

Optoelectronic Components Catalogue 2023-2024



GUARANTEED TO SHINE

IATF16949 Automotive • ISO9001 Quality • ISO14001 Environmental

SMD LEDs



- 02 Ultra-Bright Low-Current
- 04 Multi-Color
- 13 Top Emitting
- 20 Side Emitting
- 23 Reverse Mount
- 25 High Temperature Series

Thru-Hole LEDs



- 27 Round
- 29 Rectangular
- 29 Bi-Color & Bi-Polar
- 31 Low Current

CBI LEDs



- 32 One Position
- 33 Two Position
- 33 Three Position
- 33 SMD CBI

Reverse-Mount PLCC SMD



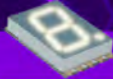
XZxx45WT-9

IR & Photo



- 34 Infrared Emitting Diode
- 36 Phototransistor

LED Displays



- 38 Single Digit SMD
- 40 Dual Digit SMD
- 42 Alphanumeric SMD
- 43 Single Digit Thru-Hole
- 45 Dual Digit Thru-Hole
- 45 Bar Graph Array

Technical Notes

- 46 Intensity Codes
- 47 Wavelength Codes
- 48 CIE Chromaticity Diagram
- 49 Reliability Tests
- 51 Soldering Instructions
- 52 Application Notes
- 55 Storage Conditions

Index

- 56 Index

3-Dome RGB SMD LED



XZFBBM2ACRDG92W-3

Ultra-Bright Low-Current SMD LED



XZCxxx53Wx-1VF

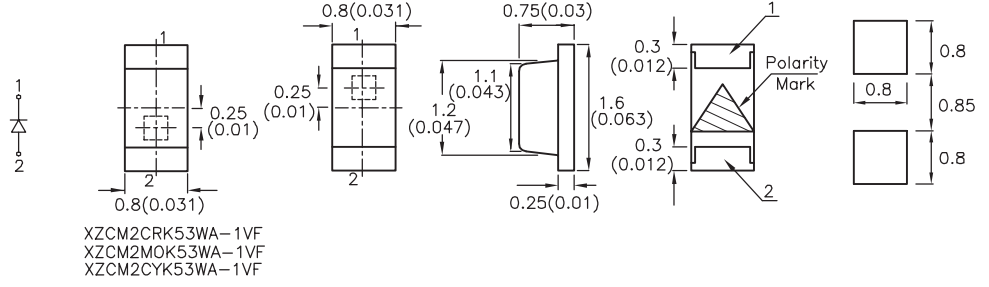
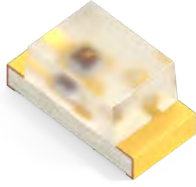
1206 Reverse-Mount Dome Lens



XZxx55W-3RT

Part Number	Chip Structure (Emitted Color)	λ_{peak} (nm)	Intensity(mcd) $I_f=2mA$		Viewing Angle 2 θ /2	Lens
			Min.	Typ.		

**1.6x0.8x0.75mm
(0603)**



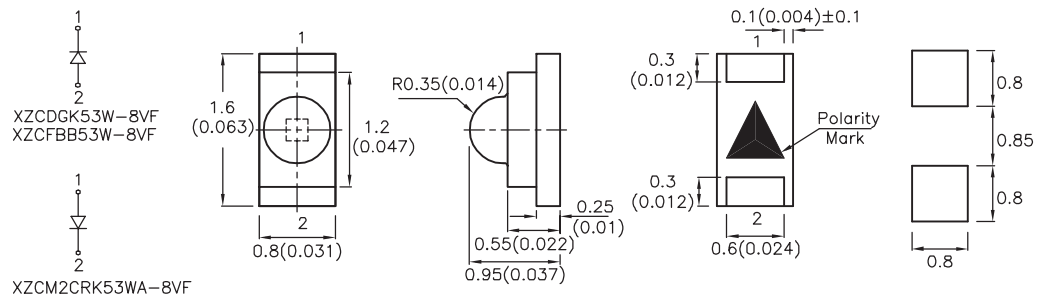
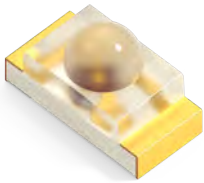
PRODUCT HIGHLIGHT

Dimension Unit: mm(inches), Tolerance : $\pm 0.1(0.004)$ "

Recommended Soldering Pattern

XZCM2CRK53WA-1VF	◆ AlGaInP(Red)	640	20	39	120°	Water Clear
XZCM2MOK53WA-1VF	◆ AlGaInP(Orange)	611	30	49	120°	Water Clear
XZCM2CYK53WA-1VF	◆ AlGaInP(Yellow)	590	15	24	120°	Water Clear
XZCDGK53W-1VF	◆ InGaN(Green)	515	50	98	130°	Water Clear
XZCFBB53W-1VF	◆ InGaN(Blue)	465	15	23	130°	Water Clear

**1.6x0.8x0.95mm
(0603 Dome Lens)**



Dimension Unit: mm(inches), Tolerance : $\pm 0.15(0.006)$ "

Recommended Soldering Pattern

XZCM2CRK53WA-8VF	◆ AlGaInP(Red)	640	50	118	60°	Water Clear
XZCDGK53W-8VF	◆ InGaN(Green)	515	250	417	60°	Water Clear
XZCFBB53W-8VF	◆ InGaN(Blue)	465	30	64	40°	Water Clear



XZCxxx53Wx-1VF - Ultra-Bright Low-Current SMD LED Series **PRODUCT HIGHLIGHT**

SunLED launches 0603 ultra-bright low-current series for the next generation of designs. Low-current LEDs have been utilized as engineers continue to design more portable battery-powered devices with limitations on power consumption. These high-performance LEDs use ultra-bright chips while only requiring a 2 mA forward current. This series gives engineers the benefit of over 90% power reduction compared to standard LEDs while maintaining high brightness output. This 0603 series will be available in red, orange, yellow, green, and blue.

PRODUCT APPLICATIONS

- Wearable electronics
- Mobile and handheld devices
- Battery-powered devices
- Consumer devices
- Medical and healthcare
- Instrumentation
- Safety and security

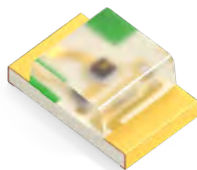
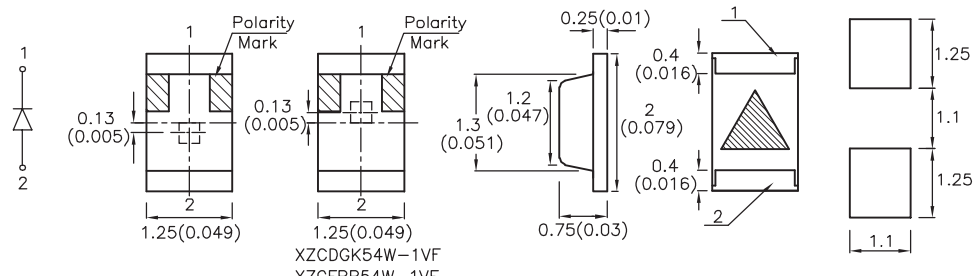
PRODUCT FEATURES

- Low current operation: $I_f=2mA$
- Low forward voltages
- Wide viewing angle: 120° to 130°
- Industry standard 0603 (1.6 mm x 0.8 mm) footprint
- Moisture sensitivity level (MSL): 3

1. Soldering Pattern Dimension Unit : mm, Tolerance : $\pm 0.1mm$.
2. Luminous intensity value and wavelength are in accordance with CIE127-2007 standards.
3. We reserve the right to make changes at any time to enhance the design and / or performance of the product.

Part Number	Chip Structure (Emitted Color)	λ_{peak} (nm)	Intensity(mcd) $I_f=2mA$		Viewing Angle 2 θ /2	Lens
			Min.	Typ.		

2.0x1.25x0.75mm (0805)

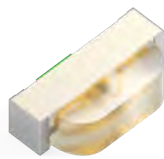
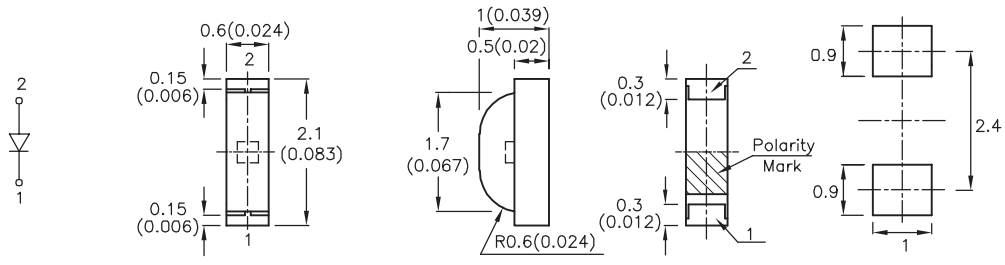



Dimension Unit: mm(inches), Tolerance : $\pm 0.1(0.004)$

XZCDGK54W-1VF
XZCFBB54W-1VF

Part Number	Chip Structure	λ_{peak} (nm)	Min. Intensity (mcd)	Typ. Intensity (mcd)	Viewing Angle	Recommended Soldering Pattern
XZCM2CRK54WA-1VF	AlGaInP (Red)	640	20	39	140°	Water Clear
XZCM2MOK54WA-1VF	AlGaInP (Orange)	611	30	49	140°	Water Clear
XZCM2CYK54WA-1VF	AlGaInP (Yellow)	590	15	24	140°	Water Clear
XZCDGK54W-1VF	InGaN (Green)	515	50	98	140°	Water Clear
XZCFBB54W-1VF	InGaN (Blue)	465	15	23	140°	Water Clear

2.1x1.0x0.6mm (Right Angle)

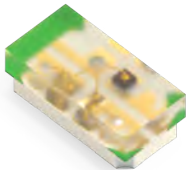
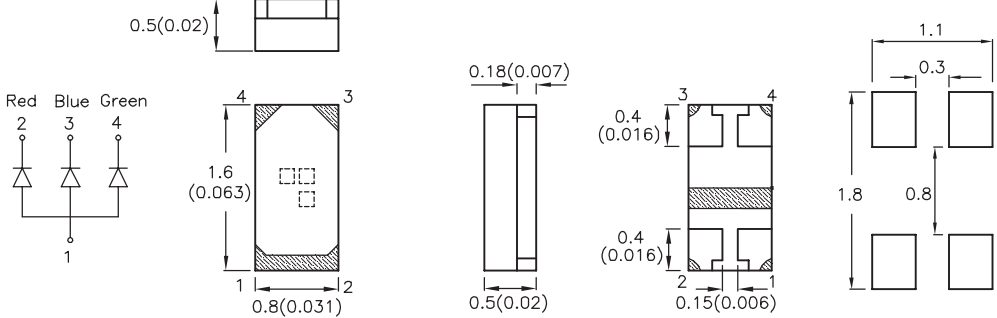



Dimension Unit: mm(inches), Tolerance : $\pm 0.1(0.004)$

Recommended Soldering Pattern

XZCFBB74W-3VU	InGaN (Blue)	465	10	19	170°	Water Clear
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1.6x0.8x0.5mm (Full Color)

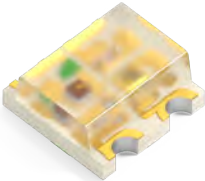
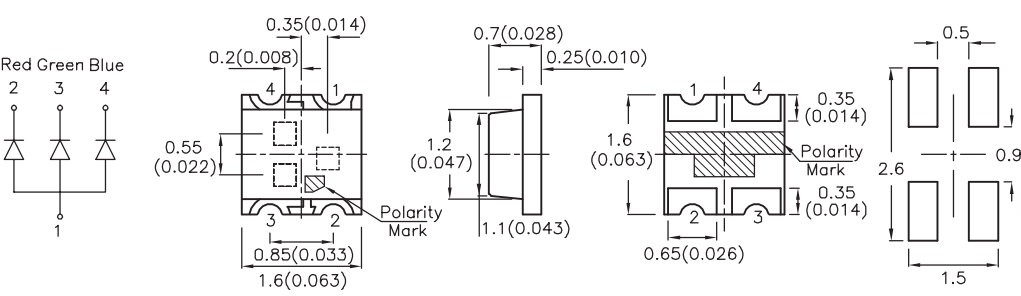



Dimension Unit: mm(inches), Tolerance : $\pm 0.15(0.006)$

Recommended Soldering Pattern

XZCMECDDGK53W	AlGaInP (Red)	630	4	14	140°	Water Clear
	InGaN (Blue)	460	4	9		
	InGaN (Green)	515	50	89		

1.6x1.6x0.7mm (Full Color)

Dimension Unit: mm(inches), Tolerance : $\pm 0.2(0.008)$


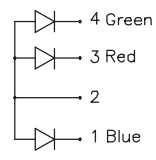
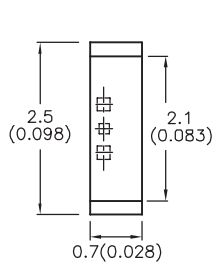
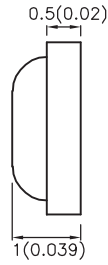
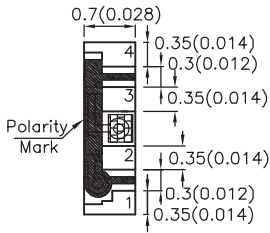
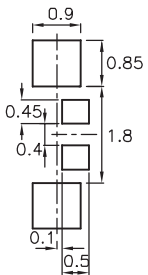
Recommended Soldering Pattern

XZCMEDGCB110W	AlGaInP (Red)	630	6	14	130°	Water Clear
	InGaN (Green)	515	20	49		
	InGaN (Blue)	460	6	13		

1. Soldering Pattern Dimension Unit : mm, Tolerance : $\pm 0.1mm$.
 2. Luminous intensity value and wavelength are in accordance with CIE127-2007 standards.
 3. We reserve the right to make changes at any time to enhance the design and / or performance of the product.

Part Number	Chip Structure (Emitted Color)	λ_{peak} (nm)	Intensity(mcd) $I_f=2mA$		Viewing Angle 2 θ 1/2	Lens
			Min.	Typ.		

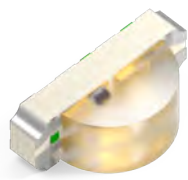
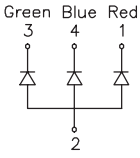
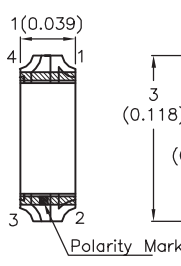
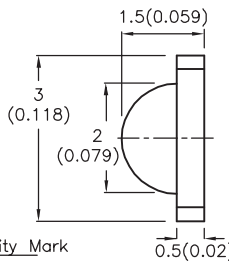
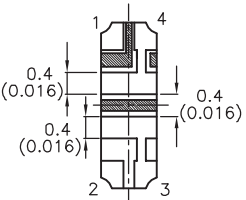
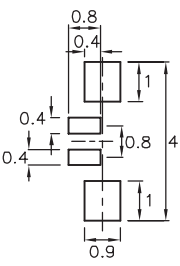
**2.5x1.0x0.7mm
(Right Angle, Full Color)**

Dimension Unit: mm(inches), Tolerance : $\pm 0.15(0.006^*)$

XZCCBDMEDGK161W	◆ InGaN(Blue)	460	4	9	130°	Water Clear
	◆ AlGaInP(Red)	630	6	9		
	◆ InGaN(Green)	515	50	89		

**3.0x1.5x1.0mm
(Right Angle, Full Color)**


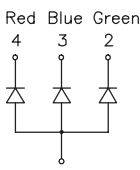
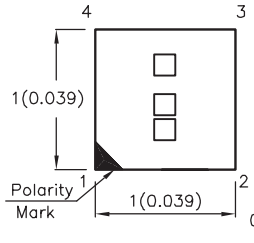
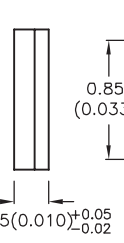
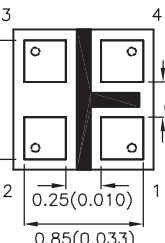
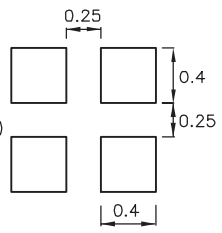
Dimension Unit: mm(inches), Tolerance : $\pm 0.2(0.008^*)$

XZCMEDGCBDS6W	◆ AlGaInP(Red)	630	6	14	150°	Water Clear
	◆ InGaN(Green)	515	50	89		
	◆ InGaN(Blue)	460	4	9		

MULTI-COLOR

Part Number	Chip Structure (Emitted Color)	λ_{peak} (nm)	Intensity(mcd) $I_f=5mA$		Viewing Angle 2 θ 1/2	Lens
			Min.	Typ.		

**1.0x1.0x0.25mm
(Full Color)**

Mask open area ratio: 80%
Mask thickness: 80~100um

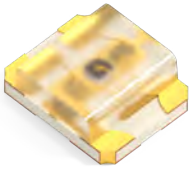
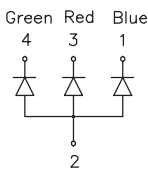
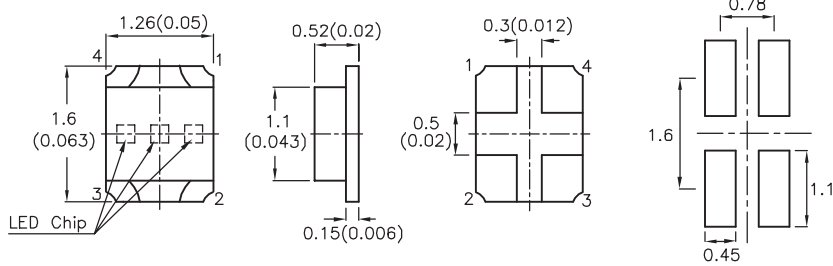
Dimension Unit: mm(inches), Tolerance : $\pm 0.1(0.004^*)$

XZDGCBDMERK150W-1	◆ InGaN(Green)	515	80	218	150°	Water Clear
	◆ InGaN(Blue)	460	10	22		
	◆ AlGaInP(Red)	632	15	29		

1. Soldering Pattern Dimension Unit : mm, Tolerance : $\pm 0.1mm$.
 2. Luminous intensity value and wavelength are in accordance with CIE127-2007 standards.
 3. We reserve the right to make changes at any time to enhance the design and / or performance of the product.




Part Number	Chip Structure (Emitted Color)	λ_{peak} (nm)	Intensity(mcd) $I_f=20mA$		Viewing Angle 2 θ 1/2	Lens
			Min.	Typ.		

1.6x1.26x0.52mm (Full Color)


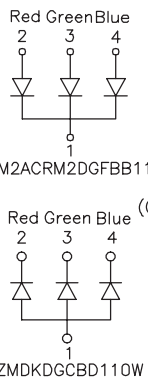
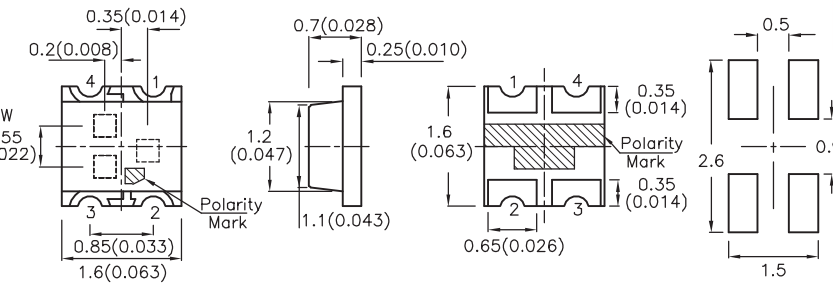




Dimension Unit: mm(inches), Tolerance : $\pm 0.2(0.008)^{\circ}$

Recommended Soldering Pattern







XZCBDMKDG62W-2	 InGaN(Blue)	460	40	69	140°	Water Clear
	 AlGaInP(Red)	645	40	79		
	 InGaN(Green)	515	400	597		

1.6x1.6x0.7mm (Full Color)


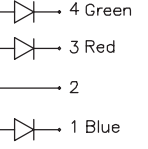
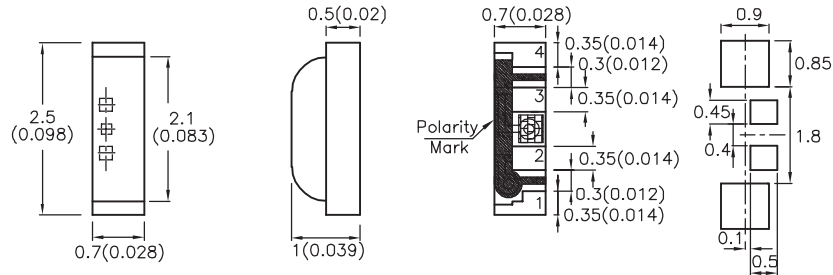




Dimension Unit: mm(inches), Tolerance : $\pm 0.2(0.008)^{\circ}$

Recommended Soldering Pattern




XZMDKDGCB110W	 AlGaInP(Red)	645	40	79	130°	Water Clear
	 InGaN(Green)	515	300	397		
	 InGaN(Blue)	460	40	69		
XZM2ACRM2DGFBB110W	 AlGaInP(Red)	640	200	357	130°	Water Clear
	 InGaN(Green)	520	500	745		
	 InGaN(Blue)	465	80	138		

2.5x1.0x0.7mm (Right Angle, Full Color)

Dimension Unit: mm(inches), Tolerance : $\pm 0.15(0.006)^{\circ}$

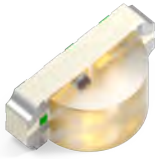
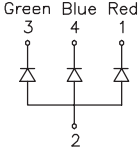
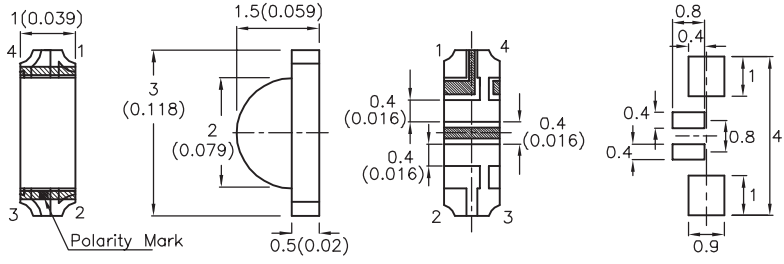
Recommended Soldering Pattern

XZCBDMEDGK161W	 InGaN(Blue)	460	40	64	130°	Water Clear
	 AlGaInP(Red)	630	80	108		
	 InGaN(Green)	515	300	497		

1. Soldering Pattern Dimension Unit : mm, Tolerance : $\pm 0.1mm$.
 2. Luminous intensity value and wavelength are in accordance with CIE127-2007 standards.
 3. We reserve the right to make changes at any time to enhance the design and / or performance of the product.

Part Number	Chip Structure (Emitted Color)	λ_{peak} (nm)	Intensity(mcd) $I_f=20mA$		Viewing Angle 2 θ 1/2	Lens
			Min.	Typ.		

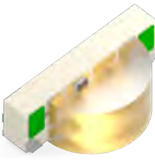
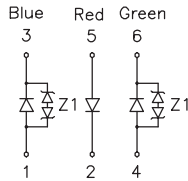
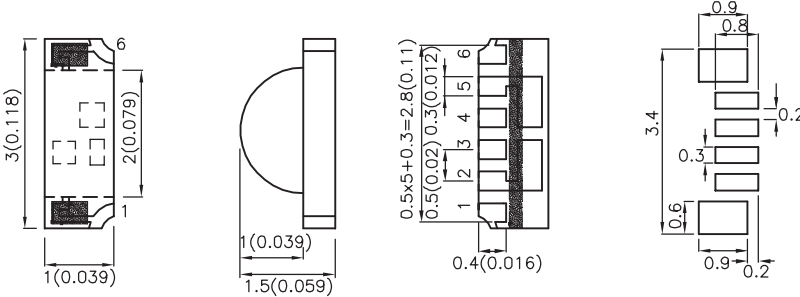
3.0x1.5x1.0mm (Right Angle, Full Color)

Dimension Unit: mm(inches), Tolerance : $\pm 0.2(0.008)$ Recommended Soldering Pattern

XZMEDGCBDS6W	◆ AlGaInP(Red)	630	80	138	150°	Water Clear
	◆ InGaIn(Green)	515	300	497		
	◆ InGaIn(Blue)	460	40	69		


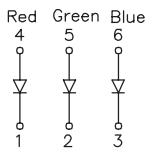
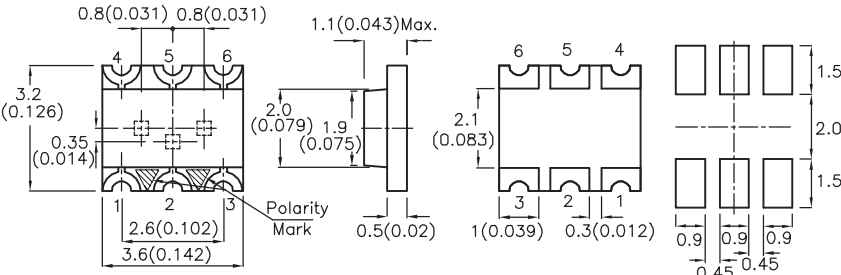
3.0x1.5x1.0mm (Right Angle, Full Color)

Dimension Unit: mm(inches), Tolerance : $\pm 0.2(0.008)$ Recommended Soldering Pattern

XZFBM2CRKM2DGZ157W	◆ InGaIn(Blue)	465	80	148	150°	Water Clear
	◆ AlGaInP(Red)	640	200	407		
	◆ InGaIn(Green)	520	500	775		

3.2x3.6x1.1mm (Full Color)

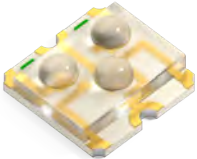
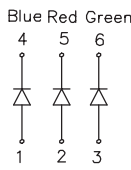
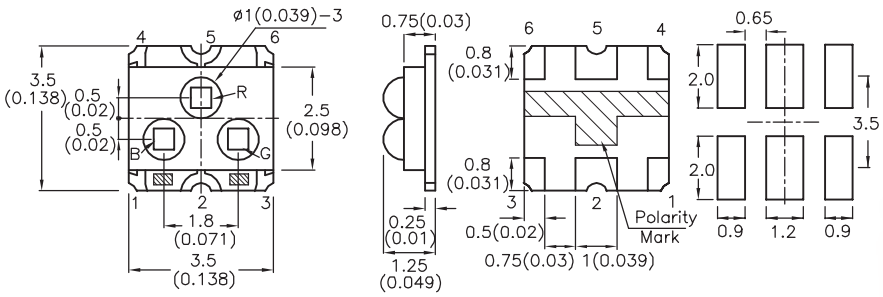
Dimension Unit: mm(inches), Tolerance : $\pm 0.2(0.008)$ Recommended Soldering Pattern

XZMEDGKCBDD1W	◆ AlGaInP(Red)	630	80	138	150°	Water Clear
	◆ InGaIn(Green)	515	200	327		
	◆ InGaIn(Blue)	460	40	69		

1. Soldering Pattern Dimension Unit : mm, Tolerance : $\pm 0.1mm$.
 2. Luminous intensity value and wavelength are in accordance with CIE127-2007 standards.
 3. We reserve the right to make changes at any time to enhance the design and / or performance of the product.

Part Number	Chip Structure (Emitted Color)	λ_{peak} (nm)	Intensity(mcd) $I_f=20mA$		Viewing Angle 2 θ 1/2	Lens
			Min.	Typ.		


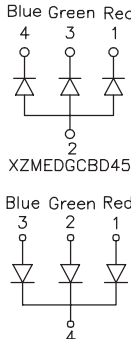
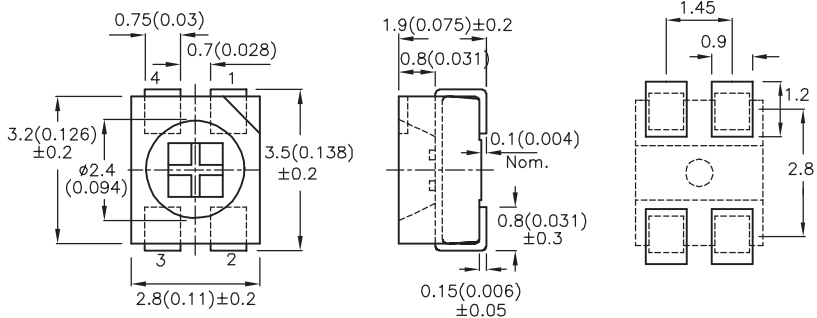
**3.5x3.5x1.25mm
(3-Dome RGB SMD)**

Dimension Unit: mm(inches), Tolerance : $\pm 0.1(0.004)$

XZFBBM2ACRDG92W-3	◆ InGaN(Blue)	465	300	497	50°	Water Clear
	◆ AlGaInP(Red)	640	1000	1590		
	◆ InGaN(Green)	520	1300	1890		

**3.5x2.8x1.9mm
(PLCC4 Full Color)**

Dimension Unit: mm(inches), Tolerance: $\pm 0.25mm$ (0.01")

XZMEDGCB45S	◆ AlGaInP(Red)	630	120	218	120°	Water Clear
	◆ InGaN(Green)	515	400	497		
	◆ InGaN(Blue)	460	55	98		
XZM2CRKM2DGFBB45SCCB	◆ AlGaInP(Red)	640	400	497	120°	Water Clear
	◆ InGaN(Green)	520	1000	1590		
	◆ InGaN(Blue)	465	200	327		



XZFBBM2ACRDG92W-3 - 3-Dome RGB SMD LED

PRODUCT HIGHLIGHT

SunLED's state-of-the-art 3-dome RGB SMD LED features a single package with optics that focus the light output from all three dies individually and in an RGB LED. This LED package leverages domed optical technology to concentrate light for each of the red, green, and blue chips to optimize intensity in a narrow viewing angle.

SunLED specializes in performance-driven, robust LED packages. With an extensive product offering of LED packages, SunLED manufactures with careful attention to detail and rigorous quality control. SunLED is committed to supporting new engineering designs with the first true RGB-domed package, the 3-dome RGB LED.

PRODUCT APPLICATIONS

- Light pipe applications
- Icon and text backlighting
- Consumer electronics
- Handheld products
- Home automation
- Safety and security
- White goods
- Audio and video
- Medical and healthcare

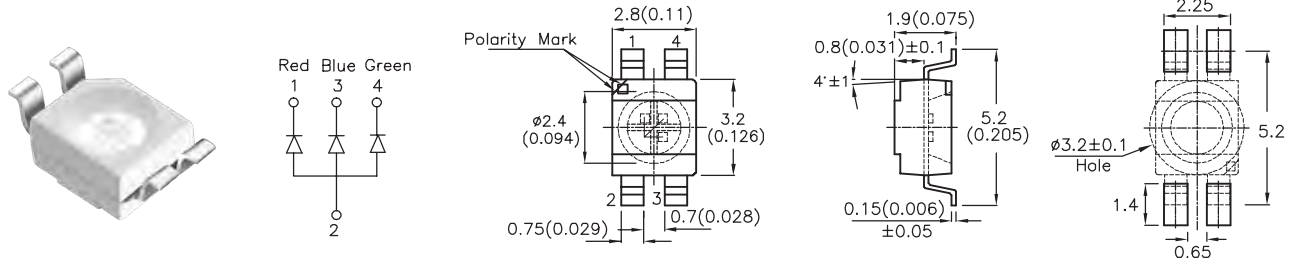
PRODUCT FEATURES

- Full color 3-dome optics in a single RGB package
- Higher intensity and narrow viewing angle
- Prevents light bleeding
- 3.5 mm x 3.5 mm footprint
- Low current: 20 mA operation
- Moisture sensitivity level (MSL): 3

1. Soldering Pattern Dimension Unit : mm, Tolerance : $\pm 0.1mm$.
 2. Luminous intensity value and wavelength are in accordance with CIE127-2007 standards.
 3. We reserve the right to make changes at any time to enhance the design and / or performance of the product.

Part Number	Chip Structure (Emitted Color)	λ_{peak} (nm)	Intensity(mcd) $I_f=20mA$		Viewing Angle 2 θ 1/2	Lens
			Min.	Typ.		

