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ASMT-CB00
InGaN Blue, 0.4mm Low Profile Right Angle Surface Mount ChipLED

Data Sheet

Description

The ASMT-CB00 of blue color chip-type LEDs is designed with the smallest footprint to achieve high density of components on board. They have the industry standard footprint 1.6 mm x 1.0 mm and a height of only 0.4 mm. This makes them very suitable for cellular phone and mobile equipment backlighting and indication application where space is a constraint. In order to facilitate automated pick and place operation, these ChipLEDs are shipped in conductive tape and reel, with 4000 units per reel. These part are compatible with IR soldering.

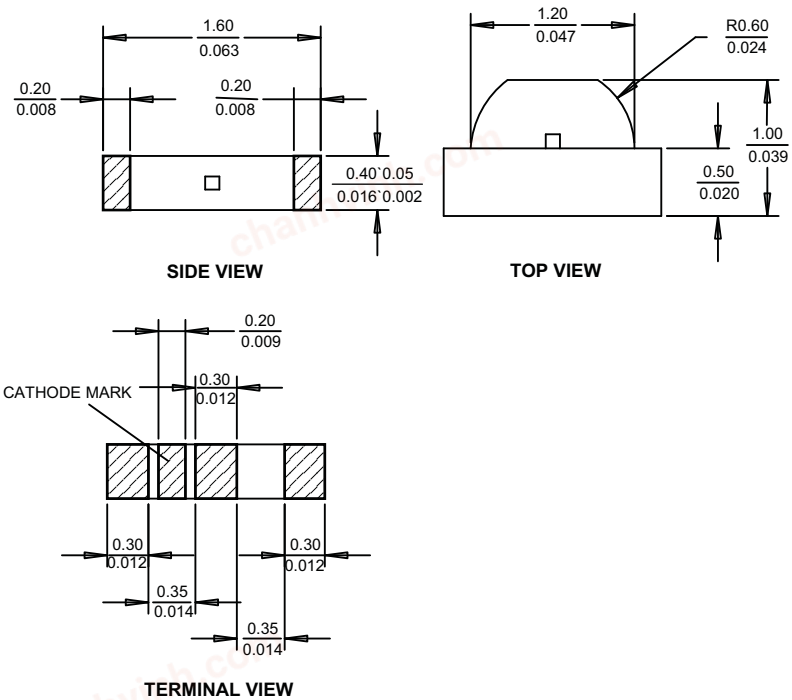
Features

- Small size right angle mount
- 0603 industry standard footprint
- 0.4 mm low profile type
- Operating temperature range of -40°C to +85 °C
- Compatible with IR reflow soldering process
- Available in 8mm tape on 178mm (7') diameter reels
- Reel sealed in zip locked moisture barrier bags

Applications

- LCD Backlighting
- Keypad Side / Backlighting
- Pushbutton backlighting
- Symbol Indicator

Package Dimension



Notes:
1. All dimensions will be in millimeters (inches)
2. Tolerance is ±0.1mm (±0.004 in) unless otherwise stated

CAUTION: *ASMT-CB00 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.*

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Device Selection Guide

Package Dimension (mm)	Parts per Reel	Package Description
1.6 (L) x 1.0 (W) x 0.4 (H)	4000	Untinted, Non-diffused

Absolute Maximum Ratings at $T_A = 25°C$

Parameter	ASMT-CB00	Unit
DC Forward Current [1]	10	mA
Power Dissipation	32	mW
Reverse Voltage (I_R = 100μA)	5	V
LED Junction Temperature	95	°C
Operating Temperature Range	-40 to +85	°C
Storage Temperature Range	-40 to +85	°C
Soldering Temperature	See reflow soldering profile (Figure 7 & 8)	

Note:
1. Derate linearly as shown in Figure 4.

