

PRELIMINARY SPEC



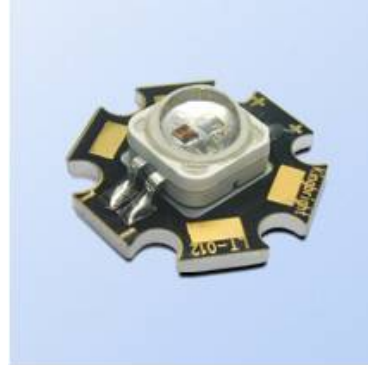
ATTENTION
OBSERVE PRECAUTIONS
FOR HANDLING
ELECTROSTATIC
DISCHARGE
SENSITIVE
DEVICES

Part Number: KAD1-9090BRGC-01/3-STAR

Blue
Reddish-Orange
Green

Features

- SUPER HIGH FLUX OUTPUT AND HIGH LUMINANCE.
- DESIGNED FOR HIGH CURRENT OPERATION.
- LOW THERMAL RESISTANCE.
- LEAD FREE PRODUCT.
- LOW VOLTAGE DC OPERATED.
- SUPERIOR ESD PROTECTION.
- NOT REFLOW COMPATIBLE.
- MOISTURE SENSITIVITY LEVEL : LEVEL 2a.
- RoHS COMPLIANT.



Application Note

Static electricity and surge damage the LEDs.

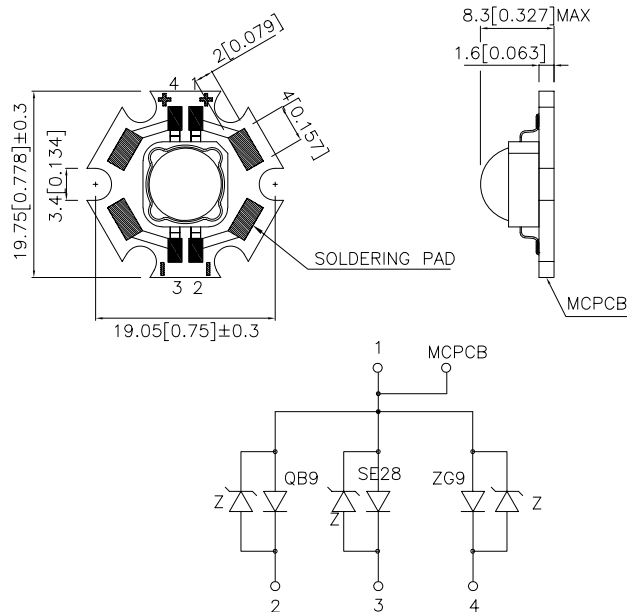
It is recommended to use a wrist band or anti-electrostatic glove when handling the LEDs.

All devices, equipment and machinery must be electrically grounded.

Applications

- traffic signaling.
- backlighting (illuminated advertising , general lighting).
- interior and exterior automotive lighting.
- substitution of micro incandescent lamps.
- portable light source (e.g. bicycle flashlight).
- signal and symbol luminaire for orientation.
- marker lights (e.g. steps, exit ways, etc).
- decorative and entertainment lighting.
- indoor and outdoor commercial and residential architectural lighting.

Package Dimensions



Notes:

1. All dimensions are in millimeters (inches).
2. Tolerance is ±0.25(0.01") unless otherwise noted.
3. Specifications are subject to change without notice.



Selection Guide

Part No.	Dice	Lens Type	luminous Intensity [2] Iv(cd)@ 350mA		Φv (lm) [2] @ 350mA		Viewing Angle [1]
			Min.	Typ.	Min.	Typ.	2θ1/2
KAD1-9090BRGC-01/3-STAR	Blue (AlInGaN)	WATER CLEAR	1.5	2.8	7.5	12	135°
	Reddish-Orange (InGaAlP)		7	10	23	30	
	Green (AlInGaN)		9	11	35	45	

Notes:

1. θ1/2 is the angle from optical centerline where the luminous intensity is 1/2 the optical centerline value.
2. Luminous intensity / luminous Flux: +/-15%.

