

Design Guide

Avago Technologies ASMT-FJ10 and ASMT-FG10 are an SMT (Surface Mount Technology) dome lamp. They use an untinted, nondiffused lens to provide a high luminous intensity within a narrow radiation pattern. These devices are made by encapsulating LED chips onto axial lead frames to form molded epoxy lamp packages with six bended leads for surfacing mounting.

The colors available for the SMT Lamp package is 530nm Green and 605nm Orange.

This narrow angle SMT lamp package is designed for applications which require long distance illumination and narrow beam pattern such as auxiliary flash for auto-focus function in digital still camera.

This package is compatible with the Pb-free 2x reflow soldering process.

Features

- Smooth, consistent narrow radiation pattern
- 8° viewing angle for Orange, 6° viewing angle for Green.
- 4.8 L x 4.8 W X 5.33H mm package dimension
- Low power consumption with good intensity output, typical 22cd for Orange and 40cd for Green at 20mA.
- RoHS compliant

Applications

The images below are of digital still cameras with auto focus function.



Eye safety classification

The Orange and Green surface mount AF lamps are used for camera applications. The Orange LED is safe to operate under all driving conditions up to 50mA; however the Green LED is limited by the current.

The LED lenses focus the divergent beam of light 10mm from the front of the lens, If no collimating optics are added to the optical path, the Orange LEDs placed in a product, would create a Class 1 LED to IEC/EN 60825-1 (2001) under all conditions of operation and single fault failure.

The Green LED is tested as Class 1 to IEC/EN 60825-1 (2001) under operation at 20mA. This LED is not recommended to drive beyond 20mA as part may fall in the classification of Class 2M to IEC/EN 60825-1 (2001).

Avago's Recommended AF LED Holder Design

The LED holder design is critical to position the LED to focus the image. If the LED is tilted, the sensor will detect the incorrect information which will affect the focal point accuracy.

