



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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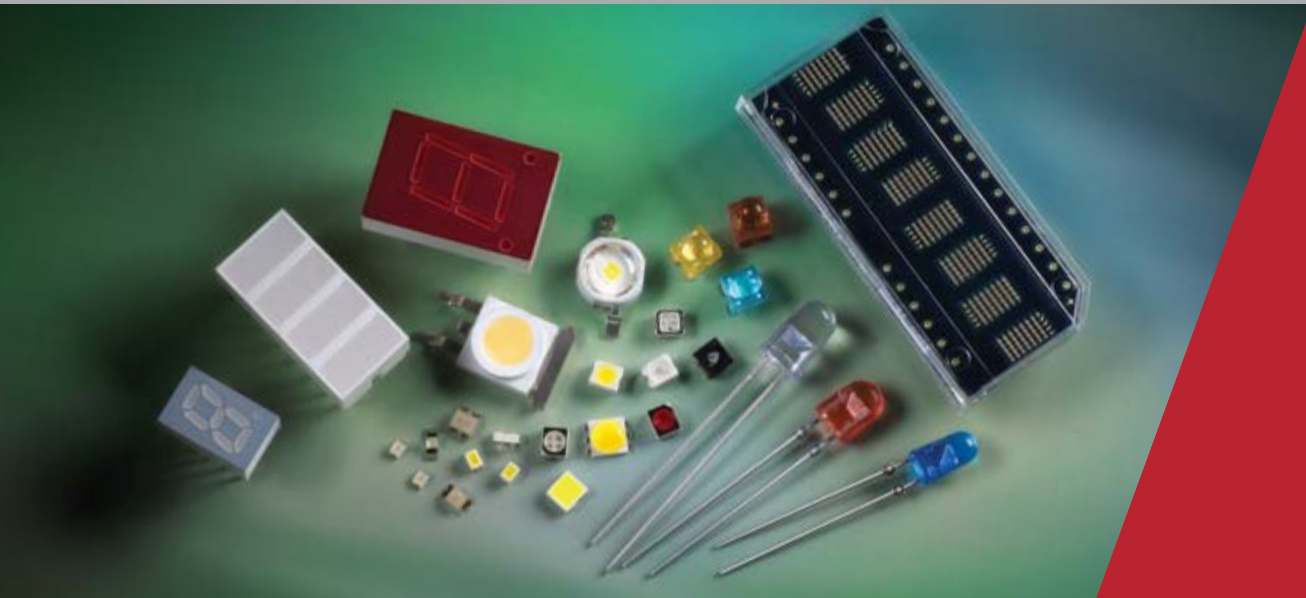


Your Imagination. Our Innovation.



LED Solutions

High Brightness LEDs, Indicators and Displays



Selection Guide

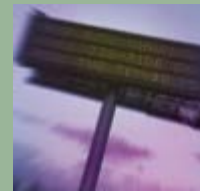
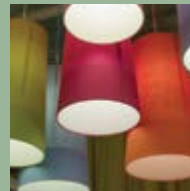
LED Solutions

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Avago Technologies is one of the largest producers of visible light-emitting diodes in the world.

Avago Technologies offers “one-stop shopping” with its wide array of LED (Light Emitting Diodes) Solutions. With our large manufacturing base and many years of experience from our HP and Agilent days, we are one of the largest producers of visible LEDs in the world and ships billions of products annually.

Avago employs the latest in material and process technology to produce superior LEDs. Our highly acclaimed AlInGaP (aluminium indium gallium phosphide) LED material offers high brightness and stable light output over thousands of hours with excellent mean-time-before-failure (MTBF). With our cutting edge LED technology, our solution also offers dazzling blue and green colors with InGaN (indium gallium nitride) material, and very cost-effective GaP (gallium phosphide) based technology, perfect for low to moderate light output. Avago’s LEDs create brilliant lights with rich life-like colors for our customers’ applications which are longer lasting and at a globally competitive price. They are suitable for almost any applications that customers need today with wide selection of viewing and package options.

Key products range from high brightness and high power LEDs, surface mount lamps, PLCC surface mount LEDs, to standard brightness through-hole lamps, chip LEDs, flash LEDs and various LED displays. These LED Solutions address a wide range of markets, including electronic sign and signal, automotive, solid-state lighting, consumer electronics, home and mobile appliances.

For virtually all established and emerging applications, Avago Technologies has the right LED Solutions to meet your design requirements.



High Brightness LEDs



High Brightness Through-hole Lamps

Description

Avago Technologies offers two types of technology based LEDs AllnGaP and InGaN which are suitable for high brightness needs. Through Hole LEDs are offered in 4 mm and 5 mm package.

These devices are casted using advance optical grade epoxy, which provides superior high temperature performance and excellent moisture resistance.

These High Brightness Through Hole LEDs are suitable for application in traffic management, solar powered variable message signs and commercial outdoor advertising video displays.

Features and Benefits

- Excellent product quality and reliability
- Wide range of products
- Competitive pricing
- Wide operating temperature range
- Low power consumption
 - High efficiency, low drive currents and low driving voltages required.
- Colors available for AllnGaP LED lamps:
Red (626nm), Red Orange (615nm), Orange (605nm) and Amber (590nm)
- Colors available for InGaN LED lamps:
Blue (470nm), Green (525nm).
- Packaging options
 - Bulk
 - Ammopack

Typical Applications

- Electronic Signs and Signals
 - Traffic Signal
 - Variable Message Sign
 - Pedestrian Signal
 - Work Zone Warning Lights
- Solar Powered Sign
- Commercial Outdoor Advertising
 - Full Color Sign
 - Mono Color Sign

High Brightness LEDs

High Brightness 5mm Round LED Lamp

Part Number	Color	Dominant Wavelength (nm)	Viewing Angle (°)	Standoff (Yes/NO)	Luminous Intensity (mcd) @ 20 mA		Package Drawing
					Min.	Max.	
5 mm Round LED Lamps							
8° Viewing Angle							
	Red	626	8	No	7200	21000	A
HLMP-EG10-X1000	Red	626	8	Yes	7200	21000	B
HLMP-EH08-Y2000	Red-Orange	615	8	No	9300	27000	A
HLMP-EH10-Y2000	Red-Orange	615	8	Yes	9300	27000	B
HLMP-EJ08-X1000	Orange	605	8	No	7200	21000	A
HLMP-EJ10-X1000	Orange	605	8	Yes	7200	21000	B
HLMP-EL08-X1000	Amber	590	8	No	7200	21000	A
HLMP-EL10-X1000	Amber	590	8	Yes	7200	21000	B
5mm Round LED Lamps							
15° Viewing Angle							
HLMP-EG1G-Y10DD	Red	626	15	No	9300	21000	A
HLMP-EG1H-Y10DD	Red	626	15	Yes	9300	21000	B
HLMP-EG1A-Z10DD	Red	626	15	No	12000	21000	A
HLMP-EG1B-Z10DD	Red	626	15	Yes	12000	21000	B
HLMP-EH1A-Z10DD	Red-Orange	615	15	No	12000	21000	A
HLMP-EH1B-Z10DD	Red-Orange	615	15	Yes	12000	21000	B
HLMP-EL1G-Y10DD	Amber	590	15	No	9300	21000	A
HLMP-EL1H-Y10DD	Amber	590	15	Yes	9300	21000	B
HLMP-EL1A-Z1KDD	Amber	590	15	No	12000	21000	A
HLMP-EL1B-Z1KDD	Amber	590	15	Yes	12000	21000	B
HLMP-CB1G-XZ0DD	Blue	470	15	No	7200	16000	C
	Blue	470	15	Yes	7200	16000	D
HLMP-CB1A-XY0DD	Blue	470	15	No	7200	12000	C
HLMP-CB1A-XYBDD	Blue	470	15	No	7200	12000	C
HLMP-CB1A-XYCDD	Blue	470	15	No	7200	12000	C
HLMP-CB1B-XY0DD	Blue	470	15	Yes	7200	12000	D
HLMP-CB1B-XYBDD	Blue	470	15	Yes	7200	12000	D
HLMP-CB1B-XYCDD	Blue	470	15	Yes	7200	12000	D
HLMP-CM1G-350DD	Green	525	15	No	27000	59000	C
HLMP-CM1H-350DD	Green	525	15	Yes	27000	59000	D
HLMP-CM1A-560DD	Green	525	15	No	45000	76000	C
HLMP-CM1B-560DD	Green	525	15	Yes	45000	76000	D
HLMP-CE13-24CDD	Cyan	505	15	No	21000	45000	C
HLMP-CE13-24QDD	Cyan	505	15	No	21000	45000	C
HLMP-CE14-24CDD	Cyan	505	15	Yes	21000	45000	D
HLMP-CE14-24QDD	Cyan	505	15	Yes	21000	45000	D

High Brightness LEDs

High Brightness 5mm Round LED Lamp

Part Number	Color	Dominant Wavelength (nm)	Viewing Angle (°)	Standoff (Yes/NO)	Luminous Intensity (mcd) @ 20 mA		Package Drawing
					Min.	Max.	
15° Viewing Angle							
HLMP-CE17-240DD	Cyan	505	15	No	21000	45000	C
HLMP-CE17-24CDD	Cyan	505	15		21000	45000	
HLMP-CE17-24QDD	Cyan	505	15		21000	45000	
HLMP-CE18-240DD	Cyan	505	15	Yes	21000	45000	D
HLMP-CE18-24CDD	Cyan	505	15		21000	45000	
HLMP-CE18-24QDD	Cyan	505	15		21000	45000	
23° Viewing Angle							
HLMP-EG2G-XZ0DD	Red	626	23	No	7200	16000	A
HLMP-EG2H-XZ0DD	Red	626	23	Yes	7200	16000	B
HLMP-EG2A-XY0DD	Red	626	23	No	7200	12000	A
HLMP-EG2B-XY0DD	Red	626	23	Yes	7200	12000	B
HLMP-EH2A-XY0DD	Red-Orange	615	23	No	7200	12000	A
HLMP-EH2B-XY0DD	Red-Orange	615	23	Yes	7200	12000	B
HLMP-EL2G-WY0DD	Amber	590	23	No	5500	12000	A
HLMP-EL2H-WY0DD	Amber	590	23	Yes	5500	12000	B
HLMP-EL2A-XYKDD	Amber	590	23	No	7200	12000	A
HLMP-EL2B-XYKDD	Amber	590	23	Yes	7200	12000	B
HLMP-CB2G-UW0DD	Blue	470	23	No	3200	7200	C
HLMP-CB2H-UW0DD	Blue	470	23	Yes	3200	7200	D
HLMP-CB2A-VW0DD	Blue	470	23	No	4200	7200	C
HLMP-CB2A-VWBDD	Blue	470	23	No	4200	7200	C
HLMP-CB2A-VWCDD	Blue	470	23	No	4200	7200	C
HLMP-CB2B-VW0DD	Blue	470	23	Yes	4200	7200	D
HLMP-CB2B-VWBDD	Blue	470	23	Yes	4200	7200	D
HLMP-CB2B-VWCDD	Blue	470	23	Yes	4200	7200	D
HLMP-CM2G-130DD	Green	525	23	No	16000	35000	C
HLMP-CM2H-130DD	Green	525	23	Yes	16000	35000	D
HLMP-CM2A-230DD	Green	525	23	No	21000	35000	C
HLMP-CM2B-230DD	Green	525	23	Yes	21000	35000	D
HLMP-CE20-Z20DD	Cyan	505	23	No	12000	27000	C
HLMP-CE20-Z2CDD	Cyan	505	23	No	12000	27000	C
HLMP-CE20-Z2QDD	Cyan	505	23	No	12000	27000	C
HLMP-CE21-Z20DD	Cyan	505	23	Yes	12000	27000	D
HLMP-CE21-Z2CDD	Cyan	505	23	Yes	12000	27000	D
HLMP-CE21-Z2QDD	Cyan	505	23	Yes	12000	27000	D
HLMP-CE22-Y1CDD	Cyan	505	23	No	9300	21000	C
HLMP-CE22-Y1QDD	Cyan	505	23	No	9300	21000	C
HLMP-CE25-Y1CDD	Cyan	505	23	Yes	9300	21000	D
HLMP-CE25-Y1QDD	Cyan	505	23	Yes	9300	21000	D

