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## Solid State Lighting

Mid-Power and High-Power LEDs

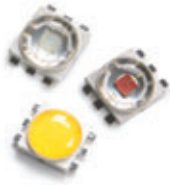
Ambient Light Sensors



Your Imagination, Our Innovation  
*Sense • Illuminate • Connect*

## Solid-State Lighting **High-Power LEDs**

# 1 Watt and 3 Watt Mini High-Power LEDs



### Description

The Mini High-Power LED family features a small scale package and comes with an isolated heat sink (for InGaN colors), which enables designs with multiple LEDs on a common heat sink without additional electrical isolation. A built-in Zener Diode enables a high ESD threshold of 16KV, thus it can be assembled in a non ESD safe environment.

### Typical Applications

- Portable lighting appliances such as torchlight, bicycle headlight and miner light
- Street lighting, tunnel lighting
- Safety, exit and emergency sign lighting
- Specialty lighting such as task lighting, small reading lights, spot lights, track lights
- Architectural facade lighting and lighting for retail outlets, casinos, restaurants
- Accent or marker lighting, strip or step lighting
- Retail lighting, decorative lighting & garden lighting

### Features



- Excellent lumen per dollar ratio, especially for the 3 Watt Series
- Small footprint (4mm x 5mm) and very low profile (1.85mm height)
- Direct heat transfer from the metal slug to the mother board
- Metal slug is electrically isolated (for InGaN colors)
- Wide viewing angle: 140° / 165°
- Low thermal resistance: 9°C/W
- Can be driven at stringent operating condition: LED Junction Temperature 150°C max \*
- Operating temperature: -40°C to +135°C max \*
- Long operating life due to silicone encapsulation
- Reliable: Non-Moisture sensitive - MSL 1 (unlimited floorlife, no baking required)
- Energy efficient: Power Dissipation starts at 1085mW
- Helps lower design cost due to:
  - Compatible with reflow soldering process
  - Non-ESD sensitive (threshold > 16kV)

\* Refer to Data Sheet for details

Avago 3W Mini High-Power LEDs in LED Light Strip by Schneider Technologies



### Secondary Optics

Part Number	Description	FWHM	Holder	Manufacturer	
10048	Plain tight Ø 26.5mm	8.31 x 8.14	10461	 www.carclo-optics.com	
10124	Narrow frosted Ø 26.5mm	13.59 x 13.26	10461		
10108	Medium frosted Ø 26.5mm	23.82 x 23.78	10461		
10049	Elliptical Ø 26.5mm	43.87 x 10.94	10461		

This is a selection of the most popular lenses for Avago High-Power LEDs. The above listed manufacturers have a much broader offering of secondary optics specifically designed for Avago High-Power LEDs. For details, please check the internet or contact one of our Distributor Partners.

## 1 Watt and 3 Watt Mini-High-Power LEDs

Product Number	Color	Color Temperature / Wavelength	Flux Bin (Luminous Flux / Radiometric Power @ 350mA)	Luminous Flux @ 350mA (typ.)	Luminous Flux @ 700mA (typ.)	Max. Current	Viewing Angle	Electrically Isolated Metal Slug	Packaging
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### 3 Watt Mini-High-Power LEDs

ASMT-JW31-NTV01	Cool White	4500 - 10000K (1)	T (67.2 - 87.4lm) U (87.4 - 99.6lm) V (99.6 - 113.6lm)	85lm	150lm	700mA	140°	Yes	Reel
ASMT-JW31-NUV01	Cool White	4500 - 10000K (1)	U (87.4 - 99.6lm) V (99.6 - 113.6lm)	95lm	160lm	700mA	140°	Yes	Reel
ASMT-JN31-NTV01	Neutral White	3500 - 4500K (1)	T (67.2 - 87.4lm) U (87.4 - 99.6lm) V (99.6 - 113.6lm)	85lm	150lm	700mA	140°	Yes	Reel
ASMT-JN31-NUV01	Neutral White	3500 - 4500K (1)	U (87.4 - 99.6lm) V (99.6 - 113.6lm)	95lm	160lm	700mA	140°	Yes	Reel
ASMT-JY31-NSU01	Warm White	2700 - 3500K (1)	S (51.7 - 67.2lm) T (67.2 - 87.4lm) U (87.4 - 99.6lm)	70lm	120lm	700mA	140°	Yes	Reel
ASMT-JA30-ARS01	Amber	587-597nm (2)	R (39.8 - 51.7lm) S (51.7 - 67.2lm)	45lm	80lm	700mA	165°	No	Reel
ASMT-JH30-ARS01	Red-Orange	610-620nm	R (39.8 - 51.7lm) S (51.7 - 67.2lm)	45lm	80lm	700mA	165°	No	Reel
ASMT-JR30-ARS01	Red	620-635nm	R (39.8 - 51.7lm) S (51.7 - 67.2lm)	45lm	80lm	700mA	165°	No	Reel
ASMT-JG31-NST01	Green	515-535nm (2)	S (51.7 - 67.2lm) T (67.2 - 87.4lm)	70lm	120lm	700mA	165°	Yes	Reel
ASMT-JB31-NMP01	Blue	460-480nm (2)	M (13.9 - 18.1lm) N (18.1 - 23.5lm) P (23.5 - 30.6lm)	20lm	33lm	700mA	165°	Yes	Reel
ASMT-JL31-NPQ01	Royal-Blue	440-460nm (2,3)	P (355 - 435mW) Q (435 - 515mW)	435mW	650mW	700mA	165°	Yes	Reel