Two types of holder design are recommended: the "U" type and "enclose" type

Recommended "U" type holder for Avago AF LED

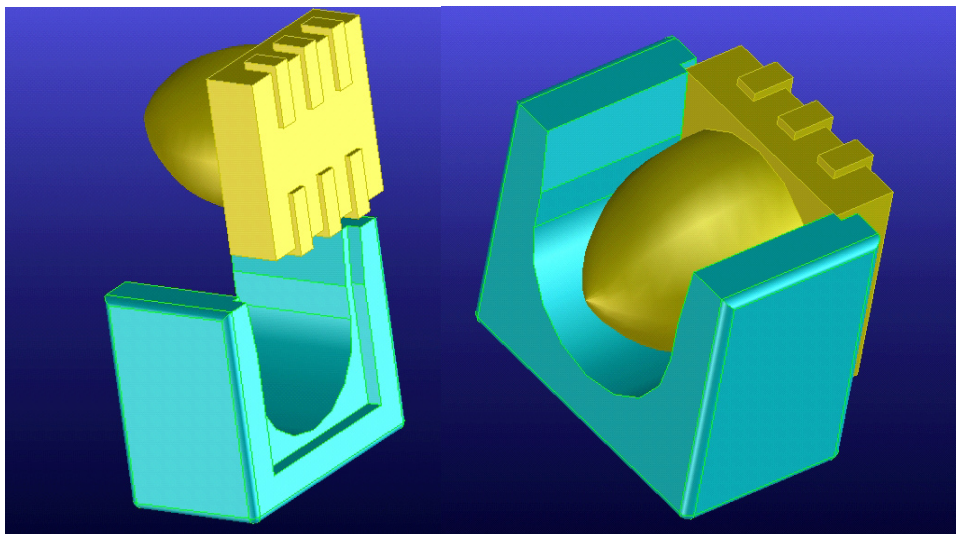
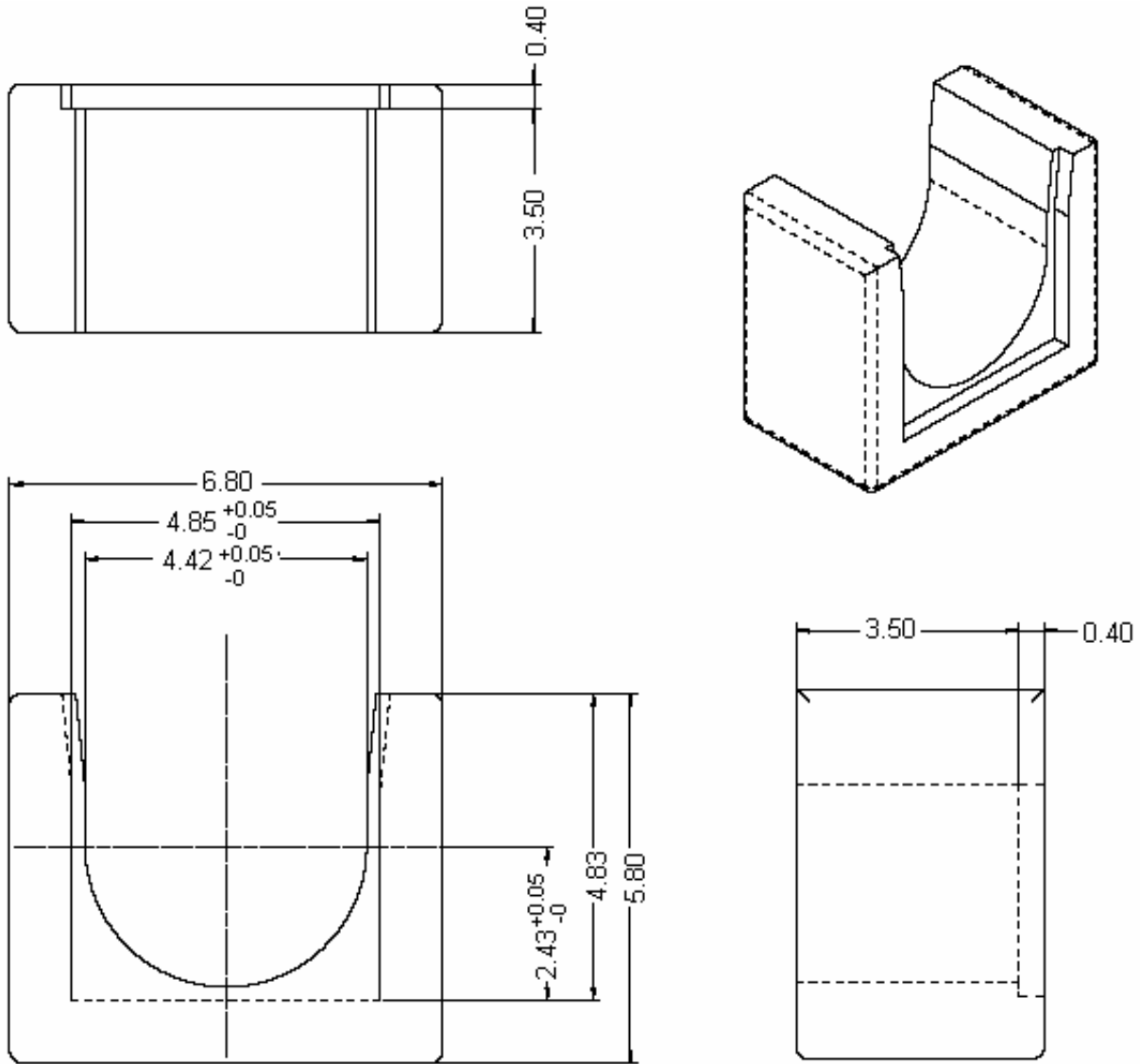


Figure 6 below shows how the AF LED should be placed into the "U" shape holder. The spring force should be applied at the bottom of the "U" shape; this is to prevent the AF LED from tilting. Figure 7 shows the wrong pushing direction of the AF LED. This will cause the AF LED to tilt downward.

