Designation system

SMD LED

BL - LS 3528 A0S1 UB C 0 D - XXX

BETLUX

LS- LED SMD type

Dimension
3528: 3.5*2.8mm
5050: 5.0*5.0mm
3535: 3.5*3.5mm
5630: 5.6*3.0mm
3014: 3.0*1.4mm
3806: 3.8*0.6mm
2724: 2.7*2.4mm
7020:7.0*2.0mm

1608: 1.6*0.8mm (0603)
2012: 2.0*1.2mm(0805)
3210: 3.2*1.0mm(1204)
3216: 3.2*1.6mm(1206)
3227: 3.2*2.7mm(1210)

Shape and class

Lens Color:
D:Color Diffused
C:Water Clear
W: Water Diffused

Wavelength code:

Color Temperature

BIN code

Code	Color	Wavelength(nm)	Material
H	Red	700	GaP
S	Hi Red	660	AlGaAs,SH
SR	Hi Red	660	AlGaAs,SH
LR	Hi Red	660	AlGaAs,DH
UR	Ultra Red	660	AlgaAs,DDH
UHR	Ultra Red	640	AlGaInP
E	Red	635	GaAsP
UE	Ultra Red	630	AlGaInP
G	Green	570	GaP
UG	Ultra Green	574	AlGaInP
PG	Ultra Pure Green	525	AlGaInP
BG	Ultra Blish Green	505	AlGaInP
Y	Yellow	585	GaAsP
UY	Ultra Yellow	590	AlGaInP
UYO	Ultra Amber	610	AlGaInP
B	Blue	460	InGaN
UB	Ultra Blue	470	InGaN
UV	violet	395	InGaN
UW	Ultra White	-	InGaN
IR	Infrared	850-940	-
P	Photo Diodes/transistor	850-940	-

PLCC SMD LEDs

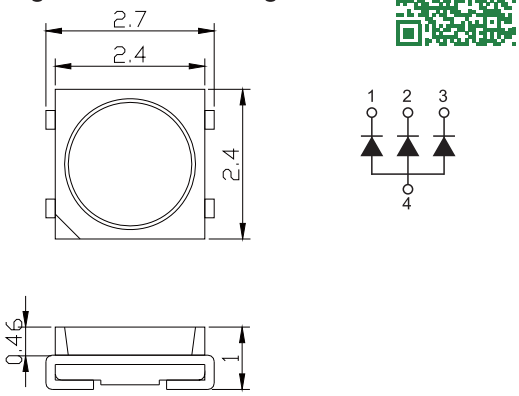
Part No	Emit Color	λ P (nm)	Lens Type	Iv(mcd) Min	Iv(mcd) Typ.	Viewing Angle 201/2	Drawing

2.7mmx2.4mm SMD,1.0mm THICKNESS,RGB type

BL-LS2724A0S3URUGUBC	Ultra Red	630	Water rclear	250	320	120
	Ultra Pure Green	525		1300	1500	
	Ultra Blue	470		450	500	

BL-LS2724A0S3XXX

Package Outline Drawing

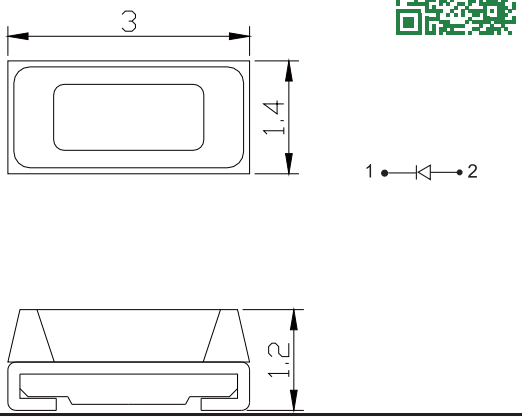


3.0mmx1.4mm SMD

BL-LS3014A0S1UEC	Ultra Red	630	Water Clear	250	320	120
BL-LS3014A0S1UYO	Ultra Amber	610		500	600	
BL-LS3014A0S1UYC	Ultra Yellow	593		500	600	
BL-LS3014A0S1UGC	Ultra Green	575		70	80	
BL-LS3014A0S1PGC	Ultra Pure Green	525		1300	1500	
BL-LS3014A0S1UBC	Ultra Blue	470		450	500	
BL-LS3014A0S1UWC	Ultra White	/		1900	2100	

