



SMT cooling

Innovation Surface Mount Technology cooling for high volumes applications

"Skis" are fixed mechanically to the heat sink body by self-riveting or staking

In the SMT heat sinks the heat generated from the device is conducted down into the PCB through the component's lead and spreads from the Cu drain pad.

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From the drain pads the heat is conducted into the sink that dissipates the heat into the ambient. The existing heat sinks for SMT applications are made in copper and tin plated to guarantee the best solder conditions. Main handicaps are the weight in the final equipment, reduced speed for the pick-and-place assembling machines, material cost.

The inventive step

The best solution from the thermal point of view is to use aluminium black anodised for the heat sink body. The increase of thermal resistance due to the lower aluminium conductivity is minimal and global performance is improved by improvement of the radiation rate (up to 30 percent plus over bright copper heat sinks). The inventive step (Patent Pending) has been to combine the technology expertise in automatically assembling the tin plated solderable tags with the technology of manufacturing pre-black anodised or painted aluminium coils and adapting it to the peculiar SMT heat sinks. Tags



SMT heatsink in Tape & Reel packaging

named „Skis“ are fixed mechanically to the heat sink body by self-riveting or staking.

This technology has been tested under the most severe shock and vibration conditions for automotive and traction applications and used for more than 10 years in high volumes mass production. Edge mounted "Skis" are available for application with limited space on board and compatible for D² Pak solder mask opening.

Main benefits

- ▶ Increased thermal performance, thanks to the improved radiation of black finish
- ▶ Material cost reduction from copper to aluminium, including PCB design reducing the needs for through holes and ground layers
- ▶ Heat sink weight reduction, that aids fast feed of pick & place machines, aids the vacuum pick up and so reducing the manufacturing operations time
- ▶ Improves Infrared reflow due to the black finish that improve the heat absorbing, getting a better cycle and quality
- ▶ Readily recyclable heatsink, by virtue of mechanical assembly
- ▶ Possible customisation of overall size and footprint design
- ▶ Available in volume thanks to fast and low cost single press stroke to manufacture each heat sink
- ▶ Supply format bulk or Tape & Reel.

ABOUT US

Aavid is the world's leading supplier of the broadest portfolio of thermal management solutions for a wide variety of applications with global production facilities. The Company's thermal management products are used in a wide variety of high power and low power segment, telecommunications equipment, instrumentation, medical equipment, transportation, motor drives, traction and consumer electronics. The product portfolio is offering, stampings for pcb, MAX-Clip heatsinks, extrusions, heat-pipes, brazed fin heatsinks, liquid cold plates in aluminium, copper and stainless steel for high power and IGBT applications

The Company offers access to best cost labour by manufacturing many of its products in China and Mexico to meet segments focused on cost. Aavid is unique by also offering state-of-the-art engineering and design services to customers who value assistance in solving difficult and complex thermal management problems. Production facilities in the US and Europe (Bologna) are equipped to service higher value-added projects. Aavid partners closely with its customers early in the design phase of product development in order to assist with modelling and simulation and to develop innovative product solutions. Accordingly, Aavid's ability to provide a high-quality, reliable and comprehensive product and service offering on a global basis makes it the leader in the industry.



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