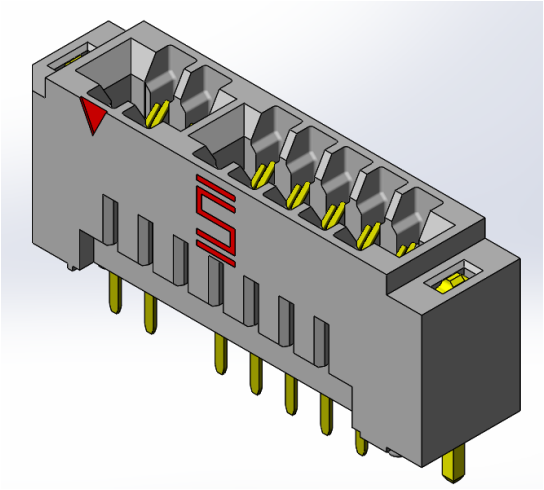
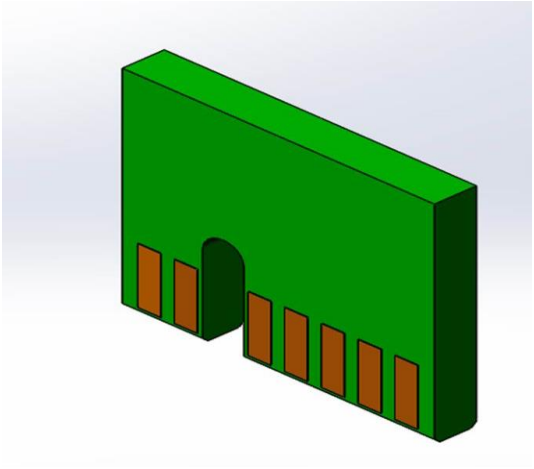
Project Number: Design Qualification Test Report	Tracking Code: 479356_Report_Rev_1
Requested by: Abbie Yang	Date: 5/8/2015
Part #: MEC2-30-02-L-TH1-WT/EDGE CARD	
Part description: MEC2/CARD	Tech: Peter Chen
Test Start: 1/15/2015	Test Completed: 3/20/2015





(Actual part not depicted)

DESIGN QUALIFICATION TEST REPORT

MEC2/CARD
MEC2-30-02-L-TH1-WT/EDGE CARD

REVISION HISTORY

DATE	REV.NUM.	DESCRIPTION	ENG
5/7/2015	**1**	**Initial Issue**	**PC**

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 Qualification test. Please see 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 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 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) Samtec Test PCBs used: PCB-106652-TST/PCB-106653-TST/PCB-106654-TST/PCB-106655-TST
   PCB-106672-TST

FLOWCHARTS

Gas Tight

Group 1
MEC2-30-02-L-TH1-WT
MATING-CARD
8 Assemblies

Note: .084" thick edge card (min)

Step	Description
1.	LLCR (2)
2.	Gas Tight (1)
3.	LLCR (2) Max Delta = 15 mOhm

(1) Gas Tight = EIA-364-36

(2) LLCR = EIA-364-23
Open Circuit Voltage = 20 mV Max
Test Current = 100 mA Max

Thermal Aging

Group 1
MEC2-30-02-L-TH1-WT
MATING-CARD
8 Assemblies

Note: .084" thick edge card (min)

Step	Description
1.	Contact Gaps
2.	Mating/Unmating Force (2)
3.	LLCR (1)
4.	Thermal Age (3)
5.	LLCR (1) Max Delta = 15 mOhm
6.	Mating/Unmating Force (2)
7.	Contact Gaps

Group 2
MEC2-30-02-L-TH1-WT
MATING-CARD
8 Assemblies

Note: .102" thick edge card (max)

Step	Description
1.	Contact Gaps
2.	Mating/Unmating Force (2)
3.	LLCR (1)
4.	Thermal Age (3)
5.	LLCR (1) Max Delta = 15 mOhm
6.	Mating/Unmating Force (2)
7.	Contact Gaps

(1) LLCR = EIA-364-23
Open Circuit Voltage = 20 mV Max
Test Current = 100 mA Max

(2) Mating/Unmating Force = EIA-364-13

(3) Thermal Age = EIA-364-17
Test Condition = 4 (105°C)
Time Condition = B (250 Hours)

FLOWCHARTS Continued

Mating/Unmating/Durability

Group 1 MEC2-30-02-L-TH1-WT MATING-CARD 8 Assemblies *Note: .084" thick edge card (min)*		Group 2 MEC2-30-02-L-TH1-WT MATING-CARD 8 Assemblies *Note: .102" thick edge card (max)*		Group 3 MEC2-05-02-L-TH1-WT MATING-CARD 8 Assemblies *Note: .102" thick edge card (max)*		Group 4 MEC2-50-02-L-TH1-WT MATING-CARD 8 Assemblies *Note: .102" thick edge card (max)*	
Step	**Description**	**Step**	**Description**	**Step**	**Description**	**Step**	**Description**
1.	Contact Gaps	1.	Contact Gaps	1.	Contact Gaps	1.	Contact Gaps
2.	LLCR (2)	2.	LLCR (2)	2.	Mating/Unmating Force (3)	2.	Mating/Unmating Force (3)
3.	Mating/Unmating Force (3)	3.	Mating/Unmating Force (3)	3.	Cycles Quantity = 25 Cycles	3.	Cycles Quantity = 25 Cycles
4.	Cycles Quantity = 25 Cycles	4.	Cycles Quantity = 25 Cycles	4.	Mating/Unmating Force (3)	4.	Mating/Unmating Force (3)
5.	Mating/Unmating Force (3)	5.	Mating/Unmating Force (3)	5.	Cycles Quantity = 25 Cycles	5.	Cycles Quantity = 25 Cycles
6.	Cycles Quantity = 25 Cycles	6.	Cycles Quantity = 25 Cycles	6.	Mating/Unmating Force (3)	6.	Mating/Unmating Force (3)
7.	Mating/Unmating Force (3)	7.	Mating/Unmating Force (3)	7.	Cycles Quantity = 25 Cycles	7.	Cycles Quantity = 25 Cycles
8.	Cycles Quantity = 25 Cycles	8.	Cycles Quantity = 25 Cycles	8.	Mating/Unmating Force (3)	8.	Mating/Unmating Force (3)
9.	Mating/Unmating Force (3)	9.	Mating/Unmating Force (3)	9.	Cycles Quantity = 25 Cycles	9.	Cycles Quantity = 25 Cycles
10.	Cycles Quantity = 25 Cycles	10.	Cycles Quantity = 25 Cycles	10.	Mating/Unmating Force (3)	10.	Mating/Unmating Force (3)
11.	Mating/Unmating Force (3)	11.	Mating/Unmating Force (3)				
12.	Contact Gaps	12.	Contact Gaps				
13.	LLCR (2) Max Delta = 15 mOhm	13.	LLCR (2) Max Delta = 15 mOhm				
14.	Thermal Shock (4)	14.	Thermal Shock (4)				
15.	LLCR (2) Max Delta = 15 mOhm	15.	LLCR (2) Max Delta = 15 mOhm				
16.	Humidity (1)	16.	Humidity (1)				
17.	LLCR (2) Max Delta = 15 mOhm	17.	LLCR (2) Max Delta = 15 mOhm				
18.	Mating/Unmating Force (3)	18.	Mating/Unmating Force (3)				

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(1) Humidity = EIA-364-31
Test Condition = B (240 Hours)
Test Method = III (+25oC to +65tC @ 90% RH to 98% RH)
Test Exceptions: ambient pre-condition and delete steps 7a and 7b

(2) LLCR = EIA-364-23
Open Circuit Voltage = 20 mV Max
Test Current = 100 mA Max

(3) Mating/Unmating Force = EIA-364-13

(4) Thermal Shock = EIA-364-32
Exposure Time at Temperature Extremes = 1/2 Hour
Method A, Test Condition = I (-55oC to +85tC)
Test Duration = A-3 (100 Cycles)

FLOWCHARTS Continued

Current Carrying Capacity

Group 1
MEC2-50-02-L-TH1-WT
MATING-CARD
2 Pins Powered
Signal
Note: .084" thick edge card (min)

Step	Description
1.	CCC (1) Rows = 2 Number of Positions = 1

Group 2
MEC2-50-02-L-TH1-WT
MATING-CARD
4 Pins Powered
Signal
Note: .084" thick edge card (min)

Step	Description
1.	CCC (1) Rows = 2 Number of Positions = 2

Group 3
MEC2-50-02-L-TH1-WT
MATING-CARD
6 Pins Powered
Signal
Note: .084" thick edge card (min)

Step	Description
1.	CCC (1) Rows = 2 Number of Positions = 3

Group 4
MEC2-50-02-L-TH1-WT
MATING-CARD
8 Pins Powered
Signal
Note: .084" thick edge card (min)

Step	Description
1.	CCC (1) Rows = 2 Number of Positions = 4

Group 5
MEC2-50-02-L-TH1-WT
MATING-CARD
100 Pins Powered
Signal
Note: .084" thick edge card (min)

Step	Description
1.	CCC (1) Rows = 2 Number of Positions = 50

(1) CCC = EIA-364-70
Method 2, Temperature Rise Versus Current Curve
(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

FLOWCHARTS Continued

Mechanical Shock/Random Vibration/LLCR

Group 1	Group 2
MEC2-30-02-L-TH1-WT	MEC2-30-02-L-TH1-WT
MATING-CARD	MATING-CARD
8 Assemblies	8 Assemblies
Note: .084" thick edge card (min)	*Note: .102" thick edge card (max)*

Step	Description	Step	Description
1.	LLCR (1)	1.	LLCR (1)
2.	Mechanical Shock (2)	2.	Mechanical Shock (2)
3.	Random Vibration (3)	3.	Random Vibration (3)
4.	LLCR (1) Max Delta = 15 mOhm	4.	LLCR (1) Max Delta = 15 mOhm

(1) LLCR = EIA-364-23
Open Circuit Voltage = 20 mV Max
Test Current = 100 mA Max

(2) Mechanical Shock = EIA-364-27
Test Condition = C (100 G Peak, 6 milliseconds, Half Sine)
Number of Shocks = 3 Per Direction, Per Axis, 18 Total

(3) Random Vibration = EIA-364-28
Condition = VB (7.56 gRMS Average, 2 Hours/Axis)

Mechanical Shock/Random Vibration/Event Detection

Group 1
MEC2-30-02-L-TH1-WT
MATING-CARD
60 Points

Note: .084" thick edge card (min)

Step	Description
1.	Nanosecond Event Detection (Mechanical Shock) (1)
2.	Nanosecond Event Detection (Random Vibration) (2)

(1) Nanosecond Event Detection (Mechanical Shock)
Use EIA-364-87 for Nanosecond Event Detection:
Test Condition = F (50 nanoseconds at 10 ohms)
Use EIA-364-27 for Mechanical Shock:
Test Condition = C (100 G Peak, 6 milliseconds, Half Sine)
Number of Shocks = 3 Per Direction, Per Axis, 18 Total

(2) Nanosecond Event Detection (Random Vibration)
Use EIA-364-87 for Nanosecond Event Detection:
Test Condition = F (50 nanoseconds at 10 ohms)
Use EIA-364-28 for Random Vibration:
Condition = VB (7.56 gRMS Average, 2 Hours/Axis)

ATTRIBUTE DEFINITIONS

The following is a brief, simplified description of attributes.