BL-LS3014A0S1

Package Outline Drawing

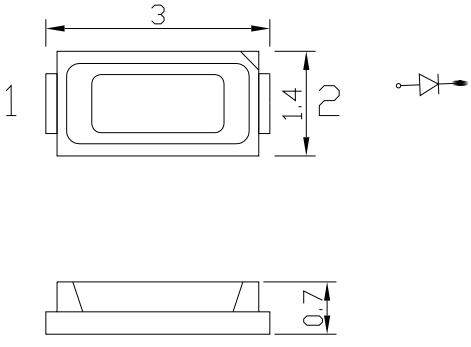


3.0mmx2.0mm SMD

BL-LS3020A0S1UEC	Ultra Red	630	Water Clear	250	320	120
BL-LS3020A0S1UYO	Ultra Amber	610		500	600	
BL-LS3020A0S1UYC	Ultra Yellow	593		500	600	
BL-LS3020A0S1UGC	Ultra Green	575		70	80	
BL-LS3020A0S1PGC	Ultra Pure Green	525		1300	1500	
BL-LS3020A0S1UBC	Ultra Blue	470		450	500	
BL-LS3020A0S1UWC	Ultra White	/		1900	2100	

BL-LS3020A0S1

Package Outline Drawing



All dimensions are in millimeters (inches)
Tolerance is ±0.25(0.01")unless otherwise note

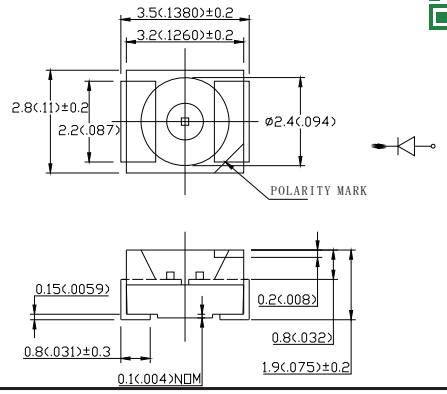
PLCC SMD LEDs

Part No	Emit Color	λ P (nm)	Lens Type	Iv(mcd) Min	Iv(mcd) Typ.	Viewing Angle 201/2	Drawing

3.5mmx2.8mm SMD, 1.9mm THICKNESS PLCC2 package

BL-LS3528A0S1UEC	Ultra Red	630	Water Clear	250	320	120
BL-LS3528A0S1UYO	Ultra Amber	610		500	600	
BL-LS3528A0S1UYC	Ultra Yellow	593		500	600	
BL-LS3528A0S1UGC	Ultra Green	575		70	80	
BL-LS3528A0S1PGC	Ultra Pure Green	525		1300	1500	
BL-LS3528A0S1UBC	Ultra Blue	470		450	500	
BL-LS3528A0S1UWC0I	Ultra White	/		1900	2100	
BL-LS3528A0S1UWC0D	Warm White	/		2000	2300	

