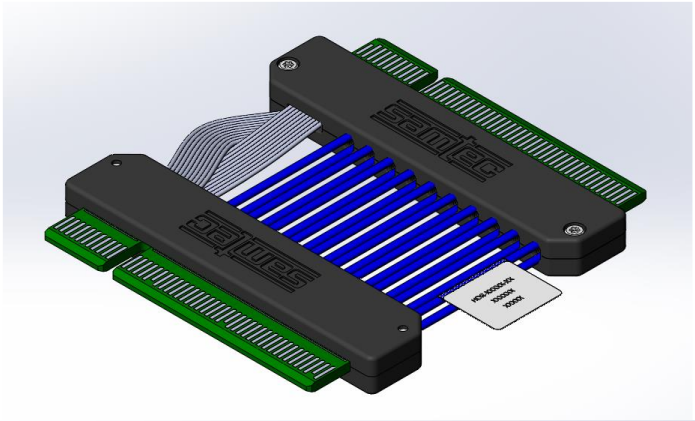
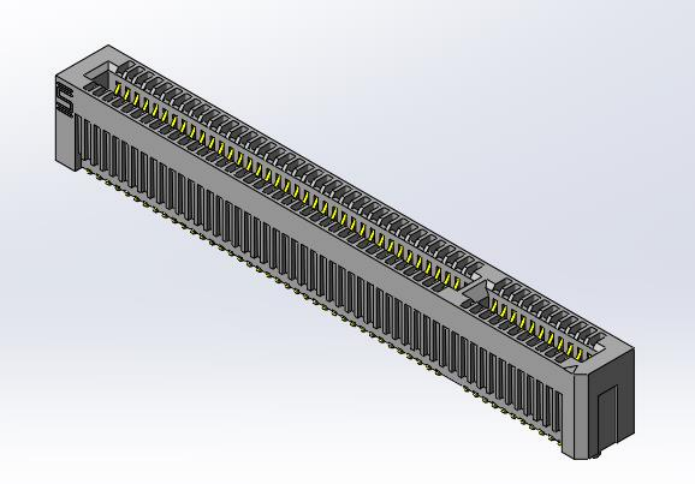
Project Number: Design Qualification Test Report	Tracking Code: 3186089_Report_Rev_1
Requested by: Leo Lee	Date: 7/28/2022
Part #: PCIEC-G4-164-0400-C2-P-85/PCIE-G4-16-01-L-DV-A-K-TR	
Part description: PCIEC/PCIE	Tech: Kason He
Test Start: 3/3/2022	Test Completed: 4/21/2022





DESIGN QUALIFICATION TEST REPORT

PCIEC/PCIE
PCIEC-G4-164-0400-C2-P-85/PCIE-G4-16-01-L-DV-A-K-TR

REVISION HISTORY

DATA	REV.NUM.	DESCRIPTION	ENG
7/28/2022	**1**	**Initial Issue**	**KH**

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 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) Samtec Test PCBs used: PCB-111954-TST/PCB-111955-TST/PCB-111956-TST.

FLOWCHARTS

Gas Tight

Group 1
PCIEC-G4-164-0400-C2-P-85
PCIE-G4-16-01-L-DV-A-K-TR
8 Assemblies

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

FLOWCHARTS Continued

Mating/Unmating/Durability

Group 1 PCIEC-G4-164-0400-C2-P-85 PCIE-G4-16-01-L-DV-A-K-TR 8 Assemblies		Group 2 PCIEC-G4-036-0400-C2-P-85 PCIE-G4-01-01-L-DV-A-K-TR 8 Assemblies		Group 3 PCIEC-G4-098-0400-C2-P-85 PCIE-G4-08-01-L-DV-A-K-TR 8 Assemblies	
Step	**Description**	**Step**	**Description**	**Step**	**Description**
1.	Contact Gaps	1.	Contact Gaps	1.	Contact Gaps
2.	LLCR (2)	2.	Mating/Unmating Force (3)	2.	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.	Mating/Unmating Force (3)	4.	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.	Mating/Unmating Force (3)	6.	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.	Mating/Unmating Force (3)	8.	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.	Mating/Unmating Force (3)	10.	Mating/Unmating Force (3)
11.	Mating/Unmating Force (3)				
12.	Contact Gaps				
13.	LLCR (2) Max Delta = 15 mOhm				
14.	Thermal Shock (4)				
15.	LLCR (2) Max Delta = 15 mOhm				
16.	Humidity (1)				
17.	LLCR (2) Max Delta = 15 mOhm				
18.	Mating/Unmating Force (3)				

(1) Humidity = EIA-364-31
Test Condition = B (240 Hours)
Test Method = III (+25°C to +65°C @ 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 (-55°C to +85°C)
Test Duration = A-3 (100 Cycles)

FLOWCHARTS Continued

IR/DWV

Pin-to-Pin

Group 1 PCIEC-G4-164-0400-C2-P-85 PCIE-G4-16-01-L-DV-A-K-TR 2 Assemblies		Group 2 PCIEC-G4-164-0400-C2-P-85 2 Assemblies		Group 3 PCIE-G4-16-01-L-DV-A-K-TR 2 Assemblies		Group 4 PCIEC-G4-164-0400-C2-P-85 PCIE-G4-16-01-L-DV-A-K-TR 2 Assemblies	
Step	**Description**	**Step**	**Description**	**Step**	**Description**	**Step**	**Description**
1.	DWV Breakdown (2)	1.	DWV Breakdown (2)	1.	DWV Breakdown (2)	1.	IR (4)
						2.	DWV at Test Voltage (1)
						3.	Thermal Shock (5)
						4.	IR (4)
						5.	DWV at Test Voltage (1)
						6.	Humidity (3)
						7.	IR (4)
						8.	DWV at Test Voltage (1)

Row-to-Row

Group 5 PCIEC-G4-164-0400-C2-P-85 PCIE-G4-16-01-L-DV-A-K-TR 2 Assemblies		Group 6 PCIEC-G4-164-0400-C2-P-85 2 Assemblies		Group 7 PCIE-G4-16-01-L-DV-A-K-TR 2 Assemblies		Group 8 PCIEC-G4-164-0400-C2-P-85 PCIE-G4-16-01-L-DV-A-K-TR 2 Assemblies	
Step	**Description**	**Step**	**Description**	**Step**	**Description**	**Step**	**Description**
1.	DWV Breakdown (2)	1.	DWV Breakdown (2)	1.	DWV Breakdown (2)	1.	IR (4)
						2.	DWV at Test Voltage (1)
						3.	Thermal Shock (5)
						4.	IR (4)
						5.	DWV at Test Voltage (1)
						6.	Humidity (3)
						7.	IR (4)
						8.	DWV at Test Voltage (1)

(1) DWV at Test Voltage = EIA-364-20
Test Condition = 1 (Sea Level)
DWV test voltage is equal to 75% of the lowest breakdown voltage
Test voltage applied for 60 seconds

(2) DWV Breakdown = EIA-364-20
Test Condition = 1 (Sea Level)
DWV test voltage is equal to 75% of the lowest breakdown voltage
Test voltage applied for 60 seconds

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

(4) IR = EIA-364-21
Test Condition = 500 Vdc, 2 Minutes Max

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

FLOWCHARTS Continued

Current Carrying Capacity

Group 1
PCIEC-G4-164-0400-C2-P-85
PCIE-G4-16-01-L-DV-A-K-TR
2 Pins Powered
Signal

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

Group 2
PCIEC-G4-164-0400-C2-P-85
PCIE-G4-16-01-L-DV-A-K-TR
4 Pins Powered
Signal

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

Group 3
PCIEC-G4-164-0400-C2-P-85
PCIE-G4-16-01-L-DV-A-K-TR
6 Pins Powered
Signal

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

Group 4
PCIEC-G4-164-0400-C2-P-85
PCIE-G4-16-01-L-DV-A-K-TR
8 Pins Powered
Signal

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

Group 5
PCIEC-G4-164-0400-C2-P-85
PCIE-G4-16-01-L-DV-A-K-TR
156 Pins Powered
Signal

Step	Description
1.	CCC (2) Rows = 2 Number of Positions = 78

Group 6
PCIEC-G4-164-0400-C2-P-85
PCIE-G4-16-01-L-DV-A-K-TR
2 Pins Powered
Power

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

Group 7
PCIEC-G4-164-0400-C2-P-85
PCIE-G4-16-01-L-DV-A-K-TR
4 Pins Powered
Power

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

Group 8
PCIEC-G4-164-0400-C2-P-85
PCIE-G4-16-01-L-DV-A-K-TR
6 Pins Powered
Power

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

Group 9
PCIEC-G4-164-0400-C2-P-85
PCIE-G4-16-01-L-DV-A-K-TR
8 Pins Powered
Power

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

Group 10
PCIEC-G4-164-0400-C2-P-85
PCIE-G4-16-01-L-DV-A-K-TR
All Power

Step	Description
1.	CCC - All Power (1)

Group 11
PCIEC-G4-164-0400-C2-P-85
PCIE-G4-16-01-L-DV-A-K-TR
All Power 12V Pins

Step	Description
1.	CCC - All Power (1)

Group 12
PCIEC-G4-164-0400-C2-P-85
PCIE-G4-16-01-L-DV-A-K-TR
All Power 3.3V Pins

Step	Description
1.	CCC - All Power (1)

(1) CCC - All Power = 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

(2) 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

Cable Flex

Group 1
PCIEC-G4-164-0400-C2-P-85
PCIE-G4-16-01-L-DV-A-K-TR
8 Assemblies
Flat Cable

Step	Description
1.	IR (3)
2.	DWV at Test Voltage (2)
3.	Cable Flex (1)
4.	Visual Inspection
5.	IR (3)
6.	DWV at Test Voltage (2)

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(1) Cable Flex = EIA-364-41
Circular Jacket Cable - to be tested 90° each direction (180° total)
Flat Cable - to be tested 70° each direction (140° total)
Monitor continuity during flex testing
Failure = Discontinuity >1 microsecond at 10 ohms

(2) DWV at Test Voltage = EIA-364-20
Test Condition = 1 (Sea Level)
DWV test voltage is equal to 75% of the lowest breakdown voltage
Test voltage applied for 60 seconds

(3) IR = EIA-364-21
Test Condition = 500 Vdc, 2 Minutes Max

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.

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.

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.

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. 65^o C
    c. 75^o C
    d. 95^o C
8) Typically, neighboring contacts (in close proximity to maximize heat buildup) 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.

ATTRIBUTE DEFINITIONS Continued

The following is a brief, simplified description of attributes.

CABLE DURABILITY:

1) Oscillate and monitor electrical continuity for open circuit indication.
    a. ± 70°Flex Mode, bend up to 500 cycles. load on cable end.

Fig. 1
(Setup picture)

ATTRIBUTE DEFINITIONS Continued

The following is a brief, simplified description of attributes.

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 +1000 mOhms: ----------Unstable
    f. >+1000 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 +1000 mOhms:----------Unstable
    f. >+1000 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.

ATTRIBUTE DEFINITIONS Continued

The following is a brief, simplified description of attributes.

INSULATION RESISTANCE (IR):

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

1) PROCEDURE:
    a. Reference document: EIA-364-21, *Insulation Resistance Test Procedure for Electrical Connectors*.
    b. Test Conditions:
        i. Between Adjacent Contacts or Signal-to-Ground
        ii. Electrification Time 2.0 minutes
        iii. Test Voltage (500 VDC) corresponds to calibration settings for measuring resistances.
2) MEASUREMENTS:
3) When the specified test voltage is applied (VDC), the insulation resistance shall not be less than 1000 megohms.

DIELECTRIC WITHSTANDING VOLTAGE (DWV):

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

1) PROCEDURE:
    a. Reference document: EIA-364-20, *Withstanding Voltage Test Procedure for Electrical Connectors*.
    b. Test Conditions:
        i. Between Adjacent Contacts or Signal-to-Ground
        ii. 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).

