Kingbright

XPower

Part Number: KAD1-1010SE28Z1S Reddish-Orange

ATTENTION
OBSERVE PRECAUTIONS
FOR HANDLING
ELECTROSTATIC
DISCHARGE
SENSITIVE
DEVICES

Features

- PLCC-4 package.
- Single color.
- High luminance.
- High power,operating current @350mA.
- Suitable for all SMT assembly methods.
- Package : 300pcs / reel.
- Moisture sensitivity level : level 3.
- RoHS compliant.

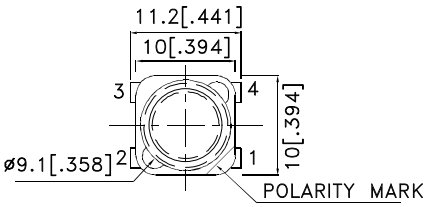
Application Note

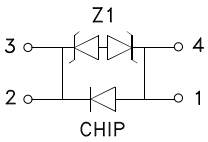
Static electricity and surge damage the LEDS.
It is recommended to use a wrist band or anti-electrostatic glove when handling the LEDs.
All devices, equipment and machinery must be electrically grounded.

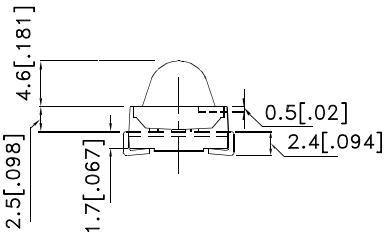
Applications

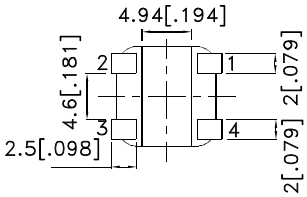
- traffic signaling.
- backlighting (illuminated advertising , general lighting).
- interior and exterior automotive lighting.
- substitution of micro incandescent lamps.
- portable light source (e.g. bicycle flashlight).
- signal and symbol luminaire for orientation.
- marker lights (e.g. steps, exit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

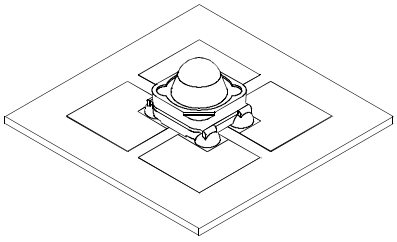
Package Dimensions









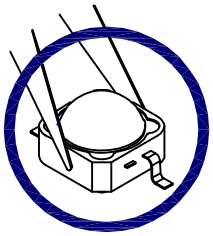


Notes:
1. All dimensions are in millimeters (inches).
2. Tolerance is ±0.25(0.01") unless otherwise noted.
3.The specifications, characteristics and technical data described in the datasheet are subject to change without prior notice.
4. The device has a single mounting surface. The device must be mounted according to the specifications.

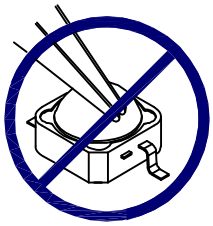
Handling Precautions

Compare to epoxy encapsulant that is hard and brittle, silicone is softer and flexible. Although its characteristic significantly reduces thermal stress, it is more susceptible to damage by external mechanical force.
As a result, special handling precautions need to be observed during assembly using silicone encapsulated LED products. Failure to comply might lead to damage and premature failure of the LED.

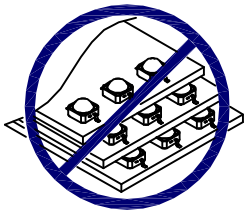
1. Handle the component along the side surfaces by using forceps or appropriate tools.



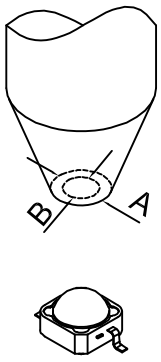
2. Do not directly touch or handle the silicone lens surface. It may damage the internal circuitry.



3. Do not stack together assembled PCBs containing exposed LEDs. Impact may scratch the silicone lens or damage the internal circuitry.