High Brightness LEDs

High Brightness 5mm Round LED Lamp

Part Number	Color	Dominant Wavelength (nm)	Viewing Angle (°)	Standoff (Yes/NO)	Luminous Intensity (mcd) @ 20 mA		Package Drawing
					Min.	Max.	
30° Viewing Angle							
HLMP-EG3G-VX0DD	Red	626	30	No	4200	9300	A
HLMP-EG3H-VX0DD	Red	626	30	Yes	4200	9300	B
HLMP-EG3A-WX0DD	Red	626	30	No	5500	9300	A
HLMP-EG3B-WX0DD	Red	626	30	Yes	5500	9300	B
HLMP-EH3A-WX0DD	Red-Orange	615	30	No	5500	9300	A
HLMP-EH3B-WX0DD	Red-Orange	615	30	Yes	5500	9300	B
HLMP-EL3G-VX0DD	Amber	590	30	No	4200	9300	A
HLMP-EL3H-VX0DD	Amber	590	30	Yes	4200	9300	B
HLMP-EL3A-WXKDD	Amber	590	30	No	5500	9300	A
HLMP-EL3B-WXKDD	Amber	590	30	Yes	5500	9300	B
HLMP-CB3G-TV0DD	Blue	470	30	No	2500	5500	C
HLMP-CB3H-TV0DD	Blue	470	30	Yes	2500	5500	D
HLMP-CB3A-UV0DD	Blue	470	30	No	3200	5500	C
HLMP-CB3A-UVBDD	Blue	470	30	No	3200	5500	C
HLMP-CB3A-UVCDD	Blue	470	30	No	3200	5500	C
HLMP-CB3B-UV0DD	Blue	470	30	Yes	3200	5500	D
HLMP-CB3B-UVBDD	Blue	470	30	Yes	3200	5500	D
HLMP-CB3B-UVCDD	Blue	470	30	Yes	3200	5500	D
HLMP-CM3G-Y10DD	Green	525	30	No	9300	21000	C
HLMP-CM3H-Y10DD	Green	525	30	Yes	9300	21000	D
HLMP-CM3A-Z10DD	Green	525	30	No	12000	21000	C
HLMP-CM3A-Z1BDD	Green	525	30	No	12000	21000	C
HLMP-CM3A-Z1CDD	Green	525	30	No	12000	21000	C
HLMP-CM3B-Z10DD	Green	525	30	Yes	12000	21000	D
HLMP-CM3B-Z1BDD	Green	525	30	Yes	12000	21000	D
HLMP-CM3B-Z1CDD	Green	525	30	Yes	12000	21000	D
HLMP-CE34-XZCDD	Cyan	505	30	No	7200	16000	C
HLMP-CE34-XZQDD	Cyan	505	30	No	7200	16000	C
HLMP-CE35-XZCDD	Cyan	505	30	Yes	7200	16000	D
HLMP-CE35-XZQDD	Cyan	505	30	Yes	7200	16000	D
HLMP-CE32-Y10DD	Cyan	505	30	No	9300	21000	C
HLMP-CE32-Y1CDD	Cyan	505	30	No	9300	21000	C
HLMP-CE32-Y1QDD	Cyan	505	30	No	9300	21000	C
HLMP-CE33-Y10DD	Cyan	505	30	Yes	9300	21000	D
HLMP-CE33-Y1CDD	Cyan	505	30	Yes	9300	21000	D
HLMP-CE33-Y1QDD	Cyan	505	30	Yes	9300	21000	D

High Brightness LEDs

High Brightness Oval LED Lamp

Part Number	Color	Dominant Wavelength (nm)	Viewing Angle (°)	Standoff (Yes/NO)	Luminous Intensity (mcd) @ 20 mA		Lead Frame Orientation	Package Drawing	Remarks
					Min.	Max.			
4 mm Standard Oval LED Lamp									
42° x 95° Viewing Angle									
HLMP-LG3V-WX0DD	Red	621	42 x 95	Yes	1380	1990	Parallel	E	For full color sign application
HLMP-LM3V-24PDD	Green	525	42 x 95	Yes	3500	6050	Parallel	E	
HLMP-LB3V-TVPDD	Blue	468	42 x 95	Yes	800	1380	Parallel	E	
45° x 90° Viewing Angle									
HLMP-LG3Y-Y10DD	Red	621	45 x 90	Yes	1990	3500	Parallel	E	For full color sign application
HLMP-LM3Y-35PDD	Green	525	45 x 90	Yes	4200	7260	Parallel	E	
HLMP-LM3U-46PDD	Green	525	45 x 90	Yes	5040	8710	Parallel	E	
HLMP-LB3Y-VWPDD	Blue	468	45 x 90	Yes	1150	1660	Parallel	E	
60° x 110° Viewing Angle									
HLMP-LG3W-VW0DD	Red	621	50 x 105	Yes	1150	1660	Parallel	E	For full color sign application
HLMP-LM3W-12PDD	Green	525	60 x 110	Yes	2900	4200	Parallel	E	
HLMP-LB3W-STPDD	Blue	468	60 x 110	Yes	660	960	Parallel	E	
50° x 100° Viewing Angle									
HLMP-LH6S-XY0DD	Red Orange	615	50x100	Yes	1660	2400	Parallel	E	For mono color sign application
HLMP-LL6S-XYKDD	Amber	590	50x100	Yes	1660	2400	Parallel	E	
4mm Standard Oval LED Lamp									
40° x 100° Viewing Angle									
HLMP-LG71-VY0DD	Red	626	40x100	Yes	1150	2400	Parallel	E	For full color sign application
HLMP-LM71-Z30DD	Green	525	40x100	Yes	2400	5040	Parallel	E	
HLMP-LB71-SV0DD	Blue	470	40x100	Yes	660	1380	Parallel	E	
HLMP-LG75-XY0DD	Red	626	40x100	Yes	1660	2400	Parallel	E	
HLMP-LG73-XZ0DD	Red	626	40x100	Yes	1660	2900	Parallel	E	
HLMP-LM75-34CDD	Green	530	40x100	Yes	4200	6050	Parallel	E	
HLMP-LM73-35PDD	Green	530	40x100	Yes	4200	7260	Parallel	E	
HLMP-LB75-VWBDD	Blue	470	40x100	Yes	1150	1660	Parallel	E	
HLMP-LB72-UWPDD	Blue	470	40x100	Yes	960	1660	Parallel	E	
4 mm Super Oval LED Lamp									
60° x 120° Viewing Angle									
HLMP-SL20-MP0DD	Amber	590	60x120	Yes	520	1150	Perpendicular	F	For mono color sign application
HLMP-RL20-MP0DD	Amber	590	60x120	Yes	520	1150	Parallel	G	
5 mm Standard Oval LED Lamps									
40° x 100° Viewing Angle									
HLMP-HG64-WX0DD	Red	626	40x100	No	1380	1990	Parallel	H	For full color sign application
HLMP-HG65-WX0DD	Red	626	40x100	Yes	1380	1990	Parallel	I	
HLMP-HM64-34BDD	Green	525	40x100	No	4200	6050	Parallel	H	
HLMP-HM65-34BDD	Green	525	40x100	Yes	4200	6050	Parallel	I	
HLMP-HB64-STBDD	Blue	470	40x100	No	660	960	Parallel	H	