### 1 Watt Mini-High-Power LEDs

ASMT-JW11-NTT01	Cool White	4500 - 10000K (1)	T (67.2 - 87.4lm)	70lm	-	350mA	140°	Yes	Reel
ASMT-JN11-NST01	Neutral White	3500 - 4500K (1)	S (51.7 - 67.2lm) T (67.2 - 87.4lm)	65lm	-	350mA	140°	Yes	Reel
ASMT-JY11-NST01	Warm White	2700 - 3500K (1)	S (51.7 - 67.2lm) T (67.2 - 87.4lm)	60lm	-	350mA	140°	Yes	Reel
ASMT-JA10-ARS01	Amber	587-597nm (2)	R (39.8 - 51.7lm) S (51.7 - 67.2lm)	45lm	-	350mA	165°	No	Reel
ASMT-JH10-ARS01	Red-Orange	610-620nm	R (39.8 - 51.7lm) S (51.7 - 67.2lm)	45lm	-	350mA	165°	No	Reel
ASMT-JR10-ARS01	Red	620-635nm	R (39.8 - 51.7lm) S (51.7 - 67.2lm)	45lm	-	350mA	165°	No	Reel
ASMT-JG11-NST01	Green	515-535nm (2)	S (51.7 - 67.2lm) T (67.2 - 87.4lm)	70lm	-	350mA	165°	Yes	Reel
ASMT-JB11-NLN01	Blue	460-480nm (2)	L (10.7 - 13.9lm) M (13.9 - 18.1lm) N (18.1 - 23.5lm)	15lm	-	350mA	165°	Yes	Reel
ASMT-JL11-NMP01	Royal-Blue	440-460nm (2,3)	M (225 - 275mW) N (275 - 355mW) P (355 - 435mW)	320mW	-	350mA	165°	Yes	Reel

Notes:

- (1) Narrow Color Temperature selections are available on request
- (2) Narrow color bin selections for blue, green, amber and royal-blue are available on request.
- (3) For royal-blue, the wavelength shown in the above table is peak wavelength.

# Solid-State Lighting **High-Power LEDs**

## 1 Watt High-Power LEDs



### Description

This High-Power package has a footprint which is most common in the industry. It is an ideal solution to upgrade your existing applications. Its robust design supports a long life performance and IR Reflow soldering capability. It also comes with an electrically isolated heat sink for white, blue, and green colors.

### Typical Applications

- Architectural lighting
- Channel backlighting
- Contour lighting
- Retail display lighting
- Decorative lighting
- Garden lighting

### Features


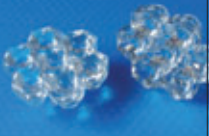




- Very good lumen per dollar ratio
- Most common footprint (7.4mm x 13.6mm), 4.1mm height
- Direct heat transfer from the metal slug to the mother board
- Wide viewing angle: 130°
- Metal slug is electrically isolated (for InGaN colors)
- Low thermal resistance: 10°C/W
- Can be driven at stringent operating condition: LED Junction Temperature 135°C max \*
- Operating temperature: -40°C to +120°C max \*
- Long operating life due to silicone encapsulation
- Moisture sensitive level (MSL) 2A: baking required after 4 weeks floorlife
- Energy efficient: Power Dissipation starts at 1085mW
- Helps lower design cost due to:
  - Compatible with reflow soldering process
  - Non-ESD sensitive (threshold > 16kV)

\* Refer to Data Sheet for details



Avago 1W High-Power LEDs in Downlight by Schneider Technologies

### Secondary Optics

Part Number	Description	FWHM	Holder	Manufacturer	
120	Hexagonal 16.5 x 14.3mm	6°	239	 www.polymer-optics.co.uk	
201	Hexagonal 16.5 x 14.3mm	15°	239		
124	Hexagonal 16.5 x 14.3mm	25°	239		
126	Oval, hexagonal 16.5 x 14.3mm	6 x 25°	239		
10048	Plain tight Ø 26.5mm	6.91 x 6.89	10469	 www.carclo-optics.com	
10124	Narrow frosted Ø 26.5mm	11.27 x 10.94	10469		
10108	Medium frosted Ø 26.5mm	22.32 x 21.97	10469		
10049	Eliptical Ø 26.5mm	44.01 x 8.14	10469		
PL1231A06	Round Ø 30mm	10°	integrated	 www.khatod.com	
PL1231A25LSD	Round Ø 30mm	20°	integrated		
PL1231A40	Round Ø 30mm	40°	integrated		
PL123725	Triple Ø 35mm	20°	integrated		

This is a selection of the most popular lenses for Avago High-Power LEDs. The above listed manufacturers have a much broader offering of secondary optics specifically designed for Avago High-Power LEDs. For details, please check the internet or contact one of our Distributor Partners.

