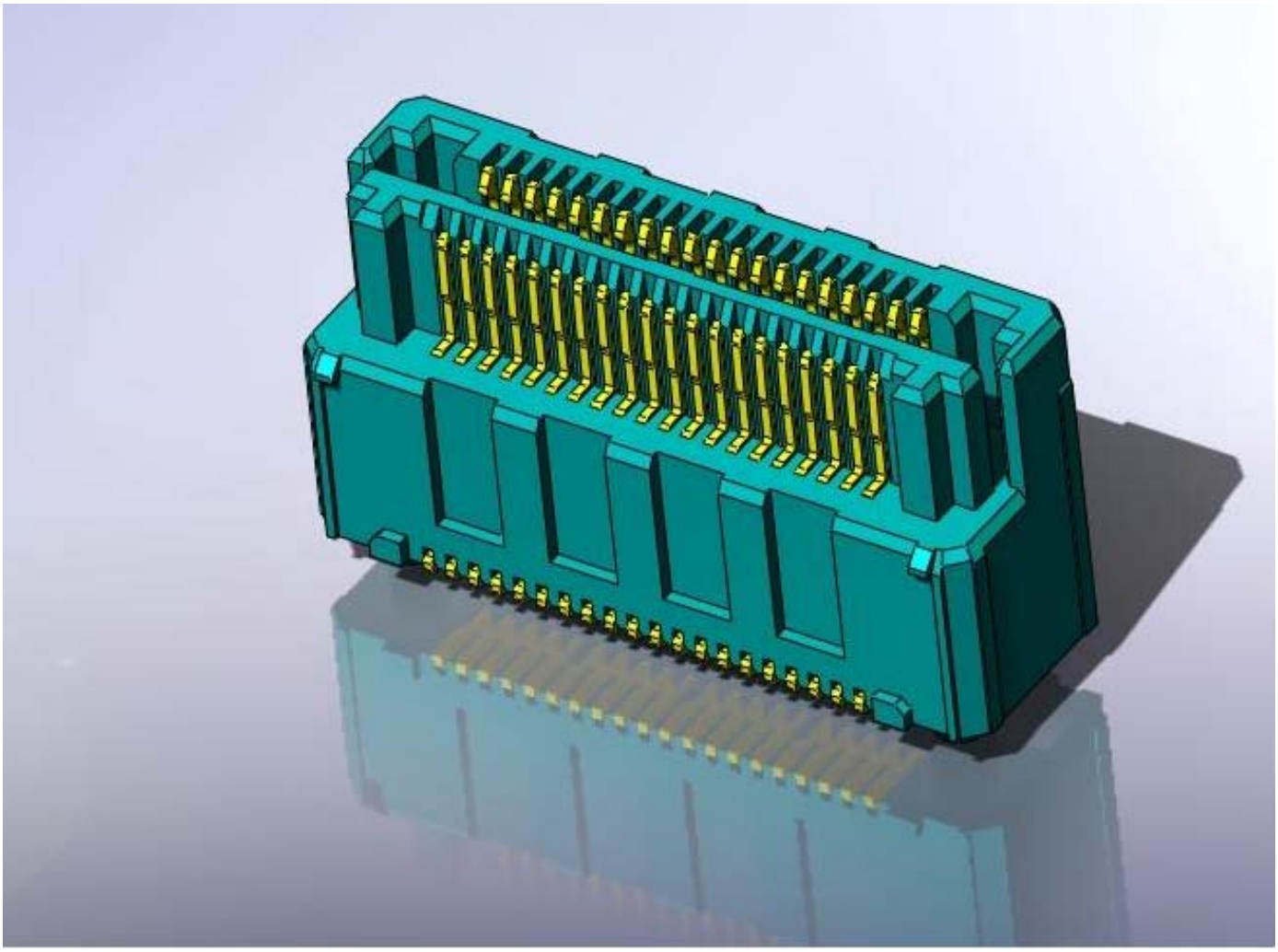
Project Number: N/A	Tracking Code:TC0923--2523		
Requested by: Steven Xu	Date: 12/30/2009	Product Rev: 0	
Part #: LSHM-50-06.0-L-DV-A-N	Lot #: 01	Tech: Kason He Sally Wang	Eng: Vico Zhao
Part description: LSHM			Qty to test: 120
Test Start: 2009-06-09	Test Completed: «Completion_Date»		



DESIGN VERIFICATION TEST REPORT

LSHM

LSHM-50-06.0-L-DV-A-N

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: DESIGN VERIFICATION TEST

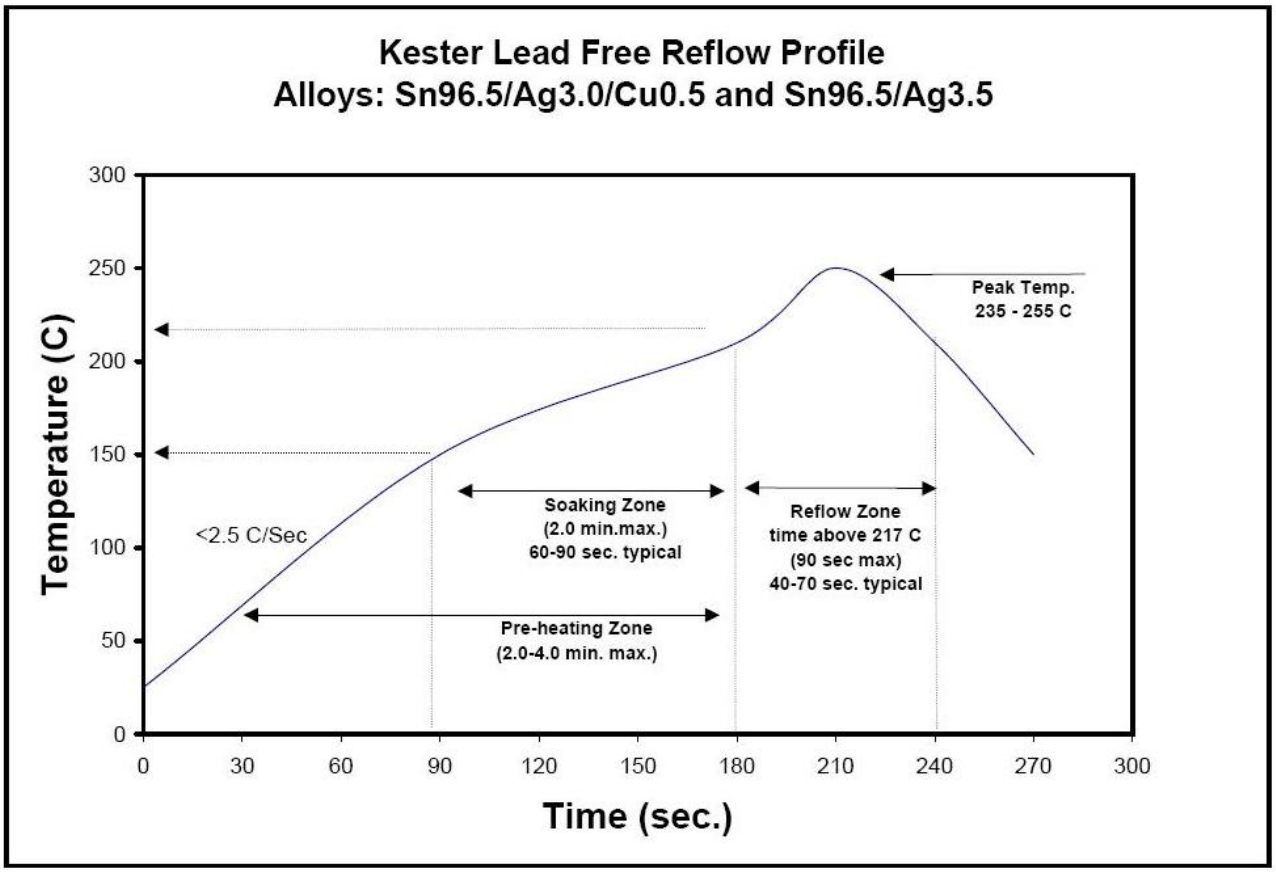
APPLICABLE DOCUMENTS

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-101868-TST

TYPICAL OVEN PROFILE (Soldering Parts to Test Boards)



FLOWCHARTS

LSHM Connector Test Plan

Gas Tight

TEST STEP	GROUP A 200 Points (min)
01	LLCR-1
02	Gas Tight
03	LLCR-2

Gas Tight = EIA-364-36A

LLCR = EIA-364-23, LLCR

use Keithley 580 in the dry circuit mode, 10 mA Max

LSHM Connector Test Plan

Mating/Unmating/Gaps/Normal Force/Deflection Force

TEST STEP	GROUP A 10 Boards	GROUP B1 Individual Contacts (30) min	GROUP B2 Individual Contacts (30) min
01	Contact Gaps	**Setup Approve**	**Setup Approve**
02	Mating / Unmating	Normal Force	Thermal Aging (Mated)
03	Data Review	Data Review	Normal Force
04	100 Cycles		
05	Mating / Unmating		
06	Contact Gaps		
07	Data Review		
08	Thermal Aging (Mated)		
09	Mating / Unmating		
10	Contact Gaps		
11	Data Review		
12	Humidity (Mated)		
13	Contact Gaps		
14	Mating / Unmating		

Thermal Aging = EIA-364-17, Test Condition 4, 105 deg 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

Mating/Un-Mating Forces = EIA-364-13

Normal Force = EIA-364-04

(Perpendicular) displacement Force = 12.7 mm/min +/- 6 mm/min

Spec is 50 N @ 1 mm displacement

Contact Gaps/Height - No standard method. Usually measured optically

LSHM Connector Test Plan

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

LSHM Connector Test Plan

Durability/Thermal Age/Cyclic Humidity

TEST STEP	GROUP A 200 Points 100 Cycles
01	LLCR-1
02	Data Review
03	100 Cycles
04	LLCR-2
05	Data Review
06	Thermal Age
07	LLCR-3
08	Data Review
09	Cyclic Humidity
10	LLCR-4

Thermal Aging = EIA-364-17, Test Condition 4, 105 deg 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
LLCR = EIA-364-23, LLCR
use Keithley 580 in the dry circuit mode, 10 mA Max

LSHM Connector Test Plan

Current Carrying Capacity

DOUBLE ROW

Current Carrying Capacity **3 Mated Assemblies Each**

TEST STEP	GROUP A 3 Mated Assembies 2 CONTACT POWERED	GROUP B 3 Mated Assembies 4 CONTACTS POWERED	GROUP C 3 Mated Assembies 6 CONTACTS POWERED	GROUP D 3 Mated Assembies 8 CONTACTS POWERED	GROUP E 3 Mated Assembies ALL CONTACTS POWERED
01	CCC	CCC	CCC	CCC	CCC

(TIN PLATING) - Tabulate calculated current at RT, 65° C, 75° C and 95° C
after derating 20% and based on 105° C
(GOLD PLATING) - Tabulate calculated current at RT, 85° C, 95° C and 115° C
after derating 20% and based on 125° C
CCC, Temp rise = EIA-364-70

ATTRIBUTE DEFINITIONS

The following is a brief, simplified description of attributes.

