



# *Power* **Z LED**

*Seoul Semiconductor as a world class optical semiconductor company has been working on high brightness LEDs since 1987. SSC' products are shining all over the world as traffic signals, automotive components and even in cell phones. Now, we're moving on to light up more of the world.*



**SEOUL SEMICONDUCTOR CO., LTD.**

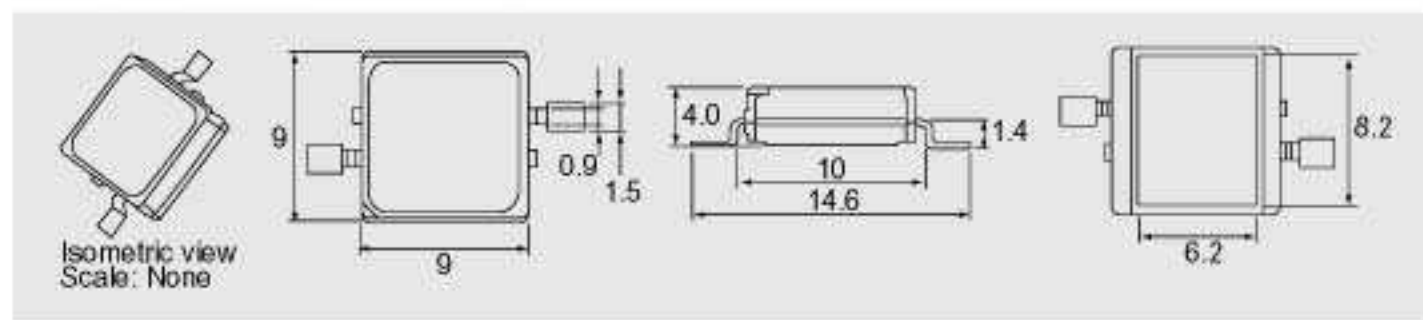


## Z-POWER

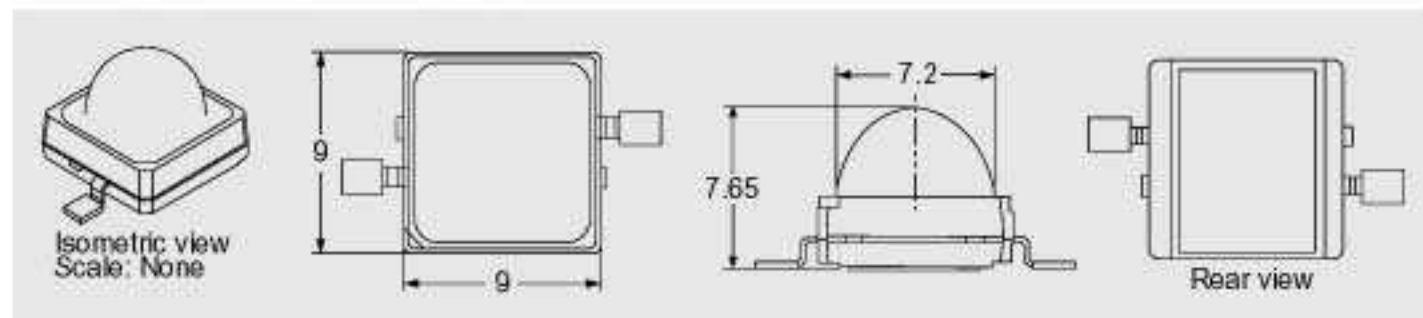
### FEATURES

- Package : SMT package
- ESD Sensitivity : 20,000 V
- Operating Temperature : -40°C ~ +85°C
- Size : 9 x 9 x 4.0 (mm)
- Taping : 1,000 EA/reel

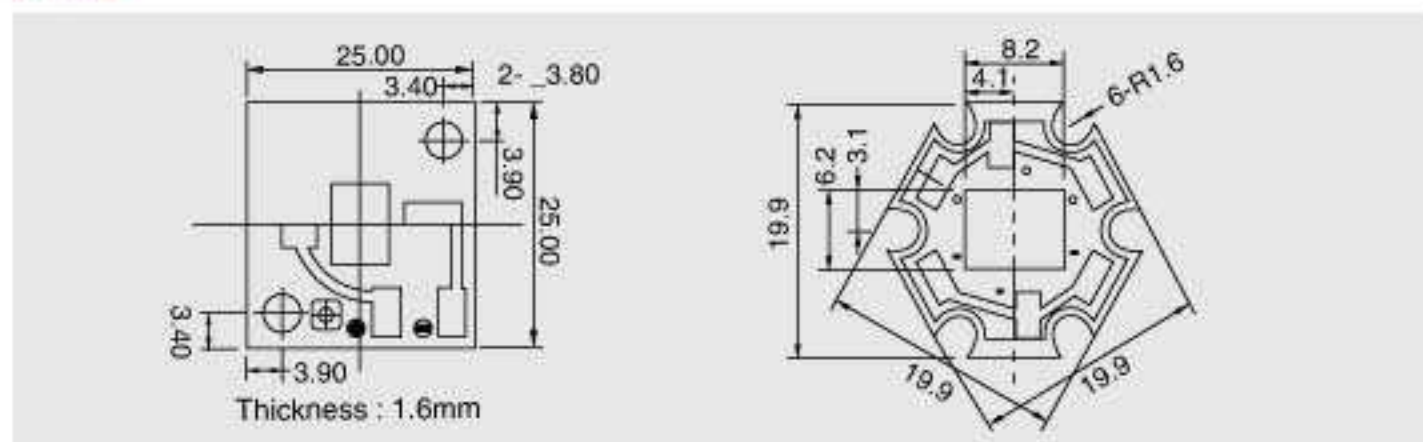
### VIEWING ANGLE 120 deg.



