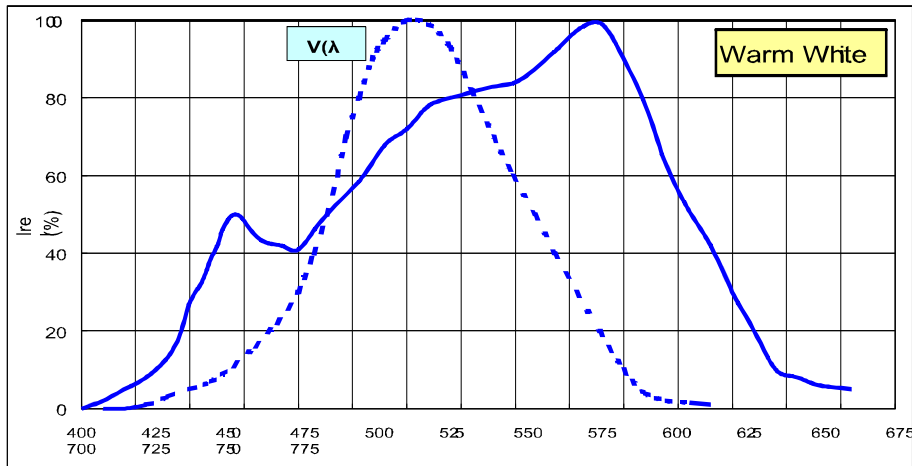
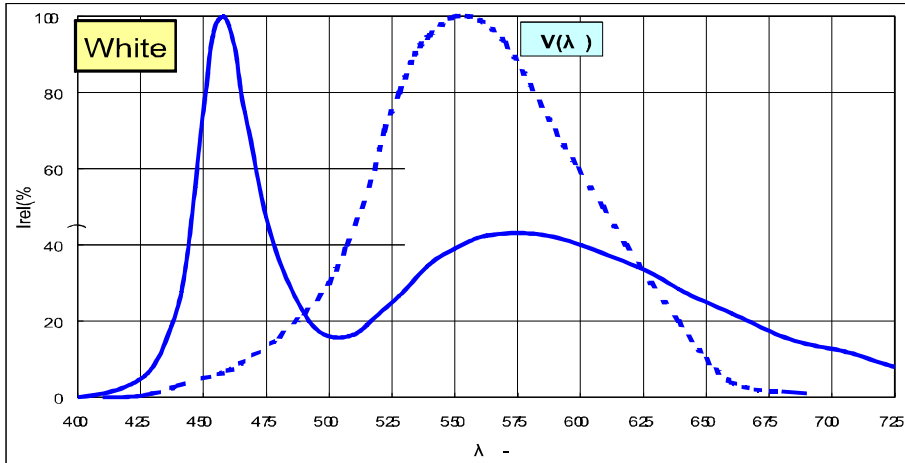