## 1 Watt High-Power LEDs

Product Number	Color	Color Temperature / Wavelength	Flux Bin (Luminous Flux / Radiometric Power @ 350mA)	Luminous Flux @ 350mA (typ.)	Max. Current	Viewing Angle	Electrically Isolated Metal Slug	Packaging
ASMT-AW00-NST00	Cool White	4500 - 10000K (1)	S (51.7 - 67.2lm) T (67.2 - 87.4lm)	65lm	350mA	130°	Yes	Tube (2)
ASMT-AW00-NSTJO	Cool White	5000 - 6300K	S (51.7 - 67.2lm) T (67.2 - 87.4lm)	65lm	350mA	130°	Yes	Tube (2)
ASMT-AW00-NSU00	Cool White	4500 - 10000K (1)	S (51.7 - 67.2lm) T (67.2 - 87.4lm) U (87.4 - 99.6lm)	70lm	350mA	130°	Yes	Tube (2)
ASMT-AW00-NTU00	Cool White	4500 - 10000K (1)	T (67.2 - 87.4lm) U (87.4 - 99.6lm)	80lm	350mA	130°	Yes	Tube (2)
ASMT-AN00-NST00	Neutral White	3500 - 4500K (1)	S (51.7 - 67.2lm) T (67.2 - 87.4lm)	65lm	350mA	130°	Yes	Tube (2)
ASMT-AN00-NSTJO	Neutral White	3500 - 4100K	S (51.7 - 67.2lm) T (67.2 - 87.4lm)	65lm	350mA	130°	Yes	Tube (2)
ASMT-AN00-NSTKO	Neutral White	3800 - 4500K	S (51.7 - 67.2lm) T (67.2 - 87.4lm)	65lm	350mA	130°	Yes	Tube (2)
ASMT-AN00-NSU00	Neutral White	3500 - 4500K (1)	S (51.7 - 67.2lm) T (67.2 - 87.4lm) U (87.4 - 99.6lm)	70lm	350mA	130°	Yes	Tube (2)
ASMT-AN00-NTU00	Neutral White	3500 - 4500K (1)	T (67.2 - 87.4lm) U (87.4 - 99.6lm)	80lm	350mA	130°	Yes	Tube (2)
ASMT-AY00-NRS00	Warm White	2700 - 3500K (1)	R (39.8 - 51.7lm) S (51.7 - 67.2lm)	60lm	350mA	130°	Yes	Tube (2)
ASMT-AY00-NRSJO	Warm White	2850 - 3250K	R (39.8 - 51.7lm) S (51.7 - 67.2lm)	60lm	350mA	130°	Yes	Tube (2)
ASMT-AY00-NRSKO	Warm White	3050 - 3500K	R (39.8 - 51.7lm) S (51.7 - 67.2lm)	60lm	350mA	130°	Yes	Tube (2)
ASMT-AY00-NST00	Warm White	2700 - 3500K (1)	S (51.7 - 67.2lm) T (67.2 - 87.4lm)	65lm	350mA	130°	Yes	Tube (2)
ASMT-AA00-AQR00	Amber	587-597nm (3)	Q (30.6 - 39.8lm) R (39.8 - 51.7lm)	43lm	350mA	130°	No	Tube (2)
ASMT-AA00-ARR00	Amber	587-597nm (3)	R (39.8 - 51.7lm)	43lm	350mA	130°	No	Tube (2)
ASMT-AH00-AQR00	Red-Orange	610-620nm	Q (30.6 - 39.8lm) R (39.8 - 51.7lm)	43lm	350mA	130°	No	Tube (2)
ASMT-AR00-AQR00	Red	620-635nm	Q (30.6 - 39.8lm) R (39.8 - 51.7lm)	43lm	350mA	130°	No	Tube (2)
ASMT-AR00-ARR00	Red	620-635nm	R (39.8 - 51.7lm)	43lm	350mA	130°	No	Tube (2)
ASMT-AG00-NST00	Green	515-535nm (3)	S (51.7 - 67.2lm) T (67.2 - 87.4lm)	65lm	350mA	130°	Yes	Tube (2)
ASMT-AB00-NLN00	Blue	460-480nm (3)	L (10.7 - 13.9lm) M (13.9 - 18.1lm) N (18.1 - 23.5lm)	15lm	350mA	130°	Yes	Tube (2)
ASMT-AB00-NMPO0	Blue	460-480nm (3)	M (13.9 - 18.1lm) N (18.1 - 23.5lm) P (23.5 - 30.6lm)	18lm	350mA	130°	Yes	Tube (2)
ASMT-AL00-NMPO0	Royal-Blue	440-460nm (3, 4)	M (225 - 275mW) N (275 - 355mW) P (355 - 435mW)	320mW	350mA	130°	Yes	Tube (2)
ASMT-AL00-NNP00	Royal-Blue	440-460nm (3, 4)	N (275 - 355mW) P (355 - 435mW)	320mW	350mA	130°	Yes	Tube (2)

Notes:

- (1) Narrow Color Temperature selections are available on request.
- (2) All above listed LEDs are also available in Reel packing.
- (3) Narrow color bin selections for blue, green, amber and royal-blue are available on request.
- (4) For royal-blue, the wavelength shown in the above table is peak wavelength.

## Solid-State Lighting **Mid- and High-Power LEDs**

# Moonstone™ Family

### Description

Avago's Moonstone™ high-power LED-family has the widest high power offering on the same platform (0.5W, 1W, and 3W). The industry-proven power transistor package grants a robust and reliable performance. The exposed pad design has excellent heat transfer from the package to the motherboard.



Moonstone™ Emitter



Moonstone™ Star 1  
Module (MCPCB)



Moonstone™ Star 2  
Module (MCPCB)

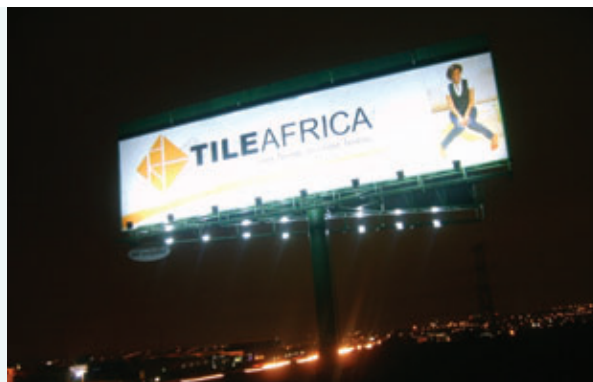
### Typical Applications

- Portable lighting – flash light, bicycle headlight & miner light
- Safety / security lighting – exit and emergency sign light
- Task lighting – reading light, spot light, track light
- General lighting – street lighting, interior lighting
- Decorative lighting – cove lighting, contour lighting and garden lighting
- Billboard backlighting – sign backlighting

### Features

- Power: 0.5 Watt, 1 Watt, and 3 Watt
- Low profile (3.3mm height), footprint is 10mm x 15.85mm
- Direct heat transfer from the metal slug to the mother board
- Option with electrically isolated metal slug is available (only for InGaN colors)
- Wide viewing angle: 110° / 120°
- Low thermal resistance: 10°C/W min \*
- Can be driven at stringent operating condition: LED Junction Temperature 145°C max \*
- Operating temperature: -40°C to +120°C max \*
- Long operating life due to silicone encapsulation
- Energy efficient: Power Dissipation starts at 525mW
- Helps lower design cost due to:
  - Compatible with reflow soldering process
  - Non-ESD sensitive (threshold > 16kV)

