Power Conditioning for the Semiconductor Industry

No one understands semiconductors better than the companies who produce them.

That explains why leading semiconductor manufacturers use ONEAC to preserve reliability of their own critical electronic systems.

Test equipment requires clean power

Semiconductor processing and test equipment operate by controlling and interpreting low-level, high-speed digital and analog electrical signals. Transient voltage events or power disturbances on the incoming AC power service confuse and disrupt that process. As a result, tests may not correlate, system accuracy is compromised, processes may become disrupted or halted and production is delayed.

ONEAC protection effectively prevents lightning and other electrical disturbances from affecting performance of critical electronic systems.

The effects of electrical over-stress

Electrical overstress resulting from transient events can also degrade or even destroy semiconductor chip material leading to increasingly unreliable operation and seemingly random failures.

A single protected power source

Semiconductor tools, working together in one work cell, perform better when they share a common protected power source. Coordinating power adds time to design and installation. ONEAC power conditioned distribution units provide a single global interface which meets agency and SEMI standards.

Benefits of Power Conditioning

- Improves Yield
- Improves Correlation and Repeatability
- Maximizes System Uptime
- Provides More Accurate Test Results
- Provides Complete Flexibility in Power Distribution
- Provides Global Voltage Conversion
- Reduces Costly Engineering Expenses

ONEAC's unique solutions

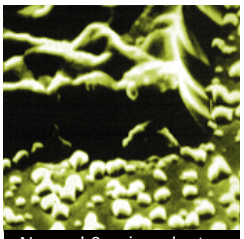
ONEAC power conditioning assures reliable tool performance by fully isolating semiconductors from the outside electrical world during the fabrication and test process. The ONEAC design includes a low-impedance transformer that limits not only peak voltage (amplitude), but also edge-speed (frequency) of electrical transients. Featuring ONEAC's patented Virtual Kelvin Ground® — a unique grounding methodology that creates a noise-free power environment. ONEAC's ability to remove a wide spectrum of conducted power line noise in all modes explains why ONEAC is used throughout the integrated chip manufacturing process.

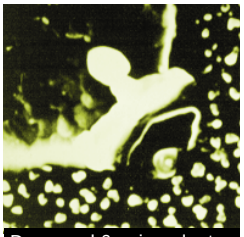
Maximize productivity

ONEAC's clean power environment improves test accuracy and correlation between testing sites. That means fewer rejects and more reliable finished product. By removing disruptive line noise, ONEAC also maximizes system uptime. Isolated from noisy loads on the same panel, equipment performs as it was designed. Production delays due to power problems are eliminated. Equipment is fully protected against damage caused by transients and other electrical disturbances.

Eliminate costly engineering expenses

ONEAC power conditioners for semiconductor applications feature selectable design options allowing complete customization, minimizing up-front engineering. Providing complete flexibility in power distribution and voltage selection. No dedicated panel feed, voltage conversion or expensive wiring is required, making ONEAC an excellent choice for semi applications around the globe. As a result, installation is consistent and cost-effective.


Normal Semiconductor


Damaged Semiconductor

Electron microscopy reveals the harmful effects of electrical overstress on delicate semiconductor circuitry. High-frequency transients often cause degradation of the silicon substrate such as the pitting shown here. Semiconductors damaged In this way can run hot, perform unreliably and ultimately fail.

ONEAC is a UL/BSI registered firm — Certification Number A2900.

A Chloride Power Protection Company

Power Conditioning Solutions

(with or without battery back-up)

ON Series (200 - 5000 VA) Uninterruptible Power Supplies

CSR Series (6 - 10 kVA) Power Conditioner

CDR Series (7.2 - 45 kVA) Power Conditioner

CD Series (54 - 100 kVA) Power Conditioner

(800) 327 8801 OPT. 2 in USA AND CANADA
27944 N. Bradley Road, Libertyville, IL 60048 Phone 847 816-6000 FAX 847 680-5124

+44 (0) 2380 610311 in UK AND EUROPE
George Curl Way, Southampton, Hampshire SO18 2RY, UK FAX +44 0 2380 612039