

# ASMT-MYA0

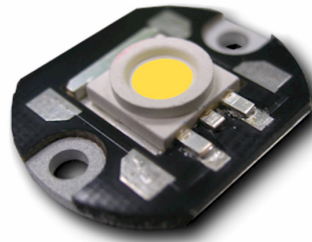
## 1W Power LED Light Source on MCPCB



### Data Sheet



Lead (Pb) Free  
RoHS 6 fully  
compliant

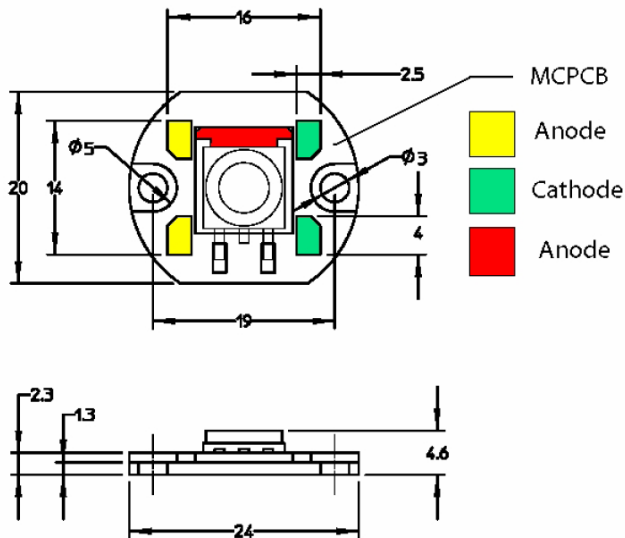


#### Description

Avago Technologies' 1W Warm White Power LED is a high performance energy efficient device which can handle high thermal and high driving current. The exposed pad design has excellent heat transfer from the package to the motherboard.

The Warm White Power LED is available in various color temperature ranging from 2600K to 4000K. The product has high Color Rendering Index (CRI) which provides excellent color perception and visual clarity.

#### Package Dimensions



#### Notes:

1. All dimensions in millimeters.
2. Tolerance is  $\pm 0.1$  mm unless otherwise specified.

#### Features

- Available in Warm White color.
- Energy efficient
- High current operation.
- Long operation life.
- Wide viewing angle.
- Silicone encapsulation

#### Specifications

- InGaN Technology
- 3.6V, 350 mA (typical)
- 110 viewing angle

#### Applications

- Portable (flash light, bicycle head light)
- Reading light
- Architectural lighting
- Garden lighting
- Decorative lighting

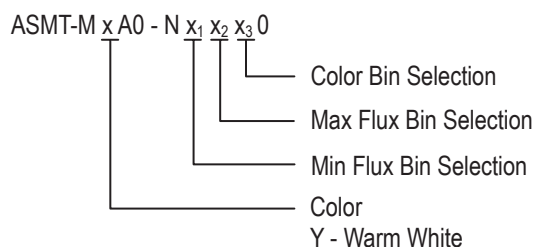
## Device Selection Guide at Junction Temperature $T_j = 25^\circ\text{C}$

Color	Part Number	Luminous Flux, $\Phi_v^{[1,2,3]}$ (lm)			Test Current (mA)	Dice Technology
		Min	Typ	Max		
Warm White	ASMT-MYA0	43.0	50.0	73.0	350	InGaN

Notes:

1.  $\Phi_v$  is the total luminous flux output as measured with an integrating sphere at 25ms mono pulse condition.
2. Flux tolerance is  $\pm 10\%$
3.  $\Phi_v$  data are only applicable for ASMT-MY00 component level device only.

## Part Numbering System



## Absolute Maximum Ratings<sup>[3]</sup> at $T_A = 25^\circ\text{C}$

Parameter	ASMT-MYA0	Units
DC Forward Current <sup>[1]</sup>	350	mA
Peak Pulsing Current <sup>[2]</sup>	500	mA
Power Dissipation	1400	mW
LED Junction Temperature	110	$^\circ\text{C}$
Operating Ambient Temperature Range	-40 to +85	$^\circ\text{C}$
Storage Temperature Range	-40 to +100	$^\circ\text{C}$

Note:

1. DC forward current – derate linearly based on Figure 5.
2. Pulse condition duty factor = 10%, Frequency = 1kHz.
3. Absolute Maximum Rating data are only applicable for ASMT-MY00 component level device only.