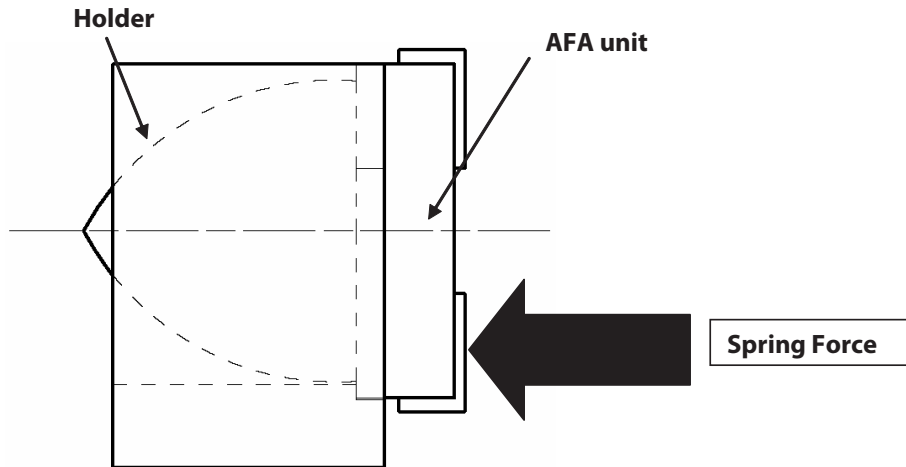


Figure 6. Correct pushing point of AF LED

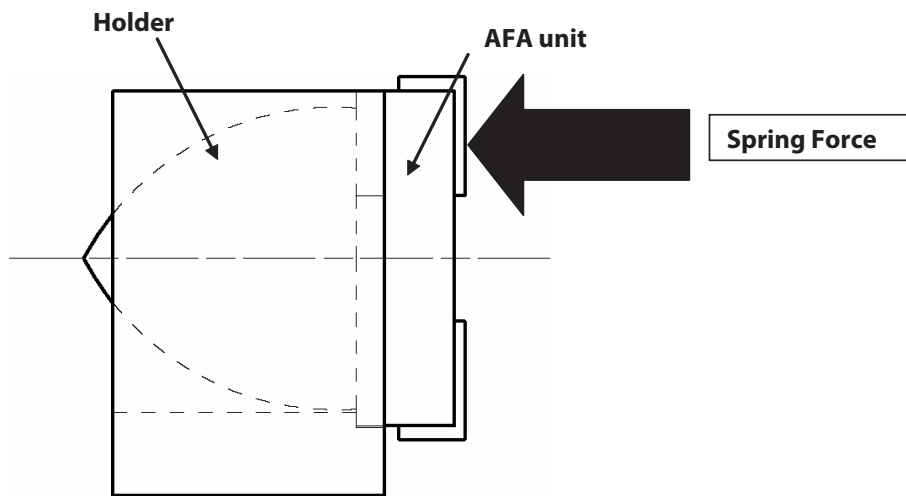
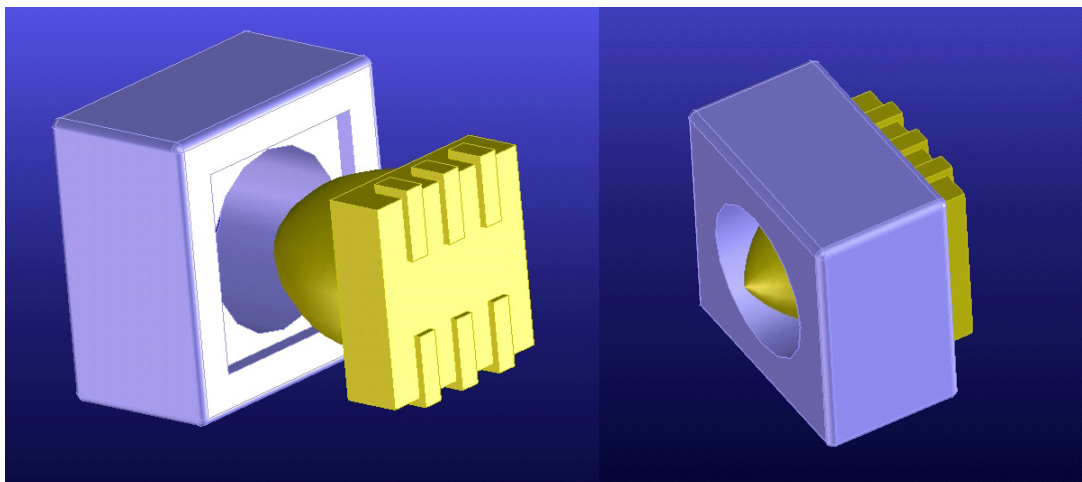
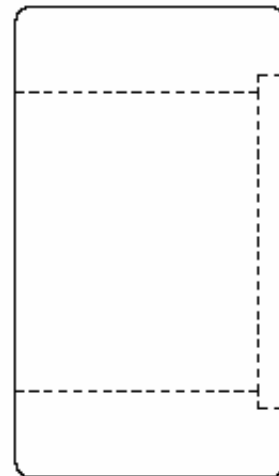
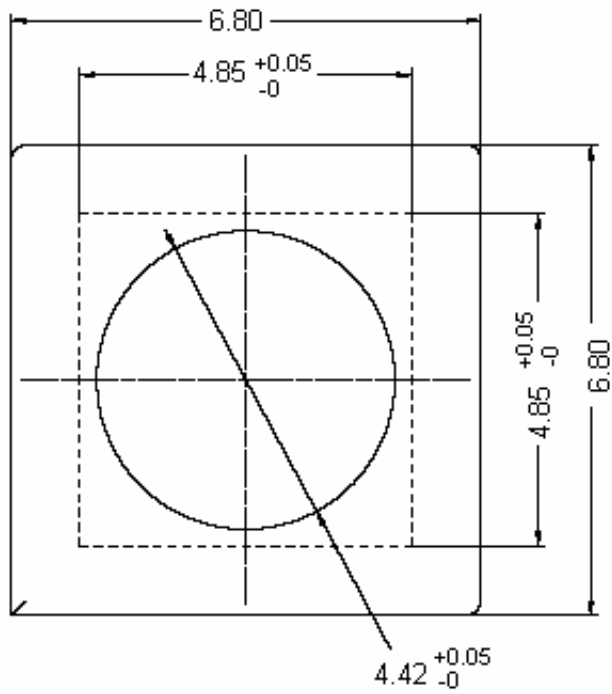
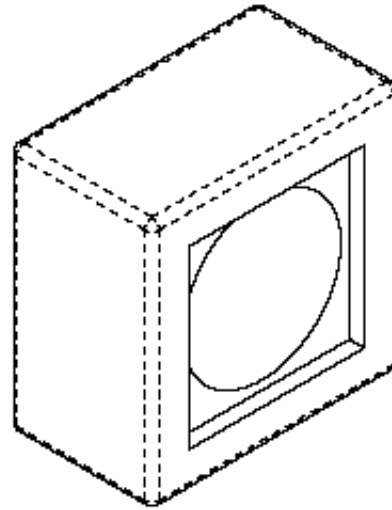
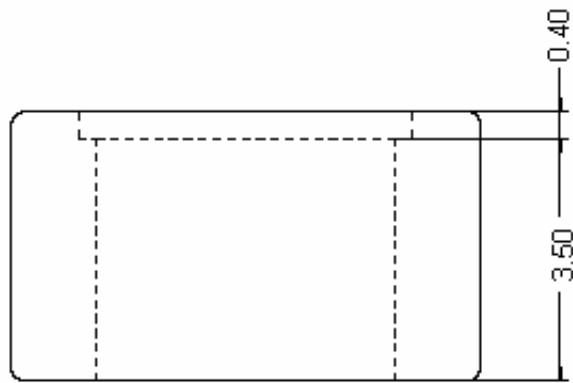


Figure 7. Wrong pushing point of AF LED

Avago Recommended Enclose Shape Holder for AF LED



Note: This dimension is for reference only

Handling Precaution

This product is classified as moisture sensitive level 3

When the bag is opened, the parts are required to be mounted within 168 hours in factory conditions of $\pm 30^{\circ}\text{C}/60\%$, and stored at $<10\%$ RH.

The devices are required to bake, before mounting, if:

- a) The humidity indicator card is $>10\%$ when read at $23^{\circ}\text{C} (\pm 5^{\circ}\text{C})$
- b) The pack has been opened for more than 168 hours.

Baking is recommended at: $60^{\circ}\text{C} (\pm 5^{\circ}\text{C})$ for 20 hours.

Note:

- 1) Do not stack the units after reflow.
- 2) This part is Class 1 ESD sensitive. 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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