



Ironwood
ELECTRONICS

**High Performance
Sockets & Adapters
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Thermal Socket Lid & Control Systems



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Introduction

Thermal Socket Lid & Control Systems enable temperature control of IC devices during thermal characterization. Direct thermal contact technology provides accurate and stable temperatures on IC resulting in precise characterization.



Thermal Socket Lid

TSL – Thermal Socket Lid

Utilizes Direct Contact Technology temperature control system for forcing and maintaining the temperature of IC's during test and characterization

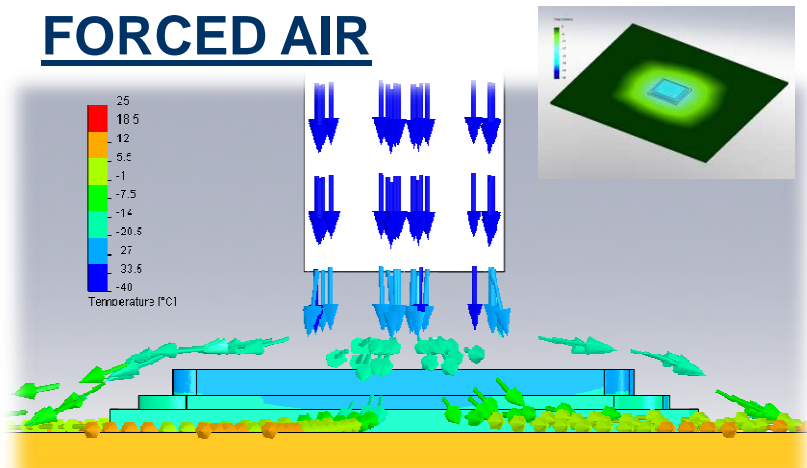
Advanced Features

- ✓ **Compact**
- ✓ **Standard Footprint**
- ✓ **Adaptable**
- ✓ **Quiet Operation**
- ✓ **Vibration Free**
- ✓ **Uniform Temperature Contact Area**
- ✓ **Excellent Thermal Stability**
- ✓ **Built in Condensation Control**
- ✓ **Fast and Easy Service**
- ✓ **No residue Contact**
- ✓ **Low Cost**
- ✓ **Fast Delivery**



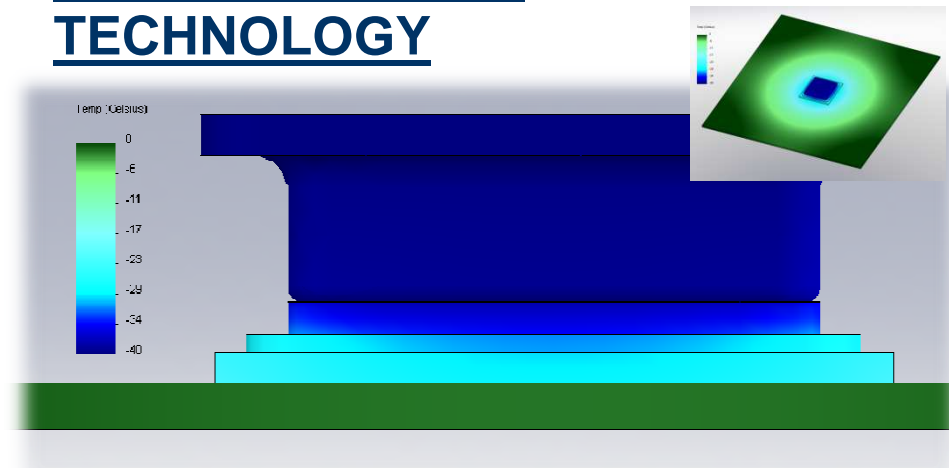
Uniform and Stable IC Temperature

FORCED AIR



- Limited management of high power devices
- Overshoot of Air temperature affects PCB and peripheral components
- Colder airstream needed for target
- Temperature of device affected by air flow access
- System is relatively bulky, higher noise dB

DIRECT CONTACT TECHNOLOGY

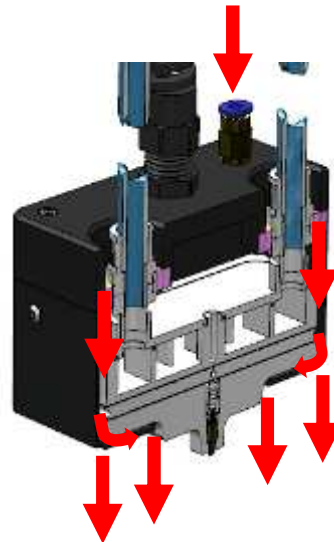


- Single target set point can readily handle management of high power devices
- Overcompensation of set point temperatures not required
- Direct touch contact on test device
- Size manageable by interchangeable pedestals
- Compact, low noise system

