

AVAGO ASMT-CW40

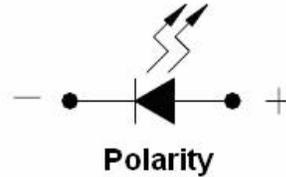
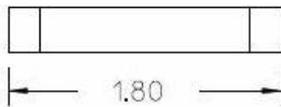
0.3mm Right Angle Surface Mount ChipLED

InGaN White

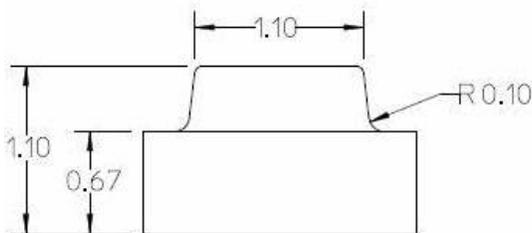
Datasheet



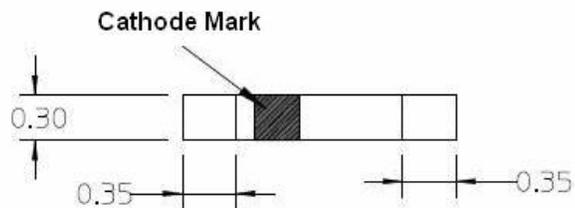
Front View



Top View



Terminal View



NOTES:

1. ALL DIMENSIONS IN MILLIMETERS (INCHES).
2. TOLERANCE IS ± 0.1 mm (± 0.004 IN.) UNLESS OTHERWISE SPECIFIED.

Device Selection Guide

Package Dimension (mm)	Parts per Reel	Package Description
1.8 (L) x 1.1 (W) x 0.3 (H)	4000	Untinted, Diffused

CAUTION: ASMT-CW40 LEDs are Class 1A ESD sensitive per JESD22-A114C.01. Please observe appropriate precautions during handling and processing. Refer to Application Note AN-1142 for additional details.

For product information and a complete list of distributors, please go to our web site: www.avagotech.com

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Absolute Maximum Ratings at $T_A = 25^\circ\text{C}$

Parameter	ASMT-CW40	Unit
DC Forward Current ^[1]	10	mA
Power Dissipation	34	mW
Reverse Voltage ($I_R = 100\mu\text{A}$)	5	V
LED Junction Temperature	95	$^\circ\text{C}$
Operating Temperature Range	-40 to 85	$^\circ\text{C}$
Storage Temperature Range	-40 to 85	$^\circ\text{C}$
Soldering Temperature	See reflow soldering profile (Figure 8 & 9)	

Note:

- Derate linearly as shown in Figure 4.

Electrical Characteristics at $T_A = 25^\circ\text{C}$

Part Number	Forward Voltage		Reverse Breakdown
	V_F (Volts) ^[1]		V_R (Volts)
	@ $I_F = 5\text{mA}$		@ $I_R = 100\mu\text{A}$
	Typical	Maximum	Minimum
ASMT-CW40	2.91	3.35	5

Notes:

- V_f tolerance : $\pm 0.1\text{V}$

Optical Characteristics at $T_A = 25^\circ\text{C}$

Part Number	Luminous Intensity		Color Chromaticity ^[2]	Viewing Angle
	I_v ^[1] (mcd)		Bin	$2\theta_{1/2}$ ^[3]
	@ 5mA			(Degrees)
	Min.	Typ.		Typical
ASMT-CW40	90	115	A1 – D2 (Refer to Figure 1)	120

Notes:

- The luminous intensity I_v is measured at the peak of the spatial radiation pattern which may not be aligned with the mechanical axis of the LED package.
- The chromaticity coordinates are derived from the CIE Chromaticity Diagram and represents the perceived color of the device.
- $\theta_{1/2}$ is the off-axis angle where the luminous intensity is $1/2$ the peak intensity.