Electrical Characteristics at $T_A = 25°C$

	Forward Voltage V_F (Volts) [1] @ I_F = 5mA		Reverse Breakdown V_R (Volts) @ I_R = 100μA	Thermal Resistance $R\theta_{J\text{-}PIN}$ (°C/W)
Part Number	**Typ.**	**Max.**	**Min.**	**Typ.**
ASMT-CB00	2.85	3.15	5	450

Notes:
1. Vf tolerance : ±0.1V

Optical Characteristics at $T_A = 25°C$

	Luminous Intensity I_V [1] (mcd) @ 5mA		Peak Wavelength λ_{peak} (nm)	Dominant Wavelength λ_d [2] (nm)	Viewing Angle 2 $\theta_{1/2}$ [3] (Degrees)
Part Number	**Min.**	**Typ.**	**Typ.**	**Typ.**	**Typ.**
ASMT-CB00	7.2	18	469	473	150

Notes:
1. 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.
2. The dominant wavelength, λ_d, is derived from the CIE Chromaticity Diagram and represents the perceived color of the device.
3. $\theta_{1/2}$ is the off-axis angle where the luminous intensity is ½ the peak intensity.

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Light Intensity (I_V) Bin Limits

	Intensity (mcd)	
Bin ID	**Minimum**	**Maximum**
K	7.20	11.20
L	11.20	18.00
M	18.00	28.50

Tolerance : ±15%

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.

Forward Voltage (V_F) Bin Limits

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

Tolerance : ±0.1V

Color Bin Limits

	Dominant Wavelength (nm)	
Bin ID	**Minimum**	**Maximum**
A	460.0	465.0
B	465.0	470.0
C	470.0	475.0
D	475.0	480.0