\* Refer to Data Sheet for details



Billboard Illumination  
using Avago 3W  
Moonstone™ –  
South Africa


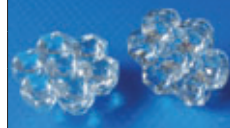






### 3 Watt Moonstone™ High-Power LEDs

Product Number	Color	Color Temperature	Flux Bin (Luminous Flux @ 700mA)	Luminous Flux @ 700mA (typ.)	Max. Current	Viewing Angle	Clear / Diffused	Type	Electrically Isolated Metal Slug	Packaging
ASMT-MW20-NNN00	Cool White	4000 - 10000K (1)	N (124 - 161lm)	145lm	700mA	120°	Clear	Emitter	No	Tube (2)
ASMT-MW22-NNN00	Cool White	4000 - 10000K (1)	N (124 - 161lm)	145lm	700mA	120°	Clear	Emitter	Yes	Tube (2)
ASMT-MW22-NNNS0	Cool White	4000 - 4500K	N (124 - 161lm)	145lm	700mA	120°	Clear	Emitter	Yes	Tube (2)
ASMT-MW22-NNNU0	Cool White	7000 - 10000K	N (124 - 161lm)	145lm	700mA	120°	Clear	Emitter	Yes	Tube (2)
ASMT-MW22-NNNW0	Cool White	5600 - 7000K	N (124 - 161lm)	145lm	700mA	120°	Clear	Emitter	Yes	Tube (2)
ASMT-MW22-NNNZ0	Cool White	4500 - 5600K	N (124 - 161lm)	145lm	700mA	120°	Clear	Emitter	Yes	Tube (2)
ASMT-MWE0-NMN00	Cool White	4000 - 10000K (1)	M (95.0 - 124lm) N (124 - 161lm)	125lm	700mA	120°	Diffused	Emitter	No	Tube (2)
ASMT-MWE2-NMN00	Cool White	4000 - 10000K (1)	M (95.0 - 124lm) N (124 - 161lm)	125lm	700mA	120°	Diffused	Emitter	Yes	Tube (2)
ASMT-MY20-NMN00	Warm White	2600 - 4000K (1)	M (95.0 - 124lm) N (124 - 161lm)	125lm	700mA	120°	Clear	Emitter	No	Tube (2)
ASMT-MY22-NMN00	Warm White	2600 - 4000K (1)	M (95.0 - 124lm) N (124 - 161lm)	125lm	700mA	120°	Clear	Emitter	Yes	Tube (2)
ASMT-MY22-NMNU0	Warm White	3500 - 4000K	M (95.0 - 124lm) N (124 - 161lm)	125lm	700mA	120°	Clear	Emitter	Yes	Tube (2)
ASMT-MY22-NMNW0	Warm White	3000 - 3500K	M (95.0 - 124lm) N (124 - 161lm)	125lm	700mA	120°	Clear	Emitter	Yes	Tube (2)
ASMT-MY22-NMNZ0	Warm White	2600 - 3000K	M (95.0 - 124lm) N (124 - 161lm)	125lm	700mA	120°	Clear	Emitter	Yes	Tube (2)
ASMT-MYE0-NMN00	Warm White	2600 - 4000K (1)	M (95.0 - 124lm) N (124 - 161lm)	110lm	700mA	120°	Diffused	Emitter	No	Tube (2)
ASMT-MYE2-NMN00	Warm White	2600 - 4000K (1)	M (95.0 - 124lm) N (124 - 161lm)	110lm	700mA	120°	Diffused	Emitter	Yes	Tube (2)

Notes:

- (1) Narrow Color Temperature selections are available on request
- (2) The above listed LEDs are also available in Reel packing

### Secondary Optics for 3 Watt, 1 Watt, and 0.5 Watt Moonstone™ Series

Part Number	Description	FWHM	Holder	Manufacturer	
170	Narrow Angle Collimator	6°	182	 <a href="http://www.polymer-optics.co.uk">www.polymer-optics.co.uk</a>	
198	Narrow Angle Collimator	15°	182		
171	Wide Angle Collimator	25°	182		
172	Elliptical Beam	6 x 25°	182		
10391	Plain tight Ø 26.5mm	12°	10469	 technical plastics <a href="http://www.carclo-optics.com">www.carclo-optics.com</a>	
10392	Narrow frosted Ø 26.5mm	17.2°	10469		
10393	Medium frosted Ø 26.5mm	25.5°	10469		
10395	Elliptical Ø 26.5mm	44 x 16°	10469		
PLVG1 26606	Narrow Angle Collimator	10°	integrated	 LENSES FOR POWER LED <a href="http://www.khatod.com">www.khatod.com</a>	
PLVG1 26625	Medium Angle Collimator	25°	integrated		
PLVG1 26640	Wide Angle Collimator	40°	integrated		
PLVG1 26825	Diffused Medium Angle Collimator	25°	integrated		
ASMT-M006	Collimator Snap function Ø 29mm	6°	integrated	 <a href="http://www.avagotech.com">www.avagotech.com</a>	
ASMT-M015	Collimator Snap function Ø 20mm	15°	integrated		
ASMT-M030	Collimator Snap function Ø 20mm	30°	integrated		

This is a selection of the most popular lenses for Avago High-Power LEDs. The above listed manufacturers have a much broader offering of secondary optics specifically designed for Avago High-Power LEDs. For details, please check the internet or contact one of our Distributor Partners.