Absolute Maximum Ratings at TA=25°C

Parameter	Symbol	Device	Value	Unit
Power dissipation	Pt	Blue	1.23	W
		Reddish-Orange	0.88	
		Green	1.2	
Reverse Voltage	VR	Blue	not designed for reverse operation	V
		Reddish-Orange		
		Green		
Junction temperature	TJ	Blue	110	°C
		Reddish-Orange	110	
		Green	110	
Operating Temperature	Top	Blue	-40 To +100	°C
		Reddish-Orange		
		Green		
Storage Temperature	Tstg	Blue	-40 To +100	°C
		Reddish-Orange		
		Green		
DC Forward Current [1]	IF	Blue	350	mA
		Reddish-Orange	350	
		Green	350	
Peak Forward Current [2]	IFM	Blue	500	mA
		Reddish-Orange	500	
		Green	500	
Thermal resistance [1]	Rth j-c	Blue	9	°C/W
		Reddish-Orange	12	
		Green	9	
Electrostatic Discharge Threshold (HBM)		Blue	8000	V
		Reddish-Orange		
		Green		

Notes:

1. Metal Core PCB is mounted on the heat Fins.
2. 1/10 Duty Cycle, 0.1ms Pulse Width.

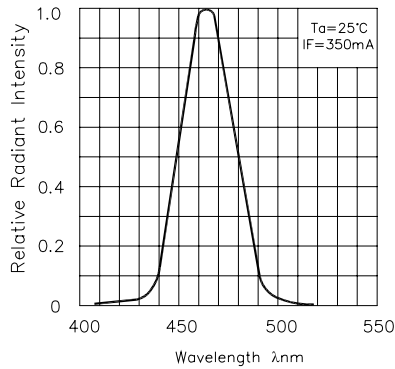
Electrical / Optical Characteristics at T_A=25°C

Parameter	Symbol	Device	Value			Unit
			Min.	Typ.	Max.	
Wavelength at peak emission I _F =350mA	λ _{peak}	Blue		464		nm
		Reddish-Orange		640		
		Green		525		
Dominant Wavelength I _F =350mA	λ _{dom} [1]	Blue		466		nm
		Reddish-Orange		625		
		Green		530		
Spectral bandwidth at 50%Φ _{REL MAX} I _F =350mA	Δλ	Blue		30		nm
		Reddish-Orange		30		
		Green		45		
Viewing angle at 50%Φ _V	θ	Blue		135		°
		Reddish-Orange		135		
		Green		135		
Forward Voltage I _F =350mA	V _F [2]	Blue	2.7	3.5	3.8	V
		Reddish-Orange	2.0	2.5	3.0	
		Green	2.7	3.3	3.8	
Reverse Current (V _R =5V)	I _R	Blue	not designed for reverse operation			μA
		Reddish-Orange				
		Green				
Temperature coefficient of λ _{peak} I _F =350mA, -10°C ≤ T ≤ 100°C	TC _{λ_{peak}}	Blue		0.15		nm/°C
		Reddish-Orange		0.12		
		Green		0.16		
Temperature coefficient of λ _{dom} I _F =350mA, -10°C ≤ T ≤ 100°C	TC _{λ_{dom}}	Blue		0.13		nm/°C
		Reddish-Orange		0.05		
		Green		0.14		
Temperature coefficient of V _F I _F =350mA, -10°C ≤ T ≤ 100°C	TC _V	Blue		-3.2		mV/°C
		Reddish-Orange		-2.6		
		Green		-2.26		