THERMAL SHOCK:

1) EIA-364-32, *Thermal Shock (Temperature Cycling) Test Procedure for Electrical Connectors.*
2) Test Condition 1: -55°C to +85°C
3) Test Time: ½ hour dwell at each temperature extreme
4) Number of Cycles: 100
5) All test samples are pre-conditioned at ambient.
6) All test samples are exposed to environmental stressing in the mated condition.

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.

MECHANICAL SHOCK (Specified Pulse):

1) Reference document: EIA-364-27, *Mechanical Shock Test Procedure for Electrical Connectors*
2) Test Condition C
3) Peak Value: 100 G
4) Duration: 6 Milliseconds
5) Wave Form: Half Sine
6) Velocity: 12.3 ft/s
7) Number of Shocks: 3 Shocks / Direction, 3 Axis (18 Total)

VIBRATION:

1) Reference document: EIA-364-28, *Vibration Test Procedure for Electrical Connectors*
2) Test Condition V, Letter B
3) Power Spectral Density: 0.04 G^2 / Hz
4) G 'RMS': 7.56
5) Frequency: 50 to 2000 Hz
6) Duration: 2.0 Hours per axis (3 axis total)

NANOSECOND-EVENT DETECTION:

1) Reference document: EIA-364-87, *Nanosecond-Event Detection for Electrical Connectors*
2) Prior to test, the samples were characterized to assure the low nanosecond event being monitored will trigger the detector.
3) After characterization it was determined the test samples could be monitored for 50 nanosecond events

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.

ATTRIBUTE DEFINITIONS Continued

The following is a brief, simplified description of attributes.

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 four temperature points are reported:
    a. Ambient
    b. 85^{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.

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

ATTRIBUTE DEFINITIONS Continued

The following is a brief, simplified description of attributes.

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----------4.9 A per contact with 2 contacts (2 x 1) powered**
- **CCC for a 30°C Temperature Rise----------4.1 A per contact with 4 contacts (2 x 2) powered**
- **CCC for a 30°C Temperature Rise----------3.5 A per contact with 6 contacts (2 x 3) powered**
- **CCC for a 30°C Temperature Rise----------3.2 A per contact with 8 contacts (2 x 4) powered**
- **CCC for a 30°C Temperature Rise----------2.1 A per contact with 98 contacts (2 x 49) powered**

Mating/Unmating Forces

Thermal Aging Group

MEC2-30-02-L-TH1-WT/EDGE CARD 0.084"

- **Initial**
  - **Mating**
    - **Min ---------- 7.76 Lbs**
    - **Max ---------- 9.25 Lbs**
  - **Unmating**
    - **Min ---------- 4.13 Lbs**
    - **Max ---------- 5.04 Lbs**
- **After Thermal**
  - **Mating**
    - **Min ---------- 8.51 Lbs**
    - **Max ---------- 10.22 Lbs**
  - **Unmating**
    - **Min ---------- 3.35 Lbs**
    - **Max ---------- 5.19 Lbs**

MEC2-30-02-L-TH1-WT /EDGE CARD 0.102"

- **Initial**
  - **Mating**
    - **Min ---------- 9.88 Lbs**
    - **Max ---------- 11.25 Lbs**
  - **Unmating**
    - **Min ---------- 4.11 Lbs**
    - **Max ---------- 5.55 Lbs**
- **After Thermal**
  - **Mating**
    - **Min ---------- 8.41 Lbs**
    - **Max ---------- 10.74 Lbs**
  - **Unmating**
    - **Min ---------- 3.97 Lbs**
    - **Max ---------- 4.91 Lbs**

RESULTS Continued

Mating/Unmating Forces

Mating-Unmating Durability Group (MEC2-30-02-L-TH1-WT/EDGE CARD 0.084")

- **Initial**
  - **Mating**
    - **Min ---------- 7.34 Lbs**
    - **Max ---------- 10.60 Lbs**
  - **Unmating**
    - **Min ---------- 4.03 Lbs**
    - **Max ---------- 5.41 Lbs**
- **After 25 Cycles**
  - **Mating**
    - **Min ---------- 10.20 Lbs**
    - **Max ---------- 14.00 Lbs**
  - **Unmating**
    - **Min ---------- 4.62 Lbs**
    - **Max ---------- 6.28 Lbs**
- **After 50 Cycles**
  - **Mating**
    - **Min ---------- 10.72 Lbs**
    - **Max ---------- 15.73 Lbs**
  - **Unmating**
    - **Min ---------- 5.03 Lbs**
    - **Max ---------- 6.84 Lbs**
- **After 75 Cycles**
  - **Mating**
    - **Min ---------- 12.16 Lbs**
    - **Max ---------- 15.89 Lbs**
  - **Unmating**
    - **Min ---------- 5.42 Lbs**
    - **Max ---------- 7.24 Lbs**
- **After 100 Cycles**
  - **Mating**
    - **Min ---------- 12.45 Lbs**
    - **Max ---------- 16.22 Lbs**
  - **Unmating**
    - **Min ---------- 5.87 Lbs**
    - **Max ---------- 7.68 Lbs**
- **Humidity**
  - **Mating**
    - **Min ---------- 7.50 Lbs**
    - **Max ---------- 9.29 Lbs**
  - **Unmating**
    - **Min ---------- 3.72 Lbs**
    - **Max ---------- 5.59 Lbs**

RESULTS Continued

Mating/Unmating Forces

Mating-Unmating Durability Group (MEC2-30-02-L-TH1-WT/EDGE CARD 0.102")

- **Initial**
  - **Mating**
    - **Min ---------- 8.16 Lbs**
    - **Max ---------- 11.62 Lbs**
  - **Unmating**
    - **Min ---------- 3.85 Lbs**
    - **Max ---------- 4.91 Lbs**
- **After 25 Cycles**
  - **Mating**
    - **Min ---------- 10.23 Lbs**
    - **Max ---------- 14.27 Lbs**
  - **Unmating**
    - **Min ---------- 4.97 Lbs**
    - **Max ---------- 6.32 Lbs**
- **After 50 Cycles**
  - **Mating**
    - **Min ---------- 12.41 Lbs**
    - **Max ---------- 16.47 Lbs**
  - **Unmating**
    - **Min ---------- 5.78 Lbs**
    - **Max ---------- 7.24 Lbs**
- **After 75 Cycles**
  - **Mating**
    - **Min ---------- 13.48 Lbs**
    - **Max ---------- 17.30 Lbs**
  - **Unmating**
    - **Min ---------- 6.24 Lbs**
    - **Max ---------- 8.12 Lbs**
- **After 100 Cycles**
  - **Mating**
    - **Min ---------- 14.42 Lbs**
    - **Max ---------- 18.68 Lbs**
  - **Unmating**
    - **Min ---------- 6.55 Lbs**
    - **Max ---------- 8.83 Lbs**
- **Humidity**
  - **Mating**
    - **Min ---------- 8.36 Lbs**
    - **Max ---------- 10.24 Lbs**
  - **Unmating**
    - **Min ---------- 3.74 Lbs**
    - **Max ---------- 5.09 Lbs**

RESULTS Continued

Mating/Unmating Forces

Mating-Unmating Basic Group (MEC2-05-02-L-TH1-WT/EDGE CARD 0.102")

- **Initial**
  - **Mating**
    - **Min ---------- 1.25 Lbs**
    - **Max ---------- 1.61 Lbs**
  - **Unmating**
    - **Min ---------- 0.41 Lbs**
    - **Max ---------- 0.65 Lbs**
- **After 25 Cycles**
  - **Mating**
    - **Min ---------- 1.28 Lbs**
    - **Max ---------- 2.07 Lbs**
  - **Unmating**
    - **Min ---------- 0.49 Lbs**
    - **Max ---------- 0.79 Lbs**
- **After 50 Cycles**
  - **Mating**
    - **Min ---------- 1.44 Lbs**
    - **Max ---------- 2.33 Lbs**
  - **Unmating**
    - **Min ---------- 0.55 Lbs**
    - **Max ---------- 0.96 Lbs**
- **After 75 Cycles**
  - **Mating**
    - **Min ---------- 1.41 Lbs**
    - **Max ---------- 2.43 Lbs**
  - **Unmating**
    - **Min ---------- 0.56 Lbs**
    - **Max ---------- 1.02 Lbs**
- **After 100 Cycles**
  - **Mating**
    - **Min ---------- 1.56 Lbs**
    - **Max ---------- 2.94 Lbs**
  - **Unmating**
    - **Min ---------- 0.59 Lbs**
    - **Max ---------- 1.11 Lbs**

