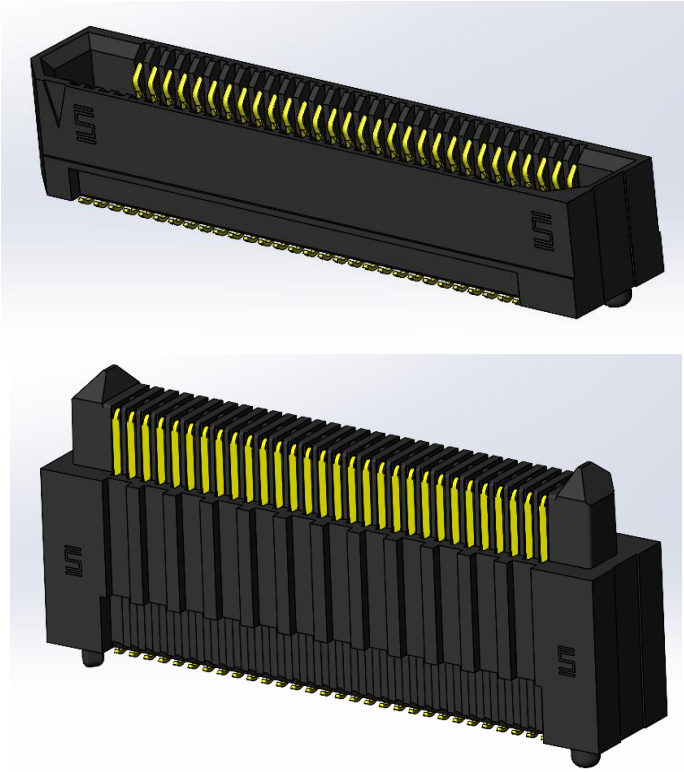
Project: Design Qualification Test Report	Tracking Code: CR-1217302_Report_Rev_1
Requested by: Lean Lin	Date: 1/8/2026
Part #: ERF8-050-05.0-P-DV-K-TR/ ERM8-050-09.0-P-DV-K-TR	Tech: Peter Chen
Part description: ERF8/ ERM8	Qty to test: 80
Test Start: 4/15/2025	Test Completed: 6/20/2025



DESIGN QUALIFICATION TEST REPORT

ERF8/ ERM8
ERF8-050-05.0-P-DV-K-TR/ ERM8-050-09.0-P-DV-K-TR

REVISION HISTORY

DATA	REV.NUM.	DESCRIPTION	ENG
6/23/2025	**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 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-110235-TST/PCB-108979-TST.

FLOWCHARTS

Gas Tight

Group 1
ERF8-050-05.0-P-DV-K-TR
ERM8-050-09.0-P-DV-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

Normal Force

Group 1
ERF8-050-05.0-P-DV-K-TR
ERM8-050-09.0-P-DV-K-TR
8 Contacts Minimum
Signal Without Thermals

Step	Description
1.	Contact Gaps
2.	Normal Force (1) Deflection = 0.0106 " Expected Force at Max Deflection = 64 g

Group 2
ERF8-050-05.0-P-DV-K-TR
ERM8-050-09.0-P-DV-K-TR
8 Contacts Minimum
Signal With Thermals

Step	Description
1.	Contact Gaps
2.	Thermal Age (2) - Non Standard
3.	Contact Gaps
4.	Normal Force (1) Deflection = 0.0106 " Expected Force at Max Deflection = 64 g

(1) Normal Force = EIA-364-04

(2) Thermal Age = Other
Test Condition = 4 (150°C)
Time Condition = B (1000 Hours)
EIA-364-17

FLOWCHARTS Continued

Thermal Aging

Group 1
ERF8-050-05.0-P-DV-K-TR
ERM8-050-09.0-P-DV-K-TR
8 Assemblies

Step	Description
1.	Contact Gaps
2.	Mating/Unmating Force (2)
3.	LLCR (1)
4.	Thermal Age (3) - Non Standard
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 = Other
Test Condition = 10 (150°C)
Time Condition = D (1000 Hours)
EIA-364-17

FLOWCHARTS Continued

Mating/Unmating/Durability

Group 1
ERF8-050-05.0-P-DV-K-TR
ERM8-050-09.0-P-DV-K-TR
8 Assemblies

Step	Description
1.	Contact Gaps
2.	LLCR (2)
3.	Mating/Unmating Force (3)
4.	Cycles Quantity = 25 Cycles
5.	Mating/Unmating Force (3)
6.	Contact Gaps
7.	LLCR (2) Max Delta = 15 mOhm
8.	Thermal Shock (4) - Non Standard
9.	LLCR (2) Max Delta = 15 mOhm
10.	Humidity (1)
11.	LLCR (2) Max Delta = 15 mOhm
12.	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 = Other
Exposure Time at Temperature Extremes = 1/2 Hour
Method A, Test Condition = IV (-65°C to +150°C)
Test Duration = A-3 (100 Cycles)
EIA-364-32

FLOWCHARTS Continued

Current Carrying Capacity

Group 1
ERF8-075-05.0-P-DV-K-TR
ERM8-075-09.0-P-DV-K-TR
2 Pins Powered
Signal

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

Group 2
ERF8-075-05.0-P-DV-K-TR
ERM8-075-09.0-P-DV-K-TR
4 Pins Powered
Signal

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

Group 3
ERF8-075-05.0-P-DV-K-TR
ERM8-075-09.0-P-DV-K-TR
6 Pins Powered
Signal

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

Group 4
ERF8-075-05.0-P-DV-K-TR
ERM8-075-09.0-P-DV-K-TR
8 Pins Powered
Signal

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

Group 5
ERF8-075-05.0-P-DV-K-TR
ERM8-075-09.0-P-DV-K-TR
150 Pins Powered
Signal

Step	Description
1.	CCC (1) - Non Standard Rows = 2 Number of Positions = 75

(1) CCC = Other
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
(PALLADIUM NICKEL PLATING) - Tabulate calculated current at RT,105°C, 115°C and 135°C after derating 20% and based on 150°C

FLOWCHARTS Continued

Extended Life

Group 1 ERF8-050-05.0-P-DV-K-TR ERM8-050-09.0-P-DV-K-TR 8 Assemblies 500 Cycles		Group 2 ERF8-050-05.0-P-DV-K-TR ERM8-050-09.0-P-DV-K-TR 8 Assemblies 1000 Cycles		Group 3 ERF8-050-05.0-P-DV-K-TR ERM8-050-09.0-P-DV-K-TR 8 Assemblies 2500 Cycles		Group 4 ERF8-050-05.0-P-DV-K-TR ERM8-050-09.0-P-DV-K-TR 8 Assemblies 5000 Cycles	
Step	**Description**	**Step**	**Description**	**Step**	**Description**	**Step**	**Description**
1.	Plating Thickness Verification (4)	1.	Plating Thickness Verification (4)	1.	Plating Thickness Verification (4)	1.	Plating Thickness Verification (4)
2.	LLCR (2)	2.	LLCR (2)	2.	LLCR (2)	2.	LLCR (2)
3.	Cycles Quantity = 500 Cycles	3.	Cycles Quantity = 1000 Cycles	3.	Cycles Quantity = 2500 Cycles	3.	Cycles Quantity = 5000 Cycles
4.	LLCR (2) Max Delta = 15 mOhm	4.	LLCR (2) Max Delta = 15 mOhm	4.	LLCR (2) Max Delta = 15 mOhm	4.	LLCR (2) Max Delta = 15 mOhm
5.	Thermal Shock (5) - Non Standard	5.	Thermal Shock (5) - Non Standard	5.	Thermal Shock (5) - Non Standard	5.	Thermal Shock (5) - Non Standard
6.	LLCR (2) Max Delta = 15 mOhm	6.	LLCR (2) Max Delta = 15 mOhm	6.	LLCR (2) Max Delta = 15 mOhm	6.	LLCR (2) Max Delta = 15 mOhm
7.	Humidity (1)	7.	Humidity (1)	7.	Humidity (1)	7.	Humidity (1)
8.	LLCR (2) Max Delta = 15 mOhm	8.	LLCR (2) Max Delta = 15 mOhm	8.	LLCR (2) Max Delta = 15 mOhm	8.	LLCR (2) Max Delta = 15 mOhm
9.	Photos (3)	9.	Photos (3)	9.	Photos (3)	9.	Photos (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) Photos
Attach 2-3 photos of contact area

