

CASE STUDY



A 2016 Award of Distinction Winner in the Electronic/Electrical category.

Aluminum Heat Sink

Process:
Conventional powder metallurgy

End Use and Function

The aluminum powder metallurgy (PM) heat sink is used in a high-volume global automotive stereo application.

Fabrication

The part is produced to net shape with no secondary machining operations needed. The high material ductility of the special aluminum PM alloy, combined with the precise positioning of the tooled-in assembly holes, enables assembly of the heat sink without the need for attachment screws. There's a unique PM-only "tower design" providing optimized heat "chimneys" to remove heat from specific areas. The part is compacted using a three lower level tooling design. Extremely large thickness variations exist within this product. Elongation is 15%

Results

Using conventional PM to create this component resulted in a net shape product that eliminated the need to machine for positional holes and flatness on contact surfaces. Additionally, the overall process is more cost effective than die casting.



PickPM is a resource created by the Metal Powder Industries Federation, a trade association for the metal powder industry, for the benefit of the metal powder industry. To learn more about powder metallurgy, or to find a part fabricator, visit us at PickPM.com