High Brightness LEDs

High Brightness Oval LED Lamp

Part Number	Color	Dominant Wavelength (nm)	Viewing Angle (°)	Standoff (Yes/NO)	Luminous Intensity (mcd) @ 20 mA		Lead Frame Orientation	Package Drawing	Remarks
					Min.	Max.			
HLMP-HB65-STBDD	Blue	470	40x100	Yes	660	960	Parallel	I	For full color sign application
HLMP-HG74-XY0DD	Red	626	40x100	No	1660	2400	Parallel	H	
HLMP-HG75-XY0DD	Red	626	40x100	Yes	1660	2400	Parallel	I	
HLMP-HM74-34CDD	Green	530	40x100	No	4200	6050	Parallel	H	
HLMP-HM75-34CDD	Green	530	40x100	Yes	4200	6050	Parallel	I	
HLMP-HB74-UVCDD	Blue	470	40x100	No	960	1380	Parallel	H	
HLMP-HB75-UVCDD	Blue	470	40x100	Yes	960	1380	Parallel	I	
HLMP-HH64-WX0DD	Red Orange	615	40x100	No	1380	1990	Parallel	H	For mono color sign application
HLMP-HH65-WX0DD	Red Orange	615	40x100	Yes	1380	1990	Parallel	I	
HLMP-HL64-XYKDD	Amber	590	40x100	No	1660	2400	Parallel	H	
HLMP-HL64-XYLDD	Amber	590	40x100	No	1660	2400	Parallel	H	
HLMP-HL65-XYKDD	Amber	590	40x100	Yes	1660	2400	Parallel	I	
HLMP-HL65-XYLDD	Amber	590	40x100	Yes	1660	2400	Parallel	I	
HLMP-HG70-VX0DD	Red	626	40x100	No	1150	1990	Parallel	H	
HLMP-HG71-VX0DD	Red	626	40x100	Yes	1150	1990	Parallel	I	
HLMP-HB70-TV8DD	Blue	470	40x100	No	800	1380	Parallel	H	For full color sign application
HLMP-HB70-TV0DD	Blue	470	40x100	No	800	1380	Parallel	H	
HLMP-HB71-TV8DD	Blue	470	40x100	Yes	800	1380	Parallel	I	
HLMP-HB71-TV0DD	Blue	470	40x100	Yes	800	1380	Parallel	I	
HLMP-HM70-23BDD	Green	525	40x100	No	3500	5040	Parallel	H	
HLMP-HM70-23CDD	Green	525	40x100	No	3500	5040	Parallel	H	
HLMP-HM71-23BDD	Green	525	40x100	Yes	3500	5040	Parallel	I	
HLMP-HM71-23CDD	Green	525	40x100	Yes	3500	5040	Parallel	I	
HLMP-HG7U-XY0DD	Red	621	40x100	No	1660	2400	Parallel	H	For full color sign application
HLMP-HG7U-XZ0DD	Red	621	40x100	No	1660	2900	Parallel	H	
HLMP-HG7Y-XY0DD	Red	621	40x100	Yes	1660	2400	Parallel	I	
HLMP-HG7Y-XZ0DD	Red	621	40x100	Yes	1660	2900	Parallel	I	
HLMP-HL7U-XYKDD	Amber	590	40x100	No	1660	2400	Parallel	H	
HLMP-HL7U-XYLDD	Amber	590	40x100	No	1660	2400	Parallel	H	
HLMP-HL7U-XZKDD	Amber	590	40x100	No	1660	2900	Parallel	H	
HLMP-HL7U-XZLDD	Amber	590	40x100	No	1660	2900	Parallel	H	
HLMP-HL7Y-XYKDD	Amber	590	40x100	Yes	1660	2400	Parallel	I	For full color sign application
HLMP-HL7Y-XYLDD	Amber	590	40x100	Yes	1660	2400	Parallel	I	
HLMP-HL7Y-XZKDD	Amber	590	40x100	Yes	1660	2900	Parallel	I	
HLMP-HL7Y-XZLDD	Amber	590	40x100	Yes	1660	2900	Parallel	I	
HLMP-HM7U-34PDD	Green	525	40x100	No	4200	6050	Parallel	H	
HLMP-HM7U-35PDD	Green	525	40x100	No	4200	7260	Parallel	H	
HLMP-HM7Y-34PDD	Green	525	40x100	Yes	4200	6050	Parallel	I	
HLMP-HM7Y-35PDD	Green	525	40x100	Yes	4200	7260	Parallel	I	
HLMP-HB7U-VWPDD	Blue	468	40x100	No	1150	1660	Parallel	H	For full color sign application
HLMP-HB7U-VXPDD	Blue	468	40x100	No	1150	1990	Parallel	H	

High Brightness LEDs

High Brightness Oval LED Lamp

Part Number	Color	Dominant Wavelength (nm)	Viewing Angle (°)	Standoff (Yes/NO)	Luminous Intensity (mcd) @ 20 mA		Lead Frame Orientation	Package Drawing	Remarks
					Min.	Max.			
5 mm Standard Oval LED Lamps									
40° x 100° Viewing Angle									
HLMP-HB7Y-VWPDD	Blue	468	40x100	Yes	1150	1660	Parallel	I	For mono color sign application
HLMP-HB7Y-VXPDD	Blue	468	40x100	Yes	1150	1990	Parallel	I	
5 mm Mini Oval LED Lamps									
30° x 70° Viewing Angle									
HLMP-AG64-Z10DD	Red	626	30x70	No	2400	3500	Parallel	J	For full color sign application
HLMP-AG65-Z10DD	Red	626	30x70	Yes	2400	3500	Parallel	K	
HLMP-AM64-460DD	Green	525	30x70	No	5040	8710	Parallel	J	
HLMP-AM65-45BDD	Green	525	30x70	Yes	5040	7260	Parallel	K	
HLMP-AG74-120DD	Red	626	30x70	No	2900	4200	Parallel	J	
HLMP-AG75-120DD	Red	626	30x70	Yes	2900	4200	Parallel	K	
HLMP-AM74-56CDD	Green	530	30x70	No	6050	8710	Parallel	J	
HLMP-AM75-56CDD	Green	530	30x70	Yes	6050	8710	Parallel	K	
HLMP-AB74-WXBDD	Blue	470	30x70	No	1380	1990	Parallel	J	
HLMP-AB75-WXBDD	Blue	470	30x70	Yes	1380	1990	Parallel	K	
HLMP-AH64-Z10DD	Red Orange	615	30x70	No	2400	3500	Parallel	J	For mono color sign application
HLMP-AH65-Z10DD	Red Orange	615	30x70	Yes	2400	3500	Parallel	K	
HLMP-AJ66-Z10DD	Orange	605	30x70	No	2400	3500	Parallel	J	
HLMP-AJ67-Z10DD	Orange	605	30x70	Yes	2400	3500	Parallel	K	
HLMP-AL64-23KDD	Amber	590	30x70	No	3500	5040	Parallel	J	
HLMP-AL65-23KDD	Amber	590	30x70	Yes	3500	5040	Parallel	K	
HLMP-AG70-Z20DD	Red	626	30x70	No	2400	4200	Parallel	J	
HLMP-AG71-Z20DD	Red	626	30x70	Yes	2400	4200	Parallel	K	
HLMP-AL70-13KDD	Amber	590	30x70	No	2900	5040	Parallel	J	
HLMP-AL70-13LDD	Amber	590	30x70	No	2900	5040	Parallel	J	
HLMP-AL71-13KDD	Amber	590	30x70	Yes	2900	5040	Parallel	K	
HLMP-AL71-13LDD	Amber	590	30x70	Yes	2900	5040	Parallel	K	
HLMP-AB70-TWBDD	Blue	470	30x70	No	800	1660	Parallel	J	
HLMP-AB70-TWCDD	Blue	470	30x70	No	800	1660	Parallel	J	
HLMP-AB71-TWBDD	Blue	470	30x70	Yes	800	1660	Parallel	K	
HLMP-AB71-TWCDD	Blue	470	30x70	Yes	800	1660	Parallel	K	
HLMP-AM70-35BDD	Green	525	30x70	No	4200	7260	Parallel	J	
HLMP-AM70-35CDD	Green	525	30x70	No	4200	7260	Parallel	J	
HLMP-AM71-35BDD	Green	525	30x70	Yes	4200	7260	Parallel	K	
HLMP-AM71-35CDD	Green	525	30x70	Yes	4200	7260	Parallel	K	

High Brightness LEDs

High Brightness Lamps

High Brightness LED Lamps 1.3:1 Intensity Bin Limits (mcd at 20mA)

Bin ID	Min.	Max.
D	65	85
E	85	110
F	110	140
G	140	180
H	180	240
J	240	310
K	310	400
L	400	520
M	520	680
N	680	880
P	880	1150
Q	1150	1500
R	1500	1900
S	1900	2500
T	2500	3200
U	3200	4200
V	4200	5500
W	5500	7200
X	7200	9300
Y	9300	12000
Z	12000	16000
1	16000	21000
2	21000	27000
3	27000	35000
4	35000	45000
5	45000	59000
6	59000	76000

Tolerance for each bin limit is $\pm 15\%$

High Brightness LED Lamps 1.2:1 Intensity Bin Limits (mcd at 20mA)

Bin ID	Min.	Max.
P	380	460
Q	460	550
R	550	660
S	660	800
T	800	960
U	960	1150
V	1150	1380
W	1380	1660
X	1660	1990
Y	1990	2400
Z	2400	2900
1	2900	3500
2	3500	4200
3	4200	5040
4	5040	6050
5	6050	7260
6	7260	8710
7	8710	10460
8	10460	12560
9	12560	15100

Tolerance for each bin limit is $\pm 15\%$

Color Bin Structure

Bin ID	Wavelength (nm)		Remark
	Min.	Max.	
Red			
--	618.0	630.0	Type 1
--	620.0	630.0	Type 2
Red Orange^{*1}			
--	612.0	619.0	Type 1
--	612.0	621.7	Type 2
Orange^{*1}			
1	600.0	604.0	Type 1
2	604.0	608.0	
3	608.0	612.0	
2	599.5	604.5	Type 2
4	604.5	610.5	
Amber			
1	584.5	587.0	
2	587.0	589.5	
4	589.5	592.0	
6	592.0	594.5	
Green^{*1}			
1	520.0	524.0	Type 1
2	524.0	528.0	Type 1
3	528.0	532.0	Type 1
4	532.0	536.0	Type 1
5	536.0	540.0	Type 1
1	519.0	523.0	Type 2
2	523.0	527.0	Type 2
3	527.0	531.0	Type 2
4	531.0	535.0	Type 2
5	535.0	539.0	Type 2
Blue			
1	460.0	464.0	
2	464.0	468.0	
3	468.0	472.0	
4	472.0	476.0	
5	476.0	480.0	

Note 1: There are 2 types of color bin limits. Please refer to individual datasheet for details.

