exatron
excellence in electronics

Hot-Cold Bench Test

PET-3

- Full temperature range: –55°C to +155°C, +/- 0.1°C
- Ideal for Bench Test applications
- Allows loading and removal of DUT even when cold
- Adjustable contact pressure
- Optimized for RF Test and Particle Interconnect Test Sockets
- Self aligning test socket assembly snaps in/out
- Unique fluid based heating and cooling method

Heat Exchanger

When the blue safety shield is lifted, the Heat Exchanger is automatically raised off the DUT in the test socket. The DUT is removed and replaced with a new DUT. The safety shield is closed and the Heat Exchanger lowers and clamps onto the DUT in the test socket. A soak time of approximately 5 seconds should be allowed prior to testing.

During test, only the DUT and its, socket are affected thermally.

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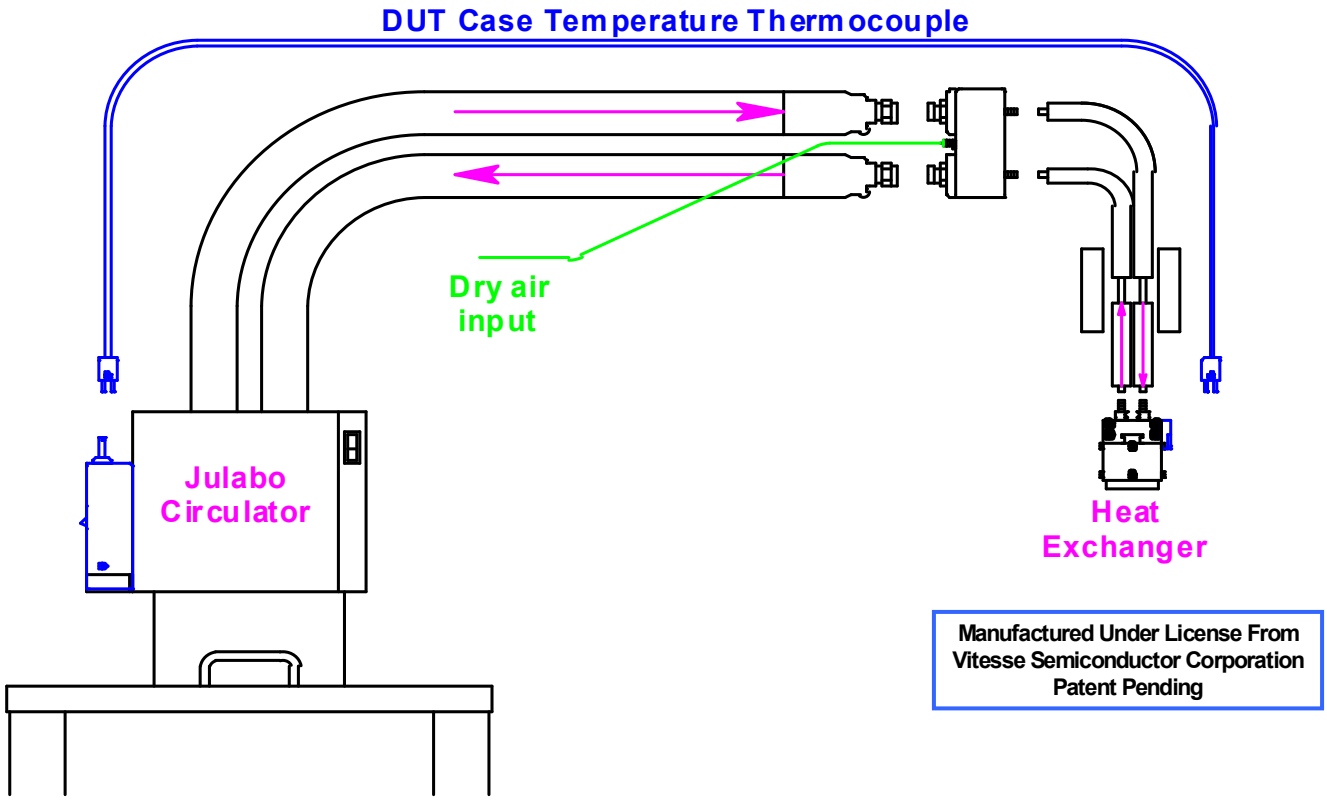

The PET-3 automates **hot** & **cold** bench testing of electronic components. Fluid flowing through a brass block called a Heat Exchanger adds or subtracts heat from the Device Under Test (DUT). No forced air or resistive heaters are used. The Heat Exchanger clamps the DUT into either a conventional test socket or an Exatron Particle Interconnect test socket. Heat transfers directly to the case of the DUT. The surrounding test socket, DUT board, and test electronics remain at or near room temperature. Traditional frost problems are greatly reduced. A very small thermal shield is built around the Heat Exchanger. This shield allows dry air and/or dry nitrogen to purge the Heat Exchanger and test socket. The operator can open the socket and remove the DUT without frost forming on the Heat Exchanger or surrounding DUT board. There is no need to wait for the socket to return to room temperature.

A Julabo circulator heats or chills a 3M fluid to +/- 0.1°C. The fluid flows through the Heat Exchanger, passing within a fraction of an inch of the DUT. Depending on the fluid and circulator unit chosen, it is possible to test from –55°C to + 155°C. Thermal losses and the case temperature of the DUT are detected with a thermocouple (TC) that is built into the face of the Heat Exchanger. This TC continuously monitors the case temperature of the DUT during the entire test. Any thermal losses or heat generated by the DUT can be calibrated out.

The Heat Exchanger can be removed from the PET-3 without tools. Optional software allows PC control of the DUT temperature at all times. Optional hardware allows for remote control of the test socket mechanical pressure. All test sockets, test hardware, Heat Exchangers, 3M fluid, and Julabo circulators can be added to Exatron Model 900HC and 8000HC Handlers. This eliminates hand-test to production-test correlation problems.

The PET-3 is mounted on a 12" square base plate for bench testing. Standard socket mount tooling is ideal for "rack & stack" applications. The base can be replaced with direct dock tooling for mounting a PET-3 to the top of any large ATE test head.

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