Tolerance : ±1nm

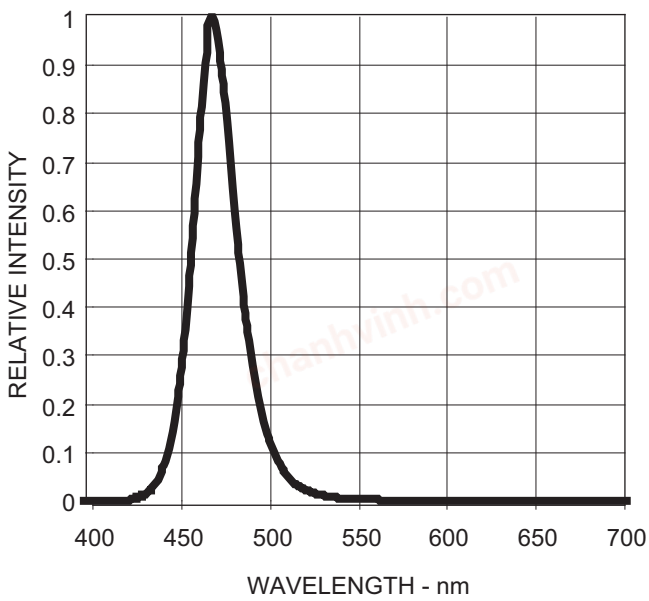


Figure 1. Relative intensity vs. wavelength

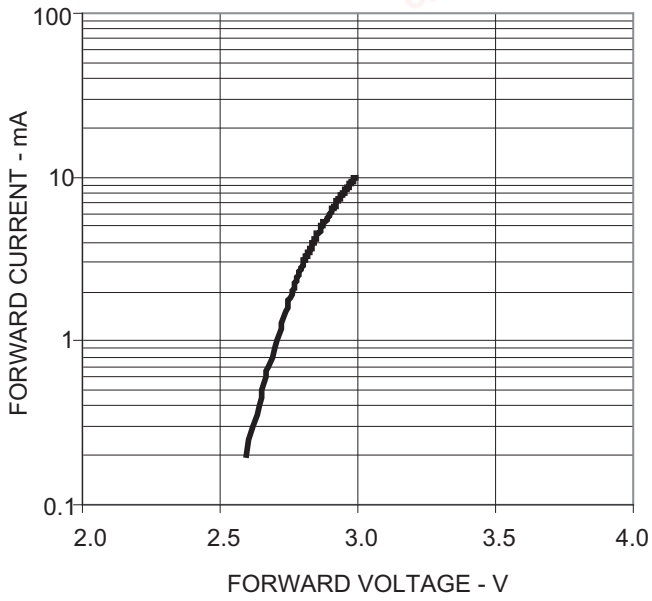


Figure 2. Forward current vs. forward voltage

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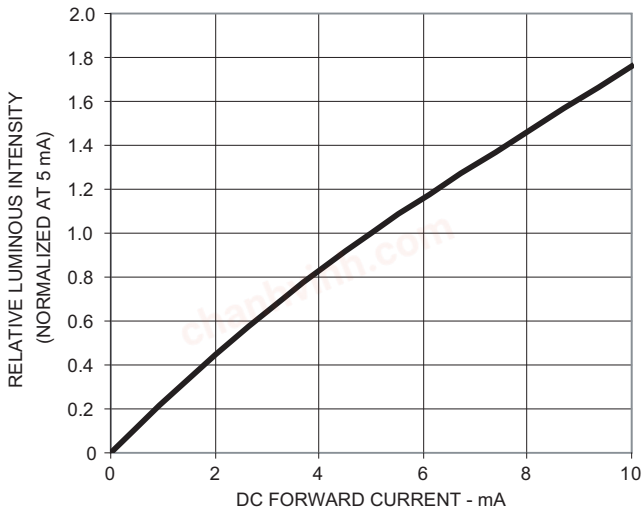


Figure 3. Luminous intensity vs. forward current

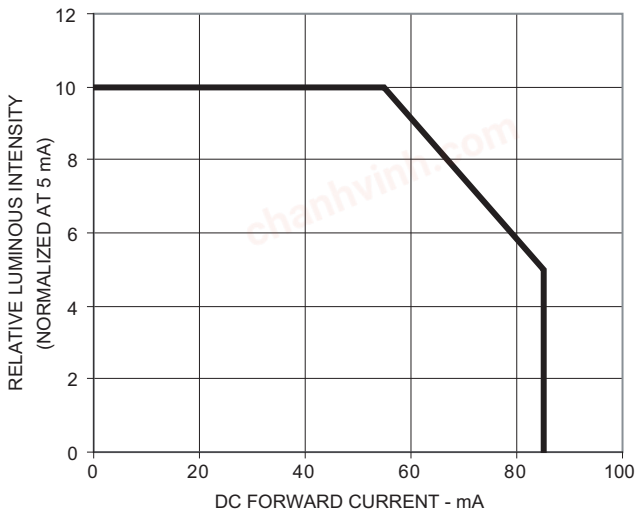


Figure 4. Maximum forward current vs. ambient temperature

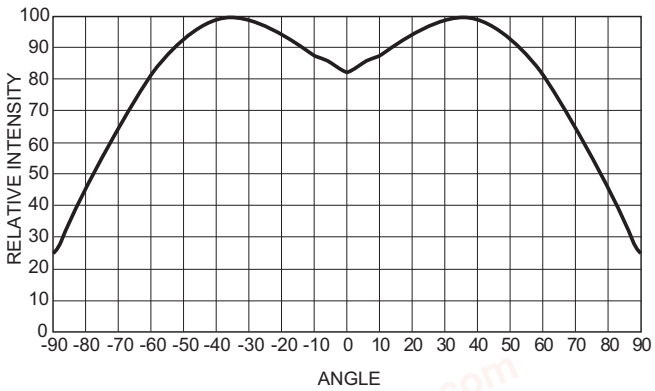
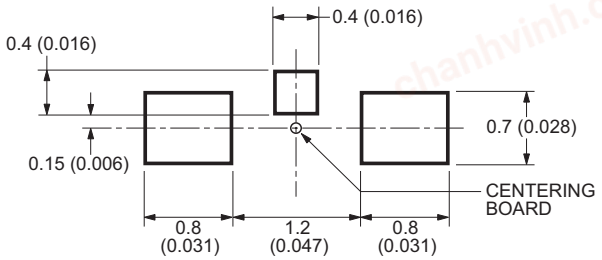


Figure 5. Radiation pattern



Notes:
1. All dimensions are in millimeters (inches).
2. Tolerance is ±0.1mm (±0.004in.) unless otherwise specified