### VIEWING ANGLE 70 deg.



### PCB



Seoul Semiconductor has rolled up its sleeves to illuminate our roads, rooms and buildings with LEDs. For us, LEDs are more than indicators and backlighters.

**Z** Power  
**LED**



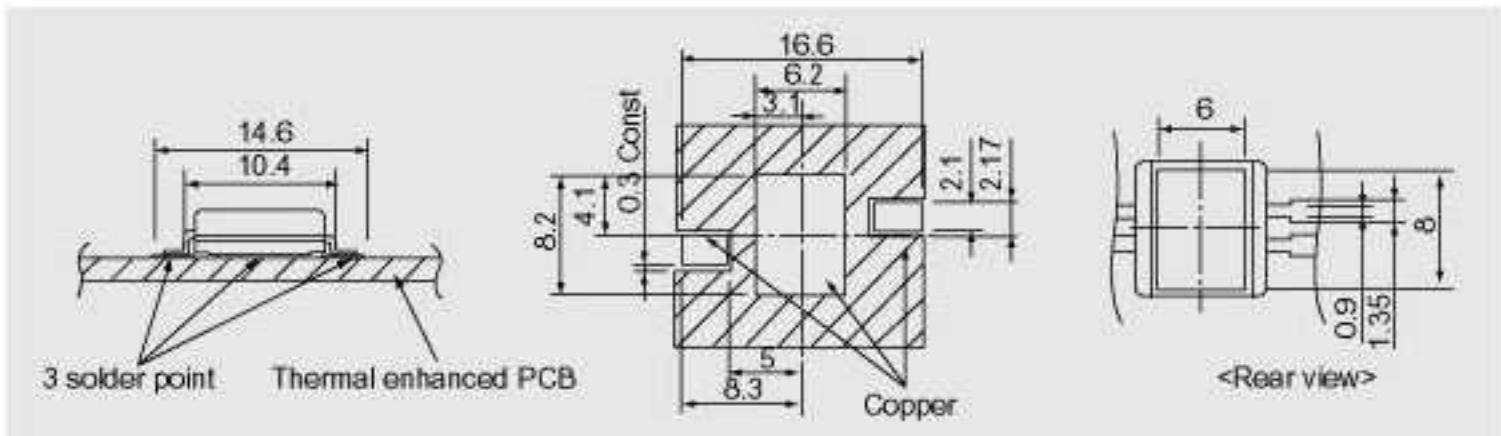
## Z-POWER

### BENEFITS

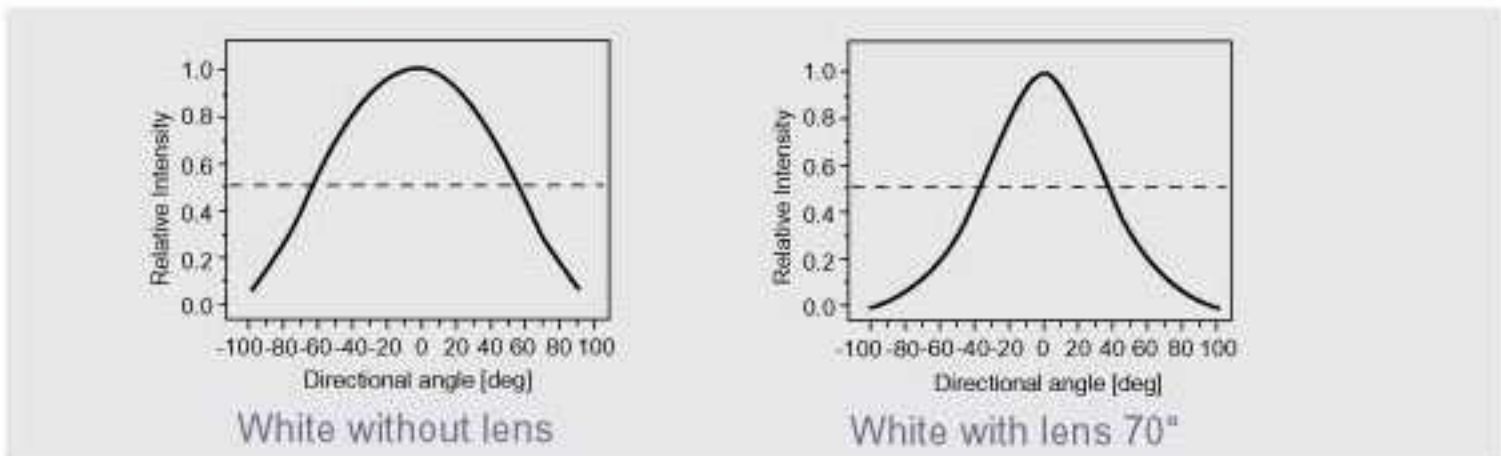
- (1) **SMT solderable**
- (2) Low Thermal Resistance
- (3) Environment-friendly
- (4) Adaptable to diversified applications
- (5) Low Energy Consumption, yet great output
- (6) White LED patents in USA, Europe, Taiwan, China, Philippines and Malaysia etc.