RESULTS Continued

Mating/Unmating Forces

Mating-Unmating Basic Group (MEC2-50-02-L-TH1-WT/EDGE CARD 0.102")

- **Initial**
  - **Mating**
    - **Min ---------- 15.54 Lbs**
    - **Max ---------- 21.15 Lbs**
  - **Unmating**
    - **Min ---------- 7.00 Lbs**
    - **Max ---------- 7.75 Lbs**
- **After 25 Cycles**
  - **Mating**
    - **Min ---------- 18.89 Lbs**
    - **Max ---------- 27.09 Lbs**
  - **Unmating**
    - **Min ---------- 8.00 Lbs**
    - **Max ---------- 10.08 Lbs**
- **After 50 Cycles**
  - **Mating**
    - **Min ---------- 21.31 Lbs**
    - **Max ---------- 29.17 Lbs**
  - **Unmating**
    - **Min ---------- 9.09 Lbs**
    - **Max ---------- 10.87 Lbs**
- **After 75 Cycles**
  - **Mating**
    - **Min ---------- 24.18 Lbs**
    - **Max ---------- 31.09 Lbs**
  - **Unmating**
    - **Min ---------- 9.97 Lbs**
    - **Max ---------- 11.94 Lbs**
- **After 100 Cycles**
  - **Mating**
    - **Min ---------- 25.97 Lbs**
    - **Max ---------- 32.75 Lbs**
  - **Unmating**
    - **Min ---------- 10.50 Lbs**
    - **Max ---------- 12.72 Lbs**

RESULTS Continued

LLCR Thermal Aging Group (192 LLCR test points)

MEC2-30-02-L-TH1-WT/EDGE CARD 0.084"

- **Initial ----------4.34 mOhms Max**
- **Thermal**
  - **<= +5.0 mOhms ----------192 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**

MEC2-30-02-L-TH1-WT/EDGE CARD 0.102"

- **Initial ----------3.68 mOhms Max**
- **Thermal**
  - **<= +5.0 mOhms ----------192 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 Group (192 LLCR test points)

MEC2-30-02-L-TH1-WT/EDGE CARD 0.084"

- **Initial ----------4.30 mOhms Max**
- **Gas-Tight**
  - **<= +5.0 mOhms ----------192 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**

RESULTS Continued

LLCR Mating/Unmating Durability Group (192 LLCR test points)

MEC2-30-02-L-TH1-WT/EDGE CARD 0.084"

- **Initial ----------4.15 mOhms Max**
- **Durability, 100 Cycles**
  - **<= +5.0 mOhms ----------192 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 Shock**
  - **<= +5.0 mOhms ----------192 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 ----------187 Points ---------- Stable**
  - **+5.1 to +10.0 mOhms ----------5 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**

MEC2-30-02-L-TH1-WT/EDGE CARD 0.102"

- **Initial ----------3.77 mOhms Max**
- **Durability, 100 Cycles**
  - **<= +5.0 mOhms ----------192 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 Shock**
  - **<= +5.0 mOhms ----------192 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 ----------188 Points ---------- Stable**
  - **+5.1 to +10.0 mOhms ----------4 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**

RESULTS Continued

LLCR Shock & Vibration Group (192 LLCR test points)

MEC2-30-02-L-TH1-WT/EDGE CARD 0.084"

- **Initial ----------3.86 mOhms Max**
- **Shock &Vibration**
  - **<= +5.0 mOhms----------192 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**

Mechanical Shock & Random Vibration:

- **Shock**
  - **No Damage ---------- ---------- Pass**
  - **50 Nanoseconds ---------- ---------- Pass**
- **Vibration**
  - **No Damage ---------- ---------- Pass**
  - **50 Nanoseconds ---------- ---------- Pass**

MEC2-30-02-L-TH1-WT/EDGE CARD 0.102"

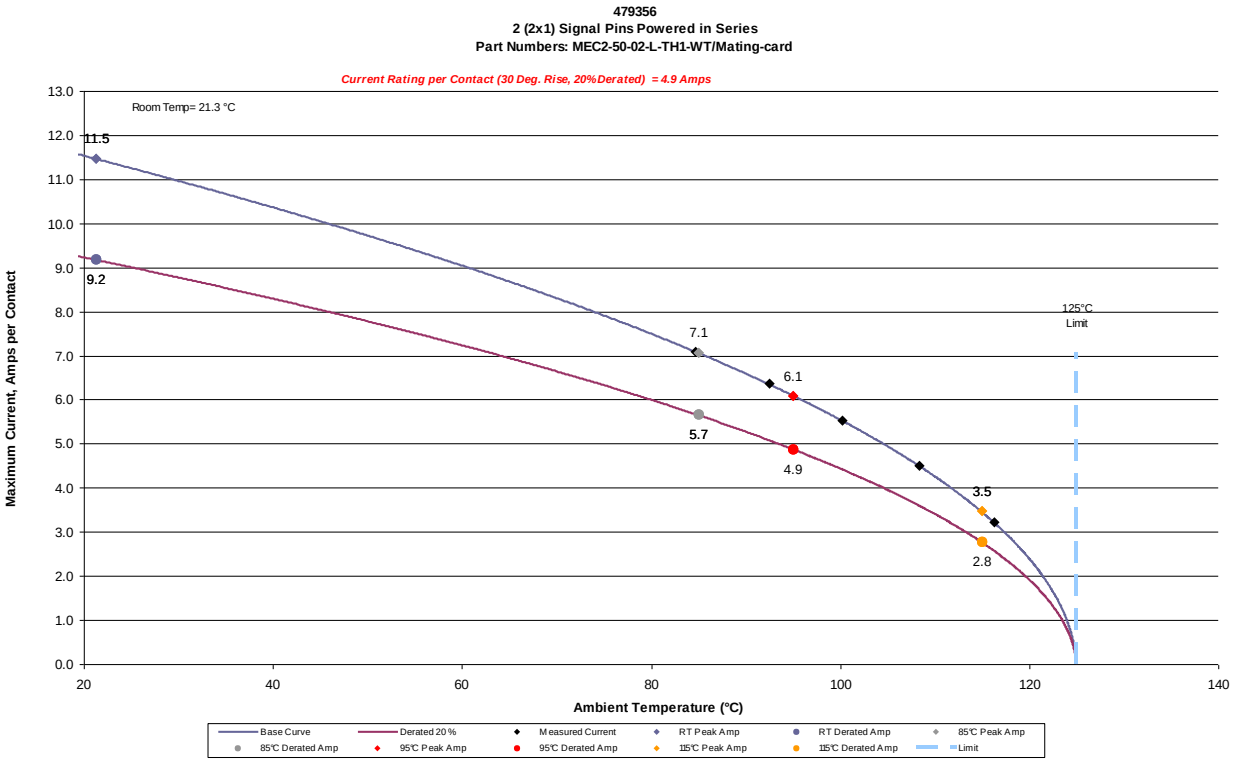
- **Initial ----------3.31 mOhms Max**
- **Shock &Vibration**
  - **<= +5.0 mOhms----------192 Points---------- Stable**
  - **+5.1 to +10.0 mOhms ----------0 Points ---------- Minor**
  - **+10.1 to +15.0 mOhms----------0 Points ---------- Acceptable**
  - **+15.1 to +50.0 mOhms----------0 Points ---------- Marginal**
  - **+50.1 to +2000 mOhms ----------0 Points ---------- Unstable**
  - **>+2000 mOhms ----------0 Points ---------- Open Failure**

DATA SUMMARIES

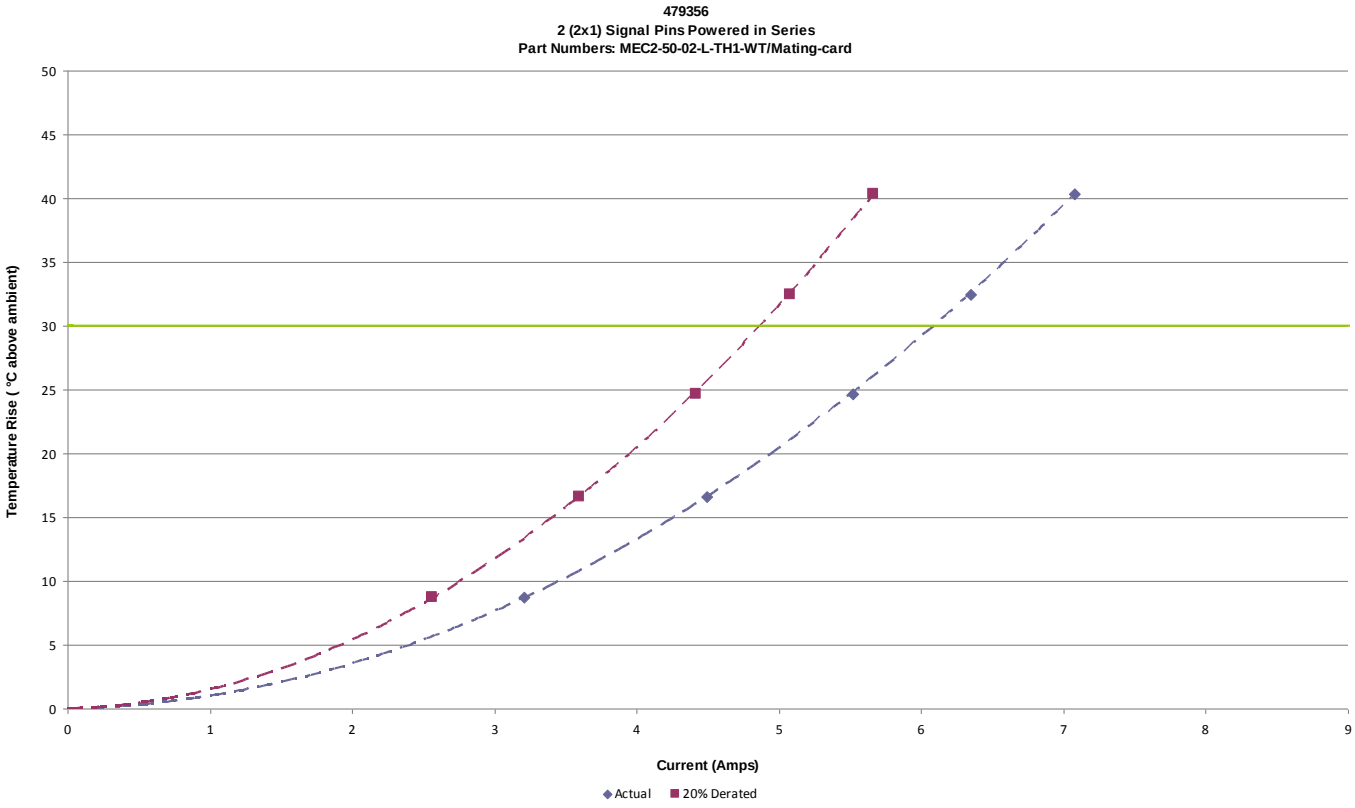
TEMPERATURE RISE (Current Carrying Capacity, CCC):