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Light Intensity (I_V) Bin Limits

Bin ID	Intensity (mcd)	
	Minimum	Maximum
Q+	90.00	112.50
R	112.50	180.00

Tolerance : $\pm 15\%$

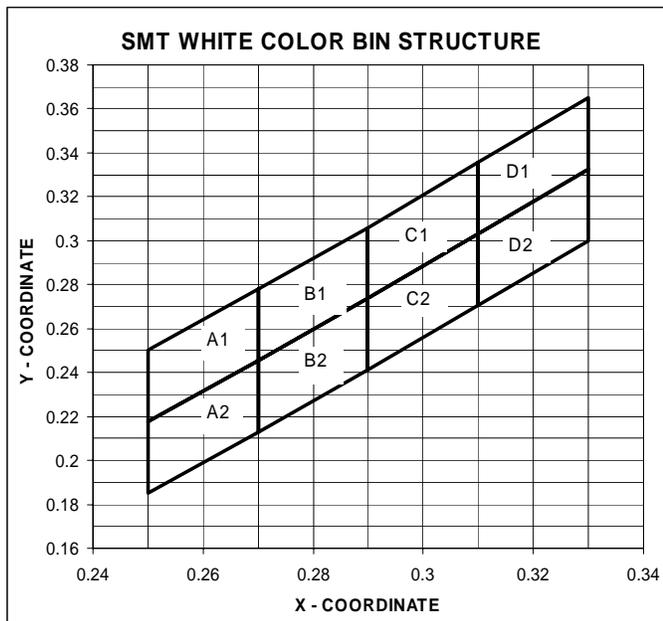
Forward Voltage (V_F) Bin Limits

Bin ID	Forward Voltage (V)	
	Minimum	Maximum
1	2.55	2.75
2	2.75	2.95
3	2.95	3.15
4	3.15	3.35

Tolerance : $\pm 0.1V$

Notes:

1. Bin categories are established for classification of products. Products may not be available in all categories. Please contact your Avago representative for information on current available bins.



Rank	Chromaticity Coordinates				
A1	X	0.2700	0.2700	0.2500	0.2500
	Y	0.2455	0.2780	0.2500	0.2175
A2	X	0.2700	0.2700	0.2500	0.2500
	Y	0.2455	0.2130	0.1850	0.2175
B1	X	0.2700	0.2700	0.2900	0.2900
	Y	0.2455	0.2780	0.3060	0.2735
B2	X	0.2700	0.2700	0.2900	0.2900
	Y	0.2455	0.2130	0.2410	0.2735
C1	X	0.2900	0.3100	0.3100	0.2900
	Y	0.3060	0.3355	0.3030	0.2735
C2	X	0.2900	0.3100	0.3100	0.2900
	Y	0.2410	0.2705	0.3030	0.2735
D1	X	0.3100	0.3100	0.3300	0.3300
	Y	0.3030	0.3355	0.3650	0.3325
D2	X	0.3100	0.3100	0.3300	0.3300
	Y	0.3030	0.2705	0.3000	0.3325

Figure 1. Color bin limits (CIE 1931 Chromaticity Diagram) [Tolerance: ± 0.02].

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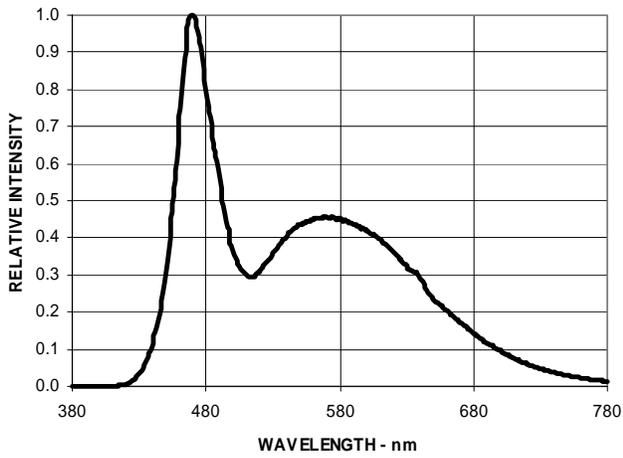


Figure 2. Relative intensity vs. wavelength.