### RECOMMENDED SOLDER PAD

- Assembly methods : Suitable for all SMT assembly methods
- Soldering Method : SMD Reflow /Manual
- Soldering Temperature : Withstand PB free Temperature up to 260 °C



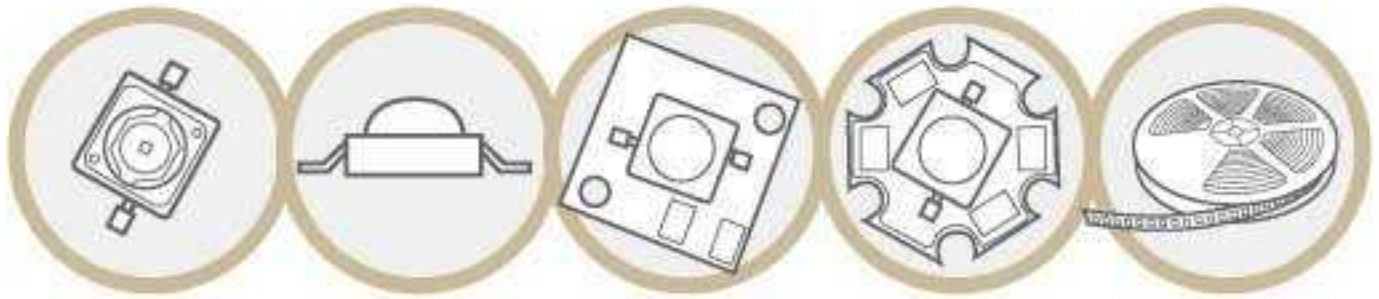
### RADIANT PATTERNS





# 1W-POWER

**WHITE**



## DESCRIPTION

Z-Power 1W series typically reach over 30lm at an operating current of 350mA and a rated wattage of about 1.2 W.

Available in White, Red, Green and Blue either mounted on PCB or a package itself.

## ELECTRO-OPTICAL CHARACTERISTICS

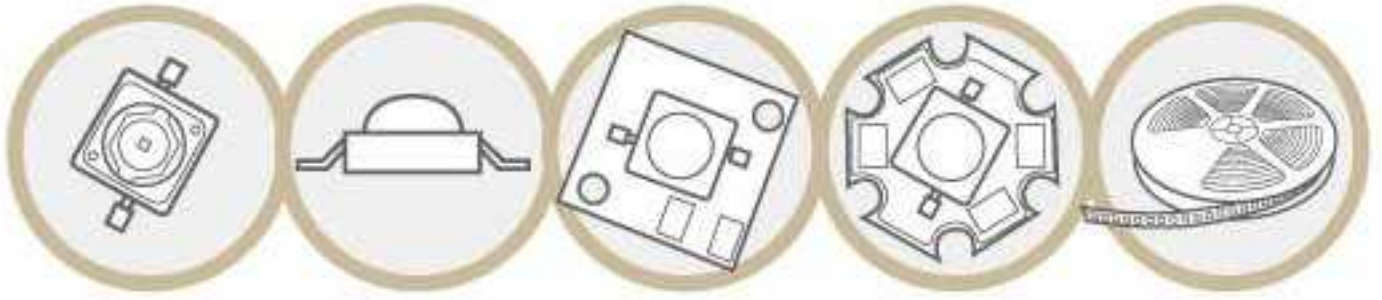
(AT  $I_f=350mA$ ,  $T_A=25^\circ C$ )

Part No.	Luminous Flux (Typ)	CCT (Typ)	CRI (Typ)	Viewing Angle	Power Dissipation	Forward Voltage	PCB
UNIT	lm	K	-	Deg.	W	V	O/X
W10190	30	6500 3300	76	120	1.2	3.4	
W10191							
W10192							
W11190				70			 

Metal PCBs are available for your options.



