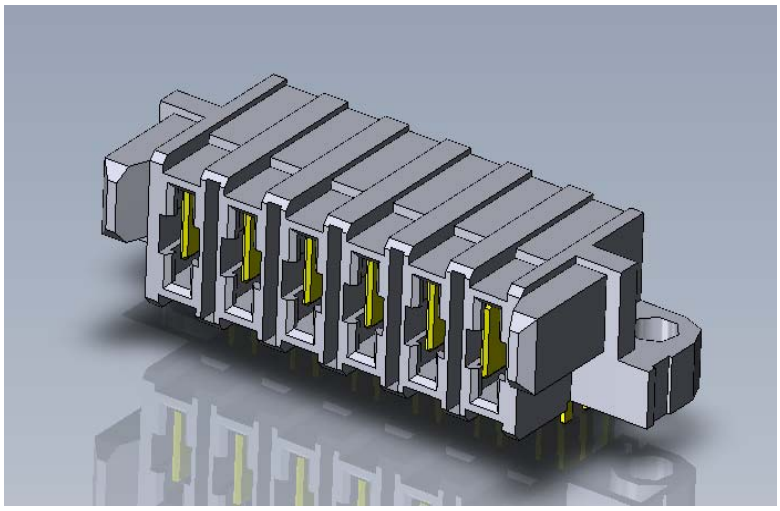
Project Number: Design Verification Test Report	Tracking Code: 099830_Report_Rev_1		
Requested by: Adam owens	Date: 10/6/2010	Product Rev: A	
Part #: MPS-08-01-L-RA-SD\MPT-08-01-T-RA-SD	Lot #: 6/10/2010	Tech: Aaron McKim	Eng: Eric Mings
Part description: MPS		Qty to test: 6	
Test Start: 8/30/2010	Test Completed: 9/25/2010		



Design Verification Test Report
MPS
MPS-08-01-L-RA-SD\MPT-08-01-T-RA-SD

CERTIFICATION

All instruments and measuring equipment were calibrated to National Institute for Standards and Technology (NIST) traceable standards according to IS0 10012-l and ANSI/NCSL 2540-1, as applicable.

SCOPE

To perform the following tests: test per the "MPS IR_DWV" test plan.