(4) Plating Thickness Verification
Measure, verify, and document plating thickness on both male and female (one group only)
Plating thickness to be measured on loose pins used during assembly

(5) Thermal Shock = Other
Exposure Time at Temperature Extremes = 1/2 Hour
Method A, Test Condition = IV (-65°C to +150°C)
Test Duration = A-3 (100 Cycles)
EIA-364-32

FLOWCHARTS Continued

Mixed Flowing Gas

Group 1
ERF8-050-05.0-P-DV-K-TR
ERM8-050-09.0-P-DV-K-TR
8 Assemblies

Step	Description
1.	Plating Thickness Verification (4)
2.	LLCR (1)
3.	Cycles Quantity = 20 Cycles
4.	LLCR (1) Max Delta = 15 mOhm
5.	Mixed Flowing Gas Unmated (3) Duration = 7 Days
6.	LLCR (1) Max Delta = 15 mOhm
7.	Cycles Quantity = 1 Cycles
8.	LLCR (1) Max Delta = 15 mOhm
9.	Mixed Flowing Gas Mated (2) Duration = 7 Days
10.	LLCR (1) Max Delta = 15 mOhm
11.	Cycles Quantity = 1 Cycles
12.	LLCR (1) Max Delta = 15 mOhm

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

(2) Mixed Flowing Gas Mated = EIA-364-65
Environmental Conditions = Class IIA

(3) Mixed Flowing Gas Unmated = EIA-364-65
Environmental Conditions = Class IIA

(4) Plating Thickness Verification
Measure, verify, and document plating thickness on both male and female (one group only)
Plating thickness to be measured on loose pins used during assembly

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: -65°C to +150°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 150° C
3) Test Time Condition D for 1000 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.

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.

Mixed Flowing Gas:

1) EIA-364-65B, *Mixed Flowing Test Procedure For Electrical Connectors Contacts And Sockets*.
2) To adequately evaluate the risk of corrosion, the Mixed Flowing Gas test shall be done with the gas mixtures in below table.

Table 1 - Environmental classes

Class	Relative humidity, %	Temperature, °C	Concentration, ppb			
			Cl_2	NO_2	H_2S	SO_2
I	Discontinued as a test procedure.					
II	Superseded by class IIA					
IIA	70 ± 2	30 ± 1	10 ± 3	200 ± 50	10 ± 5	100 ± 20
III	Superseded by class IIIA					
IIIA	70 ± 2	30 ± 1	20 ± 5	200 ± 50	100 ± 20	200 ± 50
IV	75 ± 2	40 ± 2	30 ± 5	200 ± 50	200 ± 20	N/A

3) The mated and unmated exposure is done in parallel for qualification at Class IIA conditions.
4) Exposure time for mated and unmated is 14 days

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. 105^o C
    c. 115^o C
    d. 135^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.

NORMAL FORCE (FOR CONTACTS TESTED OUTSIDE THE HOUSING):

1) Reference document: EIA-364-04, *Normal Force Test Procedure for Electrical Connectors*.
2) The contacts shall be tested in the loose state, *not* inserted in connector housing.
3) The contacts shall be prepared to allow access to the spring member at the same attitude and deflection level as would occur in actual use.
4) In the event that portions of the contact prevent insertion of the test probe and/or deflection of the spring member under evaluation, said material shall be removed leaving the appropriate contact surfaces exposed.
5) In the case of multi-tine contacts, each tine shall be tested independently on separate samples as required.
6) The connector housing shall be simulated, if required, in order to provide an accurate representation of the actual contact system performance.
7) A holding fixture shall be fashioned to allow the contact to be properly deflected.
8) 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 µm (0.0002”).
9) The probe shall be attached to a Dillon P/N 49761-0105, 5 N (1.1 Lb) load cell providing an accuracy of ± 0.2%.
10) The nominal deflection rate shall be 5 mm (0.2”)/minute.
11) Unless otherwise noted a minimum of five contacts shall be tested.
12) The force/deflection characteristic to load and unload each contact shall be repeated five times.
13) The system shall utilize the TC^2 software in order to acquire and record the test data.

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.

RESULTS

Temperature Rise, CCC at a 20% de-rating

- **CCC for a 30°C Temperature Rise----------2.2 A per contact with 2 contact (2x1) powered**
- **CCC for a 30°C Temperature Rise----------1.6 A per contact with 4 contacts (2x2) powered**
- **CCC for a 30°C Temperature Rise----------1.4 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**
- **CCC for a 30°C Temperature Rise----------0.5 A per contact with All contacts (2x75) powered**

Mating – Unmating Forces

Thermal Aging Group

- **Initial**
  - **Mating**
    - **Min ---------- 5.28 Lbs**
    - **Max---------- 6.98 Lbs**
  - **Unmating**
    - **Min ---------- 2.26 Lbs**
    - **Max---------- 3.21 Lbs**
- **After Thermal**
  - **Mating**
    - **Min ---------- 1.77 Lbs**
    - **Max---------- 2.77 Lbs**
  - **Unmating**
    - **Min ---------- 2.42 Lbs**
    - **Max---------- 2.86 Lbs**

Mating-Unmating Durability group

- **Initial**
  - **Mating**
    - **Min ---------- 5.56 Lbs**
    - **Max---------- 6.58 Lbs**
  - **Unmating**
    - **Min ---------- 2.26 Lbs**
    - **Max---------- 3.22 Lbs**
- **After 25 Cycles**
  - **Mating**
    - **Min ---------- 5.68 Lbs**
    - **Max---------- 6.59 Lbs**
  - **Unmating**
    - **Min ---------- 3.00 Lbs**
    - **Max---------- 3.60 Lbs**
- **After Humidity**
  - **Mating**
    - **Min ---------- 2.81 Lbs**
    - **Max---------- 3.85 Lbs**
  - **Unmating**
    - **Min ---------- 1.71 Lbs**
    - **Max---------- 2.12 Lbs**

Normal force:

Signal pin at 0.0106 Inch deflections

- **Initial**
  - **Min----------77.20 gf Set ----- 0.0000 Inch**
  - **Max ----------84.70 gf Set ----- 0.0009 Inch**
- **Thermal**
  - **Min----------40.10 gf Set ----- 0.0036 Inch**
  - **Max ----------48.60 gf Set ----- 0.0042 Inch**

RESULTS Continued

LLCR Durability (192 LLCR test points)

- **Initial ---------- 33.87 mOhms Max**
- **Durability, 25 Cycles**
  - **<= +5.0 mOhms ---------- 190 Points ---------- Stable**
  - **+5.1 to +10.0 mOhms ---------- 2 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 ---------- 189 Points ---------- Stable**
  - **+5.1 to +10.0 mOhms ---------- 3 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 ---------- 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 +1000 mOhms ---------- 0 Points ---------- Unstable**
  - **>+1000 mOhms ---------- 0 Points ---------- Open Failure**

LLCR Gas Tight Group (192LLCR test points)

- **Initial ---------- 31.42 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 +1000 mOhms ---------- 0 Points ---------- Unstable**
  - **>+1000 mOhms ---------- 0 Points ---------- Open Failure**

LLCR Thermal Aging Group (192 LLCR test points)

- **Initial ---------- 31.03 mOhms Max**
- **Thermal**
  - **<= +5.0 mOhms ---------- 145 Points ---------- Stable**
  - **+5.1 to +10.0 mOhms ---------- 47 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 Extended Life (192 LLCR test points)