- RED
- GREEN
- BLUE



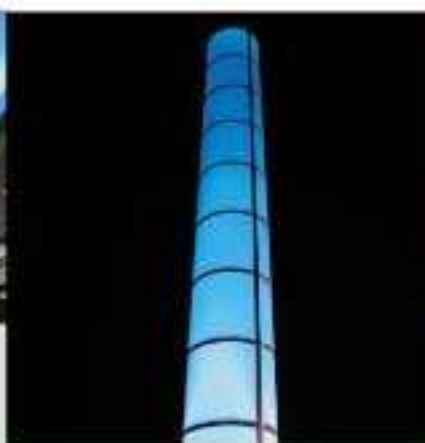
**ELECTRO-OPTICAL CHARACTERISTICS**  
(AT  $I_f=350\text{mA}$ ,  $T_A=25^\circ\text{C}$ )

Part No.	Luminous Flux (Typ)	Wavelength (Typ)	Viewing Angle	Power Dissipation	Forward Voltage	PCB
UNIT	lm	nm	Deg.	W	V	O/ X
<div style="display: inline-block; width: 15px; height: 15px; background-color: blue; margin-right: 5px;"></div> B10190 B10191 B10192 B11190	7	460	120	1.2	3.4	
			70			
<div style="display: inline-block; width: 15px; height: 15px; background-color: green; margin-right: 5px;"></div> G10190 G10191 G10192 G11190	36	525	120	1.2	3.4	
			70			
<div style="display: inline-block; width: 15px; height: 15px; background-color: red; margin-right: 5px;"></div> R10190 R10191 R10192 R11190	20	627	120	0.8	2.5	
			70			

Metal PCBs are available for your options.

**APPLICATION**

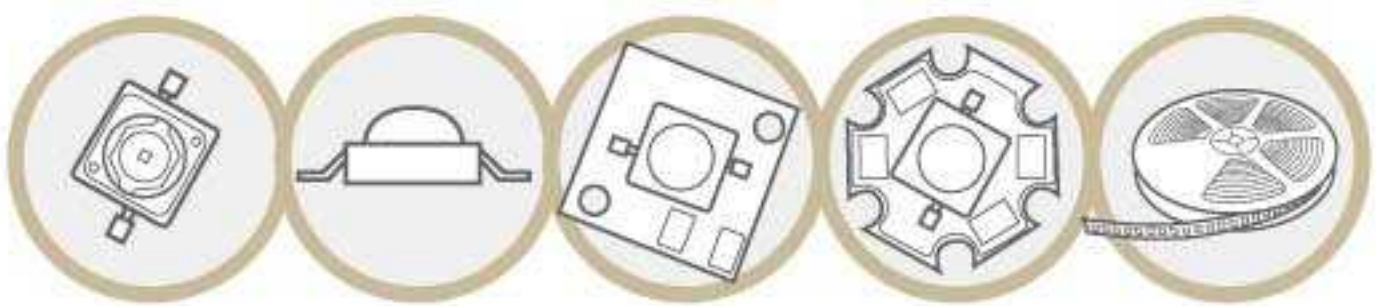
- General Lighting
- Architectural Lighting





# 2.5W-POWER

**WHITE**



### DESCRIPTION

The 2.5W power series typically reach over 60 lm at an operating current of 700mA and a rated wattage of about 2.5 W.

Available in White, Red, Green and Blue either mounted on PCB or a package itself.

### ELECTRO-OPTICAL CHARACTERISTICS

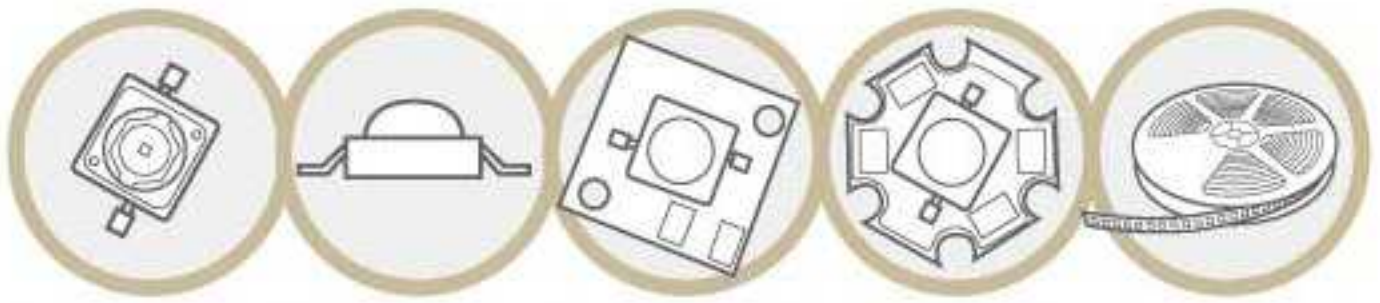
(AT  $I_f=700mA$ ,  $T_A=25^\circ C$ )

Part No.	Luminous Flux (Typ)	CCT (Typ)	CRI (Typ)	Viewing Angle	Power Dissipation	Forward Voltage	PCB
UNIT	lm	K	-	Deg.	W	V	O/X
W10290	60	6500 3300	76	120	2.5	3.4	
W10291							
W10292							
W11290				70			 

















































Metal PCBs are available for your options.



