advancing IC Diagnostics

a technical resource for news & application developments from FA Instruments, Inc.

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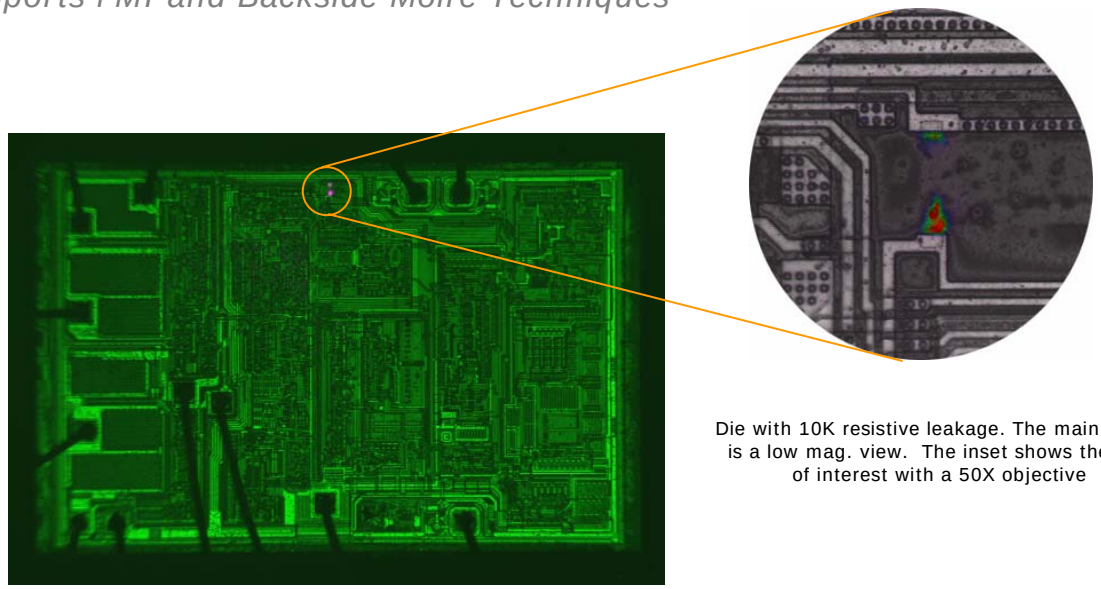
Stabilized Thermal Imaging

Up to 1000X Thermal Sensitivity Improvements
Supports FMI and Backside Moiré Techniques



Die with 10K resistive leakage. The main image is a low mag. view. The inset shows the area of interest with a 50X objective

Stabilized Thermal Imaging is a new proprietary process developed by FA Instruments. The technique allows mapping of thermal defects on IC's, packages, and boards now down to the previously unheard-of nanowatt level. Previous techniques such as liquid crystal and IR imaging methods such as InSb and MCT are limited in resolution and sensitivity -- typically to the low milliwatt level.

Stabilized Thermal Imaging (Patent Pending) realizes a 100 to 200X typical sensitivity improvement over the traditional thermal detection methods for topside **FMI** (Fluorescence Microthermal Imaging) and backside **Moiré** thermal pattern imaging in stabilize mode. Our new IR camera system enables 100 to 1000X sensitivity improvement with your choice of InSb or MerCad technologies. The thermal image develops before your eyes allowing you to stop when sufficient signal content is observed up to a total dynamic range of 28 bits. Typical acquisition times vary from seconds to minutes. Works as a stand-alone product or in conjunction with Photoemission or SIFT laser stimulus tools.

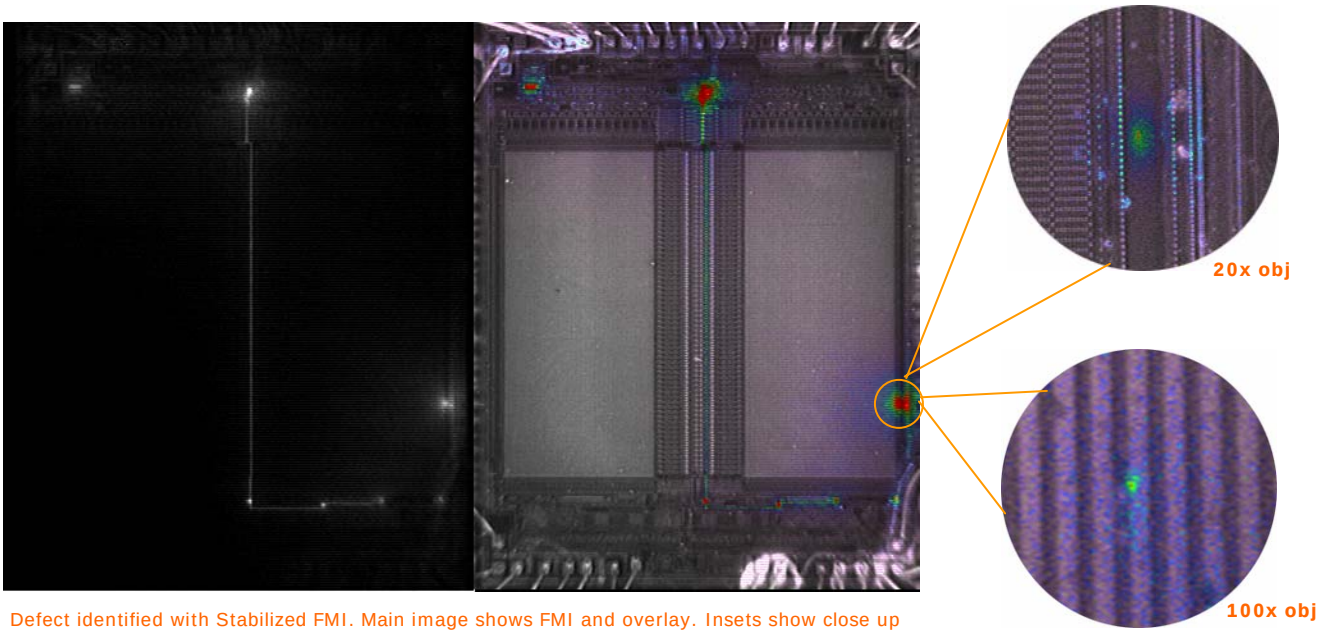
Look at the....