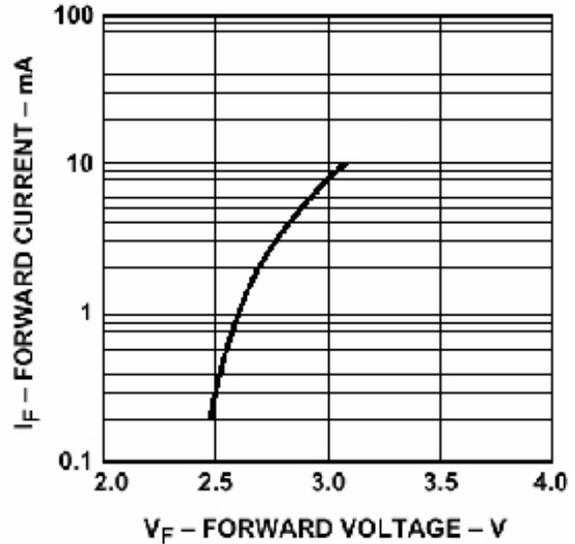


Figure 3. Forward voltage vs. forward current.

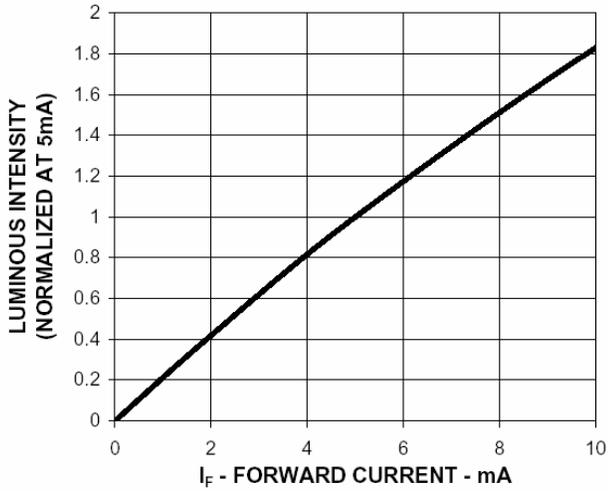


Figure 4. Luminous intensity vs. forward current.

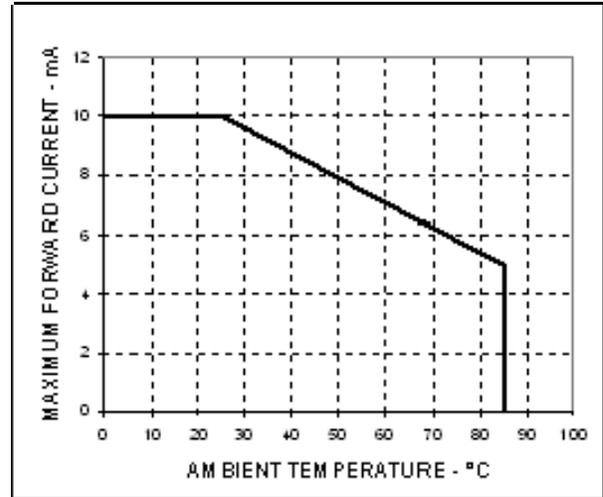


Figure 5. Maximum forward current vs. ambient temperature.

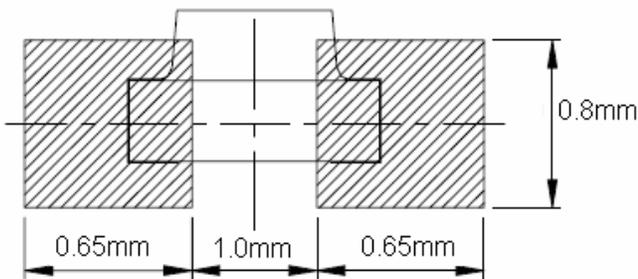


Figure 6. Recommended soldering land pattern.

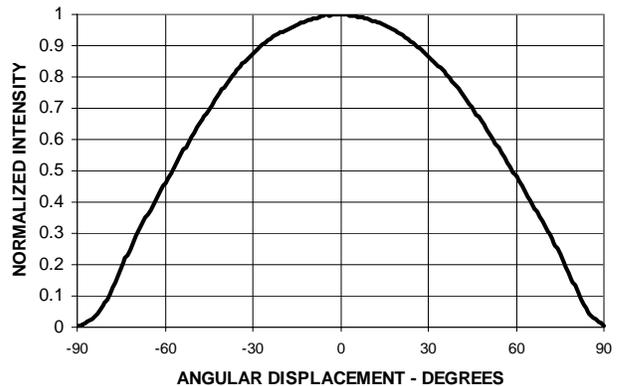


Figure 7. Relative intensity vs. angle.