THERMAL:

1) EIA-364-17, *Temperature Life with or without Electrical Load Test Procedure for Electrical Connectors.*
2) Test Condition 4 at 105° C.
3) Test Time Condition B for 250 hours.
4) All test samples are pre-conditioned at ambient.
5) All test samples are exposed to environmental stressing in the mated condition.

HUMIDITY:

1) Reference document: EIA-364-31, *Humidity Test Procedure for Electrical Connectors.*
2) Test Condition B, 240 Hours.
3) Method III, +25° C to + 65° C, 90% to 98% Relative Humidity excluding sub-cycles 7a and 7b.
4) All samples are pre-conditioned at ambient.
5) All test samples are exposed to environmental stressing in the mated condition.

TEMPERATURE RISE (Current Carrying Capacity, CCC):

1) EIA-364-70, *Temperature Rise versus Current Test Procedure for Electrical Connectors and Sockets*.
2) When current passes through a contact, the temperature of the contact increases as a result of I^2R (resistive) heating.
3) The number of contacts being investigated plays a significant part in power dissipation and therefore temperature rise.
4) The size of the temperature probe can affect the measured temperature.
5) Copper traces on PC boards will contribute to temperature rise:
    a. Self heating (resistive)
    b. Reduction in heat sink capacity affecting the heated contacts
6) A de-rating curve, usually 20%, is calculated.
7) Calculated de-rated currents at three temperature points are reported:
    a. Ambient
    b. 80^{o} C
    c. 95^{o} C
    d. 115^{o} C
8) Typically, neighboring contacts (in close proximity to maximize heat build up) are energized.
9) The thermocouple (or temperature measuring probe) will be positioned at a location to sense the maximum temperature in the vicinity of the heat generation area.
10) A computer program, *TR 803.exe*, ensures accurate stability for data acquisition.
11) Hook-up wire cross section is larger than the cross section of any connector leads/PC board traces, jumpers, etc.
12) Hook-up wire length is longer than the minimum specified in the referencing standard.

CONTACT GAPS:

1) Gaps above the surrounding plastic surface were measured before and after stressing the contacts (e.g. thermal aging, mechanical cycling, etc.).
2) Typically, all contacts on the connector are measured.

MATING/UNMATING:

1) Reference document: EIA-364-13, *Mating and Unmating Forces Test Procedure for Electrical Connectors*.
2) The full insertion position was to within 0.003" to 0.004" of the plug bottoming out in the receptacle to prevent damage to the system under test.
3) One of the mating parts is secured to a floating X-Y table to prevent damage during cycling.

NORMAL FORCE (FOR CONTACTS TESTED IN THE HOUSING):

1) Reference document: EIA-364-04, *Normal Force Test Procedure for Electrical Connectors*.
2) The contacts shall be tested in the connector housing.
3) If necessary, a "window" shall be made in the connector body to allow a probe to engage and deflect the contact at the same attitude and distance (plus 0.05 mm [0.002"]) as would occur in actual use.
4) The connector housing shall be placed in a holding fixture that does not interfere with or otherwise influence the contact force or deflection.
5) Said holding fixture shall be mounted on a floating, adjustable, X-Y table on the base of the Dillon TC^2, computer controlled test stand with a deflection measurement system accuracy of 5.0 µm (0.0002").
6) The nominal deflection rate shall be 5 mm (0.2")/minute.
7) Unless otherwise noted a minimum of five contacts shall be tested.
8) The force/deflection characteristic to load and unload each contact shall be repeated five times.
9) The system shall utilize the TC^2 software in order to acquire and record the test data.
10) The permanent set of each contact shall be measured within the TC^2 software.
11) The acquired data shall be graphed with the deflection data on the X-axis and the force data on the Y-axis and a print out will be stored with the Tracking Code paperwork.

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 1000 megohms.

DIELECTRIC WITHSTANDING VOLTAGE (DWV):

To determine if the sockets can operate at their 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. Barometric Test Condition 1
        iii. Rate of Application 500 V/Sec
        iv. 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).

LLCR:

1) EIA-364-23, *Low Level Contact Resistance Test Procedure for Electrical Connectors and Sockets*.
2) A computer program, *LLCR 221.exe*, ensures repeatability for data acquisition.
3) The following guidelines are used to categorize the changes in LLCR as a result from stressing
    a. <= +5.0 mOhms: ---------- Stable
    b. +5.1 to +10.0 mOhms:---------- Minor
    c. +10.1 to +15.0 mOhms: ---------- Acceptable
    d. +15.1 to +50.0 mOhms: ---------- Marginal
    e. +50.1 to +2000 mOhms: ---------- Unstable
    f. >+2000 mOhms:---------- Open Failure

GAS TIGHT:

To provide method for evaluating the ability of the contacting surfaces in preventing penetration of harsh vapors which might lead to oxide formation that may degrade the electrical performance of the contact system.

1) EIA-364-23, *Low Level Contact Resistance Test Procedure for Electrical Connectors and Sockets*.
2) A computer program, *LLCR 221.exe*, ensures repeatability for data acquisition.
3) The following guidelines are used to categorize the changes in LLCR as a result from stressing
    a. <= +5.0 mOhms: ---------- Stable
    b. +5.1 to +10.0 mOhms:---------- Minor
    c. +10.1 to +15.0 mOhms: ---------- Acceptable
    d. +15.1 to +50.0 mOhms: ---------- Marginal
    e. +50.1 to +2000 mOhms: ---------- Unstable
    f. >+2000 mOhms:---------- Open Failure
4) Procedure:
    a. Reference document: EIA-364-36, *Test Procedure for Determination of Gas-Tight Characteristics for Electrical Connectors, Sockets and/or Contact Systems*.
    b. Test Conditions:
        i. Class II--- Mated pairs of contacts assembled to their plastic housings.
        ii. Reagent grade Nitric Acid shall be used of sufficient volume to saturate the test chamber
        iii. The ratio of the volume of the test chamber to the surface area of the acid shall be 10:1.
        iv. The chamber shall be saturated with the vapor for at least 15 minutes before samples are added.
        v. Exposure time, 55 to 65 minutes.
        vi. The samples shall be no closer to the chamber walls than 1 inches and no closer to the surface of the acid than 3 inches.
        vii. The samples shall be dried after exposure for a minimum of 1 hour.
        viii. Drying temperature 50^{o} C
        ix. The final LLCR shall be conducted within 1 hour after drying.

RESULTS

Temperature Rise, CCC at a 20% de-rating

- **CCC for a 30°C Temperature Rise----------2.0A per contact with 2 adjacent contacts powered**
- **CCC for a 30°C Temperature Rise----------1.5A per contact with 4 adjacent contacts powered**
- **CCC for a 30°C Temperature Rise----------1.3A per contact with 6 adjacent contacts powered**
- **CCC for a 30°C Temperature Rise----------1.1A per contact with 8 adjacent contacts powered**
- **CCC for a 30°C Temperature Rise----------0.4A per contact with all adjacent contacts powered**

Contact Gaps

Male

- **Initial**
  - **Min---------- 0.0250 in**
  - **Max ---------- 0.0278 in**
- **After 100 Cycles**
  - **Min---------- 0.0250 in**
  - **Max ---------- 0.0276 in**
- **Thermal**
  - **Min---------- 0.0279 in**
  - **Max ---------- 0.0386 in**
- **Humidity**
  - **Min---------- 0.0329 in**
  - **Max ---------- 0.0387 in**

Female

- **Initial**
  - **Min---------- 0.0248 in**
  - **Max ---------- 0.0273 in**
- **After 100 Cycles**
  - **Min---------- 0.0253 in**
  - **Max ---------- 0.0274 in**
- **Thermal**
  - **Min---------- 0.0280 in**
  - **Max ---------- 0.0389 in**
- **Humidity**
  - **Min---------- 0.0321 in**
  - **Max ---------- 0.0388 in**

Mating – Unmating Forces

- **Initial**
  - **Mating**
    - **Min ----------55.86 N**
    - **Max----------68.20 N**
  - **Unmating**
    - **Min ----------62.69 N**
    - **Max----------83.50 N**
- **After 100 Cycles**
  - **Mating**
    - **Min ----------53.21 N**
    - **Max----------67.70 N**
  - **Unmating**
    - **Min ----------65.35 N**
    - **Max----------83.70 N**

- **Thermal**
  - **Mating**
    - **Min ----------39.87 N**
    - **Max----------51.70 N**
  - **Unmating**
    - **Min ----------51.97 N**
    - **Max----------67.70 N**
- **Humidity**
  - **Mating**
    - **Min ----------32.54 N**
    - **Max----------46.00 N**
  - **Unmating**
    - **Min ----------41.20 N**
    - **Max----------59.70 N**

Normal Force at 0.25 mm deflection

- **Initial**
  - **Min---------- 104.01 mm Set ----- 0.003 mm**
  - **Max ---------- 108.08 mm Set ----- 0.007 mm**
- **Thermal**
  - **Min---------- 107.29 mm**
  - **Max ---------- 115.19 mm**

Insulation Resistance minimums, IR

- **Initial**
  - **Mated----------10000Meg Ω ---------- Pass**
  - **Unmated ----------10000Meg Ω**
- **Thermal**
  - **Mated----------10000Meg Ω**
  - **Unmated ----------10000Meg Ω**
- **Humidity**
  - **Mated---------- 4573Meg Ω**
  - **Unmated ----------10000Meg Ω**

Dielectric Withstanding Voltage minimums, DWV

- **Minimums**
  - **Breakdown Voltage----------630VAC**
  - **Test Voltage ----------473VAC**
  - **Working Voltage ----------158VAC**
- **Initial DWV ----------Passed**
- **Thermal DWV----------Passed**
- **Humidity DWV----------Passed**

LLCR Durability (216 LLCR test points)

- **Initial---------- 24.1mOhms Max**
- **Durability, 100 Cycles**
  - **<= +5.0 mOhms ----------216 Points ---------- Stable**
  - **+5.1 to +10.0 mOhms----------0 Points ---------- Minor**
  - **+10.1 to +15.0 mOhms ----------0 Points ---------- Acceptable**
  - **+15.1 to +50.0 mOhms ----------0 Points ---------- Marginal**
  - **+50.1 to +2000 mOhms----------0 Points ---------- Unstable**
  - **>+2000 mOhms----------0 Points ---------- Open Failure**

- **Thermal**
  - **<= +5.0 mOhms ---------- 216 Points ---------- Stable**
  - **+5.1 to +10.0 mOhms ---------- 0 Points ---------- Minor**
  - **+10.1 to +15.0 mOhms ---------- 0 Points ---------- Acceptable**
  - **+15.1 to +50.0 mOhms ---------- 0 Points ---------- Marginal**
  - **+50.1 to +2000 mOhms ---------- 0 Points ---------- Unstable**
  - **>+2000 mOhms ---------- 0 Points ---------- Open Failure**
  -
- **Humidity**
  - **<= +5.0 mOhms ---------- 216 Points ---------- Stable**
  - **+5.1 to +10.0 mOhms ---------- 0 Points ---------- Minor**
  - **+10.1 to +15.0 mOhms ---------- 0 Points ---------- Acceptable**
  - **+15.1 to +50.0 mOhms ---------- 0 Points ---------- Marginal**
  - **+50.1 to +2000 mOhms ---------- 0 Points ---------- Unstable**
  - **>+2000 mOhms ---------- 0 Points ---------- Open Failure**