500 Cycles

- **Initial ---------- 32.18 mOhms Max**
- **500 Cycles**
  - **<= +5.0 mOhms ---------- 191 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**
- **Thermal Shock**
  - **<= +5.0 mOhms ---------- 175 Points ---------- Stable**
  - **+5.1 to +10.0 mOhms ---------- 17 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 ---------- 174 Points ---------- Stable**
  - **+5.1 to +10.0 mOhms ---------- 18 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**

1000 Cycles

- **Initial ---------- 32.77 mOhms Max**
- **1000 Cycles**
  - **<= +5.0 mOhms ---------- 190 Points ---------- Stable**
  - **+5.1 to +10.0 mOhms ---------- 2 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 ---------- 169 Points ---------- Stable**
  - **+5.1 to +10.0 mOhms ---------- 23 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 ---------- 179 Points ---------- Stable**
  - **+5.1 to +10.0 mOhms ---------- 13 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

2500 Cycles

- **Initial ---------- 34.3 mOhms Max**
- **2500 Cycles**
  - **<= +5.0 mOhms ---------- 189 Points ---------- Stable**
  - **+5.1 to +10.0 mOhms ---------- 3 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 ---------- 147 Points ---------- Stable**
  - **+5.1 to +10.0 mOhms ---------- 45 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 ---------- 171 Points ---------- Stable**
  - **+5.1 to +10.0 mOhms ---------- 21 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**

5000 Cycles

- **Initial ---------- 32.12 mOhms Max**
- **5000 Cycles**
  - **<= +5.0 mOhms ---------- 191 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**
- **Thermal Shock**
  - **<= +5.0 mOhms ---------- 164 Points ---------- Stable**
  - **+5.1 to +10.0 mOhms ---------- 28 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 ---------- 184 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**

RESULTS Continued

LLCR Mixed Flowing Gas Group (192 LLCR test points)

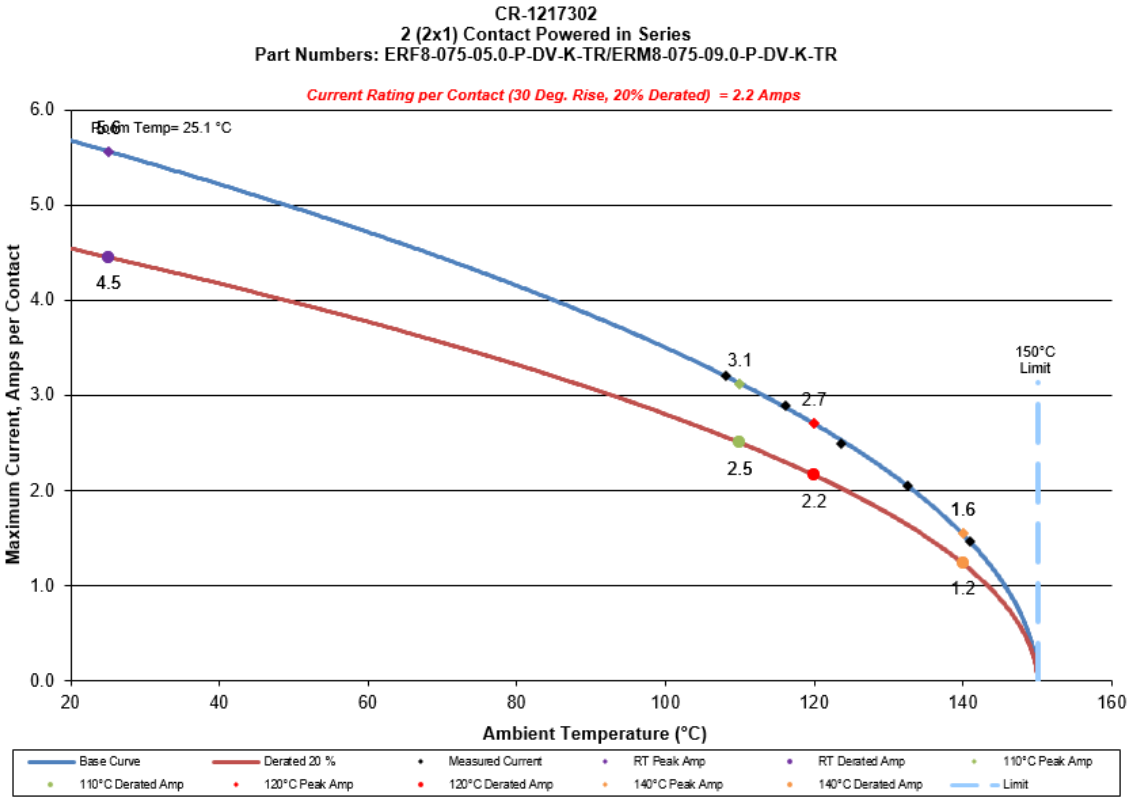
- **Initial ---------- 31.65 mOhms Max**
- **Durability, 20 Cycles**
  - **<= +5.0 mOhms ---------- 192 Points ---------- Stable**
  - **+5.1 to +10.0 mOhms ---------- 0 Points ---------- Minor**
  - **+10.1 to +15.0 mOhms ---------- 0 Points ---------- Acceptable**
  - **+15.1 to +50.0 mOhms ---------- 0 Points ---------- Marginal**
  - **+50.1 to +1000 mOhms ---------- 0 Points ---------- Unstable**
  - **>+1000 mOhms ---------- 0 Points ---------- Open Failure**
- **7 Days Mixed Flowing Gas（with 4 Samples Unmated & 4 Samples Mated During Exposure）**
  - **<= +5.0 mOhms ---------- 161 Points ---------- Stable**
  - **+5.1 to +10.0 mOhms ---------- 31 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**
- **1 Cycle**
  - **<= +5.0 mOhms ---------- 162 Points ---------- Stable**
  - **+5.1 to +10.0 mOhms ---------- 30 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**
- **14 Days Total Mixed Flowing Gas (with All 8 Samples Mated During Exposure)**
  - **<= +5.0 mOhms ---------- 134 Points ---------- Stable**
  - **+5.1 to +10.0 mOhms ---------- 50 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**
- **1 Cycle**
  - **<= +5.0 mOhms ---------- 133 Points ---------- Stable**
  - **+5.1 to +10.0 mOhms ---------- 56 Points ---------- Minor**
  - **+10.1 to +15.0 mOhms ---------- 3 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

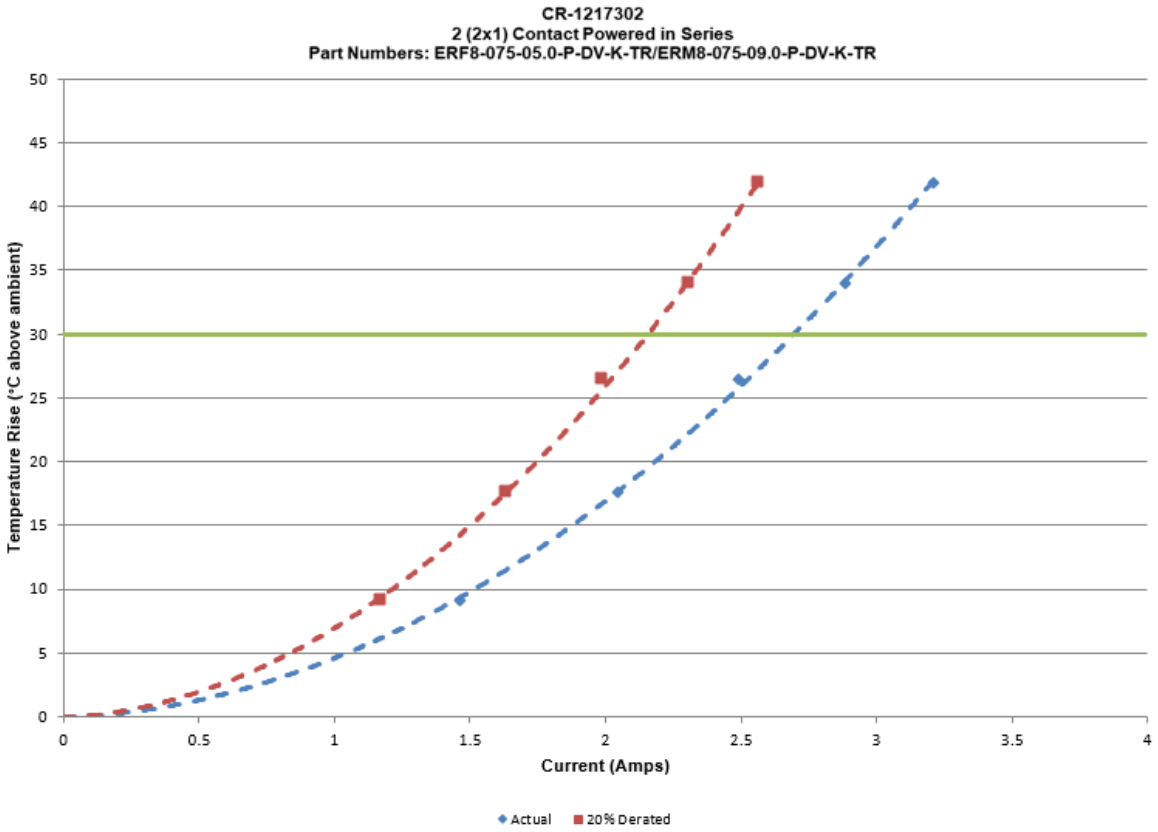
TEMPERATURE RISE (Current Carrying Capacity, CCC):

