



## The effect of CPU die not coincide with the center of Arkua heatsink

### 1. Air flow consideration.

As diagram A1 shown, CPU die is not in the center of socket. The measuring is h 5mm off center. To best fit cooler with socket, the center of heatsink needs to be coincided with the center of socket. See diagram A2.

#### **Situation A.**

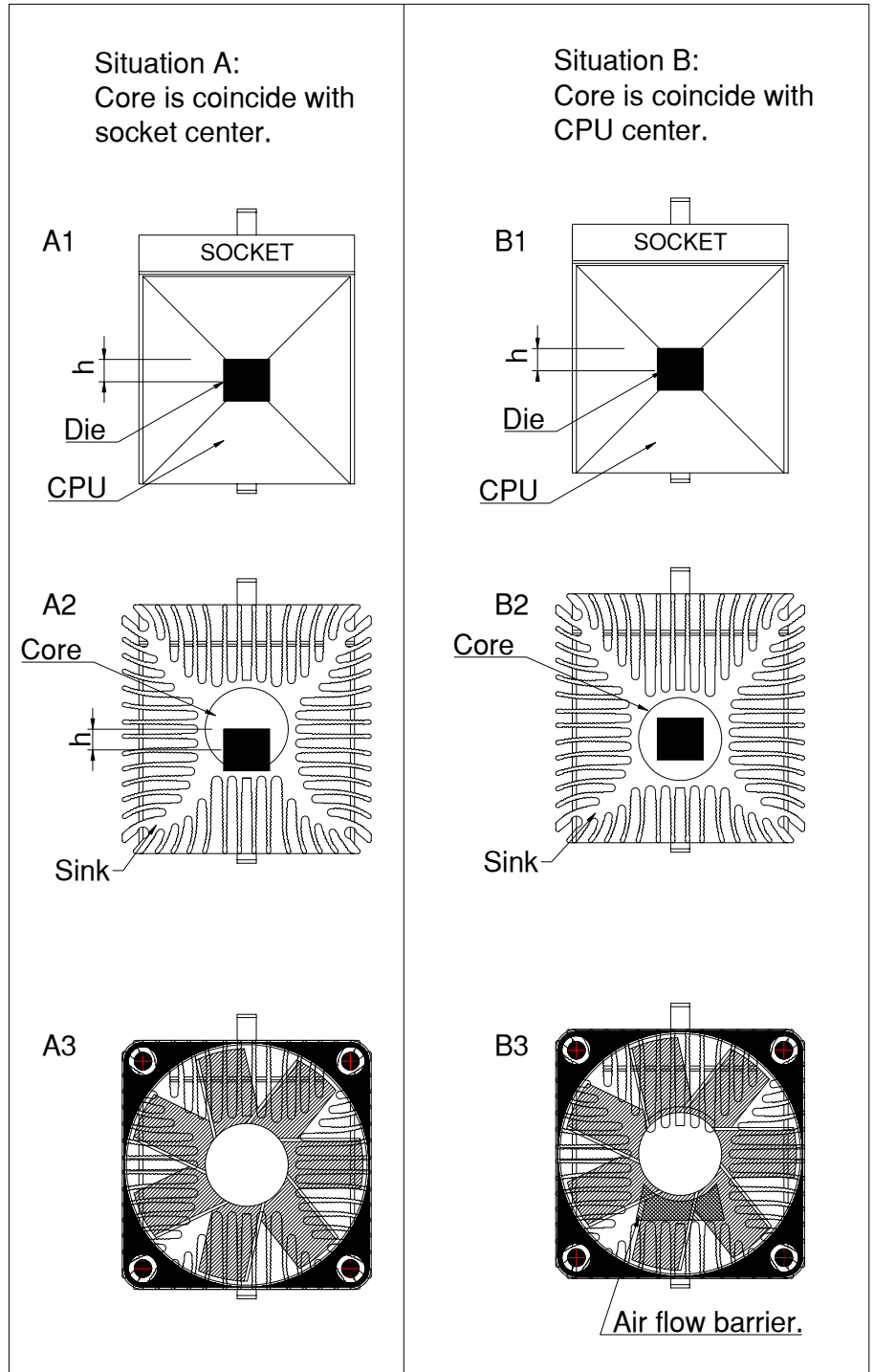
For the lowest air resistance, the center of heatsink must coincide with the center of socket, as diagram A3.

As a result, there will be 5mm measurement between the centers of heatsink and socket.

#### **Situation B.**

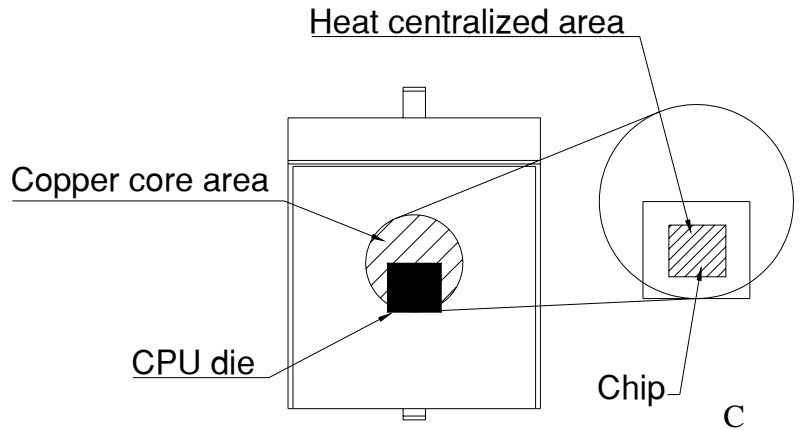
By testing, if we make the center of heatsink to coincide with CPU die, not the center of socket, the increase of air flow barrier occurs. consequently, the cooling performance will be seriously affected.

By comparing situation A with B, situation A will best suit the most demand of the cooler market. Therefore, all Arkua heatsinks are designed to get the lowest air flow resistance and higher cooling performance with a 5mm off center.



**2. The effect of copper core area not coincide with CPU heat centralized area.**

There are many new Arkua heatsink designed with copper core inserted in the center. As described above, there is 5mm off center between copper core and CPU die. To take AMD Athlon 0.13  $\mu$  for example, most of heat source is concentrated on top of the chip of 80 mm<sup>2</sup>. As seen on diagram C, the heat centralized area is still covered by the copper core of Arkua heatsink. Thus, the cooler performance of copper core heatsink does not affected by the 5mm off center.



Since the heat transmission of copper is twice fast than that of aluminum, the heatsink designed with copper core inserted in the center provides better cooling performance. As diagram D and E shown.

**3. The effect of the flatness and smoothness between the contact of heatsink and CPU die.**

The cooling performance of a heatsink is significantly affected by the flatness and smoothness of the contact surface on the base of a heatsink. All Arkua cooler series are undergone several steps of machinery processes to ensure the contact surface on CPU die is perfectly flat and smooth. As a result, all Arkua coolers performs exceptionally well to cool CPU heat source.