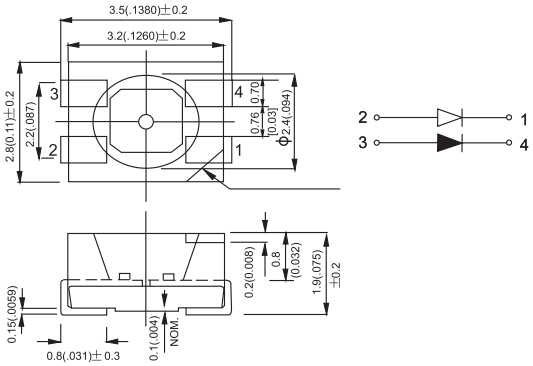
BL-LS3528A0S1
Package Outline Drawing



3.5mmx2.8mm SMD BI-Color , 1.9mm THICKNESS PLCC4 packag

BL-LS3528B0S2 EGC	Red	640	Water Clear	50	80	120
	Green	568		28	50	
BL-LS3528B0S2 UYUGC	Ultra Yellow	590		50	120	
	Ultra Green	575		50	80	
BL-LS3528B0S2 UEUGC	Ultra Red	623		110	180	
	Ultra Green	575		50	80	

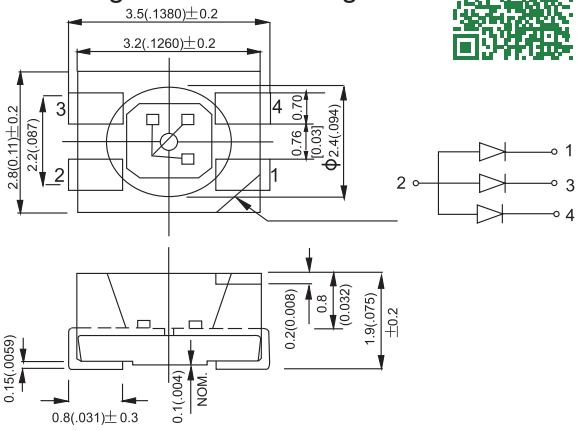
BL-LS3528B0S2XX
Package Outline Drawing



3.5mmx2.8mm SMD, 1.9mm THICKNESS PLCC4 packa g

BL-LS3528B0S 3URUGUBC	Ultra Red	630	Wate rclear	250	320	120
	Ultra Pure Green	525		1300	1500	
	Ultra Blue	470		450	500	

BL-LS3528B0S3XXX
Package Outline Drawing



All dimensions are in millimeters (inches)
Tolerance is ±0.25(0.01")unless otherwise note

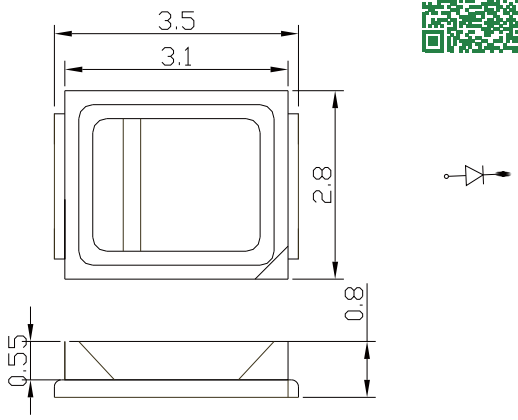
PLCC SMD LEDs

Part No	Emit Color	λ P (nm)	Lens Type	Iv(mcd)		Viewing Angle 201/2	Drawing
				Min	Typ.		

2.8mmx3.5mm SMD

BL-LS3528C1S1UWC-0.2w	Ultra White		yellow	23	25	110
BL-LS3528C1S1UWC-0.5w	Ultra White			40	55	110

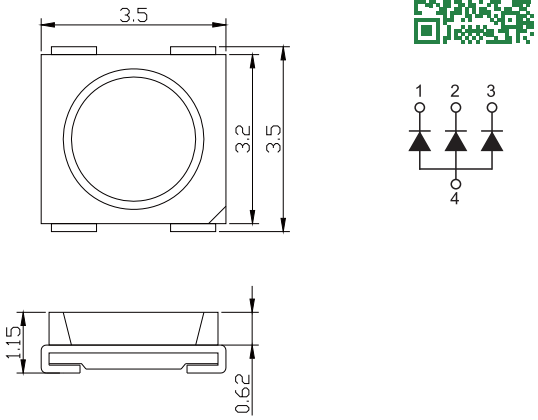
BL-LS3528C1S1
Package Outline Drawing



3.5mmx3.5mm SMD

BL-LS3535A0S3URUGUBC	Ultra Red	630	Water rclear	250	320	120
	Ultra Pure Green	525		1300	1500	
	Ultra Blue	470		450	500	

