



# TEMPERATURE TESTING



A TyRex Technology Family Company

## High Temperature

- Causes changes in factors such as resistance, inductance, capacitance, power factors, and dielectric constants.
- Destroys moving parts through softening and swelling of thermal insulation.
- Causes finished surfaces to swell.
- Causes parts to age through heat aging.
- Promotes oxidation and chemical reactions.
- Changes viscosity of and evaporates lubricants.
- Causes structural overloading due to physical expansion.

## Low Temperature

- Embrittles and lowers flexibility of resin and rubber.
- Changes electrical constants.
- Causes moisture to freeze.
- Increases viscosity of lubricants and causes gelling.
- Increases heat loss.
- Causes finished surfaces to crack.
- Causes structural overloading due to physical contraction.

## Thermal Cycling / Shock

- Solder joint cracks.
- Distortion or cracking of PCB.
- Changes in component parametric values.
- Potting / seal failures.
- Failures of circuit components due to mechanical stresses caused by thermal expansion and contraction at dissimilar rates.

## Humidity

- Moisture invades porous substances causing swelling, oxidation from conductance and corrosion between conductive materials.
- Extremely low humidity causes brittleness and granulation, potting and seal failures, conformal coating compound failure, electrical shorts due to condensation, oxidation and/or galvanic corrosion of metals, and dendrite growth.

## Austin Reliability Labs (ARL)

*Your accredited product reliability lab and partner*

**Backed by an expert staff and test methods accredited to the ISO/IEC 17025 standards, ARL provides the reliability tests your products need and develops test strategies at the right price.** We have 22 temperature and humidity test chambers - ready for any type of environmental testing needs.

Our test chambers are available for steady-state stability testing, basic temperature cycling or accelerated stress testing in a variety of sizes to accommodate your products. All chambers feature NIST traceable calibrations and our thermal experts are ready to assist in thermocoupling and real-time temperature monitoring of your products. Our team can also help evaluate your qualification and reliability test plan to make sure the tests you're running are the best for your unique product and its uses. Please contact your ARL representative for more information today!

# YOUR SUCCESS IS OUR SUCCESS



**Your Product Reliability Partner**



## ABOUT US ...

Our lab is a place where we recognize the hard work and passion that went into the design and development of your product. We have that same passion for excellence, and want to find any problems that your product may have in an effort to perfect it. At **Austin Reliability Labs**, we understand that a reputation is something that builds over time, and we support that by making long-term partnerships with our clients. **With that in mind, we not only write and develop all of the tests that we perform, but, unlike other labs, we also provide pass / fail reports on all of our tests and decipher the results for you in order to maximize your product's success.**

**Our full array of testing services include the following:**

**HALT / HASS**

**BATTERY LIFE TESTS**

**QUALIFICATION TESTS**

**ENVIRONMENTAL TESTS**

**MECHANICAL TESTS**

**ADDITIVE MFG. TESTS**

**CUSTOM TESTS**

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