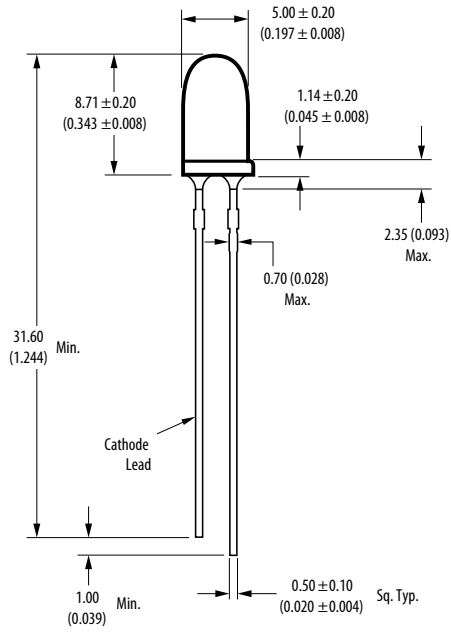
Tolerance for each bin limit is $\pm 0.5\text{nm}$

High Brightness LEDs

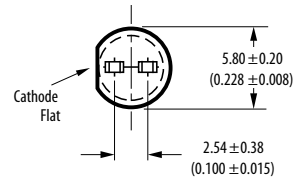
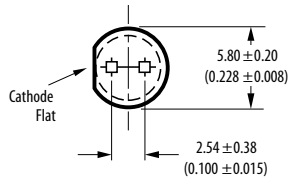
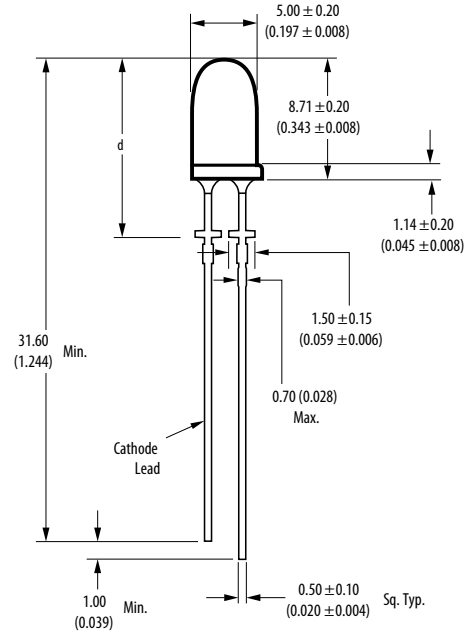
High Brightness Lamps Package Drawing

5 mm Round LED Lamp

A: Non-standoff



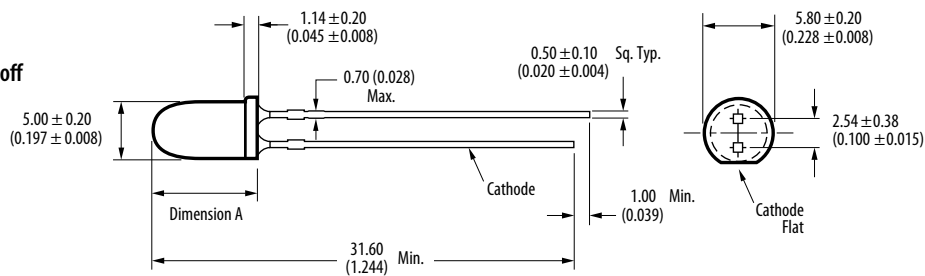
B: Standoff



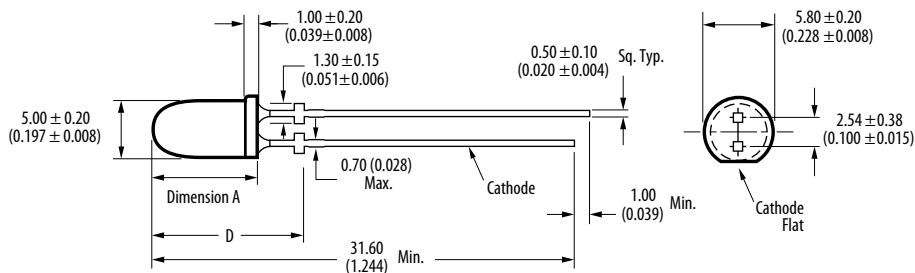
Note:
Please refer to individual datasheet for dimension D.

5 mm Round LED Lamp

C: Non-standoff



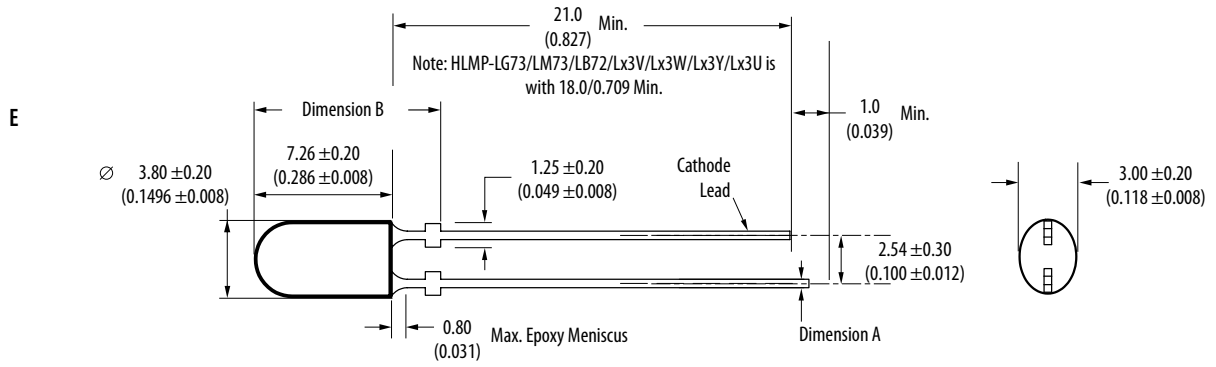
D: Standoff



Note:
Please refer to individual datasheet for dimension A and D.

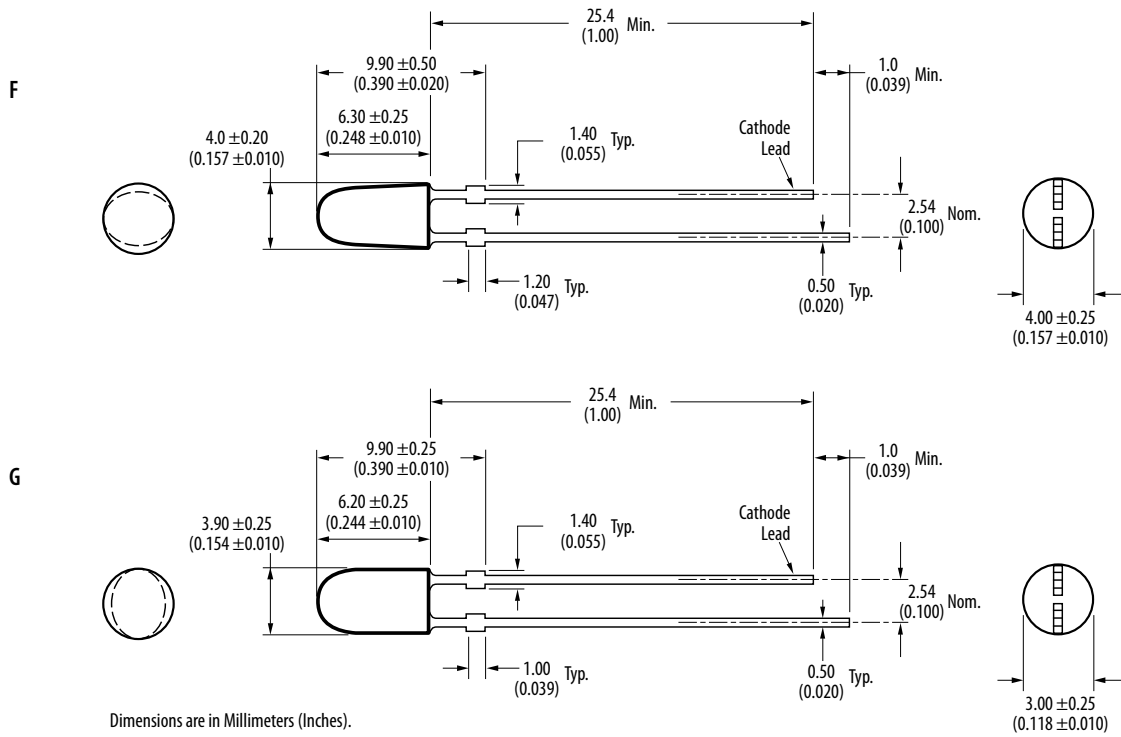
High Brightness LEDs

4 mm Standard Oval LED Lamp



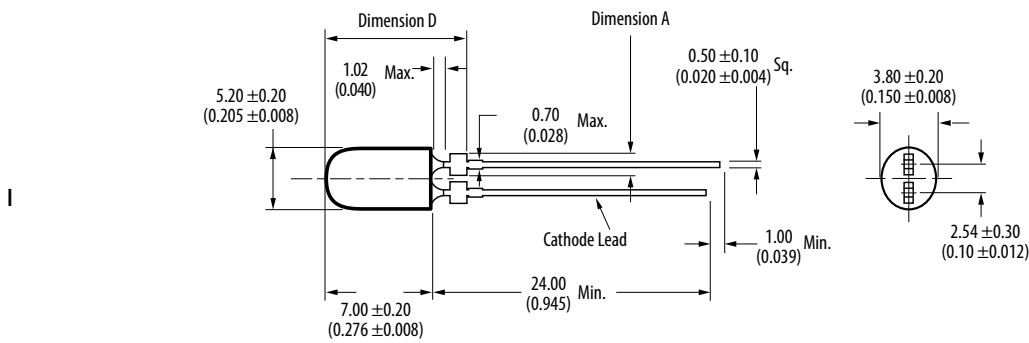
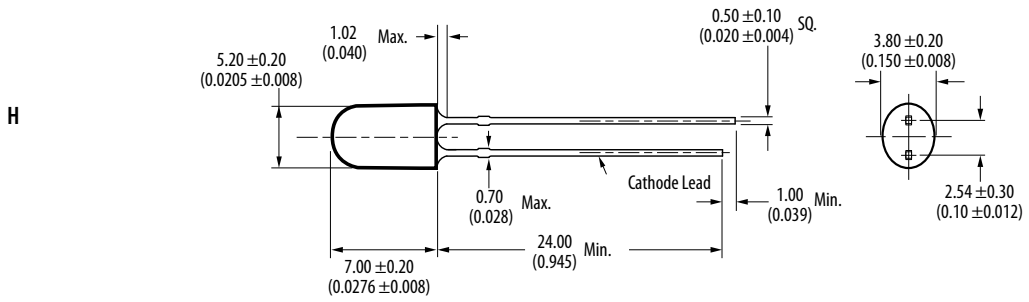
Note:
Please refer to individual datasheet for dimension A and dimension B.

4 mm Super Oval LED Lamp 60° x 120° Viewing Angle

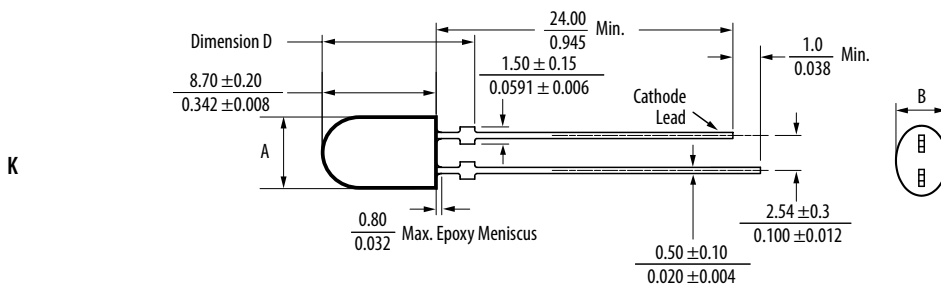
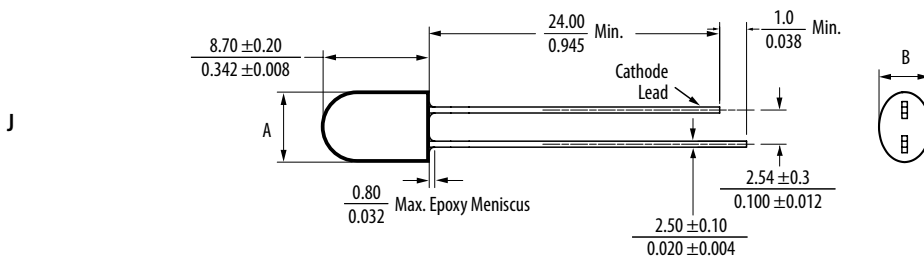


High Brightness LEDs

5 mm Standard Oval LED Lamp 40° x 100° Viewing Angle



5mm Mini Oval LED Lamp 30° x 70° Viewing Angle



Note:
 For all package drawings above, the dimension are in millimeters (inches).
 Please refer to individual datasheet for dimension A, B and D.

