Kingbright

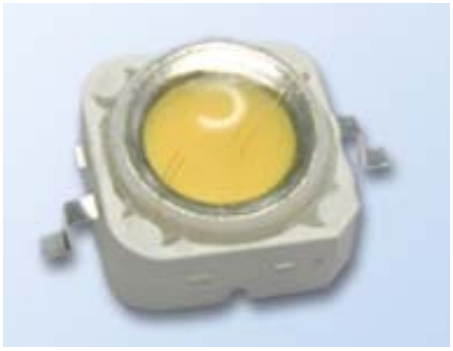
XPower

PRELIMINARY SPEC

Part Number: KAD1-9090QR411ZC/3

Warm White

ATTENTION
OBSERVE PRECAUTIONS
FOR HANDLING
ELECTROSTATIC
DISCHARGE
SENSITIVE
DEVICES



Features

- SUPER HIGH FLUX OUTPUT AND HIGH LUMINANCE.
- DESIGNED FOR HIGH CURRENT OPERATION.
- LOW THERMAL RESISTANCE.
- LOW VOLTAGE DC OPERATED.
- SUPERIOR ESD PROTECTION.
- PACKAGE: 500PCS/REEL.
- MOISTURE SENSITIVITY LEVEL : LEVEL 2a.
- THE COMPONENT IS INTERNALLY PROTECTED WITH SILICONE GEL.
- NOT REFLOW COMPATIBLE.
- RoHS COMPLIANT.

Application Note

Static electricity and surge damage the LEDS.

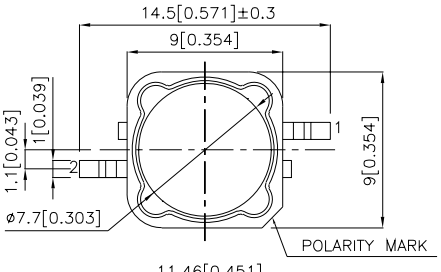
It is recommended to use a wrist band or anti-electrostatic glove when handling the LEDs.

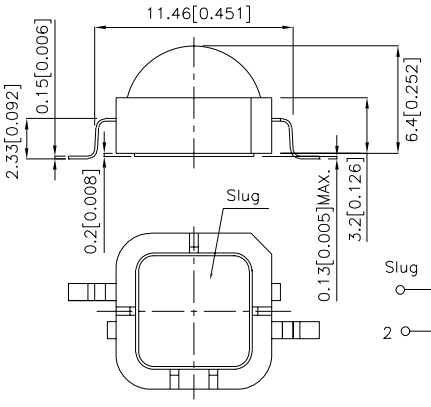
All devices, equipment and machinery must be electrically grounded.

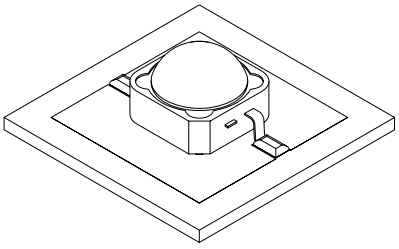
Applications

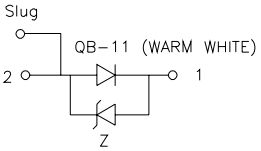
- traffic signaling.
- backlighting (illuminated advertising , general lighting).
- interior and exterior automotive lighting.
- substitution of micro incandescent lamps.
- portable light source (e.g. bicycle flashlight).
- signal and symbol luminaire for orientation.
- marker lights (e.g. steps, exit 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.
4. The device has a single mounting surface. The device must be mounted according to the specifications.