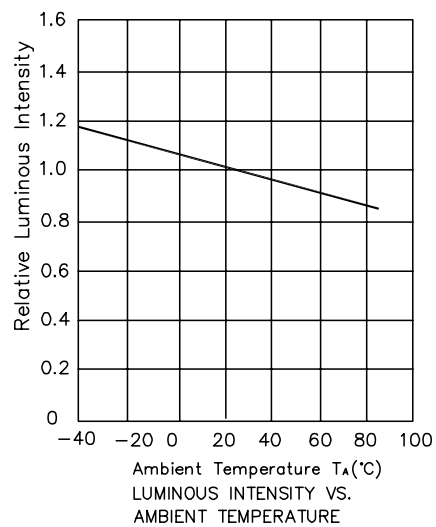
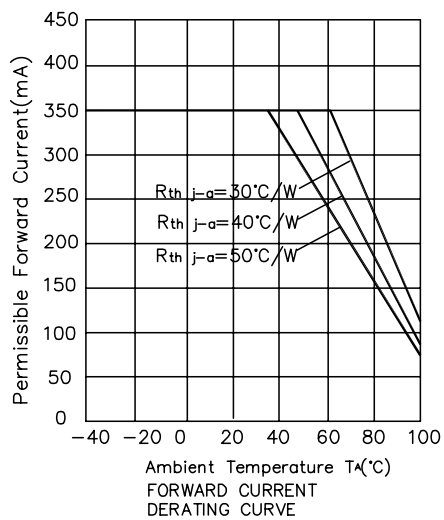
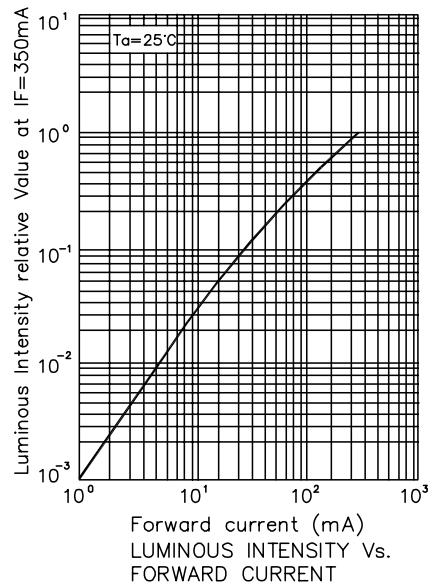
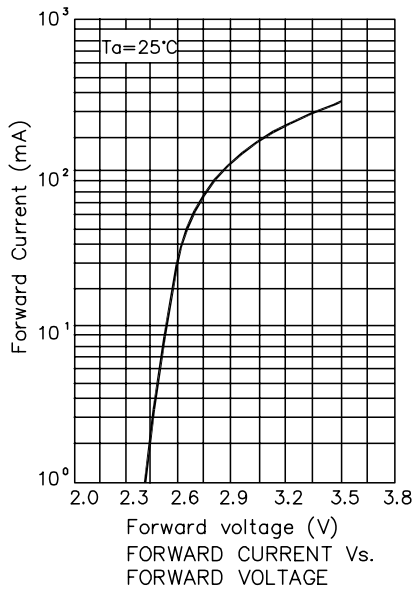
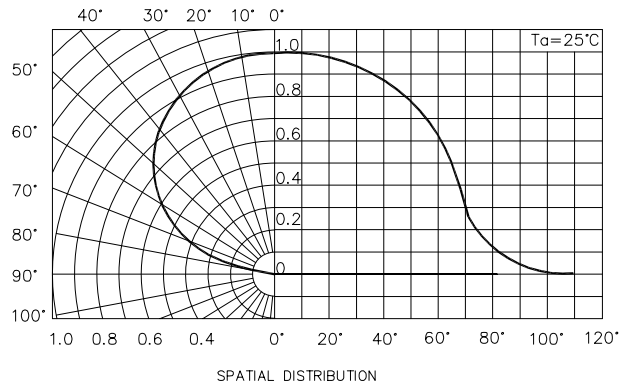
Notes:

