



ATTENTION
OBSERVE PRECAUTIONS
FOR HANDLING
ELECTROSTATIC
DISCHARGE
SENSITIVE
DEVICES

Features

- Dimension: 2.5mmx 2.0mm x 0.8mm.
- Low thermal resistance.
- Ceramic package with silicone resin.
- Small package with high efficiency.
- Surface mount technology.
- ESD protection.
- Package : 2000pcs / reel.
- Moisture sensitivity level : level 2a.
- Soldering methods: IR reflow soldering.
- 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.

Typical Applications

PDAs

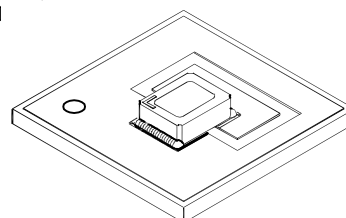
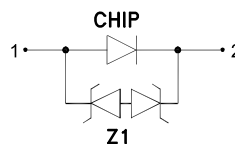
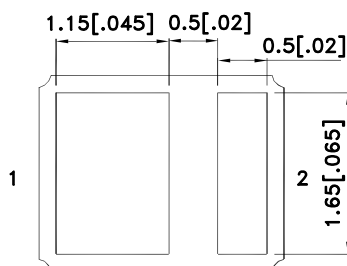
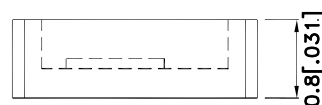
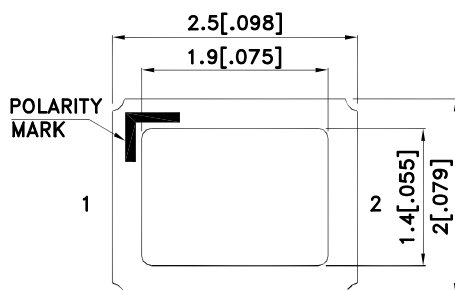
Room lighting

Architectural lighting

Decorative/pathway lighting

Front panel backlight

Package Dimensions



Notes:

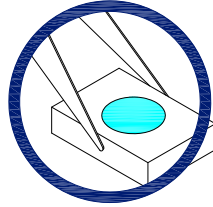
1. All dimensions are in millimeters (inches).
2. Tolerance is $\pm 0.25(0.01)$ unless otherwise noted.
3. The specifications, characteristics and technical data described in the datasheet are subject to change without prior notice.
4. The device has a single mounting surface. The device must be mounted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

Handling Precautions

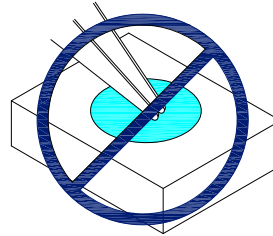
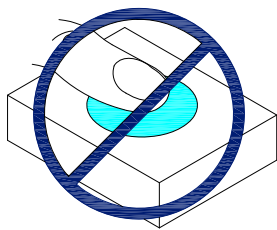
Compare to epoxy encapsulant that is hard and brittle, silicone is softer and flexible. Although its characteristic significantly reduces thermal stress, it is more susceptible to damage by external mechanical force.

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.

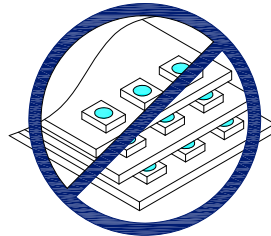
1. Handle the component along the side surfaces by using forceps or appropriate tools.



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



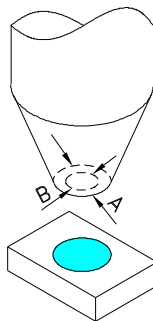
3. Do not stack together assembled PCBs containing exposed LEDs. Impact may scratch the silicone lens or damage the internal circuitry.