FACTS

Thermal Sensitivity

	Standard Thermal Methods	FA Instruments Stabilized Thermal Imaging	Improvement with Stabilized Thermal Imaging
Infrared Imaging	NIR MerCad- 1.0˚C LWIR MerCad- 0.1˚C InSb- 0.1˚C	0.001 to 0.0001˚C	Up to 1000 x
Liquid Crystal	0.1˚C	--	--
FMI	0.01˚C	0.0001˚C	100 x
Moiré	0.05˚C	0.0005˚C	100 x

FA Instruments also manufactures solid state UV sources for FMI excitation and a thermal controller for precision control down to 1 milliKelvin for temperature control of the DUT for support of OBIRCH, TIVA, SIFT, liquid crystal or AFP methods.



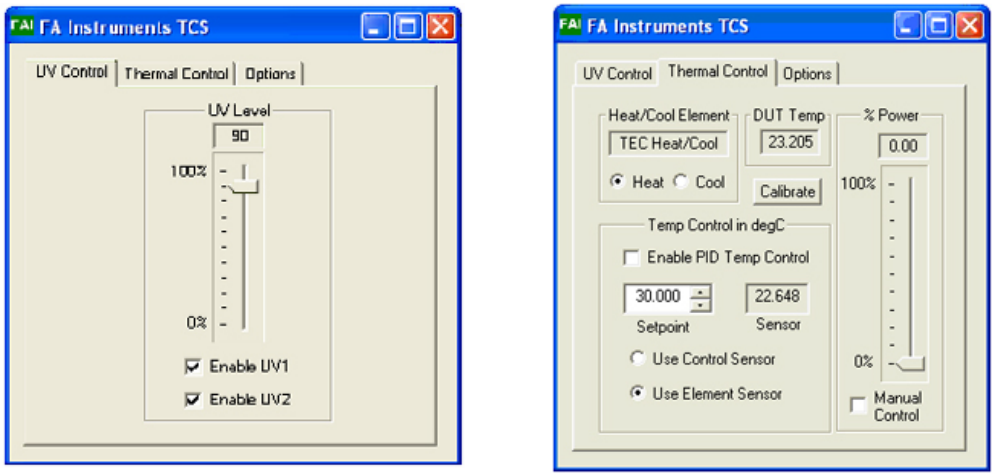
Defect identified with Stabilized FMI. Main image shows FMI and overlay. Insets show close up of defect with 20x and 100x objectives. Metal line widths are 5 microns with metal sputter defect optically visible. Note the high spatial resolution.

Thermal & UV Controller

Due to recent advances in technology, it is now possible to drive and control up to 80 watts of power for temperature control from a compact unit weighing less than 2 pounds with dimensions of 5”X5”X2.5”. This USB system is designed for **stand-alone** use with a PC or laptop computer or in conjunction with other analytical equipment such as the ***Crystal Vision*** software suite. Multiple controllers can be run from the same PC.

The small footprint and modular construction offer portability and multiple configurations for work with a variety of laboratory situations from complex to basic closed loop control.

Applications of the UV/Thermal Controller include: Atomic Force Probe Temperature characterization, UV Fluorescence, Fluorescence Microthermal Imaging, Specimen reaction rate control, Liquid crystal thermal analysis, Thermal control for thermal laser induced stimulus and Stimulus Induced Fault Testing.



Intuitive Control windows allow for advanced control of the UV Thermal Controller

Feel free to ask how the Thermal Controller can be used to improve your analytical FA toolkit

Applications Facility in Silicon Valley

Our demonstration laboratory is fully equipped with the full range of FA Instruments' microscopy solutions as well as a full range of sample preparation systems and analytical tools.

This allows us to offer an unique fully integrated approach to solve your problems. Schedule a visit to see how we can help you improve your failure analysis capabilities.

Contact us to schedule a demonstration. **Tel: 1 408 428 9353** or e-mail info@fainstruments.com

Thank you for your time! We look forward to talking with you in the near future.

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