1. Wavelength: +/-1nm.
2. Forward Voltage: +/-0.1V.

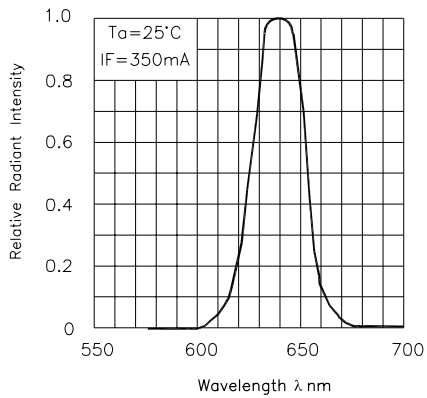
KAD1-9090BRGC-01/3-STAR Blue



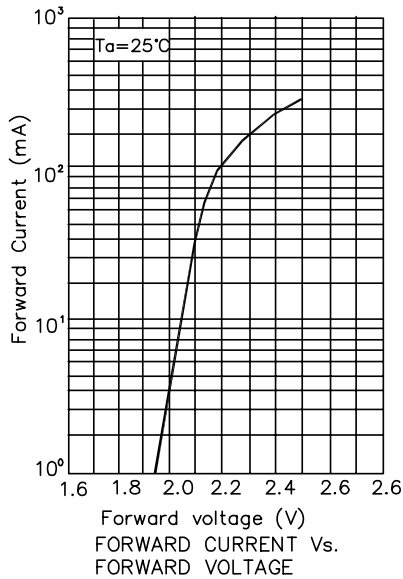
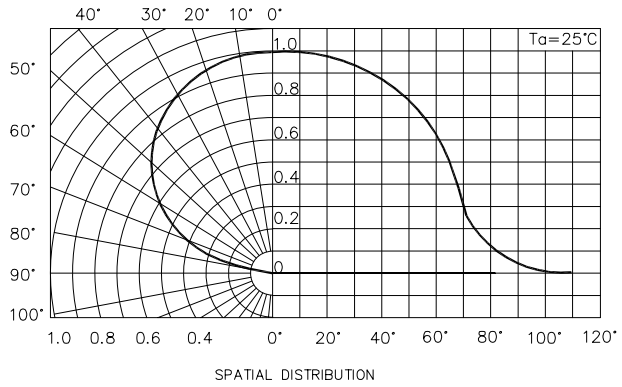
RELATIVE INTENSITY Vs. WAVELENGTH



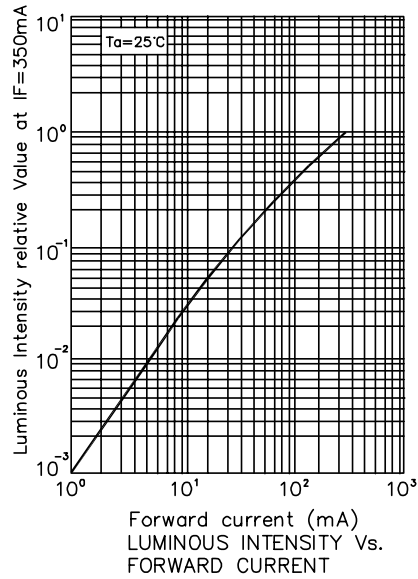
Reddish-Orange



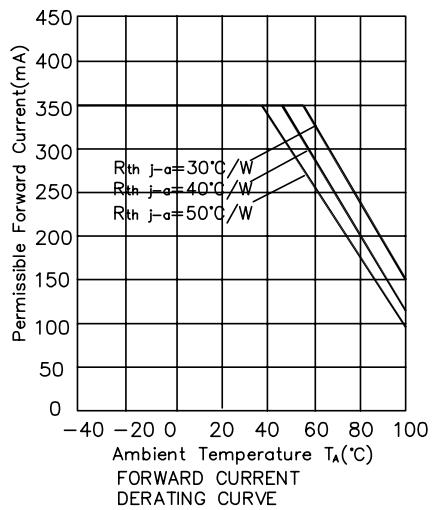
RELATIVE INTENSITY Vs. WAVELENGTH



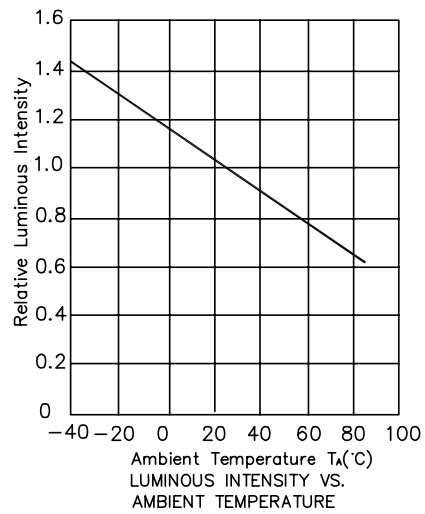
FORWARD CURRENT Vs. FORWARD VOLTAGE



LUMINOUS INTENSITY Vs. FORWARD CURRENT



FORWARD CURRENT DERATING CURVE



Kingbright

Green