- RED
- GREEN
- BLUE



### ELECTRO-OPTICAL CHARACTERISTICS (AT $I_f=700\text{mA}$ , $T_A=25^\circ\text{C}$ )

Part No.	Luminous Flux (Typ)	Wavelength (Typ)	Viewing Angle	Power Dissipation	Forward Voltage	PCB
UNIT	lm	nm	Deg.	W	V	O/X
<div style="display: inline-block; width: 15px; height: 15px; background-color: blue; margin-right: 5px;"></div> B10290 B10291 B10292 B11290	13	460	120	2.5	3.4	   
			70			   
			120			   
			70			   
<div style="display: inline-block; width: 15px; height: 15px; background-color: green; margin-right: 5px;"></div> G10290 G10291 G10292 G11290	60	525	120	2.5	3.4	   
			70			   
			120			   
			70			   
<div style="display: inline-block; width: 15px; height: 15px; background-color: red; margin-right: 5px;"></div> R10290 R10291 R10292 R11290	37	627	120	1.7	2.5	   
			70			   
			120			   
			70			   

Metal PCBs are available for your options.

### APPLICATION

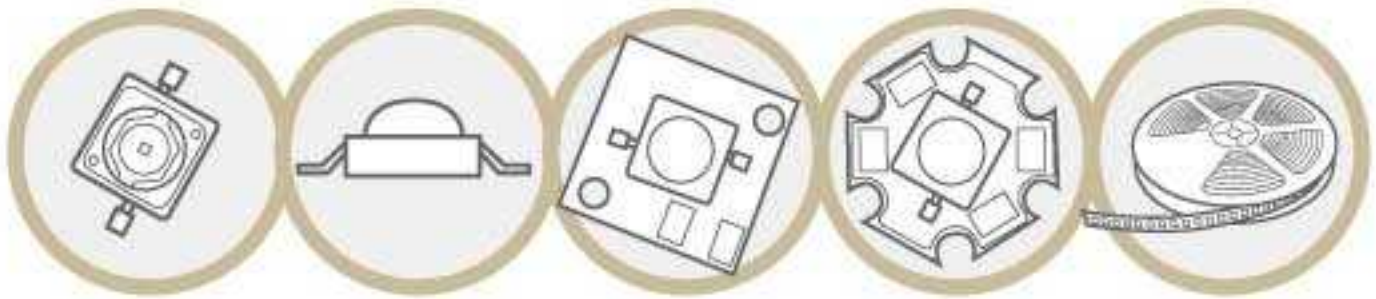
- Decorative, accent Lights
- Task Lights





# 5W-POWER

**WHITE**



### DESCRIPTION

The 5W power series typically reach over 90 lm at an operating current of 1400mA and a rated wattage of about 5 W.  
 Available in White either mounted on PCB or a package itself.

### ELECTRO-OPTICAL CHARACTERISTICS (AT $I_F=1400mA$ , $T_A=25^\circ C$ )

Part No.	Luminous Flux (Typ)	CCT (Typ)	CRI (Typ)	Viewing Angle	Power Dissipation	Forward Voltage	PCB
UNIT	lm	K	-	Deg.	W	V	O/ X
W10490	90	6500 3300	76	120	5.0	3.4	
W10491							
W10492							
W11490							

Metal PCBs are available for your options.

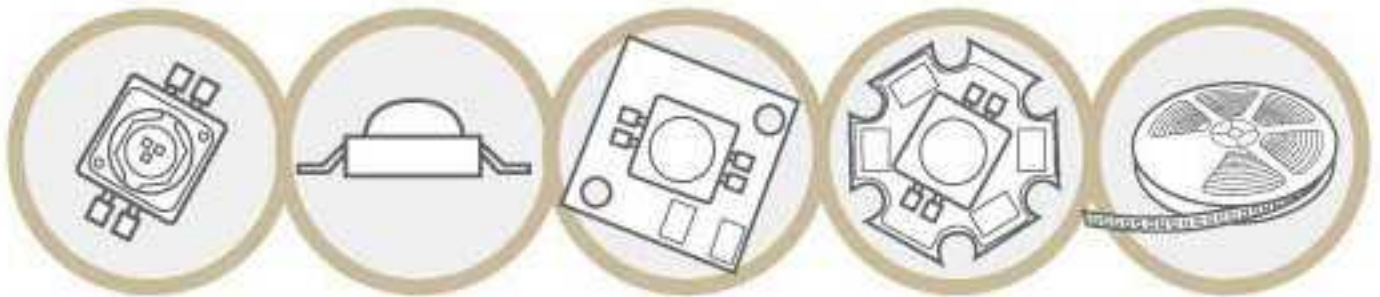


# FULL COLOR POWER



**RGB  
FULL  
COLOR  
POWER**

The only product that emits multicolor with 3 RGB power chips



## DESCRIPTION

F10390 Series are the first Full Color Power package, using 3 RGB power chips and rendering 7 colors.