High Brightness LEDs



High Brightness SMT Lamps

Description

Avago Technologies offers industry's first Surface Mount High Brightness Round and Oval LED lamps for Electronic Sign Application. These SMT lamps are compatible with industrial reflow soldering processes and made with advanced optical grade epoxy to provide superior performance in outdoor application.

Features and Benefits

- Compact form factor with well defined spatial radiation pattern
- High Brightness AlInGaP and InGaN material available in Red, Amber, Green and Blue
- Moisture sensitivity level (MSL) 2A
- Compatible with industrial reflow soldering process
- Lens features: Tinted for SMT Round
 - Tinted and diffused for SMT Oval

Typical Applications

- Electronic Signs and signals
 - Traffic Signal
 - Variable Message Signs
 - Full Color Signs
 - Mono Color Signs

High Brightness SMT Round and Oval Lamps

Part Number	Color	Typ. Dominant Wavelength (nm)	Typ. Viewing Angle (°)	Lens Tinted	Lens Diffused	Luminous Intensity (mcd) @ 20 mA		Package Drawing
						Min.	Max.	
SMT Round Lamps								
30° Viewing Angle								
ALMD-EG3D-VX002	Red	626	30	Yes	No	4200	9300	A
ALMD-EL3D-VX002	Amber	590	30	Yes	No	4200	9300	
ALMD-CM3D-XZ002	Green	525	30	Yes	No	7200	16000	
ALMD-CB3D-SU002	Blue	470	30	Yes	No	1900	5500	
ALMD-EG3E-VX002	Red	626	30	Yes	No	4200	9300	C
ALMD-EL3E-VX002	Amber	590	30	Yes	No	4200	9300	
ALMD-CM3E-Y1002	Green	525	30	Yes	No	9300	21000	
ALMD-CB3E-SU002	Blue	470	30	Yes	No	1900	4200	
ALMD-CM3F-Y1002	Green	525	30	Yes	No	9300	21000	
ALMD-CB3F-TV002	Blue	470	30	Yes	No	2500	5500	

High Brightness LEDs

High Brightness SMT Round and Oval Lamps

Part Number	Color	Typ. Dominant Wavelength (nm)	Typ. Viewing Angle (°)	Lens Tinted	Lens Diffused	Luminous Intensity (mcd) @ 20 mA		Package Drawing
						Min.	Max.	
SMT Oval Lamps								
40 × 100° Viewing Angle								
ALMD-LG36-WZ002	Red	626	40 x 100	Yes	Yes	1380	2900	B
ALMD-LL36-WZ002	Amber	590	40 x 100	Yes	Yes	1380	2900	
ALMD-LM36-14002	Green	525	40 x 100	Yes	Yes	2900	6050	
ALMD-LB36-SV002	Blue	470	40 x 100	Yes	Yes	660	1380	
	Red	626	40 x 100	Yes	Yes	1660	2900	D
ALMD-LL37-XZ002	Amber	590	40 x 100	Yes	Yes	1660	2900	
ALMD-LM37-24002	Green	525	40 x 100	Yes	Yes	3500	6050	
ALMD-LB37-SU002	Blue	470	40 x 100	Yes	Yes	660	1150	
ALMD-LM38-24002	Green	525	40 x 100	Yes	Yes	3500	6050	
ALMD-LB38-TV002	Blue	470	40 x 100	Yes	Yes	800	1380	

High Brightness SMT Round Lamps

1.3:1 Intensity Bin Limits (mcd at 20mA)

Bin ID	Min.	Max.
R	1500	1900
S	1900	2500
T	2500	3200
U	3200	4200
V	4200	5500
W	5500	7200
X	7200	9300
Y	9300	12000
Z	12000	16000

Tolerance of each bin limit is ± 15%

High Brightness SMT Oval Lamps

1.2:1 Intensity Bin Limits (mcd at 20mA)

Bin ID	Min.	Max.
R	550	660
S	660	800
T	800	960
U	960	1150
V	1150	1380
W	1380	1660
X	1660	1990
Y	1990	2400
Z	2400	2900
1	2900	3500
2	3500	4200
3	4200	5040
4	5040	6050

Tolerance of each bin limit is ± 15%

Color Bin Structure

Bin ID	Wavelength (nm)	
	Min.	Max.
Red	618.0	630.0

Tolerance for each bin limits is ± 0.05nm

Bin ID	Wavelength (nm)	
	Min.	Max.
Amber		
1	584.5	587.0
2	587.0	589.5
4	589.5	592.0
6	592.5	594.0

Tolerance for each bin limits is ± 0.05nm

Bin ID	Wavelength (nm)	
	Min.	Max.
Green		
1	519.0	523.0
2	523.0	527.0
3	527.0	531.0
4	531.0	535.0
5	535.0	539.0

Tolerance for each bin limits is ± 0.05nm

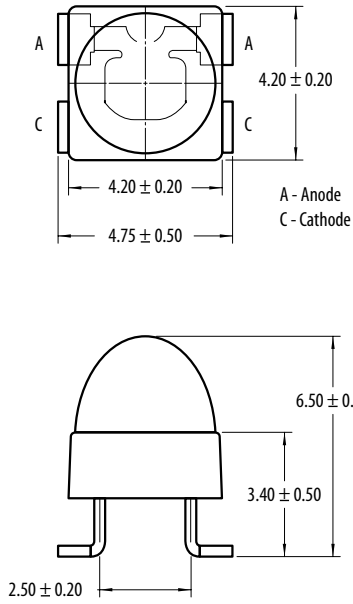
Bin ID	Wavelength (nm)	
	Min.	Max.
Blue		
1	460.0	464.0
2	464.0	468.0
3	468.0	472.0
4	472.0	476.0
5	476.0	480.0

Tolerance for each bin limits is ± 0.05nm

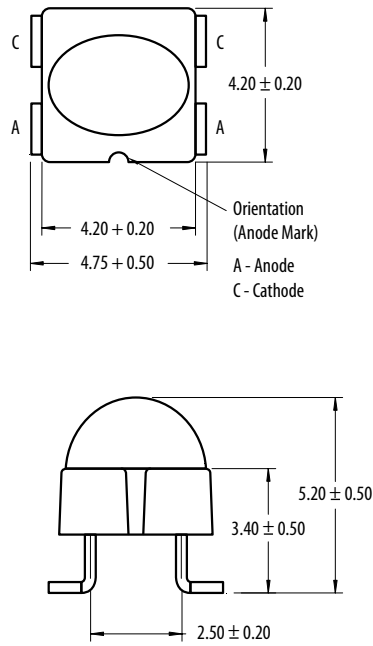
High Brightness LEDs

High Brightness SMT Lamps Package Drawing

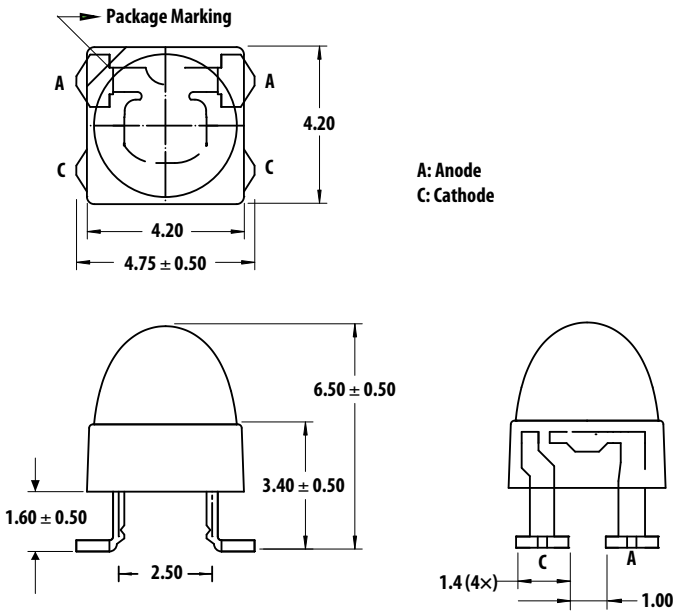
Package Drawing A



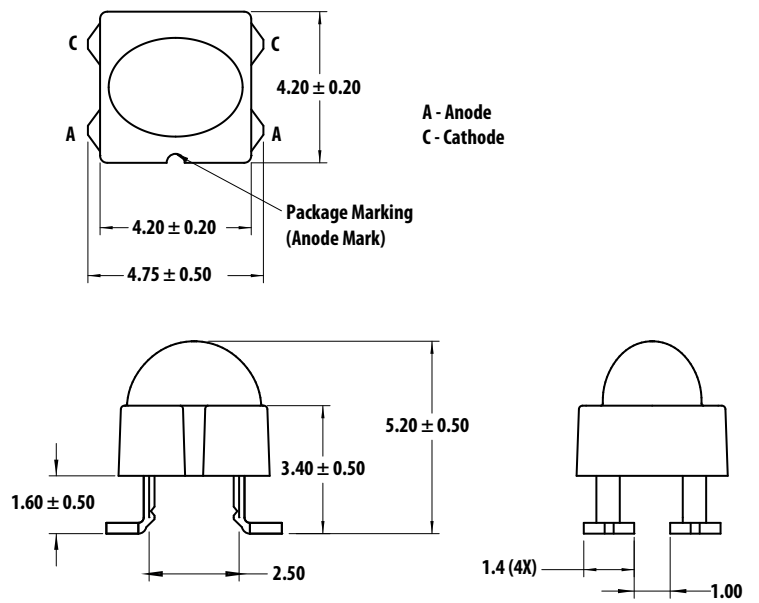
Package Drawing B



Package Drawing C



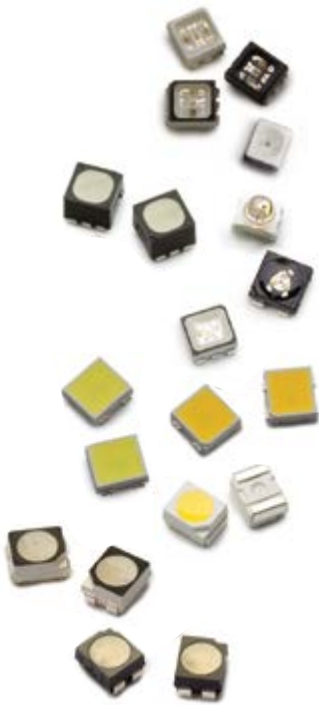
Package Drawing D



Notes:

1. All dimensions in millimeters (inches).
2. Tolerance is ± 0.20 mm unless other specified.

High Brightness LEDs



Surface Mount PLCC LEDs

Description

This surface-mount LED comes in PLCC standard package dimension. It has a substrate made up of a molded plastic reflector sitting on top of a bent lead frame. The die is attached within the reflector cavity and the cavity is encapsulated by an Avago Technologies proprietary epoxy or silicone material.