## Optical Characteristics<sup>[2]</sup> ( $T_A = 25^\circ\text{C}$ )

Part Number	Color	Correlated Color Temperature, CCT (Kelvin)		Viewing Angle $2\theta_{1/2}$ <sup>[1]</sup> (Degrees)	Luminous Efficiency (lm/W)
		Min	Max	Typ	Typ
ASMT-MYA0	Warm White	2600	4000	110	40

Notes:

1.  $\theta_{1/2}$  is the off-axis angle where the luminous intensity is  $\frac{1}{2}$  the peak intensity.
2. Optical Characteristics data are only applicable for ASMT-MY00 component level device only.

## Electrical Characteristic<sup>[3]</sup> ( $T_A = 25^\circ\text{C}$ )

Dice Type	Forward Voltage $V_F$ (Volts) @ $I_F = 350\text{mA}$		Reverse Voltage $V_R$ <sup>[1]</sup>	Thermal Resistance $R_{\theta j-b}$ ( $^\circ\text{C/W}$ ) <sup>[2]</sup>
	Typ	Max.		Typ.
InGaN	3.6	4.0	Not recommended	18

Note:

1. Not designed for reverse bias operation.
2.  $R_{\theta j-b}$  is Thermal Resistance from LED junction to MCPCB.
3. Electrical Characteristic data are only applicable for ASMT-MY00 component level device only.