RESULTS

Temperature Rise, CCC at a 20% de-rating

Signal Pin at Cable

- **CCC for a 30°C Temperature Rise----------1.0 A per contact with 2 contacts (2x1) powered.**
- **CCC for a 30°C Temperature Rise----------0.9 A per contact with 4 contacts (2x2) powered.**
- **CCC for a 30°C Temperature Rise----------0.9 A per contact with 6 contacts (2x3) powered.**
- **CCC for a 30°C Temperature Rise----------0.8 A per contact with 8 contacts (2x4) powered.**
- **CCC for a 30°C Temperature Rise----------0.6 A per contact with 156 contacts (2x78) powered.**

Power Pin at Cable

- **CCC for a 30°C Temperature Rise----------2.3 A per contact with 2 contacts (2x1) powered.**
- **CCC for a 30°C Temperature Rise----------1.8 A per contact with 4 contacts (2x2) powered.**
- **CCC for a 30°C Temperature Rise----------1.3 A per contact with 6 contacts (2x3) powered.**
- **CCC for a 30°C Temperature Rise----------1.2 A per contact with 8 contacts (2x4) powered.**

Ground Pin at Interface

- **CCC for a 30°C Temperature Rise----------23.0 A per contact with all contact powered.**

+3.3V Pin at Cable

- **CCC for a 30°C Temperature Rise----------4.7 A per contact with all contact powered.**

+12.0V Pin at Cable

- **CCC for a 30°C Temperature Rise----------5.4 A per contact with all contact powered.**

RESULTS Continued

Mating – Unmating Forces

Mating-Unmating Durability Group 1（PCIEC-G4-164-0400-C2-P-85/PCIE-G4-16-01-L-DV-A-K-TR）

- **Initial**
  - **Mating**
    - **Min ---------- 8.81 Lbs**
    - **Max----------11.32 Lbs**
  - **Unmating**
    - **Min ---------- 3.45 Lbs**
    - **Max---------- 4.14 Lbs**
- **After 25 Cycles**
  - **Mating**
    - **Min ----------10.31 Lbs**
    - **Max----------11.36 Lbs**
  - **Unmating**
    - **Min ---------- 3.45 Lbs**
    - **Max---------- 5.21 Lbs**
- **After 50 Cycles**
  - **Mating**
    - **Min ----------10.71 Lbs**
    - **Max----------12.74 Lbs**
  - **Unmating**
    - **Min ---------- 4.08 Lbs**
    - **Max---------- 5.74 Lbs**
- **After 75 Cycles**
  - **Mating**
    - **Min ----------10.80 Lbs**
    - **Max----------13.70 Lbs**
  - **Unmating**
    - **Min ---------- 4.25 Lbs**
    - **Max---------- 6.28 Lbs**
- **After 100 Cycles**
  - **Mating**
    - **Min ----------10.70 Lbs**
    - **Max----------14.72 Lbs**
  - **Unmating**
    - **Min ---------- 4.29 Lbs**
    - **Max---------- 6.79 Lbs**
- **Humidity**
  - **Mating**
    - **Min ---------- 7.00 Lbs**
    - **Max---------- 8.47 Lbs**
  - **Unmating**
    - **Min ---------- 3.37 Lbs**
    - **Max---------- 4.71 Lbs**

RESULTS Continued

Mating-Unmating Basic（PCIEC-G4-098-0400-C2-P-85/PCIE-G4-08-01-L-DV-A-K-TR）

- **Initial**
  - **Mating**
    - **Min ----------10.43 Lbs**
    - **Max----------13.14 Lbs**
  - **Unmating**
    - **Min ---------- 2.59 Lbs**
    - **Max---------- 3.05 Lbs**
- **After 25 Cycles**
  - **Mating**
    - **Min ---------- 9.64 Lbs**
    - **Max----------10.59 Lbs**
  - **Unmating**
    - **Min ---------- 2.92 Lbs**
    - **Max---------- 4.81 Lbs**
- **After 50 Cycles**
  - **Mating**
    - **Min ----------10.00 Lbs**
    - **Max----------11.04 Lbs**
  - **Unmating**
    - **Min ---------- 3.77 Lbs**
    - **Max---------- 5.63 Lbs**
- **After 75 Cycles**
  - **Mating**
    - **Min ----------10.15 Lbs**
    - **Max----------11.30 Lbs**
  - **Unmating**
    - **Min ---------- 4.33 Lbs**
    - **Max---------- 6.43 Lbs**
- **After 100 Cycles**
  - **Mating**
    - **Min ----------10.35 Lbs**
    - **Max----------11.87 Lbs**
  - **Unmating**
    - **Min ---------- 5.12 Lbs**
    - **Max---------- 7.35 Lbs**

RESULTS Continued

Mating-Unmating Basic（PCIEC-G4-036-0400-C2-P-85/PCIE-G4-01-01-L-DV-A-K-TR）

- **Initial**
  - **Mating**
    - **Min ---------- 2.80 Lbs**
    - **Max---------- 3.38 Lbs**
  - **Unmating**
    - **Min ---------- 1.00 Lbs**
    - **Max---------- 1.16 Lbs**
- **After 25 Cycles**
  - **Mating**
    - **Min ---------- 2.98 Lbs**
    - **Max---------- 3.23 Lbs**
  - **Unmating**
    - **Min ---------- 1.09 Lbs**
    - **Max---------- 1.53 Lbs**
- **After 50 Cycles**
  - **Mating**
    - **Min ---------- 2.98 Lbs**
    - **Max---------- 3.40 Lbs**
  - **Unmating**
    - **Min ---------- 1.15 Lbs**
    - **Max---------- 1.72 Lbs**
- **After 75 Cycles**
  - **Mating**
    - **Min ---------- 3.10 Lbs**
    - **Max---------- 3.51 Lbs**
  - **Unmating**
    - **Min ---------- 1.44 Lbs**
    - **Max---------- 1.84 Lbs**
- **After 100 Cycles**
  - **Mating**
    - **Min ---------- 3.07 Lbs**
    - **Max---------- 3.80 Lbs**
  - **Unmating**
    - **Min ---------- 1.52 Lbs**
    - **Max---------- 1.89 Lbs**

RESULTS Continued

Insulation Resistance minimums, IR

Pin to Pin

- **Initial**
  - **Mated ---------- 45000 Meg Ω ---------- Passed**
  - **Unmated ---------- 45000 Meg Ω ---------- Passed**
- **Thermal Shock**
  - **Mated ---------- 45000 Meg Ω ---------- Passed**
  - **Unmated ---------- 45000Meg Ω ---------- Passed**
- **Humidity**
  - **Mated ---------- 45000 Meg Ω ---------- Passed**
  - **Unmated ---------- 45000 Meg Ω ---------- Passed**

Row to Row

- **Initial**
  - **Mated ---------- 45000 Meg Ω ---------- Passed**
  - **Unmated ---------- 45000 Meg Ω ---------- Passed**
- **Thermal Shock**
  - **Mated ---------- 45000 Meg Ω ---------- Passed**
  - **Unmated ---------- 45000Meg Ω ---------- Passed**
- **Humidity**
  - **Mated ---------- 45000 Meg Ω ---------- Passed**
  - **Unmated ---------- 45000 Meg Ω ---------- Passed**

Dielectric Withstanding Voltage minimums, DWV

- **Minimums**
  - **Breakdown Voltage ---------- 892 VAC**
  - **Test Voltage ---------- 670 VAC**
  - **Working Voltage ---------- 220 VAC**

Pin to Pin

- **Initial DWV ---------- Passed**
- **Thermal DWV ---------- Passed**
- **Humidity DWV ---------- Passed**

Row to Row

- **Initial DWV ---------- Passed**
- **Thermal DWV ---------- Passed**
- **Humidity DWV ---------- Passed**

RESULTS Continued

Cable Flex:

Insulation Resistance minimums, IR

Pin to Pin

- **Initial**
  - **Mated----------45000 Meg Ω ----------Passed**
- **After 500 flex cycles**
  - **Mated----------45000 Meg Ω ----------Passed**

Row to Row

- **Initial**
  - **Mated----------45000 Meg Ω ----------Passed**
- **After 500 flex cycles**
  - **Mated----------45000 Meg Ω ----------Passed**

Dielectric Withstanding Voltage minimums, DWV

- **Test Voltage ----------670 VAC**

Pin to Pin

- **Initial DWV ----------Passed**
- **After 500 Flex cycles DWV ----------Passed**

Row to Row

- **Initial DWV ----------Passed**
- **After 500 Flex cycles DWV ----------Passed**

RESULTS Continued

LLCR Gas Tight Group (136 signal, 40 ground and 16 power LLCR test points)

Signal Pin

- **Initial ---------- 233.95 mOhms Max**
- **Gas Tight**
  - **<= +5.0 mOhms ---------- 115 Points ---------- Stable**
  - **+5.1 to +10.0 mOhms ---------- 13 Points ---------- Minor**
  - **+10.1 to +15.0 mOhms ---------- 8 Points ---------- Acceptable**
  - **+15.1 to +50.0 mOhms ---------- 0 Points ---------- Marginal**
  - **+50.1 to +1000 mOhms ---------- 0 Points ---------- Unstable**
  - **>+1000 mOhms ---------- 0 Points ---------- Open Failure**

Ground Pin

- **Initial ---------- 22.49 mOhms Max**
- **Gas Tight**
  - **<= +5.0 mOhms ---------- 39 Points ---------- Stable**
  - **+5.1 to +10.0 mOhms ---------- 1 Points ---------- Minor**
  - **+10.1 to +15.0 mOhms ---------- 0 Points ---------- Acceptable**
  - **+15.1 to +50.0 mOhms ---------- 0 Points ---------- Marginal**
  - **+50.1 to +1000 mOhms ---------- 0 Points ---------- Unstable**
  - **>+1000 mOhms ---------- 0 Points ---------- Open Failure**

Power Pin

- **Initial ---------- 93.90 mOhms Max**
- **Gas Tight**
  - **<= +5.0 mOhms ---------- 16 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 +1000 mOhms ---------- 0 Points ---------- Unstable**
  - **>+1000 mOhms ---------- 0 Points ---------- Open Failure**

RESULTS Continued

LLCR Mating/Unmating Durability Group (136 signal, 40 ground and 16 power LLCR test points)

Signal Pin

- **Initial ---------- 213.33 mOhms Max**
- **Durability, 100 Cycles**
  - **<= +5.0 mOhms ---------- 126 Points ---------- Stable**
  - **+5.1 to +10.0 mOhms ---------- 8 Points ---------- Minor**
  - **+10.1 to +15.0 mOhms ---------- 0 Points ---------- Acceptable**
  - **+15.1 to +50.0 mOhms ---------- 0 Points ---------- Marginal**
  - **+50.1 to +1000 mOhms ---------- 0 Points ---------- Unstable**
  - **>+1000 mOhms ---------- 0 Points ---------- Open Failure**
- **Thermal Shock**
  - **<= +5.0 mOhms ---------- 130 Points ---------- Stable**
  - **+5.1 to +10.0 mOhms ---------- 6 Points ---------- Minor**
  - **+10.1 to +15.0 mOhms ---------- 0 Points ---------- Acceptable**
  - **+15.1 to +50.0 mOhms ---------- 0 Points ---------- Marginal**
  - **+50.1 to +1000 mOhms ---------- 0 Points ---------- Unstable**
  - **>+1000 mOhms ---------- 0 Points ---------- Open Failure**
- **Humidity**
  - **<= +5.0 mOhms ---------- 104 Points ---------- Stable**
  - **+5.1 to +10.0 mOhms ---------- 25 Points ---------- Minor**
  - **+10.1 to +15.0 mOhms ---------- 7 Points ---------- Acceptable**
  - **+15.1 to +50.0 mOhms ---------- 0 Points ---------- Marginal**
  - **+50.1 to +1000 mOhms ---------- 0 Points ---------- Unstable**
  - **>+1000 mOhms ---------- 0 Points ---------- Open Failure**

Ground Pin

- **Initial ---------- 21.48 mOhms Max**
- **Durability, 100 Cycles**
  - **<= +5.0 mOhms ---------- 40 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 +1000 mOhms ---------- 0 Points ---------- Unstable**
  - **>+1000 mOhms ---------- 0 Points ---------- Open Failure**
- **Thermal Shock**
  - **<= +5.0 mOhms ---------- 39 Points ---------- Stable**
  - **+5.1 to +10.0 mOhms ---------- 1 Points ---------- Minor**
  - **+10.1 to +15.0 mOhms ---------- 0 Points ---------- Acceptable**
  - **+15.1 to +50.0 mOhms ---------- 0 Points ---------- Marginal**
  - **+50.1 to +1000 mOhms ---------- 0 Points ---------- Unstable**
  - **>+1000 mOhms ---------- 0 Points ---------- Open Failure**
- **Humidity**
  - **<= +5.0 mOhms ---------- 39 Points ---------- Stable**
  - **+5.1 to +10.0 mOhms ---------- 1 Points ---------- Minor**
  - **+10.1 to +15.0 mOhms ---------- 0 Points ---------- Acceptable**
  - **+15.1 to +50.0 mOhms ---------- 0 Points ---------- Marginal**
  - **+50.1 to +1000 mOhms ---------- 0 Points ---------- Unstable**
  - **>+1000 mOhms ---------- 0 Points ---------- Open Failure**

RESULTS Continued

Power Pin

- **Initial ---------- 95.41 mOhms Max**
- **Durability, 100 Cycles**
  - **<= +5.0 mOhms---------- 16 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 +1000 mOhms----------0 Points ---------- Unstable**
  - **>+1000 mOhms----------0 Points ---------- Open Failure**
- **Thermal Shock**
  - **<= +5.0 mOhms---------- 16 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 +1000 mOhms----------0 Points ---------- Unstable**
  - **>+1000 mOhms----------0 Points ---------- Open Failure**
- **Humidity**
  - **<= +5.0 mOhms---------- 15 Points ---------- Stable**
  - **+5.1 to +10.0 mOhms----------1 Points ---------- Minor**
  - **+10.1 to +15.0 mOhms ----------0 Points ---------- Acceptable**
  - **+15.1 to +50.0 mOhms ----------0 Points ---------- Marginal**
  - **+50.1 to +1000 mOhms----------0 Points ---------- Unstable**
  - **>+1000 mOhms----------0 Points ---------- Open Failure**