## 1 Watt Moonstone™ High-Power LEDs

Product Number	Color	Color Temperature / Wavelength	Flux Bin (Luminous Flux @ 350mA)	Luminous Flux @ 350mA (typ.)	Max. Current	Viewing Angle	Clear / Diffused	Type	Electrically Isolated Metal Slug	Packaging
ASMT-MW03-NJK00	Cool White	4000 - 10000K (1)	J (43.0 - 56.0lm) K (56.0 - 73.0lm)	55lm	350mA	110°	Clear	Emitter	No	Tube (2)
ASMT-MW04-NJK00	Cool White	4000 - 10000K (1)	J (43.0 - 56.0lm) K (56.0 - 73.0lm)	55lm	350mA	110°	Clear	Emitter	Yes	Tube (2)
ASMT-MWK0-NKK00	Cool White	4000 - 10000K (1)	K (56.0 - 73.0lm)	65lm	350mA	110°	Clear	Star 2	-	Tray
ASMT-MWB9-NKL00	Cool White	4000 - 10000K (1)	K (56.0 - 73.0lm) L (73.0 - 95.0lm)	73lm	500mA	120°	Diffused	Emitter	No	Tube (2)
ASMT-MW05-NLL00	Cool White	4000 - 10000K (1)	L (73.0 - 95.0lm)	80lm	500mA	110°	Clear	Emitter	No	Tube (2)
ASMT-MW06-NLL00	Cool White	4000 - 10000K (1)	L (73.0 - 95.0lm)	80lm	500mA	110°	Clear	Emitter	Yes	Tube (2)
ASMT-MW09-NMM00	Cool White	4000 - 10000K (1)	M (95.0 - 124lm)	110lm	500mA	120°	Clear	Emitter	No	Tube (2)
ASMT-MY03-NJK00	Warm White	2600 - 4000K (1)	J (43.0 - 56.0lm) K (56.0 - 73.0lm)	50lm	350mA	110°	Clear	Emitter	No	Tube (2)
ASMT-MY04-NJK00	Warm White	2600 - 4000K (1)	J (43.0 - 56.0lm) K (56.0 - 73.0lm)	50lm	350mA	110°	Clear	Emitter	Yes	Tube (2)
ASMT-MYK0-NKK00	Warm White	2600 - 4000K (1)	K (56.0 - 73.0lm)	60lm	350mA	110°	Clear	Star 2	-	Tray
ASMT-MYB9-NKL00	Warm White	2600 - 4000K (1)	K (56.0 - 73.0lm) L (73.0 - 95.0lm)	68lm	500mA	120°	Diffused	Emitter	No	Tube (2)
ASMT-MY05-NKL00	Warm White	2600 - 4000K (1)	K (56.0 - 73.0lm) L (73.0 - 95.0lm)	73lm	500mA	110°	Clear	Emitter	No	Tube (2)
ASMT-MY06-NKL00	Warm White	2600 - 4000K (1)	K (56.0 - 73.0lm) L (73.0 - 95.0lm)	73lm	500mA	110°	Clear	Emitter	Yes	Tube (2)
ASMT-MY09-NLM00	Warm White	2600 - 4000K (1)	L (73.0 - 95.0lm) M (95.0 - 124lm)	95lm	500mA	120°	Clear	Emitter	No	Tube (2)
ASMT-MA00-AGH00	Amber	582-594.5nm (3)	G (25.5 - 33.0lm) H (33.0 - 43.0lm)	35lm	350mA	120°	Clear	Emitter	No	Tube (2)
ASMT-MAK0-AGH00	Amber	582-594.5nm (3)	G (25.5 - 33.0lm) H (33.0 - 43.0lm)	35lm	350mA	120°	Clear	Star 2	-	Tray
ASMT-MR00-AHJ00	Red	620-635nm	H (33.0 - 43.0lm) J (43.0 - 56.0lm)	40lm	350mA	120°	Clear	Emitter	No	Tube (2)
ASMT-MRK0-AHJ00	Red	620-635nm	H (33.0 - 43.0lm) J (43.0 - 56.0lm)	40lm	350mA	120°	Clear	Star 2	-	Tray
ASMT-MG00-NJK00	Green	515-535nm (3)	J (43.0 - 56.0lm) K (56.0 - 73.0lm)	60lm	350mA	120°	Clear	Emitter	No	Tube (2)
ASMT-MGK0-NJK00	Green	515-535nm (3)	J (43.0 - 56.0lm) K (56.0 - 73.0lm)	60lm	350mA	120°	Clear	Star 2	-	Tray
ASMT-MB00-NDF00	Blue	460-480nm (3)	D (11.5 - 15.0lm) E (15.0 - 19.5lm) F (19.5 - 25.5lm)	15lm	350mA	120°	Clear	Emitter	No	Tube (2)
ASMT-MBK0-NDF00	Blue	460-480nm (3)	D (11.5 - 15.0lm) E (15.0 - 19.5lm) F (19.5 - 25.5lm)	15lm	350mA	120°	Clear	Star 2	-	Tray

Notes:

- (1) Narrow Color Temperature selections are available on request
- (2) The above listed LEDs are also available in Reel packing
- (3) Narrow color bin selections for blue, green and amber are available on request

## 0.5 Watt Moonstone™ Mid-Power LEDs

Product Number	Color	Color Temperature	Flux Bin (Luminous Flux @ 150mA)	Luminous Flux @ 150mA (typ.)	Max. Current	Viewing Angle	Clear / Diffused	Type	Electrically Isolated Metal Slug	Packaging
ASMT-MW60-NFH00	Cool White	4000 - 10000K (1)	F (19.5 - 25.5lm) G (25.5 - 33.0lm) H (33.0 - 43.0lm)	30lm	150mA	110°	Clear	Emitter	No	Tube (2)
ASMT-MW62-NFH00	Cool White	4000 - 10000K (1)	F (19.5 - 25.5lm) G (25.5 - 33.0lm) H (33.0 - 43.0lm)	30lm	150mA	110°	Clear	Emitter	Yes	Tube (2)
ASMT-MWHO-NFH00	Cool White	4000 - 10000K (1)	F (19.5 - 25.5lm) G (25.5 - 33.0lm) H (33.0 - 43.0lm)	27lm	150mA	120°	Diffused	Emitter	No	Tube (2)
ASMT-MWH2-NFH00	Cool White	4000 - 10000K (1)	F (19.5 - 25.5lm) G (25.5 - 33.0lm) H (33.0 - 43.0lm)	27lm	150mA	120°	Diffused	Emitter	Yes	Tube (2)
ASMT-MY60-NEG00	Warm White	2600 - 4000K (1)	E (15.0 - 19.5lm) F (19.5 - 25.5lm) G (25.5 - 33.0lm)	25lm	150mA	110°	Clear	Emitter	No	Tube (2)
ASMT-MY62-NEG00	Warm White	2600 - 4000K (1)	E (15.0 - 19.5lm) F (19.5 - 25.5lm) G (25.5 - 33.0lm)	25lm	150mA	110°	Clear	Emitter	Yes	Tube (2)
ASMT-MYH0-NEG00	Warm White	2600 - 4000K (1)	E (15.0 - 19.5lm) F (19.5 - 25.5lm) G (25.5 - 33.0lm)	22lm	150mA	120°	Diffused	Emitter	No	Tube (2)
ASMT-MYH2-NEG00	Warm White	2600 - 4000K (1)	E (15.0 - 19.5lm) F (19.5 - 25.5lm) G (25.5 - 33.0lm)	22lm	150mA	120°	Diffused	Emitter	Yes	Tube (2)

Notes:

- (1) Narrow Color Temperature selections are available on request
- (2) The above listed LEDs are also available in Reel packing

## Solid-State Lighting **RGB LEDs**



# 3 x 1 Watt RGB Moonstone™ LED

### Description

The advanced 3x1Watt RGB Moonstone™ package delivers typ.108lumens at 350mA. The selection of the Red, Green, and Blue dies helps to achieve a high flux (typ. 90 lumen) D65 white color point and a wide color gamut. The robust package design makes it an excellent choice for color mixing applications.

