Power Semiconductor Static Testers

Dependable Power through Innovation

Power Assemblies

The principle of the static test is to fire a single pulse at the desired operating conditions in order to extract the device static characteristics from the measured waveforms. Pulsed power is the preferred method so that the rise in chip temperature is minimised during the test.

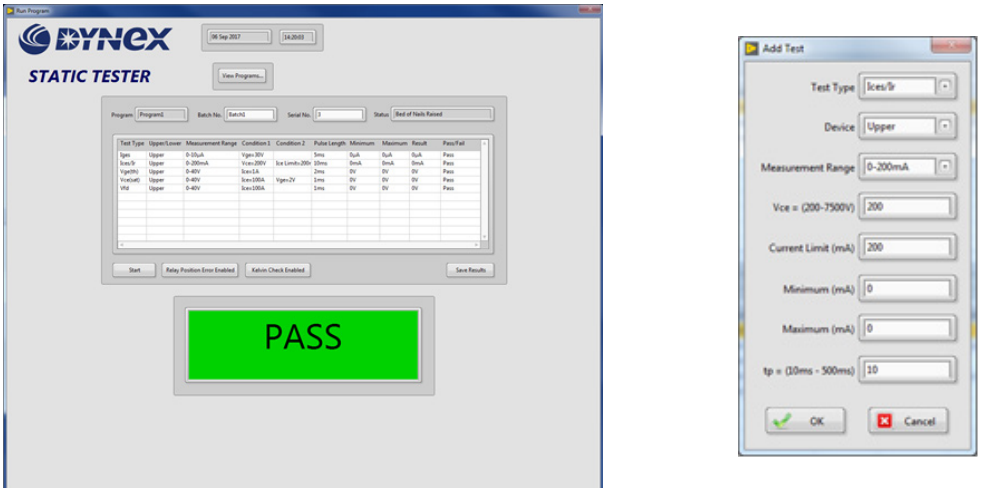
Dynex can offer a range of power semiconductor static testers designed to achieve the test conditions defined in IEC 60747- 8 & 9 and MIL-STD-750E for a number of device parameters, including:

- Collector-emitter saturation voltage (V_{CEsat}),
- Gate threshold voltage (V_{GEth}),
- Collector-emitter cut-off current (I_{CES}),
- Gate-emitter leakage current (I_{GES}),
- Diode forward voltage (V_F),
- Kelvin contact connectivity test between power and auxiliary terminals.

Dynex IGBT Module Static Tester

The device characteristics extracted from the static tests are important for an end-user to select the appropriate devices for an application and are required by IEC 60747 as a routine test. The static testers are designed to conduct these tests accurately, efficiently, reliably and safely. The key features of the testers include:

- Maximum test voltage up to 10 kV and maximum test current up to 6 kA – capable of testing most commercially available power modules.
- Maximum test temperature up to 175°C – suitable for testing SiC devices.
- Compatibility for a wide range of DUT packaging. Tester variations are available to suit either Power Module or Press-pack IGBTs.
- Productivity is excellent allowing for the completion of all tests in one go. With automatic parameter extraction from the measured waveforms and recorded data. With support for the scanning of device serial numbers to maintain full traceability.
- High accuracy is ensured by making the static test measurements using a 13-bit resolution analogue and digital converters for both measurements and command signals, providing 1 part in 8192 resolutions.
- The equipment is highly reliable, a custom design based on proven technology. An industrial PC provides reliable control and recording of test data. The test results can be backed up to an external drive or to a networked location.
- With a user-friendly control interface, all test parameters are set and displayed using a touchscreen control panel. Batch reports can be generated with summarised test results and pass rates.
- Comprehensive safety features including but not limited to; over temperature protection, smoke detection, safety interlocks and short circuit protection.



Sample screenshots of Dynex IGBT Module Static Tester user interface.

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