The PLCC SMT LED products with a viewing angle of 120° is ideal for instruments/switch/icon backlighting. With additional lens in 30° and 50° variants, these products are especially fitting to applications for traffic lights, CHMSL and displays. Its external reflector makes easy coupling with light pipe/light guide for an even-larger area backlighting. The package design coupled with careful selection of component materials allow these products to perform with high reliability in a larger temperature range -40°C to 100°C. The high reliability feature is crucial to Automotive Interior and Indoor ESS.

The surface-mount LED is designed to be compatible with industrial reflow soldering process.

Features and Benefits

- Industry Standard PLCC SMT package
 - No change in existing board layout, drop-in replacement for the existing PLCC SMT LEDs
- High brightness using AlInGaP and InGaN dice technologies
- Available in various colors
 - Red, Red Orange, Orange, Amber, Yellow Green, Emerald Green, Green, Blue and White
 - Bi-colors in various combinations
 - Tri-colors in Red, Green and Blue
- Available in viewing angle of 30°, 50° and 120°
 - Well-suited for backlighting applications
- High volume, high reliability
 - Cost-effective solution
- Black surface and black body options to enhance contrast for display application

Target Markets and Applications

- Interior automotive
 - Instrument panel backlighting
 - Central console backlighting
 - Cabin backlighting
- Exterior automotive
 - Turn signals
 - Side repeater lamps
 - CHMSLs (center high-mounted stop light)
 - Rear combination lamps
 - Puddle lights
- Electronic Signs and Signals
 - Interior full color sign
 - Variable message sign
- Office Automation, Electrical Appliances, Industrial Equipment
 - Front panel backlighting
 - Push button backlighting
 - Display backlighting

PLCC Surface Mount LEDs PLCC-2 White

Part Number	Color	Chromaticity		Viewing Angle	Intensity		Vf typ.	Test Current
		x	y		Min.	Max.		
HSMW-A100-V40J1	InGaN White	0.31	0.31	120	715	1800	3.4	20

Notes:

1. The luminous intensity I_v is measured at the mechanical axis of the lamp package. The actual peak of the spatial radiation pattern may not be aligned with this axis.
2. The chromaticity coordinates are derived from the CIE 1931 Chromaticity Diagram and represents the perceived color of the device.
3. θ_{1/2} is the off-axis angle where the luminous intensity is ½ the peak intensity.

High Brightness LEDs

PLCC Surface Mount LEDs PLCC-2

Part Number	Color	Dominant Wavelength	Viewing Angle	Intensity		Vf typ.	Test Current
HSMS-A100-J00J1	Red	626	120	4.5	–	2.2	20
HSMH-A100-L00J1	Red	637	120	11.2	–	1.9	20
HSMC-A100-Q00J1	Red	626	120	71.5	–	1.9	20
HSMC-A101-S40J1	Red	626	120	180	450	1.9	20
ASMT-URB4-PU802	Red	626	120	560	1400	1.9	20
HSMJ-A100-T40J1	Red Orange	615	120	285	715	1.9	20
HSMJ-A101-S00J1	Red Orange	615	120	180	–	1.9	20
ASMT-URB4-PU802	Red Orange	615	120	560	1400	1.9	20
HSMD-A100-J00J1	Orange	602	120	4.4	–	2.2	20
HSML-A100-Q00J1	Orange	605	120	71.5	–	1.9	20
HSMY-A100-J00J1	Amber	585	120	4.5	–	2.2	20
HSMA-A101-S70J1	Amber	590	120	224	450	1.9	20
ASMT-UAB4-PU802	Amber	590	120	560	1400	1.9	20
HSMG-A100-J02J1	Yellow Green	569	120	4.5	–	2.2	20
HSME-A100-M02J1	Yellow Green	569	120	18	–	1.9	20
HSMG-A100-H01J1	Emerald Green	560	120	2.8	–	2.2	20
HSME-A100-L01J1	Emerald Green	560	120	11.2	–	1.9	20
HSMM-A100-U4P1	Green	525	120	450	1125	3.4	20
ASMT-UGB5-NV702	Green	525	120	900	1800	3.4	20
HSMN-A100-S4Y1	Blue	470	120	180	450	3.4	20
ASMT-UBB5-NS8Q2	Blue	470	120	224	560	3.4	20

Notes:

1. The luminous intensity I_v is measured at the mechanical axis of the lamp package. The actual peak of the spatial radiation pattern may not be aligned with this axis.
2. The dominant wavelength, λ_D , is derived from the CIE Chromaticity Diagram and represents the color of the device.
3. $\theta_{1/2}$ is the off-axis angle where the luminous intensity is 1/2 the peak intensity.

PLCC-2 White (ASMT-UWB1)

Part Number	Color	CCT (K)	CRI	Viewing Angle	Luminous Intensity (mcd)			Test Current (mA)
				$2\theta_{1/2}$ (°)	Min	Typ	Max	
ASMT-UWB1-NX702	InGaN White	4500 ~ 8000	70	120	2240	2300	4500	20
ASMT-UWB1-NX712	InGaN White	2700 ~ 4000	70	120	2240	2300	4500	20
ASMT-UWB1-NX7A2	InGaN White	8000	70	120	2240	2300	4500	20
ASMT-UWB1-NX7B2	InGaN White	6500	70	120	2240	2300	4500	20
ASMT-UWB1-NX7C2	InGaN White	5700	70	120	2240	2300	4500	20
ASMT-UWB1-NX7D2	InGaN White	5000	70	120	2240	2300	4500	20
ASMT-UWB1-NX7E2	InGaN White	4500	70	120	2240	2300	4500	20
ASMT-UWB1-NX7F2	InGaN White	4000	70	120	2240	2300	4500	20
ASMT-UWB1-NX3G2	InGaN White	3500	70	120	1800	2300	3550	20
ASMT-UWB1-NX3H2	InGaN White	3000	70	120	1800	2300	3550	20
ASMT-UWB1-NX3J2	InGaN White	2700	70	120	1800	2300	3550	20
ASMT-UWB2-NX302	InGaN White	4500 ~ 8000	80	120	1800	2300	3550	20
ASMT-UWB2-NX3A2	InGaN White	8000	80	120	1800	2300	3550	20
ASMT-UWB2-NX3B2	InGaN White	6500	80	120	1800	2300	3550	20
ASMT-UWB2-NX3C2	InGaN White	5700	80	120	1800	2300	3550	20
ASMT-UWB2-NX3D2	InGaN White	5000	80	120	1800	2300	3550	20
ASMT-UWB2-NX3E2	InGaN White	4500	80	120	1800	2300	3550	20
ASMT-UWB2-NW7F2	InGaN White	4000	80	120	1400	1500	2850	20
ASMT-UWB2-NW7G2	InGaN White	3500	80	120	1400	1500	2850	20
ASMT-UWB2-NW7H2	InGaN White	3000	80	120	1400	1500	2850	20
ASMT-UWB2-NW7J2	InGaN White	2700	80	120	1400	1500	2850	20

Tolerance $\pm 12\%$

High Brightness LEDs

PLCC Surface Mount LEDs

Power PLCC-4

Part Number	Color	Typ. Dominant Wavelength $\lambda_D^{(1)}$ (nm)	Viewing Angle $2\theta_{1/2}^{(2)}$ (°)	Min. I_V (mcd)	Max. I_V (mcd)	Typ. V_F (V)	Test Current (mA)
HSMC-A401-U80M1	Red	626	120	560	1400	2.2	50
ASMT-SRB4-PW505	Red	626	120	1125	3550	2.2	50
HSMA-A401-U80M1	Amber	590	120	560	1400	2.2	50
HSMA-A401-V30M1	Amber	590	120	715	1400	2.2	50
ASMT-SAB4-PW505	Amber	590	120	1125	3550	2.2	50
HSML-A401-U40M1	Orange	605	120	450	1125	2.2	50
HSMJ-A401-U40M1	Red Orange	615	120	450	1125	2.2	50
ASMT-SHB4-PW905	Red Orange	615	120	1125	3550	2.2	50
HSME-A401-P4PM1	Emerald Green	567	120	45	112.5	2.2	50
HSMM-A400-V8QM2	Green	525	120	900	2240	3.8	30
HSMM-A400-V8YM2	Green	525	120	1400	2240	3.8	30
ASMT-SGB5-NW703	Green	525	120	224	2850	3.2	30
HSMN-A400-S8PM	Blue	470	120	224	560	3.8	30
HSMN-A400-S8QM2	Blue	470	120	224	560	3.8	30
ASMT-SBB5-NT703	Blue	470	120	355	715	3.2	30

Notes:

1. The dominant wavelength, λ_D , is derived from the CIE Chromaticity Diagram and represents the color of the device.
2. $\theta_{1/2}$ is the off-axis angle where the luminous intensity is 1/2 the peak intensity.
3. The luminous intensity, I_V , is measured at the mechanical axis of the lamp package. The actual peak of the spatial radiation pattern may not be aligned with this axis.

Power PLCC-4 White

Part Number	Color	Chromaticity		Viewing Angle	Intensity			Vf typ.	Test Current
		x	y		Min.	Typ.	Max.		
HSMW-A400-U00M2	InGaN White	0.31	0.31	120	450	700	-	3.8	30
ASMT-SWBM-NV803	InGaN White	0.318	0.318	120	900	1100	2240	3.5	30

Notes:

1. The luminous intensity I_V is measured at the mechanical axis of the lamp package. The actual peak of the spatial radiation pattern may not be aligned with this axis.
2. I_V Tolerance = $\pm 12\%$.
3. The chromaticity coordinates are derived from the CIE 1931 Chromaticity Diagram and represent the perceived color of the device.
4. $\theta_{1/2}$ is the off-axis angle where the luminous intensity is $1/2$ the peak intensity.