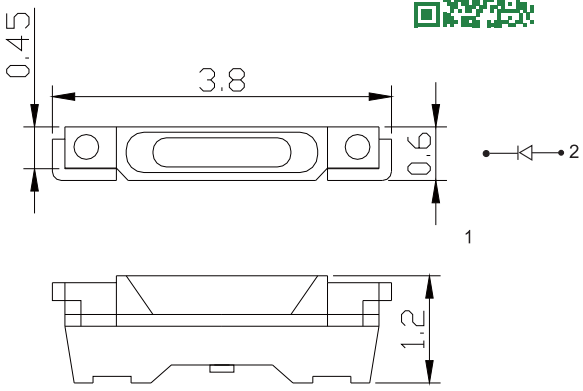
BL-LS3535A0S3XXX
Package Outline Drawing



3.8mmx0.6mm SMD

BL-LS3806A0S1UEC	Ultra Red	630	Water Clear	250	320	120
BL-LS3806A0S1UYO	Ultra Amber	610		500	600	
BL-LS3806A0S1UYC	Ultra Yellow	593		500	600	
BL-LS3806A0S1UGC	Ultra Green	575		70	80	
BL-LS3806A0S1PGC	Ultra Pure Green	525		1300	1500	
BL-LS3806A0S1UBC	Ultra Blue	470		450	500	
BL-LS3806A0S1UWC	Ultra White	/		1900	2100	

BL-LS3806A0S1
Package Outline Drawing



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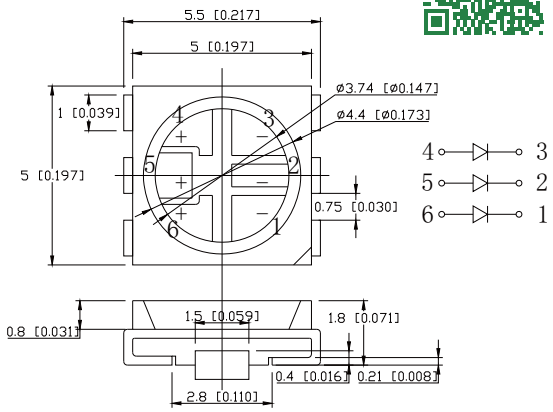
PLCC SMD LEDs

Part No	Emit Color	λ P (nm)	Lens Type	Iv(mcd) Min	Iv(mcd) Typ.	Viewing Angle 201/2	Drawing

5.5mmx5.0mm SMD, 1.8mm THICKNESS PLCC6 packag

BL-LS5050A1S3UEC	Ultra Red	630	Water Clear	750	960	120
BL-LS5050A1S3UYO	Ultra Amber	610		1500	1800	
BL-LS5050A1S3UYC	Ultra Yellow	593		1500	1800	
BL-LS5050A1S3UGC	Ultra Green	575		210	240	
BL-LS5050A1S3PGC	Ultra Pure Green	525		3900	4500	
BL-LS5050A1S3UBC	Ultra Blue	470		1300	1500	
BL-LS5050A1S3UWC	Ultra White	/		5500	6200	

