

Unlocking Ultra-High Voltage IV & CV Measurements for Next-Generation Power Devices

Keysight Technologies and
bsw TestSystems & Consulting



Expertise That Delivers Optimal Solutions

bsw TestSystems & Consulting AG, a Keysight Solution Partner, provides a wide variety of tailored solutions for semiconductor testing and development for research institutes, universities, and companies in telecommunications, automotive, and consumer electronics.

The transition to wide bandgap (WBG) power devices such as SiC and GaN is driving innovation in electric vehicles, renewable energy systems, and smart grids. These advanced devices operate at hundreds to thousands of volts, requiring rigorous validation of gate oxide integrity, dielectric reliability, and overall device performance under extreme conditions.

To address these challenges, Keysight's B1505A Power Device Analyzer, combined with bsw's ultra-high voltage accessories for IV and CV measurements, delivers a comprehensive solution that ensures safety, precision, and flexibility for next-generation power device characterization.

Solution #1 Ultra-High Voltage Bias Tee for CV Measurements

Precision meets high voltage

- Enables simultaneous high voltage biasing up to 10 kV and capacitance measurement without compromising signal integrity.
- Maintains high-frequency performance for accurate CV analysis under extreme voltage conditions.
- Designed for seamless integration with Keysight B1505A.



Key benefits

- Reliable CV measurements at high-voltage bias.
- Compact and robust design for safe, repeatable testing.
- Perfect for gate oxide integrity and trap density analysis in WBG devices.

Key specifications

- External DC bias voltage: ± 10 kV
- Frequency: Recommended 100 kHz
- Series capacitance: 100 nF
- Input resistance: 100 k Ω

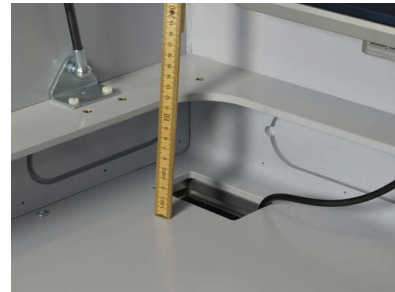
Solution #2: Flexible Ultra-High Voltage Test Enclosure for Large Semiconductor Components

Designed for safety and versatility

- Provides a robust, shielded enclosure optimized for high-voltage testing of large components and power modules up to 10 kV.
- Ensures operator protection in compliance with EN50191 and EN61010-1 safety standards.
- Features an expanded working area that accommodates packaged power modules and other physically large semiconductor devices.

Key benefits

- Enhanced safety for high-voltage IV characterization.
- Modular design supports different device sizes and configurations.
- Ideal for SiC/GaN power modules used in automotive and energy applications.



- To learn more about this solution, contact [bsw TestSystems & Consulting](#).
- Interested in becoming a Keysight Solution Partner? Submit the [form](#) to join!