

TDK-Lambda

Qualification Report Summary for: HQA2W120W280V-007

Sample universe: Units manufactured at TDK_DTC in Week 32 - 2015, Lot number: 622M73

	Samples	Failures	Notes
Visual Inspection			
Inspect for quality and workmanship	75	0	
Dimension check			
Inspect physical dimensions against mechanical requirements	100	0	
Initial characterization			
Measurements of all applicable tests of manufacturing test requirements.	150	0	
HALT Low Temperature Limits Test - IPC9592A D.1.1.1			
Decrease temperature until UUT is out of regulation	3	0	1)
HALT High Temperature Limits Test - IPC9592A D.1.1.2			
Increase temperature until UUT is out of regulation	3	0	1)
HALT Input Voltage Test - IPC9592A D.1.1.5			
Increase input voltage until UUT is out of regulation. This test is performed at both low temperature -40°C (found in D.1.1.1) and high temperature 50°C (found in D.1.1.2)	3	0	1)
HALT Output Load Test - IPC9592A D.1.1.6			
Increase output load until UUT is out of regulation at high temperature 50 °C (found in D.1.1.2)	3	0	1)
HALT Combined Stress Test - IPC9592A D.1.1.7			
Operate the device while combining the environmental effects of random vibration and rapid thermal cycling along with input voltage and output load transients.	3	0	1)
Humidity - Consistent with MIL-STD 883 Method 1004.7			
Samples are preconditioned for 72 hours at 85°C/85%RH un-powered. Samples are exposed to 85% relative humidity at a temperature of 85°C. Input voltage is at high line (40V) and minimum output load. Samples are on for 2 minutes and off for 6 hours.			
1000 hours	30	0	
Life Test - High Temperature Operating Bias (HTOB) - Consistent with MIL-STD 883 Method 1005.8			
Ambient temperature is set to stabilize the baseplate "hot spot" Tref point at approximately 77°C±5°C			
1000 hours	30	0	
Temperature Cycling Test -Consistent with MIL-STD-883F Method 1010.8			
Samples exposed in an air-to-air thermal shock chamber between temperatures of: -55 to 100°C at a ramp rate of approximately 60°C per minute. Dwell time at each extreme is 15 minutes.			
After approximately every 100 cycles, all parts are visually check and tested with the full complement of tests including, but not limited to efficiency, Ripple, Line regulation, and Load regulation			
700 thermal cycles	30	0	
Power and Temperature Cycle (PTC) - IPC9592A 5.2.7			
Samples exposed to a combined power thermal cycling at 2.1 amps output load. The ambient temperature range is -40 to +60.The dwell time at each temperature is approximately 18minutes. The thermal ramp rate is approximately 15°C to 25°C per minute. Input voltage is high line (40V)			
100 thermal cycles	3	0	
Barometric Pressure, Reduced (Altitude Operation) Consistent with MIL-STD-883 Method 1001			
Barometric pressure is reduced to 33.00mm of mercury/70,000 feet for 20 minutes. Two samples were setup with high line input voltage and no load. Samples were monitored for current variation and/or corona during pump down, at 70,000 feet, and during return to normal pressure.			
70,000ft	2	0	
Vibration: MIL-STD-202G, Method 201A.			
Unpowered, sweep 1: 5 to 50 Hz at 0.5g, sweep 2: 50 to 500 Hz at 1.5g, three axis	3	0	
Shock: MIL-STD-202G, Method 213B, Table 213-1, Test Condition I			
Unpowered, 50G half sine 6ms, three axis	3	0	
Drop Test - Tested per ISTA2A standard			
Shipping container test (carton = 350 pieces)	1 ctg		
Notes			CAR
1) HALT tests are marginality test and do not fail.			

Passed: Michael Hay - Representative of Qualification and Test - November 20, 2015