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:

a. Linear configuration with 2 adjacent conductors/contacts powered

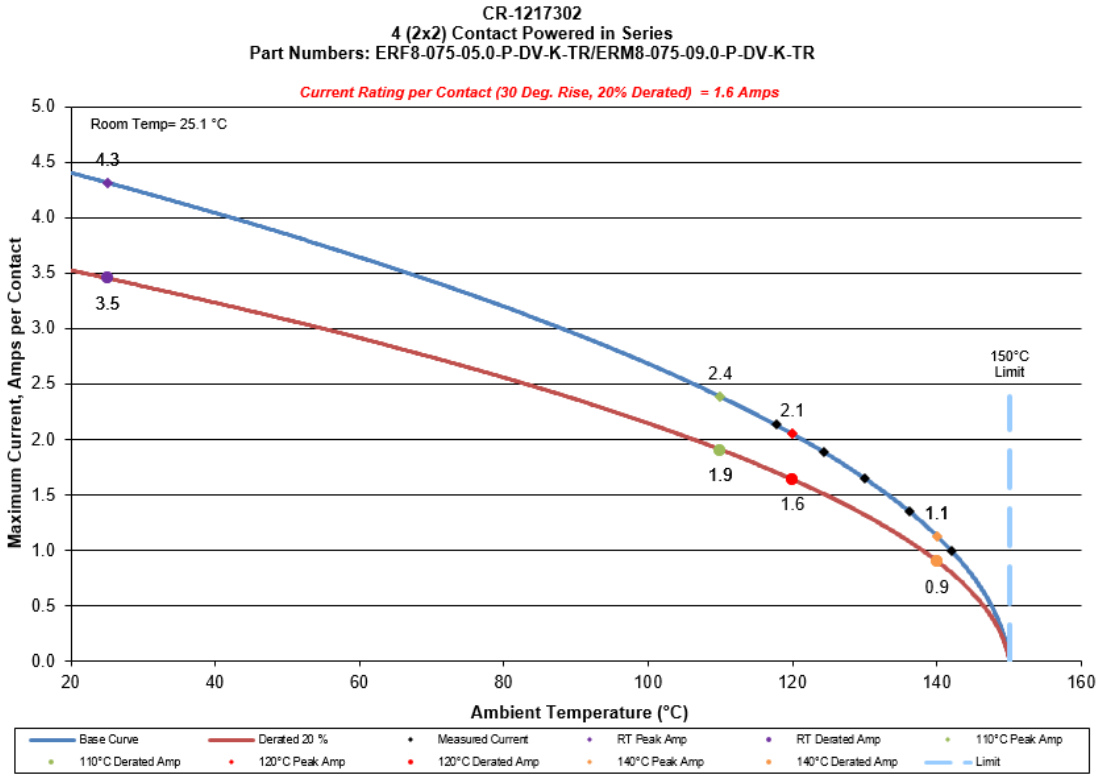


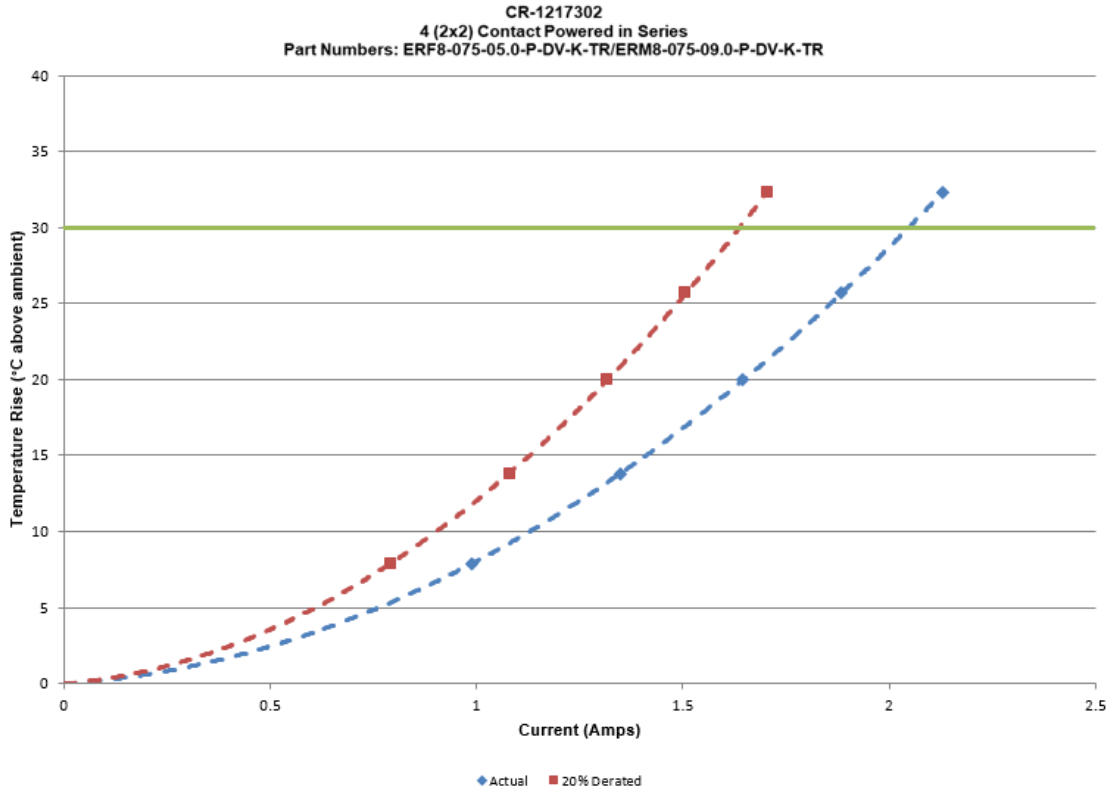
DATA SUMMARIES Continued



DATA SUMMARIES Continued

