

PRELIMINARY SPEC



ATTENTION
OBSERVE PRECAUTIONS
FOR HANDLING
ELECTROSTATIC
DISCHARGE
SENSITIVE
DEVICES

Part Number: KAD1-9090PW11ZC/5-STAR

White

Features

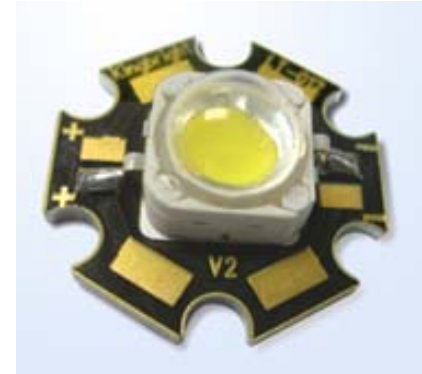
- SUPER HIGH FLUX OUTPUT AND HIGH LUMINANCE.
- DESIGNED FOR HIGH CURRENT OPERATION.
- LOW THERMAL RESISTANCE.
- LEAD FREE PRODUCT.
- LOW VOLTAGE DC OPERATED.
- SUPERIOR ESD PROTECTION.
- MOISTURE SENSITIVITY LEVEL : LEVEL 2a.
- RoHS COMPLIANT.

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.

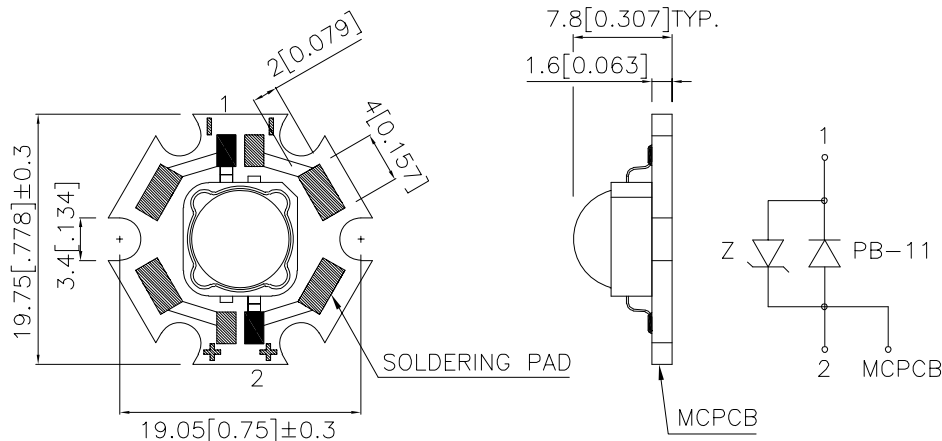
All devices, equipment and machinery must be electrically grounded.



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 $\pm 0.25(0.01)$ unless otherwise noted.
3. Specifications are subject to change without notice.

Selection Guide

Part No.	Dice	Lens Type	luminous Intensity [2] Iv (cd)@ 1200mA		Φv (lm) [2] @ 1200mA		Viewing Angle [1]
			Min.	Typ.	Min.	Typ.	2θ1/2
KAD1-9090PW11ZC/5-STAR	White (InGaN)	WATER CLEAR	50	65	200	230	100°

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	Value	Unit
Power dissipation	Pt	5	W
Junction temperature	Tj	110	°C
Operating Temperature	Top	-40 To +100	°C
Storage Temperature	Tstg	-40 To +100	°C
DC Forward Current [1]	IF	1200	mA
Peak Forward Current [2]	IFM	1500	mA
Thermal resistance [1]	Rth j-s	9	°C/W
Electrostatic Discharge Threshold (HBM)		8000	V

Notes:

1. Results from mounting on MCPCB.
2. 1/10 Duty Cycle, 0.1ms Pulse Width.

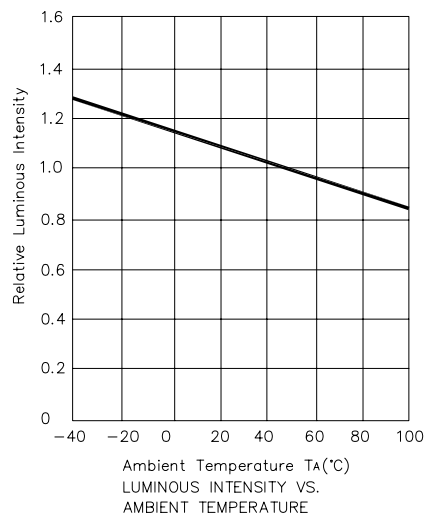
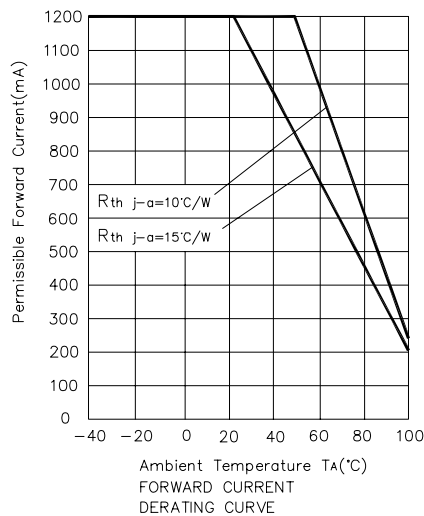
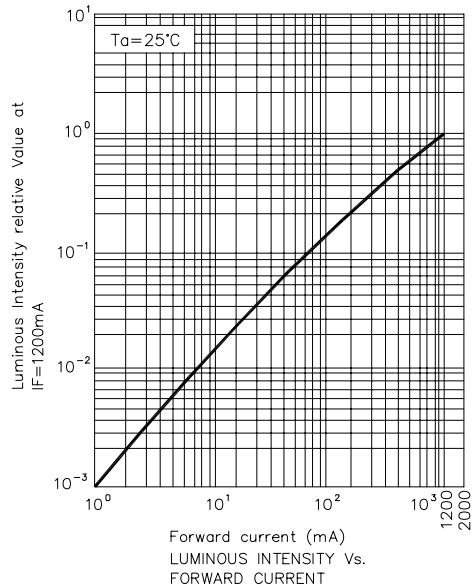
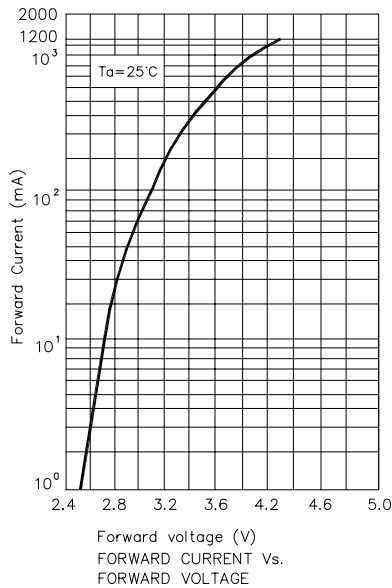
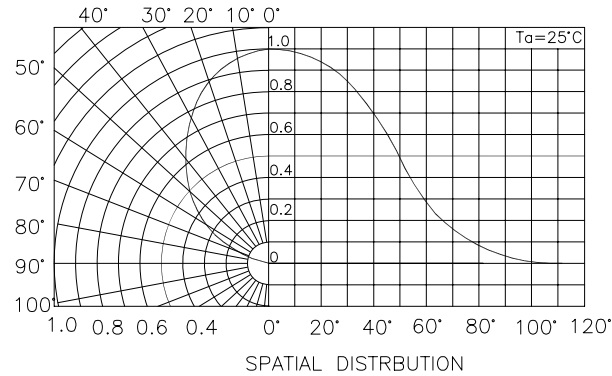
Electrical / Optical Characteristics at TA=25°C