LLCR Gas Tight (216 LLCR test points)

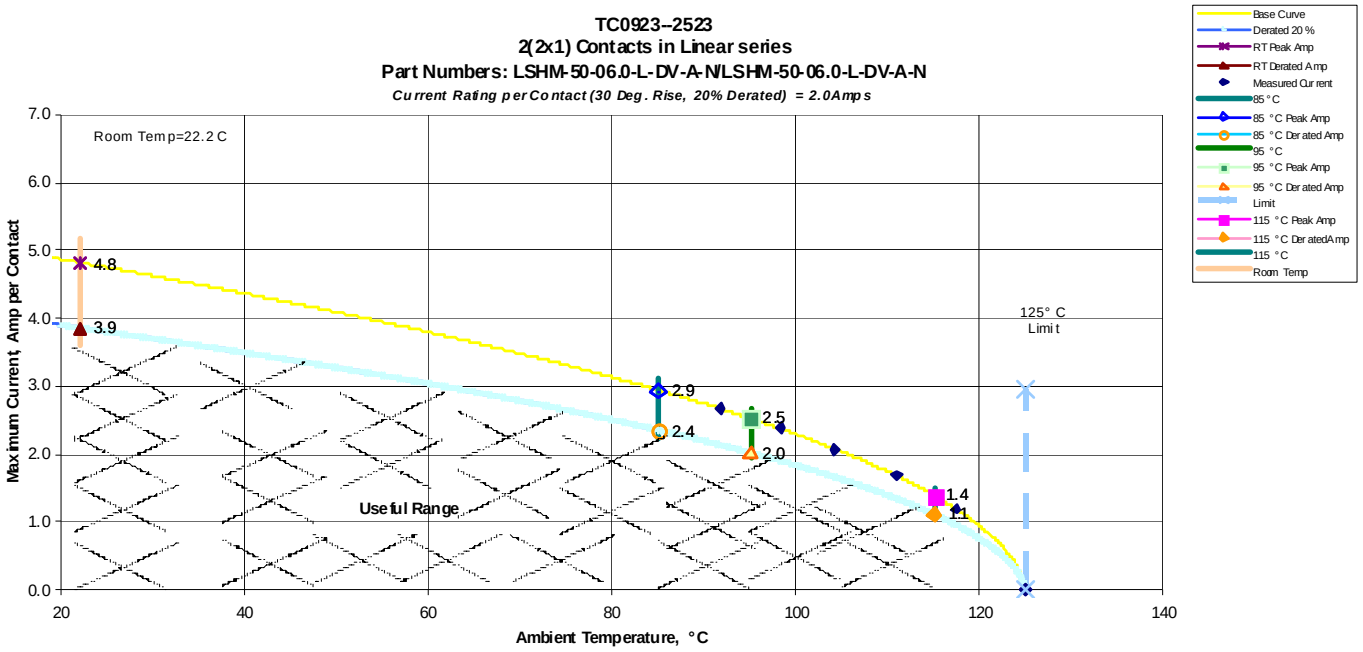
- **Initial ---------- 27.0mOhms Max**
- **Gas-Tight**
  - **<= +5.0 mOhms ---------- 216 Points ---------- Stable**
  - **+5.1 to +10.0 mOhms ---------- 0 Points ---------- Minor**
  - **+10.1 to +15.0 mOhms ---------- 0 Points ---------- Acceptable**
  - **+15.1 to +50.0 mOhms ---------- 0 Points ---------- Marginal**
  - **+50.1 to +2000 mOhms ---------- 0 Points ---------- Unstable**
  - **>+2000 mOhms ---------- 0 Points ---------- Open Failure**

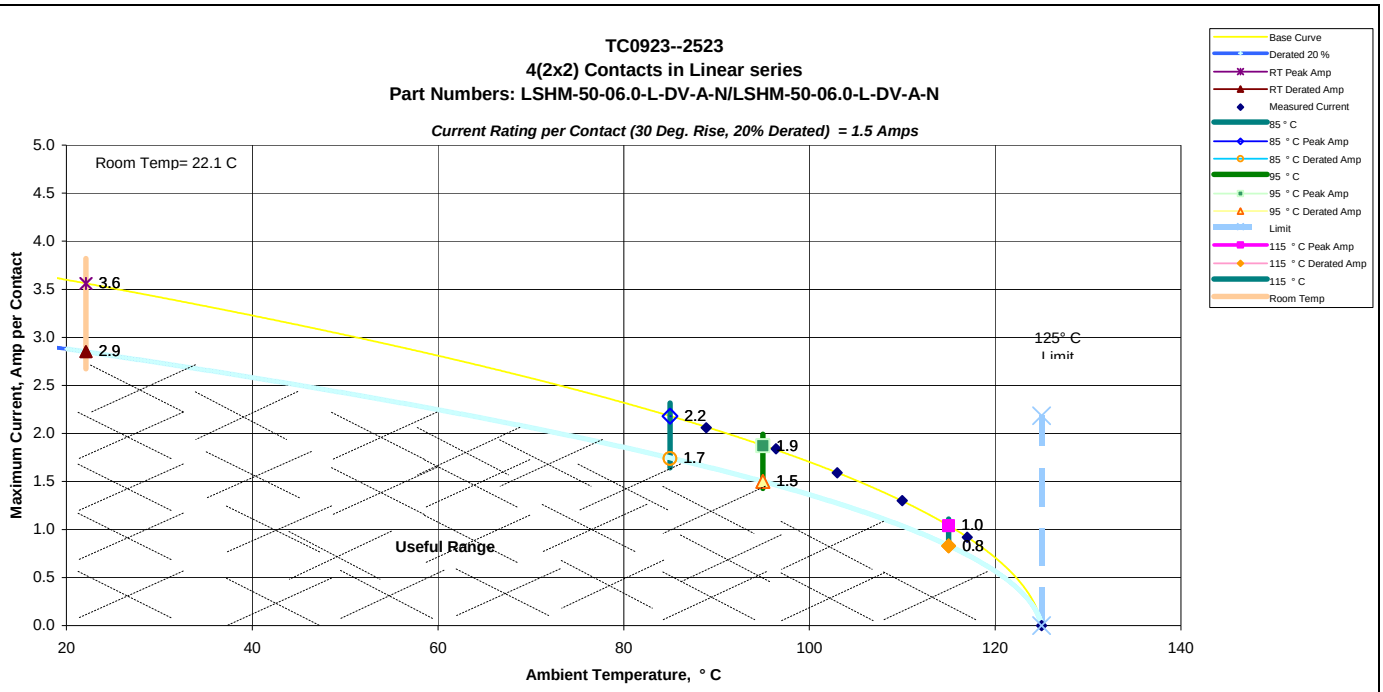
DATA SUMMARIES

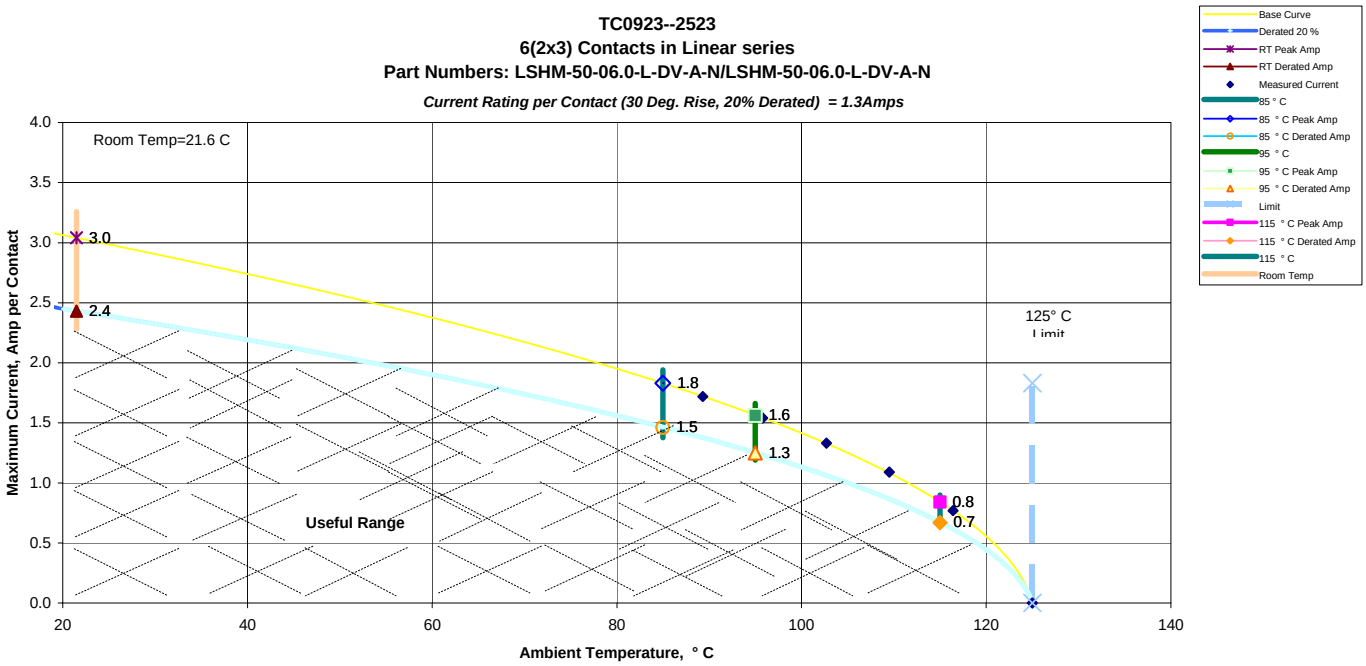
TEMPERATURE RISE (Current Carrying Capacity, CCC):

