

# ITC55100

unclamped inductive load tester



## overview

Model ITC55100 is an improved version of the successful, industry-standard series of ITC5510 testers. The ITC55100 performs all of the tests of the ITC5510 series while adding many features that improve testing accuracy, test results collection, test results viewing, and multiple tester networking. The ITC55100 has the added capability of testing dual devices; N-channel, P-channel or combination.

Model ITC55100 performs ruggedness testing of power MOSFETs and IGBTs. It also tests single and dual diodes, and forward and reverse bias of IGBTs when used with an optional ITC55-RSF Output Selector Box.

The ITC55100 performs several types of tests that conform to MIL-STD-750C Method 3470. Method 3470 tests the capability of P- and 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)

## test 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/Dual Device Testing
- N channel, P channel, Mixed
- All Solid State Switching – No Relays
- Faster Testing
- Current Range: 0.1A to 200A, 0.1A Steps
- Avalanche Voltage to 2500V
- 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
- High Speed RS-485 PTNet Interface
- Password Control of Parameter Entry
- Operates with all ITC Inductor Load Boxes
- Interfaces with ITC55MUX4 & ITC55-RSF
- Built-in Self Test

## safety features

- Test time-out
- Excessive leakage shutdown
- 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
- ITC5510 compatible 5-bin handler control interface
- 15 bin handler control interface for improved sorting of failures for process control analysis

## available options

- External Inductor Boxes  
Seven models of External Inductor Boxes are available:  
ITC5514A: Manually selected inductance: 0.01 to 159.9mH (200A/2500V)  
ITC5514B: Automatically selected inductance: 0.01 to 159.9mH (200A/2500V)  
ITC5515: Automatically selected inductance: 0.1, 0.3, 1.0, 3.0 and 10mH (200A/2500V)  
ITC5516: Automatically selected inductance: 0.001 to 0.300mH (400A/2500V)  
ITC55140: Automatically selected, high speed switching, inductance: 0.01 to 159.9mH (200A/1500V)  
ITC5517: Automatically selected inductance: 0.01 to 79.9mH (200A/2500V)  
ITC55170: Automatically selected, high speed switching, inductance: 0.01 to 79.9mH (200A/1500V)
- ITC55MUX4 Box to allow multiple devices to be tested by the same tester.
- ITC55-RSF Output Selector Box allows the ITC55100 Testers to test various configurations of MOSFETs, IGBTs, and dual and single diodes without having to replacing the DUT fixture up to 1500V avalanche voltage.
- ITC55HVD1 (High Voltage Diode Interface Box) - The ITC55HVD1 is a high voltage avalanche interface adapter box option for testing diodes using the ITC55100 at voltages up to 2500v.
- MTSDGEN Generic Test Socket may be used with the ITC55100 tester to provide a convenient method of manual avalanche testing for single or dual devices.

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