Figure 6. Recommended soldering land pattern

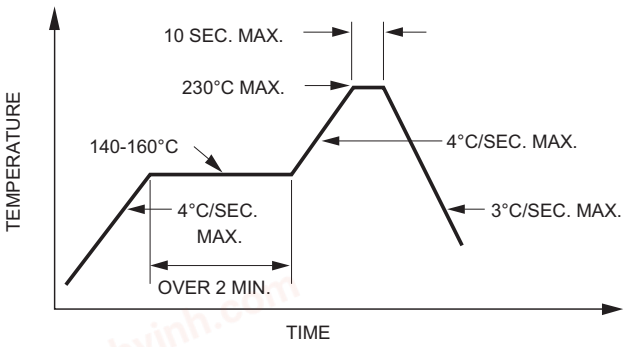


Figure 7. Recommended reflow soldering profile

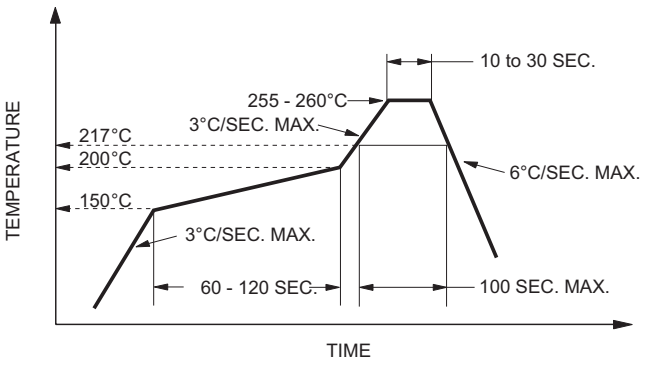


Figure 8. Recommended Pb-free reflow soldering profile

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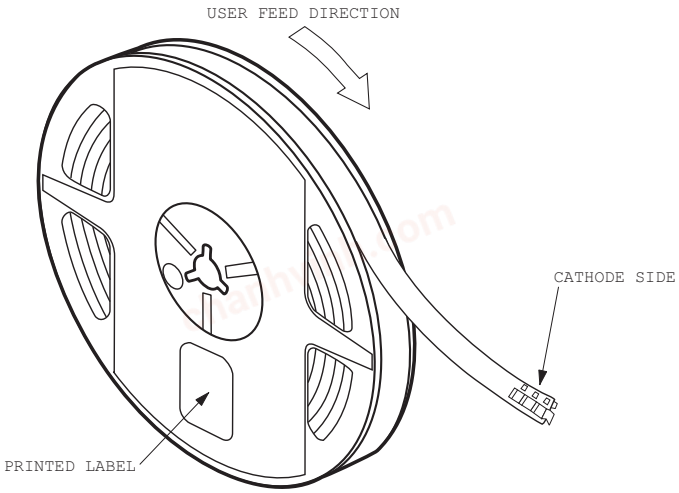