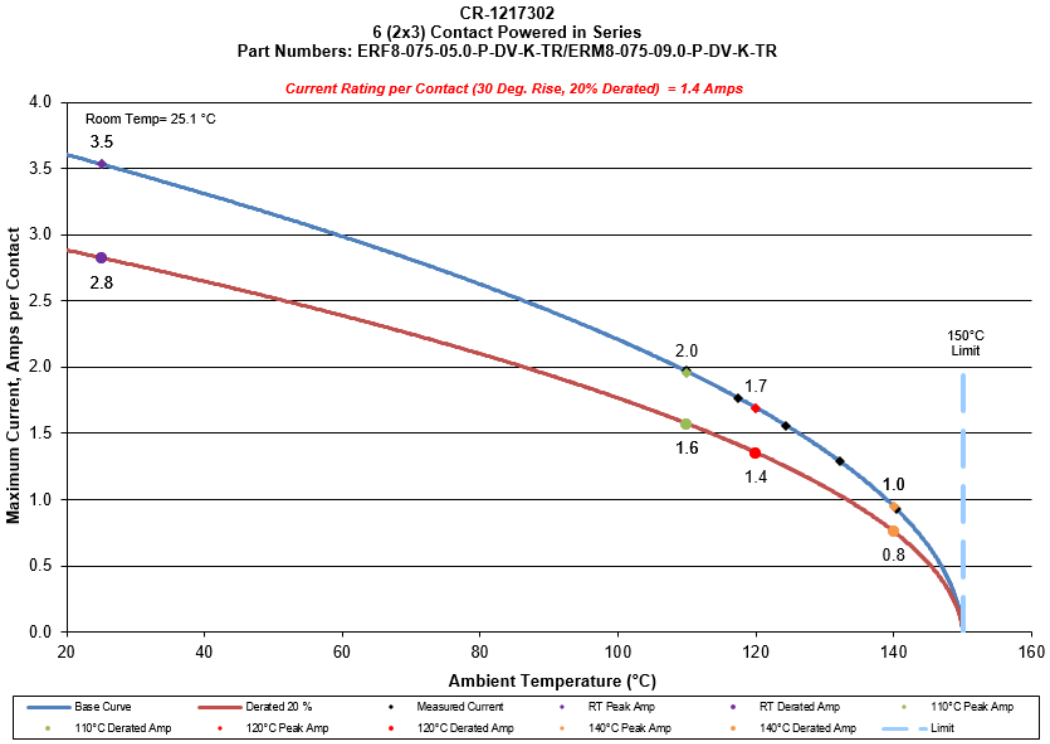
b. Linear configuration with 4 adjacent conductors/contacts powered

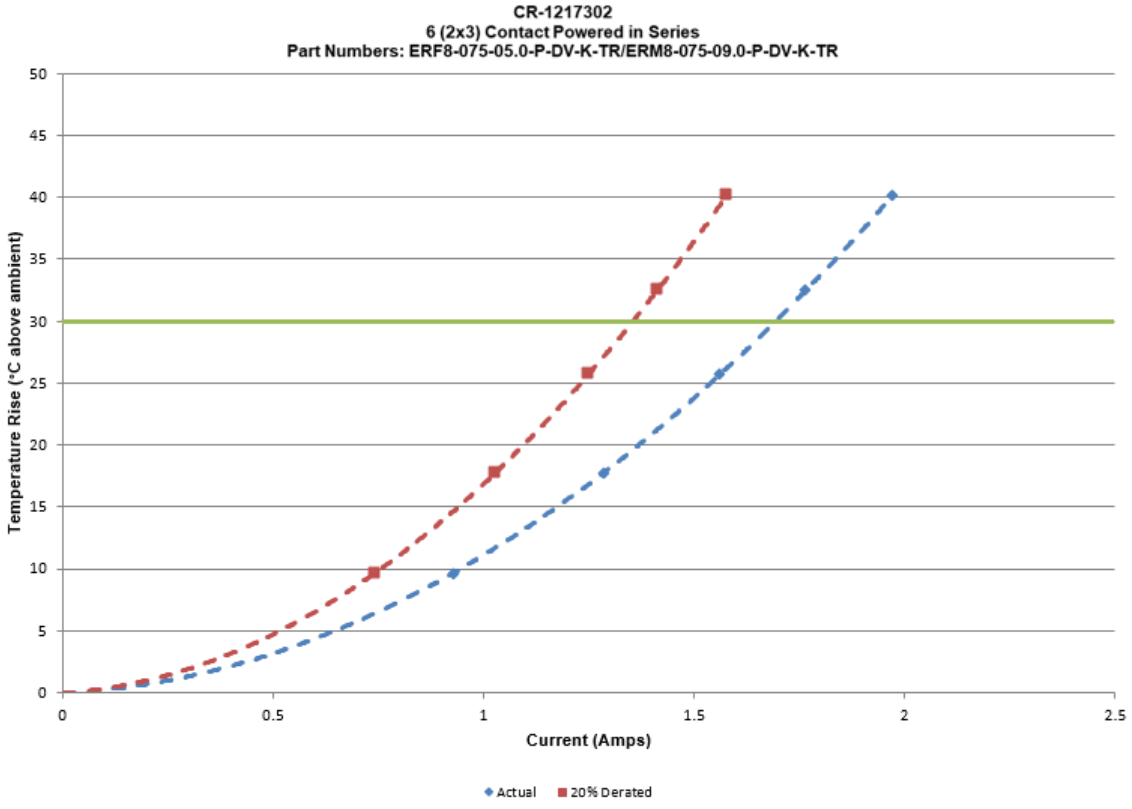




DATA SUMMARIES Continued

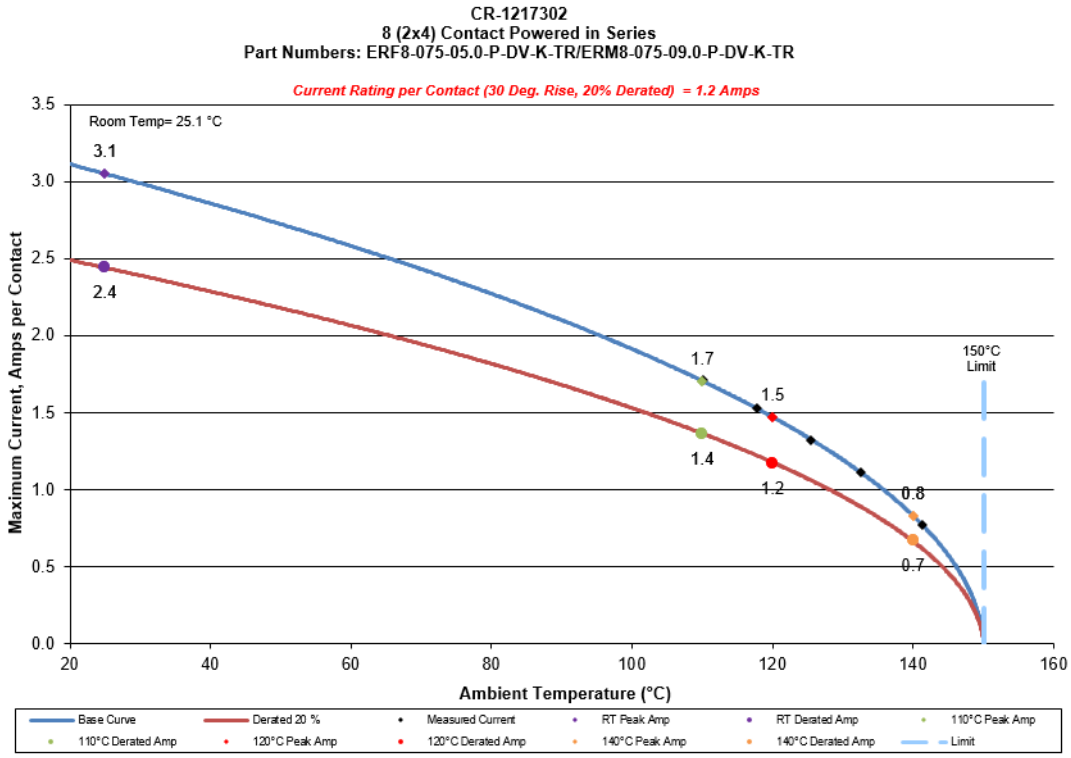
c. Linear configuration with 6 adjacent conductors/contacts powered