Condensation Control

- Clean Dry Air (CDA) or Nitrogen Purge Compatible
- Positive Pressure Displacement (PPD) Technology
- Ported and plumbed to create a frost resistant atmosphere surrounding the test location

With Condensation Control



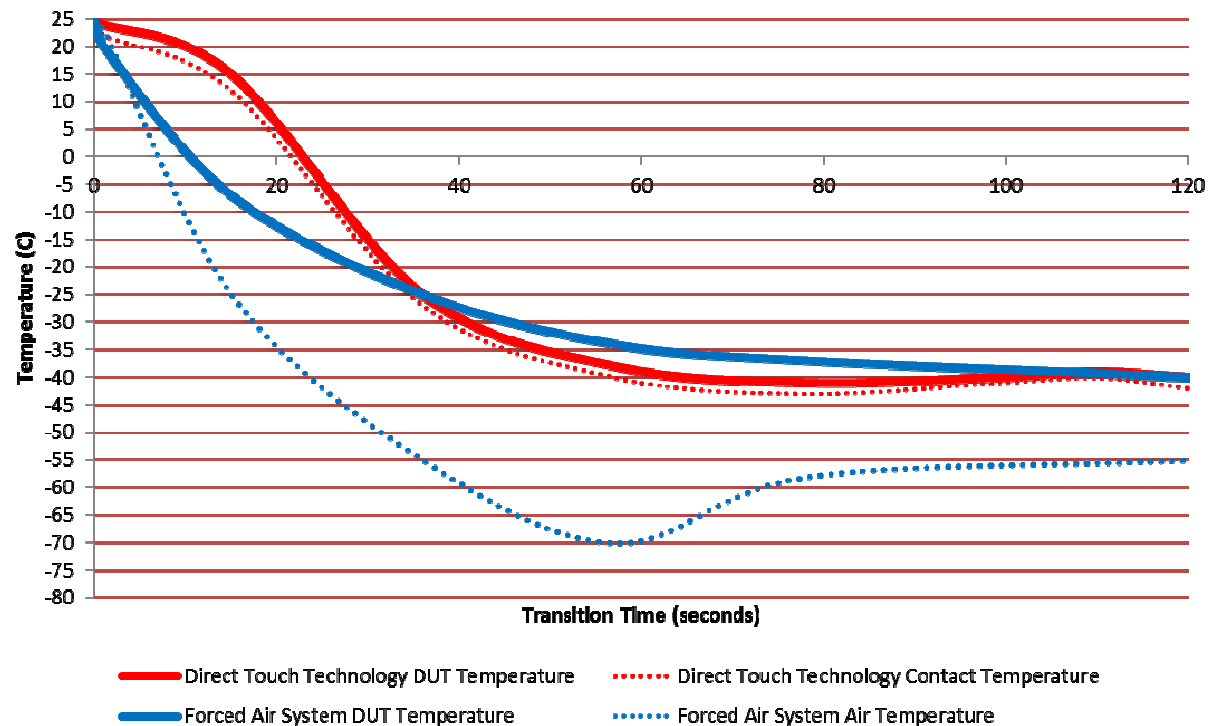
Without Condensation Control



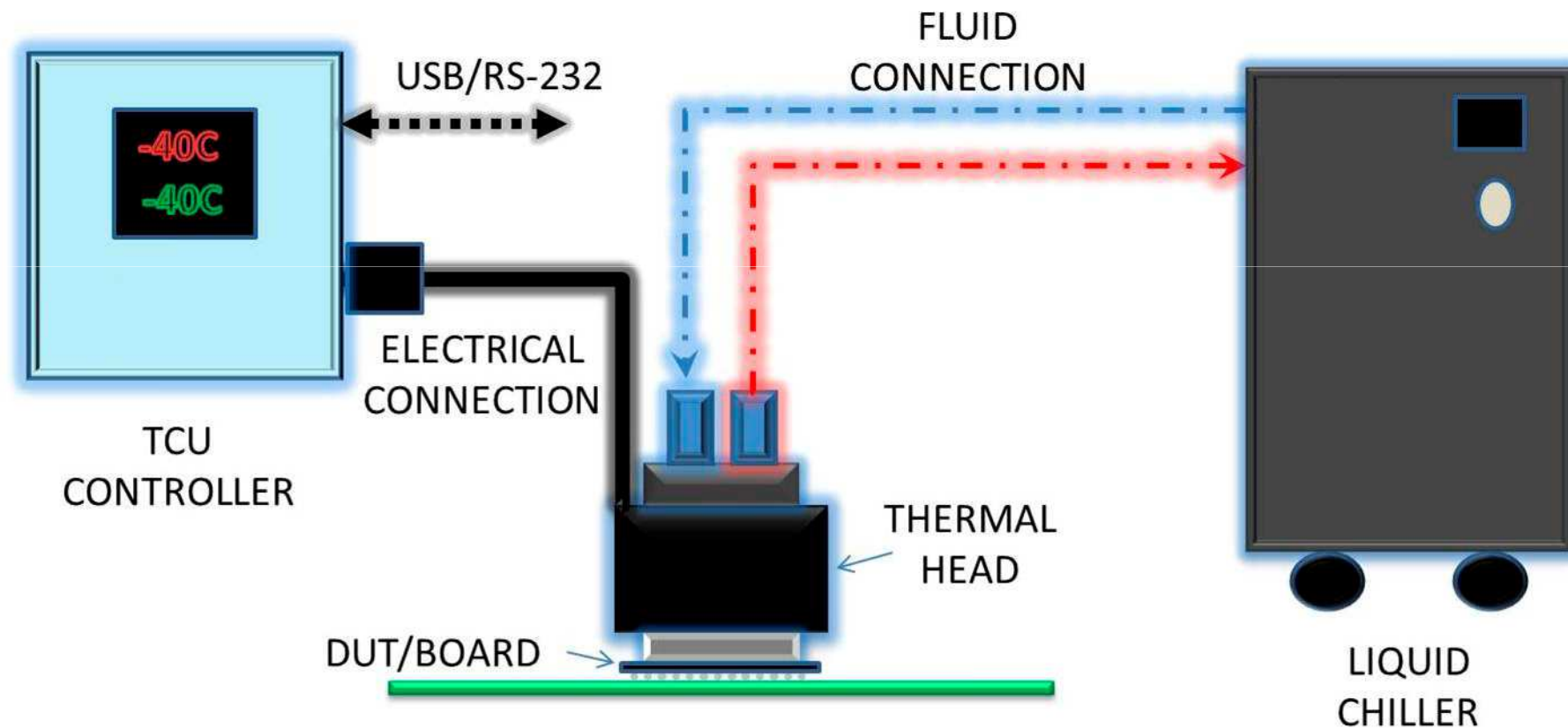
Technology Comparison

- Uniform System Temperature
- Thermal Socket Lid temperatures are accurate even at the DUT interface
- No overstress of peripheral components, due to temperature control just around DUT
- Forced air systems need to “overdrive” the high speed air temperature to compensate for losses and inefficiency

