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## SUBSURFACE MICROSCOPY USING THERMOREFLECTANCE ON MICROELECTRONIC TEST STRUCTURE CROSS-BRIDGE AND GREEK CROSS FOR SHEET RESISTANCE MEASUREMENTS: HIGH-TEMPERATURE IMAGING

The discussion of this work is focus about the temperature field induced by thermal losses in these components, highlighting the standard form of heating in some regions of interest generated with the method of Thermoreflectance images, using polysilicon Greek Cross and Cross-Bridge Test Structures. The generation of these images are obtained by a laser probe beam on the surface of the sample, in these images reveal the regions periodically heated by Joule effect, which are associated with the electric current distribution in the four terminals in Greek Cross structure and six terminals in Cross-Bridge structure using resistance measurements. The thermoreflectance microscopy provides a temperature distribution map of the operating device with high resolution. The technique is also useful for detecting and imaging defects, besides the temperature field, it is also sensitive to local electric field, the noncontact and nondestructive character of the technique is one of its main advantages, measure the uniformity of the current in the etching of polysilicon-metal, it is also tested by means of simulations by finite element.

### Keywords

Reflectance, Photothermal, Microscopy, Polysilicon, Joule effect.

### Reference

Almond, D. P., & Patel, P. (1996). Photothermal science and techniques (Vol. 10). Springer Science & Business Media.

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### Author approval

I confirm

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