Sinton instruments

PRODUCT NOTE

Suns-Voc — Post-Diffusion Process Control

The Suns-Voc stage is available as an accessory to the WCT-120 lifetime testing instrument or as a stand-alone measurement system.

Perfect for paste-firing optimization and process control. Open-circuit method indicates the upper bound for any solar cell precursors after junction formation.

Product Overview

The Suns-Voc stage is ideal for measuring wafers after Al firing, and then again after front-grid firing. This allows the optimization and monitoring of these steps to maintain voltage, obtain good ohmic contacts, and avoid shunting.

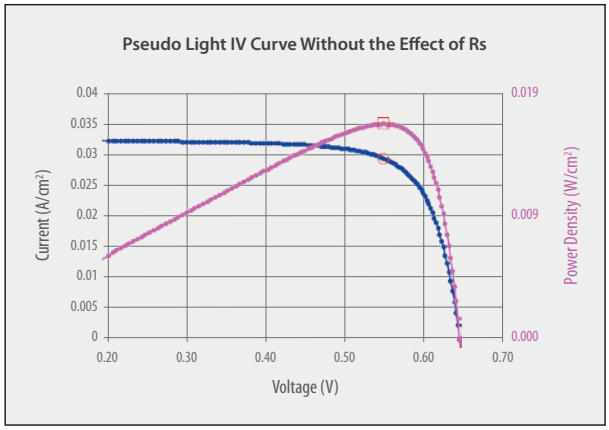
Suns-Voc Applications

By either probing the silicon p+ and n+ regions directly or probing the metallization layer (if present), the illumination-Voc curve can be measured. This curve can be displayed as our well-known Suns-Voc plot or in the form of a standard photovoltaic curve which can be used to characterize shunting. The entire curve is measured at the open-circuit voltage, so it is free from the effects of series resistance.

Comparing this curve to the final I-V curve gives a precise measure of the series resistance in the cell.

Suns-Voc System Features

- Wafer stage controlled at 25°C
- Fine-point voltage probe
- Magnetic-probe compatibility
- Xenon flashlamp with full set of neutral-density filters
- Height-adjustable back column for fine-tuning intensity range
- Utilizes standard I-V curve format as well as the Suns-Voc curve
- Measures ideal wafer characteristics without the effects of series resistance



Suns-Voc data displayed in the format of an illuminated-IV curve.

Suns-Voc Specifications

Instrument Specifications

Parameters reported for each measurement

- Implied I-V curve at open circuit: materials limit to efficiency
- Pseudo-efficiency
- Pseudo-fill-factor
- Two-diode analysis
- Shunt value

Typical calibrated illumination range

- 0.006–6 suns

Wafer size, standard configuration

- Maximum 210-mm diameter/side

Warranty

- One-year limited warranty on all parts and software
- Service agreement also available

CE

Facility Requirements

Chuck temperature control

- 25°C

Ambient operating temperature

- 18°C–25°C

Power requirements

- Computer with monitor: 200 W
- Light source: 60 W

Dimensions

- 32 cm W x 28.5 cm D x 75 cm H

Universal mains voltage

- 100–240 VAC 50/60 Hz

Special facilities requirements

None

Purchasing Information

For a quote, please contact quotes@sintoninstruments.com.

We are happy to accommodate custom requirements. Please inquire about a quote for your specific needs.

Quotes are valid for 60 days. Please allow 10 weeks for delivery from date of purchase order.

For our full product line, visit our website at: www.sintoninstruments.com

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