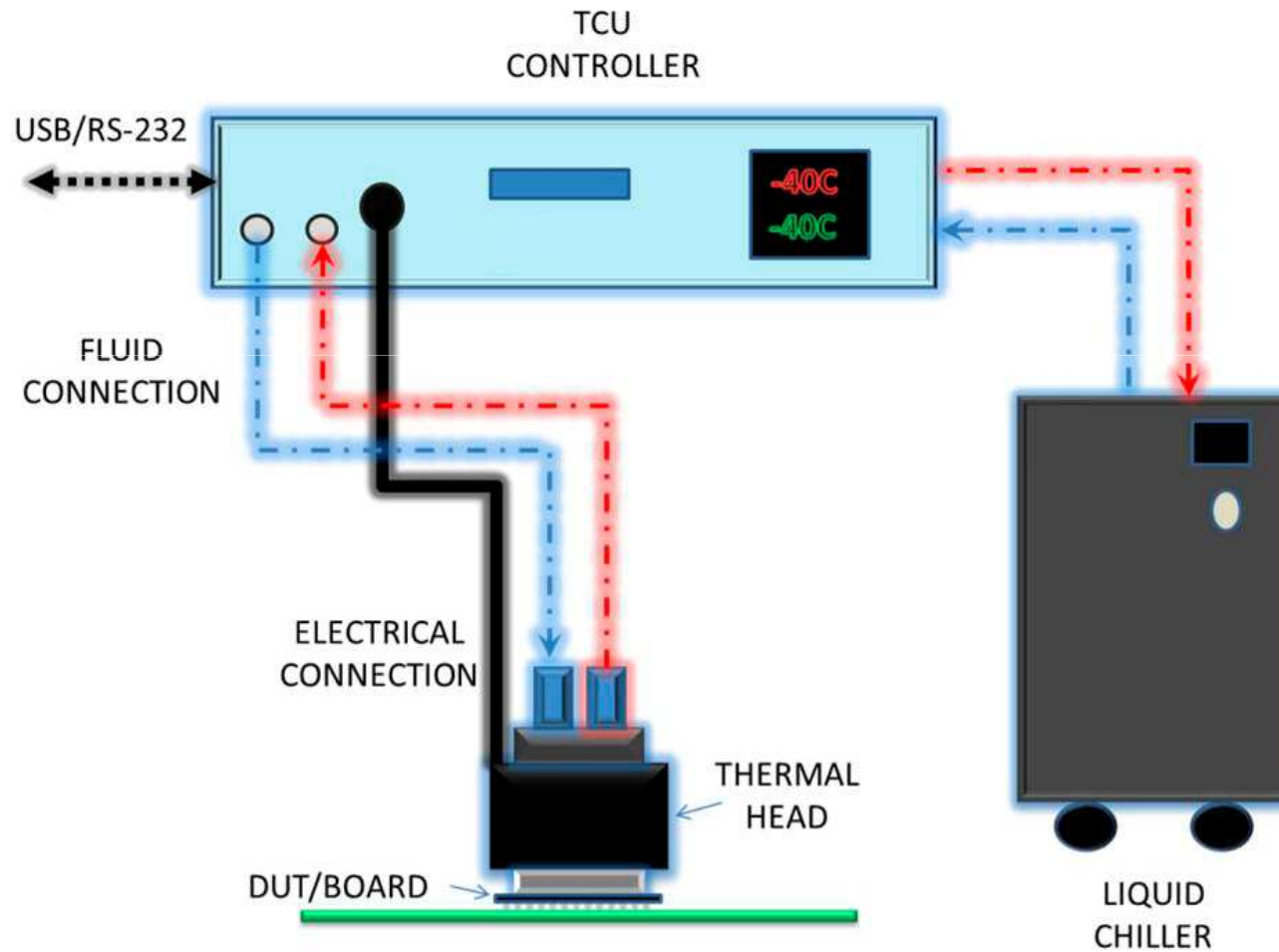
Direct Touch Technology vs. Forced Air System



System Diagram & Connections I



System Diagram & Connections II



Thermal Socket Lid

Model	TSL-ST-01
Temperature Range	-50°C to +125°C (0W Load)
Temperature Sensor	100C Platinum RTD Thermally Isolated Compliant Sensor for True Case Measurement
Cooling Media	Liquid (Ethylene Glycol and Distilled Water Mix)
Cooling Element	Thermoelectric Module
Device Interface	Removable Device Adapters Board and Socket Adaptable
Device Actuation Control	Pure Z-axis movement with configurable hard stop
Condensation Control	Integrated Dry Air Port
Safety Features	Over Temperature Protection
Weight	1.0kg



Electrical
Line

Z-axis
handle

Insulated
Liquid Lines



Package & Socket Adapter

- Easily adapt the Thermal Socket Lid to different sockets, packages and boards for a universal solution
- Accommodates most packages from 3mm to 40mm

Compression Plate for thermal socket lid to adapt various IC sizes: **TSL-CP-6000 series**

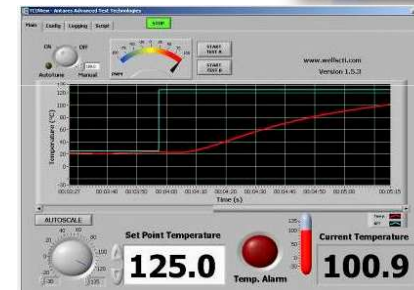


Socket Frame to adapt thermal socket lid to any socket body: **TSL-SF-6000 series**



Thermal Socket Lid Controller

Model	TSL-CT-01
Output	24V 12A Variable Heating/Cooling Voltage for Optimal Performance
Front Panel Display	Two line display with push button selection
Alarms	High and Low Temperature Alarms
Resolution	+/- 0.1°C
Stability	+/- 1.0°C
Control Method	PID Algorithm Based
Temperature Sensor	100ohm Platinum RTD
Input	
Power	100 – 240V, 5.0A
Safety Features	Over Temperature Protection Over Current Protection Under/Over Voltage Protection
Communication	RS232/USB Serial Interface
Software	Windows Compatible TCUView™



Thermal System Chiller

Model	TSL-CH-01
Temperature Range	-10°C to +25°C
Resolution	+/- 0.1°C
Stability	+/- 3.0°C
Power	115/230V 50/60Hz Compatible Units



Thanks for your time and attention !!



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