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Experimental Aspects of High Accelerated Life Tests (HALT)

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Abstract

Experimental aspects of High Accelerated Life Tests (HALT)are presented. A statistical analysis of test results which allows to define the different characteristic areas of a product (operating and destruction limits) is given. In particular, some tests on electronic board using thermal and vibration stresses have been investigated.

Keywords: *Reliability, test, statistical analysis, High Accelerated Life Tests (HALT)*

Symbols:

LIS	*Lower Limit of Specification*	$m_{LSO}(s)$	*Mean of LSO for the stress s*
LIO	*Operational Lower Limit*	$s_{LSO}(s)$	*Standard deviation of LSO for the stress s*
LID	*Lower Limit of Destruction*	$m_{LSD}(s)$	*Mean of LSD for the stress s*
LSS	*Higher Limit of Specification*	$s_{LSD}(s)$	*Standard deviation of LSD for the stress s*
LSO	*Operational Higher Limit*	$LIO(s)^i$	*Stress value of LIO for the product i*
LSD	*Higher Limi of Destruction*	$LSO(s)^i$	*Stress value of LSO for the product i*
$m_{LIO}(s)$	*Mean of LIO for the stress s*	$LID(s)^i$	*Stress value of LID for the product i*
$s_{LIO}(s)$	*Standard deviation of LIO for the stress s*	$LSD(s)^i$	*Stress value of LSD for the product i*
$m_{LID}(s)$	*Mean of LID for the stress s*	*(1-a)*	*Confidence level*
$s_{LID}(s)$	*Standard deviation of LID for the stress s*	*f(u)*	*Normal Centered distribution function*

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