Specific binning requirements- please contact our home office

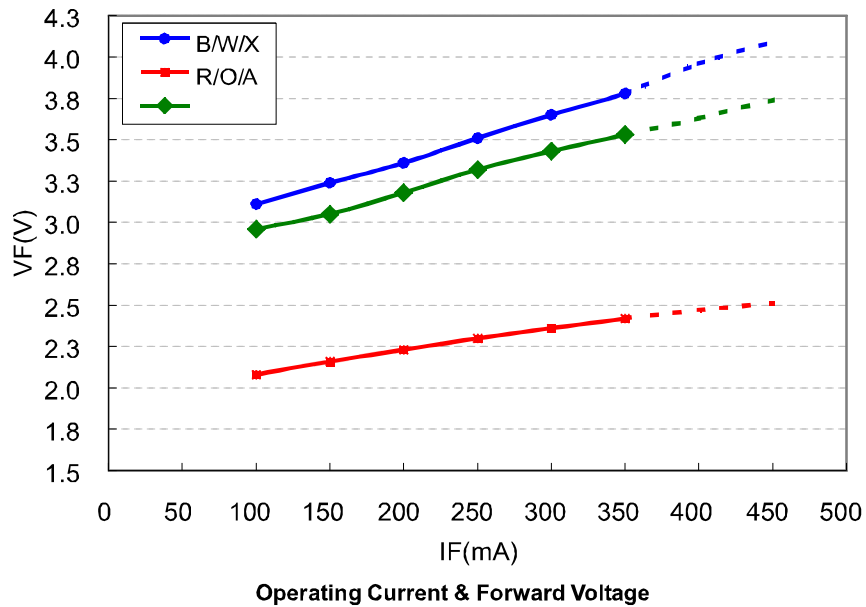
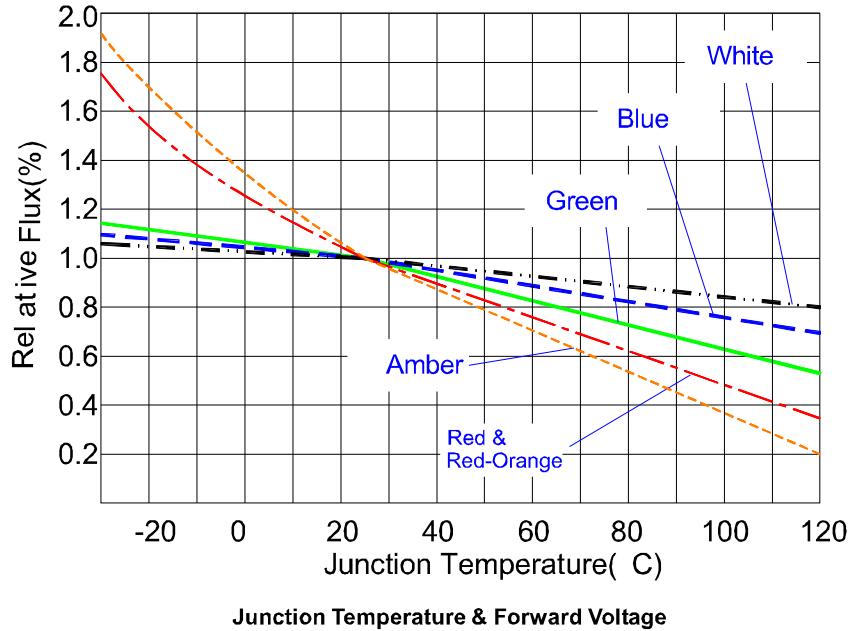
Note