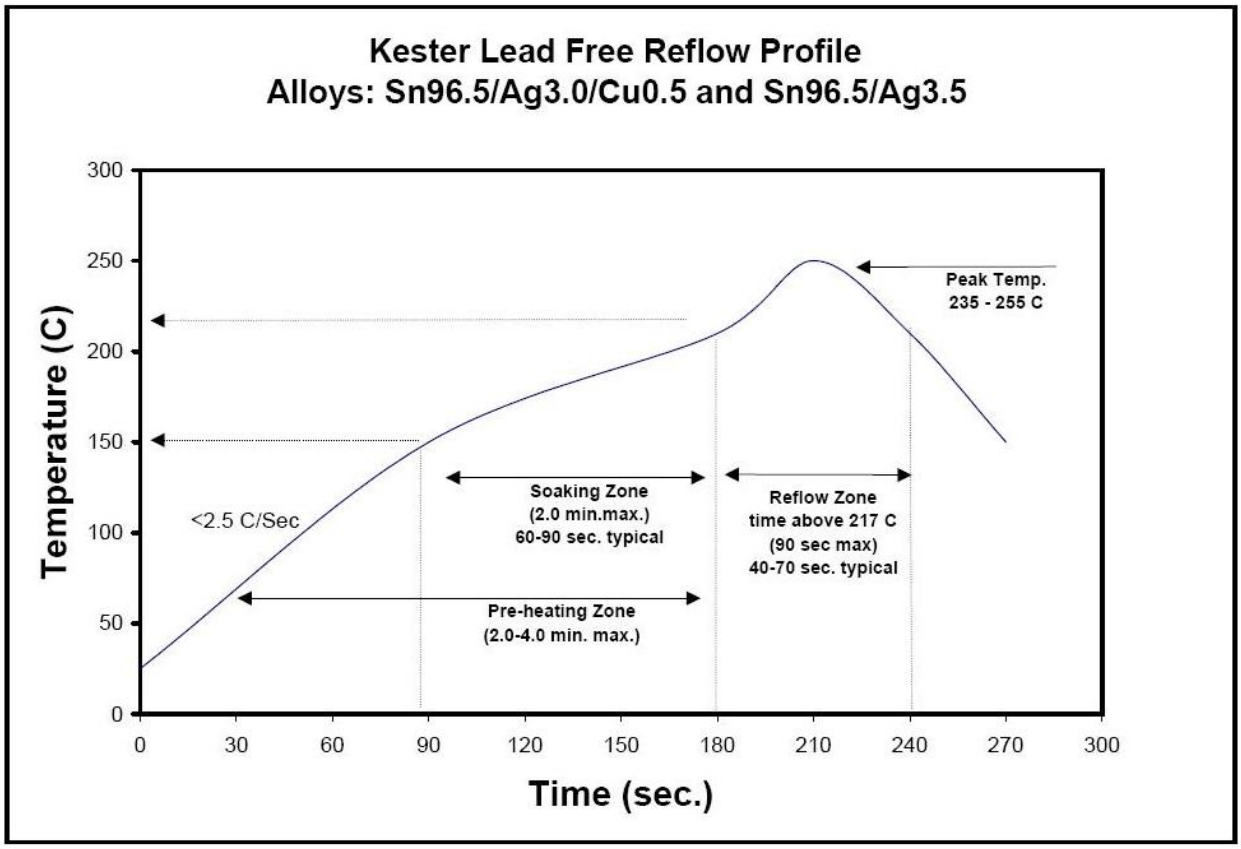
APPLICABLE DOCUMENTS

Standards: EIA Publication 364

TEST SAMPLES AND PREPARATION

1) All materials were manufactured in accordance with the applicable product specification.
2) All test samples were identified and encoded to maintain traceability throughout the test sequences.
3) After soldering, the parts to be used for LLCR and DWV/IR testing were cleaned according to TLWI-0001.
4) Either an automated cleaning procedure or an ultrasonic cleaning procedure may be used.
5) The automated procedure is used with aqueous compatible soldering materials.
6) Parts not intended for testing LLCR and DWV/IR are visually inspected and cleaned if necessary.
7) Any additional preparation will be noted in the individual test sequences.
8) Solder Information: Lead free
9) Re-Flow Time/Temp: See accompanying profile.
10) Samtec Test PCBs used: PCB-102159-TST-XX

TYPICAL OVEN PROFILE (Soldering Parts to Test Boards)



FLOWCHARTS

IR & DWV

TEST STEP	GROUP A1 2 Mated Sets Break Down - Pin to Pin	GROUP A2 2 Unmated of Part # Being Tested Break Down - Pin to Pin	GROUP A3 2 Unmated of Mating Part # Break Down - Pin to Pin	GROUP B 2 Mated Sets Pin to Pin
01	DWV/Break Down Voltage	DWV/Break Down Voltage	DWV/Break Down Voltage	IR & DWV at test voltage (on both mated sets and on each connector unmated)
02				Thermal Aging (both sets unmated)
03				IR & DWV at test voltage (on both mated sets and on each connector unmated)
04				Cyclic Humidity (both sets unmated)
05				IR & DWV at test voltage (on both mated sets and on each connector unmated)

*** - DWV on group B to be performed at Test Voltage**
DWV test voltage is equal to 75% of the lowest break down voltage from group A1, A2 or A3
Thermal Aging = EIA-364-17, Test Condition 4 (105 °C)
Time Condition 'B' (250 hours)
Humidity = EIA-364-31, Test Condition B (240 Hours)
and Method III (+25° C to +65° C @ 90%RH to 98% RH)
ambient pre-condition and delete steps 7a and 7b
IR = EIA-364-21
DWV = EIA-364-20, Test Condition 1

ATTRIBUTE DEFINITIONS

The following is a brief, simplified description of attributes.

INSULATION RESISTANCE (IR):

To determine the resistance of insulation materials to leakage of current through or on the surface of these materials when a DC potential is applied.

1) PROCEDURE:
    a. Reference document: EIA-364-21, *Insulation Resistance Test Procedure for Electrical Connectors*.
    b. Test Conditions:
        i. Between Adjacent Contacts or Signal-to-Ground
        ii. Electrification Time 2.0 minutes
        iii. Test Voltage (500 VDC) corresponds to calibration settings for measuring resistances.
2) MEASUREMENTS:
3) When the specified test voltage is applied (VDC), the insulation resistance shall not be less than 5000 megohms.

DIELECTRIC WITHSTANDING VOLTAGE (DWV):

To determine if the sockets can operate at its rated voltage and withstand momentary over potentials due to switching, surges, and other similar phenomenon. Separate samples are used to evaluate the effect of environmental stresses so not to influence the readings from arcing that occurs during the measurement process.

