

ITC52300

power cycling semiconductor
life test system



overview

The ITC52300 is designed for high-volume intermittent or steady-state operating life testing on Insulated Gate Bipolar Transistors (IGBTs), power MOSFETs, SiC, JFET, Diodes, and other Bipolar Devices in a production environment. (The ITC52300 is an enhanced version of the ITC5230.)

Testing meets the requirements of MIL-STD-750, Methods 1026.5, 1027.3, 1036.3, 1037.3, and 1042.4.

Once set up, the operation of the ITC52300 is fully automatic and can be operated around the clock without operator attention.

Test devices plug into DUT boards that are plugged into power and monitoring circuits inside a chamber that can hold up to 16 different device test boards with a maximum of 100 devices per board.

Each test board has a Test Complete LED that is turned on when the devices on that board have completed the test cycle.

Because each board is individually tracked, test boards can be inserted or removed from the test chamber without negating the test cycle on the other boards.

Custom daughter boards or a general purpose daughter board with custom inserts configure the package type or pinouts, allowing the ITC52300 to handle a wide variety of device types and packages.

All boards can be used in the ITC52300 model, but new measurement and test features may not be operational with the older boards.

ITC52300 Device testing is controlled and monitored by a computer running a Windows OS with a custom user interface.

On Model C DUT boards, the Controller measures each device's ON current and junction voltage and converts the measurements to die temperatures using customer supplied conversion constants K-factor. (Not available on the generic DUT board.)

Additionally, ON current, ON time, device polarity, and test voltage are computer programmable (per board), allowing each board to test different device types and different packages. For Model B DUT boards, On time must be the same for all boards and test voltage is switch selected on each board.

For operator safety, all VDD power to all test boards is removed and the chamber blower is turned off when the test chamber door is opened on the ITC52300. Also, device testing is interrupted but automatically restarted with a cooling cycle when the chamber door is closed.

While the chamber door is open, VDD power to any board and the chamber blower can be manually turned on. This feature allows the operator to accurately adjust the ON current before closing the door and starting a test cycle.

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features

- Good devices are not physically or electrically damaged
- Test events and test results may be exported for manipulation and viewing without interrupting the test cycle
- Reports can be generated at any time
- Custom DUT daughter boards may be provided by ITC to meet the requirements of any customer
- User-friendly and interactive menus
- Maximum of 100 DUTs per board
- Device type/polarity controlled by board jumpers and readable by the controller
- All DUTs can be measured for temperature on Model C boards (On generic boards, DUT #15 is wired to measure junction temperature)
- Each board's cool/heat cycle computer controlled

capabilities

- Tests power Bipolars, Hybrids, IGBTs, MOSFETs, SiC, JFET, Diode and SMDs using Military Standard: MIL-STD-750, Methods 1026.3, 1027.1, 1036.3, 1037, 1039, and 1042.1
- Intermittent or steady-state operating life test
- Board independent device and polarity selection
- 10-Amp VDD 24V/48 V power supply for each device board
- Individual device monitoring and data logging
- Maximum of 100 devices per DUT board available
- Device power of 480 watts per DUT board
- A maximum of 16 DUT boards
- DUT test boards may be inserted at any time without interrupting the test cycle

typical daughter boards

TO-3/TO-66, TO-39/TO-5, TO-61

TO-220/TO-218/TO-3P (Plastic)

TO-254/TO-218/TO-247 (Metal)

Edge Card Connector

Other DUT board configurations are available. Custom boards can be developed to fit specific devices or customer requirements.

available options

Thermocouple Option: The 16 Channels of Thermocouples option that capable to measure the case temperature of DUTs and data logging the High, Low, delta Temperatures.

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