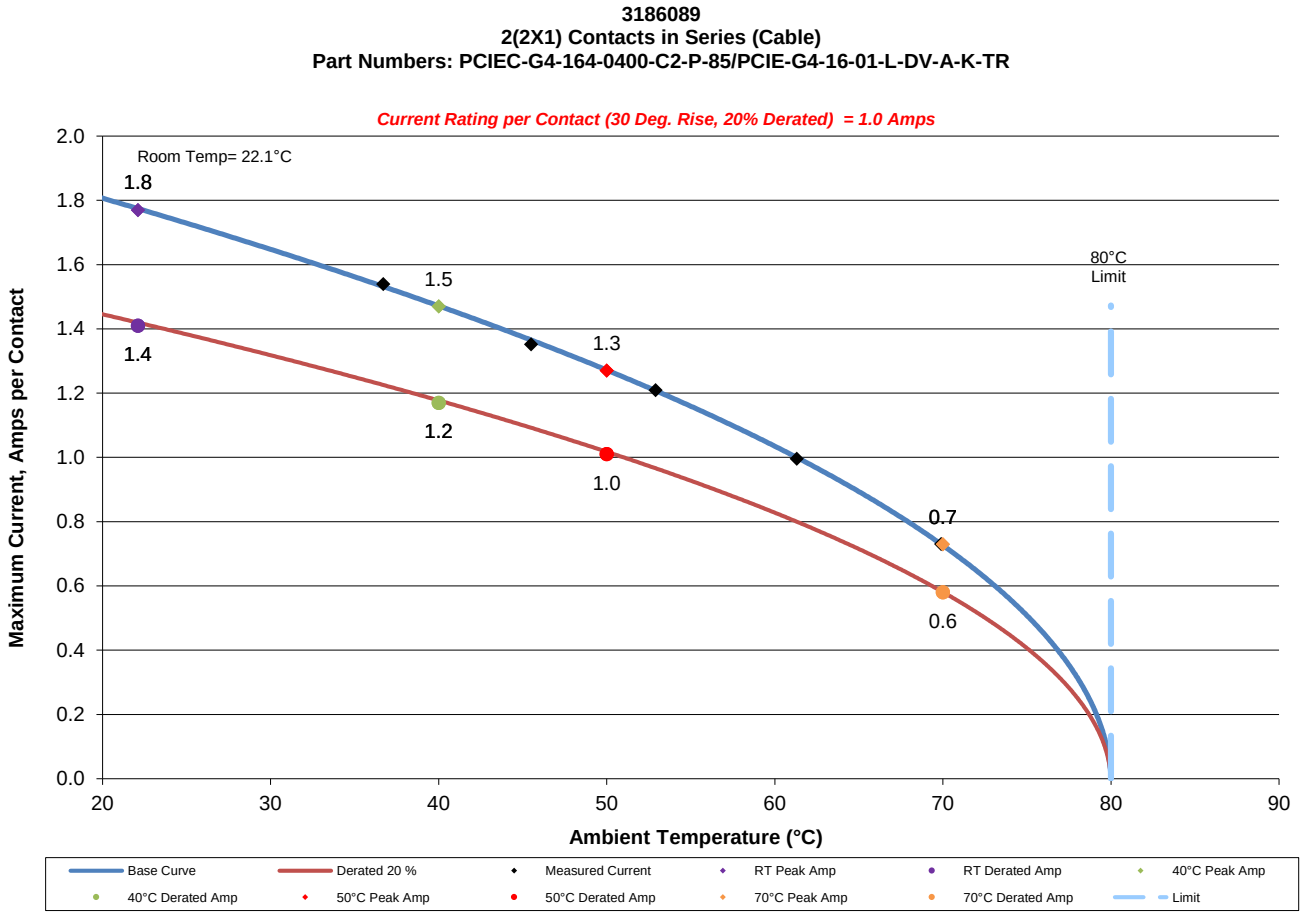
DATA SUMMARIES

TEMPERATURE RISE (Current Carrying Capacity, CCC):

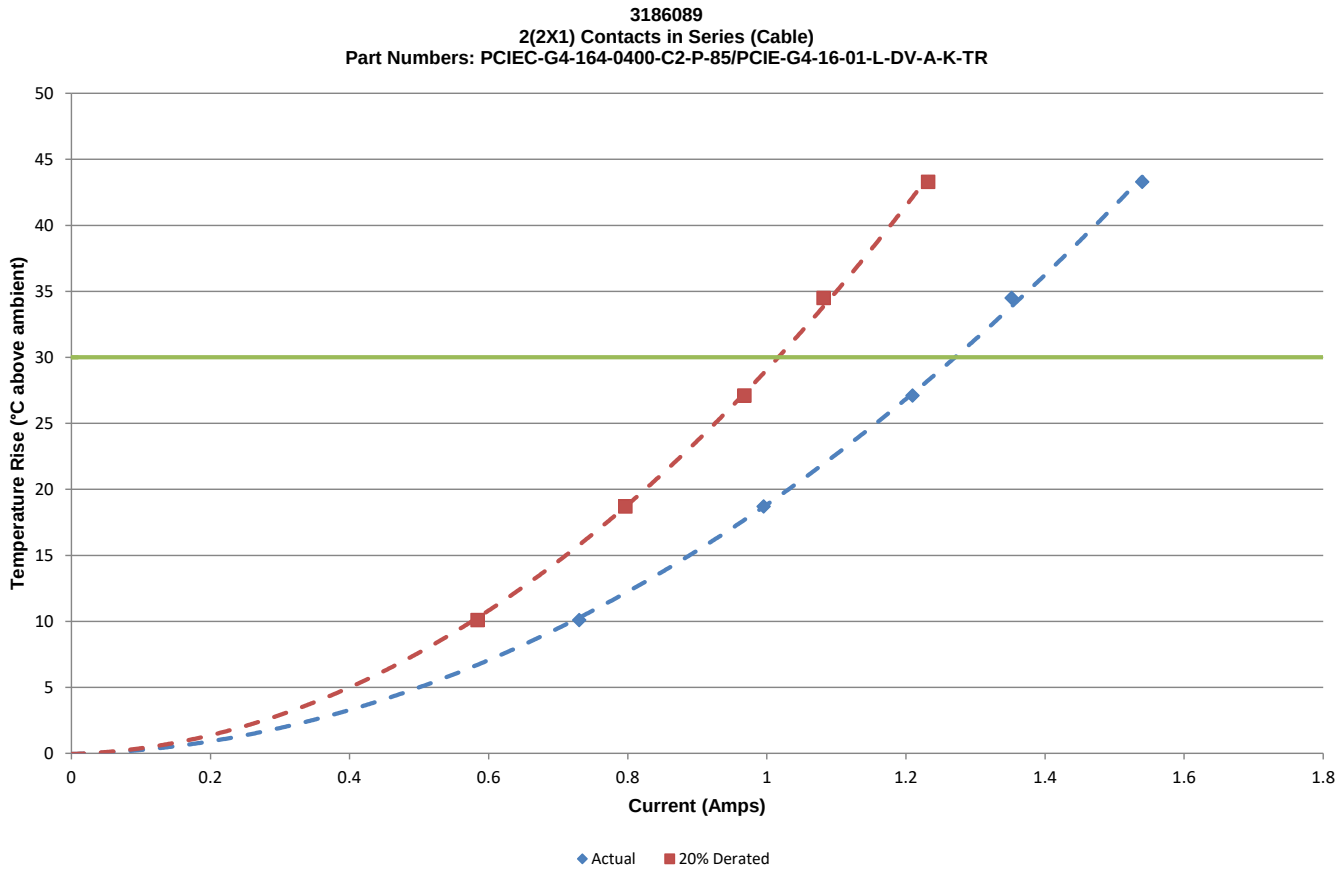
1) High quality thermocouples whose temperature slopes track one another were used for temperature monitoring.
2) The thermocouples were placed at a location to sense the maximum temperature generated during testing.
3) Temperature readings recorded are those for which three successive readings, 15 minutes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

Signal Pin at Cable

a. Linear configuration with 2 adjacent conductors/contacts powered

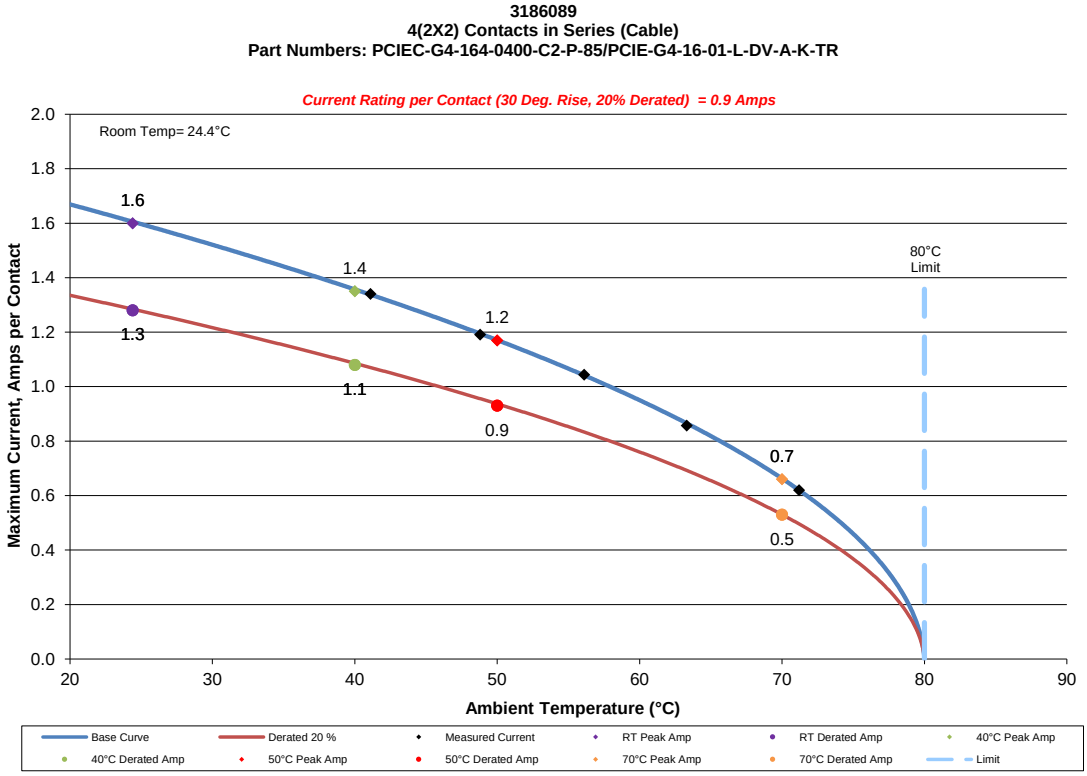


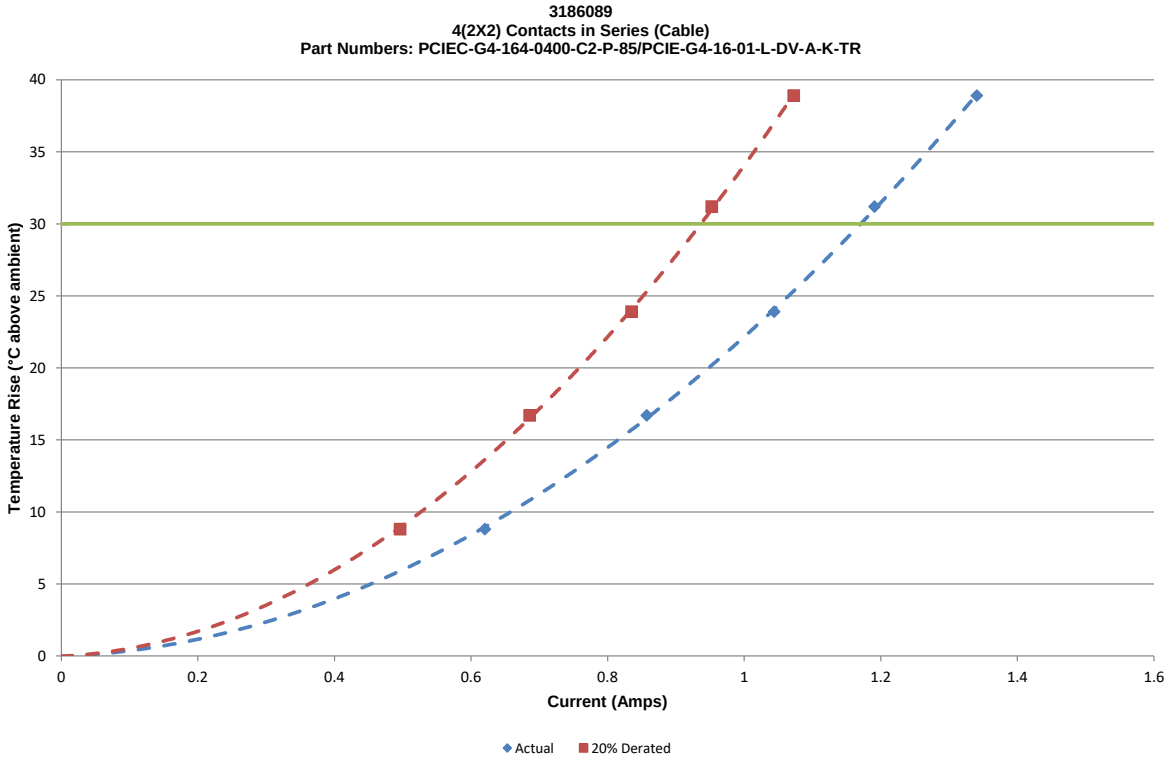
DATA SUMMARIES Continued



DATA SUMMARIES Continued

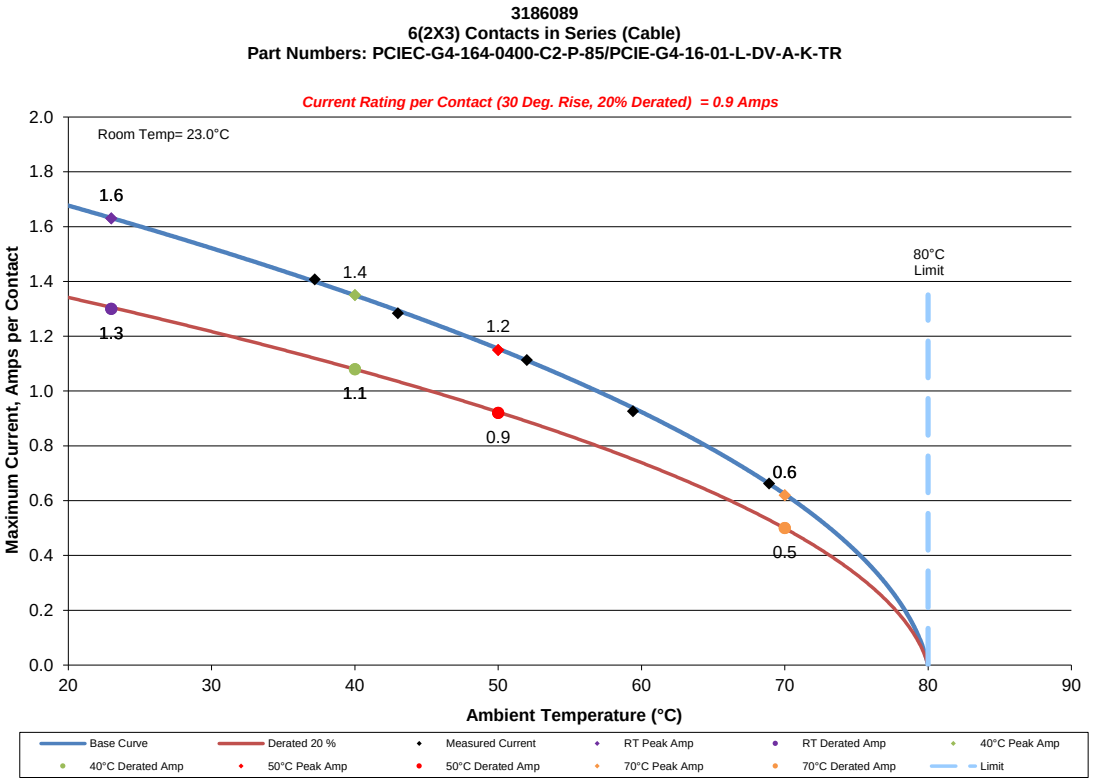
b. Linear configuration with 4 adjacent conductors/contacts powered