Notes:

1. All dimensions are in millimeters (inches).
2. Tolerance is $\pm 0.1\text{mm}$ ($\pm 0.004\text{in.}$) unless otherwise specified.

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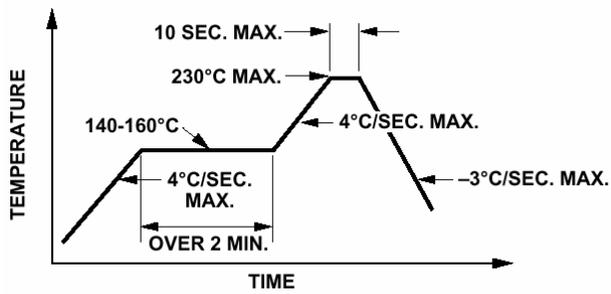


Figure 8. Recommended Reflow Soldering Profile

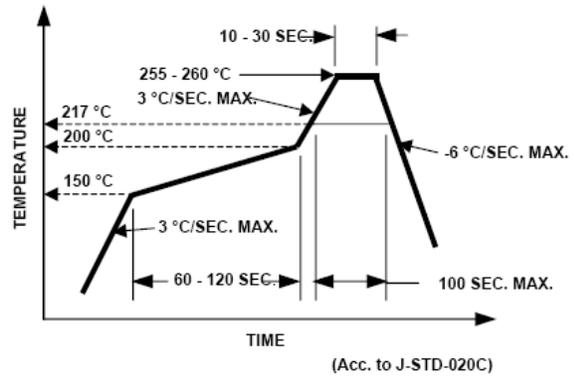


Figure 9. Recommended Pb-Free Reflow Soldering Profile

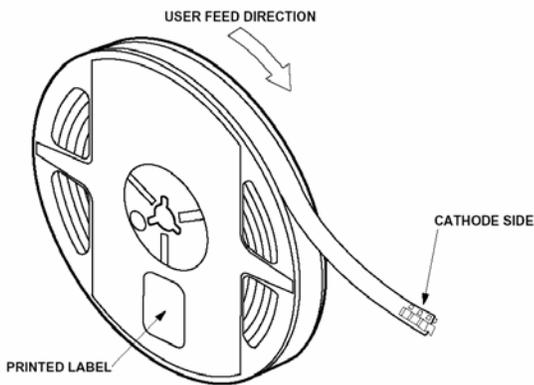


Figure 10. Reeling orientation.

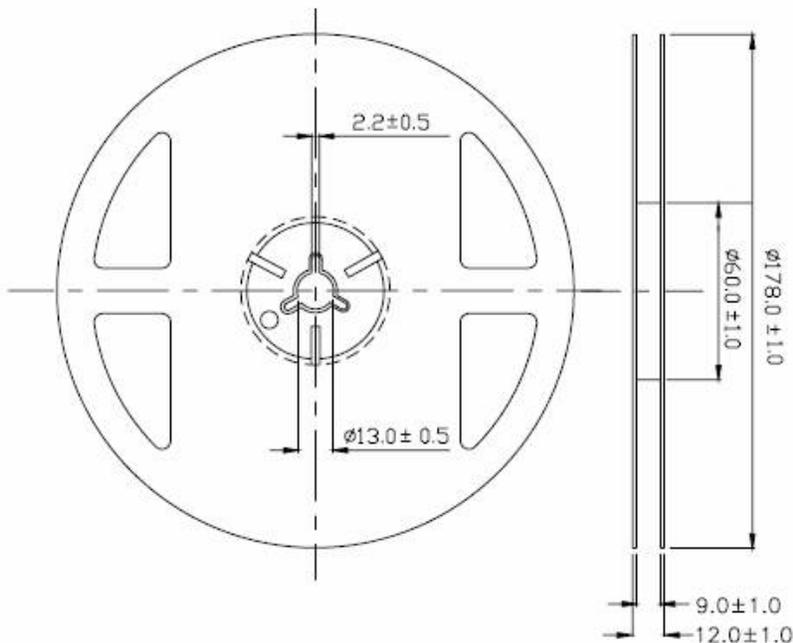


Figure 11. Reel dimensions.