4.1. The outer diameter of the SMD pickup nozzle should not exceed the size of the LED to prevent air leaks. The inner diameter of the nozzle should be as large as possible.
4.2. A pliable material is suggested for the nozzle tip to avoid scratching or damaging the LED surface during pickup.
4.3. The dimensions of the component must be accurately programmed in the pick-and-place machine to insure precise pickup and avoid damage during production.



5. As silicone encapsulation is permeable to gases, some corrosive substances such as H_2S might corrode silver plating of leadframe. Special care should be taken if an LED with silicone encapsulation is to be used near such substances.

Selection Guide

Part No.	Dice	Lens Type	luminous Intensity Iv(cd)@ 350 mA [2]		Φv (lm) [2] @ 350mA		Viewing Angle [1]
			Min.	Typ.	Min.	Typ.	2 θ 1/2
KAD1-1010SE28Z1S	Reddish-Orange (AlGaInP)	Water Clear	24	43	24	35	20 °

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

Absolute Maximum Ratings at T_A=25°C

Parameter	Symbol	Value	Unit
Power dissipation	P_d	1.05	W
Junction temperature	T_J	110	°C
Reverse Voltage	V_R	5	V
Operating Temperature	Top	-40 To +85	°C
Storage Temperature	Tstg	-40 To +85	°C
DC Forward Current[1]	I_F	350	mA
Peak Forward Current [2]	I_{FM}	500	mA
Thermal resistance [1]	R_{th}	60	°C/W

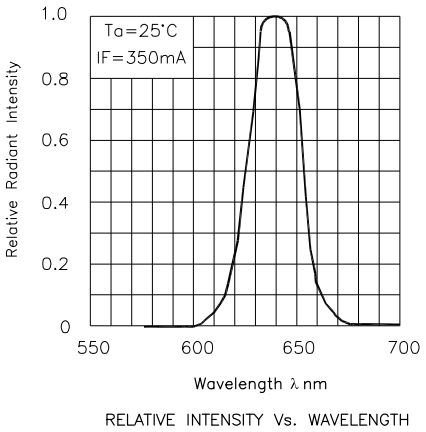
Notes:
1.Results from mounting on PC board FR4(pad size ≥ 100mm^2), mounted on pc board-metal core PCB is recommend for lowest thermal Resistance.
2.1/10 Duty Cycle, 0.1ms Pulse Width.

Electrical / Optical Characteristics at T_A=25°C

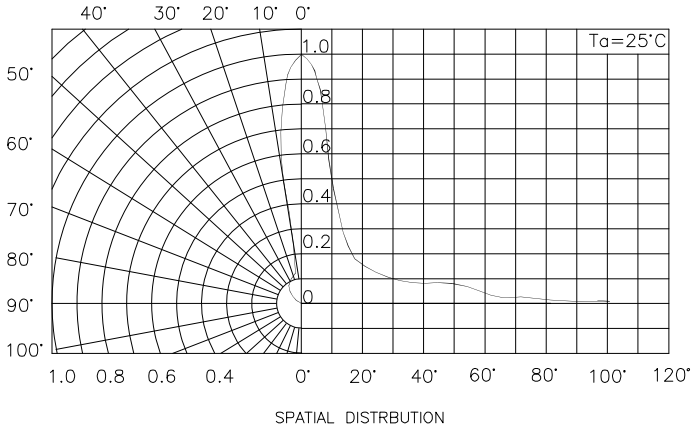
Parameter	Symbol	Value	Unit
Wavelength at peak emission I_F=350mA [Typ.]	λ peak	640	nm
Dominant Wavelength I_F=350mA [Typ.]	λ dom [1]	625	nm
Spectral bandwidth at 50%Φ REL MAX I_F=350mA [Typ.]	Δλ	30	nm
Allowable Reverse Current [Max.]	I_R	85	mA
Forward Voltage I_F=350mA [Min.]	V_F [2]	2.0	V
Forward Voltage I_F=350mA [Typ.]		2.5	
Forward Voltage I_F=350mA [Max.]		3.0	
Temperature coefficient of λ peak I_F=350mA, -10 ° C≤ T≤100 ° C [Typ.]	TC λ peak	0.14	nm/° C
Temperature coefficient of λ dom I_F=350mA, -10 ° C≤ T≤100 ° C [Typ.]	TC λ dom	0.12	nm/° C
Temperature coefficient of V_F I_F=350mA, -10 ° C≤ T≤100 ° C [Typ.]	TC_V	-3.0	mV/° C