**3.2x2.8x1.9mm
(Reverse Mount, Full Color)**



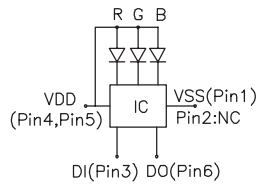
Dimension Unit: mm(inches), Tolerance : ±0.2(0.008")

Recommended Soldering Pattern

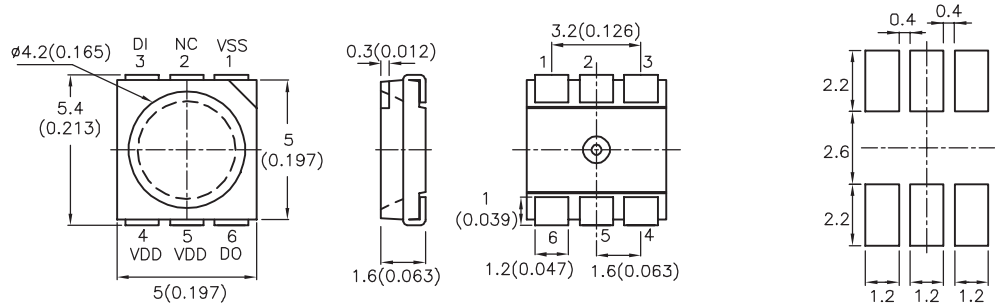
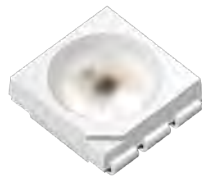
XZMDKCBDDG45S-9	◆ AlGaInP(Red)	645	55	108	120°	Water Clear
	◆ InGaN(Blue)	460	55	98		
	◆ InGaN(Green)	515	400	497		

Part Number	Chip Structure (Emitted Color)	λ_{peak} (nm)	Iv (mcd) @ VDD = 5V, Gray Scale Level = 255		Viewing Angle 2 θ 1/2	Lens
			Min.	Typ.		

**5.0x5.0x1.6mm
(Full Color)**



PIN FUNCTION		
No.	Symbol	Function Description
1	VSS	Ground
2	NC	/
3	DI	Control data signal input
4	VDD	Power supply LED
5	VDD	Power supply LED
6	DO	Control data signal output



Dimension Unit: mm(inches), Tolerance : ±0.2(0.008")

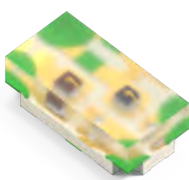
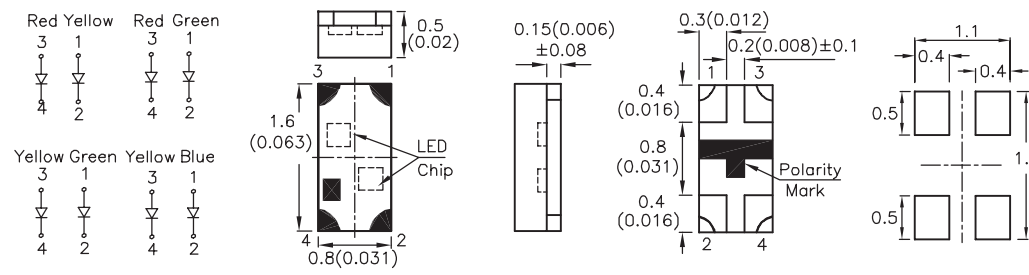
Recommended Soldering Pattern

XZM2CRKDGGKBD107S-IC	◆ AlGaInP(Red)	640	200	357	120°	Water Clear
	◆ InGaN(Green)	515	400	597		
	◆ InGaN(Blue)	460	80	148		

1. Soldering Pattern Dimension Unit : mm, Tolerance : ±0.1mm.
 2. Luminous intensity value and wavelength are in accordance with CIE127-2007 standards.
 3. We reserve the right to make changes at any time to enhance the design and / or performance of the product.

Part Number	Chip Structure (Emitted Color)	λ_{peak} (nm)	Intensity(mcd) $I_f=20mA$		Viewing Angle 2 θ 1/2	Lens
			Min.	Typ.		

1.6x0.8x0.5mm (0603 Bi-Color)

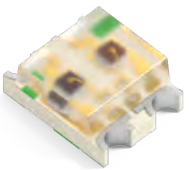
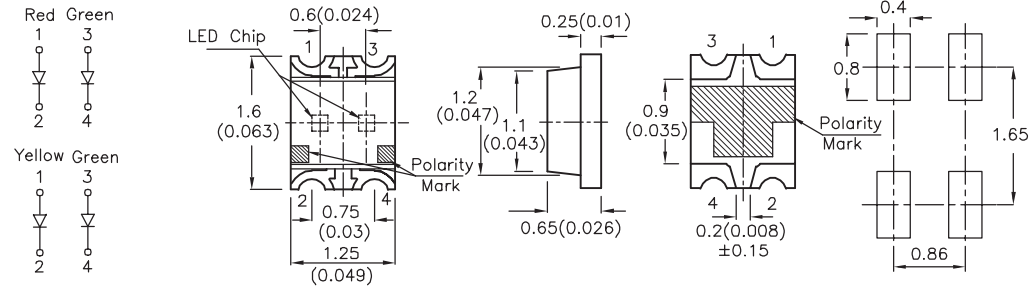
Red Yellow Red Green
3 1 3 1
4 2 4 2

Yellow Green Yellow Blue
3 1 3 1
4 2 4 2

Dimension Unit: mm(inches), Tolerance : $\pm 0.15(0.006")$

Part Number	Chip Structure	λ_{peak} (nm)	Min. Intensity (mcd)	Typ. Intensity (mcd)	Viewing Angle	Lens
XZMYKMDK53W-9	AlGaInP(Yellow)	590	80	148	130°	Water Clear
	AlGaInP(Red)	645	40	89		
XZDGKMDK53W-9	InGaIn(Green)	515	200	347	130°	Water Clear
	AlGaInP(Red)	645	40	89		
XZVGMKY53W-9	AlGaInP(Green)	574	20	49	130°	Water Clear
	AlGaInP(Yellow)	590	80	148		
XZVGM53W-9	AlGaInP(Green)	574	20	49	130°	Water Clear
	AlGaInP(Red)	645	40	89		
	AlGaInP(Yellow)	590	80	148		
XZCBDMKY53W-9	InGaIn(Blue)	460	40	69	130°	Water Clear
	AlGaInP(Yellow)	590	80	148		

1.6x1.25x0.65mm (Bi-Color)

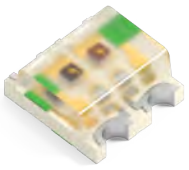
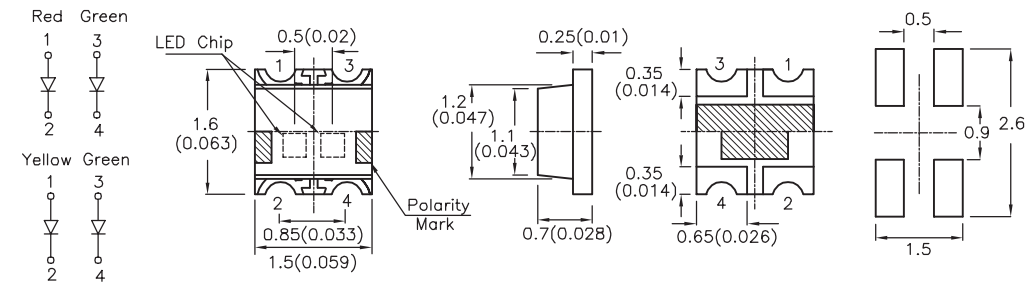
Red Green
1 3
2 4

Yellow Green
1 3
2 4

Dimension Unit: mm(inches), Tolerance : $\pm 0.2(0.008")$

Part Number	Chip Structure	λ_{peak} (nm)	Min. Intensity (mcd)	Typ. Intensity (mcd)	Viewing Angle	Lens
XZMDKVG62W-1	AlGaInP(Red)	645	40	79	150°	Water Clear
	AlGaInP(Green)	574	20	49		
XZMYKVG62W-1	AlGaInP(Yellow)	590	80	118	150°	Water Clear
	AlGaInP(Green)	574	20	49		

1.6x1.5x0.7mm (Bi-Color)

Red Green
1 3
2 4

Yellow Green
1 3
2 4


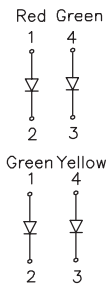
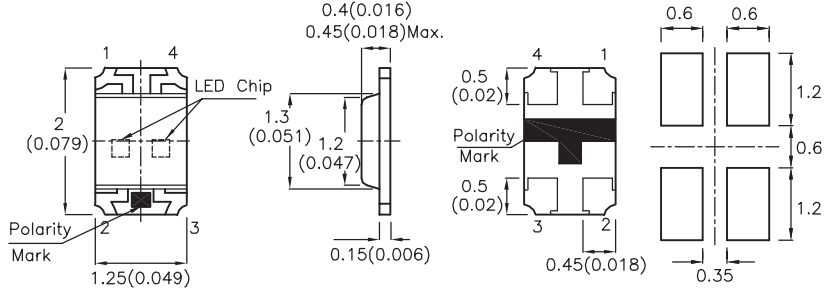
Dimension Unit: mm(inches), Tolerance : $\pm 0.2(0.008")$

Part Number	Chip Structure	λ_{peak} (nm)	Min. Intensity (mcd)	Typ. Intensity (mcd)	Viewing Angle	Lens
XZMDKVG59W-1	AlGaInP(Red)	645	40	79	150°	Water Clear
	AlGaInP(Green)	574	20	49		
XZMYKVG59W-1	AlGaInP(Yellow)	590	80	118	150°	Water Clear
	AlGaInP(Green)	574	20	49		

1. Soldering Pattern Dimension Unit : mm, Tolerance : $\pm 0.1mm$.
 2. Luminous intensity value and wavelength are in accordance with CIE127-2007 standards.
 3. We reserve the right to make changes at any time to enhance the design and / or performance of the product.

Part Number	Chip Structure (Emitted Color)	λ_{peak} (nm)	Intensity(mcd) $I_f=20mA$		Viewing Angle 2 θ 1/2	Lens
			Min.	Typ.		

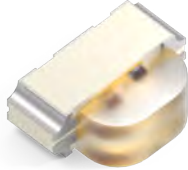
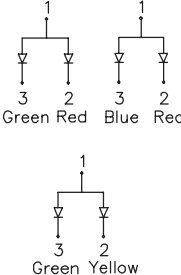
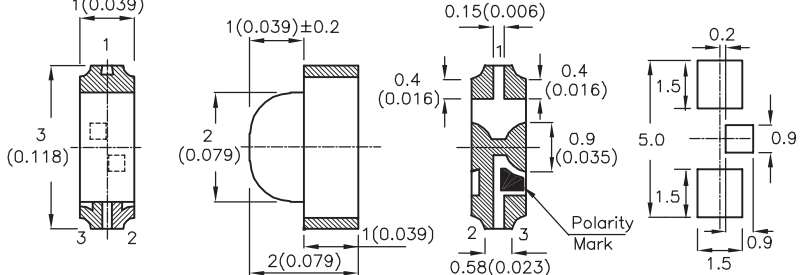
**2.0x1.25x0.45mm
(0805 Bi-Color)**

Dimension Unit: mm(inches), Tolerance : $\pm 0.1(0.004)$

Part Number	Chip Structure (Emitted Color)	λ_{peak} (nm)	Min.	Typ.	Viewing Angle	Lens
XZMDKVG54W-4	◆ AlGaInP(Red)	645	40	79	120°	Water Clear
	◆ AlGaInP(Green)	574	20	49		
XZMDKDGK54W-4	◆ AlGaInP(Red)	645	40	79	120°	Water Clear
	◆ InGaN(Green)	515	200	278		
XZVGMYS4W-4	◆ AlGaInP(Green)	574	20	49	120°	Water Clear
	◆ AlGaInP(Yellow)	590	80	118		

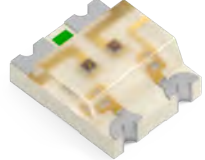
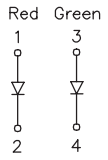
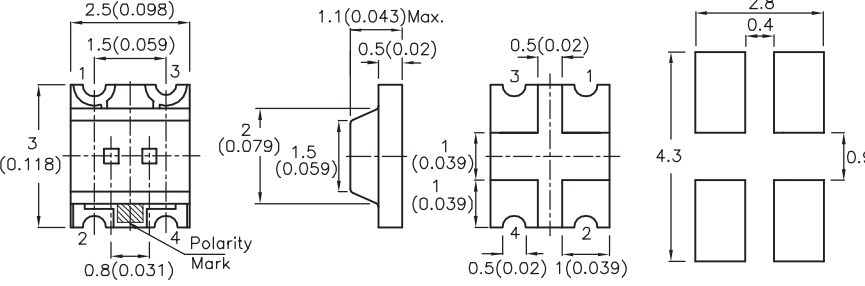
**3.0x2.0x1.0mm
(Right Angle, Bi-Color)**

Dimension Unit: mm(inches), Tolerance : $\pm 0.15(0.006)$

Part Number	Chip Structure (Emitted Color)	λ_{peak} (nm)	Min.	Typ.	Viewing Angle	Lens
XZMDKVG56W	◆ AlGaInP(Red)	645	40	79	140°	Water Clear
	◆ AlGaInP(Green)	574	40	69		
XZMDKCBDS6W	◆ AlGaInP(Red)	645	40	79	140°	Water Clear
	◆ InGaN(Blue)	460	40	89		
XZMYKVG56W	◆ AlGaInP(Yellow)	590	80	118	140°	Water Clear
	◆ AlGaInP(Green)	574	40	69		

**3.0x2.5x1.1mm
(Bi-Color)**

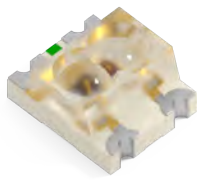
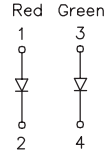
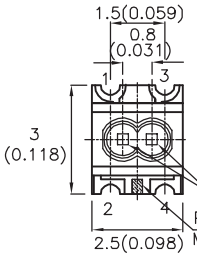
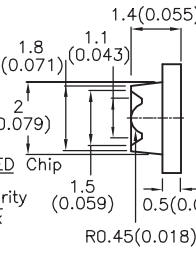
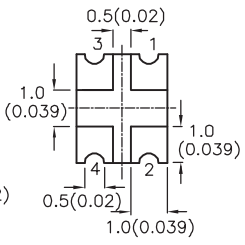
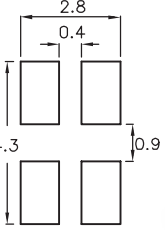
Dimension Unit: mm(inches), Tolerance : $\pm 0.2(0.008)$

Part Number	Chip Structure (Emitted Color)	λ_{peak} (nm)	Min.	Typ.	Viewing Angle	Lens
XZMDKVG57W	◆ AlGaInP(Red)	645	40	69	160°	Water Clear
	◆ AlGaInP(Green)	574	20	59		



1. Soldering Pattern Dimension Unit : mm, Tolerance : $\pm 0.1mm$.
 2. Luminous intensity value and wavelength are in accordance with CIE127-2007 standards.
 3. We reserve the right to make changes at any time to enhance the design and / or performance of the product.

Part Number	Chip Structure (Emitted Color)	λ_{peak} (nm)	Intensity(mcd) $I_f=20mA$		Viewing Angle 2 θ 1/2	Lens
			Min.	Typ.		

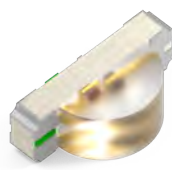
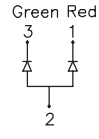
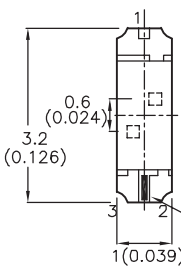
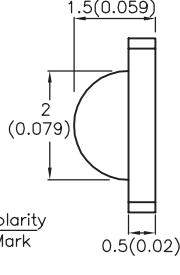
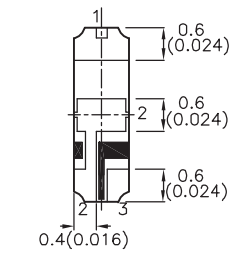
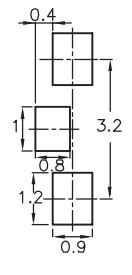
3.0x2.5x1.4mm (Bi-Color)

Dimension Unit: mm(inches), Tolerance : $\pm 0.2(0.008)^*$ Recommended Soldering Pattern

XZMDKVG57W-1	 AlGaInP(Red)	645	120	297	50°	Water Clear
	 AlGaInP(Green)	574	80	148		

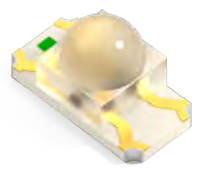
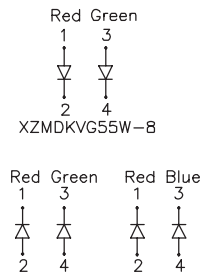
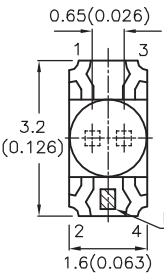
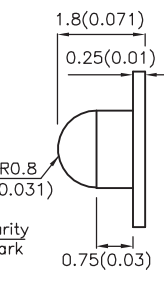
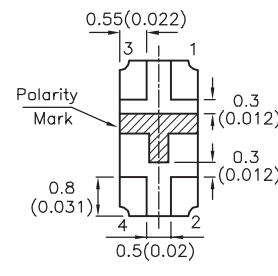
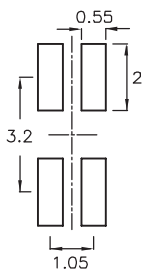
3.2x1.5x1.0mm (Right Angle, Bi-Color)







Dimension Unit: mm(inches), Tolerance : $\pm 0.1(0.004)^*$ Recommended Soldering Pattern

XZMDKVG88W	 AlGaInP(Red)	645	40	79	140°	Water Clear
	 AlGaInP(Green)	574	40	69		

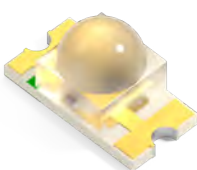
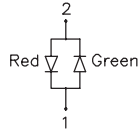
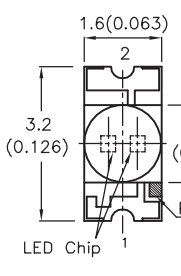
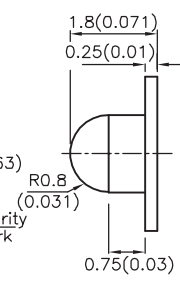
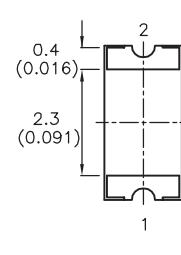
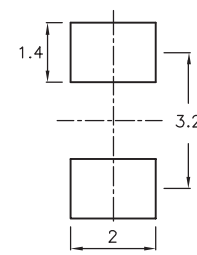
3.2x1.6x1.8mm (1206 Dome Lens Bi-Color)



Dimension Unit: mm(inches), Tolerance : $\pm 0.2(0.008)^*$ Recommended Soldering Pattern

XZMDKVG55W-8	 AlGaInP(Red)	645	300	597	30°	Water Clear
	 AlGaInP(Green)	574	120	248		
XZM2CRKM2DG55W-8	 AlGaInP(Red)	640	700	1295	30°	Water Clear
	 InGaN(Green)	520	700	1295		
XZM2CRKFBB55W-8	 AlGaInP(Red)	640	700	1295	30°	Water Clear
	 InGaN(Blue)	465	120	278		

3.2x1.6x1.8mm (1206 Dome Lens Bi-Color)


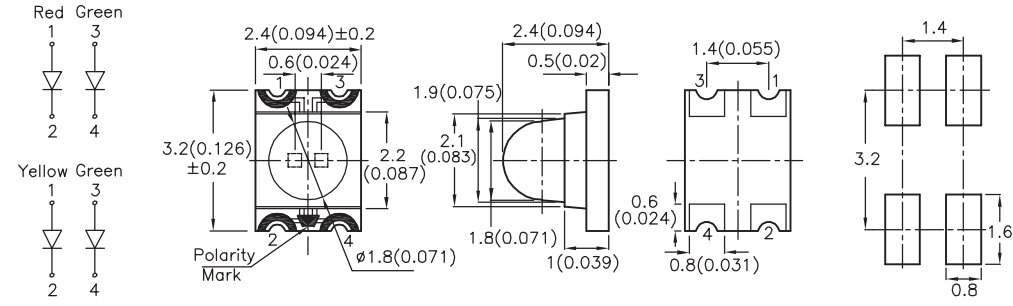
Dimension Unit: mm(inches), Tolerance : $\pm 0.1(0.004)^*$ Recommended Soldering Pattern

XZMDKVG55W-7	 AlGaInP(Red)	645	300	597	30°	Water Clear
	 AlGaInP(Green)	574	120	248		

1. Soldering Pattern Dimension Unit : mm, Tolerance : $\pm 0.1mm$.
 2. Luminous intensity value and wavelength are in accordance with CIE127-2007 standards.
 3. We reserve the right to make changes at any time to enhance the design and / or performance of the product.

Part Number	Chip Structure (Emitted Color)	λ_{peak} (nm)	Intensity(mcd) $I_f=20mA$		Viewing Angle 2 θ 1/2	Lens
			Min.	Typ.		

3.2x2.4x2.4mm (Dome Lens Bi-Color)


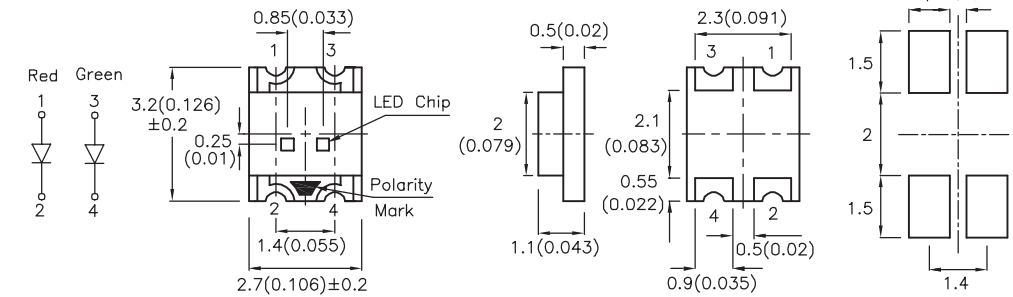
Red Green
1 3
2 4

Yellow Green
1 3
2 4

Dimension Unit: mm(inches), Tolerance : $\pm 0.1(0.004)$

Part Number	Chip Structure	λ_{peak} (nm)	Min. Intensity	Typ. Intensity	Viewing Angle	Recommended Soldering Pattern
						Water Clear
XZMDKVG78W	◆ AlGaInP(Red)	645	120	397	20°	Water Clear
	◆ AlGaInP(Green)	574	80	278		
XZMYKVG78W	◆ AlGaInP(Yellow)	590	400	795	20°	Water Clear
	◆ AlGaInP(Green)	574	80	278		

3.2x2.7x1.1mm (Bi-Color)

Red Green
1 3
2 4


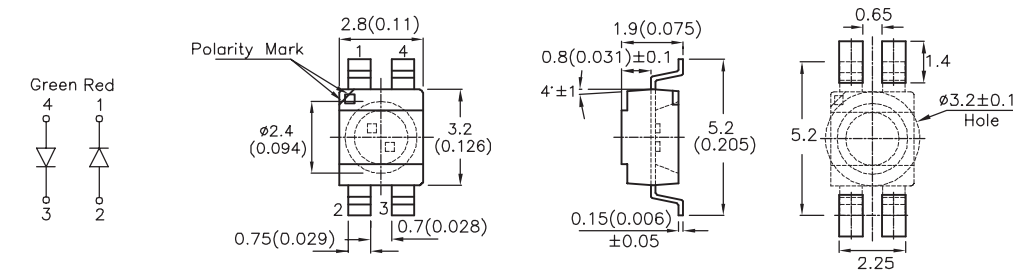
LED Chip

Polarity Mark

Dimension Unit: mm(inches), Tolerance : $\pm 0.1(0.004)$

Part Number	Chip Structure	λ_{peak} (nm)	Min. Intensity	Typ. Intensity	Viewing Angle	Recommended Soldering Pattern
						Water Clear
XZMDKVG98W	◆ AlGaInP(Red)	645	40	79	140°	Water Clear
	◆ AlGaInP(Green)	574	20	54		

3.2x2.8x1.9mm (PLCC4 Reverse Mount Bi-Color)

Green Red
4 1
3 2

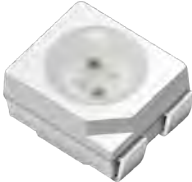
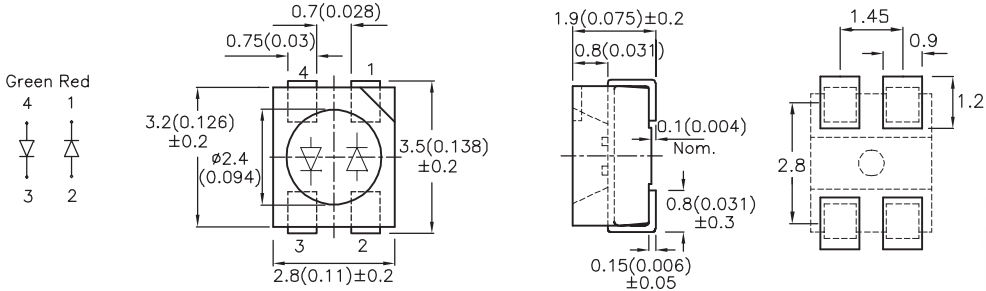
Polarity Mark

Hole

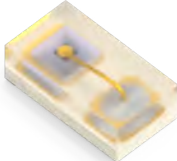
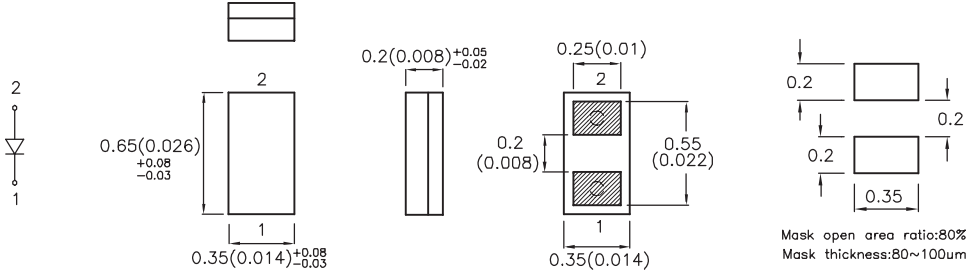
Dimension Unit: mm(inches), Tolerance: $\pm 0.2(0.008)$

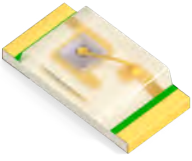
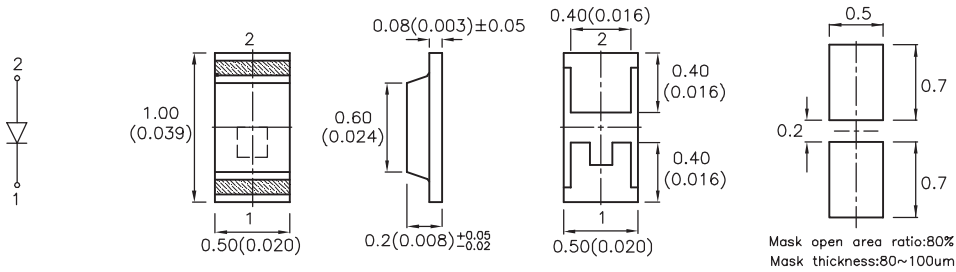
Part Number	Chip Structure	λ_{peak} (nm)	Min. Intensity	Typ. Intensity	Viewing Angle	Recommended Soldering Pattern
						Water Clear
XZMDKVG45WT-9	◆ AlGaInP(Red)	645	55	98	120°	Water Clear
	◆ AlGaInP(Green)	574	40	79		

1. Soldering Pattern Dimension Unit : mm, Tolerance : $\pm 0.1mm$.
 2. Luminous intensity value and wavelength are in accordance with CIE127-2007 standards.
 3. We reserve the right to make changes at any time to enhance the design and / or performance of the product.

Part Number	Chip Structure (Emitted Color)	λ_{peak} (nm)	Intensity(mcd) $I_f=20mA$		Viewing Angle 2 θ 1/2	Lens
			Min.	Typ.		
3.5x2.8x1.9mm (PLCC4 Bi-Color)   <p>Green Red 4 1 3 2</p> <p>Dimension Unit: mm(inches), Tolerance : $\pm 0.25(0.01")$</p>						
XZMDKVG45WT	<ul style="list-style-type: none"> ◆ AlGaInP(Red) ◆ AlGaInP(Green) 	645 574	55 40	98 79	120°	Water Clear

TOP EMITTING

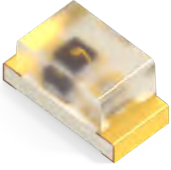
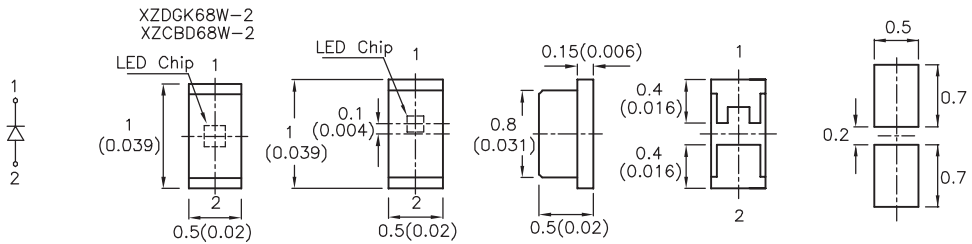
Part Number	Chip Structure (Emitted Color)	λ_{peak} (nm)	Intensity(mcd) $I_f=20mA, 10mA, 5mA^{**}$		Viewing Angle 2 θ 1/2	Lens
			Min.	Typ.		
0.65x0.35x0.2mm (0201 Super Thin)   <p>2 1</p> <p>Mask open area ratio:80% Mask thickness:80~100um</p> <p>Dimension Unit: mm(inches), Tolerance : $\pm 0.1(0.004")$</p>						
XZMDR155W	◆ AlGaInP(Red)	639	10*	34*	140°	Water Clear
XZMER155W	◆ AlGaInP(Red)	632	15*	39*	140°	Water Clear
XZMYR155W	◆ AlGaInP(Yellow)	591	10*	29*	140°	Water Clear
XZVGR155W	◆ AlGaInP(Green)	572	6*	14*	140°	Water Clear
XZDG155W5MAV	◆ InGaN(Green)	515	180**	278**	140°	Water Clear
XZFBA155W5MAV	◆ InGaN(Blue)	463	30**	59**	140°	Water Clear

Part Number	Chip Structure (Emitted Color)	λ_{peak} (nm)	Intensity(mcd) $I_f=20mA, 10mA, 5mA^{**}$		Viewing Angle 2 θ 1/2	Lens
			Min.	Typ.		
1.0x0.5x0.2mm (0402 Super Thin)   <p>2 1</p> <p>Mask open area ratio:80% Mask thickness:80~100um</p> <p>Dimension Unit: mm(inches), Tolerance : $\pm 0.1(0.004")$</p>						
XZMER68W-3	◆ AlGaInP(Red)	632	40	79	120°	Water Clear
XZMYR68W-3	◆ AlGaInP(Yellow)	591	55	98	120°	Water Clear
XZVGR68W-3	◆ AlGaInP(Green)	572	12	34	120°	Water Clear
XZDG68W5MAV-3	◆ InGaN(Green)	515	120**	278**	140°	Water Clear
XZFBA68W5MAV-3	◆ InGaN(Blue)	463	20**	59**	140°	Water Clear

1. Soldering Pattern Dimension Unit : mm, Tolerance : $\pm 0.1mm$.
 2. Luminous intensity value and wavelength are in accordance with CIE127-2007 standards.
 3. We reserve the right to make changes at any time to enhance the design and / or performance of the product.

Part Number	Chip Structure (Emitted Color)	λ_{peak} (nm)	Intensity(mcd) $I_f=20mA$		Viewing Angle 2 θ 1/2	Lens
			Min.	Typ.		