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

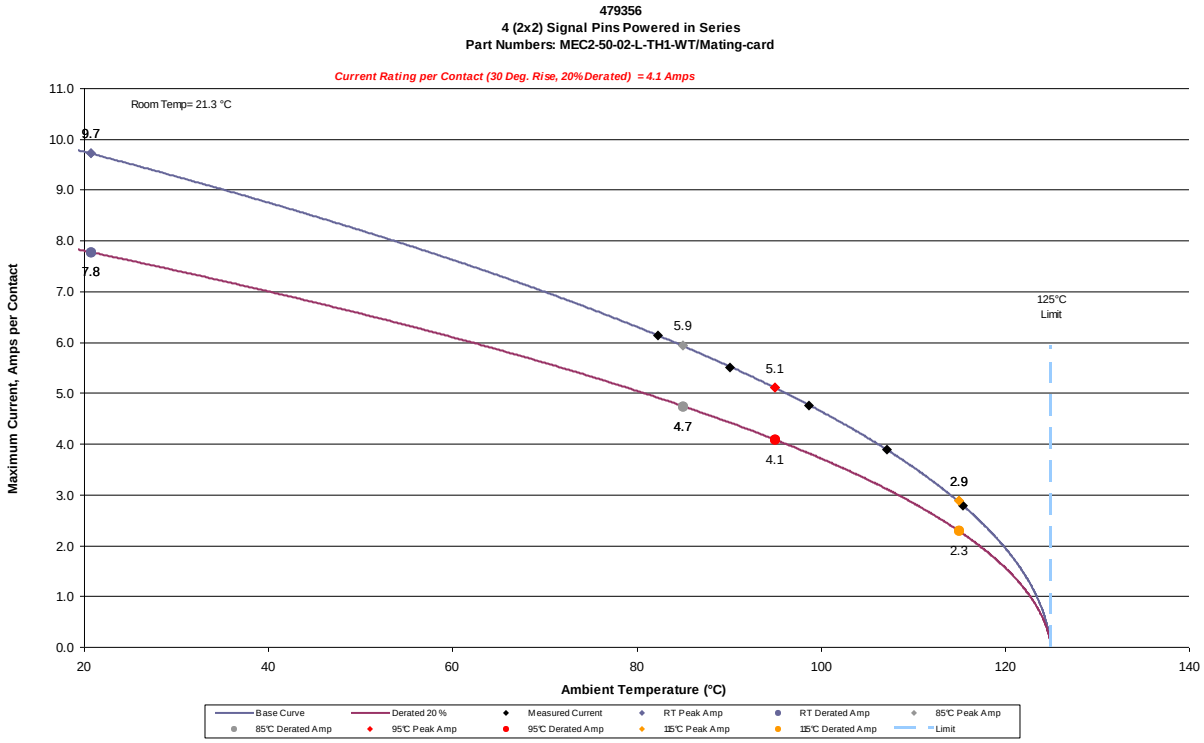


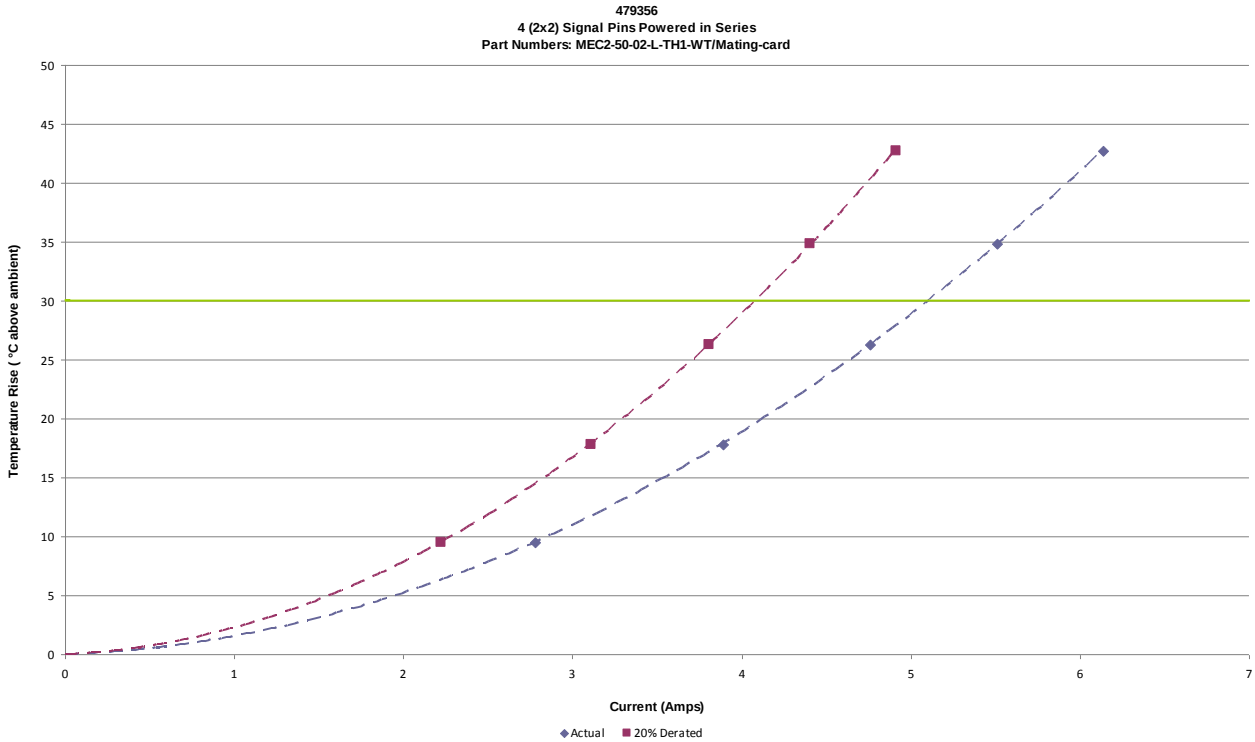
DATA SUMMARIES Continued



DATA SUMMARIES Continued

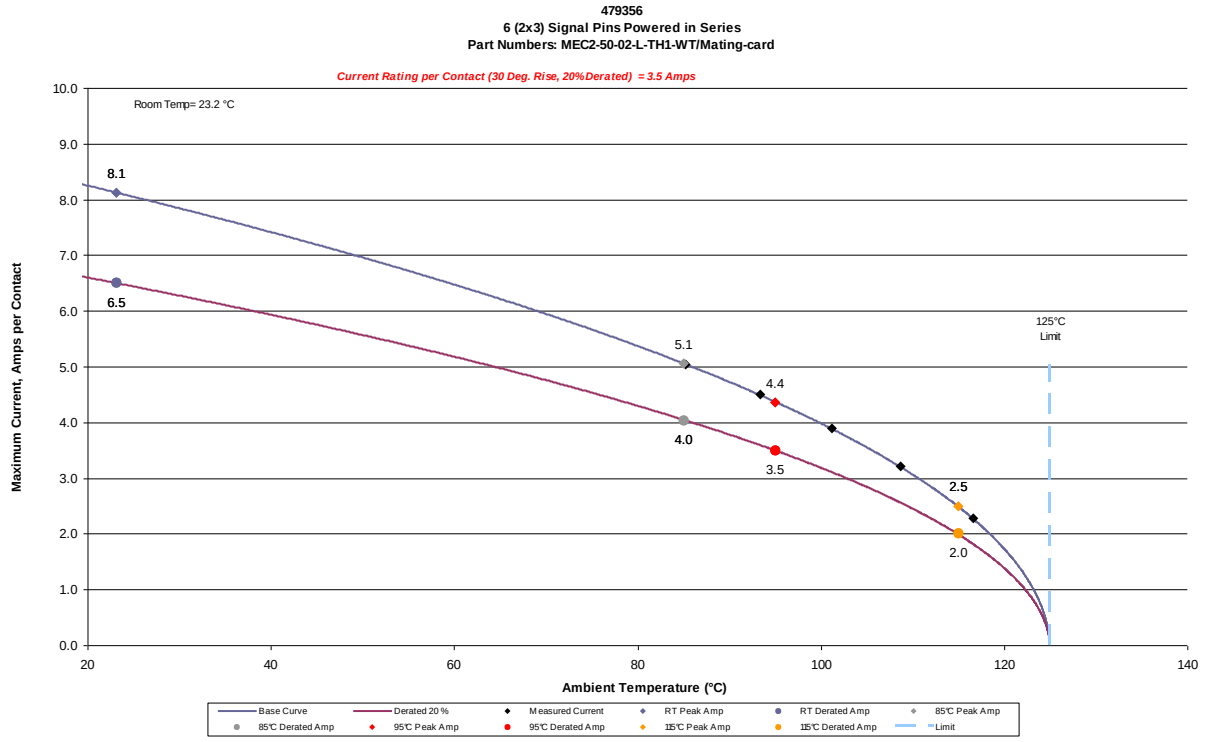
b. Linear configuration with 4 adjacent conductors/contacts powered

