VXI Instruments
the test solutions provider

DTS8765neo
Dynamic Parameter
Power Semiconductor Test System

→ Customizable modular design

→ Very low DC Link Inductance

→ Expandable for static AND dynamic tests

→ Front End | Back End | Laboratory



Features

- High Performance: Up to 3,300 V | 20,000 A
- Short test times < 200 ms
- Very low parasitic inductance down to 5 nH due to direct test head contacting without cables
- Fully modular system architecture: voltage and current modules can be combined as needed, e.g. 2,800 V | 10,000 A or 1,400 V | 20,000 A
- Easily expandable for static AND dynamic tests on ONE test station
- Easy to adapt to DUT, including individual gate drive configurations
- Optimized for high-speed production testing with ready-to-run sequencing software

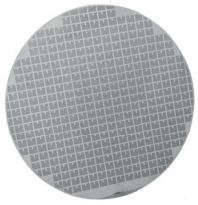
System Overview

The **DTS8765neo Dynamic Parameter Power Semiconductor Test System** is built for high-speed and precise testing of medium to high-power semiconductor components, such as diodes, MOSFETs, and IGBTs, across a wide voltage range. Designed by VX Instruments, this system supports a comprehensive suite of dynamic parameter tests “Safe operating area” and includes a modular PXI platform with an open interface, allowing for additional testing options, including DUT-specific resistor networks and temperature sensors. It can be easily expanded to perform dynamic as well as static tests on one test station. Its innovative testhead features an application-specific board for adapting DUTs, which enables a cable-free contacting and thus a very low parasitic inductance.

- **Cost-efficient testing:** Fast, high-volume multi-station capability lowers test costs
- **Very low parasitic inductance** down to 5 nH due to cable-free test head contacting
- **Modular flexibility:** Easily configurable according to testing requirements

Target DUTs include

- IGBTs
- MOSFETs (SiC & GaN)
- Diodes



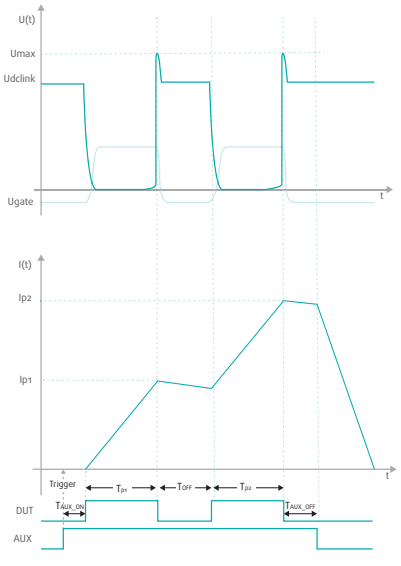


Test Levels

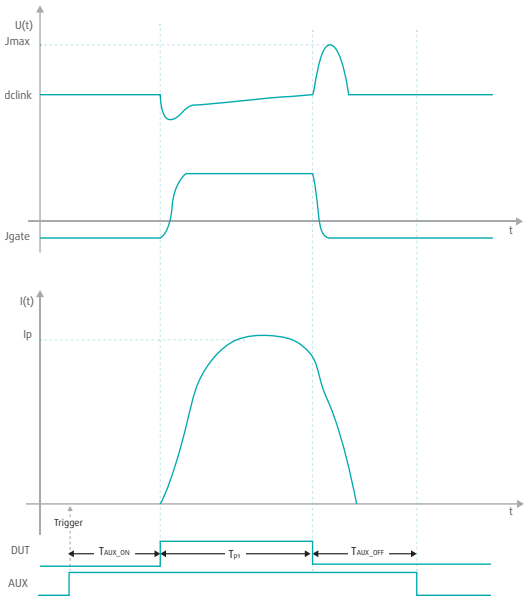
- Module level (e.g. TO, SOT, and other IPC or custom packages)
- DCB level
- Wafer level / bare die
- Discrete
- KGD
- Laboratory / Characterization

Measurement Parameters

- **MOSFET:** According to IEC60747-8 standards
- **IGBT:** According to IEC60747-9 standards
- **RBSOA & FBSOA**
  - E_ON
  - E_OFF
  - E_RR
  - Imax_pulse_x
  - Udsmax_pulse_x (Highside Switch)
  - Ugsmax_pulse_x (Highside Switch)
  - Udsmax_pulse_x (Lowside Switch)
  - Ugsmax_pulse_x (Lowside Switch)
  - du/dt
  - di/dt