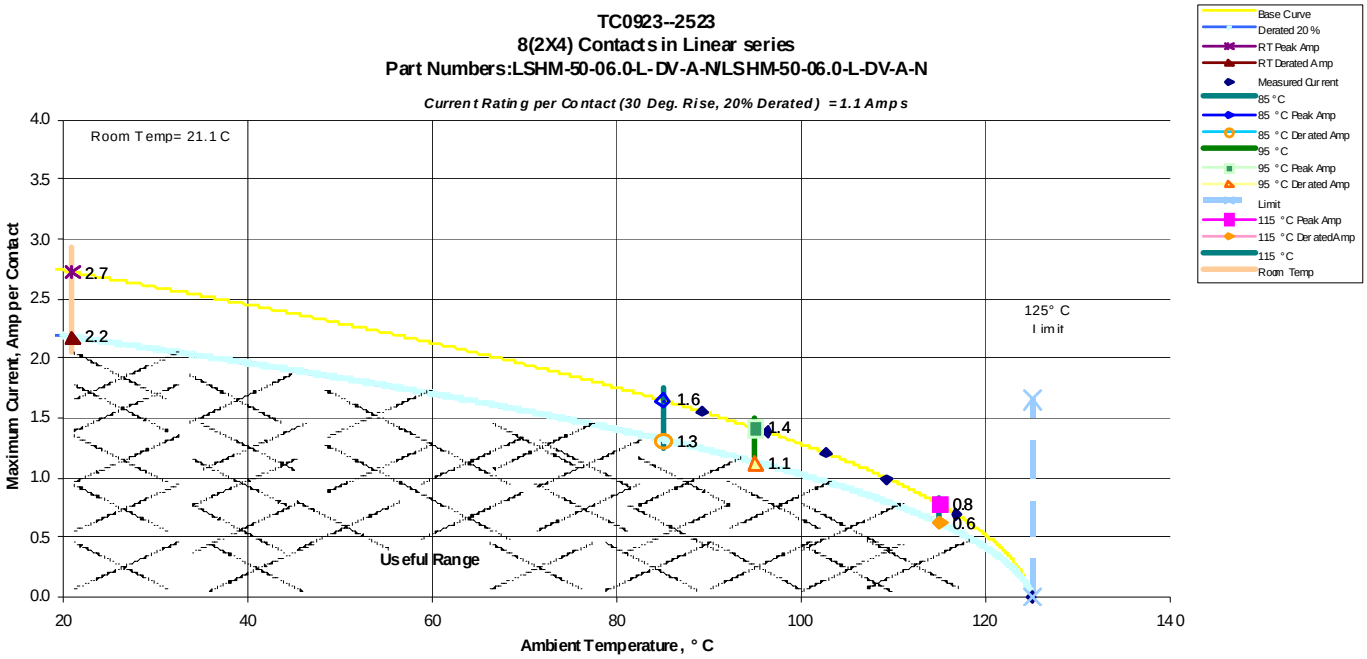
1) High quality thermocouples whose temperature slopes track one another were used for temperature monitoring.
2) The thermocouples were placed at a location to sense the maximum temperature generated during testing.
3) Temperature readings recorded are those for which three successive readings, 15 minutes apart, differ less than 1° C (computer controlled data acquisition).
4) Adjacent contacts were powered:

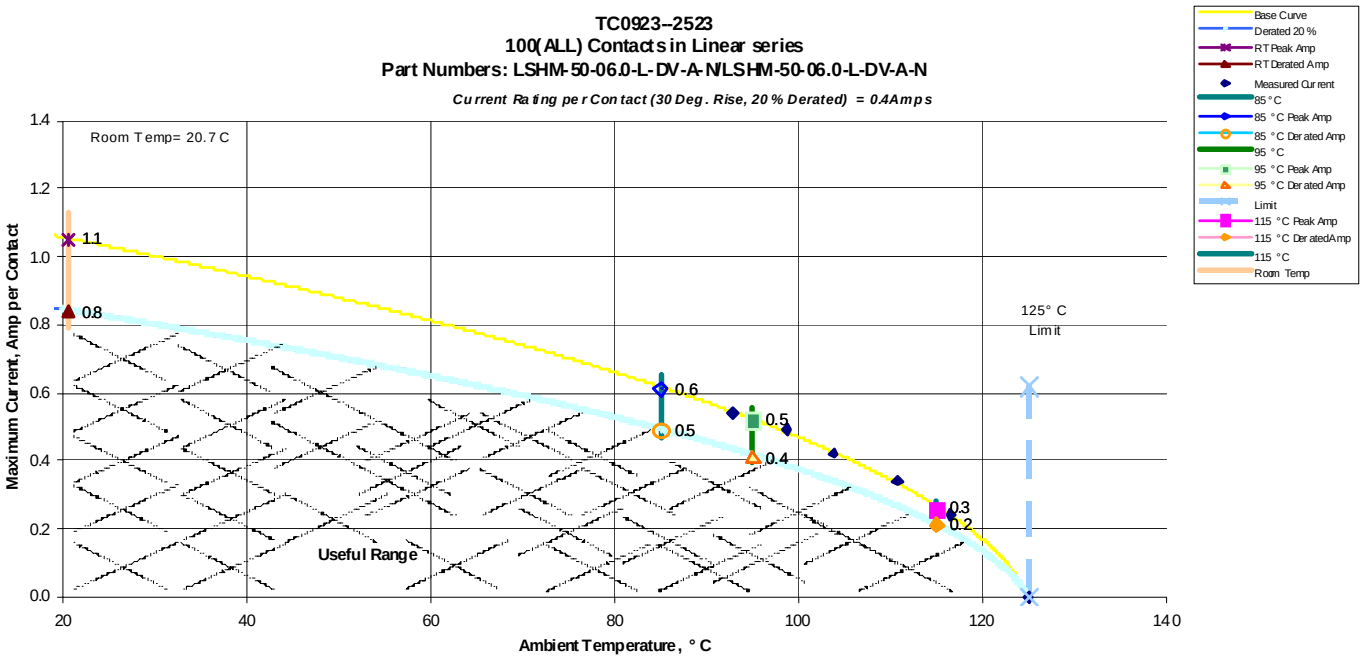
    a. Linear configuration with **2** adjacent conductors/contacts powered
    b. Linear configuration with **4** adjacent conductors/contacts powered
    c. Linear configuration with **6** adjacent conductors/contacts powered
    d. Linear configuration with **8** adjacent conductors/contacts powered
    e. Linear configuration with **all** adjacent conductors/contacts powered




TC0923--2523
4(2x2) Contacts in Linear series
Part Numbers: LSHM-50-06.0-L-DV-A-N/LSHM-50-06.0-L-DV-A-N
Current Rating per Contact (30 Deg. Rise, 20% Derated) = 1.5 Amps
Room Temp= 22.1 C
Maximum Current, Amp per Contact
Ambient Temperature, ° C
Useful Range
125° C Limit
3.6
2.9
2.2
1.7
1.9
1.5
1.0
0.8
Base Curve
Derated 20 %
RT Peak Amp
RT Derated Amp
Measured Current
85 ° C
85 ° C Peak Amp
85 ° C Derated Amp
95 ° C
95 ° C Peak Amp
95 ° C Derated Amp
Limit
115 ° C Peak Amp
115 ° C Derated Amp
115 ° C
Room Temp


TC0923--2523
6(2x3) Contacts in Linear series
Part Numbers: LSHM-50-06.0-L-DV-A-N/LSHM-50-06.0-L-DV-A-N
Current Rating per Contact (30 Deg. Rise, 20% Derated) = 1.3Amps
Room Temp=21.6 C
Maximum Current, Amp per Contact
Ambient Temperature, ° C
Useful Range
125° C Limit
3.0
2.4
1.8
1.5
1.6
1.3
0.8
0.7
Base Curve
Derated 20 %
RT Peak Amp
RT Derated Amp
Measured Current
85 ° C
85 ° C Peak Amp
85 ° C Derated Amp
95 ° C
95 ° C Peak Amp
95 ° C Derated Amp
Limit
115 ° C Peak Amp
115 ° C Derated Amp
115 ° C
Room Temp


TC0923--2523
8(2X4) Contacts in Linear series
Part Numbers:LSHM-50-06.0-L-DV-A-N/LSHM-50-06.0-L-DV-A-N
Current Rating per Contact (30 Deg. Rise, 20% Derated) =1.1 Amps
Room Temp= 21.1 C
Maximum Current, Amp per Contact
Ambient Temperature, ° C
Useful Range
125° C Limit
2.7
2.2
1.6
1.3
1.4
1.1
0.8
0.6
Base Curve
Derated 20 %
RT Peak Amp
RT Derated Amp
Measured Current
85 °C
85 °C Peak Amp
85 °C Derated Amp
95 °C
95 °C Peak Amp
95 °C Derated Amp
Limit
115 °C Peak Amp
115 °C DeratedAmp
115 °C
Room Temp


TC0923--2523
100(ALL) Contacts in Linear series
Part Numbers: LSHM-50-06.0-L-DV-A-N/LSHM-50-06.0-L-DV-A-N
Current Rating per Contact (30 Deg. Rise, 20 % Derated) = 0.4Amps
Room Temp= 20.7 C
Maximum Current, Amp per Contact
Ambient Temperature, ° C
Useful Range
125° C Limit
1.1
0.8
0.6
05
0.5
0.4
0.3
0.2
Base Curve
Derated 20 %
RT Peak Amp
RT Derated Amp
Measured Current
85 °C
85 °C Peak Amp
85 °C Derated Amp
95 °C
95 °C Peak Amp
95 °C Derated Amp
Limit
115 °C Peak Amp
115 °C DeratedAmp
115 °C
Room Temp

CONTACT GAPS:

Male

Initial Measurements Summary	
Minimum	0.0250
Maximum	0.0278
Average	0.0264
St. Dev.	0.0006
Count	500
% high	0.00%
% low	0.00%
After 100 Cycles Measurements	
Minimum	0.0250
Maximum	0.0276
Average	0.0265
St. Dev.	0.0004
Count	500
% high	0.00%
% low	0.00%
After Thermal Measurements	
Minimum	0.0279
Maximum	0.0386
Average	0.0339
St. Dev.	0.0017
Count	500
% high	96.60%
% low	0.00%
After Humidity Measurements	
Minimum	0.0329
Maximum	0.0387
Average	0.0341
St. Dev.	0.0008
Count	500
% high	100.00%
% low	0.00%

Female

Initial Measurements Summary	
Minimum	0.0248
Maximum	0.0273
Average	0.0262
St. Dev.	0.0005
Count	500
% high	0.00%
% low	0.00%

After 100 Cycles Measurements	
Minimum	0.0253
Maximum	0.0274
Average	0.0262
St. Dev.	0.0004
Count	500
% high	0.00%
% low	0.00%
After Thermal Measurements	
Minimum	0.0280
Maximum	0.0389
Average	0.0336
St. Dev.	0.0018
Count	500
% high	96.00%
% low	0.00%
After Humidity Measurements	
Minimum	0.0321
Maximum	0.0388
Average	0.0338
St. Dev.	0.0010
Count	500
% high	100.00%
% low	0.00%

MATING/UNMATING:

	Initial				After 100 Cycles			
	Mating		**Unmating**		**Mating**		**Unmating**	
	Force (Oz)	Force (N)	Force (Oz)	Force (N)	Force (Oz)	Force (N)	Force (Oz)	Force (N)
Minimum	201.1	55.86	225.7	62.69	191.6	53.21	235.3	65.35
Maximum	245.4	68.2	300.7	83.5	243.7	67.7	301.4	83.7
Average	224.7	**62.4**	263.6	**73.2**	213.5	**59.3**	267.5	**74.3**
	After Thermals				**After Humidity**			
	Mating		**Unmating**		**Mating**		**Unmating**	
	Force (Oz)	Force (N)	Force (Oz)	Force (N)	Force (Oz)	Force (N)	Force (Oz)	Force (N)
Minimum	143.5	39.87	187.1	51.97	117.1	32.54	148.3	41.20
Maximum	186.2	51.7	243.7	67.7	165.4	46.0	214.9	59.7
Average	165.0	**45.8**	208.9	**58.0**	141.4	**39.3**	177.0	**49.2**

DATA SUMMARIES Continued

NORMAL FORCE (FOR CONTACTS TESTED IN THE HOUSING):

1) Calibrated force gauges are used along with computer controlled positioning equipment.
2) For Normal force 8-10 measurements are taken and the averages reported.