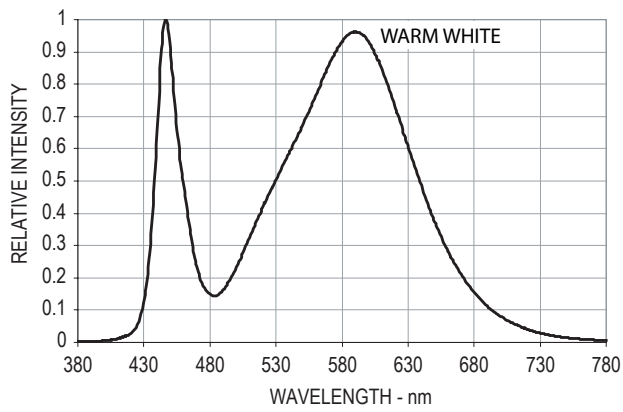


Figure 1. Relative intensity vs. wavelength

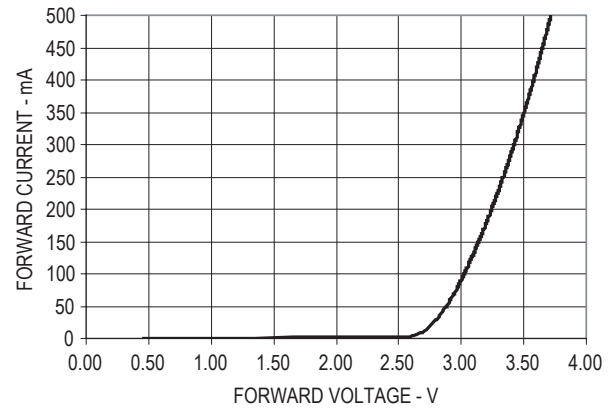


Figure 2. Forward Current vs Forward Voltage

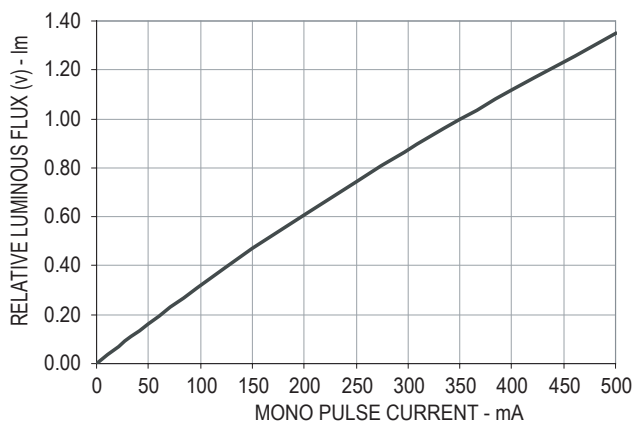


Figure 3. Relative Luminous Flux vs. Mono Pulse Current

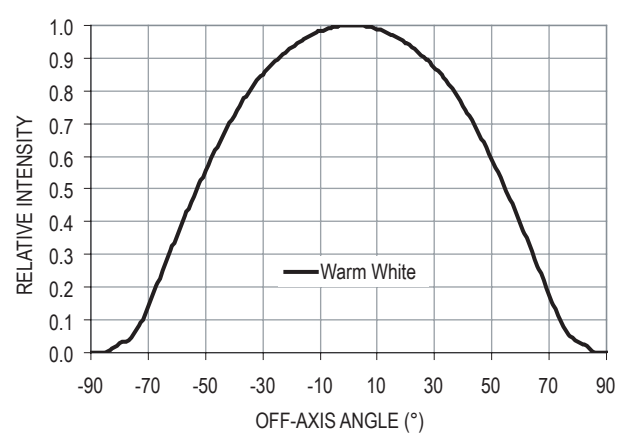


Figure 4. Radiation Pattern

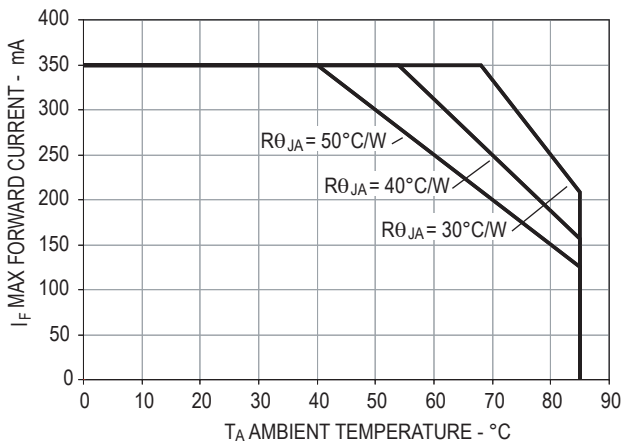


Figure 5. Maximum forward current vs. ambient temperature

Derated based on  $T_{JMAX} = 110^{\circ}\text{C}$ ,  $R_{\theta JA} = 30^{\circ}\text{C/W}$  /  $40^{\circ}\text{C/W}$  and  $50^{\circ}\text{C/W}$

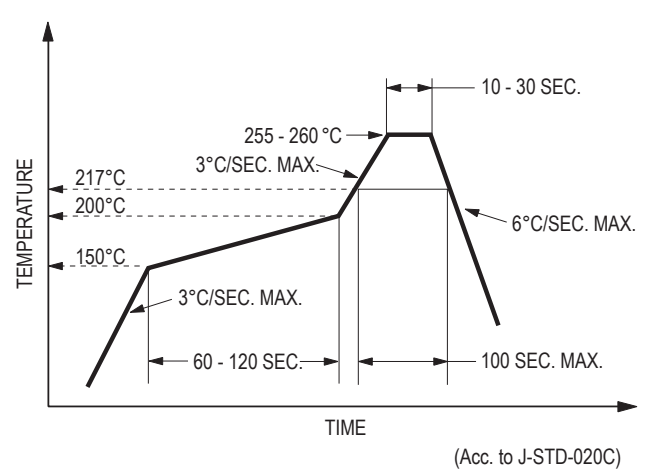
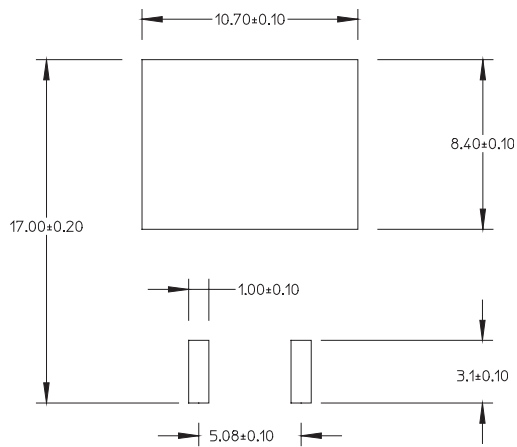
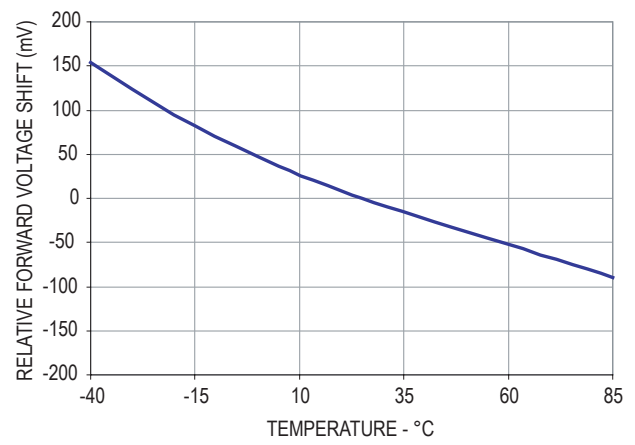