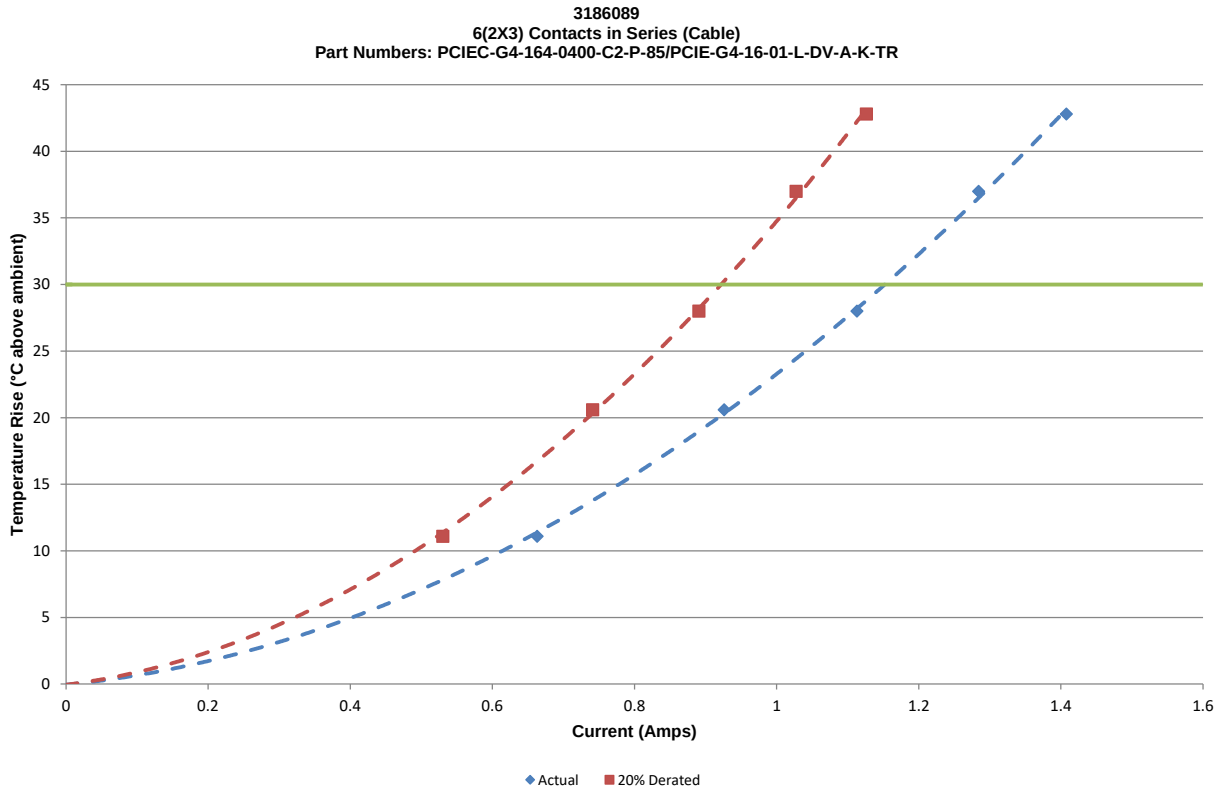




DATA SUMMARIES Continued

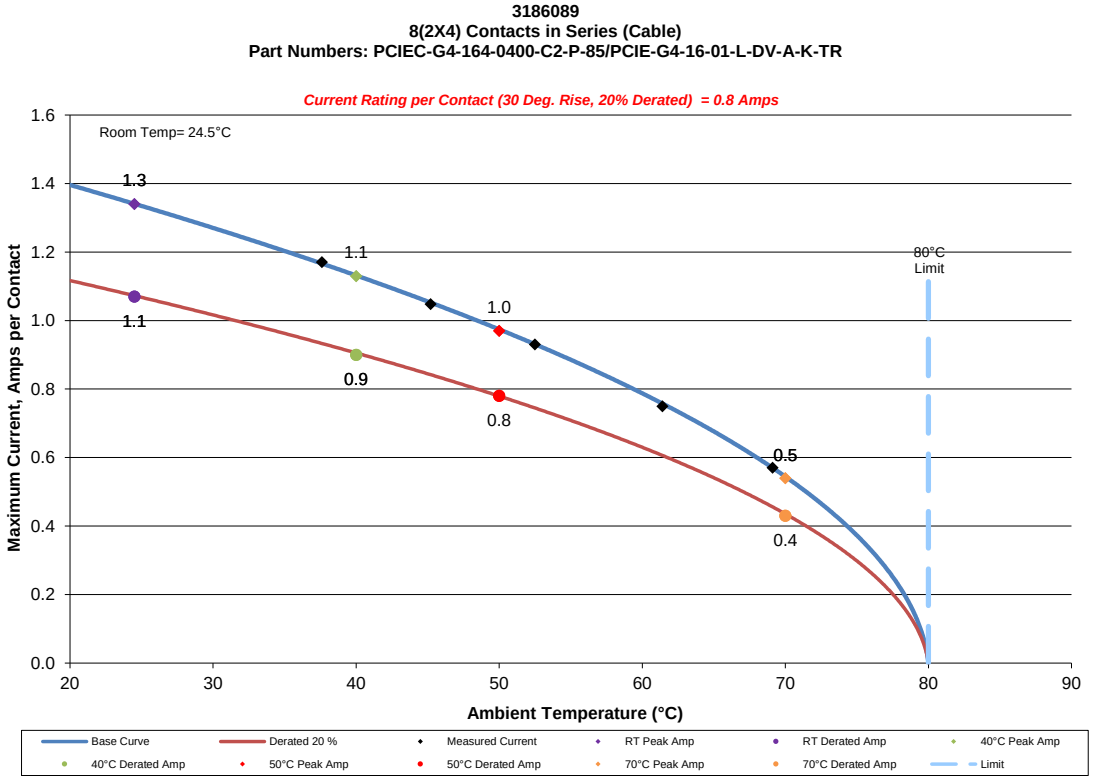
c. Linear configuration with 6 adjacent conductors/contacts powered

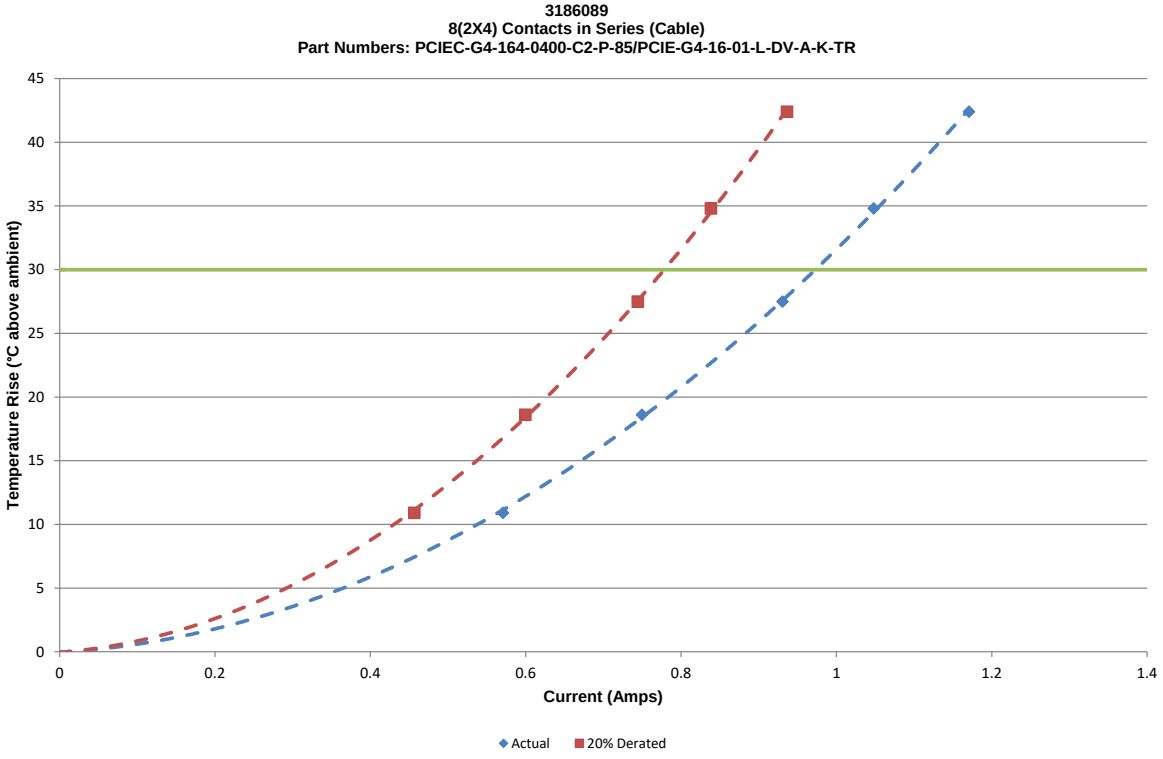




DATA SUMMARIES Continued

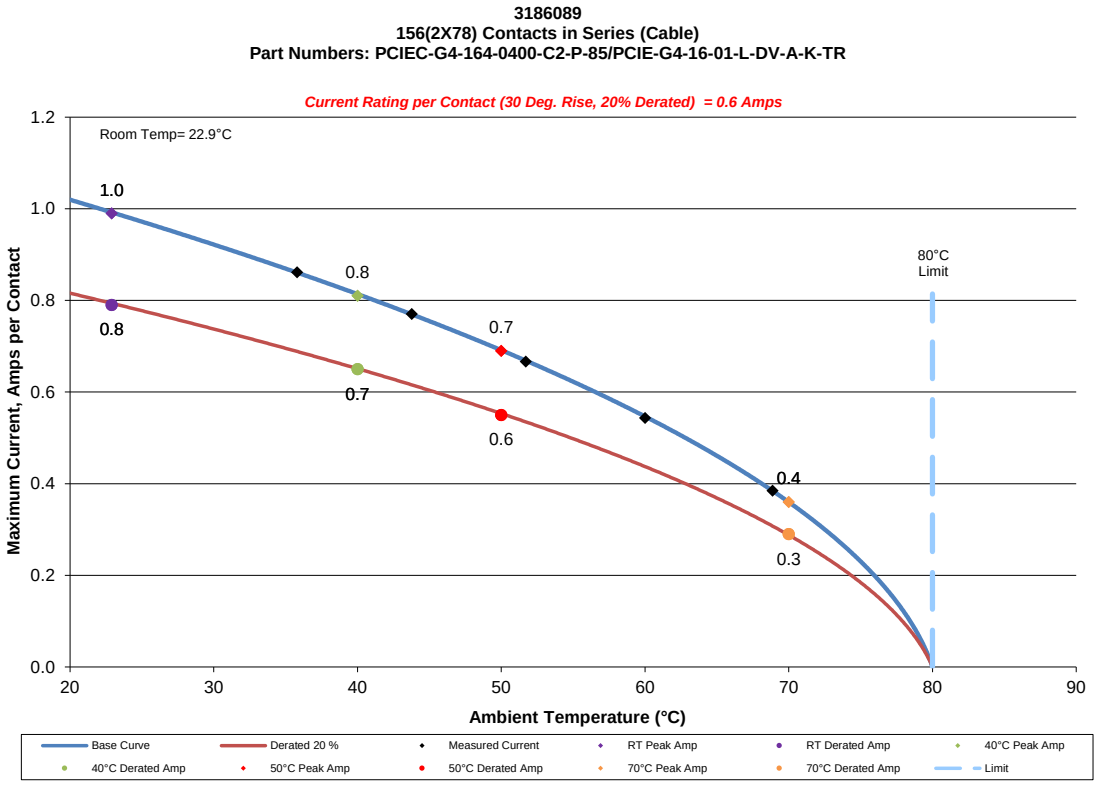
d. Linear configuration with 8 adjacent conductors/contacts powered