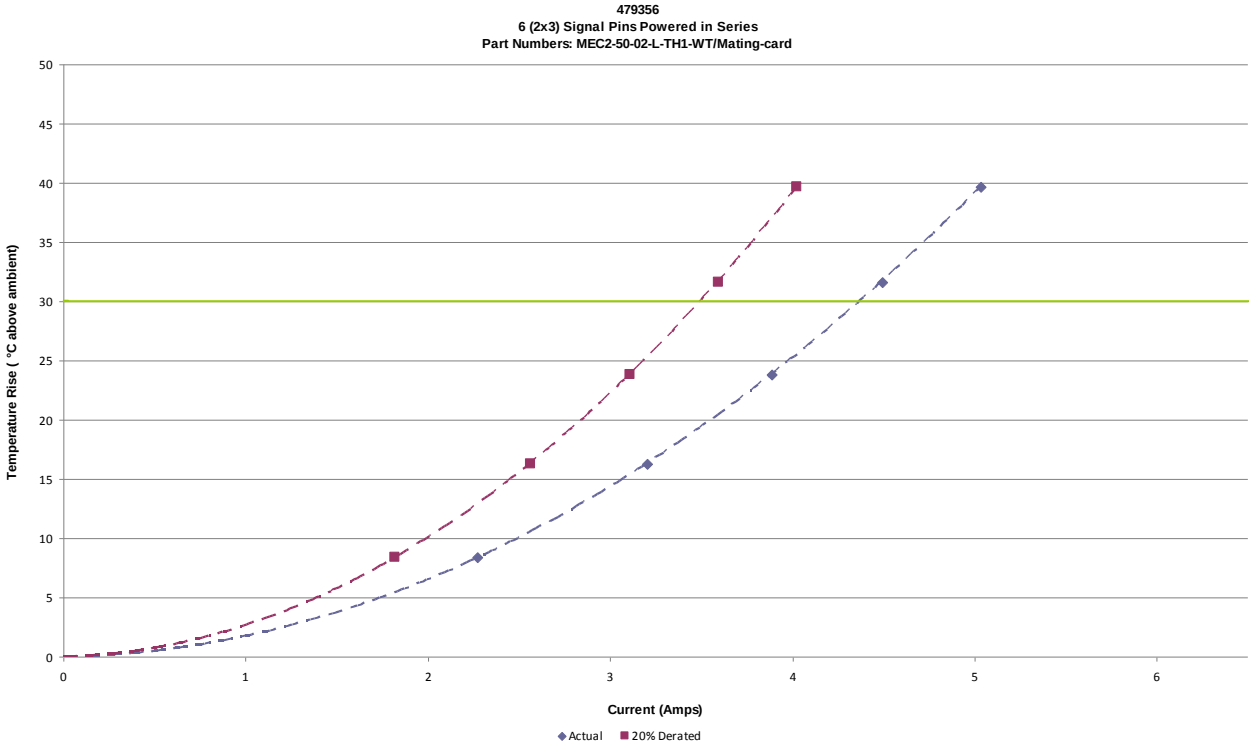




DATA SUMMARIES Continued

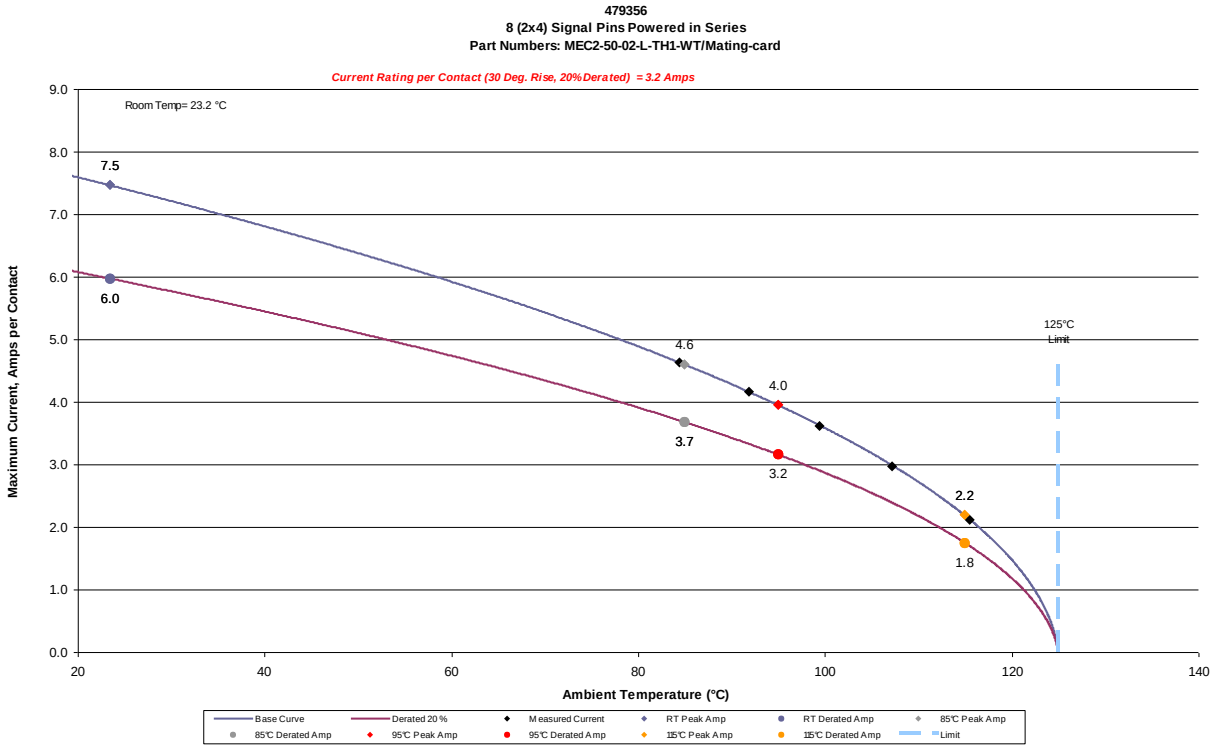
c. Linear configuration with 6 adjacent conductors/contacts powered