Power PLCC-4 with Lens

Part Number	Color	Dominant Wavelength $\lambda_D^{(1)}$ (nm)	Viewing Angle $2\theta_{1/2}$ (°)	Min. I_V (mcd)	Max. I_V (mcd)	Typ. V_F (V)	Test Current (mA)
HSMC-A431-Y80M1	AllInGaP Red	626	30	3550	9000	2.2	50
HSMC-A431-X90M1	AllInGaP Red	626	30	2240	7150	2.2	50
HSMC-A461-V00M1	AllInGaP Red	626	50	715	-	2.2	50
HSMJ-A430-W50M1	AllInGaP Red Orange	615	30	1125	3550	2.2	50
HSMJ-A431-X90M1	AllInGaP Red Orange	615	30	2240	7150	2.2	50
HSMJ-A461-W40M1	AllInGaP Red Orange	615	50	1125	2850	2.2	50
HSML-A431-X90M1	AllInGaP Orange	605	30	2240	7150	2.2	50
HSML-A461-W40M1	AllInGaP Orange	605	50	1125	2850	2.2	50
HSMA-A431-Y00M1	AllInGaP Amber	590	30	2850	-	2.2	50
HSMA-A431-Z50M1	AllInGaP Amber	590	30	4500	14000	2.2	50
HSMA-A461-X83M1	AllInGaP Amber	590	50	2240	5600	2.2	50
HSMM-A430-Y7YM2	InGaN Green	525	30	3550	7150	3.9	30
HSMN-A430-V7YM2	InGaN Blue	470	30	900	1800	3.9	30

Notes:

1. The luminous intensity, I_V , is measured at the mechanical axis of the lamp package. The actual peak of the spatial radiation pattern may not be aligned with this axis.
2. I_V tolerance $\pm 12\%$.
3. The dominant wavelength, λ_D , is derived from the CIE Chromaticity Diagram and represents the color of the device.
4. $\theta_{1/2}$ is the off-axis angle where the luminous intensity is $1/2$ the peak intensity.

High Brightness LEDs

PLCC Surface Mount LEDs

Bicolor PLCC-4

Part Number	Color	Min. I _v @ 20mA		Typ. I _v (mcd) @ 20mA
		Bin ID	mcd	
HSMF-A201-A00J1	GaP Red	K2	8	16
	GaP Yellow Green	L1	10	20
HSMF-A202-A00J1	GaP Red	K2	8	16
	GaP Yellow	K1	6.3	12
HSMF-A203-A00J1	GaP Red	K2	8	16
	GaP Emerald Green	J1	4	8
HSMF-A204-A00J1	GaP Orange	K2	8	16
	GaP Yellow Green	L1	10	20
HSMF-A205-A00J1	GaP Orange	K2	8	16
	GaP Emerald Green	J1	4	8
HSMF-A206-A00J1	GaP Yellow	K2	8	16
	GaP Yellow Green	L1	10	20
HSMF-A211-A00J1	AlGaAs Red	L2	12.5	25
	GaP Yellow Green	L1	10	20
HSMF-A212-A00J1	AlGaAs Red	L2	12.5	25
	GaP Yellow	K1	6.3	12
HSMF-A222-A00J1	AllnGaP Red	P1	40	80
	AllnGaP Amberi	P1	40	80
HSMF-A226-A00J1	AllnGaP Amber	P2	50	100
	AllnGaP Yellow Green	M2	20	60

Super 0.25W Power PLCC-4

Part Number	Color	CCT (K)	Viewing Angle (°)	Min Flux (lm)	Max Flux (lm)	Forward Voltage (V _f) I _f =80mA	Test Current (mA)
ASMT-UWBG-NAC08	Cool White	4000 ~ 8000	120	18.1	35.2	3.4	80
ASMT-UWBG-NACA8	Cool White	8000	120	18.1	35.2	3.4	80
ASMT-UWBG-NACB8	Cool White	6500	120	18.1	35.2	3.4	80
ASMT-UWBG-NACC8	Cool White	5700	120	18.1	35.2	3.4	80
ASMT-UWBG-NACD8	Cool White	5000	120	18.1	35.2	3.4	80
ASMT-UWBG-NACE8	Cool White	4500	120	18.1	35.2	3.4	80
ASMT-UWBG-NACF8	Cool White	4000	120	18.1	35.2	3.4	80
ASMT-UWBH-NBD08	Cool White	4000 ~ 8000	120	23.5	39.8	3.4	80
ASMT-UWBH-NBDA8	Cool White	8000	120	23.5	39.8	3.4	80
ASMT-UWBH-NBDB8	Cool White	6500	120	23.5	39.8	3.4	80
ASMT-UWBH-NBDC8	Cool White	5700	120	23.5	39.8	3.4	80
ASMT-UWBH-NBDD8	Cool White	5000	120	23.5	39.8	3.4	80
ASMT-UWBH-NBDE8	Cool White	4500	120	23.5	39.8	3.4	80
ASMT-UWBH-NBDF8	Cool White	4000	120	23.5	39.8	3.4	80
ASMT-UYBG-NAC18	Warm White	2700 ~ 3500	120	18.1	35.2	3.4	80
ASMT-UYBG-NACG8	Warm White	3500	120	18.1	35.2	3.4	80
ASMT-UYBG-NACH8	Warm White	3000	120	18.1	35.2	3.4	80
ASMT-UYBG-NACJ8	Warm White	2700	120	18.1	35.2	3.4	80

High Brightness LEDs

Super 0.25W Power PLCC-4

Part Number	Color	CCT (K)	Viewing Angle (°)	Min Flux (lm)	Max Flux (lm)	Forward Voltage (Vf) If=80mA	Test Current (mA)
ASMT-UYBH-NAC18	Warm White	2700 ~ 3500	120	18.1	35.2	3.2	80
ASMT-UYBH-NACG8	Warm White	3500	120	18.1	35.2	3.2	80
ASMT-UYBH-NACH8	Warm White	3000	120	18.1	35.2	3.2	80
ASMT-UYBH-NACJ8	Warm White	2700	120	18.1	35.2	3.2	80

Tolerance ±12%

Super 0.5W Power PLCC-4

Part Number	Color	Dominant Wavelength λ_D ^[1] (nm)	Viewing Angle $2\theta_{1/2}$ ^[2] (°)	Min. Flux (lm)	Max. Flux (lm)	Forward Voltage (Vf) If=150mA	Test Current (mA)
ASMT-QABD-AEFOE	Amber	593.1	120	11.5	25.5	2.5	150
ASMT-QHBD-AFHOE	Red Orange	616.1	120	11.5	25.5	2.5	150
ASMT-QRBD-AEFOE	Red	621.1	120	11.5	25.5	2.5	150
ASMT-QBB3-NBDOE	Blue	460	120	5.5	11.5	3.5	150
ASMT-QGBE-NFHOE	Green	522	120	15.0	33.0	3.6	150

Notes:

1. The dominant wavelength, λ_D , is derived from the CIE Chromaticity diagram and represents the color of the device.
2. $\theta_{1/2}$ is the off-axis angle where the luminous intensity is ½ the peak intensity.
3. Φ_V is the total luminous flux output as measured with an integrating sphere at mono pulse conditions.
4. Tolerance = ±12%.

PLCC Surface Mount LEDs

Super 0.5W White Power PLCC-4

Part Number	Color	CCT (K)	Viewing Angle $2\theta_{1/2}$ ^[2] (°)	Min. Flux (lm)	Max. Flux (lm)	Forward Voltage (Vf) If=150mA	Test Current (mA)
ASMT-QWBF-NKLOE	Cool White	4500-1000	120	43	73	3.3	150
ASMT-QYBF-NJKOE	Warm White	2500-4800	120	33	56	3.3	150

Notes:

1. $\theta_{1/2}$ is the off-axis angle where the luminous intensity is ½ the peak intensity.
2. Φ_V is the total luminous flux output as measured with an integrating sphere at mono pulse conditions.
3. Tolerance = ±12%.

High Brightness LEDs

TheiaLED Super 0.5W White Power PLCC-4

Part number	Color	CCT (K)	Viewing Angle (°)	Min Flux (lm)	Max Flux (lm)	Forward Voltage (V _F) I _F =150mA	Test Current (mA)	CRI
ASMT-QWBG-NFH0E	Cool White	4000 ~ 8000	120	45.7	62	3.2	150	85
ASMT-QWBG-NFHAE	Cool White	8000	120	45.7	62	3.2	150	85
ASMT-QWBG-NFHBE	Cool White	6500	120	45.7	62	3.2	150	85
ASMT-QWBG-NFHCE	Cool White	5700	120	45.7	62	3.2	150	85
ASMT-QWBG-NFHDE	Cool White	5000	120	45.7	62	3.2	150	85
ASMT-QWBG-NFHEE	Cool White	4500	120	45.7	62	3.2	150	85
ASMT-QWBG-NFHFE	Cool White	4000	120	45.7	62	3.2	150	85
ASMT-QWBH-NGJ0E	Cool White	4000 ~ 8000	120	51.7	67.2	3.2	150	75
ASMT-QWBH-NGJAE	Cool White	8000	120	51.7	67.2	3.2	150	75
ASMT-QWBH-NGJBE	Cool White	6500	120	51.7	67.2	3.2	150	75
ASMT-QWBH-NGJCE	Cool White	5700	120	51.7	67.2	3.2	150	75
ASMT-QWBH-NGJDE	Cool White	5000	120	51.7	67.2	3.2	150	75
ASMT-QWBH-NGJEE	Cool White	4500	120	51.7	67.2	3.2	150	75
ASMT-QWBH-NGJFE	Cool White	4000	120	51.7	67.2	3.2	150	75
ASMT-QYBG-NEG1E	Warm White	2700 ~ 3500	120	39.8	56.8	3.2	150	85
ASMT-QYBG-NEGGE	Warm White	3500	120	39.8	56.8	3.2	150	85
ASMT-QYBG-NEGHE	Warm White	3000	120	39.8	56.8	3.2	150	85
ASMT-QYBG-NEGJE	Warm White	2700	120	39.8	56.8	3.2	150	85
ASMT-QYBH-NEG1E	Warm White	2700 ~ 3500	120	39.8	56.8	3.2	150	75
ASMT-QYBH-NEGGE	Warm White	3500	120	39.8	56.8	3.2	150	75
ASMT-QYBH-NEGHE	Warm White	3000	120	39.8	56.8	3.2	150	75
ASMT-QYBH-NEGJE	Warm White	2700	120	39.8	56.8	3.2	150	75