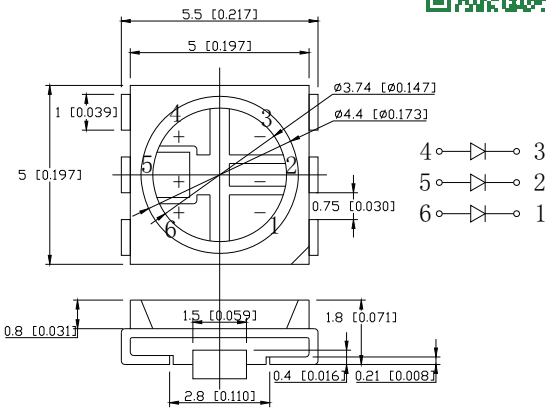
BL-LS5050A1S3
Package Outline Drawing



5.5mmx5.0mm SMD, 1.8mm THICKNESS PLCC6 packag

BL-LS5050A0S3RGBC	Red	660	Water Clear	110	180	120
	Green	574		28	50	
	Blue	470		70	120	
BL-LS5050A0S3URUGUBC	Ultra Red	630		250	320	
	Ultra Pure Green	525		1300	1500	
	Ultra Blue	470		450	500	

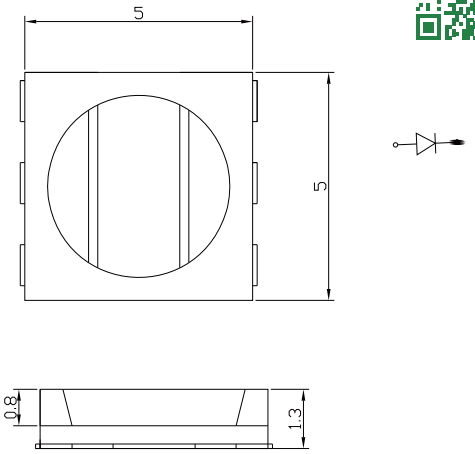
BL-LS5050A0S3XXX
Package Outline Drawing



5. 0X5. 0mm SMD LED

BL-LS5050B1S1UWC-0.5W	Ultra White		yellow	40	55	110
BL-LS5050B1S1UWC-1W	Ultra White		yellow	90	100	110

BL-LS5050B1S1
Package Outline Drawing



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Tolerance is ±0.25(0.01")unless otherwise note

PLCC SMD LEDs

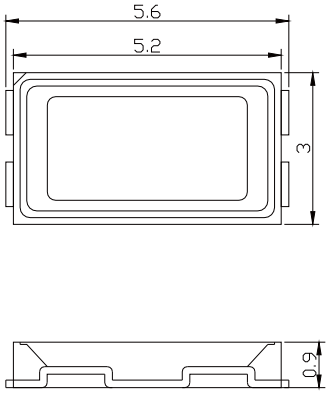
Part No	Emit Color	λ P (nm)	Lens Type	Iv(mcd)		Viewing Angle 201/2	Drawing
				Min	Typ.		

5.6mmx3.0mm SMD

BL-LS5630A1S1UWC-0.5W	Ultra White	yellow	35	55	120
BL-LS5630A1S1UWC-1W	Ultra White	yellow	80	110	120

BL-LS5630A1S1

Package Outline Drawing

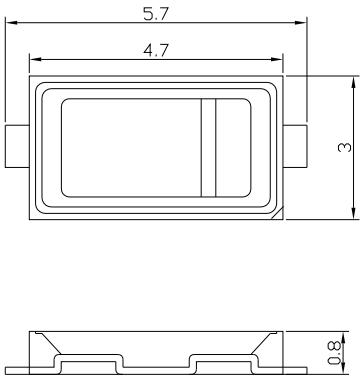


5.7mmx3.0mm SMD

BL-LS5730A1S1UWC-0.5W	Ultra White	yellow	35	55	120
BL-LS5730A1S1UWC-1W	Ultra White	yellow	80	110	120

BL-LS5730A1S1

Package Outline Drawing

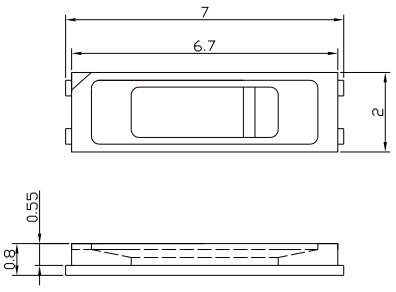


7.0mmx2.0mm SMD

BL-LS7020A1S1UWC-0.5W	Ultra White	yellow	35	55	120
BL-LS7020A1S1UWC-1W	Ultra White	yellow	80	110	120