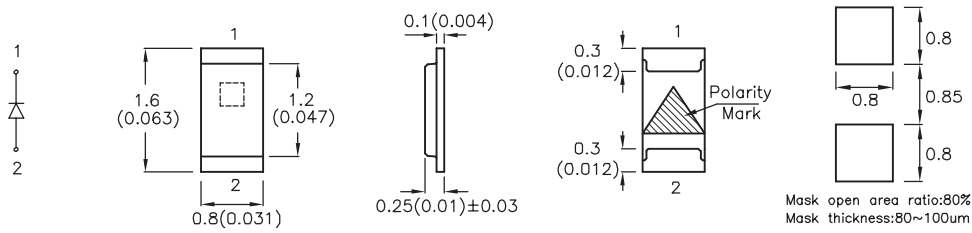
1.0x0.5x0.5mm (0402)

Dimension Unit: mm(inches), Tolerance : $\pm 0.1(0.004)$

Recommended Soldering Pattern						
XZMDK68W-2	◆ AlGaInP(Red)	645	40	69	120°	Water Clear
XZMOK68W-2	◆ AlGaInP(Orange)	610	80	148	120°	Water Clear
XZMYK68W-2	◆ AlGaInP(Yellow)	590	80	148	120°	Water Clear
XZVG68W-2	◆ AlGaInP(Green)	574	20	49	120°	Water Clear
XZDGK68W-2	◆ InGaN(Green)	515	400	547	140°	Water Clear
XZCBD68W-2	◆ InGaN(Blue)	460	40	59	140°	Water Clear

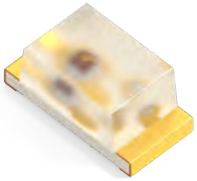
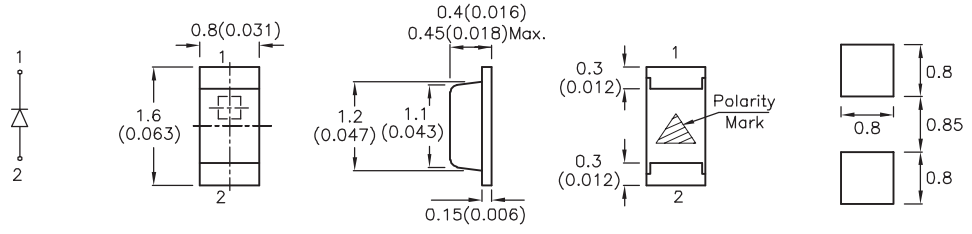
1.6x0.8x0.25mm (0603 Super Thin)

Dimension Unit: mm(inches), Tolerance : $\pm 0.1(0.004)$

Recommended Soldering Pattern						
XZMDKT53W-6	◆ AlGaInP(Red)	645	55	108	120°	Water Clear
XZMYKT53W-6	◆ AlGaInP(Yellow)	590	55	118	120°	Water Clear
XZVGT53W-6	◆ AlGaInP(Green)	574	20	49	120°	Water Clear
XZDGK53W-6	◆ InGaN(Green)	515	300	397	130°	Water Clear
XZCBD53W-6	◆ InGaN(Blue)	460	40	98	130°	Water Clear

1.6x0.8x0.45mm (0603)

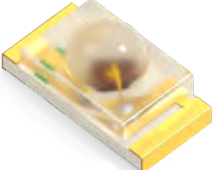

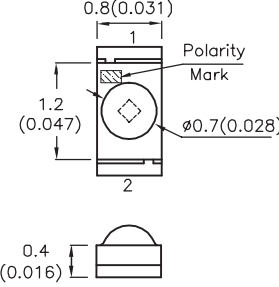
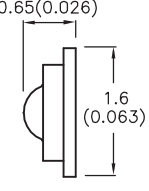
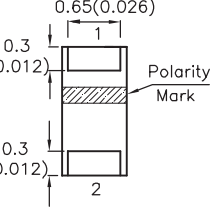
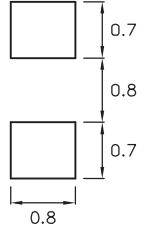
Dimension Unit: mm(inches), Tolerance : $\pm 0.1(0.004)$

Recommended Soldering Pattern						
XZMDK53W-3	◆ AlGaInP(Red)	645	40	79	120°	Water Clear
XZMOK53W-3	◆ AlGaInP(Orange)	610	80	178	120°	Water Clear
XZMYK53W-3	◆ AlGaInP(Yellow)	590	80	148	120°	Water Clear
XZVG53W-3	◆ AlGaInP(Green)	574	20	49	120°	Water Clear

1. Soldering Pattern Dimension Unit : mm, Tolerance : $\pm 0.1mm$.
 2. Luminous intensity value and wavelength are in accordance with CIE127-2007 standards.
 3. We reserve the right to make changes at any time to enhance the design and / or performance of the product.

Part Number	Chip Structure (Emitted Color)	λ_{peak} (nm)	Intensity(mcd) $I_f=20mA$		Viewing Angle 2 θ 1/2	Lens
			Min.	Typ.		

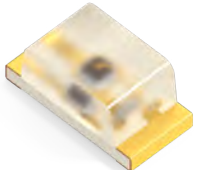

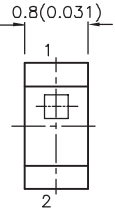
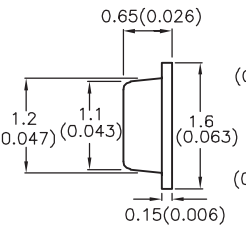
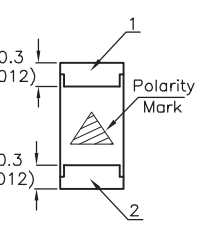
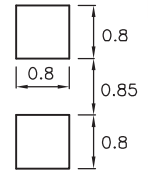
1.6x0.8x0.65mm (0603)

Dimension Unit: mm(inches), Tolerance : $\pm 0.15(0.006)$ "

Recommended Soldering Pattern						
XZM2CRK53WA-8ST	AlGaInP(Red)	640	300	597	100°	Water Clear
XZDGK53W-8ST	InGaN(Green)	515	400	935	100°	Water Clear

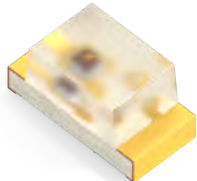

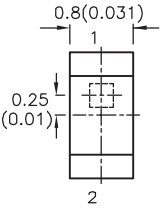
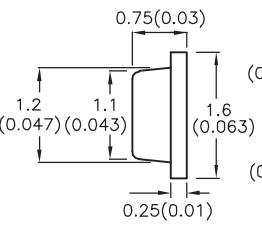
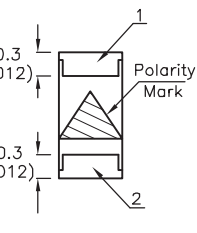
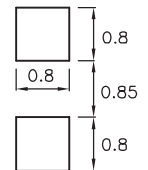
1.6x0.8x0.65mm (0603)

Dimension Unit: mm(inches), Tolerance : $\pm 0.1(0.004)$ "

Recommended Soldering Pattern						
XZMDK53W-2	AlGaInP(Red)	645	40	79	120°	Water Clear
XZMYK53W-2	AlGaInP(Yellow)	590	80	148	120°	Water Clear
XZVG53W-2	AlGaInP(Green)	574	20	49	120°	Water Clear
XZDG53W-2	InGaN(Green)	515	300	597	130°	Water Clear
XZCBD53W-2	InGaN(Blue)	460	40	98	130°	Water Clear

1.6x0.8x0.75mm (0603)

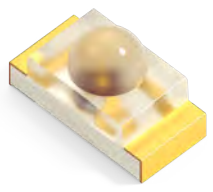
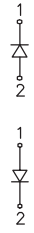
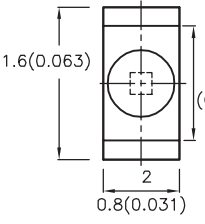
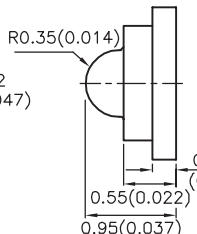
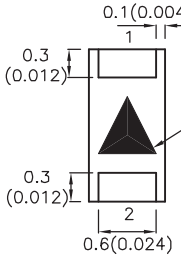
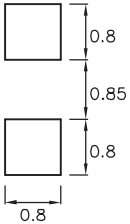
Dimension Unit: mm(inches), Tolerance : $\pm 0.1(0.004)$ "

Recommended Soldering Pattern						
XZMDK53W-1	AlGaInP(Red)	645	40	79	120°	Water Clear
XZM2CRK53W-1	AlGaInP(Red)	640	200	347	120°	Water Clear
XZMOK53W-1	AlGaInP(Orange)	610	80	178	120°	Water Clear
XZMYK53W-1	AlGaInP(Yellow)	590	80	148	120°	Water Clear
XZM2CYK53W-1	AlGaInP(Yellow)	590	200	317	120°	Water Clear
XZVG53W-1	AlGaInP(Green)	574	20	49	120°	Water Clear
XZM2DG53W-1	InGaN(Green)	520	500	795	130°	Water Clear
XZDGK53W-1	InGaN(Green)	515	300	547	130°	Water Clear
XZFB53W-1	InGaN(Blue)	465	120	178	130°	Water Clear
XZCBD53W-1	InGaN(Blue)	460	40	98	130°	Water Clear

1. Soldering Pattern Dimension Unit : mm, Tolerance : $\pm 0.1mm$.
 2. Luminous intensity value and wavelength are in accordance with CIE127-2007 standards.
 3. We reserve the right to make changes at any time to enhance the design and / or performance of the product.

Part Number	Chip Structure (Emitted Color)	λ_{peak} (nm)	Intensity(mcd) $I_f=20mA$		Viewing Angle 2 θ 1/2	Lens
			Min.	Typ.		

1.6x0.8x0.95mm (0603 Dome Lens)

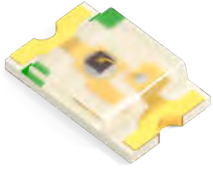

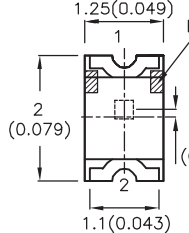
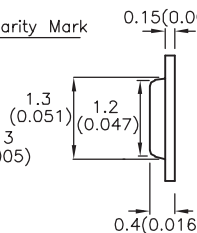
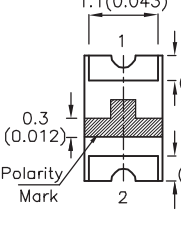
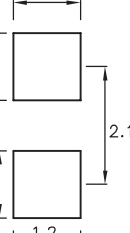







XZM2CRK53W-8
XZM2CYK53W-8

Dimension Unit: mm(inches), Tolerance : ±0.15(0.006")

Recommended Soldering Pattern						
XZMDK53W-8	◆ AlGaInP(Red)	645	80	248	60°	Water Clear
XZM2CRK53W-8	◆ AlGaInP(Red)	640	500	895	60°	Water Clear
XZMOK53W-8	◆ AlGaInP(Orange)	610	200	497	60°	Water Clear
XZMYK53W-8	◆ AlGaInP(Yellow)	590	300	597	60°	Water Clear
XZM2CYK53W-8	◆ AlGaInP(Yellow)	590	500	845	60°	Water Clear
XZVG53W-8	◆ AlGaInP(Green)	574	80	188	60°	Water Clear
XZM2DG53W-8	◆ InGaN(Green)	520	1000	1495	60°	Water Clear
XZDGK53W-8	◆ InGaN(Green)	515	700	1195	60°	Water Clear
XZFBBS53W-8	◆ InGaN(Blue)	465	200	347	40°	Water Clear
XZCBD53W-8	◆ InGaN(Blue)	460	80	198	40°	Water Clear

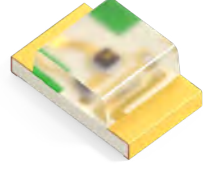

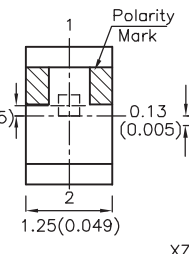
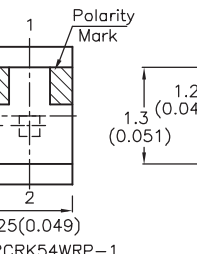
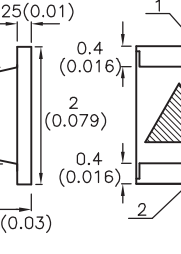
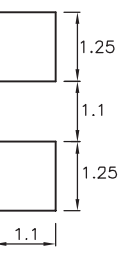
2.0x1.25x0.4mm (0805)

Dimension Unit: mm(inches), Tolerance : ±0.1(0.004")

Recommended Soldering Pattern						
XZMDK54W-4	◆ AlGaInP(Red)	645	40	79	140°	Water Clear
XZMOK54W-4	◆ AlGaInP(Orange)	610	80	178	140°	Water Clear
XZMYK54W-4	◆ AlGaInP(Yellow)	590	80	148	140°	Water Clear
XZVG54W-4	◆ AlGaInP(Green)	574	20	49	140°	Water Clear
XZCBD54W-4	◆ InGaN(Blue)	460	40	98	140°	Water Clear

2.0x1.25x0.75mm (0805)

XZM2CYK54W-1
XZM2CRK54WRP-1
XZM2CYK54WRP-1



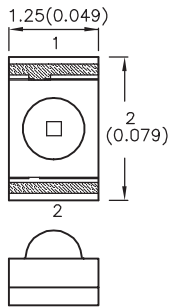
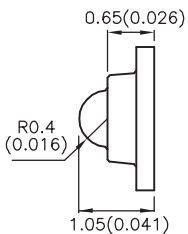
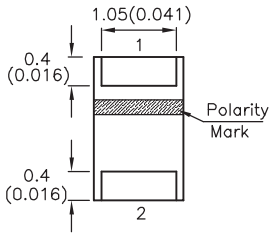
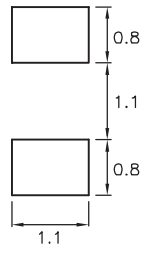
Dimension Unit: mm(inches), Tolerance : ±0.1(0.004")

Recommended Soldering Pattern						
XZMDK54W-1	◆ AlGaInP(Red)	645	40	79	140°	Water Clear
XZM2CRK54WRP-1	◆ AlGaInP(Red)	640	200	347	140°	Water Clear
XZMOK54W-1	◆ AlGaInP(Orange)	610	80	178	140°	Water Clear
XZMYK54W-1	◆ AlGaInP(Yellow)	590	80	148	140°	Water Clear
XZM2CYK54W-1	◆ AlGaInP(Yellow)	590	200	317	140°	Water Clear
XZM2CYK54WRP-1	◆ AlGaInP(Yellow)	590	200	317	140°	Water Clear
XZVG54W-1	◆ AlGaInP(Green)	574	20	49	140°	Water Clear
XZDGK54W-1	◆ InGaN(Green)	515	300	547	140°	Water Clear
XZFBBS4W-1	◆ InGaN(Blue)	465	120	178	140°	Water Clear
XZCBD54W-1	◆ InGaN(Blue)	460	40	98	140°	Water Clear

1. Soldering Pattern Dimension Unit : mm, Tolerance : ±0.1mm.
 2. Luminous intensity value and wavelength are in accordance with CIE127-2007 standards.
 3. We reserve the right to make changes at any time to enhance the design and / or performance of the product.

Part Number	Chip Structure (Emitted Color)	λ_{peak} (nm)	Intensity(mcd) $I_f=20mA$		Viewing Angle 2 θ 1/2	Lens
			Min.	Typ.		

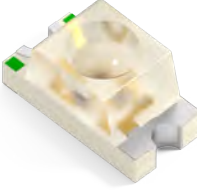

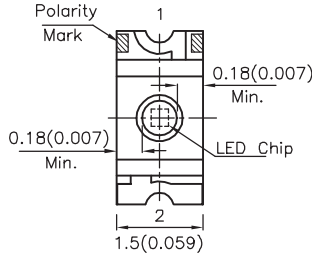
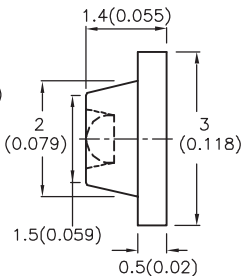
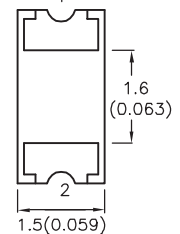
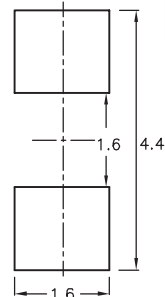
2.0x1.25x1.05mm (0805)

Dimension Unit: mm(inches), Tolerance : $\pm 0.15(0.006")$

Recommended Soldering Pattern						
XZMDK54W-8	◆ AlGaInP(Red)	645	300	547	40°	Water Clear
XZM2CRK54WA-8	◆ AlGaInP(Red)	640	1000	1990	40°	Water Clear
XZDGK54W-8	◆ InGaN(Green)	515	1600	2490	30°	Water Clear



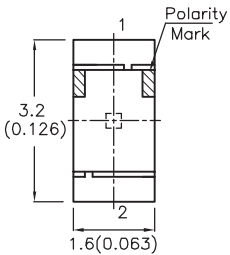
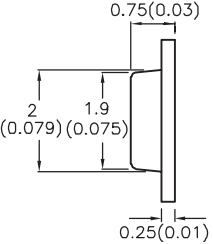
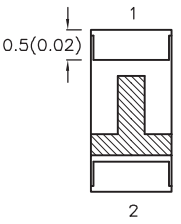
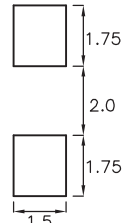
3.0x1.5x1.4mm (Inner Dome Lens)

Dimension Unit: mm(inches), Tolerance: $\pm 0.2(0.008")$

Recommended Soldering Pattern						
XZMDK60W	◆ AlGaInP(Red)	645	120	178	70°	Water Clear
XZMYK60W	◆ AlGaInP(Yellow)	590	200	347	70°	Water Clear
XZVG60W	◆ AlGaInP(Green)	574	55	118	70°	Water Clear

3.2x1.6x0.75mm (1206)

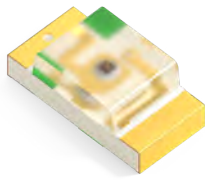

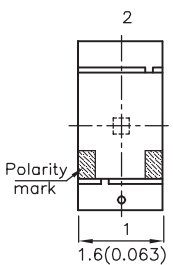
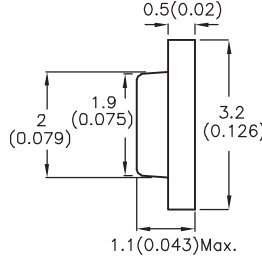
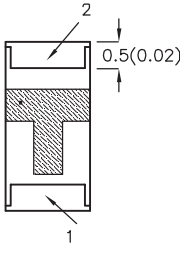
Dimension Unit: mm(inches), Tolerance : $\pm 0.2(0.008")$

Recommended Soldering Pattern						
XZMDK55W-1	◆ AlGaInP(Red)	645	40	79	140°	Water Clear
XZMOK55W-1	◆ AlGaInP(Orange)	610	80	178	140°	Water Clear
XZMYK55W-1	◆ AlGaInP(Yellow)	590	80	148	140°	Water Clear
XZVG55W-1	◆ AlGaInP(Green)	574	20	49	140°	Water Clear
XZCBD55W-1	◆ InGaN(Blue)	460	40	98	150°	Water Clear

1. Soldering Pattern Dimension Unit : mm, Tolerance : $\pm 0.1mm$.
 2. Luminous intensity value and wavelength are in accordance with CIE127-2007 standards.
 3. We reserve the right to make changes at any time to enhance the design and / or performance of the product.

Part Number	Chip Structure (Emitted Color)	λ_{peak} (nm)	Intensity(mcd) $I_f=20mA$		Viewing Angle 2 θ /2	Lens
			Min.	Typ.		

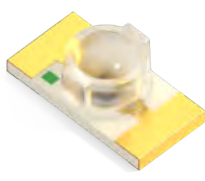

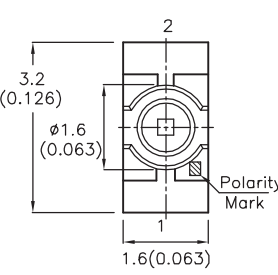
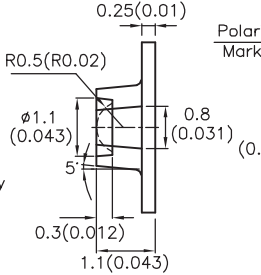
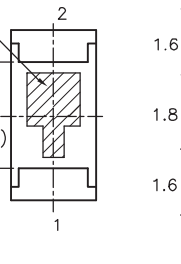
3.2x1.6x1.1mm (1206)

Dimension Unit: mm(inches), Tolerance : $\pm 0.2(0.008)$

XZMDK55W	◆ AlGaInP(Red)	645	40	79	140°	Water Clear
XZMYK55W	◆ AlGaInP(Yellow)	590	80	148	140°	Water Clear
XZVG55W	◆ AlGaInP(Green)	574	20	49	140°	Water Clear
XZDG55W	◆ InGaN(Green)	515	300	597	150°	Water Clear
XZCBD55W	◆ InGaN(Blue)	460	40	98	150°	Water Clear

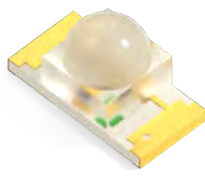

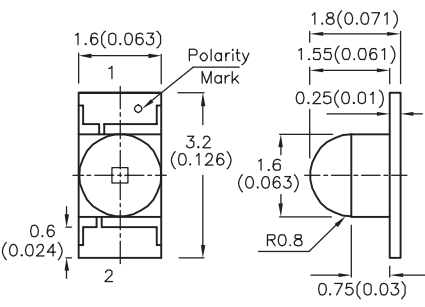
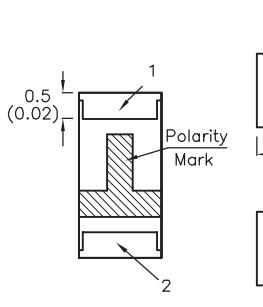
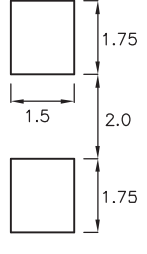
3.2x1.6x1.1mm (1206 Inner Dome Lens)

Dimension Unit: mm(inches), Tolerance : $\pm 0.1(0.004)$

XZMDK55W-A2	◆ AlGaInP(Red)	645	120	228	80°	Water Clear
XZMOK55W-A2	◆ AlGaInP(Orange)	610	200	347	80°	Water Clear
XZVG55W-A2	◆ AlGaInP(Green)	574	55	98	80°	Water Clear

3.2x1.6x1.8mm (1206 Dome Lens)

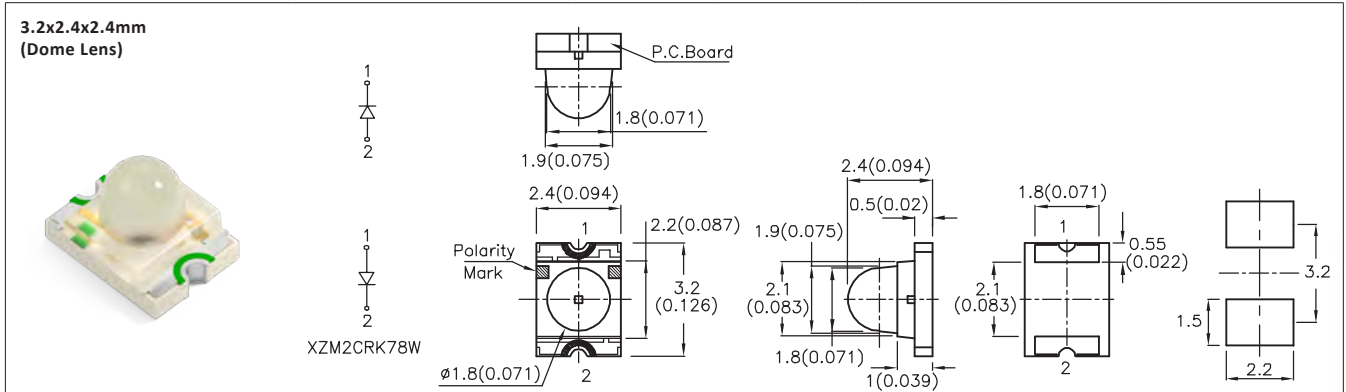
Dimension Unit: mm(inches), Tolerance : $\pm 0.2(0.008)$

XZM2MR55W-3	◆ AlGaInP(Red)	660	700	1095	40°	Water Clear
XZMDK55W-3	◆ AlGaInP(Red)	645	300	795	40°	Water Clear
XZM2CRK55W-3	◆ AlGaInP(Red)	640	1600	2490	40°	Water Clear
XZMOK55W-3	◆ AlGaInP(Orange)	610	500	995	40°	Water Clear
XZMYK55W-3	◆ AlGaInP(Yellow)	590	700	795	40°	Water Clear
XZVG55W-3	◆ AlGaInP(Green)	574	120	297	40°	Water Clear
XZM2DG55W-3	◆ InGaN(Green)	520	3600	5990	30°	Water Clear
XZDGK55W-3	◆ InGaN(Green)	515	2700	3990	30°	Water Clear
XZFB55W-3	◆ InGaN(Blue)	465	700	1195	30°	Water Clear
XZCBD55W-3	◆ InGaN(Blue)	460	300	695	30°	Water Clear

1. Soldering Pattern Dimension Unit : mm, Tolerance : $\pm 0.1mm$.
 2. Luminous intensity value and wavelength are in accordance with CIE127-2007 standards.
 3. We reserve the right to make changes at any time to enhance the design and / or performance of the product.

Part Number	Chip Structure (Emitted Color)	λ_{peak} (nm)	Intensity(mcd) $I_v=20mA, 10mA^*$		Viewing Angle 2 θ 1/2	Lens
			Min.	Typ.		

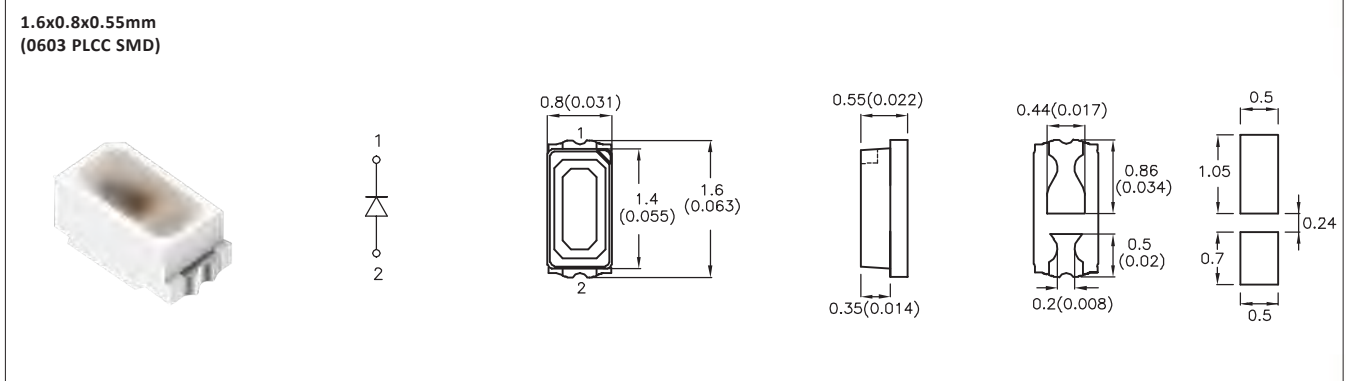
3.2x2.4x2.4mm (Dome Lens)



Dimension Unit: mm(inches), Tolerance : $\pm 0.1(0.004)^*$

Recommended Soldering Pattern						
XZMDK78W	◆ AlGaInP(Red)	645	700	1495	20°	Water Clear
XZM2CRK78W	◆ AlGaInP(Red)	640	3100	4990	20°	Water Clear
XZMOK78W	◆ AlGaInP(Orange)	610	1000	1590	20°	Water Clear
XZMYK78W	◆ AlGaInP(Yellow)	590	1000	1295	20°	Water Clear
XZVG78W	◆ AlGaInP(Green)	574	500	895	20°	Water Clear
XZDGK78W	◆ InGaN(Green)	515	3600	6790	20°	Water Clear
XZFB78W	◆ InGaN(Blue)	465	1600	1990	20°	Water Clear
XZCBD78W	◆ InGaN(Blue)	460	500	895	20°	Water Clear

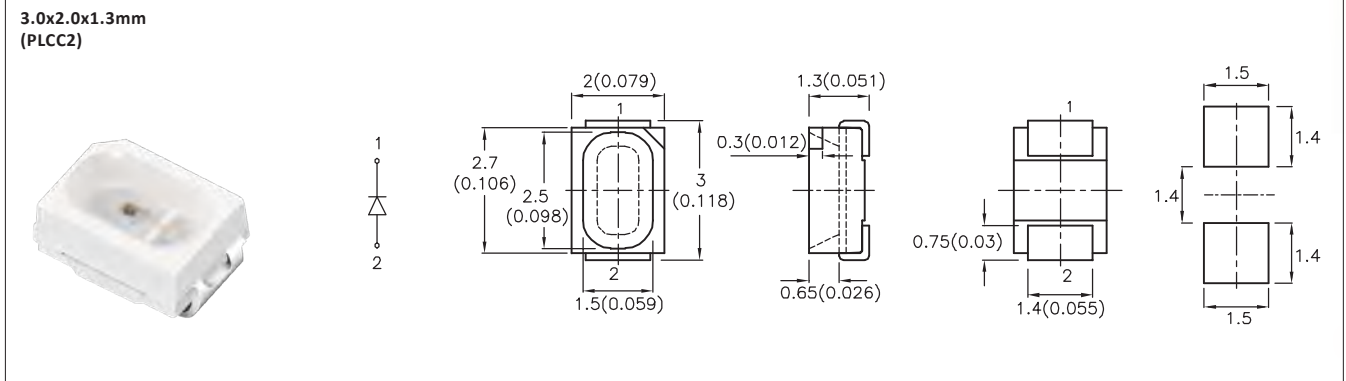
1.6x0.8x0.55mm (0603 PLCC SMD)



Dimension Unit: mm(inches), Tolerance : $\pm 0.15(0.006)^*$

Recommended Soldering Pattern						
XZMDK53S-4	◆ AlGaInP(Red)	645	40	158	120°	Water Clear
XZMYK53S-4	◆ AlGaInP(Yellow)	590	55	238	120°	Water Clear
XZVG53S-4	◆ AlGaInP(Green)	574	40	79	120°	Water Clear
XZFB53S10MAV-4	◆ InGaN(Blue)	463	50*	158*	120°	Water Clear

3.0x2.0x1.3mm (PLCC2)





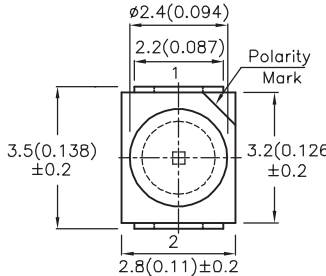
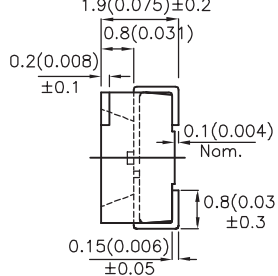
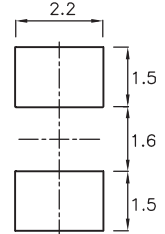
Dimension Unit: mm(inches), Tolerance : $\pm 0.2(0.008)^*$

Recommended Soldering Pattern						
XZMDK105S	◆ AlGaInP(Red)	645	40	89	120°	Water Clear
XZMYK105S	◆ AlGaInP(Yellow)	590	120	198	120°	Water Clear
XZVG105S	◆ AlGaInP(Green)	574	40	79	120°	Water Clear
XZCBD105S	◆ InGaN(Blue)	460	80	118	120°	Water Clear

1. Soldering Pattern Dimension Unit : mm, Tolerance : $\pm 0.1mm$.
 2. Luminous intensity value and wavelength are in accordance with CIE127-2007 standards.
 3. We reserve the right to make changes at any time to enhance the design and / or performance of the product.

Part Number	Chip Structure (Emitted Color)	λ_{peak} (nm)	Intensity(mcd) $I_f=20mA$		Viewing Angle 2 θ 1/2	Lens
			Min.	Typ.		

3.5x2.8x1.9mm (PLCC2)

Dimension Unit: mm(inches), Tolerance : ±0.25(0.01")

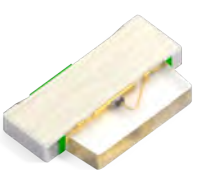

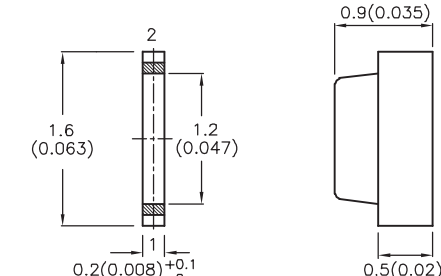
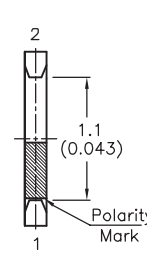
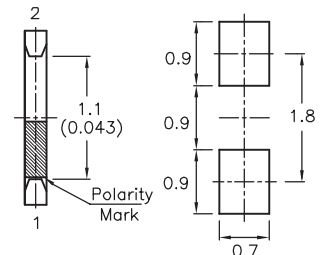
Recommended Soldering Pattern

XZMDK45WT	◆ AlGaInP(Red)	645	55	98	120°	Water Clear
XZMOK45WT	◆ AlGaInP(Orange)	610	120	228	120°	Water Clear
XZMYK45WT	◆ AlGaInP(Yellow)	590	120	248	120°	Water Clear
XZVG45WT	◆ AlGaInP(Green)	574	40	98	120°	Water Clear
XZDGK45WT	◆ InGaN(Green)	515	500	995	120°	Water Clear
XZFB45S	◆ InGaN(Blue)	465	300	447	120°	Water Clear
XZCBD45S	◆ InGaN(Blue)	460	80	148	120°	Water Clear

SIDE EMITTING

Part Number	Chip Structure (Emitted Color)	λ_{peak} (nm)	Intensity(mcd) $I_f=20mA$		Viewing Angle 2 θ 1/2	Lens
			Min.	Typ.		