### Typical Applications

- Stage and event lighting
- Full color signs and large area video walls
- Contour lighting
- Cove lighting
- Architectural lighting
- Garden lighting
- Decorative lighting
- Commercial lighting
- Mood lighting

### Features

- High flux output of typ. 108lm at 3x350mA
- High White flux output of typ. 90lm
- Low profile (3.3mm height), footprint is 10mm x 15.85mm
- Wide viewing angle: 120°
- Low thermal resistance: 20°C/W min \*
- Can be driven at stringent operating condition: LED Junction Temperature 125°C
- Operating temperature: -40°C to +105°C
- Long operating life due to silicone encapsulation
- Energy efficient: Power Dissipation starts at 1050mW
- Helps lower design cost due to:
  - Compatible with reflow soldering process
  - Non-ESD sensitive (threshold > 16kV)

\* Refer to Data Sheet for details

Avago 3x1Watt RGB Moonstone™ in bar lighting application





### 3 x 1 Watt RGB Moonstone™ High-Power LED

Product Number	Color	Dominant Wavelength	Flux Bin (Luminous Flux @ 350mA)	Luminous Flux @ 350mA (typ.)	Max. Current	Viewing Angle	Electrically Isolated Metal Slug	Packaging
ASMT-MT00-00001	Red	620 - 635nm	H (33.0 - 43.0lm) J (43.0 - 56.0lm)	40lm	350mA	120°	No	Reel
	Green	515 - 535nm (1)	J (43.0 - 56.0lm) K (56.0 - 73.0lm) L (73.0 - 95.0lm)	55lm	350mA	120°	Yes	
	Blue	460 - 480nm (1)	C (9.0 - 11.5lm) D (11.5 - 15.0lm) E (15.0 - 19.5lm)	13lm	350mA	120°	Yes	

Notes: (1) Narrow Color Bin selections for Green and Blue are available on request

### Secondary Optics

Part Number	Description	FWHM	Holder	Manufacturer	
229	30mm Color Mixer Reflector	10°	Integrated	 www.polymer-optics.co.uk	

This is one of most popular lenses for Avago High-Power LEDs. The above listed manufacturer has a much broader offering of secondary optics specifically designed for Avago High-Power LEDs. For details, please check the internet or contact one of our Distributor Partners.

# Tri-color PLCC4 and PLCC6 Surface Mount LEDs

## Description

This family of SMT LEDs packaged in the form of PLCC with separate driving capability for each color is suitable for indoor and outdoor applications. Its low thermal resistance enables a higher driving current in warm ambient conditions. The PLCC6 package is available with black surface for high contrast ratio, while the PLCC4 package is additionally available as a blackbody.

## Typical Applications

- Electronic signs and signals
- Interior and exterior full-color signs
- Interior automotive and backlighting
- Office automation, home appliances, industrial equipment
- Color-changing mood-lighting applications

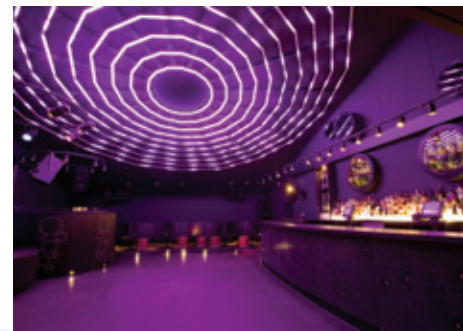
## Features

- Industry Standard PLCC-4/PLCC-6 package with individual addressable pin-out for higher flexibility of driving configuration for each color
- Extra high-brightness AlInGaP and InGaN dice technologies
- Minimum I<sub>v</sub> 1.8cd (typical I<sub>v</sub> 2.1cd) at 3x20mA \*
- Black surface / full black body for increased contrast ratio
- Wide viewing angle: 115° / 120°
- Low thermal resistance: 60°C/W min \*
- Can be driven at stringent operating condition: LED Junction Temperature 125°C
- Operating temperature: -40°C to +110°C
- Long operating life due to silicone encapsulation
- Compatible with reflow soldering process

\* Refer to Data Sheet for details



Avago Tri-color PLCC6  
Surface Mount LEDs in Rex,  
Hilversum (NL), Designed  
by DEP Nederland and  
produced by Lux Lumen



Avago tri-color PLCC4 LEDs in an  
installation in Covent Garden, London

Installation: United Visual Artists,  
Product: tarm LED GmbH & Co. KG

## RGB PLCC-4 and RGB PLCC-6 Surface Mount LEDs

Product Number	Type	Color	Dominant Wavelength	Color Bin	Intensity Half-Bins	Min. I <sub>v</sub> @ 20mA	Typ. I <sub>v</sub> @ 20mA	Max. Current	Viewing Angle	Packaging
ASMT-QTBO-0AA02	Black-Surface PLCC-4	Red	621nm	-	U1,U2,V1,V2	450mcd	620mcd	50mA	120°	Reel
		Green	528nm	C,D	V2,W1,W2,X1	900mcd	1200mcd	30mA	120°	
		Blue	470nm	B,C	S2,T1,T2,U1	224mcd	280mcd	30mA	120°	
ASMT-QTCO-0AA02	Black-Body PLCC-4	Red	621nm	-	S1,S2,T1,T2	180mcd	315mcd	50mA	115°	Reel
		Green	528nm	C,D	T1,T2,U1,U2	285mcd	470mcd	30mA	115°	
		Blue	470nm	B,C	R1,R2,S1,S2	112.5mcd	140mcd	30mA	115°	
ASMT-YTBO-0AA02	Black-Surface PLCC-6	Red	621nm	-	U1,U2,V1,V2	450mcd	648mcd	50mA	115°	Reel
		Green	528nm	C,D	V2,W1,W2,X1	900mcd	1243mcd	30mA	115°	
		Blue	470nm	B,C	S2,T1,T2,U1	224mcd	238mcd	30mA	115°	

## Solid-State Lighting **Mid-Power LEDs**

# 0.5 Watt Mid-Power PLCC4 LEDs



0.5 Watt PLCC-4



0.5 Watt Cool White PLCC-4



0.5 Watt Warm White PLCC-4

### Description

This PLCC4 product is one of the smallest 0.5 Watt packages available on the market. The small size of the PLCC4 platform package enables higher packaging density on a given area compared to other half-Watt solutions available on the market. This higher drive current can be supported because of the enhanced heat dissipation capability which additionally allows you to operate the LED at up to +120°C ambient temperature.