1) PROCEDURE:
    a. Reference document: EIA-364-20, *Withstanding Voltage Test Procedure for Electrical Connectors*.
    b. Test Conditions:
        i. Between Adjacent Contacts or Signal-to-Ground
        ii. Rate of Application 500 V/Sec
        iii. Test Voltage (VAC) until breakdown occurs
2) MEASUREMENTS/CALCULATIONS
    a. The breakdown voltage shall be measured and recorded.
    b. The dielectric withstanding voltage shall be recorded as 75% of the minimum breakdown voltage.
    c. The working voltage shall be recorded as one-third (1/3) of the dielectric withstanding voltage (one-fourth of the breakdown voltage).

RESULTS

Insulation Resistance minimums, IR

- **Initial**
  - **Mated---------- 100000Meg Ω ---------- Pass**
  - **Unmated ---------- 100000Meg Ω ---------- Pass**
- **Thermal**
  - **Mated----------50000Meg Ω ---------- Pass**
  - **Unmated ----------50000Meg Ω ---------- Pass**
- **Humidity**
  - **Mated----------25000Meg Ω ---------- Pass**
  - **Unmated ----------50000Meg Ω ---------- Pass**

Dielectric Withstanding Voltage minimums, DWV

- **Minimums**
  - **Breakdown Voltage---------- 2300 VAC**
  - **Test Voltage ---------- 1725 VAC**
  - **Working Voltage ----------575 VAC**
- **Initial DWV----------Passed**
- **Thermal DWV----------Passed**
- **Humidity DWV----------Passed**

DATA SUMMARIES

INSULATION RESISTANCE (IR):

	Pin to Pin		
	Mated	Unmated	Unmated
Minimum	MPS/MST	MPS	MPT
Initial	100000	100000	100000
Thermal	50000	50000	50000
Humidity	25000	100000	50000

DIELECTRIC WITHSTANDING VOLTAGE (DWV):

Voltage Rating Summary	
Minimum	MPS/MPT
Breakdown Voltage	2300
Test Voltage	1725
Working Voltage	575

Pin to Pin	
Initial Test Voltage	Passed
After Thermal Test Voltage	Passed
After Humidity Test Voltage	Passed

DATA

INSULATION RESISTANCE (IR):

Initial Insulation Resistance
Measured In Meg Ohms

	Pin to Pin		
	Mated	A Unmated B	
	X	X	X
Sample#	MPS/MPT	MPS	MPT
099830-005	100000	100000	100000
099830-006	100000	100000	100000

Thermal Insulation Resistance
Measured In Meg Ohms

	Pin to Pin		
	Mated	A Unmated B	
	X	X	X
Sample#	MPS/MPT	MPS	MPT
099830-005	50000	50000	50000
099830-006	50000	50000	50000

Humidity Insulation Resistance
Measured In Meg Ohms

	Pin to Pin		
	Mated	A Unmated B	
	X	X	X
Sample#	MPS/MPT	MPS	MPT
099830-005	25000	100000	50000
099830-006	50000	100000	50000

DATA Continued

DIELECTRIC WITHSTANDING VOLTAGE (DWV):

Initial Breakdown Voltage
Test Voltage *Until Breakdown Occurs*

	Pin to Pin		
	Mated	A Unmated B	
	X		
Sample#	MPS/MPT	MPS	MPT
099830-001	2900	2900	2900
099830-002	2300	2700	2700

Initial DWV
Test Voltage= 1725

	Pin to Pin		
	Mated	A Unmated B	
Sample#	MPS/MPT	MPS	MPT
099830-005	1725	1725	1725
099830-006	1725	1725	1725

Thermal Test Voltage
Test Voltage=1725

	Pin to Pin		
	Mated	A Unmated B	
Sample#	MPS/MPT	MPS	MPT
099830-005	1725	1725	1725
099830-006	1725	1725	1725

Humidity Test Voltage
Test Voltage=1725

	Pin to Pin		
	Mated	A Unmated B	
Sample#	MPS/MPT	MPS	MPT
099830-005	1725	1725	1725
099830-006	1725	1725	1725

EQUIPMENT AND CALIBRATION SCHEDULES

Equipment #: HPM-01
Description: Hipot Megommeter
Manufacturer: Hipotronics
Model: H306B-A
Serial #: M9905004
Accuracy: 2 % Full Scale Accuracy
… Last Cal: 11/30/2009, Next Cal: 11/30/2010