Selection Guide

Part No.	Dice	Lens Type	luminous Intensity [2] Iv (cd)@ 700mA		Φv (lm) [2] @ 700mA		Viewing Angle [1]
			Min.	Typ.	Min.	Typ.	2θ1/2
KAD1-9090QR411ZC/3	WARM WHITE (InGaAlN)	WATER CLEAR	22	30	80	95	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 T_A=25°C

Parameter	Symbol	Value	Unit
Power dissipation	P_t	3	W
Junction temperature	T_J	110	°C
Operating Temperature	Top	-40 To +100	°C
Storage Temperature	Tstg	-40 To +100	°C
DC Forward Current [1]	I_F	700	mA
Peak Forward Current [2]	I_{FM}	1000	mA
Thermal resistance [1]	$R_{th\ j\text{-}slug}$	11	°C/W
Iron Soldering [3]	350°C For 3 Seconds		
Electrostatic Discharge Threshold (HBM)		8000	V

Notes:
1.Metal Core PCB is mounted on the heat Fins.
2.1/10 Duty Cycle, 0.1ms Pulse Width.
3.1.29mm below package base.

Electrical / Optical Characteristics at T_A=25°C

Parameter	Symbol	Value	Unit
Chromaticity coordinate x acc.to CIE1931 I_F=700mA [Typ.]	X	0.41	-
Chromaticity coordinate y acc.to CIE1931 I_F=700mA [Typ.]	Y	0.39	-
Forward Voltage I_F=700mA [Min.]	V_F [1]	3.5	V
Forward Voltage I_F=700mA [Typ.]		3.9	
Forward Voltage I_F=700mA [Max.]		4.3	
Temperature coefficient of x I_F=700mA, -10°C≤ T≤100°C [Typ.]	TC x	-0.2	10^{-3}/°C
Temperature coefficient of y I_F=700mA, -10°C≤ T≤100°C [Typ.]	TCy	-0.1	10^{-3}/°C
Temperature coefficient of V_F I_F=700mA, -10°C≤ T≤100°C [Typ.]	TC_V	-4.3	mV/°C

Note:
1.Forward Voltage: +/-0.1V.

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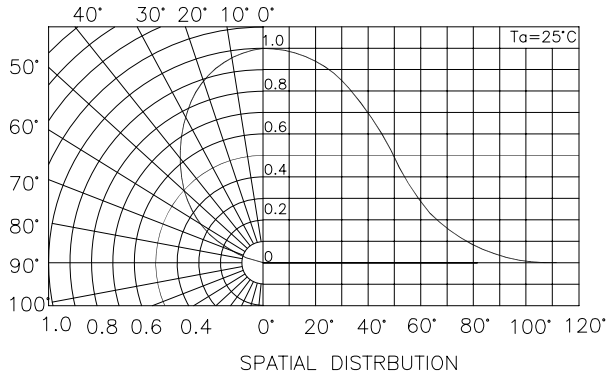
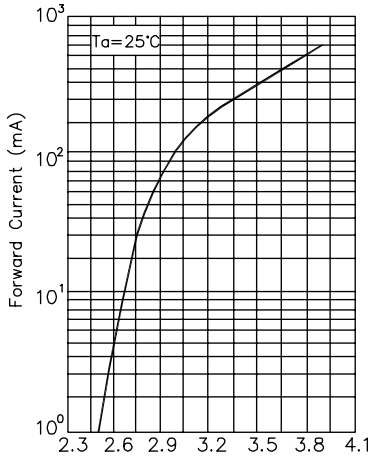
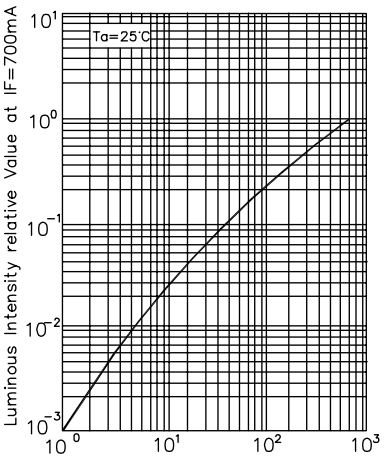