Figure 9. Reeling orientation

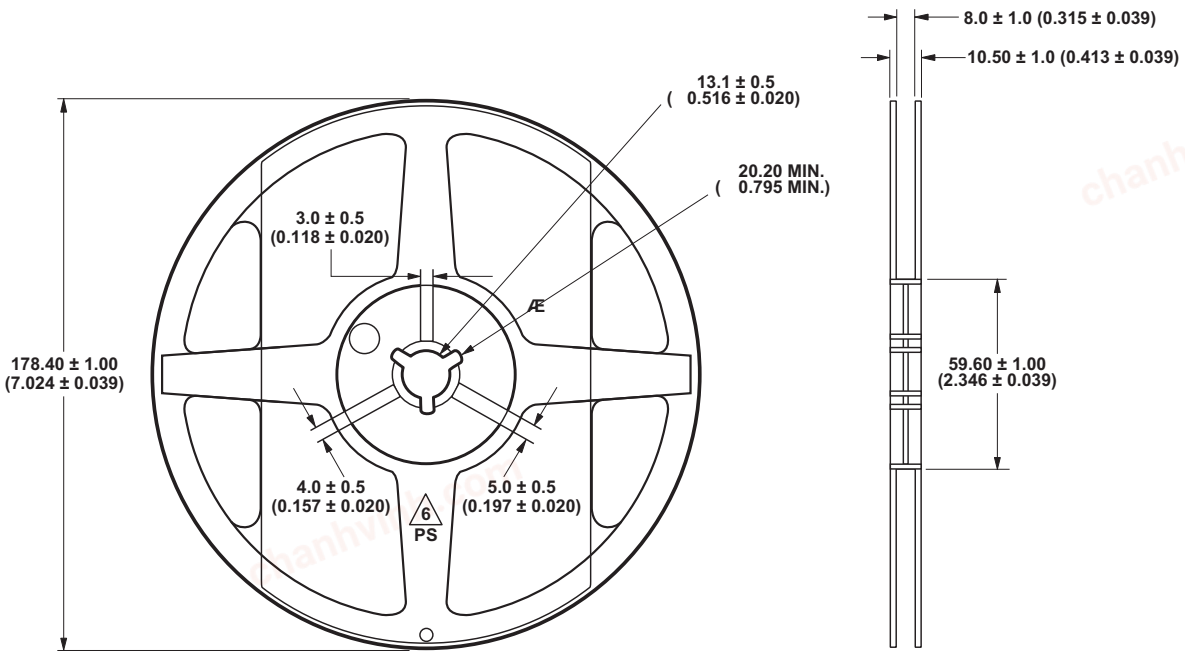
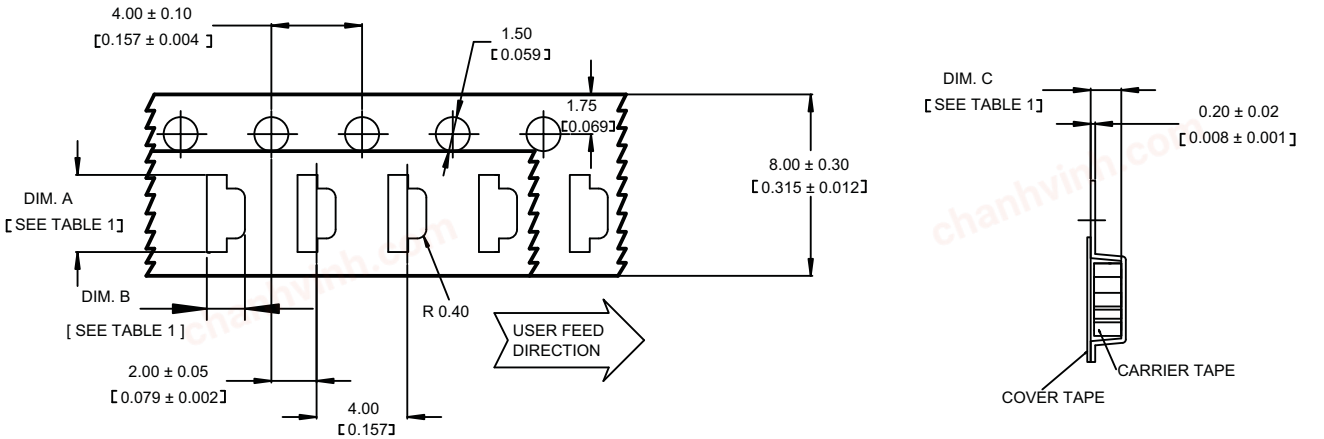


Figure 10. Reel dimensions

Notes:
1. All dimensions are in millimeters (inches).
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Table1.

PART NUMBER	DIM.A ± 0.10 (0.004)	DIM.B ± 0.10 (0.004)	DIM.C ± 0.10 (0.004)
ASMT-CA00	1.75 (0.069)	1.10 (0.043)	0.60 (0.024)

Dimensions In Millimeters (Inches)

Figure 11. Tape dimensions

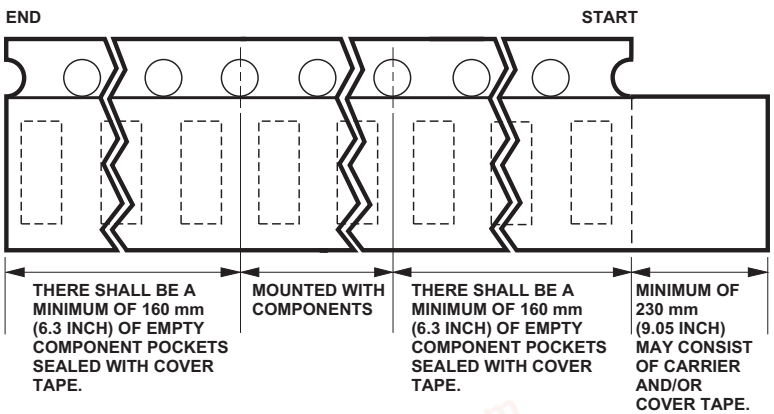


Figure 12. Tape leader and trailer dimensions

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 ± 5°C.
2. Device expose to factory conditions <30°C/60%RH more than 672 hours.

Recommended baking condition: 60±5°C for 20 hours.

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

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