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

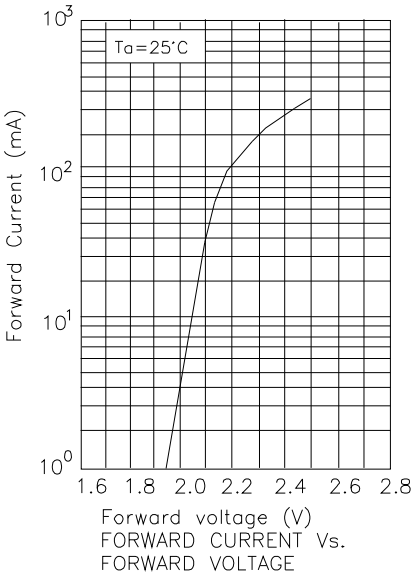
KAD1-1010SE28Z1S



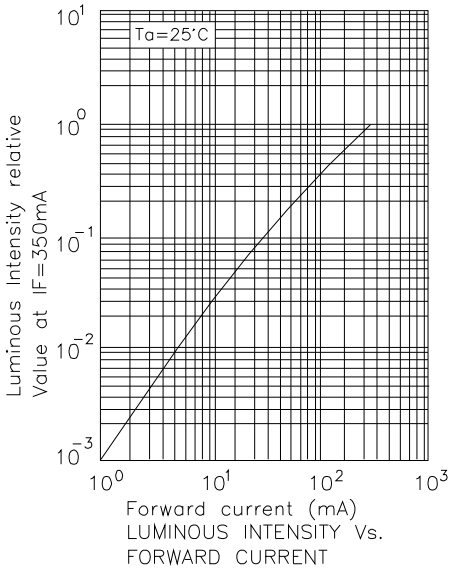
RELATIVE INTENSITY Vs. WAVELENGTH



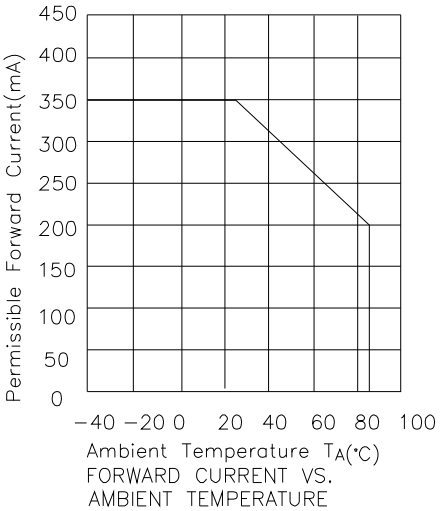
SPATIAL DISTRBUTION



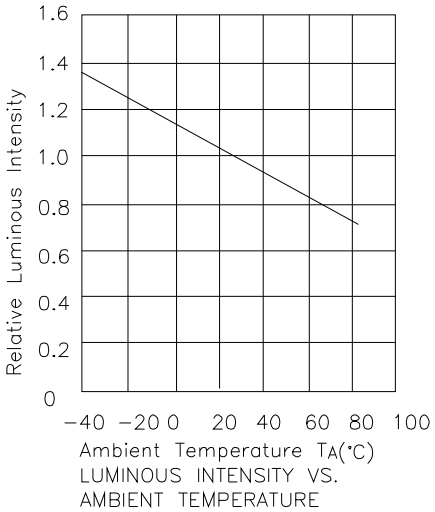
FORWARD CURRENT Vs.
FORWARD VOLTAGE



LUMINOUS INTENSITY Vs.
FORWARD CURRENT



FORWARD CURRENT VS.
AMBIENT TEMPERATURE



LUMINOUS INTENSITY VS.
AMBIENT TEMPERATURE

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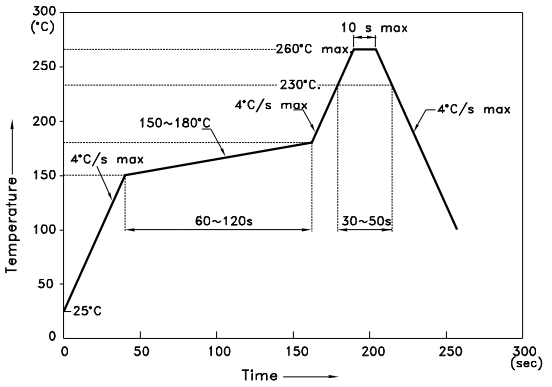
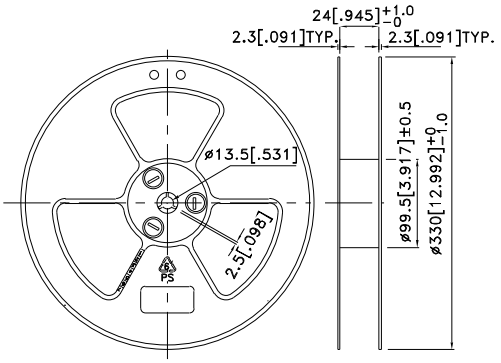
Reflow soldering is recommended and the soldering profile is shown below.