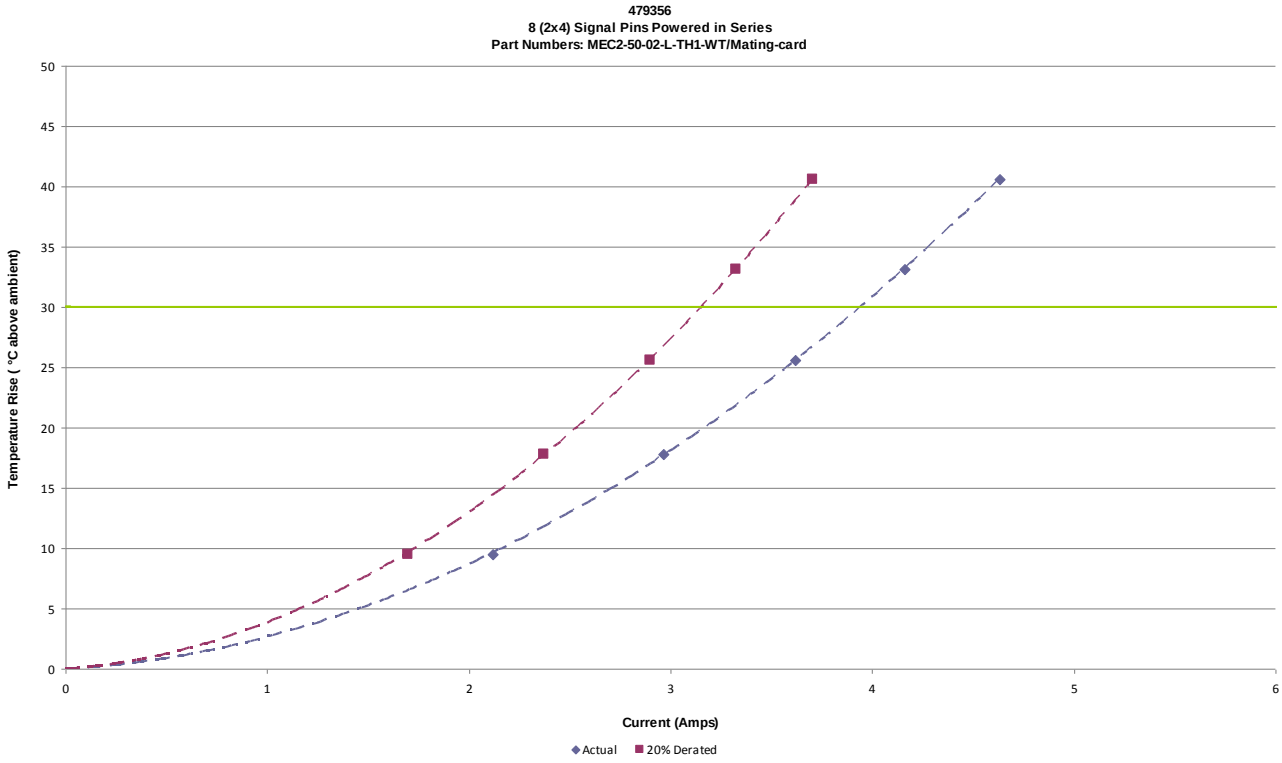




DATA SUMMARIES Continued

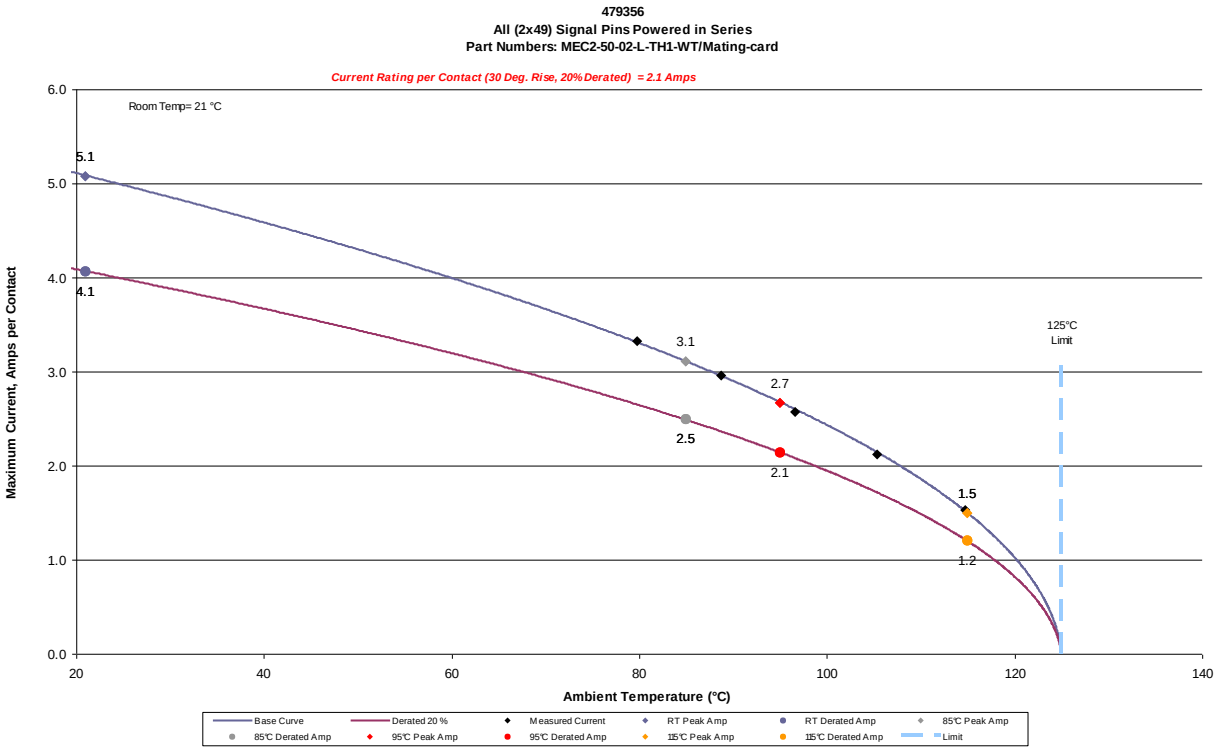
d. Linear configuration with 8 adjacent conductors/contacts powered

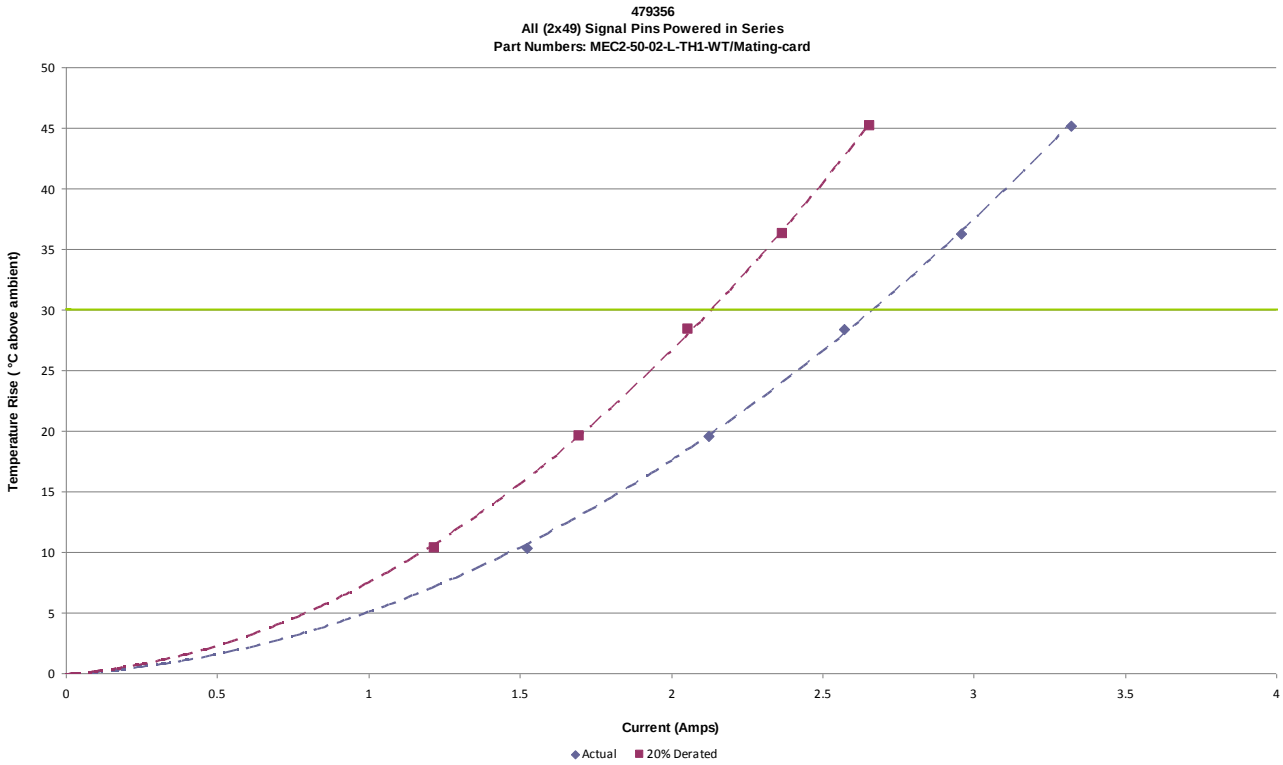




DATA SUMMARIES Continued

e. Linear configuration with all adjacent conductors/contacts powered





DATA SUMMARIES Continued

MATING-UNMATING FORCE:

Thermal Aging Group

MEC2-30-02-L-TH1-WT/EDGE CARD 0.084"

	Initial				After Thermals			
	Mating		**Unmating**		**Mating**		**Unmating**	
	Newtons	Force (Lbs)	Newtons	Force (Lbs)	Newtons	Force (Lbs)	Newtons	Force (Lbs)
Minimum	34.52	7.76	18.37	4.13	37.85	8.51	14.90	3.35
Maximum	41.14	9.25	22.42	5.04	45.46	10.22	23.09	5.19
Average	37.62	**8.46**	20.18	**4.54**	40.89	**9.19**	18.55	**4.17**
St Dev	2.55	0.57	1.54	0.35	2.64	0.59	2.66	0.60
Count	8	8	8	8	8	8	8	8

MEC2-30-02-L-TH1-WT/EDGE CARD 0.102"

	Initial				After Thermals			
	Mating		**Unmating**		**Mating**		**Unmating**	
	Newtons	Force (Lbs)	Newtons	Force (Lbs)	Newtons	Force (Lbs)	Newtons	Force (Lbs)
Minimum	43.95	9.88	18.28	4.11	37.41	8.41	17.66	3.97
Maximum	50.04	11.25	24.69	5.55	47.77	10.74	21.84	4.91
Average	48.15	**10.83**	21.52	**4.84**	41.92	**9.42**	20.04	**4.51**
St Dev	1.99	0.45	2.12	0.48	3.97	0.89	1.29	0.29
Count	8	8	8	8	8	8	8	8

DATA SUMMARIES Continued

MATING-UNMATING FORCE:

Mating-Unmating Durability Group (MEC2-30-02-L-TH1-WT/EDGE CARD 0.084")

	Initial				After 25 Cycles			
	Mating		**Unmating**		**Mating**		**Unmating**	
	Newtons	Force (Lbs)	Newtons	Force (Lbs)	Newtons	Force (Lbs)	Newtons	Force (Lbs)
Minimum	32.65	7.34	17.93	4.03	45.37	10.20	20.55	4.62
Maximum	47.15	10.60	24.06	5.41	62.27	14.00	27.93	6.28
Average	40.14	**9.03**	20.43	**4.59**	51.49	**11.58**	24.36	**5.48**
St Dev	5.01	1.13	2.26	0.51	5.41	1.22	2.75	0.62
Count	8	8	8	8	8	8	8	8

	After 50 Cycles				After 75 Cycles			
	Mating		**Unmating**		**Mating**		**Unmating**	
	Newtons	Force (Lbs)	Newtons	Force (Lbs)	Newtons	Force (Lbs)	Newtons	Force (Lbs)
Minimum	47.68	10.72	22.37	5.03	54.09	12.16	24.11	5.42
Maximum	69.97	15.73	30.42	6.84	70.68	15.89	32.20	7.24
Average	56.71	**12.75**	26.93	**6.05**	60.14	**13.52**	28.75	**6.46**
St Dev	6.55	1.47	2.71	0.61	5.07	1.14	2.89	0.65
Count	8	8	8	8	8	8	8	8

	After 100 Cycles				After Humidity			
	Mating		**Unmating**		**Mating**		**Unmating**	
	Newtons	Force (Lbs)	Newtons	Force (Lbs)	Newtons	Force (Lbs)	Newtons	Force (Lbs)
Minimum	55.38	12.45	26.11	5.87	33.36	7.50	16.55	3.72
Maximum	72.15	16.22	34.16	7.68	41.32	9.29	24.86	5.59
Average	62.25	**14.00**	30.22	**6.80**	37.60	**8.45**	21.33	**4.80**
St Dev	5.43	1.22	2.63	0.59	2.81	0.63	2.95	0.66
Count	8	8	8	8	8	8	8	8

DATA SUMMARIES Continued

MATING-UNMATING FORCE:

Mating-Unmating Durability Group (MEC2-30-02-L-TH1-WT/EDGE CARD 0.102")

	Initial				After 25 Cycles			
	Mating		**Unmating**		**Mating**		**Unmating**	
	Newtons	Force (Lbs)	Newtons	Force (Lbs)	Newtons	Force (Lbs)	Newtons	Force (Lbs)
Minimum	36.30	8.16	17.12	3.85	45.50	10.23	22.11	4.97
Maximum	51.69	11.62	21.84	4.91	63.47	14.27	28.11	6.32
Average	45.60	**10.25**	19.46	**4.38**	57.31	**12.88**	24.49	**5.51**
St Dev	5.73	1.29	2.00	0.45	6.64	1.49	2.10	0.47
Count	8	8	8	8	8	8	8	8