1.6x0.9x0.2mm (Super Thin Right Angle)



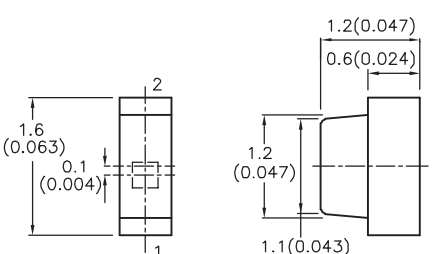
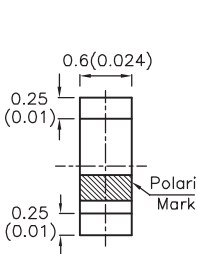
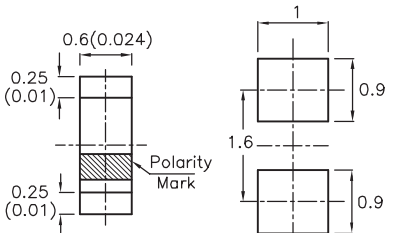






Dimension Unit: mm(inches), Tolerance : ±0.1(0.004")

Recommended Soldering Pattern

XZVG151W	◆ AlGaInP(Green)	573	12	29	150°	Water Clear
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1.6x1.2x0.6mm (Right Angle)

Dimension Unit: mm(inches), Tolerance : ±0.1(0.004")

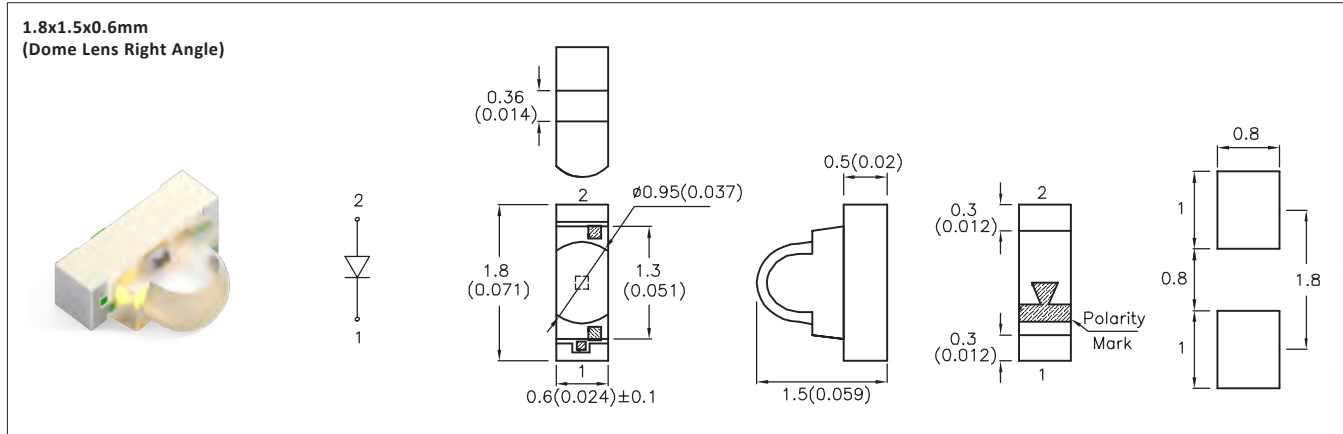
Recommended Soldering Pattern

XZMDK87W	◆ AlGaInP(Red)	645	40	79	110°	Water Clear
XZMOK87W	◆ AlGaInP(Orange)	610	80	178	110°	Water Clear
XZMYK87W	◆ AlGaInP(Yellow)	590	80	148	110°	Water Clear
XZVG87W	◆ AlGaInP(Green)	574	20	49	110°	Water Clear
XZCBD87W	◆ InGaN(Blue)	460	40	79	110°	Water Clear

1. Soldering Pattern Dimension Unit : mm, Tolerance : ±0.1mm.
 2. Luminous intensity value and wavelength are in accordance with CIE127-2007 standards.
 3. We reserve the right to make changes at any time to enhance the design and / or performance of the product.

Part Number	Chip Structure (Emitted Color)	λ_{peak} (nm)	Intensity(mcd) $I_f=20mA$		Viewing Angle 2 θ 1/2	Lens
			Min.	Typ.		

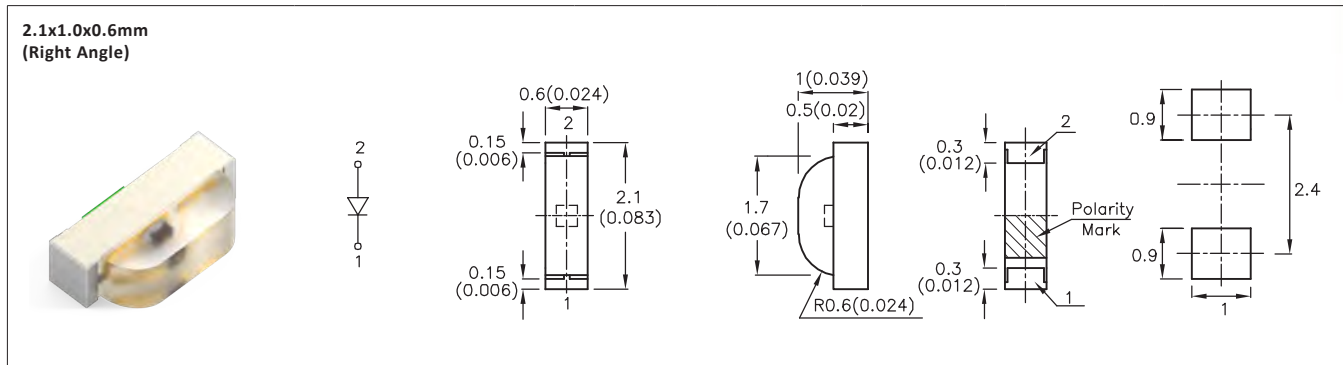
**1.8x1.5x0.6mm
(Dome Lens Right Angle)**



Dimension Unit: mm(inches), Tolerance : $\pm 0.15(0.006^*)$

Part Number	Chip Structure	λ_{peak} (nm)	Min. Intensity (mcd)	Typ. Intensity (mcd)	Viewing Angle	Lens
XZMDK168W	AlGaInP(Red)	645	500	1195	25°	Water Clear
XZM2CRK168WA	AlGaInP(Red)	640	1300	2590	25°	Water Clear
XZMYK168W	AlGaInP(Yellow)	590	500	1095	25°	Water Clear
XZVG168W	AlGaInP(Green)	574	120	397	25°	Water Clear
XZDGK168W	InGaN(Green)	515	1900	3190	25°	Water Clear
XZFB168W	InGaN(Blue)	465	400	795	25°	Water Clear

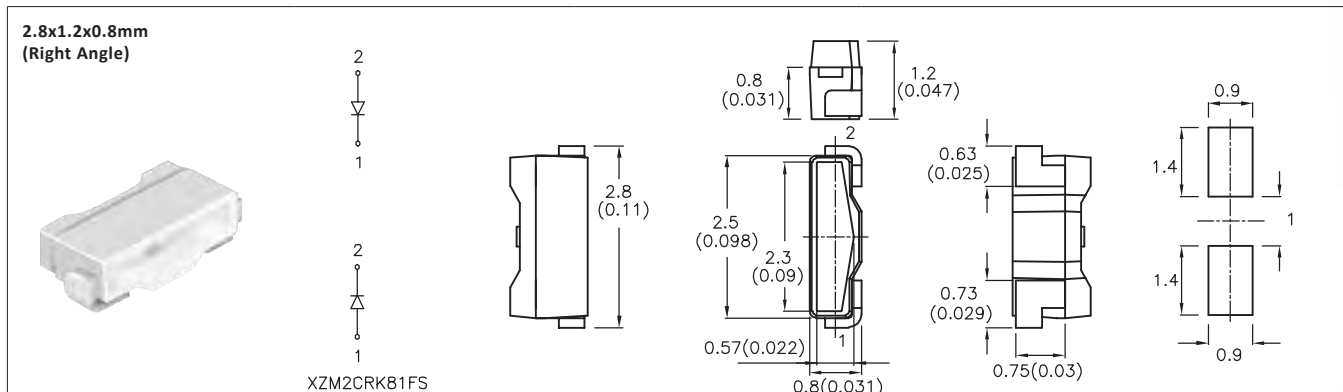
**2.1x1.0x0.6mm
(Right Angle)**



Dimension Unit: mm(inches), Tolerance : $\pm 0.1(0.004^*)$

Part Number	Chip Structure	λ_{peak} (nm)	Min. Intensity (mcd)	Typ. Intensity (mcd)	Viewing Angle	Lens
XZMDK74W	AlGaInP(Red)	645	40	79	140°	Water Clear
XZM2CRK74WA	AlGaInP(Red)	640	200	377	140°	Water Clear
XZMYK74W	AlGaInP(Yellow)	590	80	148	140°	Water Clear
XZVG74W	AlGaInP(Green)	574	20	49	140°	Water Clear

**2.8x1.2x0.8mm
(Right Angle)**





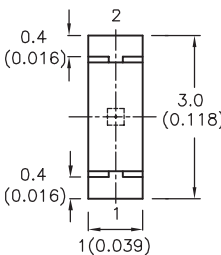
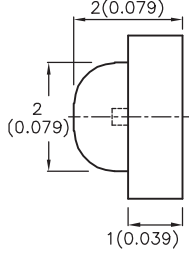
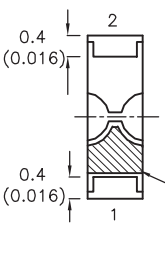
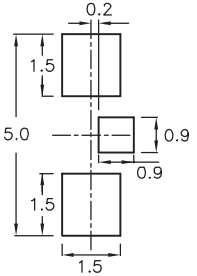
Dimension Unit: mm(inches), Tolerance : $\pm 0.1(0.004^*)$

Part Number	Chip Structure	λ_{peak} (nm)	Min. Intensity (mcd)	Typ. Intensity (mcd)	Viewing Angle	Lens
XZMDK81FS	AlGaInP(Red)	645	40	98	110°	Water Clear
XZM2CRK81FS	AlGaInP(Red)	640	300	497	110°	Water Clear
XZMYK81FS	AlGaInP(Yellow)	590	120	198	110°	Water Clear
XZVG81FS	AlGaInP(Green)	574	40	69	110°	Water Clear
XZM2DG81FS	InGaN(Green)	520	1000	1395	110°	Water Clear
XZFB81FS	InGaN(Blue)	465	200	347	110°	Water Clear

1. Soldering Pattern Dimension Unit : mm, Tolerance : $\pm 0.1mm$.
 2. Luminous intensity value and wavelength are in accordance with CIE127-2007 standards.
 3. We reserve the right to make changes at any time to enhance the design and / or performance of the product.

Part Number	Chip Structure (Emitted Color)	λ_{peak} (nm)	Intensity(mcd) $I_f=20mA$		Viewing Angle 2 θ /2	Lens
			Min.	Typ.		

3.0x2.0x1.0mm (Right Angle)

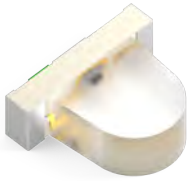

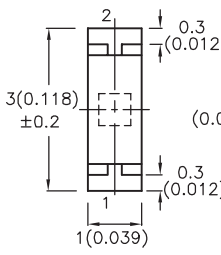
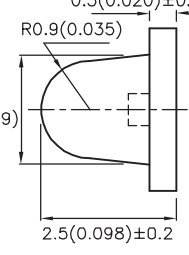
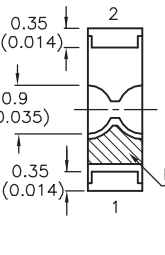
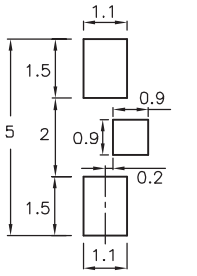







Dimension Unit: mm(inches), Tolerance : $\pm 0.15(0.006^{\circ})$

Recommended Soldering Pattern

XZMYK56W	◆ AlGaInP(Yellow)	590	80	148	120°	Water Clear
XZVG56W	◆ AlGaInP(Green)	574	20	49	120°	Water Clear
XZCBD56W	◆ InGaN(Blue)	460	40	79	120°	Water Clear

3.0x2.5x1.0mm (Right Angle)



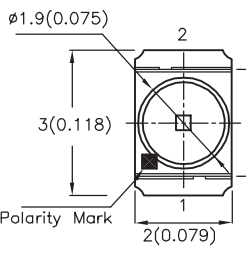
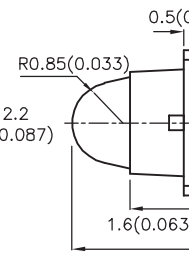
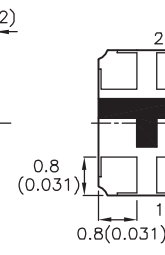
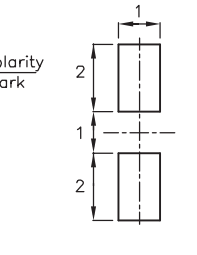







Dimension Unit: mm(inches), Tolerance : $\pm 0.15(0.006^{\circ})$

Recommended Soldering Pattern

XZMDK56W-1	◆ AlGaInP(Red)	645	200	297	30°	Water Clear
XZVG56W-1	◆ AlGaInP(Green)	574	80	148	30°	Water Clear
XZDGK56W-1	◆ InGaN(Green)	515	500	695	30°	Water Clear
XZCBD56W-1	◆ InGaN(Blue)	460	120	198	30°	Water Clear

3.0x2.8x2.0mm (Dome Lens Right Angle)

Dimension Unit: mm(inches), Tolerance : $\pm 0.2(0.008^{\circ})$


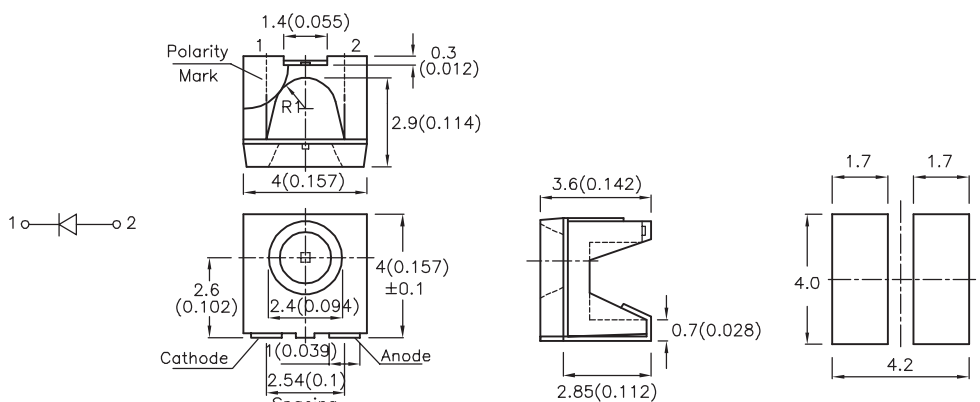
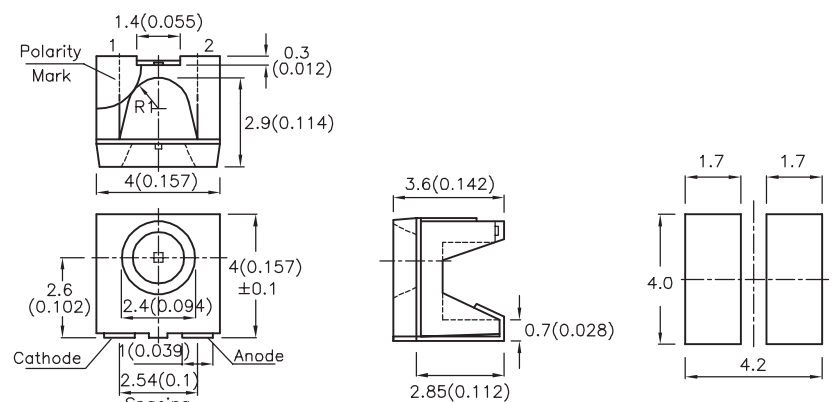
Recommended Soldering Pattern

XZM2CRK50W-2RP	◆ AlGaInP(Red)	640	2300	3790	10°	Water Clear
XZM2CYK50W-2RP	◆ AlGaInP(Yellow)	590	3600	6990	10°	Water Clear

1. Soldering Pattern Dimension Unit : mm, Tolerance : $\pm 0.1mm$.
 2. Luminous intensity value and wavelength are in accordance with CIE127-2007 standards.
 3. We reserve the right to make changes at any time to enhance the design and / or performance of the product.

Part Number	Chip Structure (Emitted Color)	λ_{peak} (nm)	Intensity(mcd) $I_f=20mA$		Viewing Angle 2 θ 1/2	Lens
			Min.	Typ.		

4.0x4.0x3.6mm (PLCC Right Angle)

Dimension Unit: mm(inches), Tolerance : $\pm 0.25(0.01^*)$

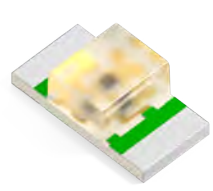
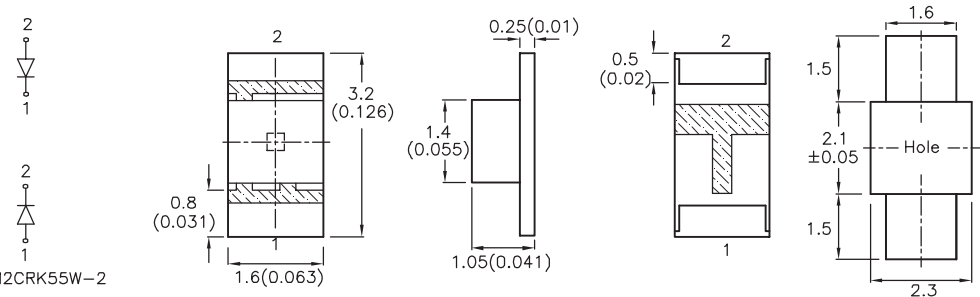
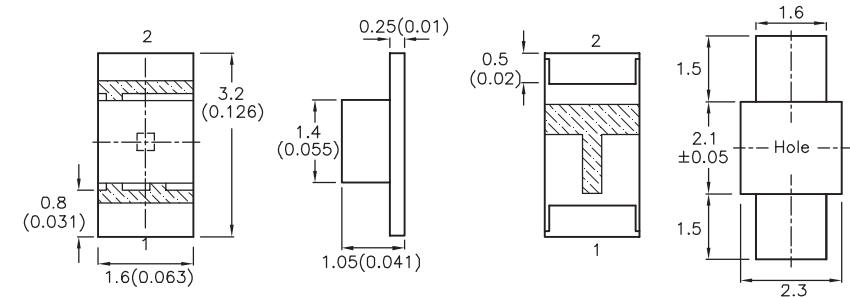
Recommended Soldering Pattern

XZMDK67S	◆ AlGaInP(Red)	645	80	148	120°	Water Clear
XZVG67WT	◆ AlGaInP(Green)	574	40	89	120°	Water Clear
XZM2DG67WT	◆ InGaN(Green)	520	1000	1395	120°	Water Clear
XZDG67S	◆ InGaN(Green)	515	500	795	120°	Water Clear
XZCBD67S	◆ InGaN(Blue)	460	80	218	120°	Water Clear

REVERSE MOUNT

Part Number	Chip Structure (Emitted Color)	λ_{peak} (nm)	Intensity(mcd) $I_f=20mA$		Viewing Angle 2 θ 1/2	Lens
			Min.	Typ.		

3.2x1.6x1.05mm (1206 Reverse Mount)

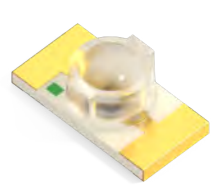
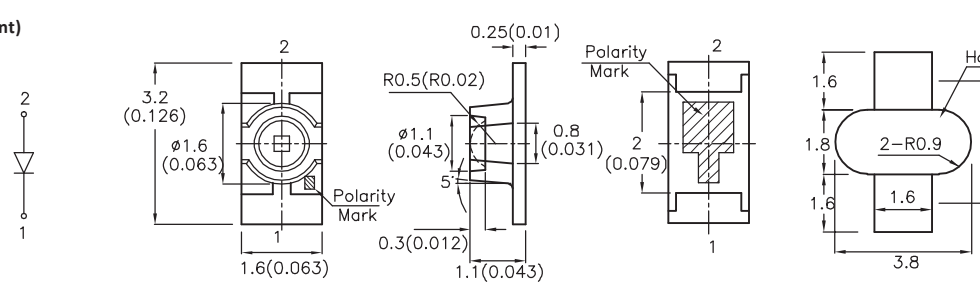
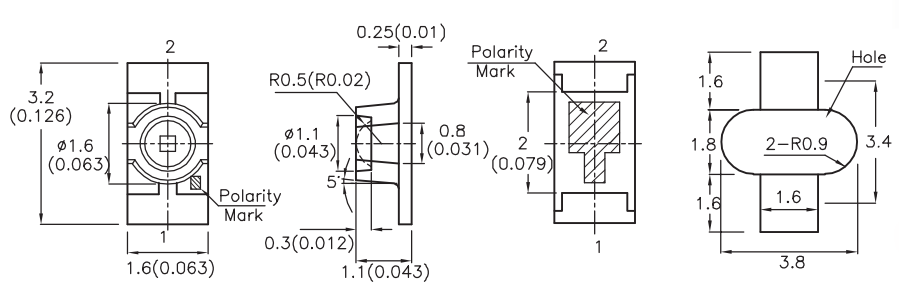




Dimension Unit: mm(inches), Tolerance : $\pm 0.2(0.008^*)$

Recommended Soldering Pattern

XZMDK55W-2	◆ AlGaInP(Red)	645	40	79	140°	Water Clear
XZM2CRK55W-2	◆ AlGaInP(Red)	640	200	347	140°	Water Clear
XZMYK55W-2	◆ AlGaInP(Yellow)	590	80	148	140°	Water Clear
XZVG55W-2	◆ AlGaInP(Green)	574	20	49	140°	Water Clear
XZDGK55W-2	◆ InGaN(Green)	515	300	547	140°	Water Clear
XZCBD55W-2	◆ InGaN(Blue)	460	40	98	140°	Water Clear

3.2x1.6x1.1mm (1206 Inner Dome Lens Reverse Mount)

Dimension Unit: mm(inches), Tolerance : $\pm 0.1(0.004^*)$

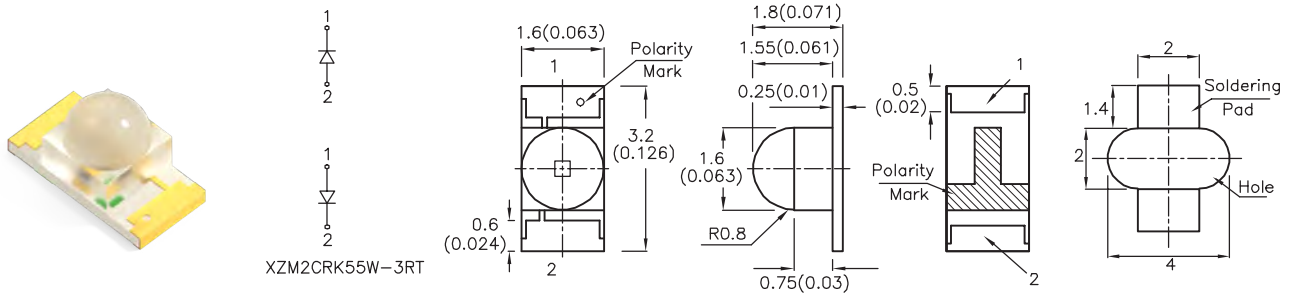
Recommended Soldering Pattern

XZMDK55W-A2RT	◆ AlGaInP(Red)	645	120	228	80°	Water Clear
XZMYK55W-A2RT	◆ AlGaInP(Yellow)	590	200	347	80°	Water Clear
XZVG55W-A2RT	◆ AlGaInP(Green)	574	55	98	80°	Water Clear
XZCBD55W-A2RT	◆ InGaN(Blue)	460	120	248	80°	Water Clear

1. Soldering Pattern Dimension Unit : mm, Tolerance : $\pm 0.1mm$.
 2. Luminous intensity value and wavelength are in accordance with CIE127-2007 standards.
 3. We reserve the right to make changes at any time to enhance the design and / or performance of the product.

Part Number	Chip Structure (Emitted Color)	λ_{peak} (nm)	Intensity(mcd) $I_f=20mA$		Viewing Angle 2 θ /2	Lens
			Min.	Typ.		

**3.2x1.6x1.8mm
(1206 Dome Lens Reverse Mount)**

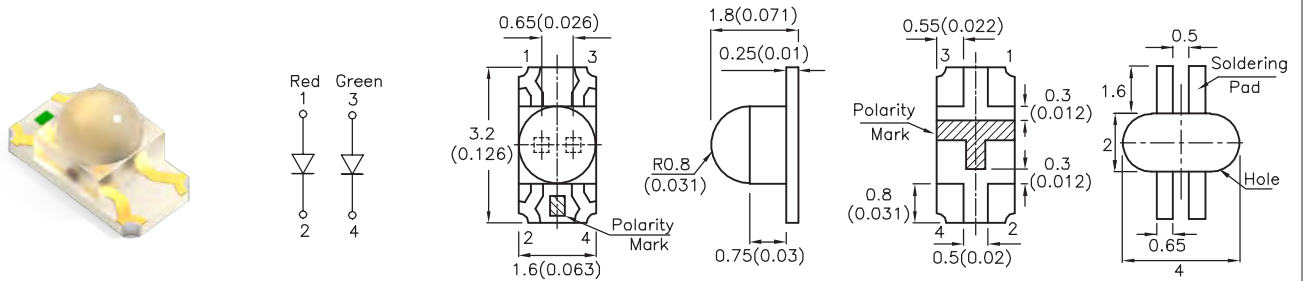


Dimension Unit: mm(inches), Tolerance : $\pm 0.2(0.008)$ "

Recommended Soldering Pattern

XZMDK55W-3RT	◆ AlGaInP(Red)	645	300	795	40°	Water Clear
XZM2CRK55W-3RT	◆ AlGaInP(Red)	640	1600	2490	40°	Water Clear
XZMYK55W-3RT	◆ AlGaInP(Yellow)	590	700	795	40°	Water Clear
XZVG55W-3RT	◆ AlGaInP(Green)	574	120	297	40°	Water Clear
XZDGK55W-3RT	◆ InGaN(Green)	515	2700	3990	30°	Water Clear

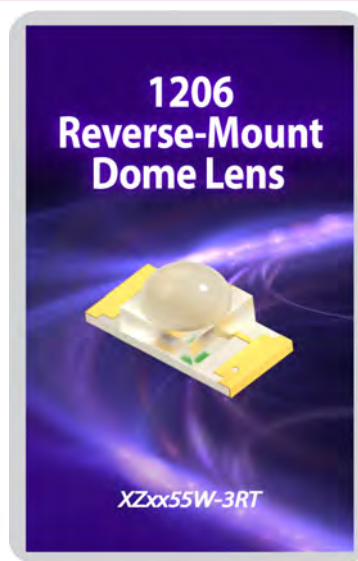
**3.2x1.6x1.8mm
(1206 Dome Lens Reverse Mount Bi-Color)**



Dimension Unit: mm(inches), Tolerance : $\pm 0.2(0.008)$ "

Recommended Soldering Pattern

XZMDKDGK55W-8RT	◆ AlGaInP(Red)	645	300	597	30°	Water Clear
	◆ InGaN(Green)	515	400	647		



XZxx55W-3RT Series - Reverse-Mount Dome Lens SMD LEDs PRODUCT HIGHLIGHT

SunLED's XZxx55W-3RT series SMD LEDs utilize an industry-standard 1206 footprint paired with a dome lens for high intensity and narrow viewing angle output. This series comes in a reverse mount package style. The XZxx55W-3RT series is an ideal choice for any applications where light bleeding is a challenge or component height restrictions are an issue. Applications include electric vehicle (EV) charging units/couplers, medical and healthcare devices, enterprise solutions, robotics/IoT devices, and many others.

PRODUCT APPLICATIONS

- Wearable electronics
- EV charging units/couplers
- Medical and healthcare devices
- Instrumentation devices
- Safety and security
- Enterprise solutions
- Robotics/IoT


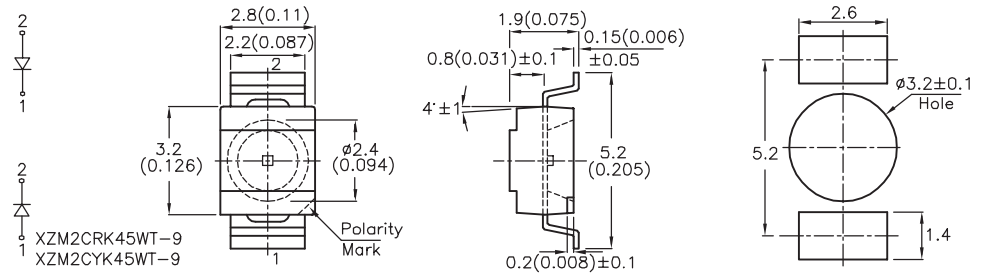
PRODUCT FEATURES

- Narrow viewing angle: 30° to 40°
- Reverse mount package style
- High-intensity output
- Industry-standard 1206 footprint: 3.2 mm x 1.6 mm x 1.8 mm (L x W x H)
- Moisture sensitivity level (MSL): 3

1. Soldering Pattern Dimension Unit : mm, Tolerance : $\pm 0.1mm$.
 2. Luminous intensity value and wavelength are in accordance with CIE127-2007 standards.
 3. We reserve the right to make changes at any time to enhance the design and / or performance of the product.

Part Number	Chip Structure (Emitted Color)	λ_{peak} (nm)	Intensity(mcd) $I_f=20mA$		Viewing Angle 2 θ 1/2	Lens
			Min.	Typ.		

3.2x2.8x1.9mm (PLCC Reverse Mount)

Dimension Unit: mm(inches), Tolerance : ±0.25(0.01")

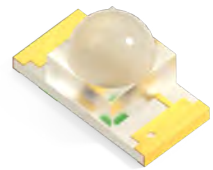
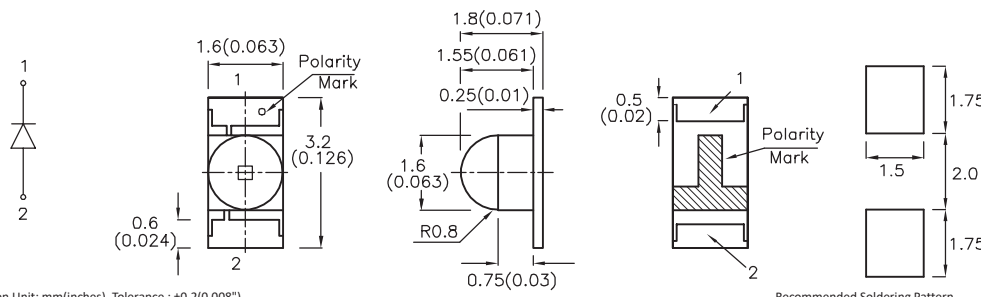
Recommended Soldering Pattern

XZMDK45WT-9	AlGaInP(Red)	645	55	98	120°	Water Clear
XZM2CRK45WT-9	AlGaInP(Red)	640	300	447	120°	Water Clear
XZMYK45WT-9	AlGaInP(Yellow)	590	120	248	120°	Water Clear
XZM2CYK45WT-9	AlGaInP(Yellow)	590	400	597	120°	Water Clear
XZVG45WT-9	AlGaInP(Green)	574	40	98	120°	Water Clear
XZM2DG45WT-9	InGaN(Green)	520	1000	1395	120°	Water Clear
XZDGK45WT-9	InGaN(Green)	515	500	995	120°	Water Clear
XZFB45S-9	InGaN(Blue)	465	300	447	120°	Water Clear

HIGH TEMPERATURE SERIES

Part Number	Chip Structure (Emitted Color)	λ_{peak} (nm)	Intensity(mcd) $I_f=20mA$		Viewing Angle 2 θ 1/2	Lens
			Min.	Max.		