Other soldering methods are not recommended as they might cause damage to the product.

Reflow Soldering Profile For Lead-free SMT Process.

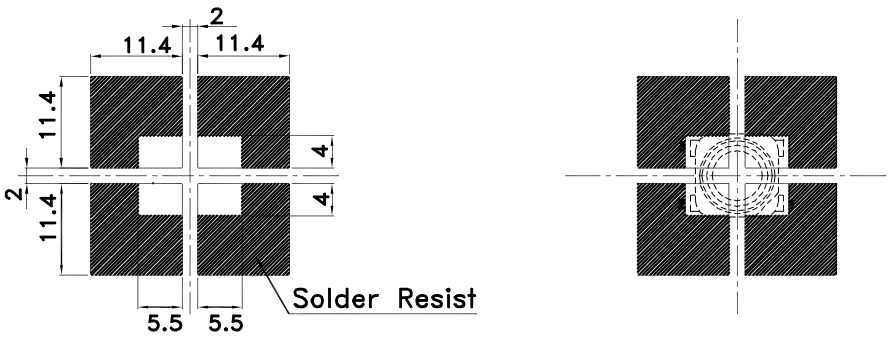


NOTES:
1. We recommend the reflow temperature 245°C(+/-5°C).The maximum soldering temperature should be limited to 260°C.
2. Don't cause stress to the epoxy resin while it is exposed to high temperature.
3. Number of reflow process shall be 2 times or less.

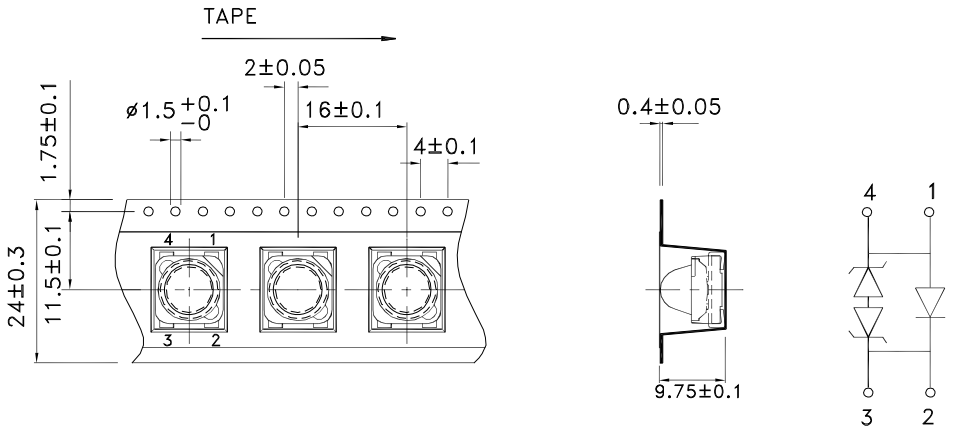
Reel Dimension



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



Tape Specifications
(Units : mm)



PACKING & LABEL SPECIFICATIONS **KAD1-1010SE28Z1S**