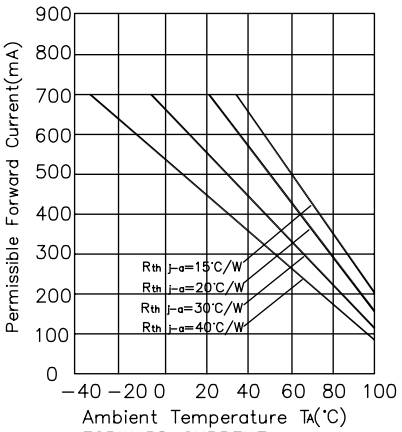
SPATIAL DISTRBUTION



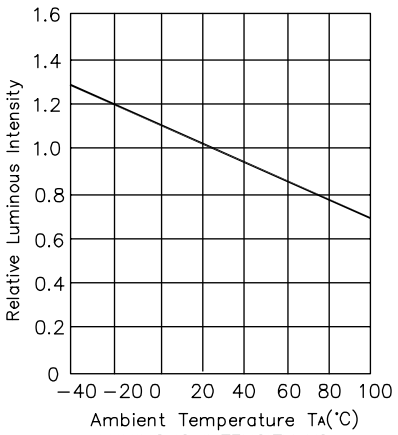
FORWARD CURRENT Vs.
FORWARD VOLTAGE



LUMINOUS INTENSITY Vs.
FORWARD CURRENT



FORWARD CURRENT
DERATING CURVE



LUMINOUS INTENSITY VS.
AMBIENT TEMPERATURE

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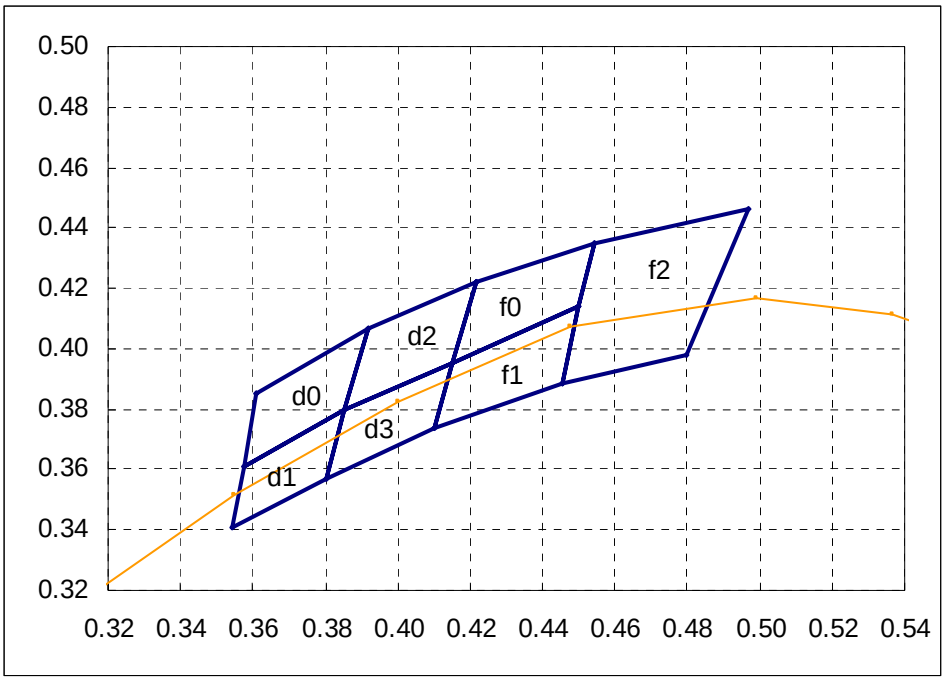
Warm White CIE



d0				
x	0.3610	0.3575	0.3870	0.3942
y	0.3850	0.3612	0.3820	0.4068
Reference CCT : 4700~3900K				

d1				
x	0.3575	0.3545	0.3800	0.3870
y	0.3612	0.3408	0.3580	0.3820
Reference CCT : 4700~3900K				

d2				
x	0.3870	0.4254	0.4350	0.3942
y	0.3820	0.4044	0.4260	0.4068
Reference CCT : 3900~3200K				

d3				
x	0.4254	0.3870	0.3800	0.4119
y	0.4044	0.3820	0.3580	0.3730
Reference CCT : 3900~3200K				

f0				
x	0.4350	0.4732	0.4600	0.4254
y	0.4260	0.4398	0.4152	0.4044
Reference CCT : 3200~2700K				

f1				
x	0.4600	0.4254	0.4119	0.4440
y	0.4152	0.4044	0.3730	0.3847
Reference CCT : 3200~2700K				

f2					
x	0.4732	0.4600	0.4440	0.4800	0.5165
y	0.4398	0.4152	0.3847	0.3960	0.4510
Reference CCT : 2700~2300K					

