Data Sheet

ITC55100D-6KVN

Unclamped Inductive Load Tester

Integrated Technology Corporation

Overview

Model ITC55100D-6KVN is the latest generation of the industry standard series of ITC55100 testers. The system has been designed around a very powerful micro-controller. Its response time to the peak and zero current is improved ten times. Combined this gives greater accuracy for the charging times, avalanche times, and for the reported peak drain current.

Model ITC55100D-6KVN has a bipolar gate drive and CROWBAR/Diode Driver as an optional feature. The user can set a total gate drive of up to 28V and can select how much of the 28V is positive and how much of it is negative. This feature ensures that the device is held off during avalanche as required for certain devices.

The ITC55100D-6KVN performs several types of tests that conform to MIL-STD-750E Method 3470. Method 3470 tests the capability of N-Channel MOSFETs and IGBTs by stressing them to controlled energy levels. This is accomplished by the devices driving an unclamped inductive load.

Test Modes

- Single-Pulse Unclamped Inductive Switching (UIS)
- Single-Pulse Avalanche Stress (EAS)
- Repetitive Avalanche Energy (EAR)
- Repetitive Pulse to Failure (RPF)

Tests Performed

- Continuity test of device socket and/or contacts
- DC zero gate bias Drain-to-Source leakage test - pre and post avalanche
- Functional device test
- Avalanche test

Features

- Single Device Testing
- N Channel Only
- EAR 100 Million pulses
- Timing Resolution of 100ns
- Current Range: 0.1A to 200A, 0.1A Steps
- Avalanche Voltage to 6000V
- Bipolar Gate Drive with 28V swing
- CROWBAR/Diode Driver (Optional)
- New High Efficiency Kelvin Circuit
- Touch-Screen Program Entry/Control
- Waveform Capture/Display
- Internal Test Program Storage (20 files)
- High Speed Inductor Charging, Reduces Test Time
- Programmable Leakage Test Voltage
- Pre/Post Avalanche Leakage Test
- Avalanche Collapse Test
- Versatile Test Handler Control
- Up to 15 Hardware Sort Bins
- Improved Voltage/Current Accuracy
- Software Updates via Flash Download
- Password Control of Parameter Entry
- Operates with all ITC HV Inductor Load Boxes
- Simple, Complete User Calibration
- Built-in Self Test

Safety Features

- Test time-out
- Excessive leakage shutdown
- EMO Safety Switch
- External safety lockout
- Two parallel connected Manual Start push buttons
- Device currents are constantly monitored.
- Testing is terminated if currents exceed or fail to reach
- Programmable levels in a specified or calculated time.

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available interfaces

- Serial communication and control interface
- IEEE 488 GPIB control interface
- 15 bin handler control interface for improved sorting of failures for process control analysis

available options

- External Inductor Boxes
    Several models of External Inductor Boxes are available:
    ITC5514HV: Automatically selected inductance: 0.01 to 159.9mH (200A/6000V)
    ITC5517HV: Automatically selected inductance: 0.01 to 79.9mH (200A/6000V)
    ITC55IND-XXXmH: DISCRETE INDUCTOR, 0.5mH to 500mH maximum

- ITC55100D-6KVN-GD Golden DUT Test Fixture with a known good "golden" DUT installed and with ITC factory test results so the ITC55x00 tester can be verified for correct and accurate operation.