	After 50 Cycles				After 75 Cycles			
	Mating		**Unmating**		**Mating**		**Unmating**	
	Newtons	Force (Lbs)	Newtons	Force (Lbs)	Newtons	Force (Lbs)	Newtons	Force (Lbs)
Minimum	55.20	12.41	25.71	5.78	59.96	13.48	27.76	6.24
Maximum	73.26	16.47	32.20	7.24	76.95	17.30	36.12	8.12
Average	66.16	**14.88**	27.63	**6.21**	70.55	**15.86**	29.76	**6.69**
St Dev	6.46	1.45	2.18	0.49	6.15	1.38	2.82	0.63
Count	8	8	8	8	8	8	8	8

	After 100 Cycles				After Humidity			
	Mating		**Unmating**		**Mating**		**Unmating**	
	Newtons	Force (Lbs)	Newtons	Force (Lbs)	Newtons	Force (Lbs)	Newtons	Force (Lbs)
Minimum	64.14	14.42	29.13	6.55	37.19	8.36	16.64	3.74
Maximum	83.09	18.68	39.28	8.83	45.55	10.24	22.64	5.09
Average	74.38	**16.72**	32.63	**7.34**	39.94	**8.98**	19.24	**4.33**
St Dev	6.22	1.40	3.05	0.69	2.62	0.59	2.30	0.52
Count	8	8	8	8	8	8	8	8

DATA SUMMARIES Continued

MATING-UNMATING FORCE:

Mating-Unmating Basic (MEC2-05-02-L-TH1-WT/EDGE CARD 0.102")

	Initial				After 25 Cycles			
	Mating		**Unmating**		**Mating**		**Unmating**	
	New tons	Force (Lbs)	New tons	Force (Lbs)	New tons	Force (Lbs)	New tons	Force (Lbs)
Minimum	5.56	1.25	1.82	0.41	5.69	1.28	2.18	0.49
Maximum	7.16	1.61	2.89	0.65	9.21	2.07	3.51	0.79
Average	6.33	**1.42**	2.25	**0.51**	7.61	**1.71**	2.63	**0.59**
St Dev	0.63	0.14	0.34	0.08	1.31	0.30	0.44	0.10
Count	8	8	8	8	8	8	8	8

	After 50 Cycles				After 75 Cycles			
	Mating		**Unmating**		**Mating**		**Unmating**	
	New tons	Force (Lbs)	New tons	Force (Lbs)	New tons	Force (Lbs)	New tons	Force (Lbs)
Minimum	6.41	1.44	2.45	0.55	6.27	1.41	2.49	0.56
Maximum	10.36	2.33	4.27	0.96	10.81	2.43	4.54	1.02
Average	8.57	**1.93**	3.08	**0.69**	9.17	**2.06**	3.38	**0.76**
St Dev	1.37	0.31	0.59	0.13	1.50	0.34	0.69	0.16
Count	8	8	8	8	8	8	8	8

	After 100 Cycles			
	Mating		**Unmating**	
	New tons	Force (Lbs)	New tons	Force (Lbs)
Minimum	6.94	1.56	2.62	0.59
Maximum	13.08	2.94	4.94	1.11
Average	9.84	**2.21**	3.69	**0.83**
St Dev	1.80	0.40	0.75	0.17
Count	8	8	8	8

DATA SUMMARIES Continued

MATING-UNMATING FORCE:

Mating-Unmating Basic (MEC2-50-01-L-TH1-WT /EDGE CARD 0.102")

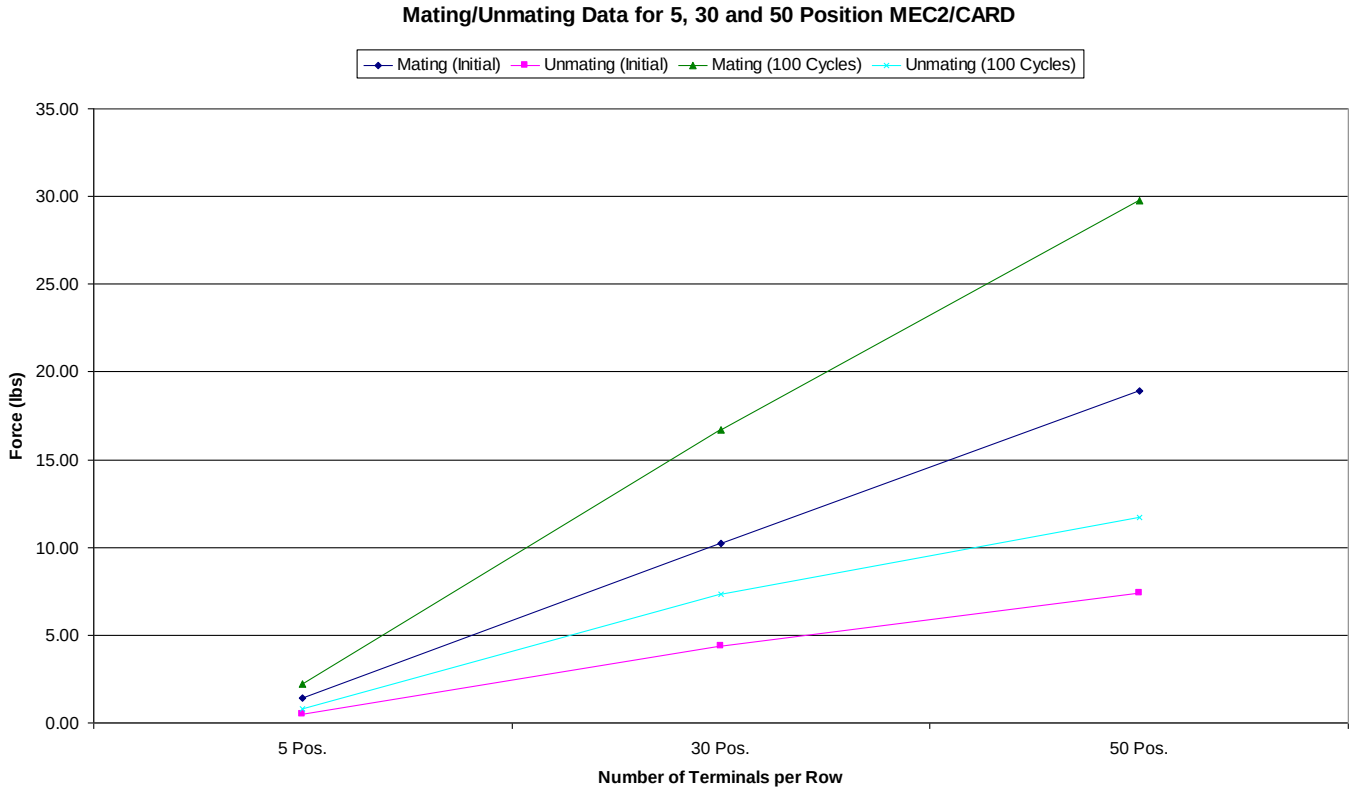
	Initial				After 25 Cycles			
	Mating		**Unmating**		**Mating**		**Unmating**	
	New tons	Force (Lbs)	New tons	Force (Lbs)	New tons	Force (Lbs)	New tons	Force (Lbs)
Minimum	69.12	15.54	31.14	7.00	84.02	18.89	35.58	8.00
Maximum	94.08	21.15	34.47	7.75	120.50	27.09	44.84	10.08
Average	84.27	**18.95**	32.92	**7.40**	101.07	**22.72**	38.39	**8.63**
St Dev	7.55	1.70	0.95	0.21	13.48	3.03	3.13	0.70
Count	8	8	8	8	8	8	8	8

	After 50 Cycles				After 75 Cycles			
	Mating		**Unmating**		**Mating**		**Unmating**	
	New tons	Force (Lbs)	New tons	Force (Lbs)	New tons	Force (Lbs)	New tons	Force (Lbs)
Minimum	94.79	21.31	40.43	9.09	107.55	24.18	44.35	9.97
Maximum	129.75	29.17	48.35	10.87	138.29	31.09	53.11	11.94
Average	114.78	**25.81**	44.09	**9.91**	124.99	**28.10**	48.56	**10.92**
St Dev	12.96	2.91	3.22	0.72	11.91	2.68	3.48	0.78
Count	8	8	8	8	8	8	8	8

	After 100 Cycles			
	Mating		**Unmating**	
	New tons	Force (Lbs)	New tons	Force (Lbs)
Minimum	115.51	25.97	46.70	10.50
Maximum	145.67	32.75	56.58	12.72
Average	132.31	**29.75**	52.16	**11.73**
St Dev	11.00	2.47	3.37	0.76
Count	8	8	8	8

DATA SUMMARIES Continued

Mating\Unmating Force Comparison



DATA SUMMARIES Continued

LLCR Thermal Aging Group

1) A total of 192 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

MEC2-30-02-L-TH1-WT/EDGE CARD 0.084"

	LLCR Measurement Summaries by Pin Type			
Date	1/18/2015	1/29/2015		
Room Temp (Deg C)	21	22		
Rel Humidity (%)	42	53		
Technician	Peter Chen	Peter Chen		
mOhm values	**Actual Initial**	**Delta Thermal**	**Delta**	**Delta**
	Pin Type 1: Signal			
Average	3.31	1.08		
St. Dev.	0.27	0.75		
Min	2.73	0.04		
Max	4.34	3.87		
Summary Count	192	192		
Total Count	192	192		

LLCR Delta Count by Category						
	Stable	**Minor**	**Acceptable**	**Marginal**	**Unstable**	**Open**
mOhms	**<=5**	**>5 & <=10**	**>10 & <=15**	**>15 & <=50**	**>50 & <=1000**	**>1000**
Thermal	**192**	**0**	**0**	**0**	**0**	**0**