Initial	Deflections in inches Forces in Grams					
	0.050	**0.100**	**0.150**	**0.200**	**0.250**	**SET**
Averages	22.75	44.62	65.99	86.66	105.98	0.0045
Min	21.90	43.40	65.00	85.10	104.01	0.0030
Max	24.00	46.00	67.50	88.00	108.08	0.0070
St. Dev	0.76	0.78	0.87	0.81	1.41	0.0016
Count	15	15	15	15	15	15

Thermal	Deflections in inches, Forces in Grams					
	0.050	**0.100**	**0.150**	**0.200**	**0.250**	***SET***
Averages	23.76	46.34	67.87	89.65	110.52	0.0019
Min	22.60	43.90	64.90	86.20	107.29	0.0000
Max	25.40	48.40	70.20	93.20	115.19	0.0050
St. Dev	0.76	1.15	1.46	2.00	2.54	0.0019
Count	15	15	15	15	15	15

DATA SUMMARIES Continued

INSULATION RESISTANCE (IR):

Initial Insulation Resistance
Measured In Meg Ohms

	Pin to Pin		
	Mated	Unmated	
	x	x	x
Sample#	LSHM/LSHM	LSHM	LSHM
1	10000	10000	10000
2	10000	10000	10000

Thermal Insulation Resistance
Measured In Meg Ohms

	Pin to Pin		
	Mated	Unmated	
	x	x	x
Sample#	LSHM/LSHM	LSHM	LSHM
1	10000	10000	10000
2	10000	10000	10000

Humidity Insulation Resistance
Measured In Meg Ohms

	Pin to Pin		
	Mated	Unmated	
	x	x	x
Sample#	LSHM/LSHM	LSHM	LSHM
1	4986	10000	10000
2	4573	10000	10000

DATA SUMMARIES Continued

DIELECTRIC WITHSTANDING VOLTAGE (DWV):

Initial Breakdown Voltage
Test Voltage *Until Breakdown Occurs*

	Pin to Pin		
	Mated	Unmated	
	x		
Sample#	LSHM/LSHM	LSHM	LSHM
1	750	750	740
2	750	630	780

Initial DWV
Test Voltage= 473

	Pin to Pin		
	Mated	Unmated	
Sample#	LSHM/LSHM	LSHM	LSHM
1	473	473	473
2	473	473	473

Thermal Test Voltage
Test Voltage= 473

	Pin to Pin		
	Mated	Unmated	
Sample#	LSHM/LSHM	LSHM	LSHM
1	473	473	473
2	473	473	473

Humidity Test Voltage
Test Voltage= 473

	Pin to Pin		
	Mated	Unmated	
Sample#	LSHM/LSHM	LSHM	LSHM
1	473	473	473
2	473	473	473

DATA SUMMARIES Continued

LLCR:

1) A total of **216** points were measured.
2) EIA-364-23, *Low Level Contact Resistance Test Procedure for Electrical Connectors and Sockets.*
3) A computer program, *LLCR 221.exe*, ensures repeatability for data acquisition.
4) The following guidelines are used to categorize the changes in LLCR as a result from stressing.
   a. <= +5.0 mOhms: ---------- Stable
   b. +5.1 to +10.0 mOhms:---------- Minor
   c. +10.1 to +15.0 mOhms: ---------- Acceptable
   d. +15.1 to +50.0 mOhms: ---------- Marginal
   e. +50.1 to +2000 mOhms ---------- Unstable
   f. >+2000 mOhms:---------- Open Failure

Date	Jun. 09 2009	Jun. 10 2009	Jun. 22 2009	Jul. 03 2009
Room Temp C	23	23	26	25
RH	66%	66%	51%	52%
Name	Kason He	Kason He	Kason He	KasonHe
mOhm values	**Actual Initial**	**Delta 100 Cycles**	**Delta Thermal**	**Delta Humidity**
Average	22.2	0.1	0.8	0.5
St. Dev.	0.8	0.7	0.9	0.8
Min	20.2	-1.5	-1.3	-1.6
Max	24.1	2.5	3.4	3.8
Count	216	216	216	216

GAS TIGHT:

1) A total of **216** points were measured.
2) EIA-364-23, *Low Level Contact Resistance Test Procedure for Electrical Connectors and Sockets.*
3) A computer program, *LLCR 221.exe*, ensures repeatability for data acquisition.
4) The following guidelines are used to categorize the changes in LLCR as a result from stressing.
   a. <= +5.0 mOhms: ---------- Stable
   b. +5.1 to +10.0 mOhms:---------- Minor
   c. +10.1 to +15.0 mOhms: ---------- Acceptable
   d. +15.1 to +50.0 mOhms: ---------- Marginal
   e. +50.1 to +2000 mOhms: ---------- Unstable
   f. >+2000 mOhms:---------- Open Failure

Date	Jun. 09 2009	Jun. 25 2009
Room Temp C	23	22
RH	65%	55%
Name	Kason He	Kason He
mOhm values	**Actual Initial**	**Delta Gas Tight**
Average	22.3	0.3
St. Dev.	0.8	0.6
Min	20.5	-2.5
Max	27.0	3.5
Count	216	216

DATA

CONTACT GAPS:

Male

Pos.#	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10
1	0.0339	0.0342	0.0344	0.0342	0.0333	0.0333	0.0338	0.0337	0.0342	0.0336
2	0.0339	0.0345	0.0337	0.0340	0.0332	0.0331	0.0337	0.0335	0.0339	0.0335
3	0.0337	0.0345	0.0339	0.0340	0.0330	0.0330	0.0342	0.0339	0.0358	0.0334
4	0.0335	0.0339	0.0340	0.0340	0.0331	0.0330	0.0338	0.0350	0.0359	0.0334
5	0.0353	0.0383	0.0343	0.0344	0.0334	0.0341	0.0339	0.0335	0.0331	0.0337
6	0.0339	0.0342	0.0344	0.0342	0.0335	0.0335	0.0340	0.0338	0.0331	0.0337
7	0.0338	0.0341	0.0343	0.0342	0.0335	0.0337	0.0378	0.0336	0.0332	0.0337
8	0.0338	0.0342	0.0344	0.0343	0.0337	0.0334	0.0338	0.0337	0.0331	0.0335
9	0.0339	0.0341	0.0342	0.0343	0.0335	0.0337	0.0347	0.0378	0.0332	0.0337
10	0.0342	0.0346	0.0387	0.0349	0.0339	0.0341	0.0341	0.0342	0.0337	0.0342
11	0.0340	0.0343	0.0345	0.0349	0.0338	0.0340	0.0340	0.0340	0.0335	0.0339
12	0.0338	0.0341	0.0344	0.0381	0.0335	0.0338	0.0359	0.0339	0.0334	0.0337
13	0.0338	0.0349	0.0344	0.0354	0.0335	0.0368	0.0337	0.0339	0.0333	0.0337
14	0.0340	0.0340	0.0344	0.0345	0.0336	0.0340	0.0337	0.0339	0.0373	0.0337
15	0.0341	0.0345	0.0347	0.0347	0.0338	0.0341	0.0343	0.0341	0.0336	0.0380
16	0.0340	0.0344	0.0347	0.0346	0.0339	0.0340	0.0342	0.0342	0.0336	0.0339
17	0.0338	0.0340	0.0344	0.0346	0.0380	0.0340	0.0344	0.0341	0.0354	0.0338
18	0.0338	0.0341	0.0344	0.0343	0.0335	0.0339	0.0336	0.0341	0.0334	0.0336
19	0.0339	0.0341	0.0353	0.0344	0.0336	0.0340	0.0338	0.0341	0.0335	0.0336
20	0.0341	0.0345	0.0346	0.0353	0.0339	0.0345	0.0350	0.0345	0.0338	0.0341
21	0.0340	0.0343	0.0345	0.0346	0.0339	0.0343	0.0349	0.0344	0.0357	0.0337
22	0.0378	0.0341	0.0344	0.0345	0.0336	0.0339	0.0355	0.0352	0.0344	0.0337
23	0.0337	0.0343	0.0344	0.0343	0.0336	0.0340	0.0335	0.0352	0.0334	0.0336
24	0.0340	0.0341	0.0344	0.0379	0.0337	0.0340	0.0344	0.0342	0.0336	0.0338
25	0.0339	0.0347	0.0346	0.0345	0.0340	0.0345	0.0339	0.0342	0.0359	0.0340
26	0.0340	0.0344	0.0344	0.0344	0.0338	0.0343	0.0336	0.0339	0.0337	0.0338
27	0.0329	0.0342	0.0343	0.0344	0.0335	0.0341	0.0345	0.0347	0.0336	0.0337
28	0.0337	0.0341	0.0342	0.0345	0.0334	0.0339	0.0335	0.0340	0.0384	0.0335
29	0.0338	0.0341	0.0342	0.0345	0.0335	0.0342	0.0335	0.0339	0.0355	0.0376
30	0.0340	0.0344	0.0344	0.0347	0.0338	0.0344	0.0337	0.0343	0.0337	0.0339
31	0.0340	0.0343	0.0344	0.0346	0.0339	0.0374	0.0339	0.0340	0.0339	0.0339
32	0.0339	0.0343	0.0342	0.0343	0.0337	0.0340	0.0346	0.0372	0.0358	0.0337
33	0.0338	0.0341	0.0343	0.0341	0.0335	0.0341	0.0336	0.0339	0.0347	0.0336
34	0.0339	0.0342	0.0383	0.0346	0.0336	0.0342	0.0335	0.0339	0.0338	0.0336
35	0.0341	0.0343	0.0344	0.0345	0.0370	0.0343	0.0337	0.0342	0.0339	0.0339
36	0.0339	0.0342	0.0343	0.0344	0.0344	0.0341	0.0338	0.0340	0.0339	0.0337
37	0.0336	0.0340	0.0342	0.0341	0.0335	0.0350	0.0335	0.0340	0.0355	0.0335
38	0.0337	0.0338	0.0340	0.0342	0.0334	0.0339	0.0335	0.0350	0.0336	0.0335
39	0.0338	0.0340	0.0339	0.0340	0.0333	0.0339	0.0334	0.0338	0.0337	0.0335
40	0.0339	0.0342	0.0341	0.0341	0.0345	0.0341	0.0337	0.0355	0.0339	0.0335
41	0.0340	0.0339	0.0342	0.0339	0.0334	0.0341	0.0355	0.0340	0.0340	0.0337
42	0.0338	0.0340	0.0340	0.0342	0.0335	0.0341	0.0339	0.0340	0.0338	0.0335
43	0.0338	0.0339	0.0340	0.0339	0.0335	0.0340	0.0334	0.0338	0.0338	0.0335
44	0.0337	0.0340	0.0339	0.0341	0.0333	0.0341	0.0333	0.0338	0.0358	0.0334
45	0.0338	0.0341	0.0340	0.0337	0.0340	0.0340	0.0336	0.0341	0.0339	0.0336