### Typical Applications

- Decorative and mood lighting
- Channel and counter lighting
- Advertisement panel backlighting
- Battery powered reading lamps and flashlights
- Interior automotive: Dome, map, and reading lamps, glove compartment illumination
- Exterior automotive: Tail lights and side repeater
- Display backlighting
- Signage

### Features

- Industry Standard PLCC-4 package (3.2 x 2.8 x 1.9mm)
- High reliability package with enhanced silicone resin encapsulation
- Extra high-brightness AlInGaP and InGaN dice technologies
- Wide viewing angle: 120°
- Low thermal resistance: 40°C/W min \*
- Can be driven at stringent operating condition: LED Junction Temperature 125°C
- Operating temperature: -40°C to +120°C max \*
- Long operating life due to silicone encapsulation
- Reliable: Moisture sensitive level (MSL) 2 / 2A \*
- Energy efficient: Power Dissipation starts at 450mW
- Compatible with IR and TTW soldering processes
- AEC-Q101 qualified

\* Refer to Data Sheet for details

Avago 0.5W PLCC4 LEDs in  
Tram Tango Basel by SBF




## 0.5 Watt Mid-Power PLCC-4 Surface Mount LEDs

Product Number	Power	Color	Color Temperature / Dominant Wavelength	Color Bin	Flux Bin (Luminous Flux @ 150mA)	Luminous Flux @ 150mA (typ.)	Max. Current	Viewing Angle	Packaging
ASMT-QWBC-NJKOE	0.5 Watt	Cool White	4500 - 10000K (1)	5K,5L,6K,6L,7K,7L,8K,8L	J (33.0 - 43.0lm) K (43.0 - 56.0lm)	38.0lm	150mA	120°	Reel
ASMT-QWBC-NHJOE	0.5 Watt	Cool White	4500 - 10000K (1)	5K,5L,6K,6L,7K,7L,8K,8L	H (25.5 - 33.0lm) J (33.0 - 43.0lm)	30.0lm	150mA	120°	Reel
ASMT-QWBE-NFH0E	0.5 Watt	Cool White	4500 - 10000K (1)	5K,5L,6K,6L,7K,7L,8K,8L	F (15.0 - 19.5lm) G (19.5 - 25.5lm) H (25.5 - 33.0lm)	19.5lm	150mA	120°	Reel
ASMT-QWBE-NFHCE	0.5 Watt	Cool White	5000 - 5600K	7K,7L	F (15.0 - 19.5lm) G (19.5 - 25.5lm) H (25.5 - 33.0lm)	19.5lm	150mA	120°	Reel
ASMT-QWBE-NFHDE	0.5 Watt	Cool White	4500 - 5000K	8K,8L	F (15.0 - 19.5lm) G (19.5 - 25.5lm) H (25.5 - 33.0lm)	19.5lm	150mA	120°	Reel
ASMT-QYBC-NHJOE	0.5 Watt	Warm White	2500 - 4800K (1)	H,J,K,L,M,N,P,Q,R	H (25.5 - 33.0lm) J (33.0 - 43.0lm)	31.0lm	150mA	120°	Reel
ASMT-QYBC-NGJOE	0.5 Watt	Warm White	2500 - 4800K (1)	H,J,K,L,M,N,P,Q,R	G (19.5 - 25.5lm) H (25.5 - 33.0lm) J (33.0 - 43.0lm)	24.0lm	150mA	120°	Reel
ASMT-QYBE-NEG0E	0.5 Watt	Warm White	2500 - 4800K (1)	H,J,K,L,M,N,P,Q,R	E (11.5 - 15.0lm) F (15.0 - 19.5lm) G (19.5 - 25.5lm)	18.0lm	150mA	120°	Reel
ASMT-QABD-AEF0E	0.5 Watt	Amber	593.1nm	2,3,4,5,6	E (11.5 - 15.0lm) F (15.0 - 19.5lm)	16.5lm	150mA	120°	Reel
ASMT-QAB2-FDE0E	0.5 Watt	Amber	594.5nm	2,3,4,5,6	D (9.0 - 11.5lm) E (11.5 - 15.0lm)	11.4lm	150mA	120°	Reel
ASMT-QHBD-AFH0E	0.5 Watt	Red-Orange	616.1nm	1,2,3	F (15.0 - 19.5lm) G (19.5 - 25.5lm) H (25.5 - 33.0lm)	17.5lm	150mA	120°	Reel
ASMT-QHB2-FF0E	0.5 Watt	Red-Orange	617.0nm	1,2,3	E (11.5 - 15.0lm) F (15.0 - 19.5lm)	14.0lm	150mA	120°	Reel
ASMT-QRBD-AEF0E	0.5 Watt	Red	621.1nm	-	E (11.5 - 15.0lm) F (15.0 - 19.5lm)	16.5lm	150mA	120°	Reel
ASMT-QRB2-FDE0E	0.5 Watt	Red	624.0nm	-	D (9.0 - 11.5lm) E (11.5 - 15.0lm)	11.4lm	150mA	120°	Reel
ASMT-QRB2-FC0E	0.5 Watt	Red	624.0nm	-	C (7.0 - 9.0lm) D (9.0 - 11.5lm)	9.8lm	150mA	120°	Reel
ASMT-QGBE-NFH0E	0.5 Watt	Green	522.0nm	1,2,3,4	F (15.0 - 19.5lm) G (19.5 - 25.5lm) H (25.5 - 33.0lm)	23.0lm	150mA	120°	Reel
ASMT-QBBC-NAC0E	0.5 Watt	Blue	464.0nm	1,2,3,4	A (4.3 - 5.5lm) B (5.5 - 7.0lm) C (7.0 - 9.0lm)	7.0lm	150mA	120°	Reel
ASMT-QBBE-NOB0E	0.5 Watt	Blue	464.5nm	1,2,3,4	O (3.4 - 4.3lm) A (4.3 - 5.5lm) B (5.5 - 7.0lm)	4.8lm	150mA	120°	Reel

Notes:

(1) Narrow Color Temperature selections are available on request

## Secondary Optics

Part Number	Description	FWHM	Holder	Manufacturer
210	14mm Linear Collimator Optic	15°	integrated	 www.polymer-optics.co.uk



# Digital and Analog Ambient Light Sensors



## Description

Avago Technologies offers a wide range of Ambient Light Sensors; linear analog sensors fit any kind of application, logarithmic analog ones are very suitable for outdoor applications, and sensors with digital output are ideal for high accuracy and ease of use. Avago's Ambient Light sensors offer an excellent IR filtering as well as a wide luminosity (LUX) coverage.