BL-LS7020A0S1

Package Outline Drawing



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Tolerance is ±0.25(0.01")unless otherwise note

Applicant Note

CAUTIONS for SMD LED

1.Application

The SMD LED is widely applied for ordinary electronic equipment (such as office equipment, communication equipment and household applications). Checking with BETLUX's Sales in advance for information on applications in which exceptional reliability is required, particularly when the failure or malfunction of the LEDs may directly jeopardize life or health (such as in aviation, transportation, traffic control equipment, medical and life support systems and safety devices).

2.Storage

The storage ambient for the LEDs should not exceed 30℃ temperature or 70% relative humidity. It is recommended that LEDs out of their original packaging are IR-reflowed within one week. For extended storage out of their original packaging, it is recommended that the LEDs be stored in a sealed container with appropriate desiccant, or in a desiccator with nitrogen ambient. LEDs stored out of their original packaging for more than a week should be baked at about 60 deg C for at least 24 hours before solder assembly.

3.Cleaning

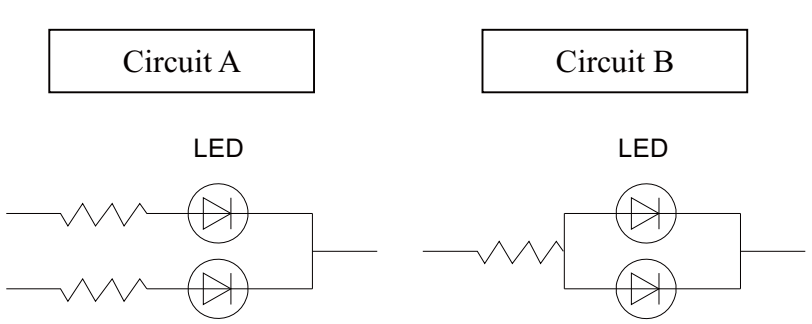
Use alcohol-based cleaning solvents such as isopropyl alcohol to clean the LED if necessary

1. Soldering

IR Reflow Soldering		Wave soldering		Soldering iron	
Pre-Heat	120~150℃	Pre-Heat	100℃ Max.	Tempera	300℃ Max.
Pre-heat time	120 sec. Max.	Pre-heat time	60 sec. Max.	ture	3 sec. Max.
Peak temperature	240℃ Max.	Solder wave	260℃ Max.	Solderin	(one time
Soldering time	10 sec. Max.	Soldering time	10 sec. Max.	g time	only)

3.Drive Method

An LED is a current-operated device. In order to ensure intensity uniformity on multiple LEDs connected in parallel in an application, it is recommended that a current limiting resistor be incorporated in the drive circuit, in series with each LED as shown in Circuit A below.



(A) Recommended circuit
(B) The brightness of each LED might appear different due to the differences in the I-V characteristics of those LEDs

6.ESD(Electrostatic Discharge)
Static Electricity or power surge will damage the LED.
Suggestions to prevent ESD damage:
Use a conductive wrist band or anti-electrostatic glove when handling these LEDs
All devices, equipment, and machinery must be properly grounded
Work tables, storage racks, etc. should be properly grounded
Use ion blower to neutralize the static charge which might have built up on surface of the LED's plastic lens as a result of friction between LEDs during storage and handling
ESD-damaged LEDs will exhibit abnormal characteristics such as high reverse leakage current, low forward voltage, or “no light on” at low currents. To verify for ESD damage, check for “light on” and Vf of the suspect LEDs at low currents.
The Vf of “good” LEDs should be>2.0V@0.1mA for InGaN product and >1.4V@0.1mA for AlInGaP product.

Chip ESD level	Machine Model	Human Body Model
InGaN/Sapphire	100V	300V
AlInGaP	200V	500V
InGaN/Sic	600V	1000V