- 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	luminous Intensity [2] Iv(mcd)@ 150mA		Φv (lm) [2] @ 150mA		Viewing Angle [1]
		Min.	Typ.	Min.	Typ.	2 θ 1/2
KT-2520QB25Z1S	Blue (InGaN)	500	800	3.5	4.5	120 °

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 TA = 25°C

Parameter	Symbol	Value	Unit
Power dissipation	P _D	600	mW
Junction temperature[1]	T _J	110	°C
Reverse Voltage	V _R	5	V
Operating Temperature	T _{op}	-40 To +100	°C
Storage Temperature	T _{stg}	-40 To +110	°C
DC Forward Current [1]	I _F	150	mA
Peak Forward Current [2]	I _{FM}	300	mA
Thermal resistance [1](Junction/ambient)	R _{th j-a}	170	°C/W
Thermal resistance (Junction/solder point)	R _{th j-s}	55	°C/W
Electrostatic Discharge Threshold (HBM)		8000	V

Notes:

1. Results from mounting on PC board FR4, 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 TA = 25°C

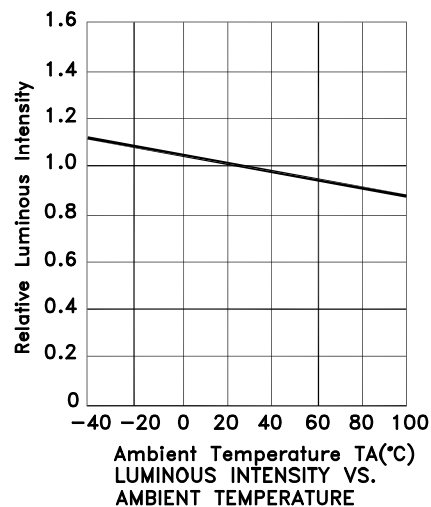
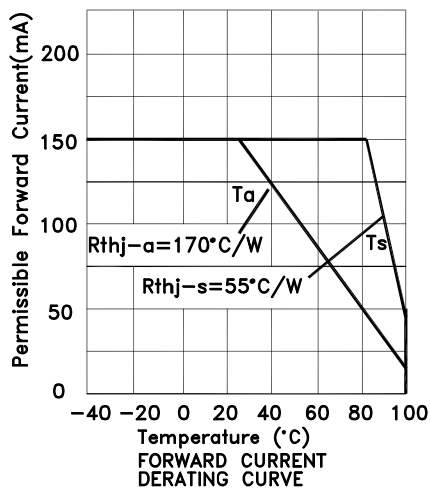
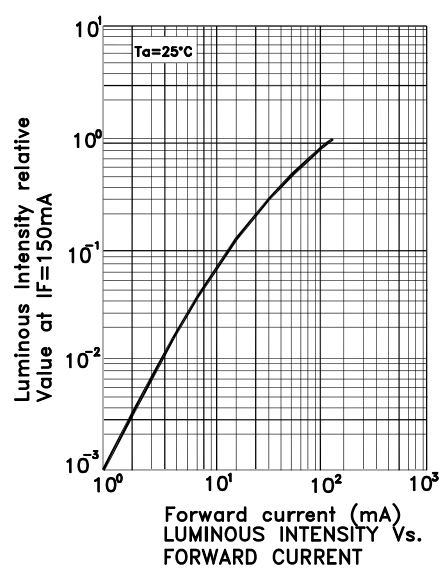
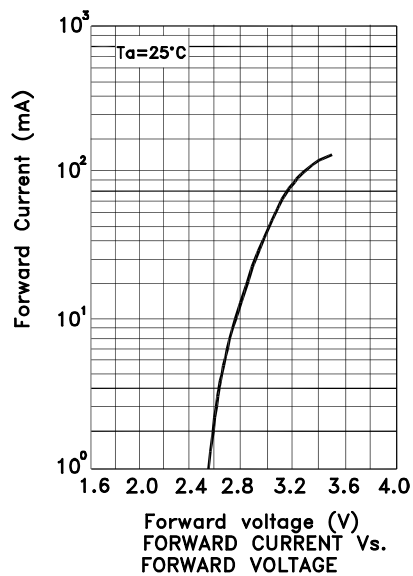
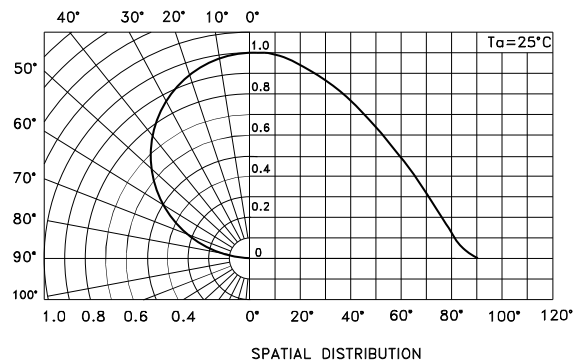
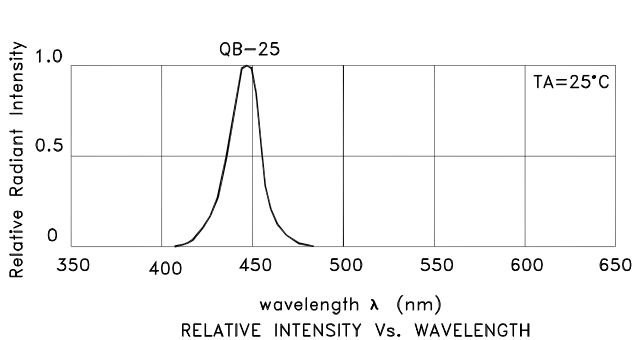
Parameter	Symbol	Value	Unit
Wavelength at peak emission I _F = 150mA [Typ.]	λ _{peak}	450	nm
Dominant Wavelength I _F = 150mA [Typ.]	λ _{dom} [1]	445	nm
Allowable Reverse Current [Max.]	I _R	85	mA
Spectral bandwidth at 50%Φ _{REL MAX} I _F = 150mA [Typ.]	Δλ	20	nm
Forward Voltage I _F = 150mA [Min.]	V _F [2]	2.7	V
Forward Voltage I _F = 150mA [Typ.]		3.5	
Forward Voltage I _F = 150mA [Max.]		4.0	
Temperature coefficient of λ _{peak} I _F = 150mA, -10 ° C ≤ T ≤ 100 ° C [Typ.]	TC λ _{peak}	0.13	nm/°C
Temperature coefficient of λ _{dom} I _F = 150mA, -10 ° C ≤ T ≤ 100 ° C [Typ.]	TC λ _{dom}	0.10	nm/°C
Temperature coefficient of V _F I _F = 150mA, -10 ° C ≤ T ≤ 100 ° C [Typ.]	TC _V	-3.1	mV/°C