Parameter	Symbol	Value	Unit
Chromaticity coordinate x acc.to CIE1931 IF=1200mA [Typ.]	X	0.31	-
Chromaticity coordinate y acc.to CIE1931 IF=1200mA [Typ.]	Y	0.31	-
Viewing angle at 50%Φv [Typ.]	θ	100	°
Forward Voltage IF=1200mA [Min.]	VF [1]	4.0	V
Forward Voltage IF=1200mA [Typ.]		4.5	
Forward Voltage IF=1200mA [Max.]		5.1	
Temperature coefficient of x IF=1200mA, -10°C ≤ T ≤ 100°C [Typ.]	TCx	-0.2	10 ⁻³ /°C
Temperature coefficient of y IF=1200mA, -10°C ≤ T ≤ 100°C [Typ.]	TCy	-0.1	10 ⁻³ /°C
Temperature coefficient of VF IF=1200mA, -10°C ≤ T ≤ 100°C [Typ.]	TCv	-4.2	mV/°C

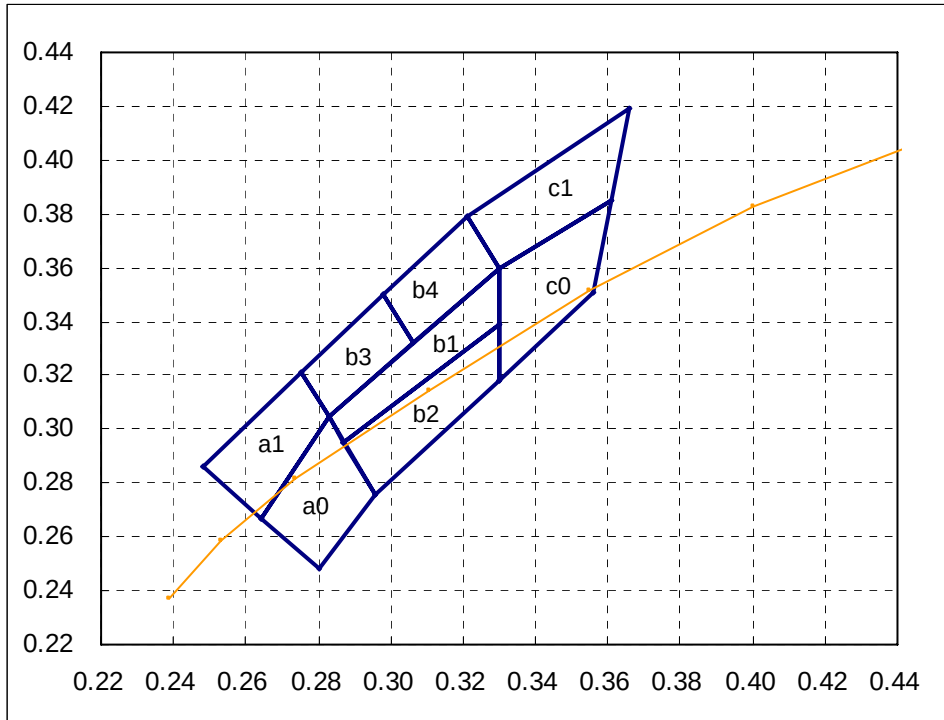
Note:

1. Forward Voltage: +/-0.1V.

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White CIE



a0				
X	0.264	0.283	0.296	0.280
Y	0.267	0.305	0.276	0.248
Reference CCT: 14000~9000k				
b1				
X	0.283	0.330	0.330	0.287
Y	0.305	0.360	0.339	0.295
Reference CCT: 9000~5600k				
b3				
X	0.275	0.298	0.306	0.283
Y	0.321	0.350	0.332	0.305
Reference CCT: 9000~7000k				
c0				
X	0.330	0.361	0.356	0.330
Y	0.360	0.385	0.351	0.318
Reference CCT: 5600~4600k				

a1				
X	0.248	0.275	0.283	0.264
Y	0.286	0.321	0.305	0.267
Reference CCT: 14000~9000k				
b2				
X	0.287	0.330	0.330	0.296
Y	0.295	0.339	0.318	0.276
Reference CCT: 9000~5600k				
b4				
X	0.298	0.321	0.330	0.306
Y	0.350	0.379	0.360	0.332
Reference CCT: 7600~5600k				
c1				
X	0.321	0.366	0.361	0.330
Y	0.379	0.419	0.385	0.360
Reference CCT: 6000~4600k				

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