3.2x1.6x1.8mm (1206 Dome Lens)

Dimension Unit: mm(inches), Tolerance : ±0.2(0.008")

Recommended Soldering Pattern

XZMDK55W-3HTA	AlGaInP(Red)	645	300	1300	40°	Water Clear
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XZxx45WT-9 - Reverse-Mount PLCC SMD LED Series

PRODUCT HIGHLIGHT

SunLED's Reverse-Mount PLCC SMD LED series are perfect for designs with limitations on component height. This series takes the traditional, industry-standard 3.5 mm x 2.8 mm top-emitting LED and re-engineers it for reverse-mount emission. This is achieved through a Z-Bend lead frame which allows the LED to mount upside-down and provide illumination through a hole on the PCB.

Reverse-mount LEDs have been an increasingly popular and creative solution for designs with limitations on component height by creating a flush surface on the PCB. Reverse-mount LEDs are also widely used to keep all components on one side of the PCB while requiring illumination to emit on the opposite side. SunLED is ready to support next-generation designs with a full spectrum of reverse-mount PLCC SMD LEDs.

PRODUCT APPLICATIONS

- Consumer electronics
- Home automation/IoT
- White goods
- Icon and text backlighting
- Safety and security
- Audio and video
- Automotive backlighting
- Instrumentation
- Medical and healthcare


PRODUCT FEATURES

- Reverse-mount version of industry-standard PLCC footprint
- High-intensity output utilizing a reflector-type package
- Wide viewing angle: 120°
- Single and multi-color options
- Low current: 20 mA operation
- Moisture sensitivity level (MSL): 3

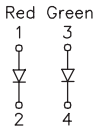
1. Soldering Pattern Dimension Unit : mm, Tolerance : ±0.1mm.
 2. Luminous intensity value and wavelength are in accordance with CIE127-2007 standards.
 3. We reserve the right to make changes at any time to enhance the design and / or performance of the product.

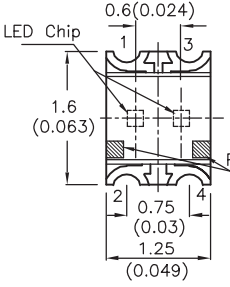
Part Number	Chip Structure (Emitted Color)	λ_{peak} (nm)	Intensity(mcd) $I_f=20mA,5mA^*$		Viewing Angle 2 θ /2	Lens
			Min.	Max.		

1.6x1.25x0.65mm (Bi-Color)

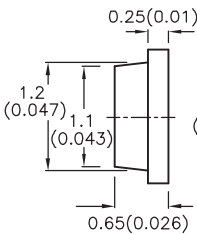


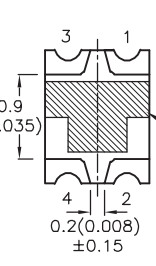
Red Green

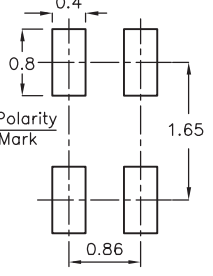




LED Chip








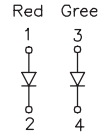
Dimension Unit: mm(inches), Tolerance : $\pm 0.2(0.008")$

XZMDKVG62W5MAV-1HTA	◆ AlGaInP(Red)	645	15*	30*	150°	Water Clear
	◆ AlGaInP(Green)	574	6*	20*		

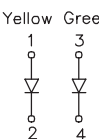
1.6x1.5x0.7mm (Bi-Color)

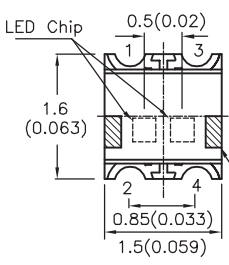


Red Green

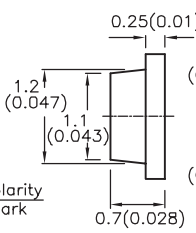


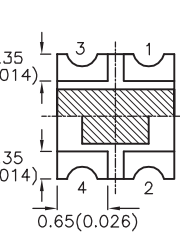
Yellow Green

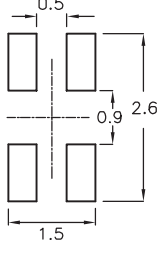




LED Chip



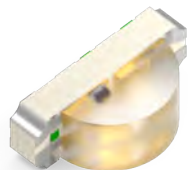




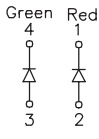
Dimension Unit: mm(inches), Tolerance : $\pm 0.2(0.008")$

XZMDKVG59W-1HTA	◆ AlGaInP(Red)	645	40	120	150°	Water Clear
	◆ AlGaInP(Green)	574	20	120		
XZMYKVG59W-1HTA	◆ AlGaInP(Yellow)	590	80	300	150°	Water Clear
	◆ AlGaInP(Green)	574	20	120		

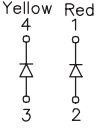
3.0x1.5x1.0mm (Right Angle, Bi-Color)

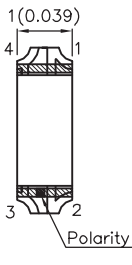


Green Red

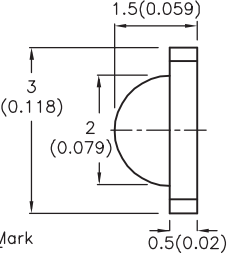


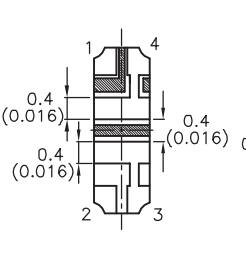
Yellow Red

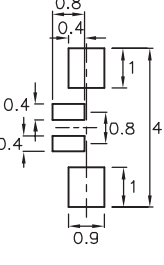




LED Chip









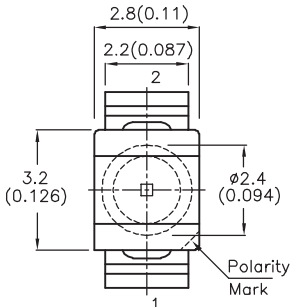
Dimension Unit: mm(inches), Tolerance : $\pm 0.2(0.008")$

XZMDKVGX56W-HTA	◆ AlGaInP(Red)	645	55	200	150°	Water Clear
	◆ AlGaInP(Green)	574	20	80		
XZMDKMYKX56W-HTA	◆ AlGaInP(Red)	645	55	200	150°	Water Clear
	◆ AlGaInP(Yellow)	590	120	400		

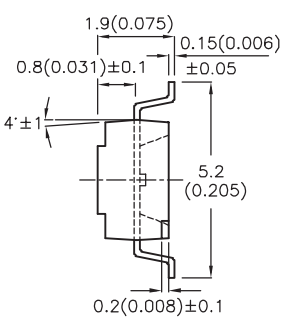
3.2x2.8x1.9mm (PLCC2 Reverse Mount)

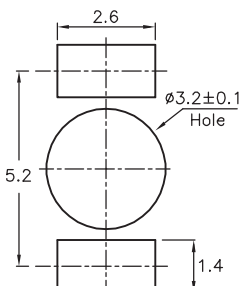






LED Chip






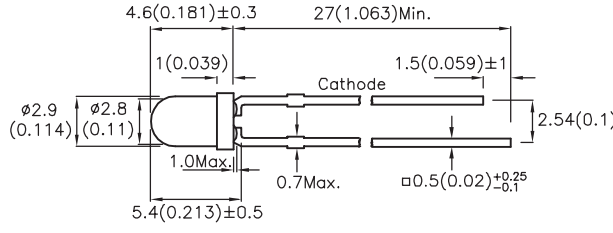
Dimension Unit: mm(inches), Tolerance : $\pm 0.25(0.01")$

XZYG45WT-9HTA	◆ AlGaInP(Green)	560	12	55	120°	Water Clear
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1. Soldering Pattern Dimension Unit : mm, Tolerance : $\pm 0.1mm$.
 2. Luminous intensity value and wavelength are in accordance with CIE127-2007 standards.
 3. We reserve the right to make changes at any time to enhance the design and / or performance of the product.


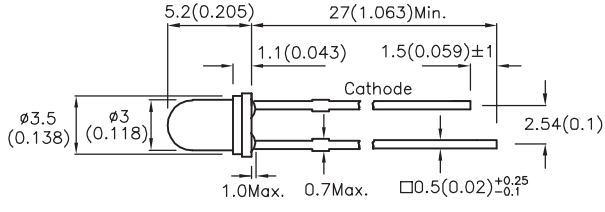
Part Number	Chip Structure (Emitted Color)	λ_{peak} (nm)	Intensity(mcd) $I_f=20mA$		Viewing Angle 2 θ 1/2	Lens
			Min.	Typ.		

3mm


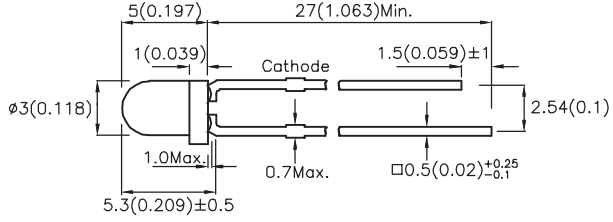
XLM2MR11D	◆ AlGaInP(Red)	660	200	497	50°	Red Diffused
XLM2MR11W	◆ AlGaInP(Red)	660	1000	1495	30°	Water Clear
XLMDK11D	◆ AlGaInP(Red)	645	120	238	50°	Red Diffused
XLMDK11W	◆ AlGaInP(Red)	645	400	895	30°	Water Clear
XLM2CRK11W	◆ AlGaInP(Red)	640	2300	3590	30°	Water Clear
XLM2MOK11W	◆ AlGaInP(Orange)	611	3600	5990	30°	Water Clear
XLMYK11D	◆ AlGaInP(Yellow)	590	400	795	50°	Yellow Diffused
XLMYK11W	◆ AlGaInP(Yellow)	590	700	1495	30°	Water Clear
XLM2CYK11W	◆ AlGaInP(Yellow)	590	1900	2990	30°	Water Clear
XLVG11D	◆ AlGaInP(Green)	574	80	248	50°	Green Diffused
XLM2DG11W	◆ InGaN(Green)	520	10500	16490	30°	Water Clear
XLDGK11W	◆ InGaN(Green)	515	8000	13990	30°	Water Clear
XLFB11W	◆ InGaN(Blue)	465	2100	3690	30°	Water Clear
XLCBD11D	◆ InGaN(Blue)	460	480	995	50°	Blue Diffused
XLCBD11W	◆ InGaN(Blue)	460	900	1590	30°	Water Clear

3mm


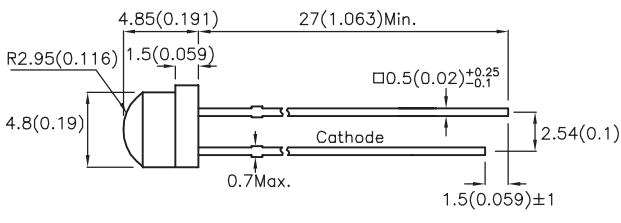
XLMDK65D	◆ AlGaInP(Red)	645	60	208	60°	Red Diffused
XLVG65D	◆ AlGaInP(Green)	574	60	138	60°	Green Diffused

3mm

XLMDK34D	◆ AlGaInP(Red)	645	100	248	60°	Red Diffused
XLMYK34D	◆ AlGaInP(Yellow)	590	300	497	60°	Yellow Diffused
XLVG34D	◆ AlGaInP(Green)	574	80	148	60°	Green Diffused

5mm


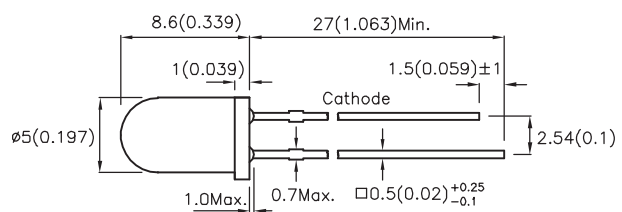



XLMDK169W	◆ AlGaInP(Red)	645	100	178	70°	Water Clear
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1. Dimension Unit: mm(inches), Tolerance: ±0.25mm (0.01").
 2. Luminous intensity value and wavelength are in accordance with CIE127-2007 standards.
 3. We reserve the right to make changes at any time to enhance the design and / or performance of the product.


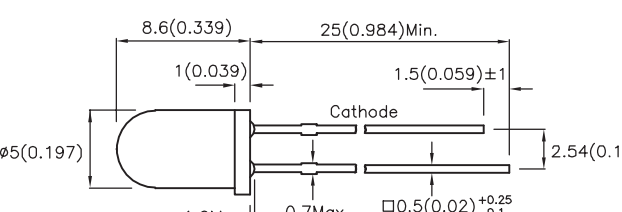
Part Number	Chip Structure (Emitted Color)	λ_{peak} (nm)	Intensity(mcd) $I_f=20mA$		Viewing Angle 2 θ 1/2	Lens
			Min.	Typ.		

5mm


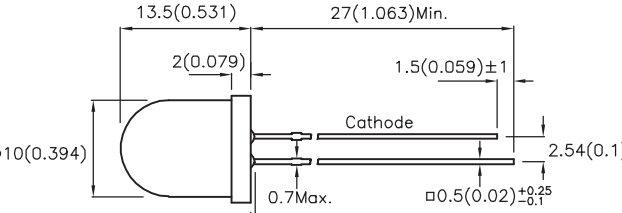
XLM2MR12D	◆ AlGaInP(Red)	660	300	597	30°	Red Diffused
XLM2MR12W	◆ AlGaInP(Red)	660	2300	3690	20°	Water Clear
XLMDK12D	◆ AlGaInP(Red)	645	300	647	30°	Red Diffused
XLMDK12W	◆ AlGaInP(Red)	645	900	1295	20°	Water Clear
XLM2CRK12W	◆ AlGaInP(Red)	640	3600	5990	20°	Water Clear
XLM2MOK12W	◆ AlGaInP(Orange)	611	5000	8890	20°	Water Clear
XLMDK12W	◆ AlGaInP(Orange)	610	1300	2090	20°	Water Clear
XLMYK12D	◆ AlGaInP(Yellow)	590	500	995	30°	Yellow Diffused
XLM2CYK12W	◆ AlGaInP(Yellow)	590	5000	7790	20°	Water Clear
XLVG12D	◆ AlGaInP(Green)	574	50	138	30°	Green Diffused
XLDGK12W	◆ InGaN(Green)	515	14000	25990	20°	Water Clear
XLFB12W	◆ InGaN(Blue)	465	4300	6990	20°	Water Clear
XLCBD12D	◆ InGaN(Blue)	460	600	995	30°	Blue Diffused
XLCBD12W	◆ InGaN(Blue)	460	3100	4490	20°	Water Clear

5mm

XLM2CRK14W	◆ AlGaInP(Red)	640	1500	2890	30°	Water Clear
XLFB14W	◆ InGaN(Blue)	465	1900	3090	30°	Water Clear

10mm

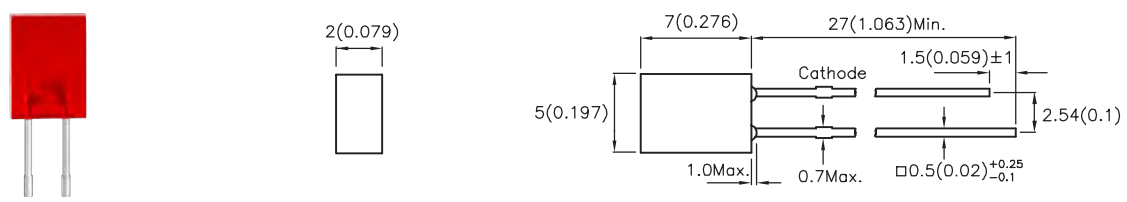



XLM2MR01D	◆ AlGaInP(Red)	660	300	597	30°	Red Diffused
XLMDK01D	◆ AlGaInP(Red)	645	150	297	30°	Red Diffused
XLVG01D	◆ AlGaInP(Green)	574	55	98	30°	Green Diffused

1. Dimension Unit: mm(inches), Tolerance: ±0.25mm (0.01").
 2. Luminous intensity value and wavelength are in accordance with CIE127-2007 standards.
 3. We reserve the right to make changes at any time to enhance the design and / or performance of the product.

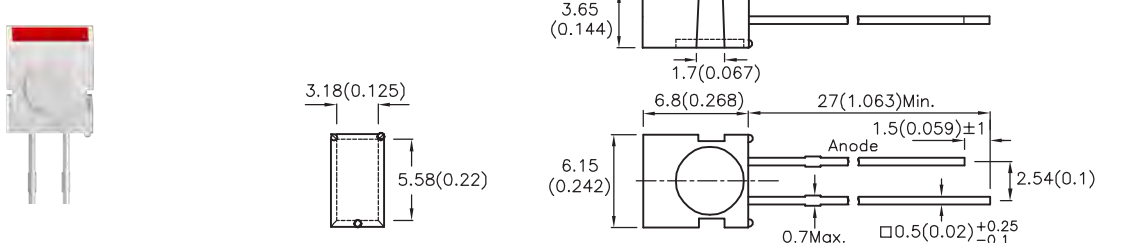
Part Number	Chip Structure (Emitted Color)	λ_{peak} (nm)	Intensity(mcd) $I_f=20mA$		Viewing Angle 2 θ 1/2	Lens
			Min.	Typ.		

2x5mm



XSMKD18D	◆ AlGaInP(Red)	645	25	49	140°	Red Diffused
XSMYK18D	◆ AlGaInP(Yellow)	590	70	118	140°	Yellow Diffused
XSVG18D	◆ AlGaInP(Green)	574	10	29	140°	Green Diffused

3.65x6.15mm

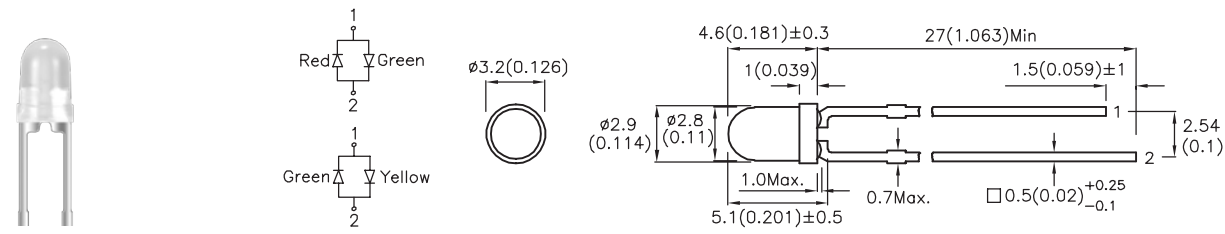


XEMDK21D	◆ AlGaInP(Red)	645	30	59	140°	Red Diffused
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BI-COLOR & BI-POLAR

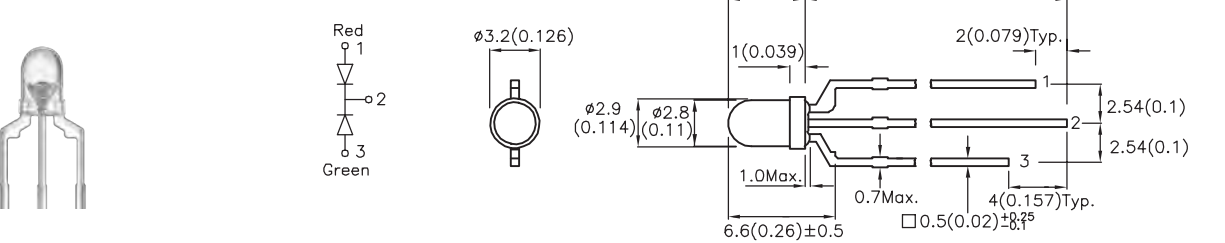
Part Number	Chip Structure (Emitted Color)	λ_{peak} (nm)	Intensity(mcd) $I_f=20mA$		Viewing Angle 2 θ 1/2	Lens
			Min.	Typ.		

3mm Round



XLMDKVG37M	◆ AlGaInP(Red)	645	55	108	60°	White Diffused
	◆ AlGaInP(Green)	574	40	79		
XLVGMVK37M	◆ AlGaInP(Green)	574	40	79	60°	White Diffused
	◆ AlGaInP(Yellow)	590	80	228		

3mm Round



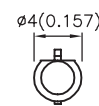
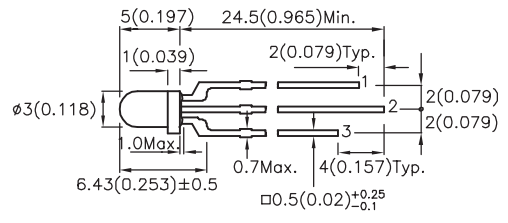


XLMDKVG38W	◆ AlGaInP(Red)	645	350	795	30°	Water Clear
	◆ AlGaInP(Green)	574	300	497		

1. Dimension Unit: mm(inches), Tolerance: $\pm 0.25mm$ (0.01").
 2. Luminous intensity value and wavelength are in accordance with CIE127-2007 standards.
 3. We reserve the right to make changes at any time to enhance the design and / or performance of the product.


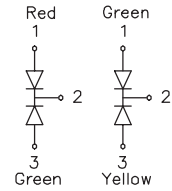
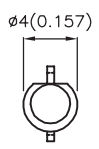
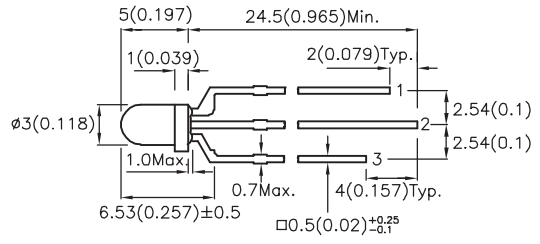
Part Number	Chip Structure (Emitted Color)	λ_{peak} (nm)	Intensity(mcd) $I_f=20mA$		Viewing Angle 2 θ 1/2	Lens
			Min.	Typ.		

3mm Round


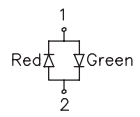
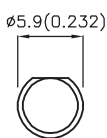
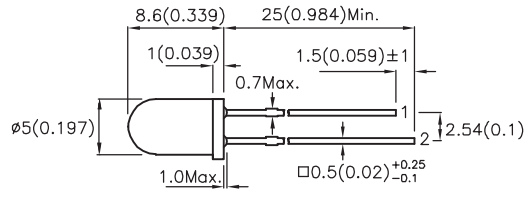
XLMDKVG29M	◆ AlGaInP(Red)	645	80	158	60°	White Diffused
	◆ AlGaInP(Green)	574	40	98		

3mm Round


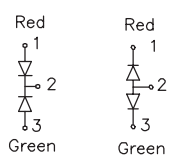
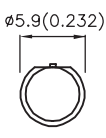
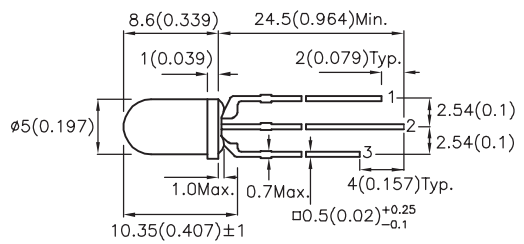
XLMDKVG34M	◆ AlGaInP(Red)	645	80	158	60°	White Diffused
	◆ AlGaInP(Green)	574	60	158		
XLVGMKY34M	◆ AlGaInP(Green)	574	40	118	60°	White Diffused
	◆ AlGaInP(Yellow)	590	120	297		

5mm Round

XLMDKVG58M	◆ AlGaInP(Red)	645	80	148	30°	White Diffused
	◆ AlGaInP(Green)	574	60	118		


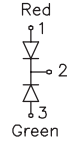
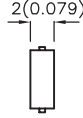
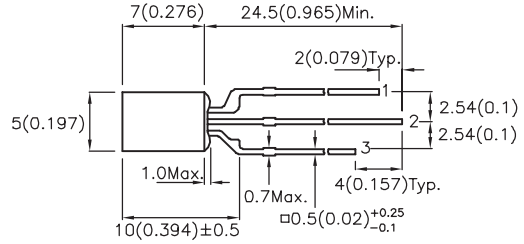
5mm Round


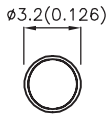
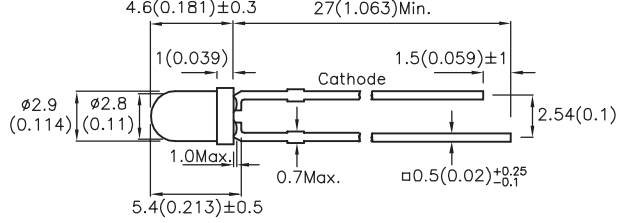
XLMDKVG59MCA


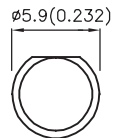
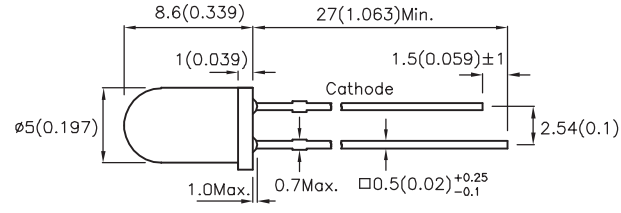
XLMDKVG59M	◆ AlGaInP(Red)	645	200	397	30°	White Diffused
	◆ AlGaInP(Green)	574	80	178		
XLMDKVG59MCA	◆ AlGaInP(Red)	645	18	39	60°	White Diffused
	◆ AlGaInP(Green)	574	8	19		

1. Dimension Unit: mm(inches), Tolerance: ±0.25mm (0.01").
 2. Luminous intensity value and wavelength are in accordance with CIE127-2007 standards.
 3. We reserve the right to make changes at any time to enhance the design and / or performance of the product.

Part Number	Chip Structure (Emitted Color)	λ_{peak} (nm)	Intensity(mcd) $I_f=20mA$		Viewing Angle 2 θ 1/2	Lens
			Min.	Typ.		
2x5mm Rectangular    						
XSMDKVG47M	◆ AlGaInP(Red) ◆ AlGaInP(Green)	645 574	30 15	54 29	140°	White Diffused

LOW CURRENT

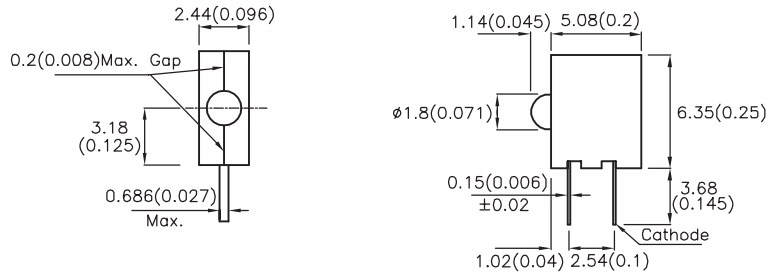
Part Number	Chip Structure (Emitted Color)	λ_{peak} (nm)	Intensity(mcd) $I_f=2mA$		Viewing Angle 2 θ 1/2	Lens
			Min.	Typ.		
3mm   						
XCMDK11D	◆ AlGaInP(Red)	645	10	19	50°	Red Diffused
XCVG11D	◆ AlGaInP(Green)	574	4	7	50°	Green Diffused

5mm   						
XCMDK12D	◆ AlGaInP(Red)	645	18	34	30°	Red Diffused
XCMYK12D	◆ AlGaInP(Yellow)	590	20	69	30°	Yellow Diffused
XCVG12D	◆ AlGaInP(Green)	574	6	11	30°	Green Diffused

1. Dimension Unit: mm(inches), Tolerance: $\pm 0.25mm$ (0.01").
 2. Luminous intensity value and wavelength are in accordance with CIE127-2007 standards.
 3. We reserve the right to make changes at any time to enhance the design and / or performance of the product.

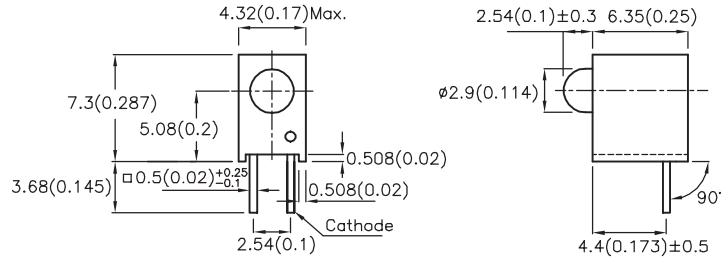
Part Number	Chip Structure (Emitted Color)	λ_{peak} (nm)	Intensity(mcd) $I_f=10mA, 20mA^*$		Viewing Angle 2 θ 1/2	Lens
			Min.	Typ.		

1.8mm



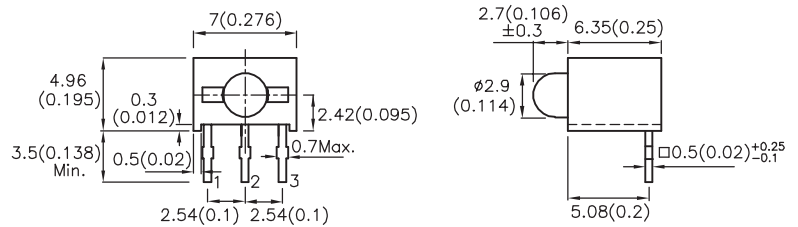
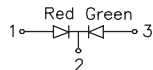
XNH1ZMG46D	 GaP(Green)	565	5*	11*	40°	Green Diffused
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3mm



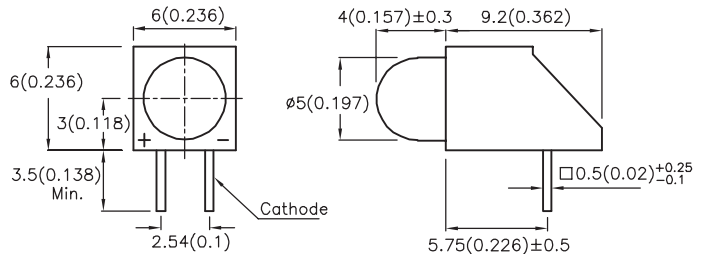
XNK1LUG11D	 GaP(Green)	565	10	24	50°	Green Diffused
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3mm
(Bi-Color)



XNN1LUGR86M	 GaAsP/GaP(Red)	627	10*	23*	60°	White Diffused
	 GaP(Green)	565	12*	29*		


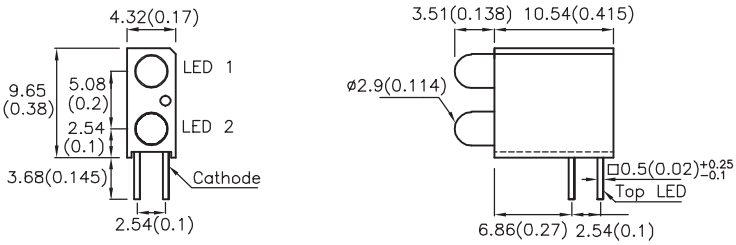
5mm


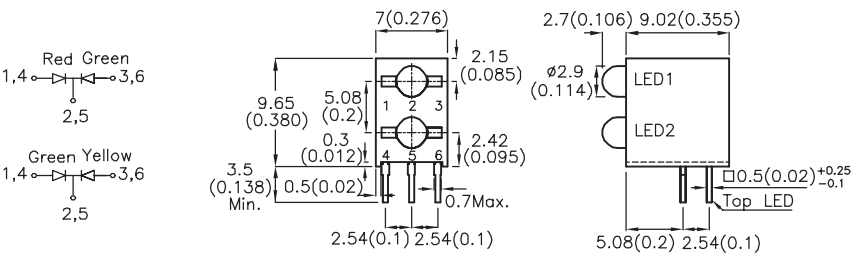


XVB1LUR50D	 GaAsP/GaP(Red)	627	12	39	30°	Red Diffused
XVB1LUY50D	 GaAsP/GaP(Yellow)	590	15	29	30°	Yellow Diffused
XVB1LUG50D	 GaP(Green)	565	15	29	30°	Green Diffused


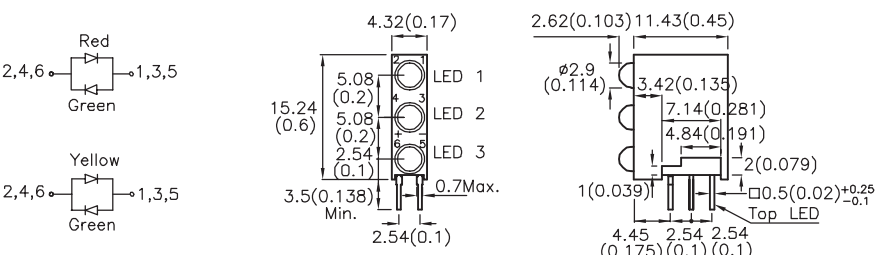
1. Dimension Unit: mm(inches), Tolerance: $\pm 0.25mm$ (0.01").
 2. Luminous intensity value and wavelength are in accordance with CIE127-2007 standards.
 3. We reserve the right to make changes at any time to enhance the design and / or performance of the product.