## FEATURES

- Package : SMT package
- Size : 9.0 \* 9.0 \* 4.0 (mm)
- Multi color emitting including white

## ELECTRO-OPTICAL CHARACTERISTICS (AT $I_F=760\text{mA}$ , $T_A=25^\circ\text{C}$ )

Part No.	Color	Luminous Flux	CCT	CIE	Forward Current
Unit		lm	K	X, Y	mA
F10390	White	50	6000	0.32,0.32	R:237 G:370 B:120
F10391	Color	Wavelength	Forward Voltage	Forward Current	
		nm	V	mA	
F10392	R	627	2.5	350	
	G	530	3.4	350	
	B	460	3.4	350	

Metal PCBs are available for your options.

# HIGH FLUX



Power Flux

SHF-WHDM900NI

## WHITE

### DESCRIPTION

The High Flux package design allows lighting designers to reduce the number of LEDs required, and provide more uniformity than other LED solutions.

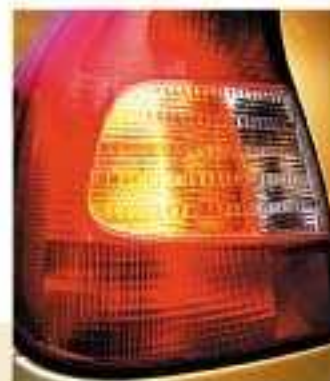
The Heat Sink in the Power Flux protects your lighting systems absorbing and dissipating the excess heat generated by the systems.

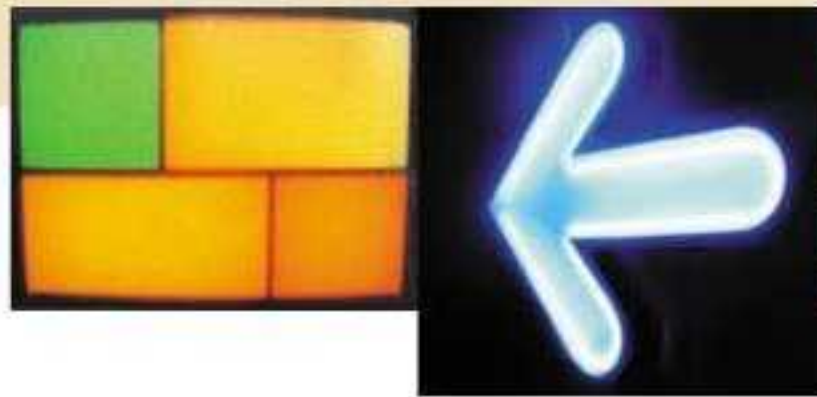
Therefore, you can use more current than other products.

### ELECTRO-OPTICAL CHARACTERISTICS

Color	Part No.	Size	$\lambda_d$ [nm]	$I_v$ [mcd]	$V_f$ [V]	Flux[lm]	Viewing Angle	Condition
			Typ	Typ	Typ	Typ	$2\theta_{1/2}$ (degree)	
	Power Flux	$\phi 5$	0.3/0.31	6000	4.0	9.0	90	IF=90mA
<input type="checkbox"/>	SHF-WHRM300N	$\phi 3$	0.3/0.3	3000	4.0	2.2	40	IF=30mA
	SHF-WHDM900NI		0.3/0.3	750	3.7	1.7	150	IF=30mA

Other viewing angle and size options are available.





- RGB
- RED
- GREEN
- BLUE
- YELLOW

### FEATURES

- High flux output and high luminance
- Designed for high current operation
- Good Color Uniformity
- Low profile and low thermal resistance

### APPLICATIONS

- Indicators
- Electronic signs and signals
- Back light

### ELECTRO-OPTICAL CHARACTERISTICS

Color	Part No.	Size	$\lambda_d$ [nm]	$I_v$ [mcd]	Flux[lm]	$V_f$ [V]	Viewing Angle $2\theta_{1/2}$ (degree)	Condition
			Typ	Typ	Typ	Typ		
	SHF-SBRM300	$\phi 3$	470	1500	0.6	4.2	30	IF=30mA
	SHF-TGRM300	$\phi 3$	527	4000	1.7	4.2	30	IF=30mA
	SHF-UYRH300	$\phi 3$	590	2500	2.2	2.5	50	IF=40mA
	SHF-UYRTH500	$\phi 5$	590	2400	5.2	2.4	80	IF=120mA
	SHF-HRRH300	$\phi 3$	630	4500	2.5	2.5	50	IF=40mA
	SHF-HRRTH500	$\phi 5$	630	2800	6.0	2.4	80	IF=120mA

Other viewing angle and size options are available.