46	0.0338	0.0341	0.0340	0.0339	0.0336	0.0339	0.0335	0.0340	0.0340	0.0336
47	0.0337	0.0339	0.0339	0.0338	0.0337	0.0338	0.0333	0.0340	0.0348	0.0333
48	0.0334	0.0337	0.0336	0.0336	0.0334	0.0338	0.0332	0.0338	0.0336	0.0331
49	0.0333	0.0337	0.0336	0.0335	0.0333	0.0338	0.0332	0.0342	0.0336	0.0333
50	0.0336	0.0336	0.0336	0.0335	0.0347	0.0341	0.0333	0.0340	0.0348	0.0333

Female

Pos.#	B1	B2	B3	B4	B5	B6	B7	B8	B9	B10
1	0.0271	0.0266	0.0261	0.0271	0.0268	0.0262	0.0260	0.0266	0.0266	0.0261
2	0.0272	0.0261	0.0255	0.0267	0.0264	0.0257	0.0255	0.0263	0.0260	0.0255
3	0.0271	0.0260	0.0255	0.0265	0.0263	0.0257	0.0254	0.0262	0.0261	0.0255
4	0.0270	0.0261	0.0255	0.0265	0.0263	0.0257	0.0253	0.0262	0.0260	0.0263
5	0.0273	0.0262	0.0260	0.0269	0.0266	0.0260	0.0257	0.0266	0.0264	0.0260
6	0.0273	0.0263	0.0258	0.0269	0.0265	0.0259	0.0257	0.0265	0.0262	0.0260
7	0.0271	0.0259	0.0256	0.0267	0.0264	0.0257	0.0255	0.0264	0.0262	0.0256
8	0.0271	0.0260	0.0257	0.0266	0.0264	0.0258	0.0254	0.0263	0.0263	0.0255
9	0.0271	0.0261	0.0258	0.0266	0.0264	0.0257	0.0256	0.0265	0.0261	0.0257
10	0.0274	0.0265	0.0262	0.0271	0.0268	0.0262	0.0259	0.0267	0.0267	0.0262
11	0.0272	0.0263	0.0260	0.0269	0.0267	0.0258	0.0259	0.0266	0.0264	0.0260
12	0.0270	0.0261	0.0258	0.0267	0.0264	0.0257	0.0256	0.0263	0.0262	0.0257
13	0.0269	0.0259	0.0258	0.0266	0.0263	0.0256	0.0254	0.0263	0.0260	0.0257
14	0.0269	0.0260	0.0257	0.0265	0.0265	0.0257	0.0255	0.0264	0.0261	0.0257
15	0.0272	0.0261	0.0261	0.0270	0.0265	0.0260	0.0260	0.0265	0.0264	0.0260
16	0.0272	0.0263	0.0260	0.0268	0.0266	0.0260	0.0259	0.0264	0.0263	0.0260
17	0.0269	0.0259	0.0259	0.0267	0.0263	0.0258	0.0255	0.0263	0.0261	0.0257
18	0.0269	0.0259	0.0257	0.0267	0.0261	0.0256	0.0255	0.0264	0.0261	0.0256
19	0.0270	0.0259	0.0258	0.0266	0.0261	0.0257	0.0256	0.0262	0.0260	0.0256
20	0.0272	0.0263	0.0262	0.0271	0.0267	0.0263	0.0261	0.0267	0.0265	0.0261
21	0.0270	0.0262	0.0262	0.0269	0.0264	0.0262	0.0259	0.0266	0.0264	0.0260
22	0.0268	0.0258	0.0258	0.0266	0.0262	0.0259	0.0256	0.0262	0.0260	0.0256
23	0.0267	0.0258	0.0257	0.0266	0.0261	0.0257	0.0255	0.0263	0.0260	0.0256
24	0.0268	0.0259	0.0258	0.0266	0.0263	0.0259	0.0256	0.0264	0.0261	0.0258
25	0.0270	0.0264	0.0263	0.0271	0.0266	0.0263	0.0260	0.0267	0.0266	0.0261
26	0.0268	0.0262	0.0261	0.0268	0.0264	0.0262	0.0258	0.0266	0.0265	0.0260
27	0.0266	0.0258	0.0258	0.0265	0.0262	0.0260	0.0256	0.0264	0.0264	0.0257
28	0.0267	0.0258	0.0257	0.0265	0.0262	0.0259	0.0255	0.0262	0.0262	0.0256
29	0.0265	0.0259	0.0258	0.0265	0.0262	0.0260	0.0256	0.0263	0.0261	0.0256
30	0.0269	0.0261	0.0262	0.0268	0.0265	0.0264	0.0260	0.0266	0.0265	0.0259
31	0.0269	0.0263	0.0263	0.0269	0.0267	0.0265	0.0262	0.0269	0.0266	0.0261
32	0.0267	0.0261	0.0259	0.0267	0.0262	0.0263	0.0257	0.0266	0.0263	0.0258
33	0.0265	0.0260	0.0260	0.0265	0.0263	0.0262	0.0257	0.0265	0.0262	0.0257
34	0.0266	0.0260	0.0261	0.0266	0.0263	0.0262	0.0258	0.0265	0.0263	0.0257
35	0.0267	0.0262	0.0264	0.0268	0.0265	0.0266	0.0262	0.0269	0.0265	0.0260
36	0.0266	0.0261	0.0259	0.0265	0.0264	0.0263	0.0257	0.0267	0.0263	0.0258
37	0.0264	0.0258	0.0259	0.0263	0.0262	0.0261	0.0256	0.0264	0.0261	0.0255
38	0.0262	0.0258	0.0257	0.0262	0.0260	0.0260	0.0255	0.0265	0.0260	0.0255
39	0.0263	0.0258	0.0259	0.0261	0.0261	0.0259	0.0256	0.0264	0.0258	0.0255
40	0.0264	0.0260	0.0262	0.0264	0.0263	0.0261	0.0258	0.0266	0.0262	0.0257
41	0.0264	0.0262	0.0264	0.0265	0.0265	0.0263	0.0260	0.0268	0.0262	0.0259

42	**0.0262**	**0.0258**	**0.0260**	**0.0263**	**0.0263**	**0.0262**	**0.0258**	**0.0267**	**0.0260**	**0.0257**
43	**0.0261**	**0.0258**	**0.0260**	**0.0262**	**0.0263**	**0.0261**	**0.0257**	**0.0266**	**0.0259**	**0.0256**
44	**0.0262**	**0.0260**	**0.0261**	**0.0262**	**0.0263**	**0.0262**	**0.0257**	**0.0267**	**0.0262**	**0.0258**
45	**0.0263**	**0.0262**	**0.0263**	**0.0264**	**0.0266**	**0.0265**	**0.0260**	**0.0270**	**0.0262**	**0.0260**
46	**0.0262**	**0.0263**	**0.0263**	**0.0265**	**0.0266**	**0.0264**	**0.0260**	**0.0269**	**0.0264**	**0.0260**
47	**0.0262**	**0.0259**	**0.0259**	**0.0262**	**0.0262**	**0.0263**	**0.0259**	**0.0268**	**0.0261**	**0.0258**
48	**0.0259**	**0.0261**	**0.0259**	**0.0260**	**0.0262**	**0.0263**	**0.0259**	**0.0266**	**0.0261**	**0.0258**
49	**0.0261**	**0.0260**	**0.0259**	**0.0260**	**0.0262**	**0.0262**	**0.0258**	**0.0266**	**0.0258**	**0.0256**
50	**0.0258**	**0.0262**	**0.0260**	**0.0263**	**0.0264**	**0.0264**	**0.0261**	**0.0267**	**0.0258**	**0.0262**

MATING/UNMATING:

	Initial		**After 100 Cycles**		**After Thermals**		**After Humidity**	
Sample#	Mating	Unmating	Mating	Unmating	Mating	Unmating	Mating	Unmating
1	55.86	69.87	53.88	68.77	40.19	53.53	36.24	41.60
2	59.72	71.08	53.21	68.56	45.35	55.76	38.91	50.90
3	64.76	81.73	58.49	73.02	48.37	61.51	45.54	56.80
4	65.35	63.64	61.55	83.72	50.40	53.44	42.55	59.70
5	61.12	67.20	53.45	65.35	40.63	51.97	32.54	43.30
6	62.96	76.84	62.38	77.64	48.25	62.11	37.29	48.60
7	64.37	83.53	62.68	79.23	51.71	67.70	45.95	59.24
8	68.17	82.82	67.69	79.20	39.87	53.40	40.86	41.20
9	60.71	72.95	57.67	70.96	44.80	58.23	36.16	45.20
10	61.08	62.69	61.99	76.49	48.64	62.73	36.84	45.14

DATA Continued

NORMAL FORCE (FOR CONTACTS TESTED IN THE HOUSING):

Initial — **Deflections in inches Forces in Grams**

Sample #	0.050	0.100	0.150	0.200	0.250	*SET*
1	22.60	44.90	67.20	87.30	106.96	0.00600
2	21.90	43.80	65.00	86.20	104.84	0.00300
3	22.20	44.20	65.00	86.20	104.92	0.00300
4	21.90	43.80	65.40	85.80	104.01	0.00300
5	22.20	43.80	66.10	87.30	107.87	0.00300
6	21.90	44.20	65.70	86.20	104.66	0.00500
7	21.90	43.40	65.00	85.10	104.17	0.00300
8	23.00	44.50	65.40	86.20	105.61	0.00700
9	23.70	46.00	67.20	88.00	107.21	0.00600
10	22.60	44.90	66.10	86.60	105.29	0.00500
11	23.70	45.20	65.70	86.60	105.30	0.00500
12	24.00	46.00	67.50	88.00	108.08	0.00700
13	23.00	44.50	65.70	86.90	107.97	0.00300
14	23.00	45.20	67.20	87.30	107.02	0.00300
15	23.70	44.90	65.70	86.20	105.85	0.00500

Thermal — **Deflections in inches Forces in Grams**

Sample #	0.050	0.100	0.150	0.200	0.250	*SET*
1	23.40	46.80	69.00	89.90	110.07	0.00000
2	24.60	46.80	67.70	89.10	108.70	0.00000
3	23.00	46.40	66.90	87.90	108.09	0.00000
4	24.60	47.20	67.70	89.10	109.44	0.00000
5	23.40	45.60	67.70	88.30	108.19	0.00400
6	24.20	48.40	70.20	90.70	111.95	0.00300
7	24.40	48.00	68.60	91.20	111.97	0.00300
8	23.80	44.80	66.10	87.10	107.51	0.00400
9	22.60	43.90	64.90	86.20	107.29	0.00300
10	23.80	45.60	66.90	88.30	109.24	0.00000
11	23.40	45.60	67.70	89.50	110.73	0.00000
12	23.00	46.40	66.90	90.30	111.88	0.00000
13	23.00	46.00	68.20	90.70	112.43	0.00500
14	25.40	46.80	69.80	93.20	115.17	0.00300
15	23.80	46.80	69.80	93.20	115.19	0.00300