Tolerance ±12%

High Brightness LEDs

High Brightness Tricolor PLCC4 & PLCC6

Part Number	Color	Package	Package Dimension	Viewing Angle (°)	Dominant Wavelength (nm)	Min Intensity (mcd) @ 20mA		Typ IV @ 20mA (mcd)	Features
						Bin	mcd		
ASMB-BTE1-0B332	Red	PLCC-4	3.5x2.8x1.9	110	622	U1	450	630	Black Body White Reflector
	Green				529	W1	1125	1500	
	Blue				469	T1	285	350	
ASMB-MTB0-0A302	Red	PLCC-4	3.5x2.8x1.9	115	625	U1	450	540	Black Surface
	Green				530	W1	1125	1600	
	Blue				470	T1	285	350	
ASMB-MTB1-0A302	Red	PLCC-4	3.5x2.8x1.9	115	625	U1	450	540	Black Surface
	Green				530	W1	1125	1600	
	Blue				470	T1	285	350	
ASMB-MTC1-0A3A2	Red	PLCC-4	3.4 x 2.8 x 1.8	105	625	S1	180	280	Black Body
	Green				528	U2	560	850	
	Blue				470	R1	112.5	170	
ASMB-TTB0-0A3A2	Red	PLCC-6	3.5 x 3.5 x 2.8	115	621	U2	560	790	Black Surface
	Green				530	X1	1800	2400	
	Blue				470	T2	355	500	
ASMB-TTB2-0C3A2	Red	PLCC-6	3.5 x 3.5 x 2.8	115	621	U2	560	790	Black Surface
	Green				530	W2	1400	2000	
	Blue				470	T1	285	380	
ASMB-TTE0-0A3A2	Red	PLCC-6	3.2 x 3.2 x 2.7	110	623	V1	715	880	Black Body White Reflector
	Green				525	X1	1800	2300	
	Blue				469	T2	355	440	
ASMB-TTE2-0B3A2	Red	PLCC-6	3.2 x 3.2 x 2.7	110	623	V1	715	880	Black Body White Reflector
	Green				525	W2	1400	1700	
	Blue				469	T1	285	330	
ASMT-YTB2-0BB02	Red	PLCC-6	3.4 x 2.8x 1.8	120	626	U2	560	745	Black Surface
	Green				525	W1	1125	1600	
	Blue				470	T1	285	380	
ASMT-YTB7-0AA02	Red	PLCC-6	3.4 x 2.8x 1.8	120	622	U2	560	650	Black Surface
	Green				530	W2	1400	1900	
	Blue				470	T1	285	384	
ASMT-YTC2-0BB02	Red	PLCC-6	3.4 x 2.8x 1.8	120	626	T2	355	450	Black Body
	Green				525	U1	450	560	
	Blue				470	R2	140	180	
ASMT-YTC7-0AA02	Red	PLCC-6	3.4 x 2.8x 1.8	110	622	S2	224	330	Black Body
	Green				530	U2	560	1125	
	Blue				470	R1	112.5	160	
ASMT-YTD2-0BB02	Red	PLCC-6	3.4 x 2.8x 1.8	120	626	U2	560	745	White Surface
	Green				525	W1	1125	1600	
	Blue				470	T1	285	380	
ASMT-YTD7-0AA02	Red	PLCC-6	3.4 x 2.8x 1.8	120	622	U2	560	650	White Surface
	Green				530	W1	1400	1900	
	Blue				470	T1	285	384	

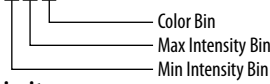
Subminiature Tricolor PLCC4

Part Number	Color	Package	Package Dimension	Viewing Angle (°)	Dominant Wavelength (nm)	Min Intensity (mcd)	Typ IV (mcd)	Test Current (mA)	Features
ASMB-LTC0-0A3A5	Red	PLCC-4	2.1 x 2.1 x 1.0	105	621	200	273	20	Black Body
	Green				525	355	393	20	
	Blue				470	50	72	10	

High Brightness LEDs

PLCC-2 (ASMT-UWB1)

ASMT-UWB1-N X₂ X₃ X₄ 2



Color Bin Limits

Individual reel will contain parts from one sub bin only.

Sub Bin	Chromaticity Coordinates
1A	x 0.2950 0.2920 0.2984 0.3009 y 0.2970 0.3060 0.3133 0.3042
1B	x 0.2920 0.2895 0.2962 0.2984 y 0.3060 0.3135 0.3220 0.3133
1C	x 0.2984 0.2962 0.3028 0.3048 y 0.3133 0.3220 0.3304 0.3207
1D	x 0.2984 0.3048 0.3068 0.3009 y 0.3060 0.3135 0.3220 0.3133
2A	x 0.3048 0.3130 0.3144 0.3068 y 0.3207 0.3290 0.3186 0.3113
2B	x 0.3028 0.3115 0.3130 0.3048 y 0.3304 0.3391 0.3290 0.3207
2C	x 0.3115 0.3205 0.3213 0.3130 y 0.3391 0.3481 0.3373 0.3290
2D	x 0.3130 0.3213 0.3221 0.3144 y 0.3290 0.3373 0.3261 0.3186
3A	x 0.3215 0.3290 0.3290 0.3222 y 0.3350 0.3417 0.3300 0.3243
3B	x 0.3207 0.3290 0.3290 0.3215 y 0.3462 0.3538 0.3417 0.3350
3C	x 0.3290 0.3376 0.3371 0.3290 y 0.3538 0.3616 0.3490 0.3417
3D	x 0.3290 0.3371 0.3366 0.3290 y 0.3417 0.3490 0.3369 0.3300
4A	x 0.3371 0.3451 0.3440 0.3366 y 0.3490 0.3554 0.3427 0.3369
4B	x 0.3376 0.3463 0.3451 0.3371 y 0.3616 0.3687 0.3554 0.3490
4C	x 0.3463 0.3551 0.3533 0.3451 y 0.3687 0.3760 0.3620 0.3554
4D	x 0.3451 0.3533 0.3515 0.3440 y 0.3554 0.3620 0.3487 0.3427
5A	x 0.3530 0.3615 0.3590 0.3512 y 0.3597 0.3659 0.3521 0.3465
5B	x 0.3548 0.3641 0.3615 0.3530 y 0.3736 0.3804 0.3659 0.3597
5C	x 0.3641 0.3736 0.3702 0.3615 y 0.3804 0.3874 0.3722 0.3659
5D	x 0.3615 0.3702 0.3670 0.3590 y 0.3659 0.3722 0.3578 0.3521

Intensity Bin Limits

Bin ID	Min. (mcd)	Max. (mcd)
X1	1800	2240
X2	2240	2850
Y1	2850	3550
Y2	3550	4500
Z1	4500	5600
Z2	5600	7150

Tolerance of each bin it = ± 12%

6A	x	0.3670	0.3702	0.3825	0.3783
	y	0.3578	0.3722	0.3798	0.3646
6B	x	0.3702	0.3736	0.3869	0.3825
	y	0.3722	0.3874	0.3958	0.3798
6C	x	0.3825	0.3869	0.4006	0.3950
	y	0.3798	0.3958	0.4044	0.3875
6D	x	0.3783	0.3825	0.3950	0.3898
	y	0.3646	0.3798	0.3875	0.3716
7A	x	0.3889	0.3941	0.4080	0.4017
	y	0.3690	0.3848	0.3916	0.3751
7B	x	0.3941	0.3996	0.4146	0.4080
	y	0.3848	0.4015	0.4089	0.3916
7C	x	0.4080	0.4146	0.4299	0.4221
	y	0.3916	0.4089	0.4165	0.3984
7D	x	0.4017	0.4080	0.4221	0.4147
	y	0.3751	0.3916	0.3984	0.3814
8A	x	0.4147	0.4221	0.4342	0.4259
	y	0.3814	0.3984	0.4028	0.3853
8B	x	0.4221	0.4299	0.4430	0.4342
	y	0.3984	0.4165	0.4212	0.4028
8C	x	0.4342	0.4430	0.4562	0.4465
	y	0.4028	0.4212	0.4260	0.4071
8D	x	0.4259	0.4342	0.4465	0.4373
	y	0.3853	0.4028	0.4071	0.3893
9A	x	0.4373	0.4465	0.4582	0.4483
	y	0.3893	0.4071	0.4099	0.3919
9B	x	0.4465	0.4562	0.4687	0.4582
	y	0.4071	0.4260	0.4289	0.4099
9C	x	0.4582	0.4687	0.4813	0.4700
	y	0.4099	0.4289	0.4319	0.4126
9D	x	0.4483	0.4582	0.4700	0.4593
	y	0.3919	0.4099	0.4126	0.3944

Intensity Bin Select (X₂X₃)

Individual reel will contain parts from one half bin only.

X ₂	Minimum Iv Bin
X ₃	Maximum Iv Bin
0	Full Distribution
3	3 half bins starting from X ₂ 1
4	4 half bins starting from X ₂ 1
5	5 half bins starting from X ₂ 1
7	3 half bins starting from X ₂ 2
8	4 half bins starting from X ₂ 2
9	5 half bins starting from X ₂ 2

Color Bin Limits

Individual reel will contain parts from one sub bin only.

Bin	Sub Bin
A	1A, 1B, 1C, 1D
B	2A, 2B, 2C, 2D
C	3A, 3B, 3C, 3D
D	4A, 4B, 4C, 4D
E	5A, 5B, 5C, 5D
F	6A, 6B, 6C, 6D
G	7A, 7B, 7C, 7D
H	8A, 8B, 8C, 8D
J	9A, 9B, 9C, 9D
K	1A, 1B, 1C, 1D, 2A, 2B, 2C, 2D
L	2A, 2B, 2C, 2D, 3A, 3B, 3C, 3D
M	3A, 3B, 3C, 3D, 4A, 4B, 4C, 4D
N	4A, 4B, 4C, 4D, 5A, 5B, 5C, 5D
P	5A, 5B, 5C, 5D, 6A, 6B, 6C, 6D
R	7A, 7B, 7C, 7D, 8A, 8B, 8C, 8D
S	8A, 8B, 8C, 8D, 9A, 9B, 9C, 9D
0	1A, 1B, 1C, 1D, 2A, 2B, 2C, 2D, 3A, 3B, 3C, 3D, 4A, 4B, 4C, 4D, 5A, 5B, 5C, 5D
1	6A, 6B, 6C, 6D, 7A, 7B, 7C, 7D, 8A, 8B, 8C, 8D, 9A, 9B, 9C, 9D

Forward Voltage Bin

Bin	Min (V)	Max (V)
F05	2.80	3.00
F06	3.00	3.20
F07	3.20i	3.40
F08	3.40	3.60

Tolerance ± 0.1V