- **SCSOA**
  - E_ON (Highside Switch)
  - E_OFF (Lowside Switch)
  - Imax
  - Udsmax (Highside Switch)
  - Ugsmax (Highside Switch)
  - Udsmax (Lowside Switch)
  - Ugsmax (Lowside Switch)



Key Features

- Sensing to DUT ensures low noise levels
- Low power consumption with reduced thermal effects on DUT and connections
- The innovative test head allows high-side measurements with exceptional precision and very low parasitic inductance
- Flexibility
  - Compatible with market-available test sequencers
  - Tool-free product changeover allows quick and easy transitions to different DUTs, enabling mixed-product lines with no setup time required.
- Modularity
  - Configurable and expandable via plug-in cards, usable across all systems
  - Quick exchange of cards, adapter boards and gate drivers (also 3rd-party)
- High Performance
  - High Bandwidth capability
  - Minimal inductance enables operation close to product limits. Low stray inductance down to 5 nH, even without a snubber network
- Product Safety
  - Emergency shutdown ensures protection of contacting and test systems, with shutdown capability up to 10 kA in less than 290 ns
  - Adjustable current limitation provides additional protection for contacting
  - Bypass current path
- Cost Reduction and Flexibility
  - Integrated static pre-tests reduce costs and increase flexibility.
  - Cost-effective solution with applications for new DUT

Additional Features

- Easily expandable to conduct dynamic and static tests on one test platform
- Multisite and multistation test capability
- Expandable measurement equipment options via PXI(e)
- Optional static parameter & dynamic parameter tests
  (e.g. Idss, Igss, avalanche, multi-pulse)

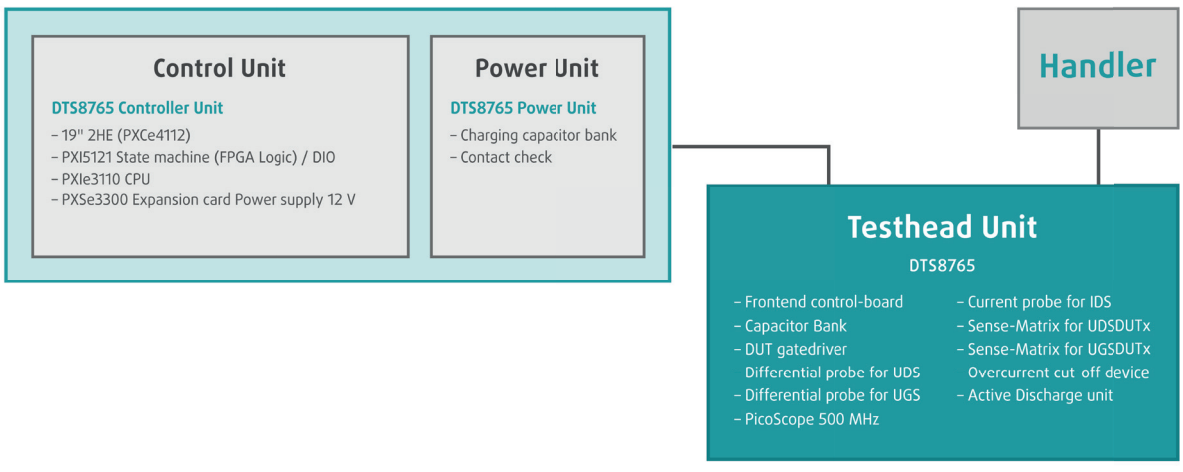
Applications

- Designed for medium to high-power devices up to 3,300 V | 20,000 A
- Suitable for diodes, MOSFETs (incl. SiC & GaN) and IGBTs
- Capable of handling low to high current DUTs, from discretes to modules
- Supports RBSOA, FBSOA, SCSOA and CIS / UIS tests
- Ideal for production testing as well as characterization

Benefits

- **High Performance:** Short test times, minimal inductance, wide bandwidth
- **Time-saving:** Dynamic and static tests combined on a single station significantly reduce index time
- **Highly Flexible:** Modular design to adapt to customer requirements, fast integration times, easy maintainability, high common part rate for spare parts
- **Easy re-use:** Designed for re-use of major instruments/components
- **Compact:** Saves valuable floor space
- **Cost-efficient:** Best price/performance ratio
- **Handler-independent:** Short integration times for new DUTs and machine suppliers

Test System Main Components



VX Instruments GmbH
Phone: +49 871 93 15 55-0
E-Mail: sales@vxinstruments.com