## Typical Applications

- Automatic residential & commercial lighting management
- Control of display backlighting
- Automotive Instrumentation clusters
- Signage

## Features

- Spectral Responsivity close to that of the human eye
- Precise measurement under diverse lighting conditions
- Miniature Chipled package
- Operating temperature -40 to +85 °C
- High level of integration

### Analog Ambient Light Sensor

- Linear and Logarithm parts are available
- Reverse mounting parts are available
- Wide selection of supply voltage

### Digital Ambient Light Sensor

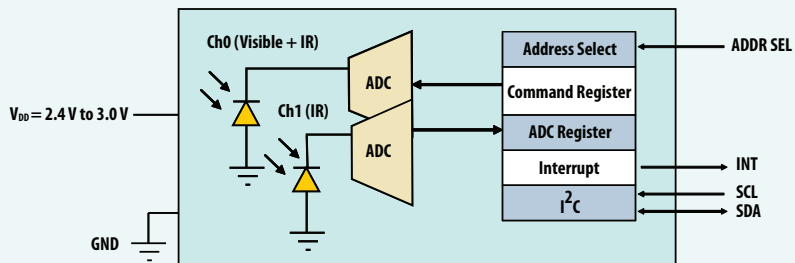
- Programmable interrupt function with user-defined threshold settings
- 16-Bit Digital Output with I<sup>2</sup>C Fast-Mode at 400 kHz
- Programmable Analog Gain and Integration Time
- Low 2.5-V Input Voltage and 1.8-V Digital Output
- Low Active Power (0.6 mW Typical) with Power Down Mode



## Digital and Analog Ambient Light Sensors

Part Number	Description	Output	Package	Pinout	Supply Voltage	Typ Output Current @ 100 Lux (μA)
APDS-9002-021	Miniature Surface-Mount Ambient Light Photo Sensor	Analog, linearity across wide illumination range	ChipLED (2.00 x 1.25 x 0.80 mm)	4 pins	2.4 -5.5 V	250
APDS-9003-020	Miniature Surface-Mount Ambient Light Photo Sensor	Analog, good linearity across wide illumination range, up to 10 K lux	ChipLED (1.60 x 1.50 x 0.55 mm)	6 pins	2.4 -5.5 V	230
APDS-9004-020	Miniature Surface-Mount Ambient Light Photo Sensor – Reverse Mounting	Analog, good linearity across wide illumination range, up to 10 K lux	ChipLED (3.20 x 1.60 x 1.10 mm)	4 pins	2.4 -5.5 V	230
APDS-9005-020	Miniature Surface-Mount Ambient Light Photo Sensor	Analog, very stable vs temperature and supply voltage, up to 10 K lux	ChipLED (1.60 x 1.50 x 0.55 mm)	6 pins	2.4 -5.5 V	40
APDS-9006-020	Miniature Surface-Mount Ambient Light Photo Sensor – Reverse Mounting	Analog, very stable vs temperature and supply voltage, up to 10 K lux	ChipLED (3.20 x 1.60 x 1.10 mm)	4 pins	2.4 -5.5 V	40
APDS-9007-020	Miniature Surface-Mount Ambient Light Photo Sensor with Logarithmic Current Output	Logarithmic output over a range of 3 lux to 70 K lux	ChipLED (2.40 x 2.00 x 0.80 mm)	6 pins	2.0 -3.6 V	30 @ 1klux (logarithmic output)
APDS-9008-020	Miniature Surface-Mount Ambient Light Photo Sensor	Analog, good linearity across wide illumination range	ChipLED (1.60 x 1.50 x 0.55 mm)	6 pins	1.6 -5.5 V	40
APDS-9300-020	Miniature Surface-Mount Ambient Light Photo Sensor with Digital (I <sup>2</sup> C) Output	16-bit digital output with I <sup>2</sup> C Fast- Mode at 400 kHz, up to 55 K lux	ChipLED (2.60 x 2.20 x 0.55 mm)	6 pins	2.4 -3.0 V	N/A

## APDS-9300 Functional Block Diagram







## High CRI Mini High-Power LEDs

Color	CRI	Flux [lm]	
		350mA (typ)	700mA (typ)
Cool White	80	60	100
Neutral White	80	50	85
Warm White	90	45	75

The values shown in the above table are preliminary and subject to change.



## 3 Watt High-Power LEDs (to be released in early 2010)

Product Number	Color	Luminous Flux at 350mA (typ.)	Luminous Flux at 700mA (typ.)	Max. Current	Viewing Angle	Electrically Isolated Metal Slug
ASMT-AW31	Cool White	80lm	140lm	700mA	130°	Yes
ASMT-AN31	Neutral White	80lm	140lm	700mA	130°	Yes
ASMT-AY31	Warm White	65lm	115lm	700mA	130°	Yes
ASMT-AA30	Amber	43lm	80lm	700mA	130°	No
ASMT-AH30	Red-Orange	43lm	80lm	700mA	130°	No
ASMT-AR30	Red	43lm	80lm	700mA	130°	No
ASMT-AG31	Green	70lm	120lm	700mA	130°	Yes
ASMT-AB31	Blue	18lm	30lm	700mA	130°	Yes
ASMT-AL31	Royal-Blue	435mW	650mW	700mA	130°	Yes

The values shown in the above table are preliminary and subject to change.

### About Avago Technologies

Avago Technologies is a leading supplier of analog interface components for communications, industrial and consumer applications. By leveraging its core competencies in III-V compound and silicon semiconductor design and processing, the company provides an extensive range of analog, mixed signal and optoelectronics components and subsystems to more than 40,000 customers. Backed by strong customer service support, the company's products serve four diverse end markets: industrial and automotive, wired infrastructure, wireless communications, and computer peripherals. Avago has a global employee presence and heritage of technical innovation dating back 40 years to its Hewlett-Packard roots. Information about Avago is available on the Web at [www.avagotech.com](http://www.avagotech.com)

For product information and a complete list of distributors, please go to our web site and select "Find a Distributor" at:

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