



Process Development: Heatsink Attach

A client was having an issue with the epoxy attachment process used to mount a multi-layer printed circuit board to a metal heat sink, in a high visibility military product. The existing process was found to result in severely voided attachments. The client was seeking a non-destructive means to evaluate the finished attachment in order to compare the effects of various process variations.

Solution:

Using scanning acoustic microscopy, an image of the attachment layer was created. The images below show the attachment layer in four units constructed using different attachment process parameters. In each image, darker areas represent a good bond while lighter areas represent voiding. The images are numbered 1 through 4 and show sequential improvement with each process adjustment, image 1 being the original process and image 4 the final process.

Summary:

High quality acoustic micro imaging, along with rapid turnaround, enabled the client to correct their process in a timely and cost-effective manner.

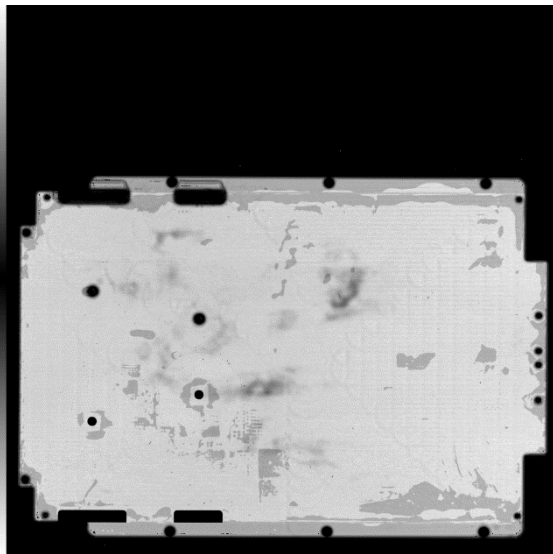


Image 1

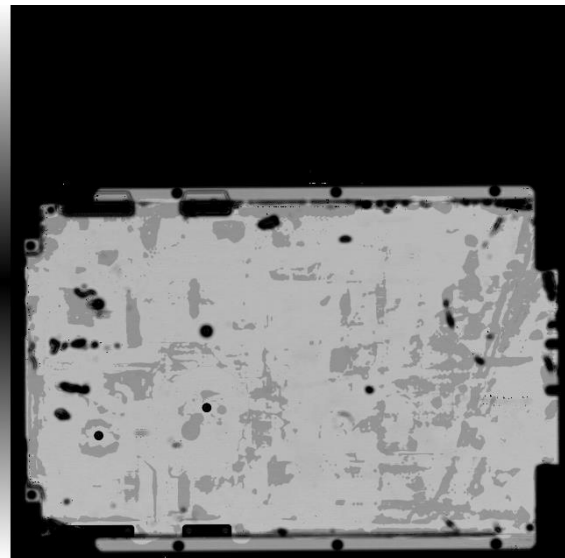


Image 2

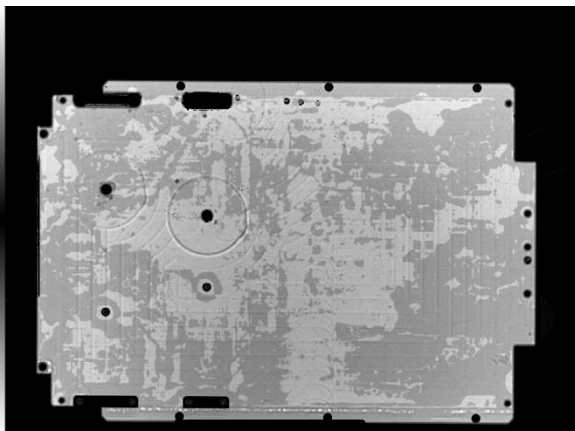


Image 3

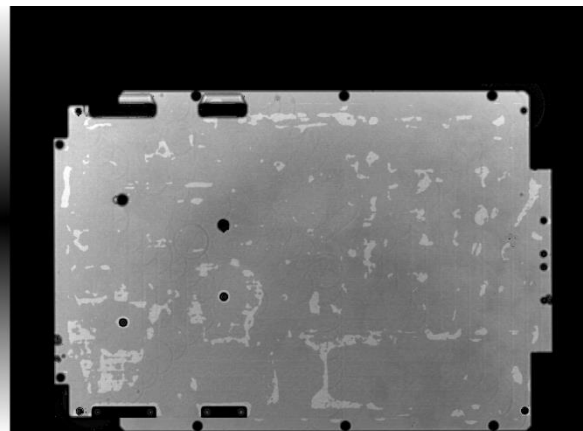


Image 4