TWO POSITION


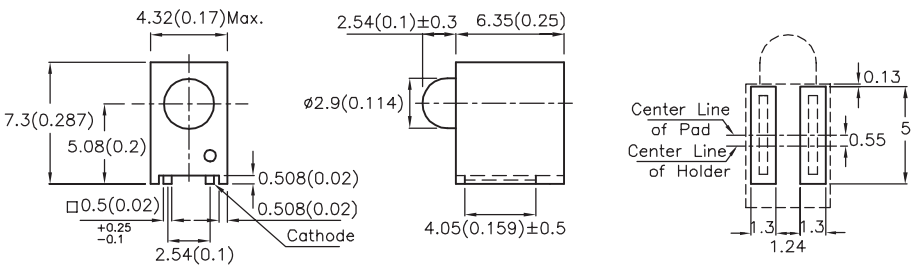
Part Number	Chip Structure (Emitted Color)	λ_{peak} (nm)	Intensity(mcd) $I_f=10mA, 20mA^*$		Viewing Angle 201/2	Lens
			Min.	Typ.		
3mm  						
XPF2LUY11D	◆ GaAsP/GaP(Yellow)	590	8	14	50°	Yellow Diffused
XPF2LUG11D	◆ GaP(Green)	565	10	24	50°	Green Diffused

3mm (Bi-Color)  						
XVO2LUGR86M	◆ GaAsP/GaP(Red) ◆ GaP(Green)	627 565	10* 12*	23* 29*	60°	White Diffused
XVO2LUGY86M	◆ GaP(Green) ◆ GaAsP/GaP(Yellow)	565 590	18* 10*	39* 19*	60°	White Diffused

THREE POSITION

Part Number	Chip Structure (Emitted Color)	λ_{peak} (nm)	Intensity(mcd) $I_f=20mA$		Viewing Angle 201/2	Lens
			Min.	Typ.		
3mm (Bi-Color)  						
XPZ3LUGR37M	◆ GaAsP/GaP(Red) ◆ GaP(Green)	627 565	4 6	9 13	60°	White Diffused
XPZ3LUGY37M	◆ GaAsP/GaP(Yellow) ◆ GaP(Green)	590 565	4 6	7 13	60°	White Diffused

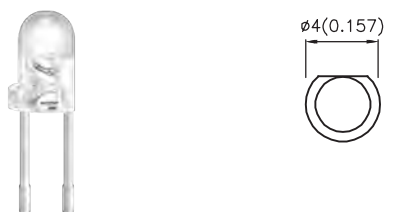
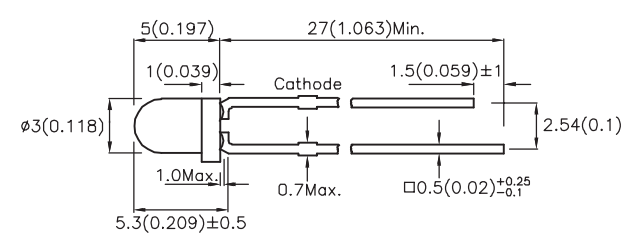
SMD CBI

Part Number	Chip Structure (Emitted Color)	λ_{peak} (nm)	Intensity(mcd) $I_f=10mA$		Viewing Angle 201/2	Lens
			Min.	Typ.		
3mm (One-Position SMD)  						
XNK1LUG11DSMD	◆ GaP(Green)	565	10	24	50°	Green Diffused

1. Dimension Unit: mm(inches), Tolerance: $\pm 0.25mm$ (0.01").
 2. Luminous intensity value and wavelength are in accordance with CIE127-2007 standards.
 3. We reserve the right to make changes at any time to enhance the design and / or performance of the product.

Part Number	Chip Structure	λ_{peak} (nm)	Po(mW/sr) $I_f=20mA, 50mA^*$		Viewing Angle 2 θ /2	Lens
			Min.	Typ.		


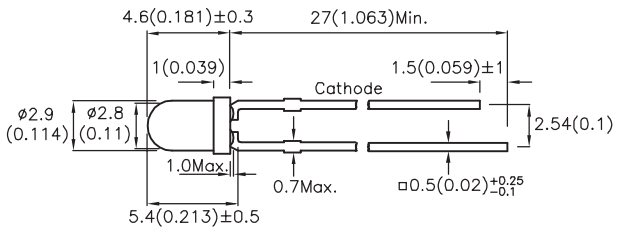
3mm

Dimensions: $\phi 4(0.157)$, $5(0.197)$, $27(1.063)Min.$, $1(0.039)$, Cathode, $1.5(0.059)\pm 1$, $\phi 3(0.118)$, $1.0Max.$, $0.7Max.$, $\square 0.5(0.02)^{+0.25}_{-0.1}$, $2.54(0.1)$, $5.3(0.209)\pm 0.5$

XTNI30W	GaAs	940	3 8*	7 14*	50°	Water Clear
XTHI30W	GaAlAs	880	3 5*	7 15*	50°	Water Clear


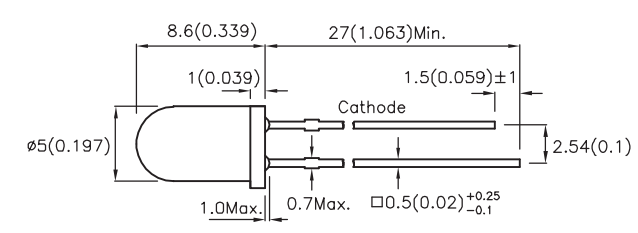
3mm

Dimensions: $\phi 3.2(0.126)$, $4.6(0.181)\pm 0.3$, $27(1.063)Min.$, $1(0.039)$, Cathode, $1.5(0.059)\pm 1$, $\phi 2.9(0.114)$, $\phi 2.8(0.11)$, $1.0Max.$, $0.7Max.$, $\square 0.5(0.02)^{+0.25}_{-0.1}$, $2.54(0.1)$, $5.4(0.213)\pm 0.5$

XTNI11W	GaAs	940	3 12*	7 24*	30°	Water Clear
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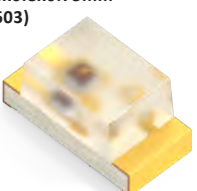
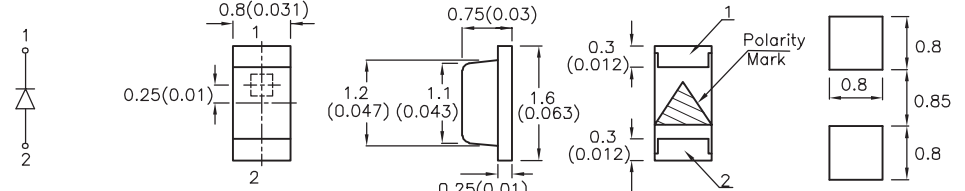
5mm

Dimensions: $\phi 5.9(0.232)$, $8.6(0.339)$, $27(1.063)Min.$, $1(0.039)$, Cathode, $1.5(0.059)\pm 1$, $\phi 5(0.197)$, $1.0Max.$, $0.7Max.$, $\square 0.5(0.02)^{+0.25}_{-0.1}$, $2.54(0.1)$

XTNI12W	GaAs	940	8 25*	19 49*	20°	Water Clear
XTNI12BF	GaAs	940	8 25*	19 49*	20°	Blue Transparent
XTHI12W	GaAlAs	880	6 15*	14 39*	20°	Water Clear


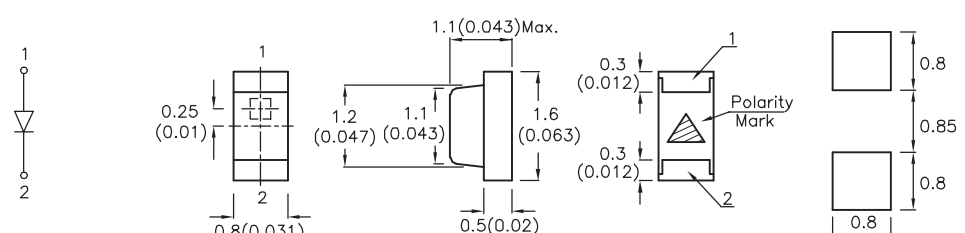
1.6x0.8x0.75mm (0603)

Dimensions: $0.8(0.031)$, $0.75(0.03)$, 1 , $0.25(0.01)$, $1.2(0.047)$, $1.1(0.043)$, $1.6(0.063)$, $0.3(0.012)$, $0.3(0.012)$, $0.25(0.01)$, 0.8 , 0.8 , 0.8 , Polarity Mark

XZTI53W-1	GaAs	940	0.8	1.8	150°	Water Clear
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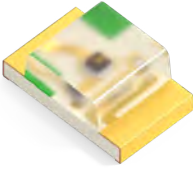

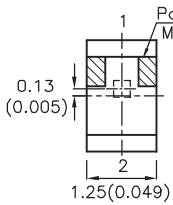
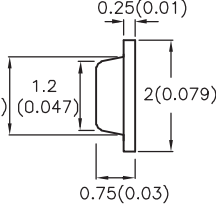
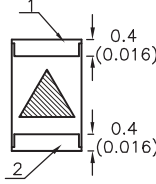
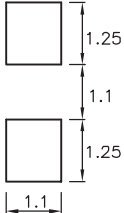
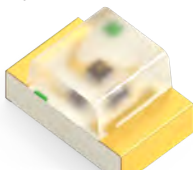
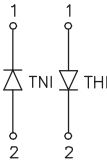
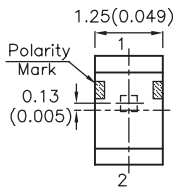
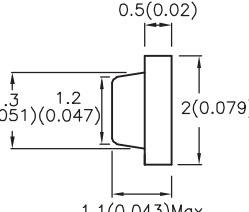
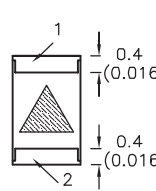
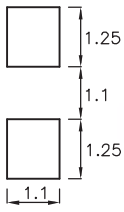
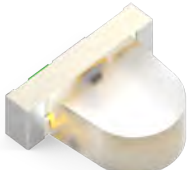
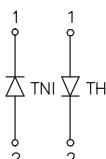
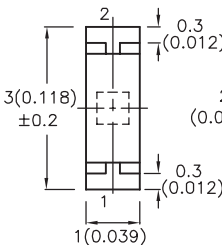
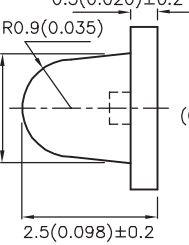
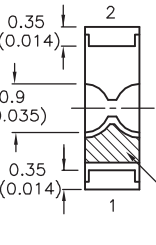
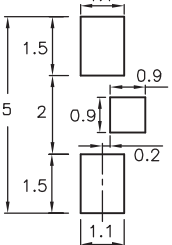
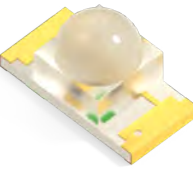

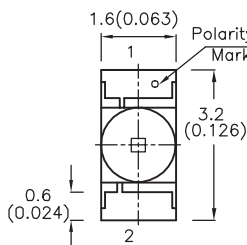
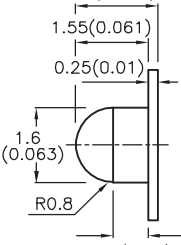
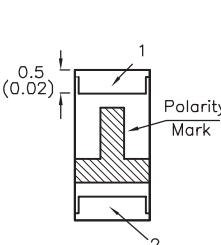
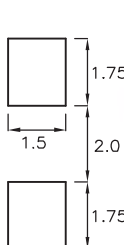
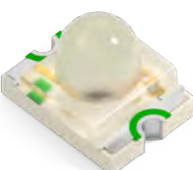

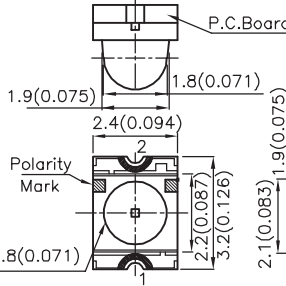
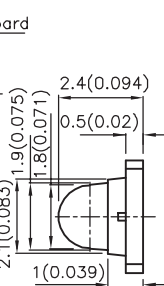
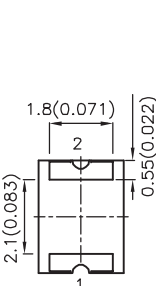
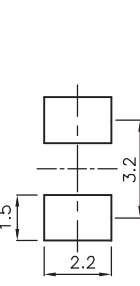
1.6x0.8x1.1mm (0603)


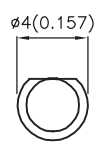
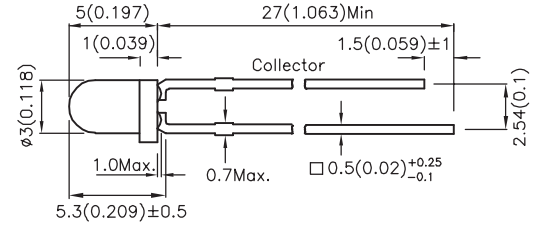

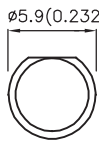
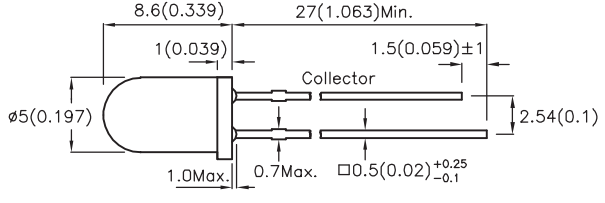

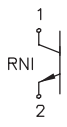
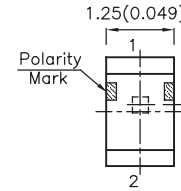
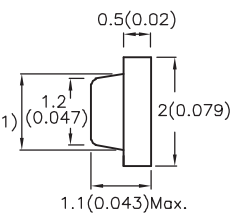
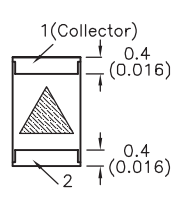
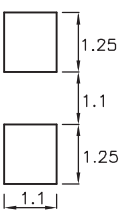
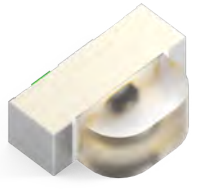

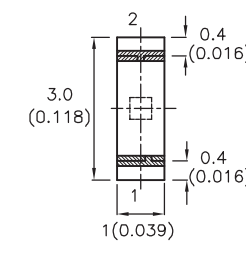
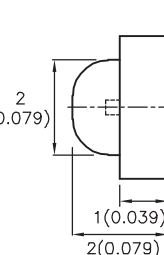
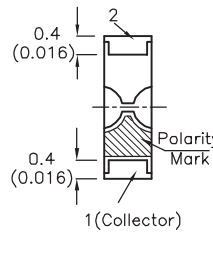
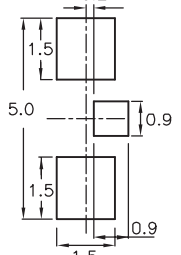
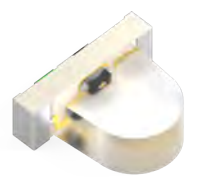

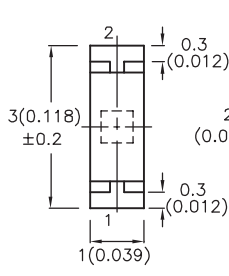
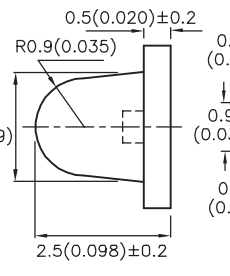
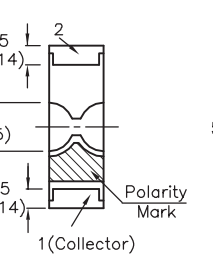
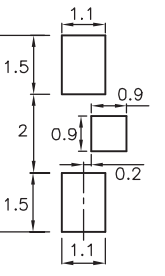
Dimensions: $1.1(0.043)Max.$, 1 , $0.25(0.01)$, $1.2(0.047)$, $1.1(0.043)$, $1.6(0.063)$, $0.3(0.012)$, $0.3(0.012)$, $0.5(0.02)$, $0.8(0.031)$, 0.8 , 0.85 , 0.8 , Polarity Mark

XZTI53W	GaAlAs	880	0.8	1.3	150°	Water Clear
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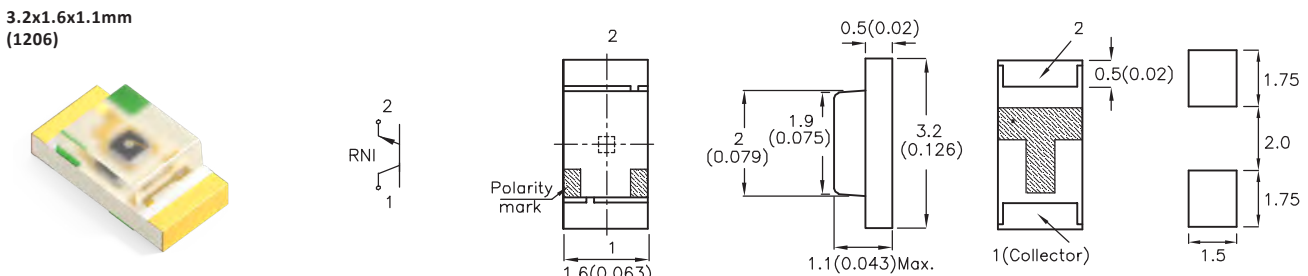
1. Dimension Unit: mm(inches), Tolerance: $\pm 0.25mm(0.01")$. Soldering Pattern Tolerance: $\pm 0.1mm$.
 2. Radiant intensity value and wavelength are in accordance with CIE127-2007 standards.
 3. We reserve the right to make changes at any time to enhance the design and / or performance of the product.

Part Number	Chip Structure	λ_{peak} (nm)	Po(mW/sr) $I_f=20mA$		Viewing Angle 2 θ 1/2	Lens
			Min.	Typ.		
2.0x1.25x0.75mm (0805)       <p>Dimension Unit: mm(inches), Tolerance : $\pm 0.1(0.004)$ Recommended Soldering Pattern</p>						
XZTNI54W-1	GaAs	940	0.8	1.8	160°	Water Clear
2.0x1.25x1.1mm (0805)       <p>Dimension Unit: mm(inches), Tolerance : $\pm 0.1(0.004)$ Recommended Soldering Pattern</p>						
XZTNI54W	GaAs	940	0.8	1.8	160°	Water Clear
XZTHI54W	GaAlAs	880	0.8	1.3	160°	Water Clear
3.0x2.5x1.0mm (Right Angle)       <p>Dimension Unit: mm(inches), Tolerance : $\pm 0.15(0.006)$ Recommended Soldering Pattern</p>						
XZTNI56W-1	GaAs	940	1.2	2.3	30°	Water Clear
XZTHI56W-1	GaAlAs	880	1	2.3	30°	Water Clear
3.2x1.6x1.8mm (1206 Dome Lens)       <p>Dimension Unit: mm(inches), Tolerance : $\pm 0.2(0.008)$ Recommended Soldering Pattern</p>						
XZTNI55W-3	GaAs	940	2	4.8	40°	Water Clear
3.2x2.4x2.4mm (Dome Lens)       <p>Dimension Unit: mm(inches), Tolerance : $\pm 0.1(0.004)$ Recommended Soldering Pattern</p>						
XZTHI78W	GaAlAs	880	3	5	20°	Water Clear

1. Soldering Pattern Dimension Unit : mm , Tolerance : $\pm 0.1mm$.
 2. Radiant intensity value and wavelength are in accordance with CIE127-2007 standards.
 3. We reserve the right to make changes at any time to enhance the design and / or performance of the product.

Part Number	Lens	Description
<p>3mm</p>   	Water Clear	3mm
<p>5mm</p>   	Water Clear	5mm
<p>2.0x1.25x1.1mm (0805)</p>       <p>Dimension Unit: mm(inches), Tolerance : ±0.1(0.004")</p> <p>Recommended Soldering Pattern</p>	Water Clear	2.0x1.25x1.1mm
<p>3.0x2.0x1.0mm (Right Angle)</p>       <p>Dimension Unit: mm(inches), Tolerance : ±0.15(0.006")</p> <p>Recommended Soldering Pattern</p>	Water Clear Blue transparent	3.0x2.0x1.0mm 3.0x2.0x1.0mm
<p>3.0x2.5x1.0mm (Right Angle)</p>       <p>Dimension Unit: mm(inches), Tolerance : ±0.15(0.006")</p> <p>Recommended Soldering Pattern</p>	Water Clear	3.0x2.5x1.0mm

1. Dimension Unit: mm(inches), Tolerance: ±0.25mm (0.01"). Soldering Pattern Tolerance : ±0.1mm.
 2. We reserve the right to make changes at any time to enhance the design and / or performance of the product.

Part Number	Lens	Description
3.2x1.6x1.1mm (1206)		
 <p>Dimension Unit: mm(inches), Tolerance : ±0.2(0.008")</p> <p style="text-align: right;">Recommended Soldering Pattern</p>		
XZRNI55W	Water Clear	3.2x1.6x1.1mm

Electrical & Radiant Characteristics Ta =25°C

Symbol	Parameter	Part Number	Min.	Typ.	Max.	Unit	Test Condition
I _(ON)	On State Collector Current	XRNI30W-1	0.3	0.8	-	mA	V _{CE} =5V, Ee=1mW/cm ² λ=940nm
		XRNI12W	0.5	2.5			
		XZRNI54W	0.2	0.4			
		XZRNI56W	0.2	0.4			
		XZRNI56BF	0.1	0.3			
		XZRNI56W-1	0.2	0.5			
		XZRNI55W	0.2	0.4			
V _{BR(CEO)}	Collector-to-Emitter Breakdown Voltage	-	30	-	-	V	I _C =100μA Ee=0mW/cm ²
V _{BR(ECO)}	Emitter-to-Collector Breakdown Voltage	-	5	-	-	V	I _E =100μA Ee=0mW/cm ²
V _{CE(SAT)}	Collector-to-Emitter Saturation Voltage	-	-	-	0.8	V	I _C =2mA Ee=20mW/cm ²
I _{CEO}	Collector Dark Current	-	-	-	100	nA	V _{CE} =10V Ee=0mW/cm ²
T _R	Rise Time (10% to 90%)	-	-	15	-	μs	V _{CE} =5V I _C =1mA R _L =1KΩ
T _F	Fall Time (90% to 10%)	-	-	15	-	μs	V _{CE} =5V I _C =1mA R _L =1KΩ

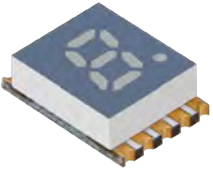
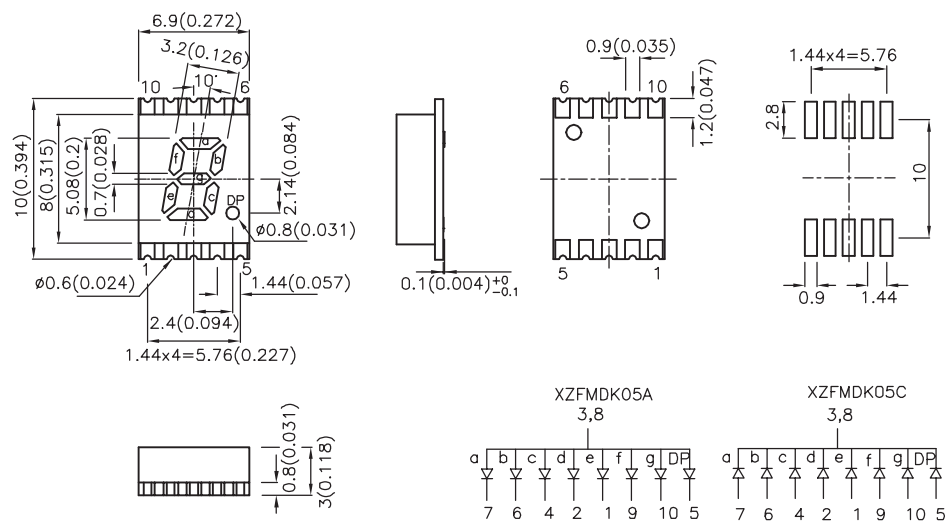
Absolute Maximum Rating Ta =25°C

Collector-to-Emitter Voltage	30V	Operating Temperature Range	-40°C ~ +85°C
Emitter-to-Collector Voltage	5V	Storage Temperature Range	-40°C ~ +85°C
Power Dissipation at (or below) 25°C Free Air Temperature	100mW	Lead Soldering Temperature(>5mm For 5sec)	260°C

1. Soldering Pattern Dimension Unit : mm , Tolerance : ±0.1mm.
 2. We reserve the right to make changes at any time to enhance the design and / or performance of the product.

Part Number		Chip Structure (Emitted Color)	λ_{peak} (nm)	Intensity(ucd) $I_t=10mA$	
Common Anode	Common Cathode			Min.	Typ.

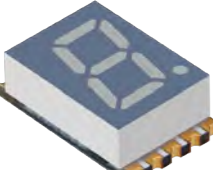
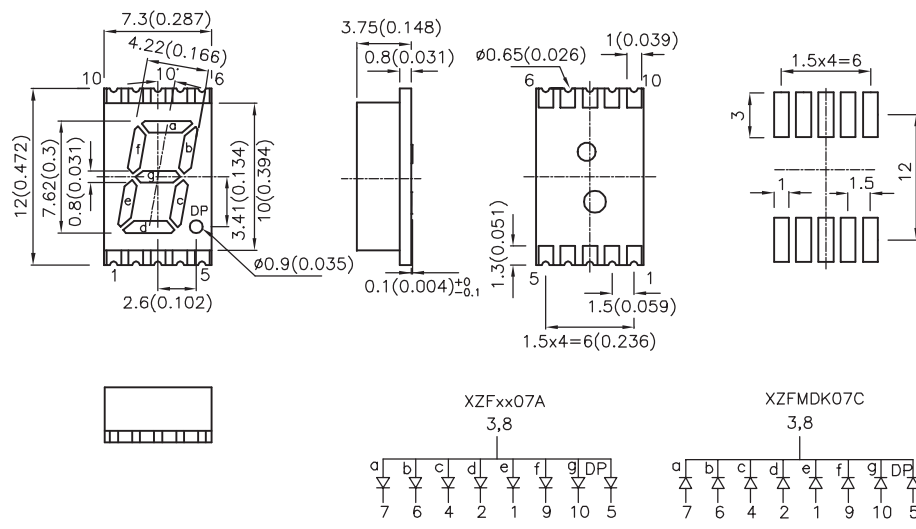
0.2"(5.08mm)

Technical drawing showing dimensions for the 0.2" SMD LED chip. Dimensions include: 6.9(0.272), 3.2(0.126), 10, 10, 6, 10(0.394), 8(0.315), 5.08(0.2), 0.7(0.028), 2.14(0.084), 0.9(0.035), 1.2(0.047), 1.44x4=5.76, 2.8, 10, 0.9, 1.44, 0.1(0.004) \pm 0.1, 5, 1, 1.44(0.057), 2.4(0.094), 1.44x4=5.76(0.227), 0.8(0.031), 3(0.118), XZFMOK05A 3.8, XZFMOK05C 3.8, and pin layouts for 7 6 4 2 1 9 10 5.

XZFMOK05A	XZFMOK05C	◆ AlGaInP(Red)	645	3600	8090
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0.3"(7.62mm)

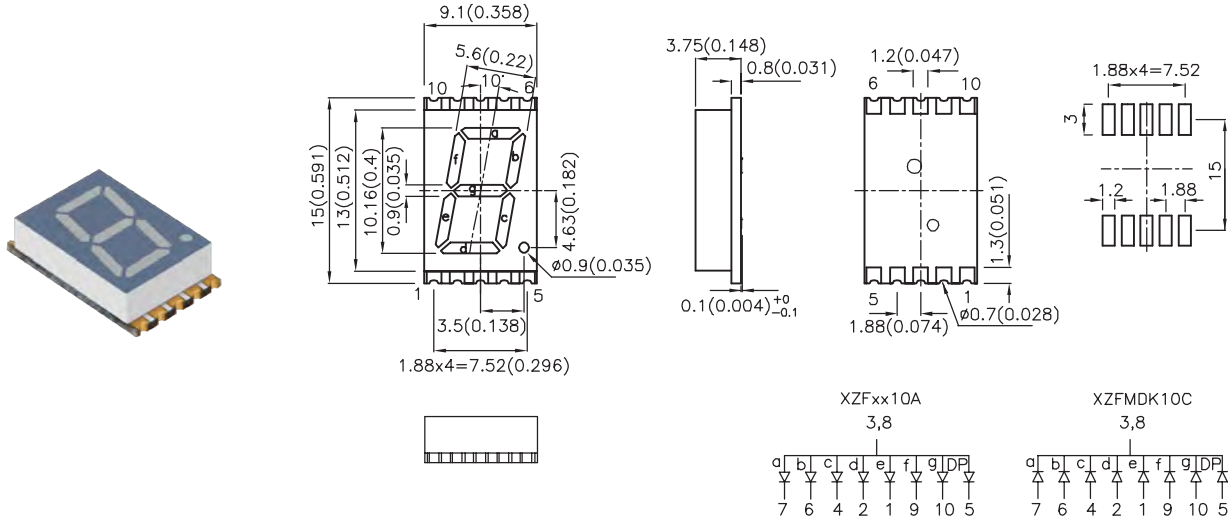
Technical drawing showing dimensions for the 0.3" SMD LED chip. Dimensions include: 7.3(0.287), 4.22(0.166), 10, 10, 6, 12(0.472), 7.62(0.3), 0.8(0.031), 3.41(0.134), 10(0.394), 3.75(0.148), 0.8(0.031), 0.65(0.026), 1(0.039), 1.5x4=6, 3, 12, 1, 1.5, 0.1(0.004) \pm 0.1, 1.3(0.051), 5, 1, 1.5(0.059), 1.5x4=6(0.236), 0.9(0.035), XZFxx07A 3.8, XZFMOK07C 3.8, and pin layouts for 7 6 4 2 1 9 10 5.

XZFMOK07A	XZFMOK07C	◆ AlGaInP(Red)	645	3600	6390
XZFMOK07A	-	◆ AlGaInP(Orange)	610	5600	10990
XZFMOK07A	-	◆ AlGaInP(Yellow)	590	5600	12990
XZFMOK07A	-	◆ AlGaInP(Green)	574	1400	3090

1. Dimension Unit: mm(inches), Tolerance: $\pm 0.25mm$ (0.01").
 2. Luminous intensity value and wavelength are in accordance with CIE127-2007 standards.
 3. We reserve the right to make changes at any time to enhance the design and / or performance of the product.

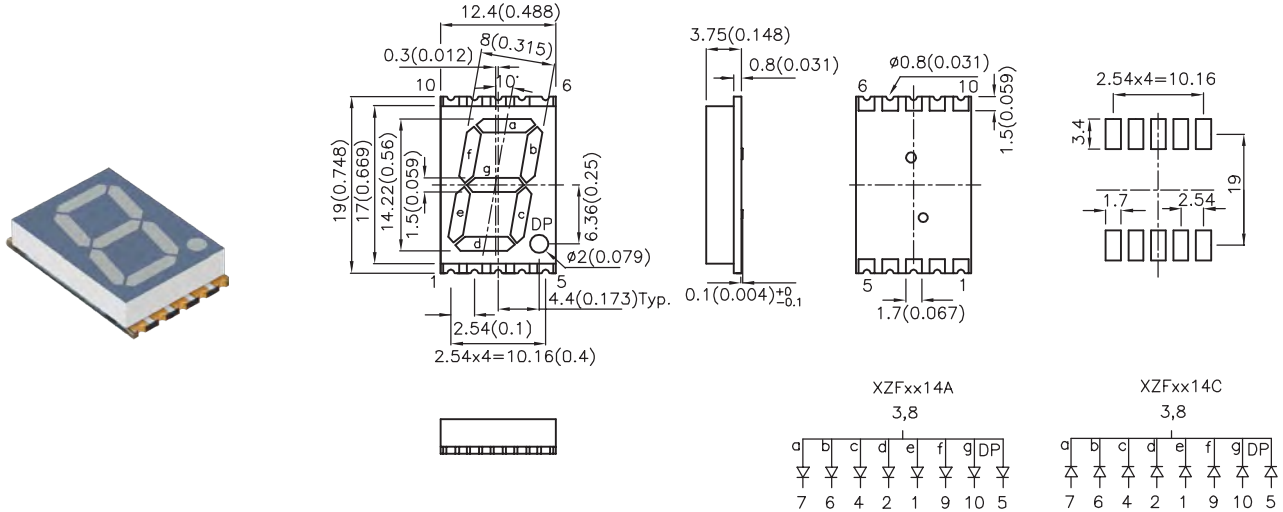
Part Number		Chip Structure (Emitted Color)	λ_{peak} (nm)	Intensity(Icd) $I_t=10mA$	
Common Anode	Common Cathode			Min.	Typ.