# LAMP

## WHITE

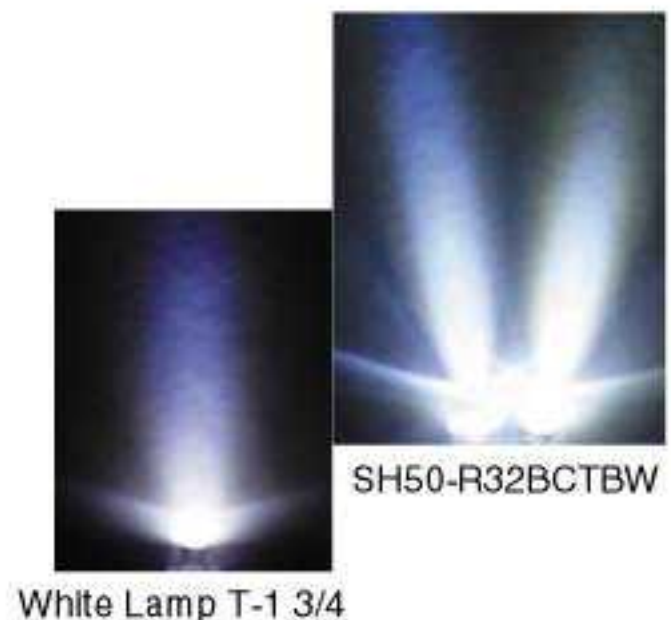
### DESCRIPTION

SSC's LED lamps are effective in hot thermal and humid condition. This high brightness and weather-resistant packaging design makes these LED Lamps ideal for outdoor applications such as traffic signals, variable message signs and backlighting for transparent sign panels.

### ELECTRO-OPTICAL CHARACTERISTICS

Color	Part No.	Size	$\lambda_d$ [nm]	$I_v$ [mcd]	$V_f$ [V]	Flux[lm]	Viewing Angle	Condition
			Typ	Typ	Typ	Typ	$2\theta^{1/2}$ (degree)	
□	White Lamp T-1 3/4	∅ 5	0.3/0.31	13000	3.4	1.7	18	IF=20mA
	SH50 -R32BCTBW	∅ 5	0.3/0.3	9200	3.2	1.7	20	IF=20mA

Other viewing angle and size options are available.



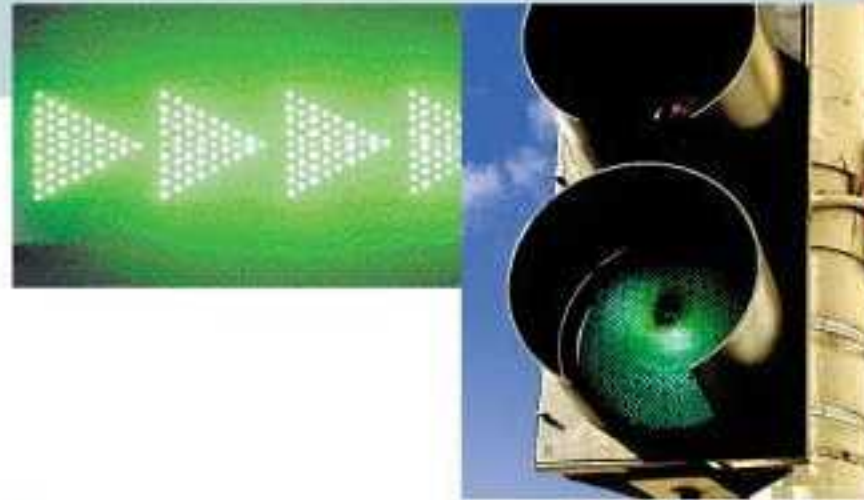
RGB

RED

GREEN

BLUE

YELLOW







### FEATURES

- Narrow viewing angle
- Super bright
- Resistant to humidity and high temperature

### APPLICATIONS

- Indicators
- Automotive electronic components
- Traffic signs and signals
- In/Out Door Bulletin Boards

