

ENVIRONMENTAL TEST SYSTEMS for electronic devices and modules

<i>I. Climatic Stress Tests</i>	
1	Temperature Storage T= -70°C...+300°C
2	Temperature Cycling T= -70°C...+200°C
3	Temperature Shock T= -70°C...+200°C air-to-air
4	Thermal Shock T= -65°C...+150°C liquid-to-liquid
5	Climatic Storage T= -70 °C...+180°C; in range T= +10 °C... +95 °C, RH= 10-98 %
6	HAST (Highly Accelerated Stress Test) T= 105°C ... 142°C; RH: 75-100 %
7	PTC (Power and Temperature Cycling) T= -40°C...+130°C; V= 5-35 V; I= 0-100 A
8	HTOL (High Temperature Operating Life) T ≤ +150°C
9	LTOL (Low Temperature Operating Life) T ≥ -65°C
10	HTRB (High Temperature Reversed Bias) HTGS (High Temperature Gate Source) T= 50°C...200°C; VDS= -1200 V ... +1200 V; VGS= -60 V... +60 V
11	H3TRB (High Humidity, High Temperature Reverse Bias) T= 85°C; RH= 85 %; V= 0-300 V; I= 0-450 mA
12	IOL (Intermittent Operating Life) T= 75°C...175°C; IDS ≤ 12,5 A; VDS ≤ 12 V
13	THB (Temperature Humidity Biased) T= 85°C; RH= 85 %; V= 0-250 V; I= 0-6000 mA
14	Burn-In static, dynamic, real-time monitoring T ≤ 150°C; Umax = 20V, Imax = 12A
<i>II. Mechanical Tests</i>	
1	Centrifuge constant acceleration [acc. standard MIL 883, method 2001] up to 30.000g acceleration
2	Shaker systems for mechanical vibration vector force: 5880 Newton; amplitude: +/- 12,7 mm; frequency: 5-3000 Hertz; velocitymax: 1,2 m/s; acceleration max: 70g
3	Systems for mechanical shock tests acceleration max: 3.000g, impulse durance: 0,2 to 11ms -different combinations of acceleration and impulse durance-
Tests according to standards: shock half-sine: IEC 60 068-2-27; vibration sinusoidal: 60 068-2-6; vibration random: 60 068-2-64; bump: 60 068-2-29	
<i>III. Solderability Tests</i>	
1	Access to Reflow oven Access to reflow oven to provide reflow test according to e.g. IPC/JEDEC J-STD-020D.1 with RoodMicrotec people
2	Solder bath lead / lead-free