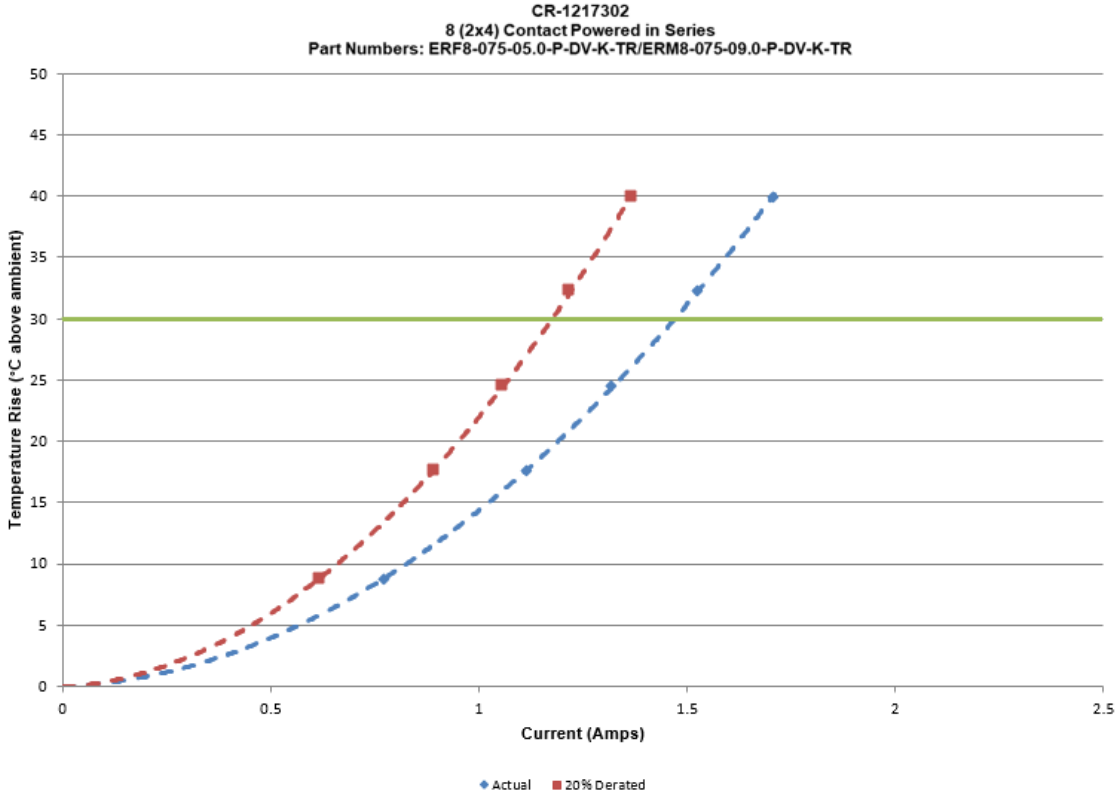




DATA SUMMARIES Continued

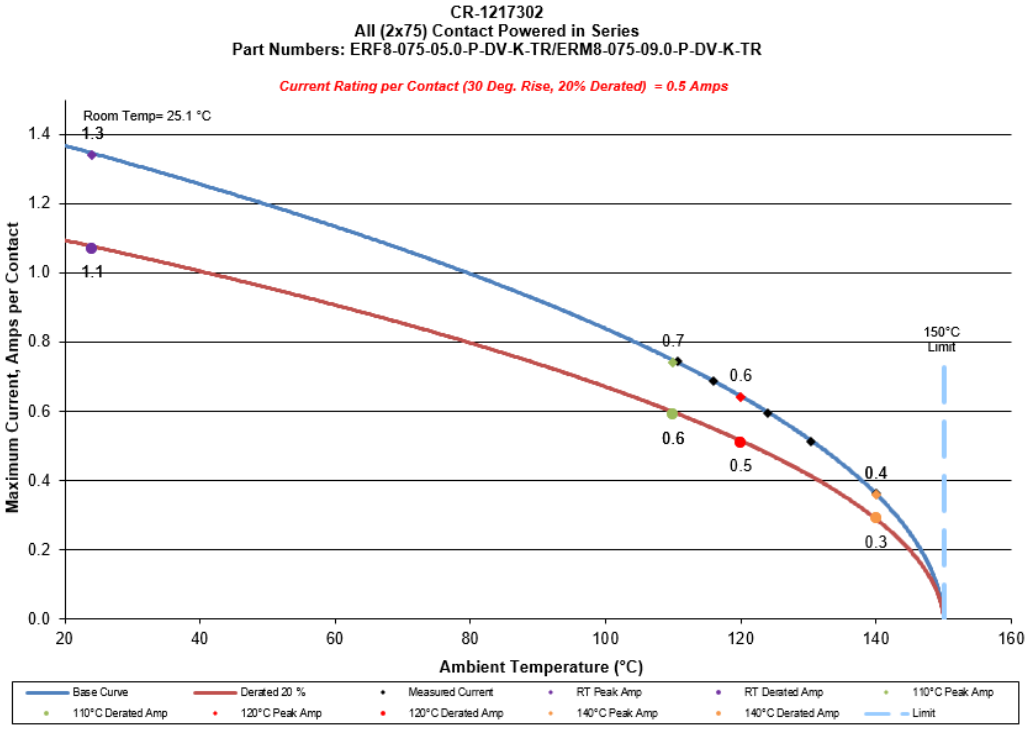
d. Linear configuration with 8 adjacent conductors/contacts powered

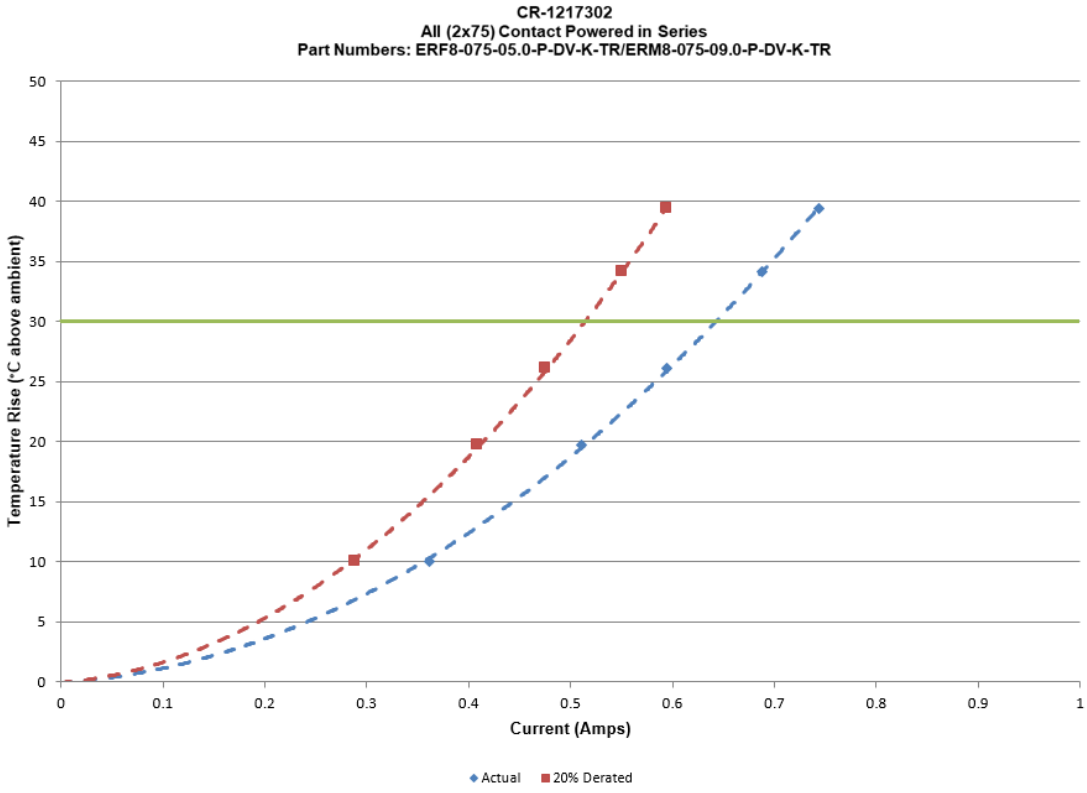




DATA SUMMARIES Continued

e. Linear configuration with all adjacent conductors/contacts powered





DATA SUMMARIES Continued

MATING-UNMATING FORCE:

Thermal Aging Group

	Initial				After Thermals			
	Mating		**Unmating**		**Mating**		**Unmating**	
	Newtons	Force (Lbs)	Newtons	Force (Lbs)	Newtons	Force (Lbs)	Newtons	Force (Lbs)
Minimum	23.49	5.28	10.05	2.26	7.87	1.77	10.76	2.42
Maximum	31.05	6.98	14.28	3.21	12.32	2.77	12.72	2.86
Average	27.91	**6.28**	12.47	**2.80**	9.99	**2.25**	11.66	**2.62**
St Dev	2.53	0.57	1.46	0.33	1.50	0.34	0.76	0.17
Count	8	8	8	8	8	8	8	8

Mating-Unmating durability Group

	Initial				After 25 Cycles			
	Mating		**Unmating**		**Mating**		**Unmating**	
	Newtons	Force (Lbs)	Newtons	Force (Lbs)	Newtons	Force (Lbs)	Newtons	Force (Lbs)
Minimum	24.73	5.56	10.05	2.26	25.26	5.68	13.34	3.00
Maximum	29.27	6.58	14.32	3.22	29.31	6.59	16.01	3.60
Average	26.40	**5.94**	12.95	**2.91**	27.14	**6.10**	14.97	**3.37**
St Dev	1.41	0.32	1.31	0.29	1.38	0.31	0.83	0.19
Count	8	8	8	8	8	8	8	8

	After Humidity			
	Mating		**Unmating**	
	Newtons	Force (Lbs)	Newtons	Force (Lbs)
Minimum	12.50	2.81	7.61	1.71
Maximum	17.12	3.85	9.43	2.12
Average	14.08	**3.17**	8.50	**1.91**
St Dev	1.88	0.42	0.57	0.13
Count	8	8	8	8

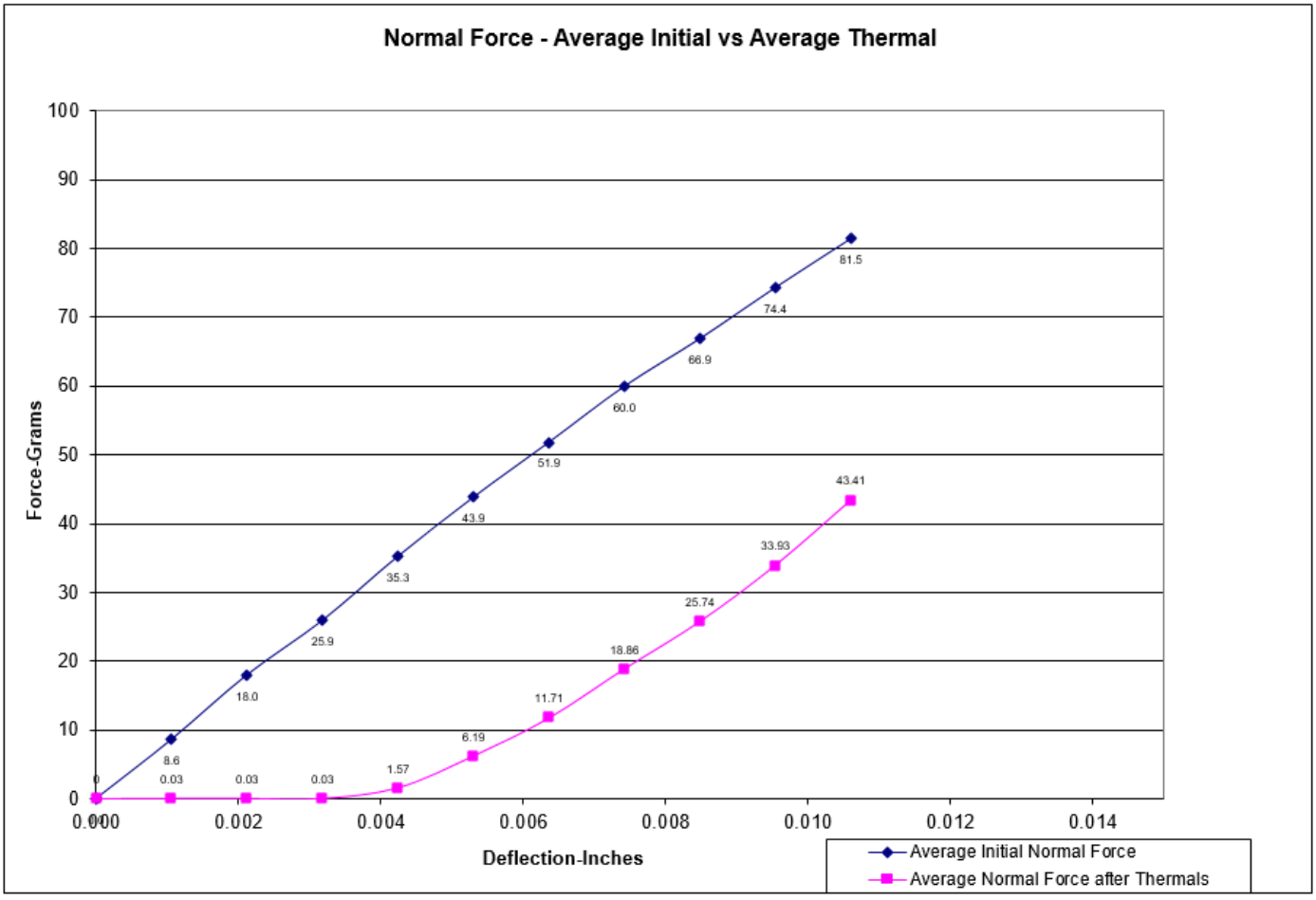
DATA SUMMARIES Continued

NORMAL FORCE (FOR CONTACTS TESTED OUT 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										
	0.0011	**0.0021**	**0.0032**	**0.0042**	**0.0053**	**0.0064**	**0.0074**	**0.0085**	**0.0095**	**0.0106**	***SET***
Averages	8.62	18.01	25.93	35.26	43.86	51.85	60.00	66.93	74.38	81.48	0.0006
Min	6.80	15.40	22.90	31.10	40.20	47.40	55.30	62.30	70.10	77.20	0.0000
Max	14.90	25.40	33.20	42.70	50.90	58.70	66.00	72.20	78.90	84.70	0.0009
St. Dev	2.285	2.650	2.734	2.843	2.773	2.829	2.590	2.509	2.412	2.314	0.0003
Count	12	12	12	12	12	12	12	12	12	12	12

After Thermals	Deflections in inches Forces in Grams										
	0.0011	**0.0021**	**0.0032**	**0.0042**	**0.0053**	**0.0064**	**0.0074**	**0.0085**	**0.0095**	**0.0106**	***SET***
Averages	0.03	0.03	0.03	1.57	6.19	11.71	18.86	25.74	33.93	43.41	0.0039
Min	0.00	0.00	0.00	0.30	4.70	9.50	17.00	23.50	30.80	40.10	0.0036
Max	0.20	0.20	0.20	3.00	8.60	14.60	21.80	29.30	38.20	48.60	0.0042
St. Dev	0.065	0.065	0.065	0.808	1.000	1.289	1.328	1.549	2.184	2.500	0.0002
Count	12	12	12	12	12	12	12	12	12	12	12



DATA SUMMARIES Continued

LLCR 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 +1000 mOhms:----------Unstable
   f. >+1000 mOhms:----------Open Failure