DATA Continued

LLCR:

Board	mOhm values Position	Actual Initial	Delta 100 Cycles	Delta Thermal	Delta Humidity
1	P1	23.3	-0.8	0.4	0.4
1	P2	22.5	0.5	0.9	0.2
1	P3	22.8	-0.2	0.7	0.5
1	P4	22.0	0.4	1.2	1.2
1	P5	23.2	-0.9	-0.7	-0.6
1	P6	22.6	0.0	0.2	0.0
1	P7	22.3	-0.5	0.6	0.0
1	P8	21.8	0.2	1.7	1.1
1	P9	22.0	0.5	1.1	0.6
1	P10	22.0	0.6	2.4	1.7
1	P11	22.1	0.0	1.8	1.0
1	P12	22.0	0.5	1.8	1.4
1	P13	22.4	0.3	1.4	0.5
1	P14	22.2	0.0	0.6	0.9
1	P15	22.2	0.0	1.4	1.1
1	P16	22.1	1.4	2.1	1.3
1	P17	22.8	-0.5	3.0	0.8
1	P18	22.4	-0.2	1.4	0.9
1	P19	22.2	0.4	0.8	0.7
1	P20	21.3	-0.4	1.2	0.9
1	P21	21.9	0.1	1.2	0.8
1	P22	22.6	0.3	0.6	0.5
1	P23	23.5	-0.7	-0.1	-0.1
1	P24	23.0	-0.6	0.9	0.2
2	P1	22.9	0.6	1.9	0.3
2	P2	23.3	-0.5	0.6	0.4
2	P3	23.4	0.3	1.6	0.0
2	P4	22.7	0.3	0.9	0.4
2	P5	23.1	-0.4	0.9	-0.1
2	P6	23.2	-0.3	0.8	0.5
2	P7	24.1	-0.4	1.2	-0.4
2	P8	22.9	-0.2	0.8	0.0
2	P9	23.4	-0.3	-0.2	-0.9
2	P10	23.7	-0.4	1.6	0.2
2	P11	23.5	-0.3	-0.3	-0.2
2	P12	23.8	-0.2	1.1	1.3
2	P13	23.6	-0.7	-0.7	0.1
2	P14	23.9	-0.2	0.9	0.6
2	P15	24.0	-0.7	-0.3	1.0
2	P16	24.0	2.5	0.0	0.7
2	P17	24.0	0.3	1.5	1.1
2	P18	24.1	0.3	0.0	-0.1
2	P19	22.7	0.4	0.5	1.3
2	P20	23.4	-1.2	-0.7	-0.7

2	P21	22.4	0.0	0.4	0.3
2	P22	22.6	0.2	0.5	0.3
2	P23	23.0	0.1	0.2	0.1
2	P24	23.0	0.3	0.6	0.6
3	P1	22.0	0.0	1.7	1.5
3	P2	22.1	-0.5	0.5	1.5
3	P3	21.6	0.8	3.4	2.6
3	P4	21.8	0.0	1.9	2.1
3	P5	21.7	0.0	1.5	3.6
3	P6	22.1	-0.3	0.4	1.5
3	P7	22.1	0.4	1.4	1.3
3	P8	21.6	0.8	1.6	3.8
3	P9	21.7	1.1	0.5	1.6
3	P10	21.8	1.1	0.7	0.9
3	P11	21.9	1.0	1.7	1.6
3	P12	21.9	1.1	1.1	1.0
3	P13	22.4	0.7	0.5	1.9
3	P14	22.8	0.7	0.7	0.5
3	P15	21.9	0.9	0.1	2.6
3	P16	22.1	1.2	0.6	1.2
3	P17	23.2	0.4	1.1	0.4
3	P18	22.3	0.7	2.4	1.8
3	P19	22.1	0.1	0.6	-0.2
3	P20	21.4	0.6	1.0	1.0
3	P21	21.4	-0.4	1.3	0.8
3	P22	22.4	-1.0	-0.2	-0.9
3	P23	21.8	0.6	1.7	0.8
3	P24	21.6	0.8	2.3	1.9
4	P1	21.7	0.0	1.4	0.0
4	P2	21.6	1.0	1.5	0.9
4	P3	21.7	0.5	1.2	0.5
4	P4	21.5	0.2	0.8	0.6
4	P5	21.6	0.2	0.9	0.5
4	P6	21.7	0.1	0.2	0.3
4	P7	21.3	0.4	2.6	0.7
4	P8	21.5	0.3	1.0	0.5
4	P9	21.5	0.8	1.6	1.0
4	P10	21.9	1.0	1.5	0.7
4	P11	21.8	0.6	1.1	0.6
4	P12	21.5	0.1	1.4	1.0
4	P13	22.5	-0.2	-0.2	0.0
4	P14	22.1	0.1	0.8	1.2
4	P15	21.9	0.4	1.3	1.3
4	P16	22.6	-0.6	0.7	-0.5
4	P17	22.4	0.4	0.6	0.1
4	P18	21.7	-0.2	1.5	0.7
4	P19	22.1	-0.8	-0.1	-0.5
4	P20	20.9	0.5	0.4	0.3
4	P21	20.4	0.2	0.6	0.2

4	P22	21.1	1.4	2.8	1.1
4	P23	20.9	1.0	1.8	1.5
4	P24	20.9	1.1	1.6	1.0
5	P1	22.2	0.3	1.3	0.5
5	P2	21.5	0.4	0.0	1.0
5	P3	22.0	-0.2	-0.2	-0.3
5	P4	21.8	-0.4	0.9	0.1
5	P5	22.1	-0.9	0.1	2.3
5	P6	22.0	-0.3	-0.7	-0.8
5	P7	21.5	0.0	0.2	-0.2
5	P8	21.3	0.1	0.3	0.7
5	P9	21.5	0.5	0.0	0.6
5	P10	21.4	0.6	0.5	0.9
5	P11	21.8	-0.1	0.5	-0.1
5	P12	21.9	-0.4	-0.7	-0.3
5	P13	21.9	0.1	0.6	0.3
5	P14	22.8	-0.6	-0.9	-0.6
5	P15	22.0	0.2	0.8	0.3
5	P16	22.2	-0.6	-0.1	-0.2
5	P17	22.5	-0.4	-0.4	0.1
5	P18	21.9	0.5	0.3	0.2
5	P19	22.2	-0.3	0.0	-0.5
5	P20	21.0	-0.1	-0.6	-0.3
5	P21	21.3	-0.8	-0.3	-0.7
5	P22	22.1	-0.4	-0.3	-0.5
5	P23	22.1	-0.3	0.0	0.0
5	P24	22.2	-0.6	-0.3	-0.7
6	P1	22.3	0.5	0.1	0.5
6	P2	22.0	1.3	1.4	1.2
6	P3	22.5	-0.2	-0.8	-0.3
6	P4	21.8	-0.3	-0.1	0.1
6	P5	21.7	-0.1	0.4	0.1
6	P6	21.3	0.0	-0.1	0.6
6	P7	21.5	1.3	1.5	1.6
6	P8	21.4	1.8	3.3	3.2
6	P9	21.7	1.3	1.2	0.9
6	P10	21.4	1.7	1.8	1.1
6	P11	22.0	1.2	1.1	1.2
6	P12	21.4	2.2	1.6	1.2
6	P13	21.8	0.9	1.6	1.1
6	P14	22.0	0.8	2.2	1.4
6	P15	21.4	1.2	1.9	1.5
6	P16	21.6	1.4	1.6	1.4
6	P17	21.9	0.9	1.0	0.5
6	P18	21.2	1.8	1.5	1.2
6	P19	21.1	1.5	2.4	1.0
6	P20	20.2	2.4	2.6	1.7
6	P21	21.0	0.5	0.6	0.6
6	P22	21.8	0.3	0.5	0.5

6	P23	22.2	0.8	2.3	1.0
6	P24	21.5	0.9	1.2	0.1
7	P1	22.8	-0.1	0.1	-0.3
7	P2	21.7	0.3	0.9	1.8
7	P3	21.7	-0.3	0.6	-0.2
7	P4	22.7	-0.5	-0.2	-0.1
7	P5	22.1	0.1	0.4	0.1
7	P6	21.5	0.0	0.7	0.2
7	P7	22.3	0.0	0.1	0.1
7	P8	21.1	0.3	1.1	0.9
7	P9	22.1	0.3	0.4	0.3
7	P10	21.9	0.4	1.4	0.4
7	P11	22.1	0.1	0.5	-0.1
7	P12	22.8	-0.4	-0.2	-0.8
7	P13	22.1	0.2	1.6	0.8
7	P14	22.7	0.0	1.4	1.2
7	P15	22.6	-0.2	2.0	0.9
7	P16	23.4	-0.1	1.1	0.8
7	P17	23.1	-0.3	0.8	0.4
7	P18	22.0	0.9	1.6	0.6
7	P19	22.6	0.1	0.5	0.6
7	P20	21.7	0.3	1.0	0.7
7	P21	21.9	-0.5	0.2	0.0
7	P22	22.0	0.3	1.5	0.9
7	P23	22.7	-0.3	0.2	0.1
7	P24	22.7	-0.2	1.0	-0.1
8	P1	22.4	-0.2	0.9	0.1
8	P2	21.8	0.3	2.9	0.6
8	P3	21.6	0.3	3.3	0.8
8	P4	22.6	-0.4	1.6	0.0
8	P5	22.0	0.2	3.0	0.6
8	P6	21.8	0.1	1.1	0.3
8	P7	21.9	-0.5	-0.1	-0.3
8	P8	21.5	0.9	1.1	0.5
8	P9	22.9	-1.0	0.7	-0.4
8	P10	23.4	-1.1	-1.2	-1.4
8	P11	21.9	-0.1	0.0	0.2
8	P12	22.2	-0.6	0.5	0.0
8	P13	23.0	-0.8	-1.0	-1.1
8	P14	22.5	-0.3	-0.3	-0.8
8	P15	22.7	-0.9	1.8	0.3
8	P16	22.1	0.0	1.4	0.5
8	P17	21.8	0.5	0.4	0.1
8	P18	22.6	-1.0	-1.3	-1.6
8	P19	21.6	0.5	0.1	-0.1
8	P20	20.8	-0.3	-0.2	-0.8
8	P21	21.2	0.1	1.5	0.3
8	P22	21.6	0.4	2.4	0.4
8	P23	22.0	0.5	3.2	0.5

