

Failure analysis

- a powerful in-house capability

Introduction

DELTA operates its own in-house microelectronics failure analysis department.

We have a very large investment in specialized equipment for the task, from mechanical access techniques to X-ray and scanning electron microscope examination (SEM).

Trouble-shoot problems quickly

This analysis capability ensures that we are able to quickly get to the root cause of any problem, whether the aim is to keep a microelectronic or ASICs project on track, or to trouble-shoot problems that have developed during operational service.

Among the issues we can quickly and efficiently resolve are:

- Is a failure due to some aspect of the IC fabrication process?
- Is a failure caused by the operating conditions?
- Is a failure related to a design weakness?

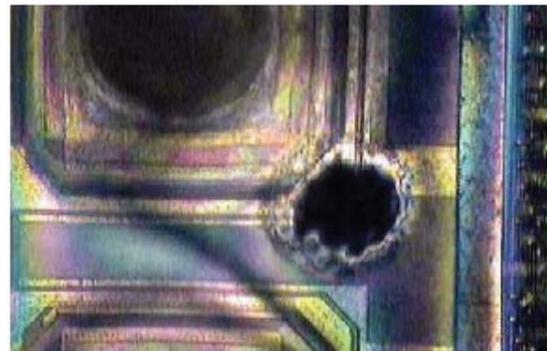
These specialist services are widely used by commercial IC manufacturers and IC users, and by our own in-house IC developers.

The skills and technologies we use for these investigations also mean that we additionally have a lot of know-how to combat any threat of reverse engineering, on ICs destined for financial- or security-related applications, or where the IP used protects a large market share.

Some of the major techniques available at DELTA:

- Microsectioning
- Real time X-ray
- Hot spot analysis

- Solderability tests
- Sub-micron probing
- Chemical and plasma etching
- Scanning electron microscopy (SEM)
- Scanning acoustic microscopy (SAM)
- Energy dispersive analysis of X-ray
- Gross and fine leak hermeticity testing
- Bright/dark field, differential interference, light sectioning, and stereo microscopy
- Environmental testing (temperature, shock, humidity, corrosion, vibration ...)



Location of degraded protection circuit by use of hot spot analysis.

DELTA also has access to other specialised equipment such as FIB material deposition, via a network of partners.

If you have a problem, then a phone call to DELTA's failure analysis department will often provide enough information to allow us to advise on the likely techniques required to locate the cause.

For further information please contact

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