	LLCR Measurement Summaries by Pin Type			
Date	4/21/2025	4/22/2025	5/8/2025	5/20/2025
Room Temp (Deg C)	23	23	23	23
Rel Humidity (%)	51	51	51	51
Technician	Peter Chen	Peter Chen	Peter Chen	Peter Chen
mOhm values	Actual **Initial**	**Delta Cycles**	**Delta Therm Shck**	**Delta Humidity**
	Pin Type: Signal 1			
Average	28.65	0.94	1.84	1.71
St. Dev.	1.16	0.86	1.25	1.41
Min	26.41	0	0.04	0.05
Max	33.87	5.65	5.97	8.13
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**
Cycles	**190**	**2**	**0**	**0**	**0**	**0**
Therm Shck	**189**	**3**	**0**	**0**	**0**	**0**
Humidity	**187**	**5**	**0**	**0**	**0**	**0**

DATA SUMMARIES Continued

LLCR Gas Tight Group

5) A total of 192 points were measured.
6) EIA-364-23, *Low Level Contact Resistance Test Procedure for Electrical Connectors and Sockets.*
7) A computer program, *LLCR 221.exe*, ensures repeatability for data acquisition.
8) 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	4/21/2025	4/22/2025		
Room Temp (Deg C)	23	23		
Rel Humidity (%)	51	51		
Technician	Peter Chen	Peter Chen		
mOhm values	Actual	**Delta**		
	Initial	**Acid Vapor**		
	Pin Type: Signal 1			
Average	28.54	0.57		
St. Dev.	0.93	0.48		
Min	26.65	0		
Max	31.42	2.54		
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 Thermal Aging Group

1) A total of 48 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	4/22/2025	6/4/2025		
Room Temp (Deg C)	23	23		
Rel Humidity (%)	51	51		
Technician	Peter Chen	Peter Chen		
mOhm values	Actual **Initial**	**Delta** **Thermal**		
	Pin Type: Signal 1			
Average	28.16	3.5		
St. Dev.	0.83	2.71		
Min	26.55	0.05		
Max	31.03	8.87		
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	**145**	**47**	**0**	**0**	**0**	**0**

DATA SUMMARIES Continued

LLCR Extended Life 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 +1000 mOhms:----------Unstable
   f. >+1000 mOhms:----------Open Failure

500 Cycles

	LLCR Measurement Summaries by Pin Type			
Date	4/24/2025	5/16/2025	5/26/2025	6/10/2025
Room Temp (Deg C)	23	23	23	23
Rel Humidity (%)	51	51	51	51
Technician	Peter Chen	Peter Chen	Peter Chen	Peter Chen
mOhm values	Actual **Initial**	**Delta Cycles**	**Delta Therm Shck**	**Delta Humidity**
	Pin Type: Signal 1			
Average	28.76	0.82	2.43	2.14
St. Dev.	1.1	0.73	1.63	1.78
Min	26.52	0	0.01	0.02
Max	32.18	5.2	7.81	7.95
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**
Cycles	**191**	**1**	**0**	**0**	**0**	**0**
Therm Shck	**175**	**17**	**0**	**0**	**0**	**0**
Humidity	**174**	**18**	**0**	**0**	**0**	**0**

DATA SUMMARIES

1000 Cycles

LLCR Measurement Summaries by Pin Type				
Date	4/24/2025	5/16/2025	5/26/2025	6/10/2025
Room Temp (Deg C)	23	23	23	23
Rel Humidity (%)	51	51	51	51
Technician	Peter Chen	Peter Chen	Peter Chen	Peter Chen
mOhm values	Actual **Initial**	**Delta Cycles**	**Delta Therm Shck**	**Delta Humidity**
	Pin Type: Signal 1			
Average	28.63	1.25	2.8	2.55
St. Dev.	1.05	1	1.63	1.56
Min	26.78	0	0.12	0.08
Max	32.77	5.35	7.24	9.04
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**
Cycles	**190**	**2**	**0**	**0**	**0**	**0**
Therm Shck	**169**	**23**	**0**	**0**	**0**	**0**
Humidity	**179**	**13**	**0**	**0**	**0**	**0**

2500 Cycles

LLCR Measurement Summaries by Pin Type				
Date	4/27/2025	5/26/2025	6/4/2025	6/17/2025
Room Temp (Deg C)	23	23	23	23
Rel Humidity (%)	51	51	51	51
Technician	Peter Chen	Peter Chen	Peter Chen	Peter Chen
mOhm values	Actual **Initial**	**Delta Cycles**	**Delta Therm Shck**	**Delta Humidity**
	Pin Type: Signal 1			
Average	28.7	1.32	3.56	2.53
St. Dev.	1.23	1.19	2.03	1.92
Min	25.17	0	0.02	0.02
Max	34.3	5.32	9.84	8.59
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**
Cycles	**189**	**3**	**0**	**0**	**0**	**0**
Therm Shck	**147**	**45**	**0**	**0**	**0**	**0**
Humidity	**171**	**21**	**0**	**0**	**0**	**0**

DATA SUMMARIES

5000 Cycles

	LLCR Measurement Summaries by Pin Type			
Date	8/15/2025	8/25/2025	9/18/2025	9/30/2025
Room Temp (Deg C)	25	25	25	25
Rel Humidity (%)	56	56	56	56
Technician	Kason He	Kason He	Kason He	Kason He
mOhm values	Actual **Initial**	**Delta 5000 Cycles**	**Delta Therm Shck**	**Delta Humidity**
	Pin Type: Signal 1			
Average	28.03	0.4	2.86	1.92
St. Dev.	1.05	0.5	1.84	1.54
Min	26.16	0	0.01	0.01
Max	32.12	5.42	9.22	8.73
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**
5000 Cycles	**191**	**1**	**0**	**0**	**0**	**0**
Therm Shck	**164**	**28**	**0**	**0**	**0**	**0**
Humidity	**184**	**8**	**0**	**0**	**0**	**0**

DATA SUMMARIES

LLCR Mixed Flowing Gas 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 +1000 mOhms----------Unstable
   f. > +1000 mOhms:----------Open Failure

	LLCR Measurement Summaries by Pin Type					
Date	5/13/2025	5/14/2025	5/21/2025	5/21/2025	5/28/2025	5/28/2025
Room Temp (Deg C)	22	22	22	22	22	22
Rel Humidity (%)	50	50	50	50	50	50
Technician	Keney Chen	Keney Chen	Keney Chen	Keney Chen	Keney Chen	Keney Chen
mOhm values	Actual **Initial**	**Delta Cycles 1**	**Delta MFG 1**	**Delta Cycles 2**	**Delta MFG 2**	**Delta Cycles 3**
	Pin Type: Signal 1					
Average	28.47	0.67	2.28	2.18	3.64	3.43
St. Dev.	0.91	0.56	2.5	2.31	3.07	2.96
Min	26.23	0.01	0	0	0.01	0.03
Max	31.65	3.84	9.87	8.72	11.36	10.96
Summary Count	192	192	192	192	192	192
Total Count	192	192	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**
Cycles 1	**192**	**0**	**0**	**0**	**0**	**0**
MFG 1	**161**	**31**	**0**	**0**	**0**	**0**
Cycles 2	**162**	**30**	**0**	**0**	**0**	**0**
MFG 2	**134**	**50**	**8**	**0**	**0**	**0**
Cycles 3	**133**	**56**	**3**	**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: 4/26/2025, Next Cal: 4/27/2026

Equipment #: HZ-THC-01
Description: Humidity transmitter
Manufacturer: Thermtron
Model: HMM30C
Serial #: D0240037
Accuracy: Last Cal: 3/1/2025, Next Cal: 2/28/2026

Equipment #: MO-04
Description: Multimeter /Data Acquisition System
Manufacturer: Keithley
Model: 2700
Serial #: 0798688
Accuracy: Last Cal: 4/20/2025, Next Cal: 4/20/2026

Equipment #: PS-11
Description: Power Supply
Manufacturer: Hewlett Packard / Agilent
Model: AT-6032A
Serial #: 3440A10457
Accuracy: Last Cal: no calibrate, Next Cal: no calibrate

Equipment #: HZ-MO-05
Description: Micro-ohmmeter
Manufacturer: Keithley
Model: 3706
Serial #: 1285188
Accuracy: Last Cal: 11/15/2024, Next Cal: 11/14/2025

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: 06/28/2024, Next Cal: 06/27/2025