8	P24	21.8	0.5	1.2	0.5
9	P1	23.1	-0.8	0.5	0.1
9	P2	22.9	-0.4	0.1	1.7
9	P3	24.0	-1.1	0.3	-0.1
9	P4	22.9	-0.6	0.4	1.8
9	P5	22.8	-0.8	0.1	0.8
9	P6	21.9	0.0	0.4	0.1
9	P7	23.9	-1.5	-0.2	-0.3
9	P8	23.2	-0.5	0.1	0.3
9	P9	23.3	-0.3	0.7	0.6
9	P10	23.3	-0.4	1.0	0.2
9	P11	23.1	-0.1	0.6	0.6
9	P12	23.8	-0.2	-0.1	0.1
9	P13	23.7	-1.3	-0.3	-0.1
9	P14	22.7	-0.7	1.1	0.2
9	P15	23.3	-1.4	0.6	-0.3
9	P16	23.1	-0.7	0.4	0.1
9	P17	23.9	-0.9	-0.2	-1.0
9	P18	22.8	-0.3	-0.2	0.0
9	P19	22.4	-0.2	0.3	0.3
9	P20	22.6	-0.5	0.0	-0.2
9	P21	22.2	-0.7	0.4	0.0
9	P22	22.2	-0.1	0.9	0.2
9	P23	22.6	0.1	1.8	1.8
9	P24	22.3	0.5	1.4	0.7

DATA Continued

GAS TIGHT:

Board	mOhm values Position	Actual Initial	Delta Gas Tight
1	P1	22.2	0.2
1	P2	21.6	0.2
1	P3	21.5	0.1
1	P4	22.2	0.2
1	P5	21.8	-0.2
1	P6	22.2	0.3
1	P7	21.5	0.1
1	P8	21.5	0.4
1	P9	22.3	-0.2
1	P10	21.6	-0.3
1	P11	21.4	0.5
1	P12	22.4	-0.2
1	P13	21.0	0.0
1	P14	20.8	0.7
1	P15	21.7	-0.2
1	P16	22.1	-0.3
1	P17	21.6	0.0
1	P18	21.2	0.2
1	P19	21.2	0.6
1	P20	20.6	0.9
1	P21	21.0	0.8
1	P22	22.1	0.6
1	P23	21.8	0.6
1	P24	21.7	1.3
2	P1	22.8	0.3
2	P2	21.7	0.9
2	P3	21.2	0.7
2	P4	21.9	0.3
2	P5	22.3	0.5
2	P6	21.5	0.4
2	P7	22.4	0.4
2	P8	22.5	0.1
2	P9	22.2	0.2
2	P10	22.5	0.8
2	P11	22.6	0.2
2	P12	22.5	0.4
2	P13	22.2	0.5
2	P14	22.7	0.5
2	P15	22.1	0.3
2	P16	22.2	0.3
2	P17	23.1	-0.1
2	P18	23.0	-0.1
2	P19	22.1	0.1
2	P20	21.2	0.5

2	P21	21.5	-0.1
2	P22	22.2	0.3
2	P23	22.1	0.0
2	P24	23.0	0.5
3	P1	21.7	0.1
3	P2	21.4	0.5
3	P3	21.6	0.1
3	P4	21.4	1.2
3	P5	21.4	0.3
3	P6	21.8	0.3
3	P7	21.5	0.1
3	P8	21.6	-0.1
3	P9	21.8	-0.3
3	P10	21.3	0.0
3	P11	21.4	0.7
3	P12	22.0	-0.2
3	P13	21.7	0.1
3	P14	21.8	0.1
3	P15	22.4	-0.5
3	P16	22.1	-0.3
3	P17	22.0	1.6
3	P18	21.7	0.1
3	P19	21.2	0.9
3	P20	20.7	0.2
3	P21	20.5	0.4
3	P22	21.0	0.4
3	P23	21.5	0.5
3	P24	21.1	0.6
4	P1	22.4	-0.2
4	P2	22.0	0.5
4	P3	22.1	0.7
4	P4	21.7	0.6
4	P5	22.2	-0.2
4	P6	22.1	-0.1
4	P7	23.5	-0.5
4	P8	22.5	-0.5
4	P9	23.0	0.4
4	P10	22.1	1.8
4	P11	22.4	0.3
4	P12	23.3	0.1
4	P13	22.1	1.3
4	P14	22.6	0.0
4	P15	23.2	0.3
4	P16	23.4	-0.4
4	P17	23.0	0.9
4	P18	22.9	0.5
4	P19	23.1	0.2
4	P20	22.1	0.1
4	P21	21.2	0.0

4	P22	22.2	-0.1
4	P23	22.1	0.5
4	P24	22.4	-0.5
5	P1	23.0	0.9
5	P2	21.7	1.4
5	P3	23.0	-1.1
5	P4	22.2	1.2
5	P5	22.0	0.6
5	P6	21.6	1.1
5	P7	22.7	1.1
5	P8	23.1	-1.5
5	P9	23.2	-0.4
5	P10	23.3	-1.1
5	P11	22.8	0.0
5	P12	23.2	-0.5
5	P13	23.9	-0.3
5	P14	23.8	0.2
5	P15	22.9	1.6
5	P16	23.0	-0.3
5	P17	23.4	-1.3
5	P18	23.0	-0.6
5	P19	22.8	0.9
5	P20	22.3	-1.1
5	P21	21.2	0.3
5	P22	21.9	0.6
5	P23	23.3	-0.3
5	P24	21.9	0.8
6	P1	22.7	0.1
6	P2	22.2	0.5
6	P3	22.1	-0.3
6	P4	22.2	0.1
6	P5	21.8	0.4
6	P6	22.4	-0.3
6	P7	21.9	1.1
6	P8	21.4	0.0
6	P9	22.0	0.4
6	P10	22.5	-0.2
6	P11	22.2	0.4
6	P12	22.8	-0.1
6	P13	22.7	0.3
6	P14	22.6	0.9
6	P15	22.7	0.3
6	P16	22.8	-0.1
6	P17	21.8	0.3
6	P18	22.3	-0.1
6	P19	22.2	0.9
6	P20	21.5	0.6
6	P21	20.9	0.4
6	P22	22.1	0.7

6	P23	22.6	0.2
6	P24	22.3	0.4
7	P1	23.1	0.0
7	P2	22.8	0.3
7	P3	23.0	-0.1
7	P4	22.5	0.9
7	P5	23.1	0.1
7	P6	23.7	-0.2
7	P7	22.7	0.1
7	P8	22.3	1.0
7	P9	23.2	0.8
7	P10	23.1	0.2
7	P11	22.5	1.1
7	P12	23.2	-0.2
7	P13	23.0	0.5
7	P14	23.4	0.7
7	P15	22.7	1.1
7	P16	23.3	0.4
7	P17	23.2	1.0
7	P18	23.3	0.6
7	P19	22.4	0.1
7	P20	22.5	0.3
7	P21	21.9	1.0
7	P22	23.5	0.3
7	P23	22.8	0.8
7	P24	23.0	0.3
8	P1	22.9	1.4
8	P2	23.2	1.0
8	P3	22.9	1.0
8	P4	22.2	0.7
8	P5	22.2	1.6
8	P6	22.4	1.1
8	P7	22.5	1.5
8	P8	22.3	0.5
8	P9	22.1	0.5
8	P10	22.9	0.4
8	P11	22.4	1.0
8	P12	22.1	1.1
8	P13	21.7	1.4
8	P14	22.1	1.0
8	P15	22.4	1.2
8	P16	27.0	-2.5
8	P17	21.7	3.5
8	P18	23.2	0.4
8	P19	22.1	1.4
8	P20	20.5	0.6
8	P21	21.7	1.5
8	P22	22.5	-0.4
8	P23	23.1	-0.9

8	P24	23.5	0.3
9	P1	23.1	-0.2
9	P2	22.9	-0.1
9	P3	22.4	-0.3
9	P4	21.9	-0.1
9	P5	22.3	-0.1
9	P6	22.4	-0.3
9	P7	22.2	0.3
9	P8	22.7	-0.3
9	P9	21.7	-0.1
9	P10	22.4	0.0
9	P11	22.1	0.1
9	P12	22.0	0.0
9	P13	21.6	0.2
9	P14	22.1	0.1
9	P15	22.4	-0.4
9	P16	22.3	-0.1
9	P17	22.8	0.1
9	P18	22.4	-0.6
9	P19	21.9	0.0
9	P20	20.9	0.1
9	P21	21.4	-0.2
9	P22	21.7	0.2
9	P23	22.1	1.4
9	P24	22.5	-0.3

EQUIPMENT AND CALIBRATION SCHEDULES

Equipment #: HZ-MO-03
Description: Micro-ohmmeter
Manufacturer: Keithley
Model: 580
Serial #: 297288
Accuracy: «Equipment_List_1_Accuracy1» «Equipment_List_1_Accuracy2»
… Last Cal: 2008-7-22, Next Cal: 2009-7-21

Equipment #: HZ-MO-02
Description: Digital Multimeter
Manufacturer: Keithley
Model: 2700
Serial #: 1192950
Accuracy: «Equipment_List_2_Accuracy1» «Equipment_List_2_Accuracy2»
… Last Cal: 2008-12-15, Next Cal: 2009-12-14

Equipment #: HZ-PS-01
Description: 120 Amp Power Supply
Manufacturer: Agilent
Model: Agilent 6031A PS
Serial #: MY41000982
Accuracy: «Equipment_List_3_Accuracy1» «Equipment_List_3_Accuracy2»
… Last Cal: 2009-4-29, Next Cal: 2010-4-28

Equipment #: HZ-MO-01
Description: Digital Multimeter
Manufacturer: Keithley 2700
Model: 2700
Serial #: 1199807
Accuracy: «Equipment_List_4_Accuracy1» «Equipment_List_4_Accuracy2»
… Last Cal: 2009-4-29, Next Cal: 2010-4-28

Equipment #: HZ-HPM-01
Description: IR/DWV Tester
Manufacturer: Ainuo
Model: AN9636H
Serial #: 089601091
Accuracy: «Equipment_List_5_Accuracy1» «Equipment_List_5_Accuracy2»
… Last Cal: 2009-3-4, Next Cal: 2010-3-3

Equipment #: HZ-TCT-01
Description: Normal force analyzer
Manufacturer: Mecmesin Multitester
Model: Mecmesin Multitester 2.5-i
Serial #: 08-1049-04
Accuracy: «Equipment_List_6_Accuracy1» «Equipment_List_6_Accuracy2»
… Last Cal: 2009-4-29, Next Cal: 2010-4-28

Equipment #: HZ-OV-01
Description: Oven
Manufacturer: Huida
Model: CS101-1E
Serial #: CS101-1E-B
Accuracy: «Equipment_List_2_Accuracy1» «Equipment_List_2_Accuracy2»
… Last Cal: 2008-12-15, Next Cal: 2009-12-14

Equipment #: HZ-THC-01
Description: Humidity transmitter
Manufacturer: Thermtron
Model: HMM30C
Serial #: D0240037
Accuracy: «Equipment_List_3_Accuracy1» «Equipment_List_3_Accuracy2»
… Last Cal: 2009-3-4, Next Cal: 2009-3-3