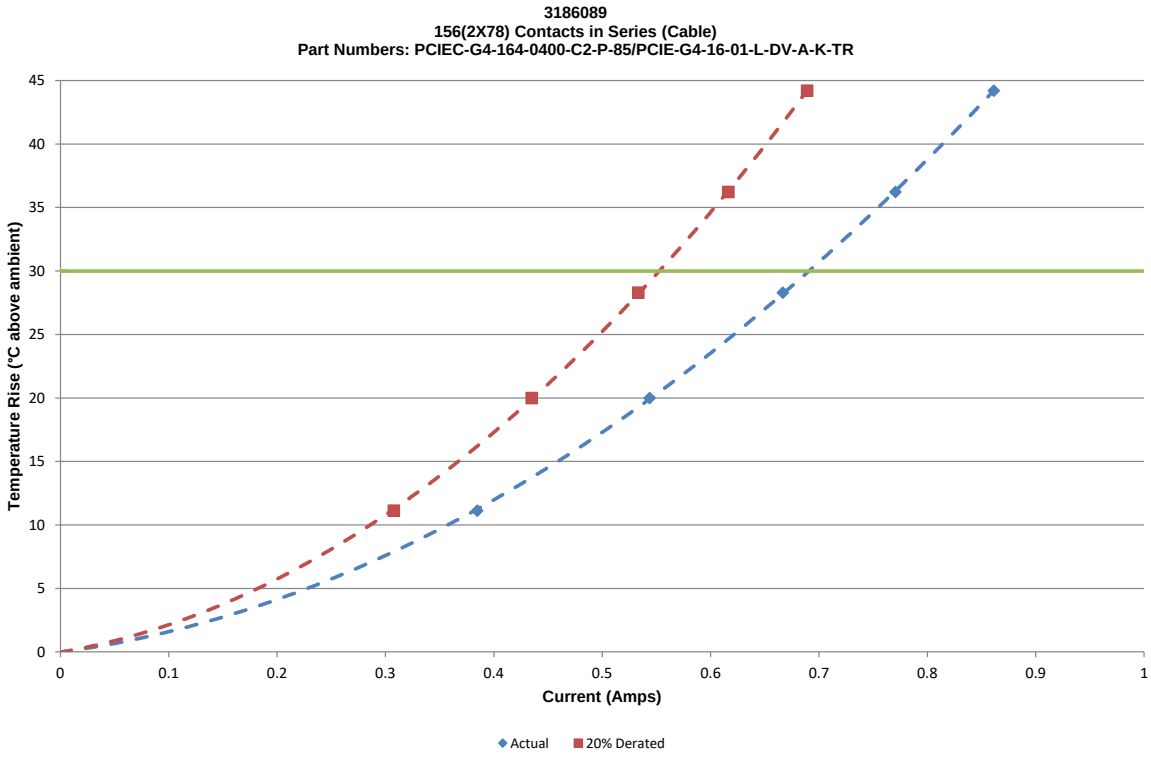




DATA SUMMARIES Continued

e. Linear configuration with all adjacent conductors/contacts powered

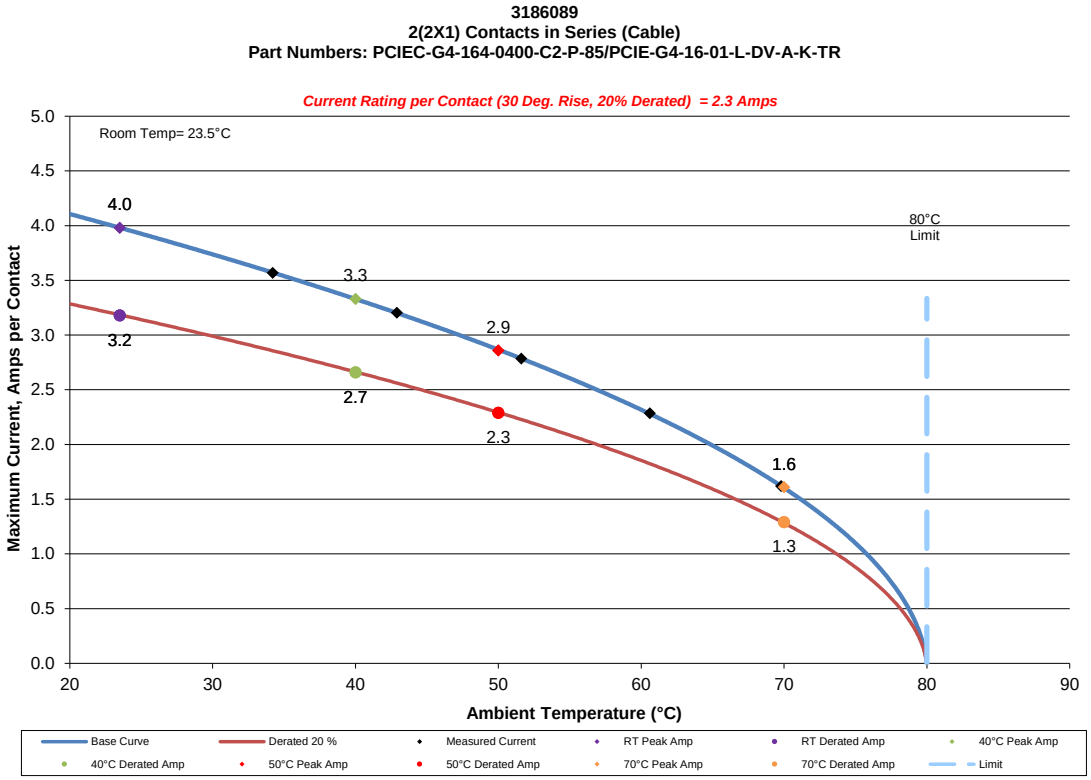


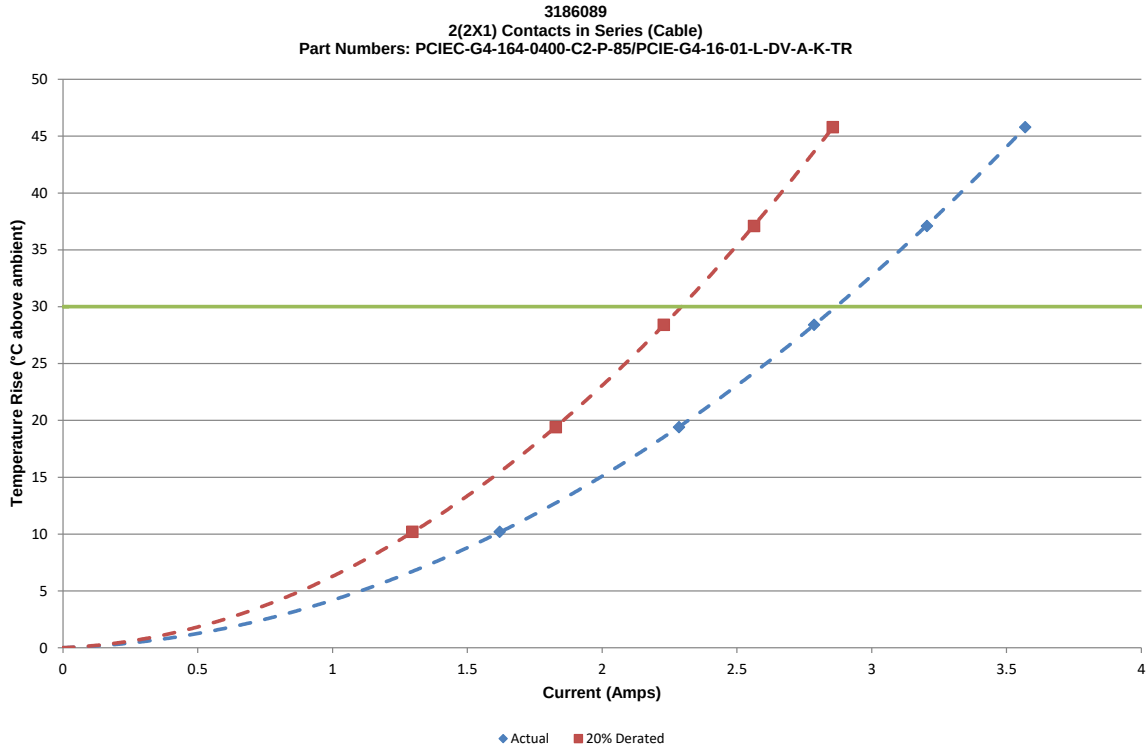


DATA SUMMARIES Continued

Power Pin at Cable

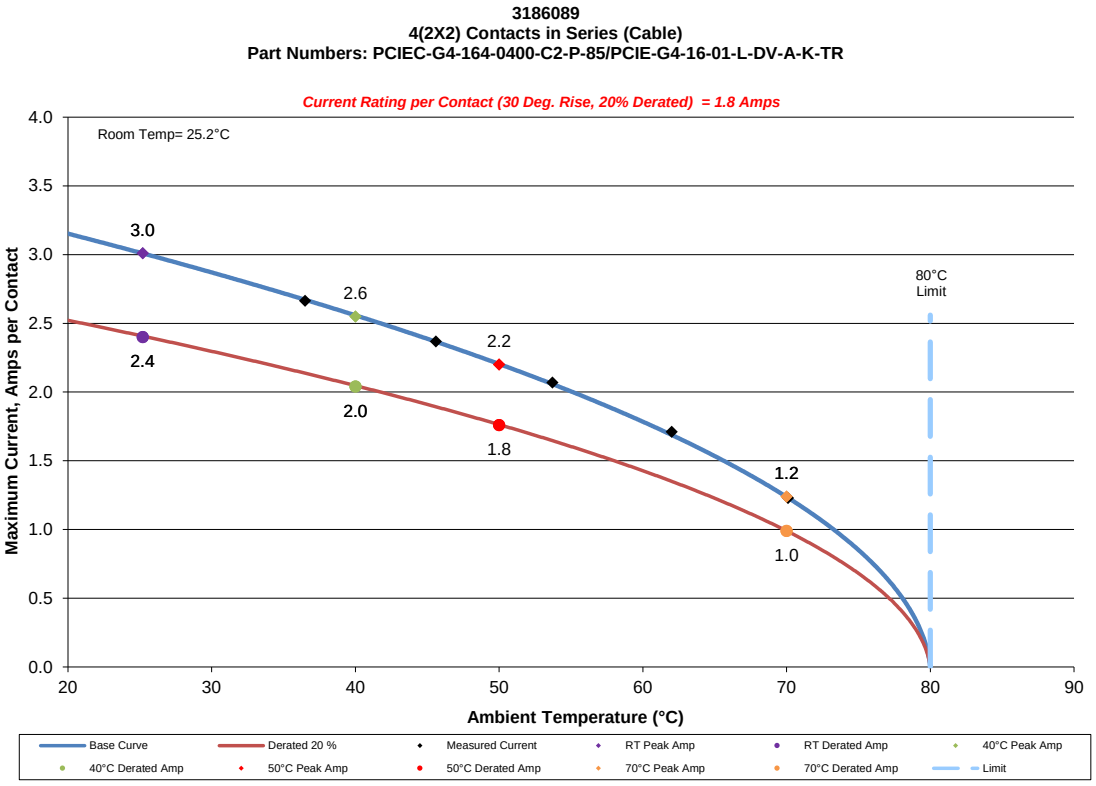
a. Linear configuration with 2 adjacent conductors/contacts powered