Notes:

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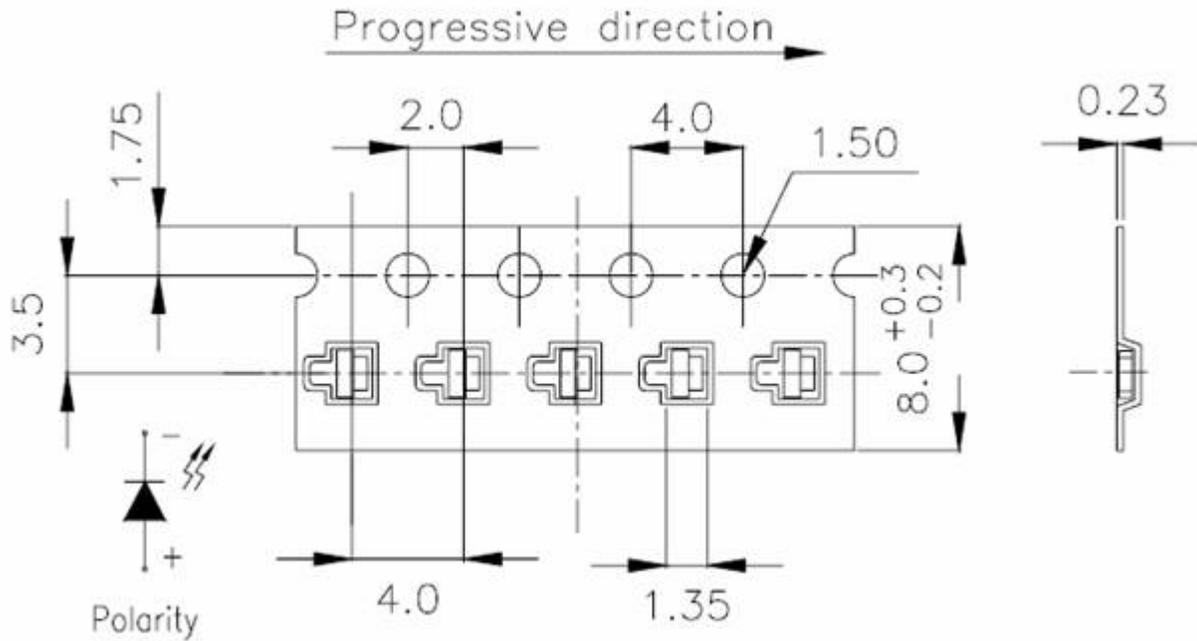


Figure 12. Tape dimensions.

NOTES:

1. All dimensions are in millimeters (inches).
2. Tolerance is $\pm 0.1\text{mm}$ ($\pm 0.004\text{in.}$) unless otherwise specified.

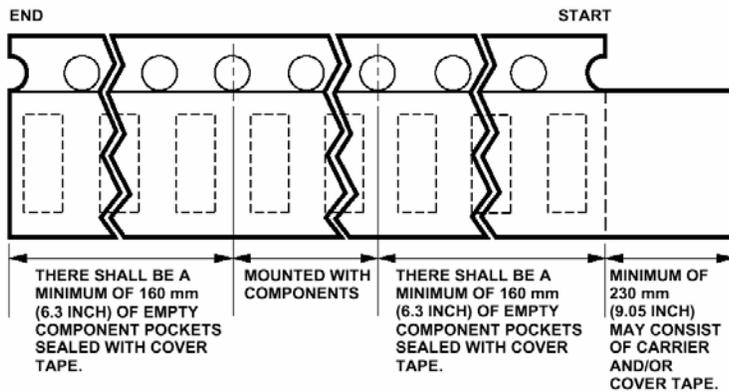


Figure 13. Tape leader and trailer dimensions.

Reflow Soldering:

For more information on reflow soldering, refer to Application Note AN-1060, *Surface Mounting SMT LED Indicator Components*.

Storage Condition:

5 to 30°C @ 60%RH max.

Baking is required before mounting, if:

1. Humidity Indicator Card is $> 10\%$ when read at $23 \pm 5^\circ\text{C}$.
2. Device expose to factory conditions $< 30^\circ\text{C}/60\%RH$ more than 672 hours.

Recommended baking condition:

$60 \pm 5^\circ\text{C}$ for 20 hours.

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