Figure 6. Recommended Reflow Soldering

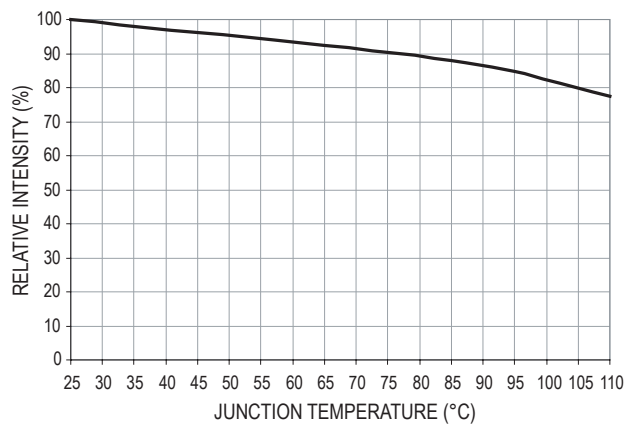
(Acc. to J-STD-020C)



**Figure 7. Recommended soldering land pattern**



**Figure 8. Temperature vs. relative forward voltage shift**



**Figure 9. Relative LOP vs. junction temperature**

Note: All parametric charts are only applicable for ASMT-MY00 component level device only.

### Color Bin Selections [X<sub>3</sub>]

Individual reel will contain parts from one full bin only.

0	Full Distribution
A	A only
B	B only
C	C only
D	D only
E	E only
F	F only
Z	A and B only
Y	B and C only
W	C and D only
V	D and E only
U	E and F only
Q	A, B and C only
P	B, C and D only
N	C, D and E only
M	D, E and F only
J	Special Color Bin
1	A, B, C and D only
2	E, F, G and H only
3	B, C, D and E only
4	C, D, E and F only
5	A, B, C, D and E only
6	B, C, D, E, and F only

### Flux Bin Limit<sup>[1]</sup> (For reference only) [X<sub>1</sub>, X<sub>2</sub>]

Bin	Flux (lm) at 350mA	
	Min	Max
J	43.0	56.0
K	56.0	73.0

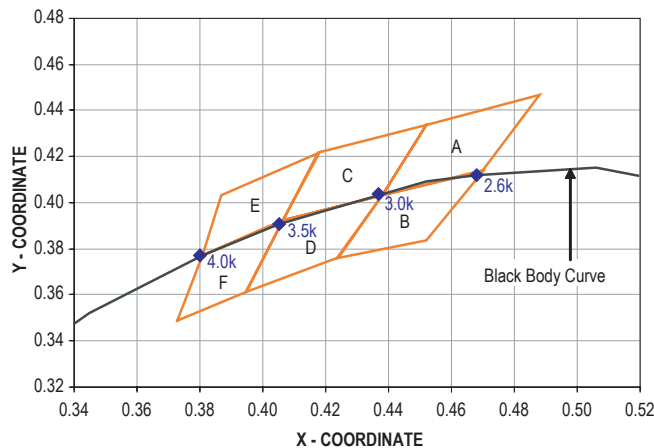
Tolerance for each bin limits is  $\pm 10\%$

Note:

1. Flux Bin Limit is only applicable for ASMT-MY00 component level device only

Color Limits (Chromaticity Coordinates)					
White					
Bin A	X	0.452	0.488	0.470	0.438
	Y	0.434	0.447	0.414	0.403
Bin B	X	0.438	0.470	0.452	0.424
	Y	0.403	0.414	0.384	0.376
Bin C	X	0.407	0.418	0.452	0.438
	Y	0.393	0.422	0.434	0.403
Bin D	X	0.395	0.407	0.438	0.424
	Y	0.362	0.393	0.403	0.376
Bin E	X	0.381	0.387	0.418	0.407
	Y	0.377	0.404	0.422	0.393
Bin F	X	0.373	0.381	0.407	0.395
	Y	0.349	0.377	0.393	0.362

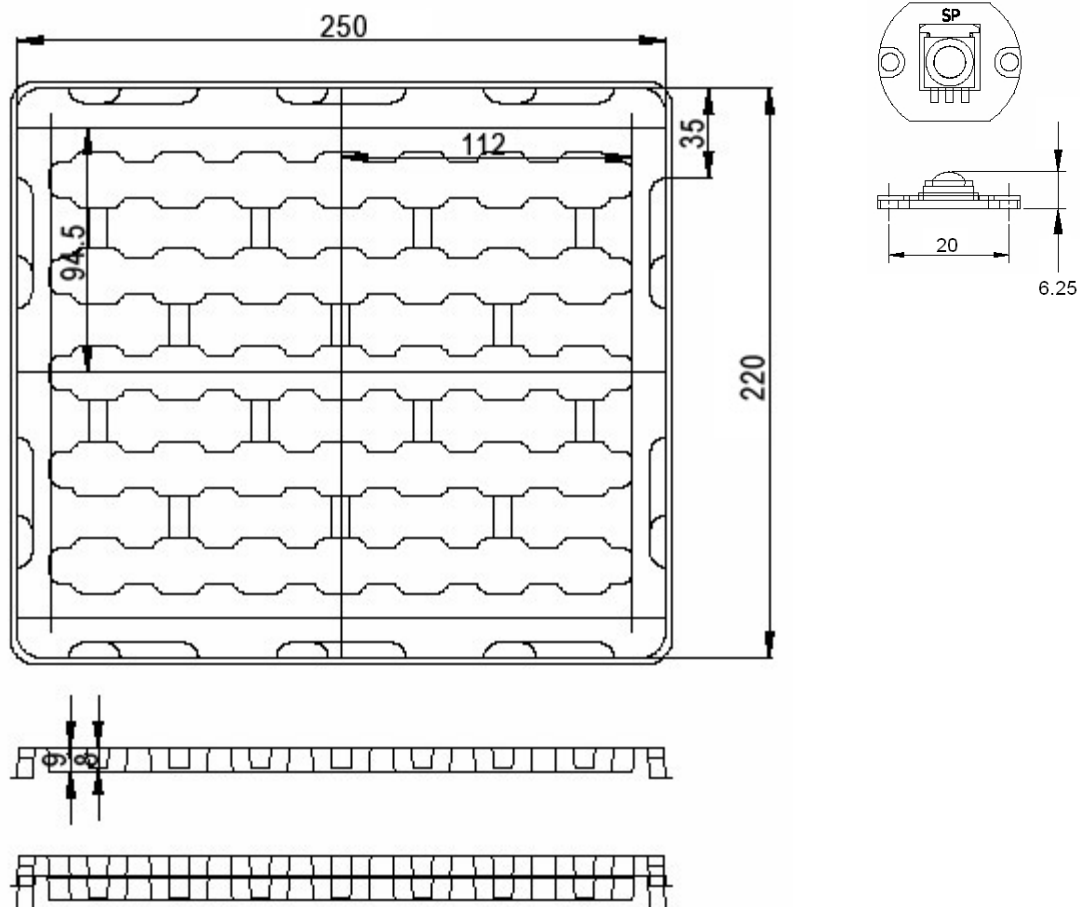
Tolerances  $\pm 0.01$



Note:

1. Color Limit and Color binning chart are only applicable for ASMT-MY00 component level device only

## Package Tray Dimensions



## Handling Precaution

The encapsulation material of the product is made of silicone for better reliability of the product. As silicone is a soft material, please do not press on the silicone or poke a sharp object onto the silicone. These might damage the product and cause premature failure. During assembly or handling, the unit should be held on the body (white plastic).

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