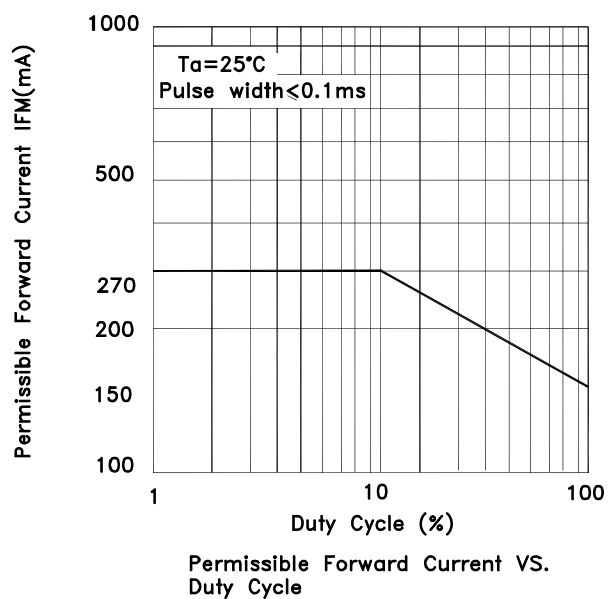
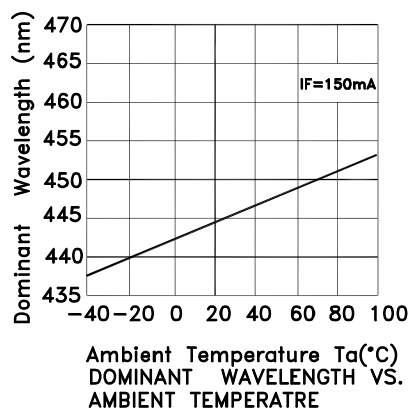
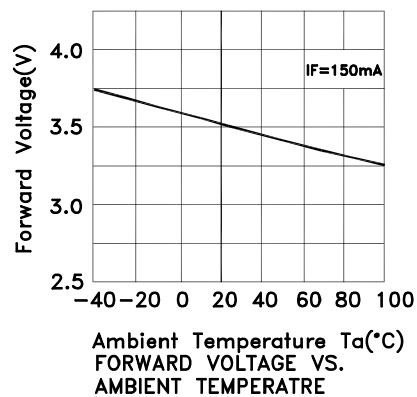
Notes:

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

Blue

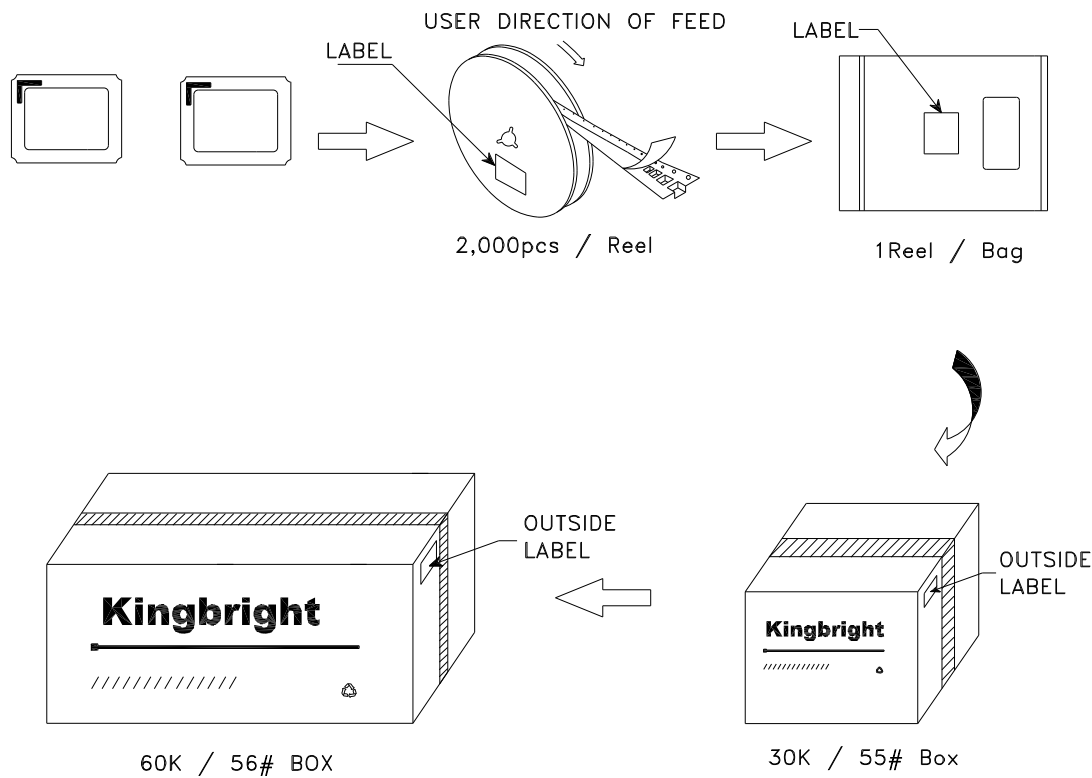
KT-2520QB25Z1S






PACKING & LABEL SPECIFICATIONS

KT-2520QB25Z1S



Kingbright	
P/NO: KT-2520xxx	
QTY: 2,000 pcs	Q.C. <div>Q C xx-xx-xxxx PASSED</div>
S/N: XXXX	
CODE: XXX	
LOT NO:	
 xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx	
RoHS Compliant	