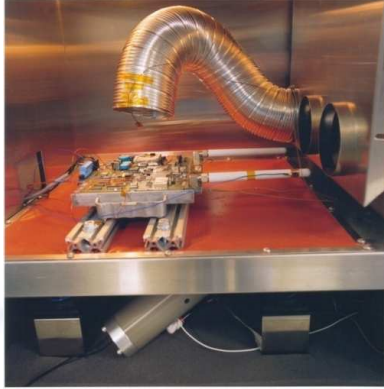
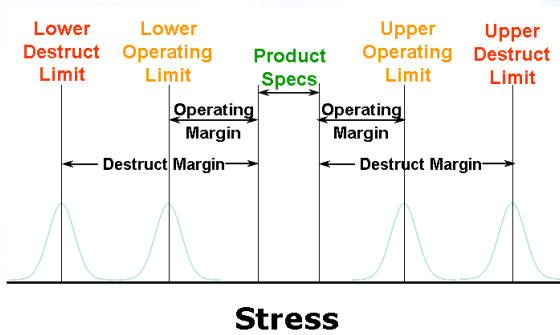


HALT Test Service



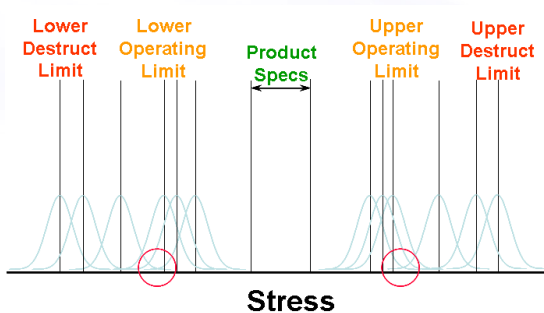
HALT

- Highly Accelerated Life Test (HALT)
- To verify robustness of (electronic) system in design phase
- Combined temperature and vibration test
- Stress product outside specification



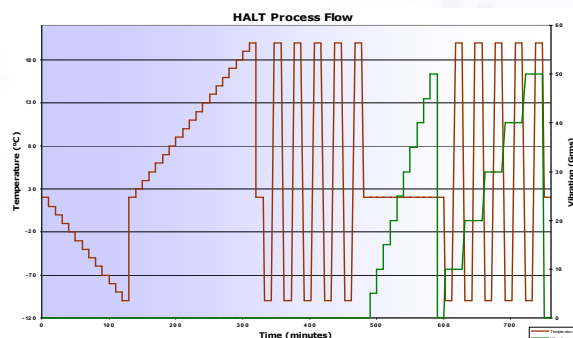
HALT test goal

- Determination of operating and destruct limits
- Combined temperature and vibration test under operation found with burn-in test



HASS

- Highly Accelerated Stress Screening
- To verify robustness of (electronic) system during production
- Monitor production process
- Monitor for failures that are not



HALT test procedure

- Temperature step stress
- Temperature cycles (5)
- Vibration step test
- Combined temperature and vibration test @ tested limits

ARTC Accelerated Reliability Test Center

- World Wide Network
- Founded by QualMark Corp.
- State of the art test lab
- Independent evaluation of your products

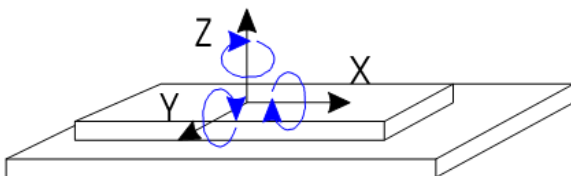


ARTC Accelerated Reliability Test Center

- Omniaxial Vibration System
- Multipoint Temperature Sensing
- Multipoint accelerometers
- Electrical Stimulating and Monitoring Test

QualMark OVS 1.5 HP

- Temperature range -100°C to +200°C, ramp rate up to 60 K/min
- Table size: 450 x 450 x 400 mm
- Liquid Nitrogen cooling
- Positioning accuracy of 0.01mm
- Three independent video cameras
- Excites six axes, 3 linear and 3 rotational up to 45 Grms
- Broadband, 2 Hz to 10 kHz random vibration on rigid shaker table



QualMark OVS 4.0

- Table size: 1200 x 1200 x 900/1390mm
- Max load: 180 kg
- Operated by MASER Engineering
- Partner lab facility