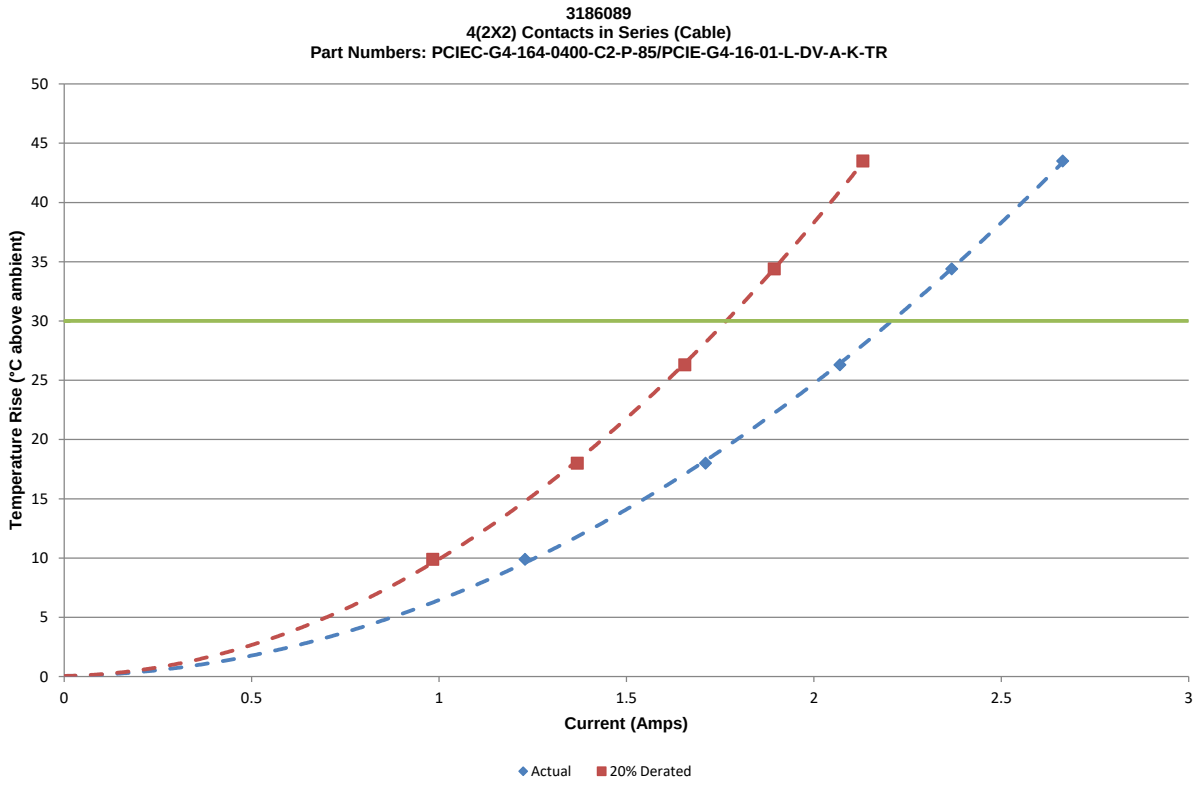




DATA SUMMARIES Continued

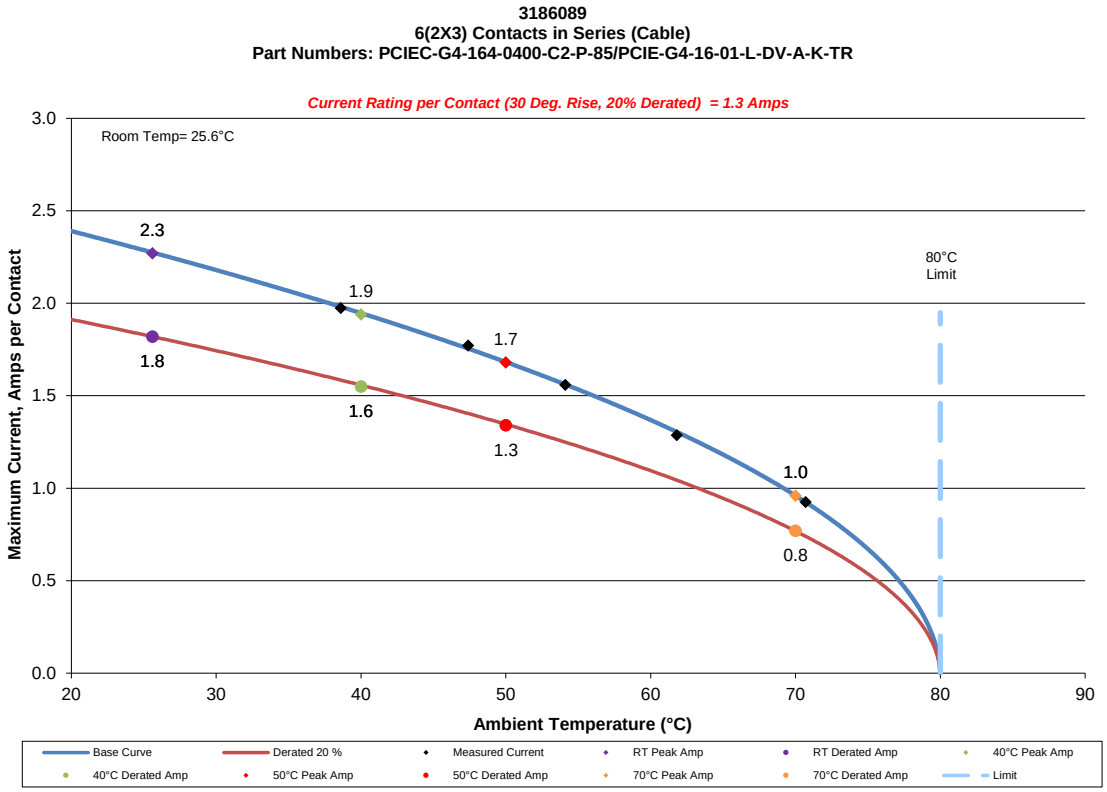
b. Linear configuration with 4 adjacent conductors/contacts powered

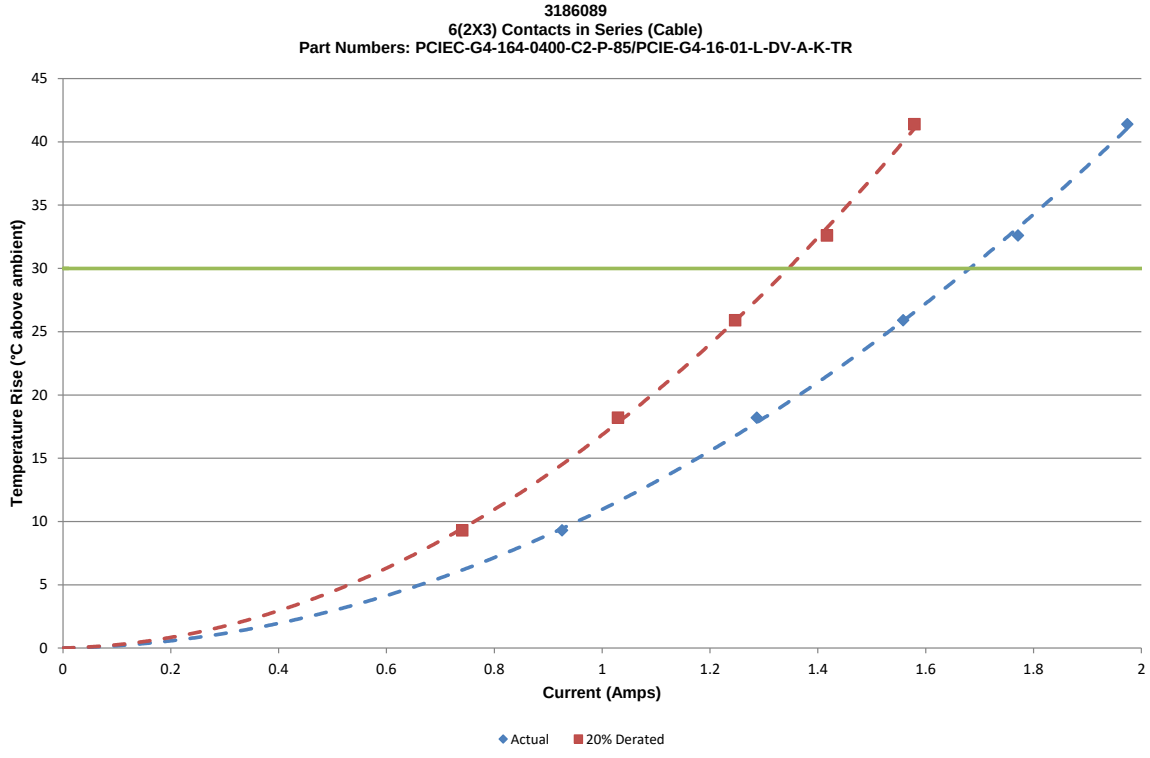




DATA SUMMARIES Continued

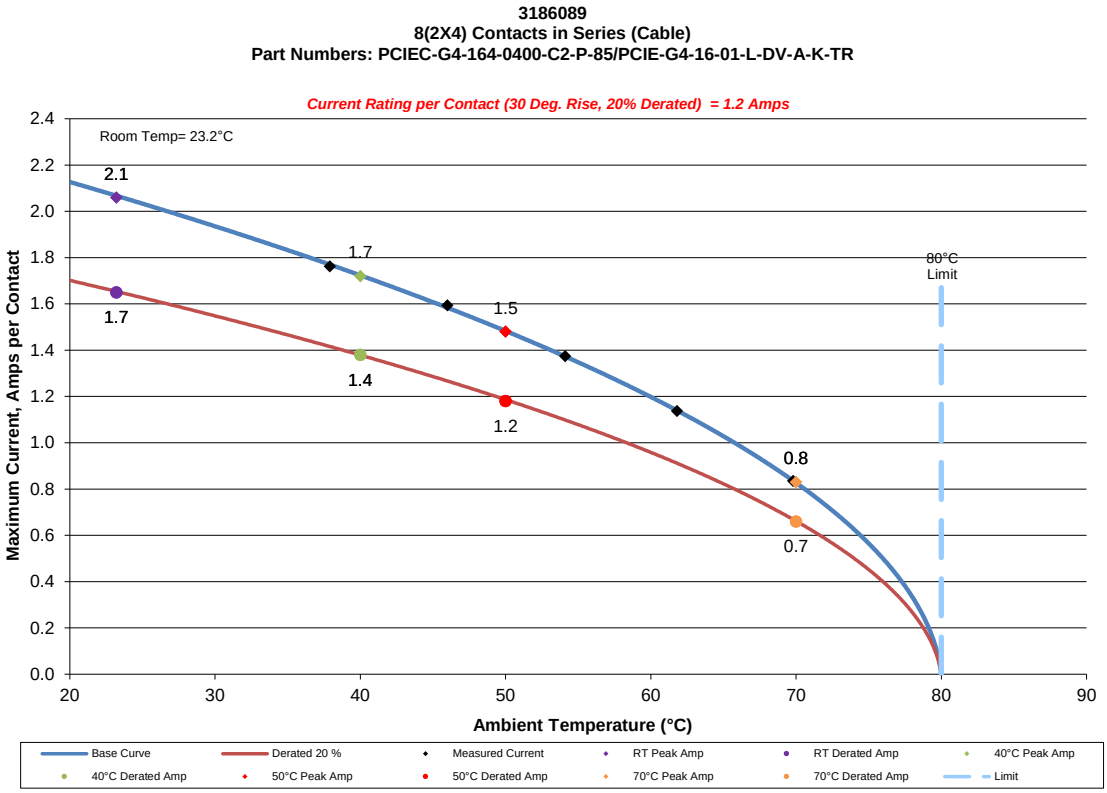
c. Linear configuration with 6 adjacent conductors/contacts powered