DATA SUMMARIES Continued

MEC2-30-02-L-TH1-WT/EDGE CARD 0.102"

	LLCR Measurement Summaries by Pin Type			
Date	1/18/2015	1/29/2015		
Room Temp (Deg C)	21	21		
Rel Humidity (%)	42	53		
Technician	Peter Chen	Peter Chen		
mOhm values	**Actual Initial**	**Delta Thermal**	**Delta**	**Delta**
	Pin Type 1: Signal			
Average	3.10	1.42		
St. Dev.	0.19	0.76		
Min	2.62	0.04		
Max	3.68	3.81		
Summary Count	192	192		
Total Count	192	192		

LLCR Delta Count by Category						
	Stable	**Minor**	**Acceptable**	**Marginal**	**Unstable**	**Open**
mOhms	**<=5**	**>5 & <=10**	**>10 & <=15**	**>15 & <=50**	**>50 & <=1000**	**>1000**
Thermal	**192**	**0**	**0**	**0**	**0**	**0**

DATA SUMMARIES Continued

LLCR Mating/Unmating Durability Group

1). A total of 192 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

MEC2-30-02-L-TH1-WT/EDGE CARD 0.084"

	LLCR Measurement Summaries by Pin Type			
Date	1/15/2015	1/20/2015	1/26/2015	2/5/2015
Room Temp (Deg C)	21	21	21	21
Rel Humidity (%)	43	42	46	52
Technician	Peter Chen	Peter Chen	Peter Chen	Peter Chen
mOhm values	**Actual Initial**	**Delta 100 Cycles**	**Delta Therm Shck**	**Delta Humidity**
	Pin Type 1: Signal			
Average	3.13	0.22	0.29	1.16
St. Dev.	0.32	0.21	0.26	1.25
Min	2.58	0.00	0.00	0.00
Max	4.15	1.00	1.93	6.45
Summary Count	192	192	192	192
Total Count	192	192	192	192

LLCR Delta Count by Category						
	Stable	**Minor**	**Acceptable**	**Marginal**	**Unstable**	**Open**
mOhms	**<=5**	**>5 & <=10**	**>10 & <=15**	**>15 & <=50**	**>50 & <=1000**	**>1000**
100 Cycles	**192**	**0**	**0**	**0**	**0**	**0**
Therm Shck	**192**	**0**	**0**	**0**	**0**	**0**
Humidity	**187**	**5**	**0**	**0**	**0**	**0**

DATA SUMMARIES Continued

MEC2-30-01-L-TH1-WT/EDGE CARD 0.102"

	LLCR Measurement Summaries by Pin Type			
Date	1/16/2015	1/20/2015	1/26/2015	2/5/2015
Room Temp (Deg C)	21	21	21	23
Rel Humidity (%)	43	42	43	45
Technician	Peter Chen	Peter Chen	Peter Chen	Peter Chen
mOhm values	**Actual Initial**	**Delta 100 Cycles**	**Delta Therm Shck**	**Delta Humidity**
	Pin Type 1: Signal			
Average	3.16	0.23	0.28	1.18
St. Dev.	0.18	0.16	0.24	1.32
Min	2.67	0.00	0.00	0.01
Max	3.77	1.01	1.24	6.57
Summary Count	192	192	192	192
Total Count	192	192	192	192

LLCR Delta Count by Category						
	Stable	**Minor**	**Acceptable**	**Marginal**	**Unstable**	**Open**
mOhms	**<=5**	**>5 & <=10**	**>10 & <=15**	**>15 & <=50**	**>50 & <=1000**	**>1000**
100 Cycles	**192**	**0**	**0**	**0**	**0**	**0**
Therm Shck	**192**	**0**	**0**	**0**	**0**	**0**
Humidity	**188**	**4**	**0**	**0**	**0**	**0**

DATA SUMMARIES Continued

LLCR Gas Tight Group

1) A total of 192 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

MEC2-30-02-L-TH1-WT/EDGE CARD 0.084"

	LLCR Measurement Summaries by Pin Type			
Date	1/23/2015	2/2/2015		
Room Temp (Deg C)	22	21		
Rel Humidity (%)	43	43		
Technician	Peter Chen	Peter Chen		
mOhm values	**Actual Initial**	**Delta Acid Vapor**	**Delta**	**Delta**
	Pin Type 1: Signal			
Average	3.30	0.35		
St. Dev.	0.32	0.34		
Min	2.58	0.00		
Max	4.30	3.12		
Summary Count	192	192		
Total Count	192	192		

LLCR Delta Count by Category						
	Stable	**Minor**	**Acceptable**	**Marginal**	**Unstable**	**Open**
mOhms	**<=5**	**>5 & <=10**	**>10 & <=15**	**>15 & <=50**	**>50 & <=1000**	**>1000**
Acid Vapor	**192**	**0**	**0**	**0**	**0**	**0**

DATA SUMMARIES Continued

LLCR Shock & Vibration Group

1) A total of 192 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

MEC2-30-02-L-TH1-WT/EDGE CARD 0.084"

LLCR Measurement Summaries by Pin Type				
Date	3/12/2015	3/17/2015		
Room Temp (Deg C)	22	22		
Rel Humidity (%)	34	35		
Technician	Aaron McKim	Aaron McKim		
mOhm values	**Actual Initial**	**Delta Shock-Vib**	**Delta**	**Delta**
	Pin Type 1: Signal			
Average	3.11	0.20		
St. Dev.	0.25	0.15		
Min	2.35	0.00		
Max	3.86	1.02		
Summary Count	192	192		
Total Count	192	192		

"

LLCR Delta Count by Category						
	Stable	**Minor**	**Acceptable**	**Marginal**	**Unstable**	**Open**
mOhms	**<=5**	**>5 & <=10**	**>10 & <=15**	**>15 & <=50**	**>50 & <=1000**	**>1000**
Shock-Vib	**192**	**0**	**0**	**0**	**0**	**0**

Nanosecond Event Detection:

Shock and Vibration Event Detection Summary	
Contacts tested	60
Test Condition	C, 100g's, 6ms, Half-Sine
Shock Events	0
Test Condition	V-B, 7.56 rms g
Vibration Events	0
Total Events	0

DATA SUMMARIES Continued

MEC2-30-02-L-TH1-WT/EDGE CARD 0.102"

	LLCR Measurement Summaries by Pin Type			
Date	3/17/2015	3/20/2015		
Room Temp (Deg C)	22	22		
Rel Humidity (%)	35	34		
Technician	Aaron McKim	Aaron McKim		
mOhm values	**Actual Initial**	**Delta Shock-Vib**	**Delta**	**Delta**
	Pin Type 1: Signal			
Average	2.84	0.17		
St. Dev.	0.19	0.12		
Min	2.13	0.00		
Max	3.31	0.57		
Summary Count	192	192		
Total Count	192	192		

LLCR Delta Count by Category						
	Stable	**Minor**	**Acceptable**	**Marginal**	**Unstable**	**Open**
mOhms	**<=5**	**>5 & <=10**	**>10 & <=15**	**>15 & <=50**	**>50 & <=1000**	**>1000**
Shock-Vib	**192**	**0**	**0**	**0**	**0**	**0**

EQUIPMENT AND CALIBRATION SCHEDULES

Equipment #: HZ-TCT-01
Description: Normal force analyzer
Manufacturer: Mecmesin Multitester
Model: Mecmesin Multitester 2.5-i
Serial #: 08-1049-04
Accuracy: Last Cal: 4/25/2014, Next Cal: 4/24/2015

Equipment #: HZ-OV-01
Description: Oven
Manufacturer: Huida
Model: CS101-1E
Serial #: CS101-1E-B
Accuracy: Last Cal: 12/11/2014, Next Cal: 12/10/2015

Equipment #: HZ-THC-01
Description: Humidity transmitter
Manufacturer: Thermtron
Model: SM-8-8200
Serial #: 38846
Accuracy: Last Cal: 2/26/2015, Next Cal: 2/25/2016

Equipment #: HZ-MO-05
Description: Micro-ohmmeter
Manufacturer: Keithley
Model: 3706
Serial #: 1285188
Accuracy: Last Cal: 11/13/2014, Next Cal: 11/12/2015

Equipment #: HZ-TSC-01
Description: Vertical Thermal Shock Chamber
Manufacturer: Cincinnatti Sub Zero
Model: VTS-3-6-6-SC/AC
Serial #: 10-VT14994
Accuracy: See Manual
… Last Cal: 06/26/2014, Next Cal: 06/25/2015

Equipment #: HZ-PS-01
Description: 120 Amp Power Supply
Manufacturer: Agilent
Model: 6031A PS
Serial #: MY41000982
Accuracy: See Manual
… Last Cal: 07/02/2014, Next Cal: 07/01/2015

Equipment #: HZ-MO-01
Description: Multimeter /Data Acquisition System
Manufacturer: Keithley
Model: 2700
Serial #: 1199807
Accuracy: See Manual
… Last Cal: 07/02/2014, Next Cal: 07/01/2015

EQUIPMENT AND CALIBRATION SCHEDULES Continued

Equipment #: MO-11
Description: Switch/Multimeter
Manufacturer: Keithley
Model: 3706
Serial #: 120169
Accuracy: See Manual
… Last Cal: 08/21/2014, Next Cal: 08/21/2015

Equipment #: SVC-01
Description: Shock & Vibration Table
Manufacturer: Data Physics
Model: LE-DSA-10-20K
Serial #: 10037
Accuracy: See Manual
… Last Cal: 11/31/2014, Next Cal: 11/31/2015

Equipment #: ACLM-01
Description: Accelerometer
Manufacturer: PCB Piezotronics
Model: 352C03
Serial #: 115819
Accuracy: See Manual
… Last Cal: 07/09/2014, Next Cal: 07/09/2015

Equipment #: ED-03
Description: Event Detector
Manufacturer: Analysis Tech
Model: 32EHD
Serial #: 1100604
Accuracy: See Manual
… Last Cal: 06/04/2014, Next Cal: 06/04/2015