0.4"(10.16mm)



XZFMKD10A	XZFMKD10C	◆ AlGaInP(Red)	645	9000	19990
XZFGV10A	-	◆ AlGaInP(Green)	574	2200	4090

0.56"(14.22mm)

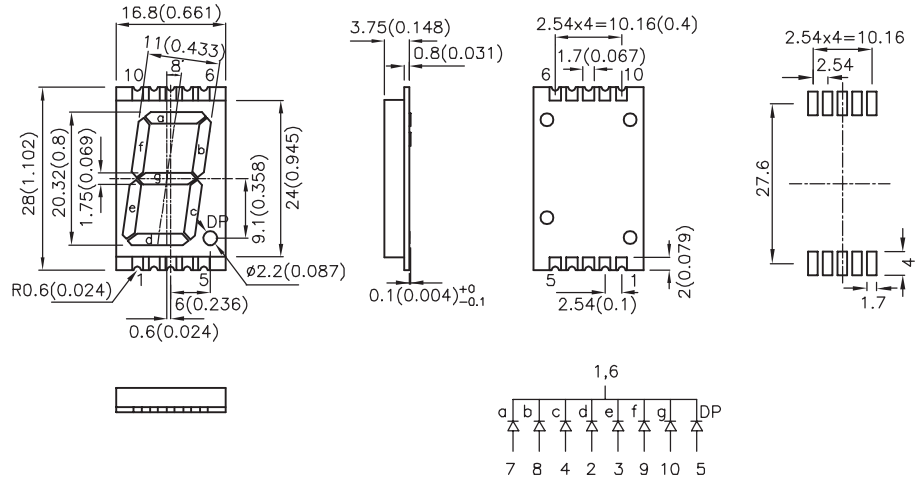
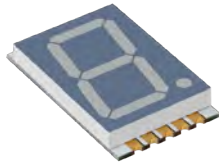


XZFMKD14A	XZFMKD14C	◆ AlGaInP(Red)	645	14000	28990
-	XZFMK14C	◆ AlGaInP(Yellow)	590	14000	28990
XZFGV14A	XZFGV14C	◆ AlGaInP(Green)	574	2200	4590
XZFCBD14A	XZFCBD14C	◆ InGaN(Blue)	460	5600	14990

1. Dimension Unit: mm(inches), Tolerance: ±0.25mm (0.01").
 2. Luminous intensity value and wavelength are in accordance with CIE127-2007 standards.
 3. We reserve the right to make changes at any time to enhance the design and / or performance of the product.

Part Number		Chip Structure (Emitted Color)	λ_{peak} (nm)	Intensity(ucd) $I_t=10mA$	
Common Anode	Common Cathode			Min.	Typ.

0.8"(20.32mm)

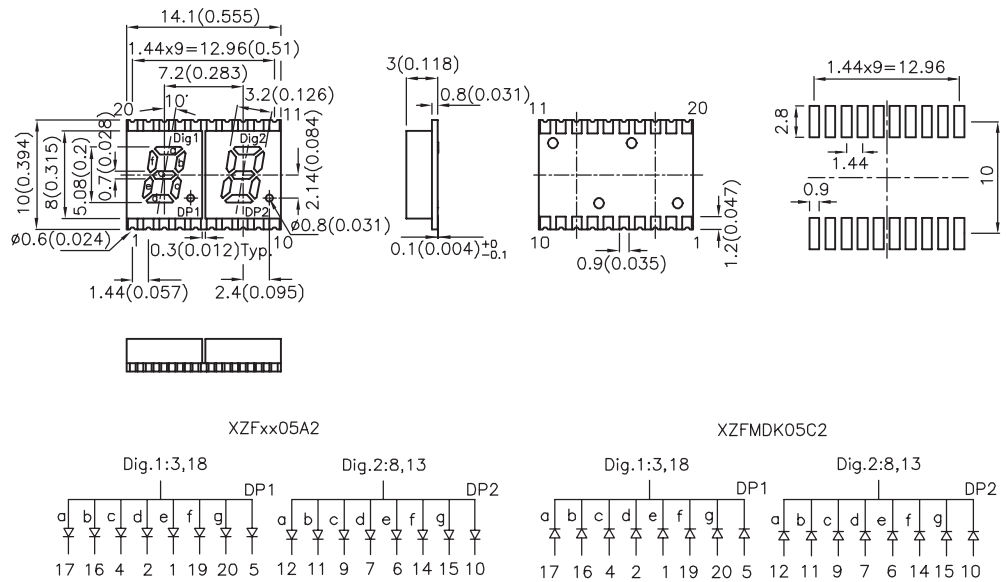


-	XZFMKD20C-A	◆ AlGaInP(Red)	645	5600	11990
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DUAL DIGIT SMD

Part Number		Chip Structure (Emitted Color)	λ_{peak} (nm)	Intensity(ucd) $I_t=10mA$	
Common Anode	Common Cathode			Min.	Typ.

0.2"(5.08mm)

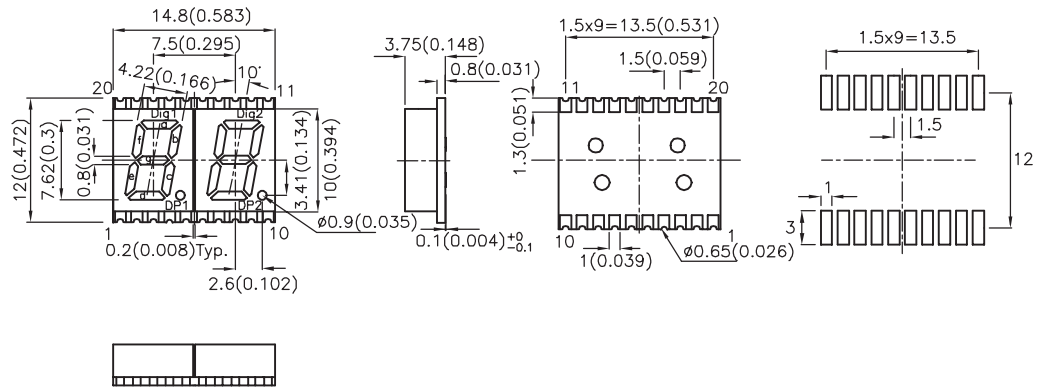
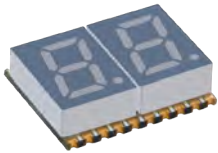


XZFMKD05A2	XZFMKD05C2	◆ AlGaInP(Red)	645	3600	8090
XZFMK05A2	-	◆ AlGaInP(Yellow)	590	5600	14990
XZFG05A2	-	◆ AlGaInP(Green)	574	2200	4290

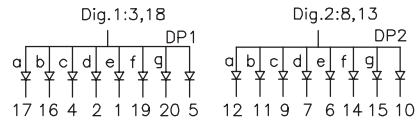
1. Dimension Unit: mm(inches), Tolerance: $\pm 0.25mm$ (0.01").
 2. Luminous intensity value and wavelength are in accordance with CIE127-2007 standards.
 3. We reserve the right to make changes at any time to enhance the design and / or performance of the product.

Part Number		Chip Structure (Emitted Color)	λ_{peak} (nm)	Intensity(I _{cd}) I _v =10mA	
Common Anode	Common Cathode			Min.	Typ.

0.3"(7.62mm)

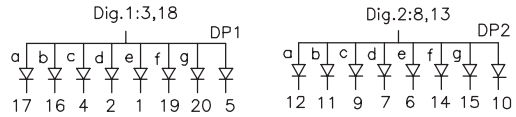
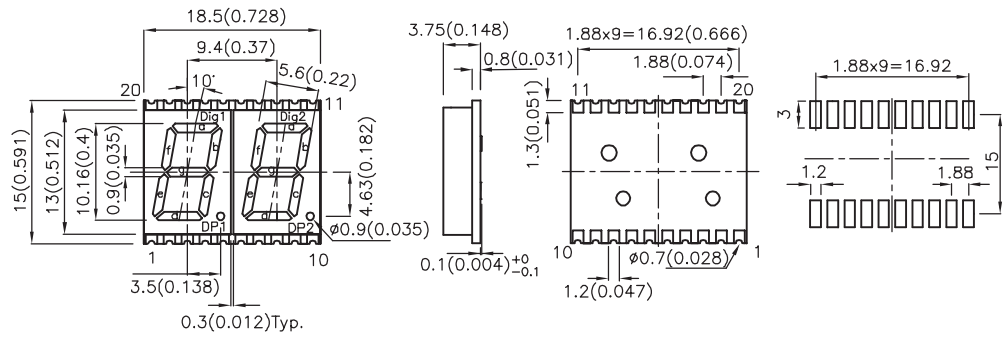
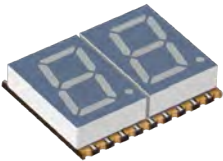


XZFxx07A2



XZFMKD07A2	-	◆ AlGaInP(Red)	645	3600	6390
XZFMOK07A2	-	◆ AlGaInP(Orange)	610	5600	10990

0.4"(10.16mm)

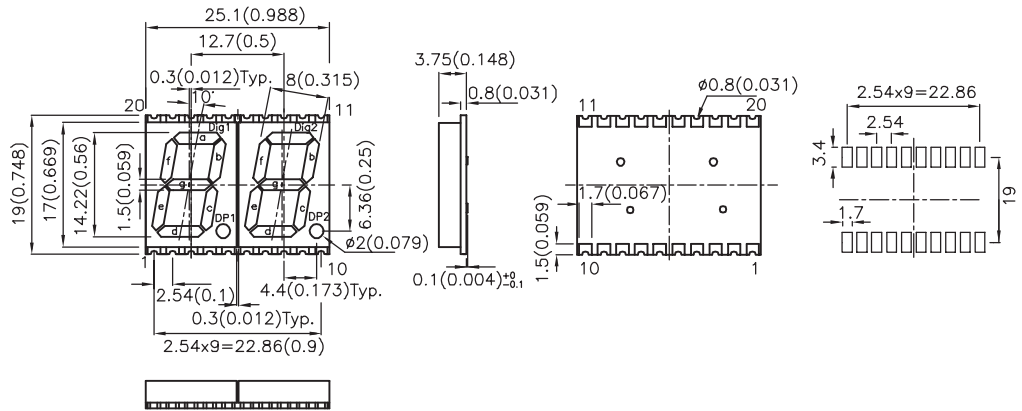
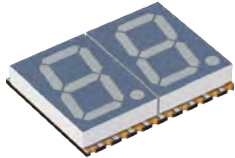


XZFMKD10A2	-	◆ AlGaInP(Red)	645	9000	19990
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1. Dimension Unit: mm(inches), Tolerance: ± 0.25 mm (0.01").
 2. Luminous intensity value and wavelength are in accordance with CIE127-2007 standards.
 3. We reserve the right to make changes at any time to enhance the design and / or performance of the product.

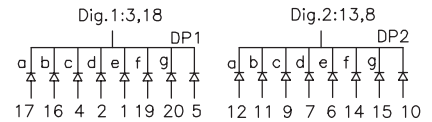
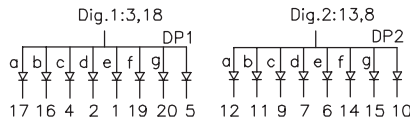
Part Number		Chip Structure (Emitted Color)	λ_{peak} (nm)	Intensity(ucd) $I_f=10mA$	
Common Anode	Common Cathode			Min.	Typ.

0.56"(14.22mm)



XZFVG14A2

XZFMKD14C2

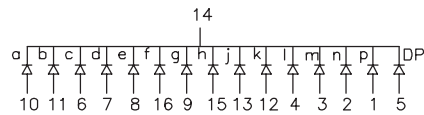
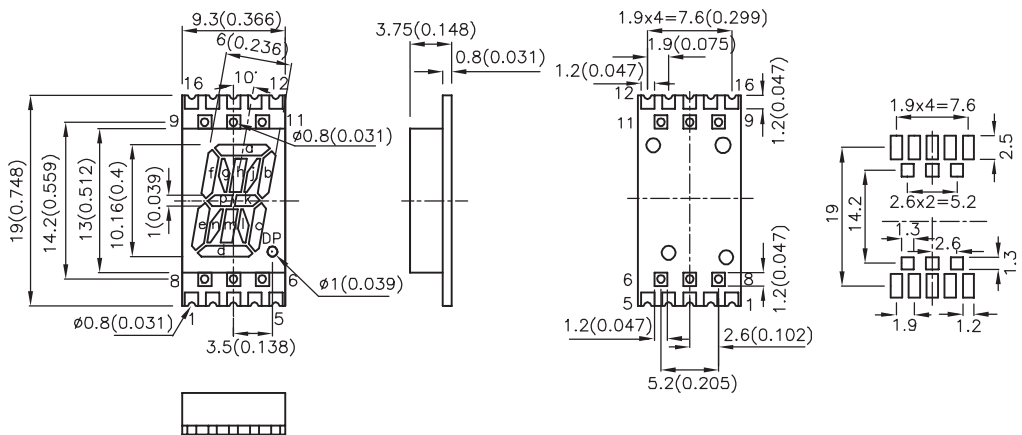
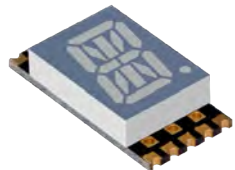


-	XZFMKD14C2	◆ AlGaInP(Red)	645	14000	28990
XZFVG14A2	-	◆ AlGaInP(Green)	574	2200	4590

ALPHANUMERIC SMD

Part Number		Chip Structure (Emitted Color)	λ_{peak} (nm)	Intensity(ucd) $I_f=10mA$	
Common Anode	Common Cathode			Min.	Typ.

0.4"(10.16mm)

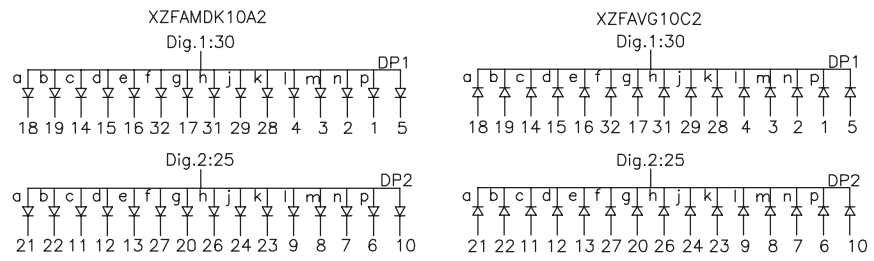
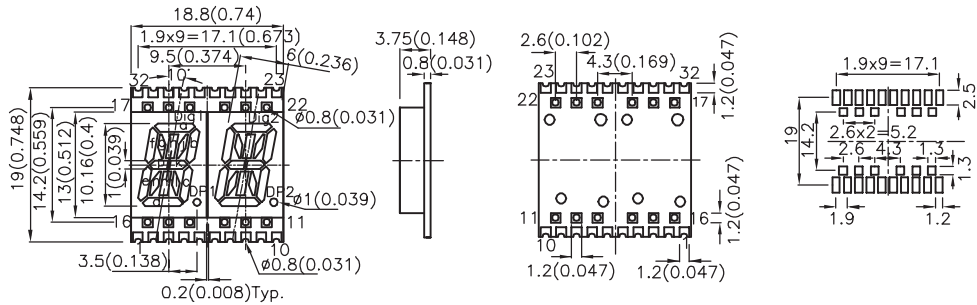
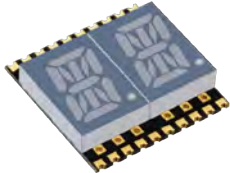


-	XZFMKD10C	◆ AlGaInP(Red)	645	3600	8290
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1. Dimension Unit: mm(inches), Tolerance: $\pm 0.25mm$ (0.01").
 2. Luminous intensity value and wavelength are in accordance with CIE127-2007 standards.
 3. We reserve the right to make changes at any time to enhance the design and / or performance of the product.

Part Number		Chip Structure (Emitted Color)	λ_{peak} (nm)	Intensity(ucd) $I_f=10mA$	
Common Anode	Common Cathode			Min.	Typ.

0.4"(10.16mm)

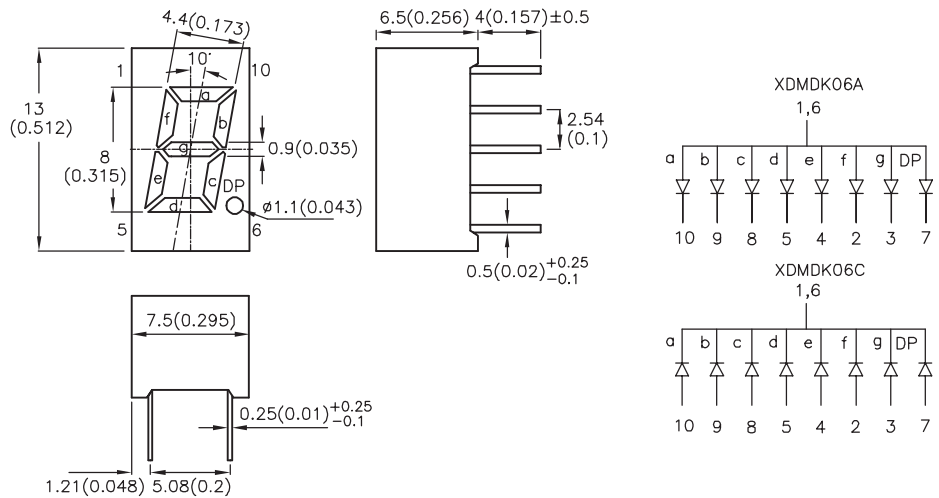
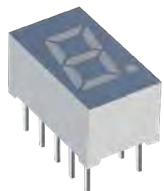


XZFAMDK10A2	-	◆ AlGaInP(Red)	645	3600	8290
-	XZFAVG10C2	◆ AlGaInP(Green)	574	1400	3090

SINGLE DIGIT

Part Number		Chip Structure (Emitted Color)	λ_{peak} (nm)	Intensity(ucd) $I_f=10mA$	
Common Anode	Common Cathode			Min.	Typ.

0.32"(8mm)

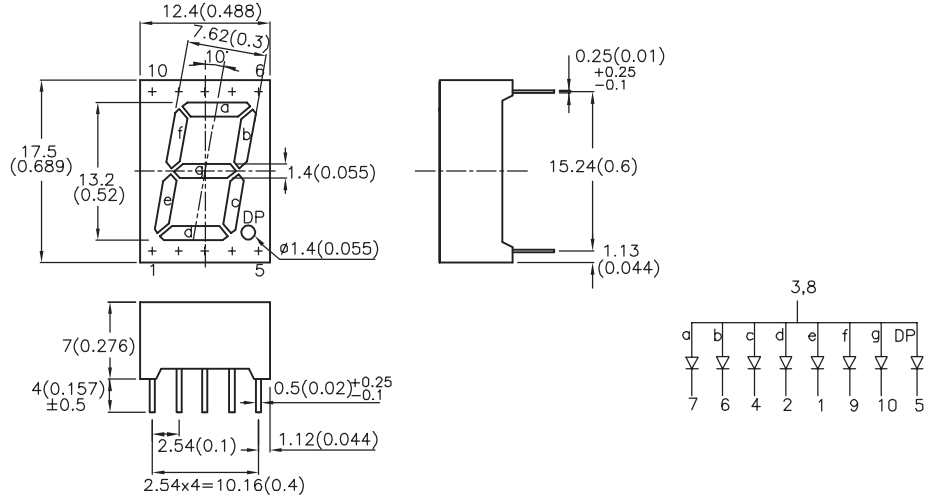
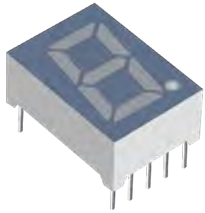


XDMDK06A	XDMDK06C	◆ AlGaInP(Red)	645	9000	20990
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1. Dimension Unit: mm(inches), Tolerance: $\pm 0.25mm$ (0.01").
 2. Luminous intensity value and wavelength are in accordance with CIE127-2007 standards.
 3. We reserve the right to make changes at any time to enhance the design and / or performance of the product.

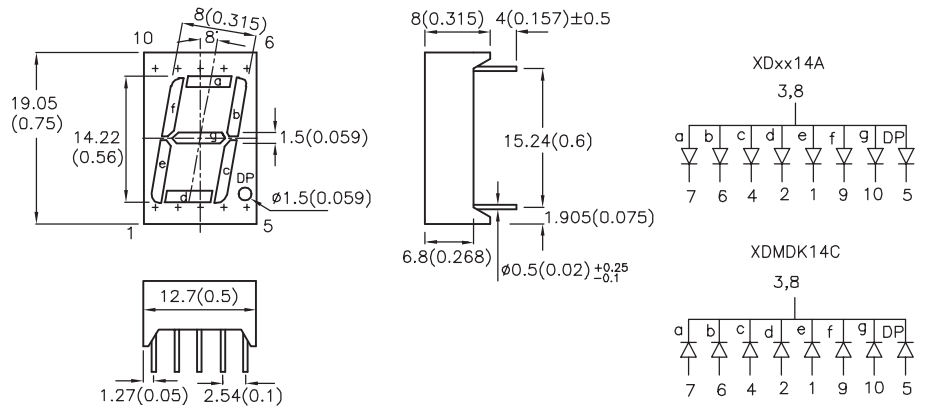
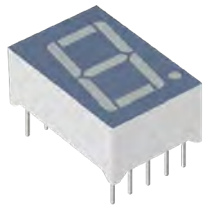
Part Number		Chip Structure (Emitted Color)	λ_{peak} (nm)	Intensity(ucd) $I_f=10mA$	
Common Anode	Common Cathode			Min.	Typ.

0.52"(13.2mm)



XDMDK13A	-	◆ AlGaInP(Red)	645	14000	31990
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0.56"(14.22mm)


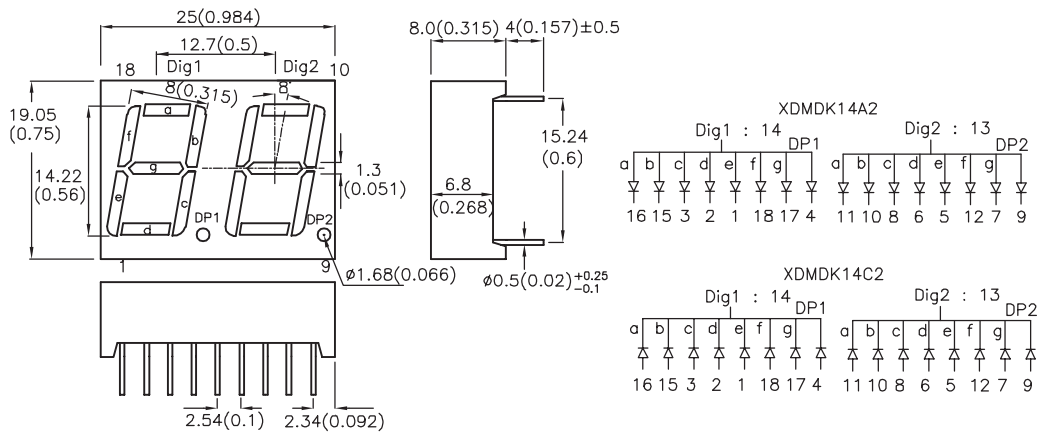


XDMDK14A	XDMDK14C	◆ AlGaInP(Red)	645	14000	26990
XDCBD14A	-	◆ InGaN(Blue)	460	9000	23990

1. Dimension Unit: mm(inches), Tolerance: $\pm 0.25mm$ (0.01").
 2. Luminous intensity value and wavelength are in accordance with CIE127-2007 standards.
 3. We reserve the right to make changes at any time to enhance the design and / or performance of the product.

Part Number		Chip Structure (Emitted Color)	λ_{peak} (nm)	Intensity(ucd) $I_f=10mA$	
Common Anode	Common Cathode			Min.	Typ.

0.56"(14.22mm)

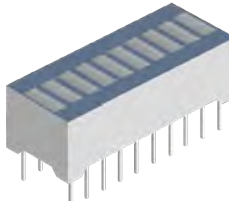
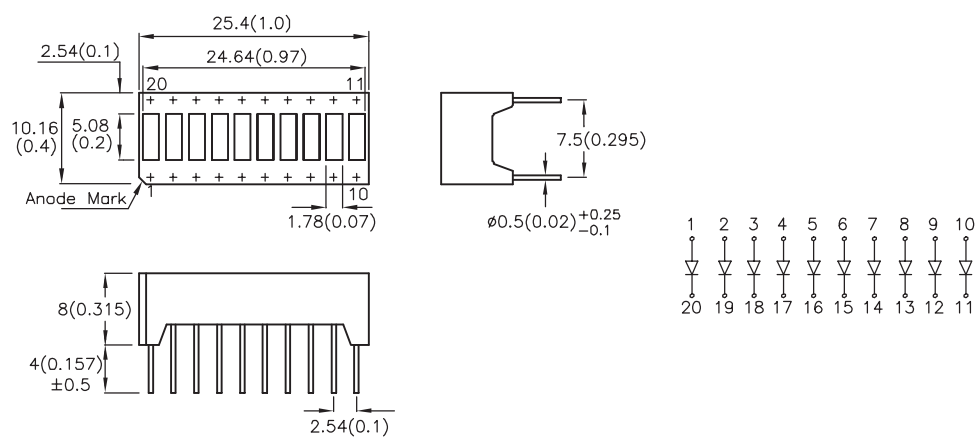
Technical drawing showing dimensions and pin configurations for XDMDK14A2 and XDMDK14C2. Dimensions include overall width (25.0984), segment width (8.0), and pin pitch (2.54). Pin configurations for Dig1 (14 pins) and Dig2 (13 pins) are shown with labels a, b, c, d, e, f, g, DP1, DP2.

XDMDK14A2	XDMDK14C2	◆ AlGaInP(Red)	645	9000	23990
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BAR GRAPH ARRAY

Part Number	Chip Structure (Emitted Color)	λ_{peak} (nm)	Intensity(ucd) $I_f=10mA$	
			Min.	Typ.

10 Segment

Technical drawing showing dimensions and pin configurations for the 10-segment bar graph array. Dimensions include overall width (25.4), segment width (2.54), and pin pitch (2.54). Pin configurations are shown for 10 segments.

XGMDKX10D	◆ AlGaInP(Red)	645	9000	24990
XGVGX10D	◆ AlGaInP(Green)	574	3600	7990

1. Dimension Unit: mm(inches), Tolerance: $\pm 0.25mm$ (0.01").
 2. Luminous intensity value and wavelength are in accordance with CIE127-2007 standards.
 3. We reserve the right to make changes at any time to enhance the design and / or performance of the product.

INTENSITY CODES

Intensity Code for Standard LEDs (Ta=25°C Tolerance +/-15%)

Bin Code	Light intensity in mcd (IF<15mA)		Bin Code	Light intensity in mcd (IF<15mA)		Bin Code	Light intensity in mcd (IF<15mA)	
	min.	max.		min.	max.		min.	max.
F	0.1	0.2	R	15	20	ZB	550	700
G	0.2	0.35	S	20	30	ZC	700	1000
H	0.35	0.5	T	30	50	ZD	1000	1600
I	0.5	0.8	U	50	80	ZE	1600	2200
K	0.8	1.2	V	80	120	ZF	2200	2800
L	1.2	2	W	120	180	ZG	2800	3400
M	2	4	X	180	250	ZH	3400	4300
N	4	6	Y	250	320	ZM	4300	5200
P	6	10	Z	320	450	ZN	5200	6300
Q	10	15	ZA	450	550	ZP	6300	7400

Intensity Code for Displays (Ta=25°C Tolerance +/-15%)

Bin Code	Light intensity in ucd (IF≤10mA)		Bin Code	Light intensity in ucd (IF≤10mA)	
	min.	max.		min.	max.
C	70	140	P	14000	21000
D	140	240	Q	21000	31000
E	240	360	R	31000	52000
F	360	560	S	52000	88000
G	560	900	T	88000	150000
H	900	1400	U	150000	255000
I	1400	2200	V	255000	433000
K	2200	3600	W	433000	736000
L	3600	5600	X	736000	1251000
M	5600	9000	Y	1251000	2126000
N	9000	14000	Z	2126000	3614000

Intensity Code for High Intensity LEDs (Ta=25°C Tolerance +/-15%)

Bin Code	Light intensity in mcd (IF≥15mA)		Bin Code	Light intensity in mcd (IF≥15mA)	
	Min.	Max.		Min.	Max.
A	2	3	ZA	3100	3600
B	3	5	ZB	3600	4200
C	5	8	ZC	4200	5000
D	8	12	ZD	5000	6000
E	12	20	ZE	6000	7000
F	20	40	ZF	7000	8000
G	40	55	ZG	8000	9000
H	55	80	ZH	9000	11000
M	80	120	ZM	11000	14000
N	120	200	ZN	14000	18000
P	200	300	ZP	18000	22000
Q	300	400	ZQ	22000	27000
R	400	500	ZR	27000	35000
S	500	700	ZS	35000	43000
T	700	1000	ZT	43000	55000
U	1000	1300	ZU	55000	75000
V	1300	1600	ZV	75000	130000
W	1600	1900	ZW	130000	200000
X	1900	2300	ZX	200000	320000
Y	2300	2700	ZY	320000	490000
Z	2700	3100	ZZ	490000	800000

Intensity Codes for High Powered LEDs (Ta=25°C Tolerance: +/-15%)

Bin Code	Luminous Flux in lm		Bin Code	Luminous Flux in lm	
	Min.	Max.		Min.	Max.
A1	0.5	0.6	B10	50	60
A2	0.6	0.7	B11	60	70
A3	0.7	0.8	B12	70	80
A4	0.8	1	B13	80	90
A5	1	1.2	B14	90	100
A6	1.2	1.4	C1	100	120
A7	1.4	1.7	C2	120	140
A8	1.7	2	C3	140	160
A9	2	2.4	C4	160	180
A10	2.4	2.9	C5	180	210
A11	2.9	3.5	C6	210	240
A12	3.5	4.2	C7	240	280
A13	4.2	5	C8	280	320
A14	5	6	C9	320	370
A15	6	7.2	C10	370	430
A16	7.2	8.6	C11	430	490
A17	8.6	10	C12	490	560
B1	10	12	C13	560	640
B2	12	14	C14	640	740
B3	14	17	C15	740	850
B4	17	20	C16	850	1000
B5	20	24	D1	1000	1200
B6	24	29	D2	1200	1400
B7	29	35	D3	1400	1600
B8	35	42	D4	1600	1800
B9	42	50	D5	1800	2100

INTENSITY CODES

Code for NPN Phototransistors
(Ta=25°C Tolerance +/-15%)

Bin Code	Photocurrent in mA		Bin Code	Photocurrent in mA	
	min.	max.		min.	max.
F	0.1	0.2	L	1.2	2
G	0.2	0.35	M	2	4
H	0.35	0.5	N	4	6
I	0.5	0.8	P	6	10
K	0.8	1.2			

Code for Infrared Emitting Diodes
(Ta=25°C Tolerance +/-15%)

Bin Code	Radiant intensity in mW/sr (IF=20mA)		Bin Code	Radiant intensity in mW/sr (IF=20mA)	
	min.	max.		min.	max.
AK	0.8	1.2	D	8	12
AL	1.2	2	E	12	20
A	2	3	F	20	40
B	3	5	G	40	55
C	5	8	H	55	80

WAVELENGTH CODES

Color Code for LEDs and Displays (Ta=25°C Tolerance: +/-1nm)

Bin Code	Dominant Wavelength in nm							
	Green		Aqua Green		True Green		Yellow	
	min.	max.	min.	max.	min.	max.	min.	max.
0	556	559			510	515		
1	559	561	497	501	515	520	581	584
2	561	563	501	504	520	525	584	586
3	563	565	504	506	525	530	586	588
4	565	567	506	508	530	535	588	590
5	567	569	508	510	535	540	590	592
6	569	571	510	512			592	594
7	571	573	512	515			594	597
8	573	575					597	600

Color Code for LEDs and Displays (Ta=25°C Tolerance: +/-1nm)

Bin Code	Dominant Wavelength in nm		Bin Code	Dominant Wavelength in nm	
	Blue			Blue	
	min.	max.		min.	max.
1	445	450	3A	471	473
2	450	455	3B	473	475
3	455	460	4A	475	477
1A	460	463	4B	477	479
1B	463	466	5A	479	481
2A	466	469	5B	481	483
2B	469	471	5C	483	486

SunLED white LEDs are color sorted based on either CIE (coordinates) or CCT (Kelvin). Refer to below diagram (Fig. 1).