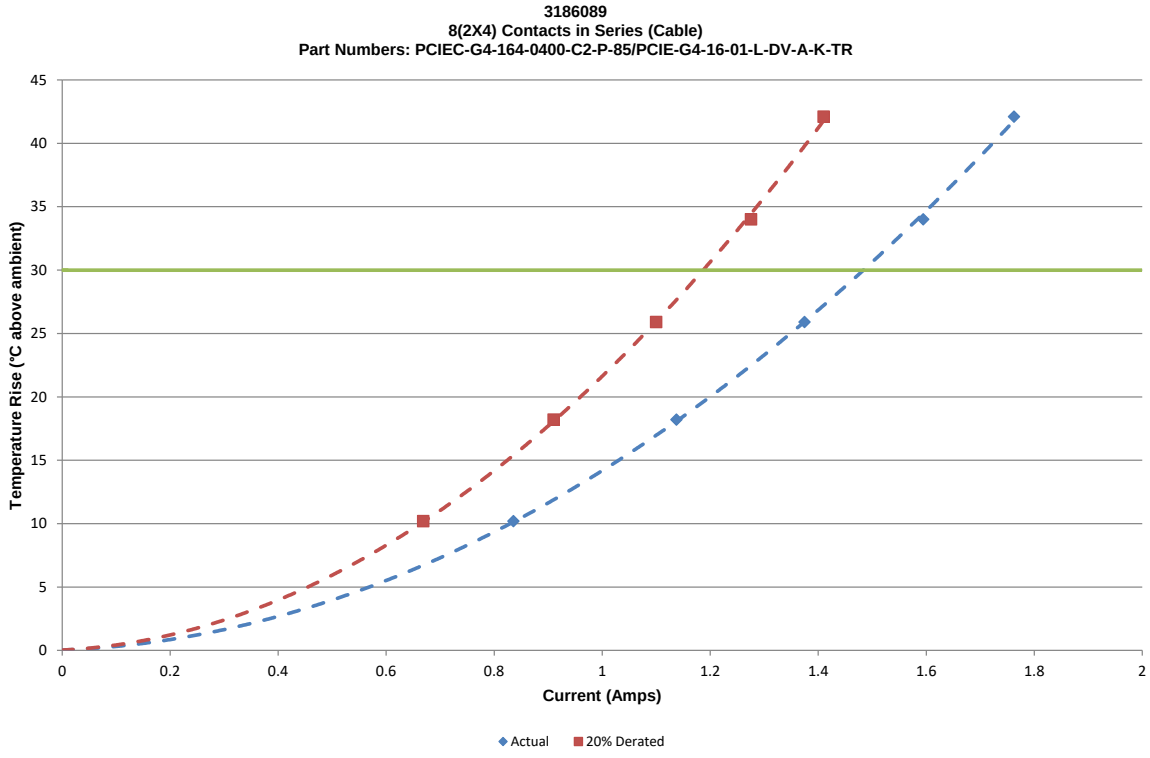




DATA SUMMARIES Continued

d. Linear configuration with 8 adjacent conductors/contacts powered

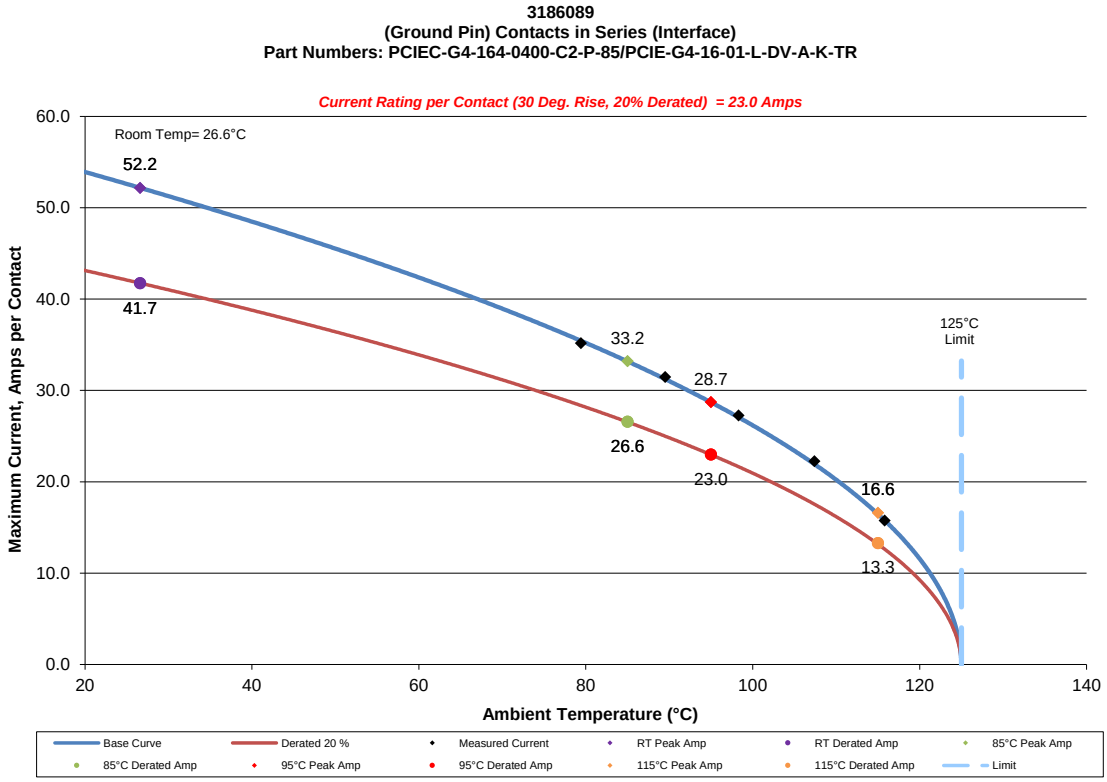


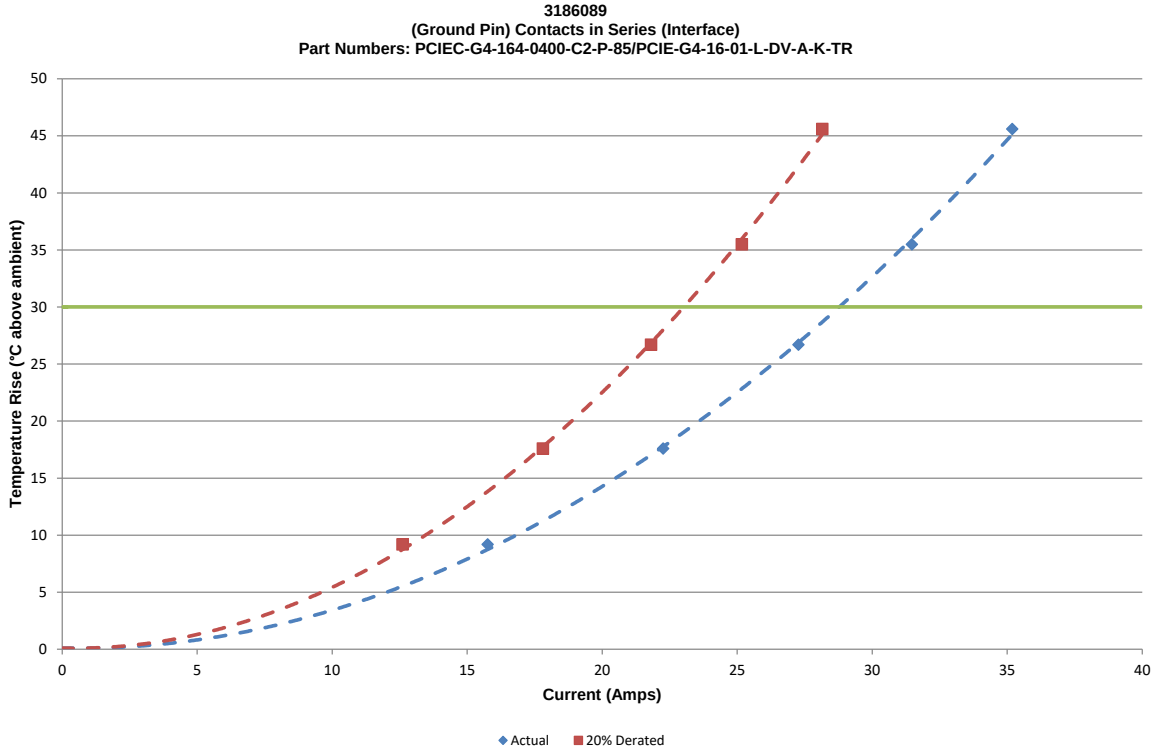


DATA SUMMARIES Continued

Ground Pin at Interface

e. Linear configuration with all adjacent conductors/contacts powered

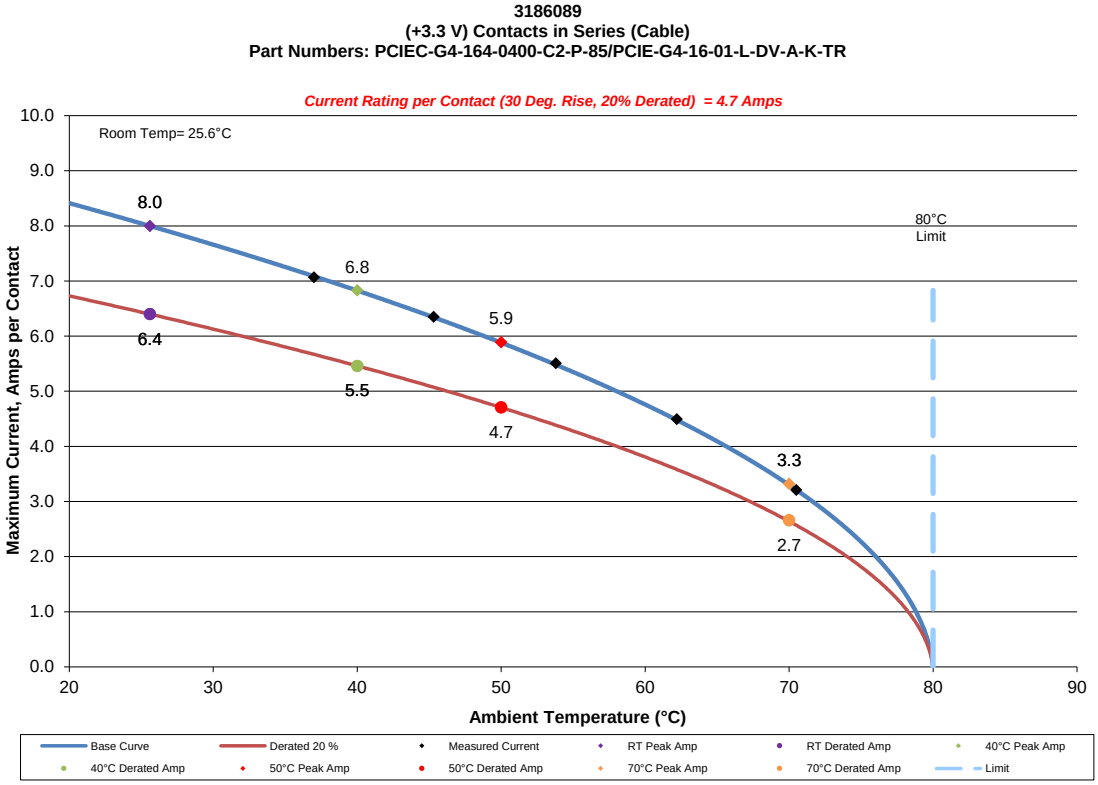


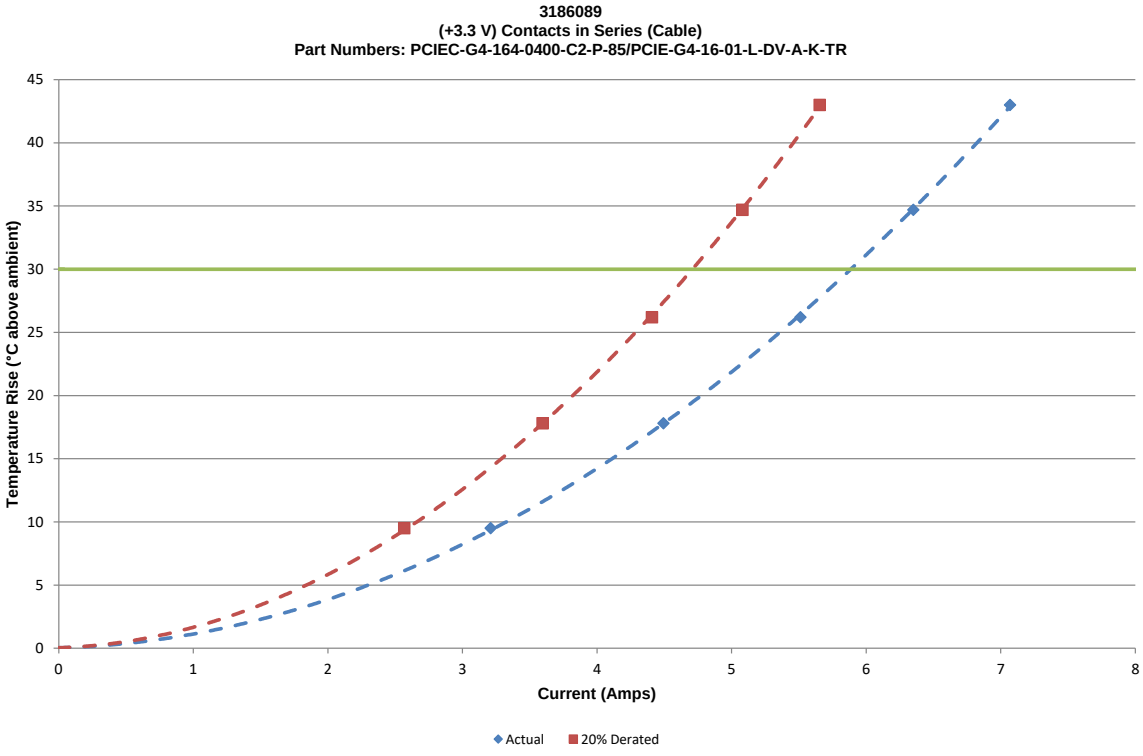


DATA SUMMARIES Continued

+3.3V Pin at Cable

a) Linear configuration with all adjacent conductors/contacts powered

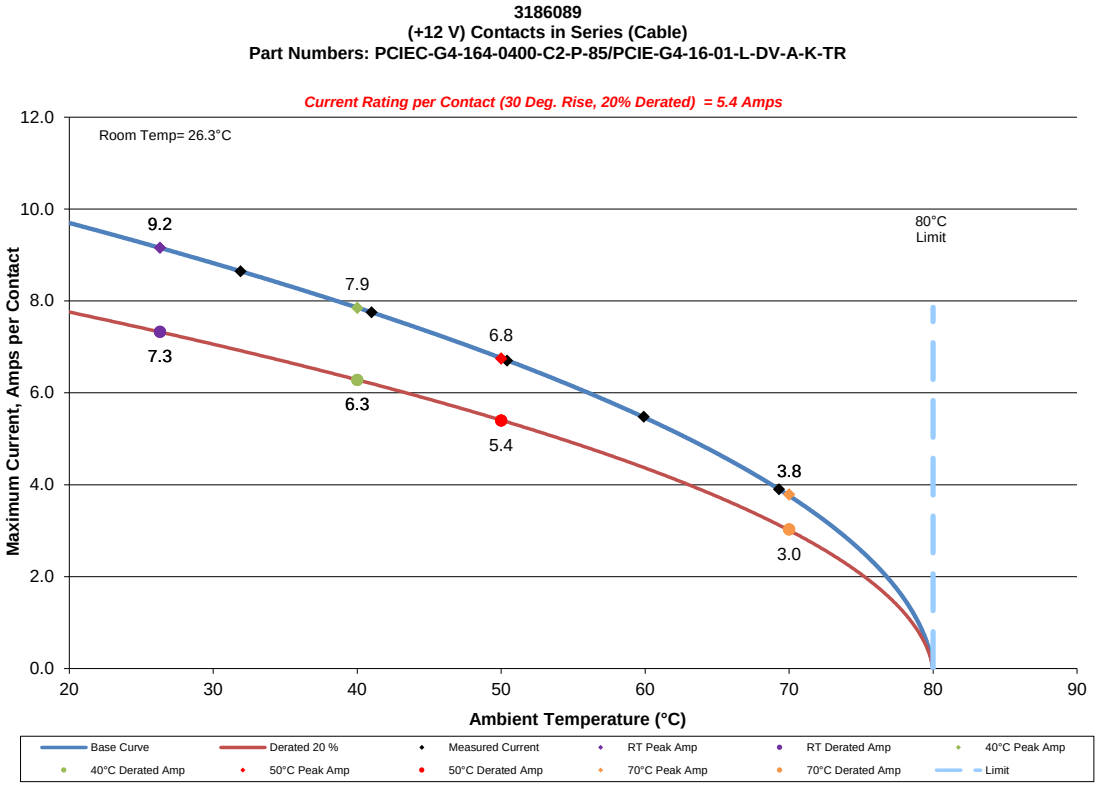


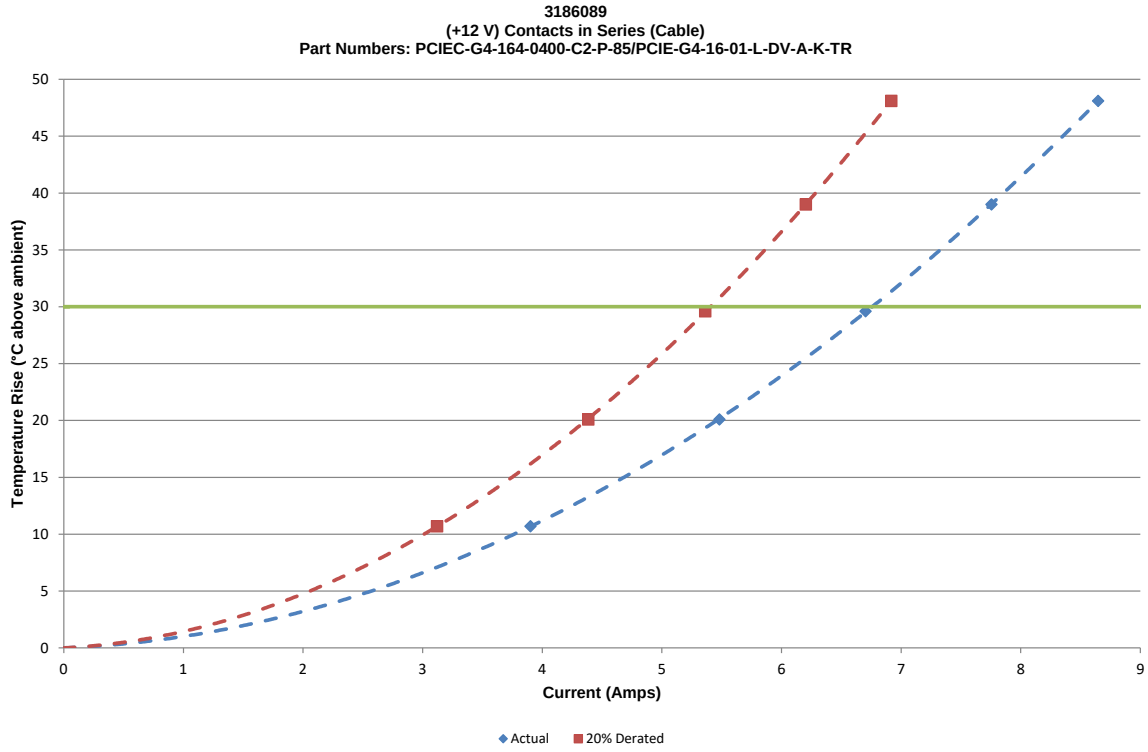


DATA SUMMARIES Continued

+12V Pin at Cable

a) Linear configuration with all adjacent conductors/contacts powered





DATA SUMMARIES Continued

MATING-UNMATING FORCE:

Mating-Unmating Durability Group (PCIEC-G4-164-0400-C2-P-85/PCIE-G4-16-01-L-DV-A-K-TR)

	Initial				After 25 Cycles			
	Mating		**Unmating**		**Mating**		**Unmating**	
	Newtons	Force (Lbs)	Newtons	Force (Lbs)	Newtons	Force (Lbs)	Newtons	Force (Lbs)
Minimum	39.19	8.81	15.35	3.45	45.86	10.31	15.35	3.45
Maximum	50.35	11.32	18.41	4.14	52.31	11.76	23.17	5.21
Average	45.59	**10.25**	16.65	**3.74**	49.08	**11.03**	19.63	**4.41**
St Dev	3.70	0.83	1.21	0.27	2.81	0.63	2.62	0.59
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	47.64	10.71	18.15	4.08	48.04	10.80	18.90	4.25
Maximum	56.67	12.74	25.53	5.74	60.94	13.70	27.93	6.28
Average	52.13	**11.72**	22.70	**5.10**	53.28	**11.98**	24.15	**5.43**
St Dev	3.58	0.80	2.63	0.59	5.39	1.21	2.99	0.67
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	47.59	10.70	19.08	4.29	31.14	7.00	14.99	3.37
Maximum	65.47	14.72	30.20	6.79	37.67	8.47	20.95	4.71
Average	54.70	**12.30**	25.51	**5.74**	34.32	**7.72**	17.24	**3.88**
St Dev	6.74	1.52	3.53	0.79	2.67	0.60	2.08	0.47
Count	8	8	8	8	8	8	8	8

DATA SUMMARIES Continued

Mating-Unmating Basic (PCIEC-G4-098-0400-C2-P-85/PCIE-G4-08-01-L-DV-A-K-TR)

	Initial				25 Cycles			
	Mating		**Unmating**		**Mating**		**Unmating**	
	Newtons	Force (Lbs)	Newtons	Force (Lbs)	Newtons	Force (Lbs)	Newtons	Force (Lbs)
Minimum	46.39	10.43	11.52	2.59	42.88	9.64	12.99	2.92
Maximum	58.45	13.14	13.57	3.05	47.10	10.59	21.39	4.81
Average	51.69	**11.62**	12.69	**2.85**	44.86	**10.09**	17.35	**3.90**
St Dev	3.58	0.80	0.63	0.14	1.21	0.27	3.31	0.74
Count	8	8	8	8	8	8	8	8

	50 Cycles				75 Cycles			
	Mating		**Unmating**		**Mating**		**Unmating**	
	Newtons	Force (Lbs)	Newtons	Force (Lbs)	Newtons	Force (Lbs)	Newtons	Force (Lbs)
Minimum	44.48	10.00	16.77	3.77	45.15	10.15	19.26	4.33
Maximum	49.11	11.04	25.04	5.63	50.26	11.30	28.60	6.43
Average	46.85	**10.53**	21.85	**4.91**	48.63	**10.93**	24.84	**5.58**
St Dev	1.66	0.37	3.06	0.69	1.83	0.41	3.08	0.69
Count	8	8	8	8	8	8	8	8

	100 Cycles			
	Mating		**Unmating**	
	Newtons	Force (Lbs)	Newtons	Force (Lbs)
Minimum	46.04	10.35	22.77	5.12
Maximum	52.80	11.87	32.69	7.35
Average	50.45	**11.34**	27.41	**6.16**
St Dev	2.31	0.52	3.40	0.77
Count	8	8	8	8

DATA SUMMARIES Continued

Mating-Unmating Basic (PCIEC-G4-036-0400-C2-P-85/PCIE-G4-01-01-L-DV-A-K-TR)

	Initial				25 Cycles			
	Mating		**Unmating**		**Mating**		**Unmating**	
	Newtons	Force (Lbs)	Newtons	Force (Lbs)	Newtons	Force (Lbs)	Newtons	Force (Lbs)
Minimum	12.45	2.80	4.45	1.00	13.26	2.98	4.85	1.09
Maximum	15.03	3.38	5.16	1.16	14.37	3.23	6.81	1.53
Average	13.58	**3.05**	4.79	**1.08**	13.92	**3.13**	6.09	**1.37**
St Dev	0.80	0.18	0.23	0.05	0.38	0.09	0.59	0.13
Count	8	8	8	8	8	8	8	8

	50 Cycles				75 Cycles			
	Mating		**Unmating**		**Mating**		**Unmating**	
	Newtons	Force (Lbs)	Newtons	Force (Lbs)	Newtons	Force (Lbs)	Newtons	Force (Lbs)
Minimum	13.26	2.98	5.12	1.15	13.79	3.10	6.41	1.44
Maximum	15.12	3.40	7.65	1.72	15.61	3.51	8.18	1.84
Average	14.24	**3.20**	6.27	**1.41**	14.59	**3.28**	6.84	**1.54**
St Dev	0.58	0.13	0.75	0.17	0.62	0.14	0.60	0.13
Count	8	8	8	8	8	8	8	8

	100 Cycles			
	Mating		**Unmating**	
	Newtons	Force (Lbs)	Newtons	Force (Lbs)
Minimum	13.66	3.07	6.76	1.52
Maximum	16.90	3.80	8.41	1.89
Average	15.10	**3.39**	7.41	**1.67**
St Dev	1.10	0.25	0.49	0.11
Count	8	8	8	8

DATA SUMMARIES Continued

Cable Flex:

Insulation Resistance minimums, IR

Pin to Pin	
Mated	
Minimum	
Initial	45000
After 500 Flex Cycles	45000

Row to Row	
Mated	
Minimum	
Initial	45000
After 500 Flex Cycles	45000

Dielectric Withstanding Voltage minimums, DWV