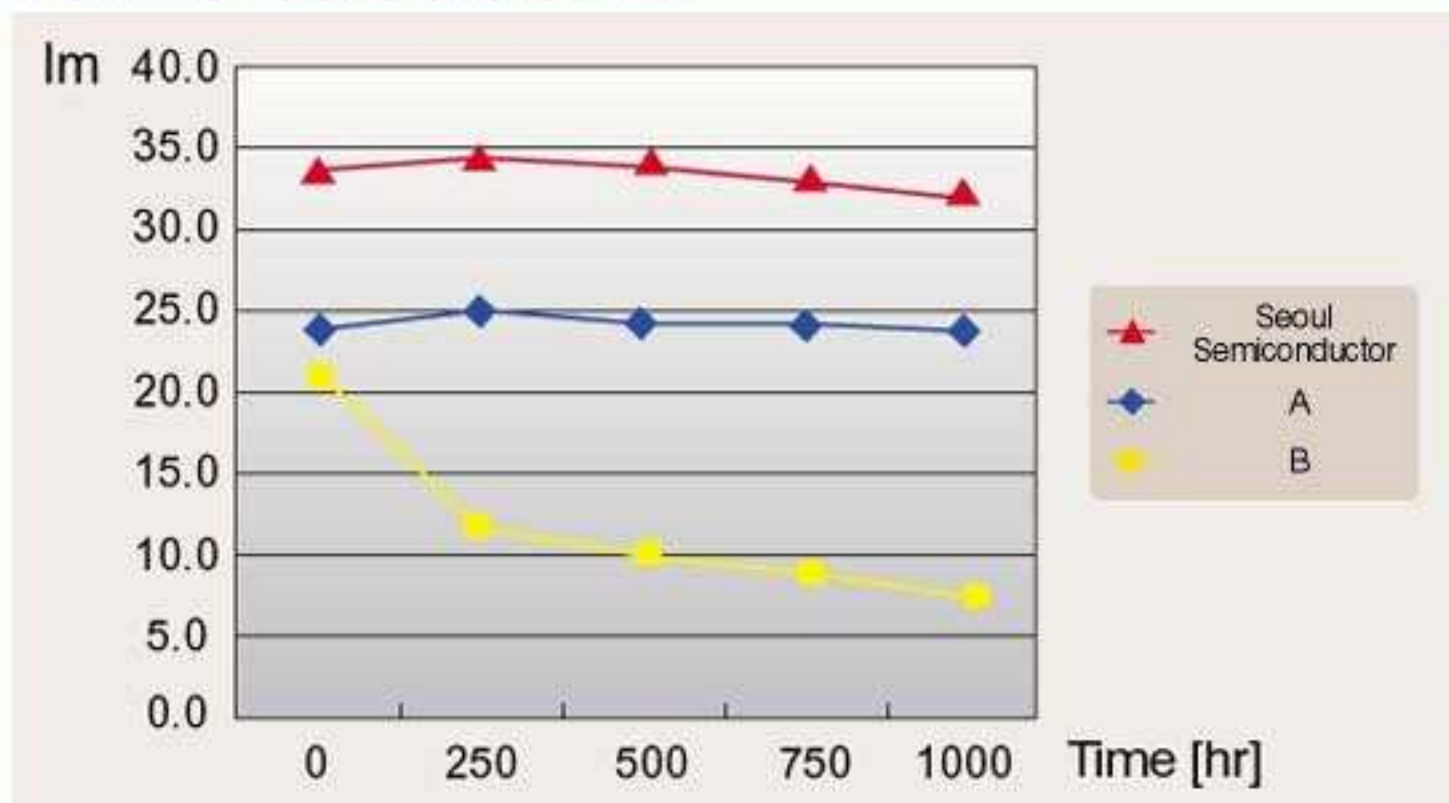
### ELECTRO-OPTICAL CHARACTERISTICS

Color	Part No.	Size	$\lambda_d$ [nm]	$I_v$ [mcd]	Flux[lm]	$V_f$ [V]	Viewing Angle	Condition
			Typ	Typ	Typ	Typ	$2\theta_{1/2}$ (degree)	
	SH50 -RS05BX505CGT	$\phi 5$	505	7000	1.3	3.3	30	IF=20mA
	SH50 -RUP501AC470BLT	$\phi 5$	470	1300	0.5	3.6	20	IF=20mA
	SH50 -R32DETS590YT	$\phi 5$	590	4000	1.0	2.2	30	IF=20mA
	SH50 -RUP501AH630RT	$\phi 5$	630	5000	1.2	2.2	24	IF=20mA

Other viewing angle and size options are available.

## Reliability Comparison

### Luminous flux in Operating test



## Electrical Modules

Parts Number	Type	Vin	Vout(max)	Iout(max)	Pout(max)	Description
EM0518K-01	Buck	5-18V	4V	0.35A	1.2W	
EM0518K-02	Buck	5-18V	4V	0.70A	2.5W	
EM0518K-05	Buck	5-18V	4V	1.40A	5W	
EM0536K-01	Buck	5-36V	4V	0.35A	1.2W	
EM0536K-02	Buck	5-36V	4V	0.70A	2.5W	
EM0536K-05	Buck	5-36V	4V	1.40A	5W	
EM0536T-01	Boost	0.8-3V	4V	0.30A	1.2W	Under development

## Other options

Customer applications often require customized components or other solutions. Besides metal PCB, Heat Sink Solutions, multi array power packages are available at your request.

To get references, please contact Seoul Semiconductor.



When you develop your light applications, you may need other solutions, for example Heat Sinks and Power Controllers. Or you may have these resources and not know how to apply them to the power products.

If you are looking for solutions or any kind of information, please contact your current sales representatives.

#### Contact Point

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