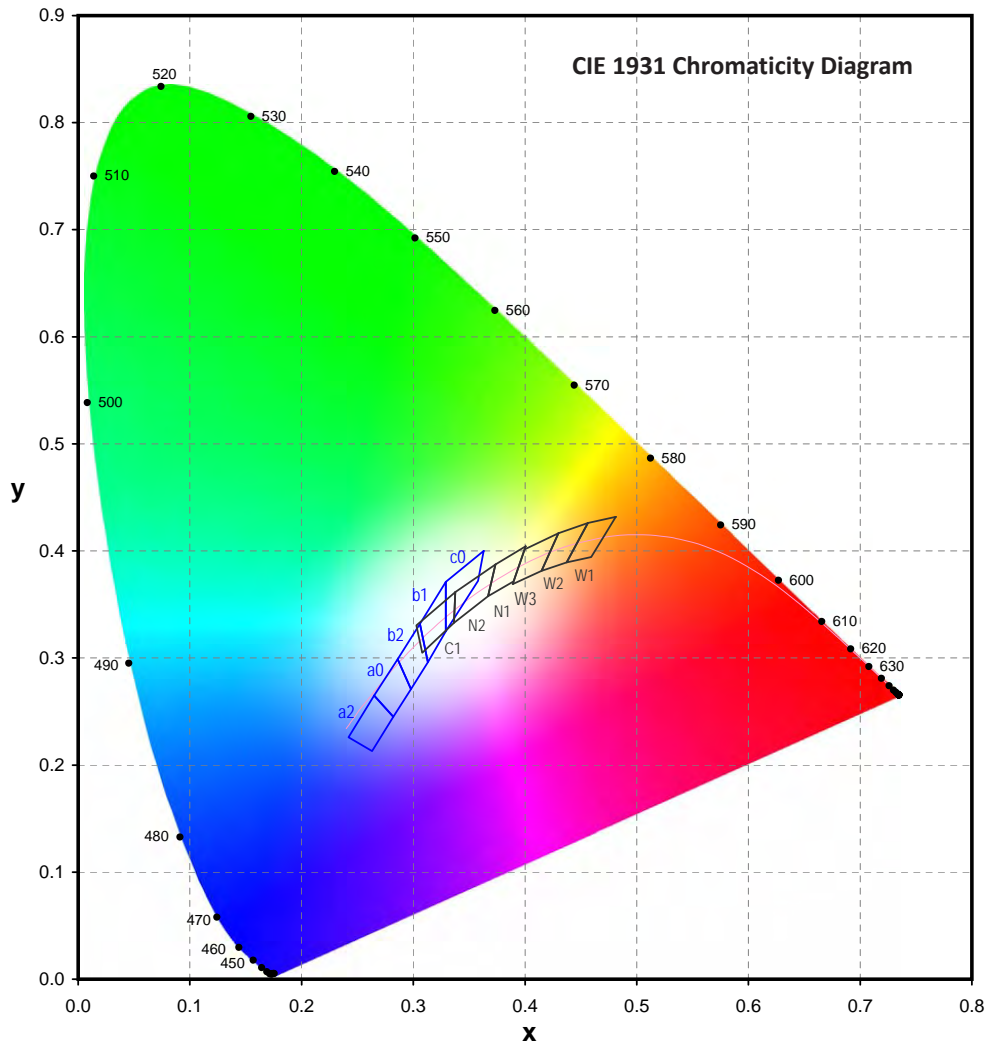


Fig. 1

a2				
x	0.263	0.282	0.265	0.242
y	0.213	0.245	0.265	0.226
CCT: 15000K~				

a0				
x	0.282	0.298	0.286	0.265
y	0.245	0.271	0.299	0.265
CCT: 9000~15000K				

b2				
x	0.298	0.313	0.306	0.286
y	0.271	0.296	0.332	0.299
CCT: 6800~9000K				

b1				
x	0.313	0.329	0.329	0.306
y	0.296	0.325	0.371	0.332
CCT: 5600~6800K				

c0				
x	0.329	0.358	0.363	0.329
y	0.325	0.372	0.400	0.371
CCT: 4600~5600K				

W1				
x	0.4373	0.4593	0.4813	0.4562
y	0.3893	0.3944	0.4319	0.4260
CCT: 2580~2870K				

W2				
x	0.4147	0.4373	0.4562	0.4299
y	0.3814	0.3893	0.4260	0.4165
CCT: 2870~3220K				

W3				
x	0.3889	0.4147	0.4299	0.3996
y	0.3690	0.3814	0.4165	0.4015
CCT: 3220~3710K				

N1				
x	0.3670	0.3898	0.4006	0.3736
y	0.3578	0.3716	0.4044	0.3874
CCT: 3710~4260K				

N2				
x	0.3364	0.3670	0.3736	0.3376
y	0.3328	0.3578	0.3874	0.3616
CCT: 4260~5310K				

C1				
x	0.3081	0.3364	0.3376	0.3028
y	0.3049	0.3328	0.3616	0.3304
CCT: 5310~7040K				

SMD LED Products

Test Item	Test Conditions	Description	Reference Standard
Continuous operating	Ta=25°C T=1000hrs	The purpose of this test is to determine the resistance of the device when operating under electrical stress	EIAJ ED-4701 100 101
	RH<75%RH, IF(Max)		
High temperature storage	Ta=100°C T=1000hrs	The purpose of this test is to evaluate the product durability after long-term storage in high temperature	EIAJ ED-4701 200 201
Low temperature storage	Ta=-40°C T=1000hrs	The purpose of this test is to evaluate the product durability after long-term storage in low temperature	EIAJ ED-4701 200 202
High temperature and humidity storage	Ta=60°C T=1000hrs	The purpose of this test is to evaluate product durability under long-term high temperature and high humidity storage	EIAJ ED-4701 100 103
	RH=90%RH		
High temperature and humidity operating	Ta=60°C T=1000hrs	The purpose of this test is to determine the resistance of the device under electrical and thermal stress	EIAJ ED-4701 100 102
	RH=90%RH, IF(Max)		
Solderability	Ta=245°C T=5sec	The purpose of this test is to evaluate solderability on leads of device	EIAJ ED-4701 300 303
Soldering resistance	Ta=260°C T=5sec	The purpose of this test is to determine the thermal resistance characteristics of the device to sudden exposures at extreme changes in temperature during Tin-dipping	EIAJ ED-4701 300 301
Temperature cycling	Ta=-40°C~25°C~100°C~25°C	The purpose of this test is to determine the resistance of the device to storage under extreme temperature for hours	EIAJ ED-4701 100 105
	T=(30min~5min~30min~5min)×10cycles		
Temperature cycling operating	Ta=-40°C~25°C~100°C~25°C IF(Max)	The purpose of this test is to determine the resistance of the device under extreme temperature for hours	N/A
	T=(30min~5min~30min~5min)×10cycles		
Thermal shock	Ta=-40°C~100°C	The purpose of this test is to determine the resistance of the device to sudden extreme changes in high and low temperature	EIAJ ED-4701 300 307
	T=15min~15min×100cycles		

LED Displays

Test Item	Test Conditions	Description	Reference Standard
Continuous operating	Ta=25°C T=1000hrs	The purpose of this test is to determine the resistance of the device when operating under electrical stress	EIAJ ED-4701 100 101
	RH<75%RH, IF(Max)		
High temperature storage	Ta=100°C T=1000hrs	The purpose of this test is to evaluate the product durability after long-term storage in high temperature	EIAJ ED-4701 200 201
Low temperature storage	Ta=-40°C T=1000hrs	The purpose of this test is to evaluate the product durability after long-term storage in low temperature	EIAJ ED-4701 200 202
High temperature and humidity storage	Ta=60°C T=1000hrs	The purpose of this test is to evaluate product durability under long-term high temperature and high humidity storage	EIAJ ED-4701 100 103
	RH=90%RH		
Solderability	Ta=245°C T=5sec	The purpose of this test is to evaluate solderability on leads of device	EIAJ ED-4701 300 303
Soldering resistance	Ta=260°C T=5sec	The purpose of this test is to determine the thermal resistance characteristics of the device to sudden exposures at extreme changes in temperature during Tin-dipping	EIAJ ED-4701 300 301
Temperature cycling	Ta=-40°C~25°C~100°C~25°C	The purpose of this test is to determine the resistance of the device to storage under extreme temperature for hours	EIAJ ED-4701 100 105
	T=(30min~5min~30min~5min)×10cycles		
Thermal shock	Ta=-40°C~100°C	The purpose of this test is to determine the resistance of the device to sudden extreme changes in high and low temperature	EIAJ ED-4701 300 307
	T=15min~15min×100cycles		

Through-Hole LEDs

Test Item	Test Conditions	Description	Reference Standard
Continuous operating	Ta=25°C T=1000hrs	The purpose of this test is to determine the resistance of the device when operating under electrical stress	EIAJ ED-4701 100 101
	RH<75%RH, IF(Max)		
High temperature storage	Ta=100°C T=1000hrs	The purpose of this test is to evaluate the product durability after long-term storage in high temperature	EIAJ ED-4701 200 201
Low temperature storage	Ta=-40°C T=1000hrs	The purpose of this test is to evaluate the product durability after long-term storage in low temperature	EIAJ ED-4701 200 202
High temperature and humidity storage	Ta=60°C T=1000hrs	The purpose of this test is to evaluate product durability under long-term high temperature and high humidity storage	EIAJ ED-4701 100 103
	RH=90%RH		
High temperature and humidity operating	Ta=60°C T=1000hrs	The purpose of this test is to determine the resistance of the device under electrical and thermal stress	EIAJ ED-4701 100 102
	RH=90%RH, IF(Max)		
Lead frame bending	Bend 90°C T=3 cycles	The purpose of this test is to evaluate products durability against mechanical stress applied to leads	N/A
Lead frame pulling	W=1kg T=30sec	The purpose of this test is to evaluate products durability against mechanical stress	N/A
Solderability	Ta=245°C T=5sec	The purpose of this test is to evaluate solderability on leads of device	EIAJ ED-4701 300 303
Soldering resistance	Ta=260°C T=5sec	The purpose of this test is to determine the thermal resistance characteristics of the device to sudden exposures at extreme changes in temperature during Tin-dipping	EIAJ ED-4701 300 302
Temperature cycling	Ta=-40°C~25°C~100°C~25°C	The purpose of this test is to determine the resistance of the device to storage under extreme temperature for hours	EIAJ ED-4701 100 105
	T=(30min~5min~30min~5min)×10cycles		
Temperature cycling operating	Ta=-40°C~25°C~100°C~25°C IF(Max)	The purpose of this test is to determine the resistance of the device under extreme temperature for hours	N/A
	T=(30min~5min~30min~5min)×10cycles		
Thermal shock	Ta=-40°C~100°C	The purpose of this test is to determine the resistance of the device to sudden extreme changes in high and low temperature	EIAJ ED-4701 300 307
	T=15min~15min×100cycles		

- Manual soldering operations should only be for repairs and reworks unless otherwise noted on product specifications.
- Maximum soldering iron temperatures for manual soldering:
 - Pb-Sn solder: 300°C
 - Pb-Free solder: 350°C
 - All LEDs using InGaN material (e.g. Blue, Green, White): 280°C
- The soldering iron should never touch the epoxy lens. Contact duration with the component should not exceed 3 seconds.
- Do not apply stress or pressure to the leads when the component is heated above 80°C as possible damage to the internal wire bonds may occur.
- During soldering, component covers and holders should leave enough clearance to avoid any stress applied to the LED. Refer to below diagram (Fig. 2) for examples of proper method.

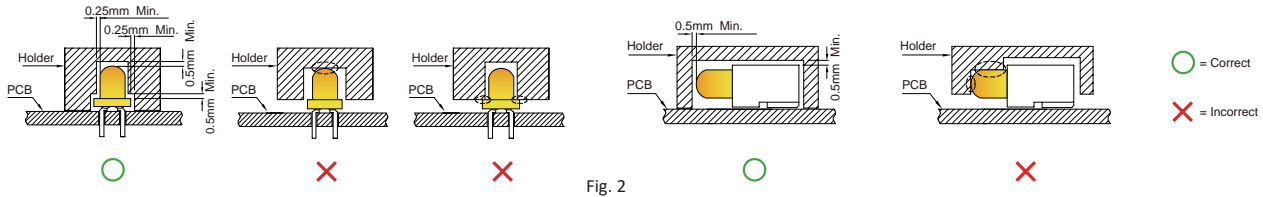
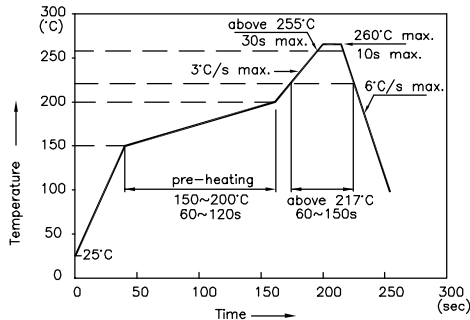


Fig. 2

- Refer to below diagrams for recommended soldering profiles.
 - SMD LEDs: Reflow Soldering – Pb-Free Solder (Fig. 3) | Pb-Sn Solder (Fig. 4)
 - No more than two soldering passes except SMD CBIs which should not exceed one pass
 - Through-hole LEDs: Wave Soldering – Pb-Free Solder (Fig. 5) | Pb-Sn Solder (Fig. 6)
 - No more than one soldering pass

Reflow Soldering Profile for SMD Products (Pb-Free Components)



Notes:

- All temperatures refer to the center of the package, measured on the package body surface facing up during reflow.
- Do not apply any stress to the LED during high temperature conditions.
- Maximum number of soldering passes: 2

Fig. 3

Reflow Soldering Profile (Pb-Sn Solder)

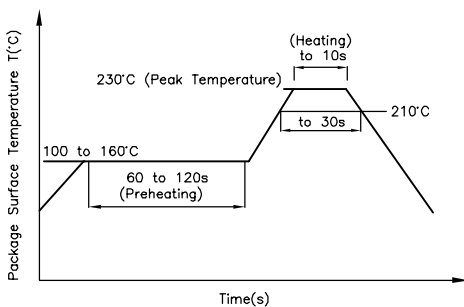
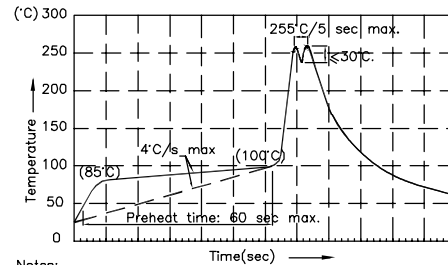


Fig. 4

Wave Soldering Profile (Pb-Free Solder)



Notes:

- Recommend pre-heat temperature of 105°C or less (as measured with a thermocouple attached to the LED pins) prior to immersion in the solder wave with a maximum solder bath temperature of 280°C
- Peak wave soldering temperature between 245°C ~ 255°C for 3 sec (5 sec max).
- Do not apply stress to the epoxy resin while the temperature is above 85°C.
- Fixtures should not incur stress on the component when mounting and during soldering process.
- SAC 305 solder alloy is recommended.
- No more than one wave soldering pass.
- During wave soldering, the PCB top-surface temperature should be kept below 105°C.

Fig. 5

Wave Soldering Profile (Pb-Sn Solder)

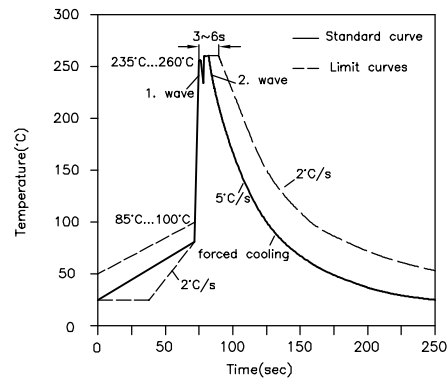


Fig. 6

7. Refer to the appropriate product datasheet for details on specific soldering pay layout. To ensure proper bonding and setting of the LED, solder paste must be evenly applied to each soldering pad. Refer to below diagram (Fig. 7) for example of improper solder application.

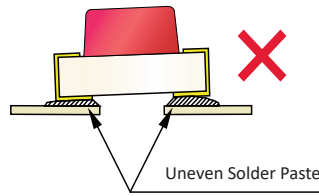


Fig. 7

8. After soldering, allow at least three minutes for the component to cool to room temperature before further processing.

9. Refer to below table for summary of soldering instructions for dip, wave, and manual solder. Note that these are considered general instructions and all soldering notes indicated above should take precedence.

Types	Dip soldering / *Wave Soldering			Iron soldering (with 1.5mm iron tip)		
	Temperature of the soldering bath	Maximum soldering time	Distance from solder joint to package	Temperature of soldering iron	Maximum soldering time	Distance from solder joint to package
LEDs	<=260°C	3s	>=2mm	<=350°C	3s	>2mm
	<=260°C	5s	>=5mm	<=350°C	5s	>5mm
SMDs	/	/	/	<=350°C	3s (one time only)	/
DISPLAYs	*<=260°C	*3s	*>2mm	<=350°C	3s	>2mm

APPLICATION NOTES

Cleaning

1. Do not use harsh organic solvents such as acetone, trichloroethylene, Chlorsan, and/or diflon solvent for cleaning as they may cause damage or hazing to the LED lens.
2. Do not use acidic solvents or unknown chemicals for cleaning as they may damage or degrade the LED. Always check the properties of the chemical to ensure it will not corrode or damage epoxy resin, silicone resin, silver plating, or organosilicates.
3. Recommended solvents for cleaning: deionized water or isopropyl alcohol.
4. Special attention should be taken if other chemicals are used for cleaning as they may damage the epoxy lens or housing.
5. Any cleaning should take place at room temperature and the wash duration should not exceed one minute.
6. Use forced-air drying immediately following water wash to remove excess moisture.

Lead Forming

1. Any lead forming or bending must be done prior to soldering.
2. Avoid bending leads at the same point more than once as it may compromise the integrity of the leads.
3. Minimum clearance of 3mm is required between the base of the LED lens and the bend location. Refer to below diagram (Fig. 8).

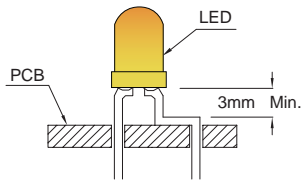
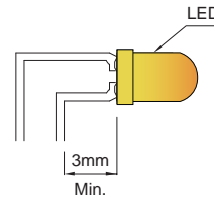


Fig. 8



4. Lead forming should only be done with proper tools such as a jig and/or radio pliers. The upper section of the leads should be secured firmly such that the bending force is not exerted on the LED body. Refer to below diagram (Fig. 9) for recommended lead bending method.

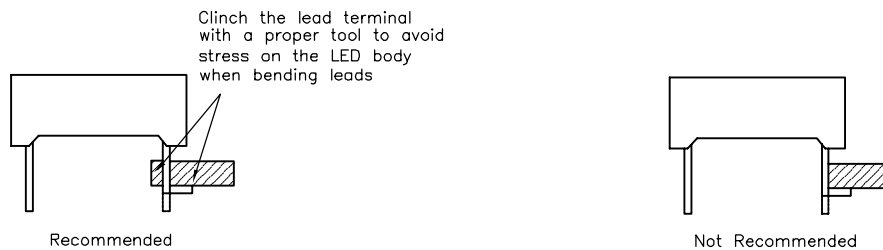


Fig. 9

ESD Precautions

InGaN/GaN material LEDs are sensitive to electrostatic discharge (ESD) and other transient voltage spikes. ESD and voltage spikes can affect the component’s performance due to increased reverse current and/or decreased forward voltage. This may result in reduced light intensity and/or component failure. Static discharge may occur when static sensitive LEDs come in contact with the user or other conductive devices. ESD sensitive LEDs must incorporate protective circuitry to prevent ESD and to control voltage spikes in order to stay within the maximum voltage specified.

SunLED products are stored in anti-static bags for protection during transportation and storage. However, below anti-static measures should always be noted when handling static sensitive components.

1. Operators must wear anti-static wristbands.
2. Operators must wear anti-static suits when entering work areas with conductive machinery and materials.
3. All test instruments and production machinery must be grounded.
4. Avoid static build up by minimizing friction between the LED and its surroundings.
5. Relative Humidity between 40% ~ 60% is recommended in ESD-protected work areas to reduce static build up.
Reference JEDEC/J-STD-033 and JEDEC/JESD625-A standards.
6. All workstations that handle ESD sensitive components must maintain an electrostatic condition of 150V or less.
7. Anti-static material/packaging should be used when parts are being stored and/or transported.
8. All anti-static measures noted above should be periodically checked and inspected to ensure proper functionality.

Design Notes

1. Protective current-limiting resistors should be used in conjunction with LEDs to ensure parts are operating within specified current range.
2. The driving circuit should be designed to avoid reverse voltages and transient voltage spikes when the circuit is in both on & off states. Prolonged reverse bias may cause metal migration leading to an increase in leakage current or causing a short circuit.

- 3. Prevent exposure of LEDs to environments containing high moisture or corrosive gases.
- 4. Excess operating temperature and/or forward current should be avoided as it may lead to accelerated degradation or failure of the LED. Always refer to the most updated datasheet for driving conditions.
- 5. When LEDs are mounted in a parallel configuration, there should be individual current-limiting resistors in series with each LED. Refer to below diagram (Fig.10) for an example of a recommended set up.

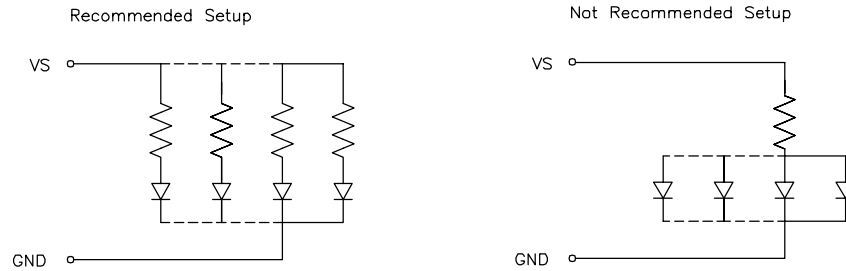


Fig. 10

- 6. Mounting direction of SMD components should be placed perpendicular to the direction of PCB travel. This will ensure the solder wets on each lead simultaneously during reflow and prevent shifting of LEDs. Refer to below diagram (Fig.11) for examples of recommended mounting direction.

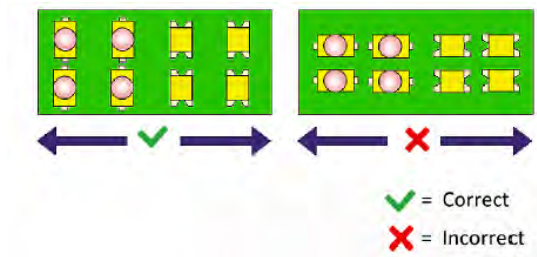


Fig. 11

- 7. High-power LED devices require optimization of heat dissipation. Increasing the size of metal mounting surface and proper application of thermal conductive paste will help improve heat dissipation. Refer to below diagram (Fig.12) and product datasheets for specific design recommendations.

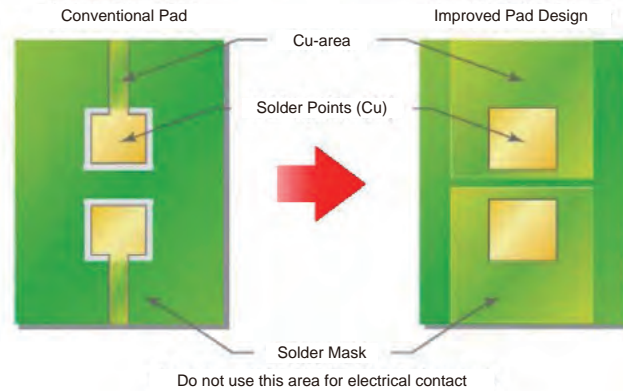


Fig. 12

- 8. High temperatures may reduce component's performance and reliability. Please refer to individual product datasheets for specific details on operable temperature range and effects of temperature on the LED.

Storage, MSL, and Humidity Conditions

SMD LEDs are considered moisture sensitive and storage/usage precautions must be taken to prevent damage to the internal materials. Excess moisture trapped within the component may cause internal vapor pressure during solder reflow leading to possible delamination of the die or wire bond.

1. Do not store or expose LEDs in an environment where high levels of moisture or corrosive gases are present and keep away from rapid transitions in ambient temperature.

Recommended storage conditions for each type of LED product as per below:

Product Type	Temperature	Humidity
SMD LED	< 40°C	< 90%RH
Through-hole LED	≤ 30°C	< 60%RH
LED Displays	5°C to 30°C	< 60%RH

Note: Above conditions are based on products in original sealed packaging

2. All SMD LEDs are packaged in moisture barrier bags (MBB) with a label indicating the moisture sensitivity level (MSL).
 - a. Storage conditions for unopened MBB: Temperature < 40°C, Humidity < 90%RH with shelf life of 24 months.
 - b. Floor life for opened MBB follows the corresponding MSL as per below:

IPC/JEDEC J-STD-020

MSL	Floor Life	
	Time	Conditions
1	Unlimited	≤30°C / 85%RH
2	1 Year	≤30°C / 60%RH
2a	4 Weeks	≤30°C / 60%RH
3	168 Hours	≤30°C / 60%RH
4	72 Hours	≤30°C / 60%RH
5	48 Hours	≤30°C / 60%RH
5a	24 Hours	≤30°C / 60%RH
6	Time indicated on label	≤30°C / 60%RH

3. All SMD LEDs are packaged with desiccants and a humidity indicator card (HIC). If the LEDs are not used within the specific floor life or if the HIC has indicated presence of moisture, the following baking procedure must be taken:

Condition	Temperature	Humidity	Bake Duration
LED inside carrier	60°C ± 3°C	<5% RH	100 hours
LED outside carrier tape	110°C	-	10 hours

*Not more than once

Additional Notes

1. LED devices may contain Gallium Arsenide (GaAs). GaAs dust and fumes are toxic and harmful if ingested. Do not expose LEDs to chemical solvents and/or break open LED devices.
2. The light output from UV, blue, and high-power LEDs may cause injury to the human eye when viewed directly.
3. Semiconductor devices can fail or malfunction due to their sensitivity to electrical fluctuation and physical stress. In design development, please make certain that SunLED products are used within the specified operating conditions as indicated on our most current product datasheets. The user is responsible to observe and follow all safety measures to avoid situations where the failure or malfunction of a SunLED product could cause injury, property damage, or the loss of human life.
4. Reference <https://www.SunLEDusa.com/TechnicalNotes.asp> for complete technical notes.

INDEX

XCxx11D.....	P31-31	XZM2CRKDGKCB107S-IC.....	P8-8
XCxx12D.....	P31-31	XZM2CRKM2DGFBB45SCCB.....	P7-7
XDMDK06A.....	P43-43	XZMDK55W-3HTA.....	P25-25
XDMDK06C.....	P43-43	XZMDKCBDDG45S-9.....	P8-8
XDMDK13A.....	P44-44	XZMDKDGK55W-8RT.....	P24-24
XDMDK14A2.....	P45-45	XZMDKVG45WT.....	P13-13
XDMDK14C.....	P44-44	XZMDKVG45WT-9.....	P12-12
XDMDK14C2.....	P45-45	XZMDKVG55W-7.....	P11-11
XDxx14A.....	P44-44	XZMDKVG57W.....	P10-10
XEMDK21D.....	P29-29	XZMDKVG57W-1.....	P11-11
XGxxX10D.....	P45-45	XZMDKVG62W5MAV-1HTA.....	P26-26
XLMDK169W.....	P27-27	XZMDKVG88W.....	P11-11
XLMDKVG29M.....	P30-30	XZMDKVG98W.....	P12-12
XLMDKVG38W.....	P29-29	XZMEDGCB45S.....	P7-7
XLMDKVG58M.....	P30-30	XZMEDGCB56W.....	P6-6
XLxx01D.....	P28-28	XZMEDGKCB61W.....	P6-6
XLxx11D.....	P27-27	XZRNI54W.....	P36-36
XLxx11W.....	P27-27	XZRNI55W.....	P37-37
XLxx12D.....	P28-28	XZRNI56BF.....	P36-36
XLxx12W.....	P28-28	XZRNI56W.....	P36-36
XLxx14W.....	P28-28	XZRNI56W-1.....	P36-36
XLxx34D.....	P27-27	XZTHI53W.....	P34-34
XLxx34M.....	P30-30	XZTHI54W.....	P35-35
XLxx37M.....	P29-29	XZTHI56W-1.....	P35-35
XLxx59M.....	P30-30	XZTHI78W.....	P35-35
XLxx65D.....	P27-27	XZTNI53W-1.....	P34-34
XNH1ZMG46D.....	P32-32	XZTNI54W.....	P35-35
XNK1LUG11D.....	P32-32	XZTNI54W-1.....	P35-35
XNK1LUG11DSMD.....	P33-33	XZTNI55W-3.....	P35-35
XNN1LUGR86M.....	P32-32	XZTNI56W-1.....	P35-35
XP2Lxx11D.....	P33-33	XZVGF151W.....	P20-20
XPZ3Lxx37M.....	P33-33	XZxx105S.....	P19-19
XRNI12W.....	P36-36	XZxx110W.....	P5-5
XRNI30W-1.....	P36-36	XZxx155W.....	P13-13
XSMDKVG47M.....	P31-31	XZxx155W5MAV.....	P13-13
XSxx18D.....	P29-29	XZxx168W.....	P21-21
XTHI12W.....	P34-34	XZxx45S.....	P20-20
XTHI30W.....	P34-34	XZxx45WT.....	P20-20
XTNI11W.....	P34-34	XZxx45WT-9.....	P25-25
XTNI12BF.....	P34-34	XZxx50W-2RP.....	P22-22
XTNI12W.....	P34-34	XZxx53S-4.....	P19-19
XTNI30W.....	P34-34	XZxx53W-1.....	P15-15
XVB1Lxx50D.....	P32-32	XZxx53W-2.....	P15-15
XVO2Lxx86M.....	P33-33	XZxx53W-3.....	P14-14
XZCBDMDKDG62W-2.....	P5-5	XZxx53W-6.....	P14-14
XZCBDMEDGK161W.....	P5-5	XZxx53W-8.....	P16-16
XZCCBDMEDGK161W.....	P4-4	XZxx53W-9.....	P9-9
XZCFBB74W-3VU.....	P3-3	XZxx54W-1.....	P16-16
XZCMECBDDGK53W.....	P3-3	XZxx54W-4.....	P16-16
XZCMEDGCB110W.....	P3-3	XZxx54W-8.....	P17-17
XZCMEDGCB56W.....	P4-4	XZxx55W.....	P18-18
XZCxx53Wx-1VF.....	P2-2	XZxx55W-1.....	P17-17
XZCxx53Wx-8VF.....	P2-2	XZxx55W-2.....	P23-23
XZCxx54Wx-1VF.....	P3-3	XZxx55W-3.....	P18-18
XZDGCBDMERK150W-1.....	P4-4	XZxx55W-8.....	P11-11
XZDGK53W-8ST.....	P15-15	XZxx55W-A2.....	P18-18
XZFAMDK10A2.....	P43-43	XZxx55W-A2RT.....	P23-23
XZFAMDK10C.....	P42-42	XZxx56W.....	P22-22
XZFAVG10C2.....	P43-43	XZxx56W-1.....	P22-22
XZFBB45S-9.....	P25-25	XZxx56W-HTA.....	P26-26
XZFBBM2ACRDG92W-3.....	P7-7	XZxx59W-1.....	P9-9
XZFBBM2CRKM2DGG157W.....	P6-6	XZxx59W-1HTA.....	P26-26
XZFMDK05A.....	P38-38	XZxx60W.....	P17-17
XZFMDK05C.....	P38-38	XZxx62W-1.....	P9-9
XZFMDK05C2.....	P40-40	XZxx67S.....	P23-23
XZFMDK07C.....	P38-38	XZxx67WT.....	P23-23
XZFMDK10A2.....	P41-41	XZxx68W-2.....	P14-14
XZFMDK10C.....	P39-39	XZxx68W-3.....	P13-13
XZFMDK14C2.....	P42-42	XZxx68W5MAV-3.....	P13-13
XZFMDK20C-A.....	P40-40	XZxx74W.....	P21-21
XZFBV14A2.....	P42-42	XZxx78W.....	P19-19
XZFxx05A2.....	P40-40	XZxx81FS.....	P21-21
XZFxx07A.....	P38-38	XZxx87W.....	P20-20
XZFxx07A2.....	P41-41	XZxxx54W-4.....	P10-10
XZFxx10A.....	P39-39	XZxxx56W.....	P10-10
XZFxx14A.....	P39-39	XZxxx78W.....	P12-12
XZFxx14C.....	P39-39	XZYG45WT-9HTA.....	P26-26
XZM2CRK53WA-8ST.....	P15-15		

Infinite Design Possibilities ∞



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