Voltage Rating Summary	
Minimum	**PCIEC/PCIE**
Test Voltage	670

Pin to Pin	
Initial Test Voltage	Passed
After 500 Flex Cycles Test Voltage	Passed

Row to Row	
Initial Test Voltage	Passed
After 500 Flex Cycles Test Voltage	Passed

DATA SUMMARIES Continued

INSULATION RESISTANCE (IR):

	Pin to Pin		
	Mated	Unmated	Unmated
Minimum	**PCIEC/PCIE**	**PCIEC**	**PCIE**
Initial	45000	45000	45000
Thermal	45000	45000	45000
Humidity	45000	45000	45000

	Row to Row		
	Mated	Unmated	Unmated
Minimum	**PCIEC/PCIE**	**PCIEC**	**PCIE**
Initial	45000	45000	45000
Thermal	45000	45000	45000
Humidity	45000	45000	45000

DIELECTRIC WITHSTANDING VOLTAGE (DWV):

Voltage Rating Summary	
Minimum	**PCIEC/PCIE**
Break Down Voltage	892
Test Voltage	670
Working Voltage	220

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

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

DATA SUMMARIES Continued

Gas Tight:

1) A total of 136 signal, 40 ground and 16 power 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 +1000 mOhms:----------Unstable
   f. >+1000 mOhms:----------Open Failure

LLCR Measurement Summaries by Pin Type				
Date	2022/4/18	2022/4/20		
Room Temp (Deg C)	22	22		
Rel Humidity (%)	52	52		
Technician	Kason He	Kason He		
mOhm values	**Actual Initial**	**Delta Acid Vapor**	**Delta**	**Delta**
	Pin Type 1: Signal			
Average	201.30	3.38		
St. Dev.	10.54	5.99		
Min	185.38	0.00		
Max	233.95	14.08		
Summary Count	136	136		
Total Count	136	136		
	Pin Type 2: Group			
Average	17.60	1.01		
St. Dev.	1.79	1.07		
Min	15.87	0.01		
Max	22.49	5.17		
Summary Count	40	40		
Total Count	40	40		
	Pin Type 3: Power			
Average	90.48	0.96		
St. Dev.	1.75	0.88		
Min	87.57	0.03		
Max	93.90	3.09		
Summary Count	16	16		
Total Count	16	16		

LLCR Delta Count by Category						
	Stable	**Minor**	**Acceptable**	**Marginal**	**Unstable**	**Open**
mOhms	**<=5**	**>5 & <=10**	**>10 & <=15**	**>15 & <=50**	**>50 & <=1000**	**>1000**
Acid Vapor	**170**	**14**	**8**	**0**	**0**	**0**

DATA SUMMARIES Continued

LLCR Mating/Unmating Durability Group

1). A total of 136 signal, 40 ground and 16 power 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 +1000 mOhms:----------Unstable
   f. >+1000 mOhms:----------Open Failure

LLCR Measurement Summaries by Pin Type				
Date	2022/3/10	2022/3/17	2022/3/23	2022/4/7
Room Temp (Deg C)	22	22	22	22
Rel Humidity (%)	52	52	52	52
Technician	Kason He	Kason He	Kason He	Kason He
mOhm values	**Actual Initial**	**Delta 100 Cycles**	**Delta Therm Shck**	**Delta Humidity**
	Pin Type 1: Signal			
Average	201.70	1.21	1.71	3.39
St. Dev.	5.00	1.67	1.60	4.41
Min	190.57	0.01	0.01	0.01
Max	213.33	9.58	8.16	13.01
Summary Count	136	136	136	136
Total Count	136	136	136	136
	Pin Type 2: Ground			
Average	17.01	1.05	1.33	1.85
St. Dev.	1.28	1.06	1.23	1.27
Min	15.48	0.00	0.02	0.03
Max	21.48	4.36	6.64	5.69
Summary Count	40	40	40	40
Total Count	40	40	40	40
	Pin Type 3: Power			
Average	91.04	0.65	0.97	1.45
St. Dev.	1.86	0.51	1.28	1.66
Min	87.99	0.09	0.05	0.01
Max	95.41	1.80	4.72	7.19
Summary Count	16	16	16	16
Total Count	16	16	16	16

LLCR Delta Count by Category						
	Stable	**Minor**	**Acceptable**	**Marginal**	**Unstable**	**Open**
mOhms	**<=5**	**>5 & <=10**	**>10 & <=15**	**>15 & <=50**	**>50 & <=1000**	**>1000**
100 Cycles	**184**	**8**	**0**	**0**	**0**	**0**
Therm Shck	**185**	**7**	**0**	**0**	**0**	**0**
Humidity	**158**	**27**	**7**	**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: 3/5/2022, Next Cal: 3/4/2023

Equipment #: DG-THC-01
Description: Humidity transmitter
Manufacturer: Thermtron
Model: SM-8-8200
Serial #: 50613
Accuracy: Last Cal: 12/4/2021, Next Cal: 12/3/2022

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: 04/16/2022, Next Cal: 04/15/2023

Equipment #: DG-HPT-01
Description: Hipot Safety Tester
Manufacturer: Vitrek
Model: V73
Serial #: 025866
Accuracy:
… Last Cal: 04/16/2022, Next Cal: 04/15/2023

Equipment #: HZ-MO-05
Description: Micro-ohmmeter
Manufacturer: Keithley
Model: 3706
Serial #: 1285188
Accuracy: Last Cal: 1/2/2022, Next Cal: 1/1/2023

Equipment #: HZ-MO-01
Description: Micro-ohmmeter
Manufacturer: Keithley
Model: 2700
Serial #: 1199807
Accuracy: Last Cal: 05/19/2022, Next Cal: 05/18/2023

Equipment #: HZ-PS-01
Description: Power Supply
Manufacturer: Agilent
Model: 6031A
Serial #: MY41000982
Accuracy: Last Cal: 04/16/2022, Next Cal: 04/15/2023