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

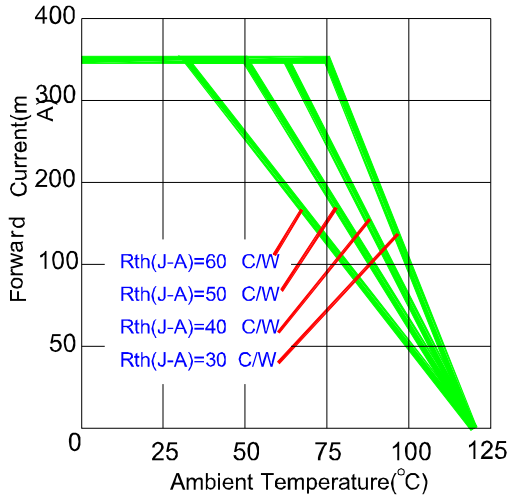
Electrical & Optical Curves-Spectrum



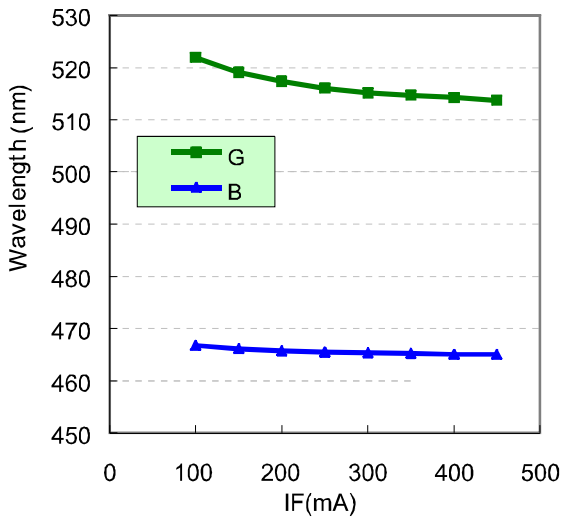
Typical Optical and Electrical Curves



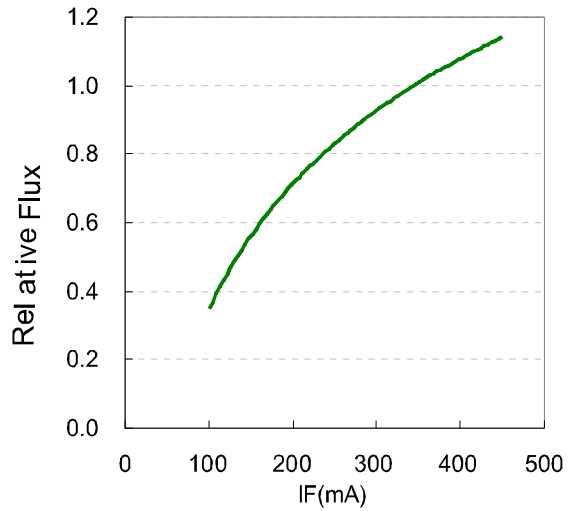
Typical Optical and Electrical Curves



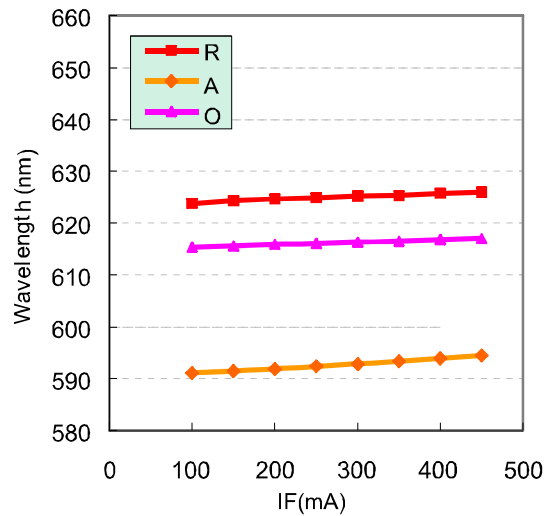
Operating Current & Ambient Temperature



Forward Current & Wavelength



Forward Current & Luminous Flux



Package Specifications

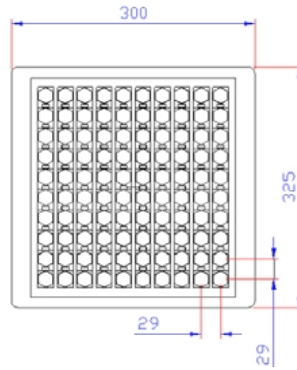
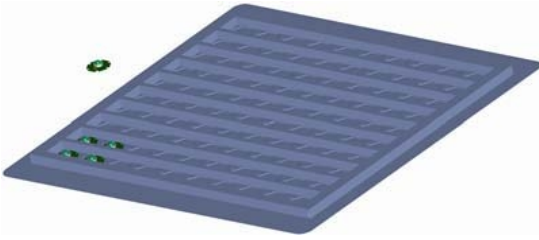


Figure 1: Tray

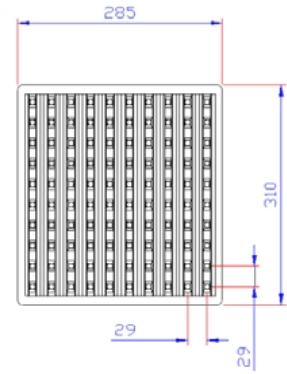


Figure 2: Cover

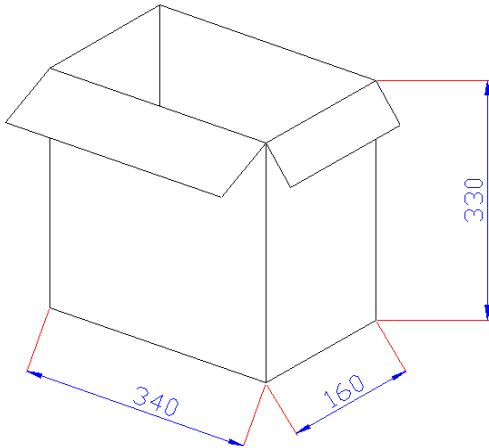


Figure 3: Inner box

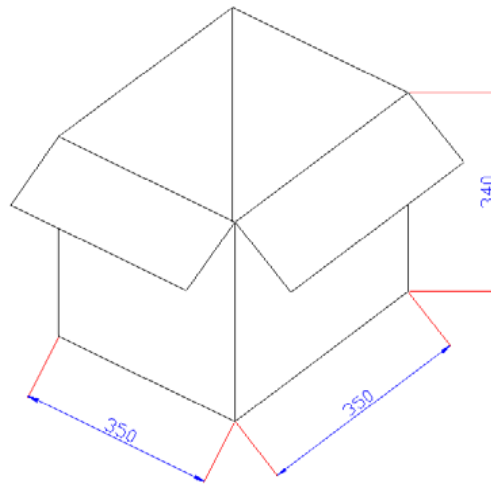


Figure 4: Outer box

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.