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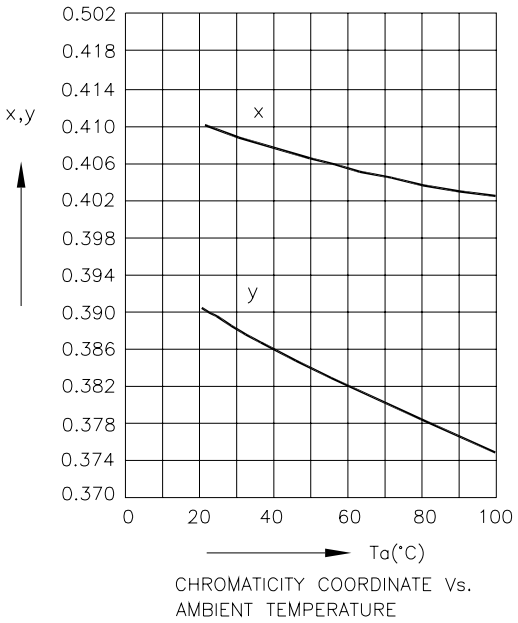
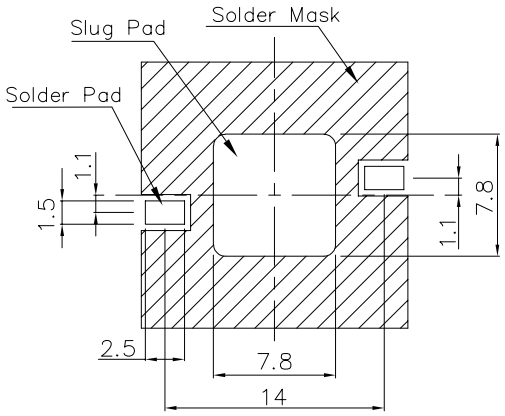
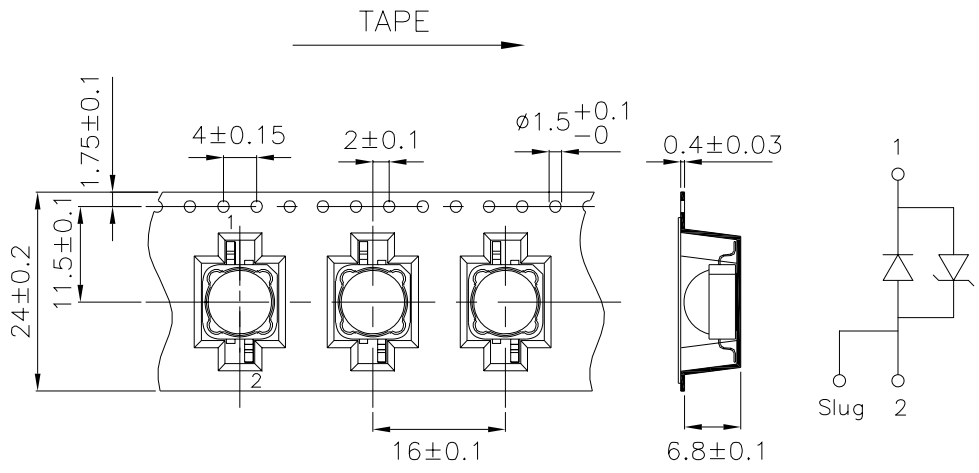


CHROMATICITY COORDINATE Vs.
AMBIENT TEMPERATURE

Recommended Soldering Pattern
(Units : mm; Tolerance: ±0.1)



Tape Specifications
(Units : mm)



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Recommended Solder Steps