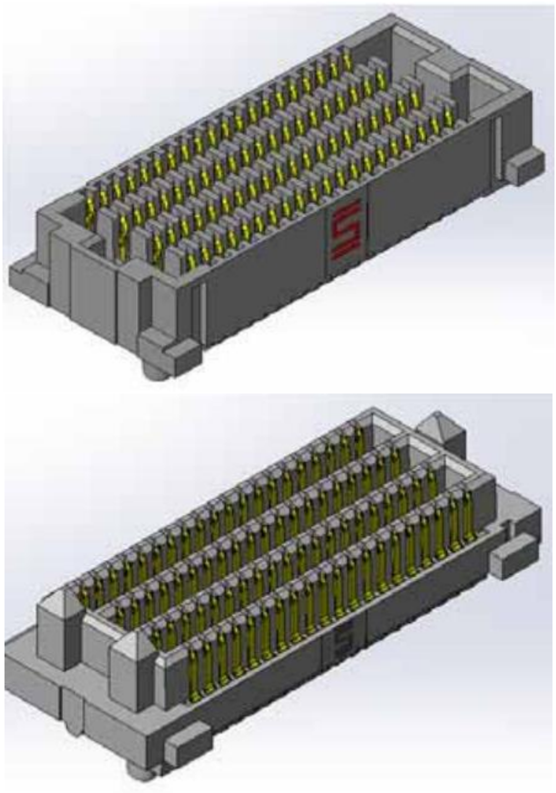
Project Number: Design Qualification Test Report	Tracking Code: 1745467_Report_Rev_1
Requested by: Tyler Lang	Date: 6/22/2021
Part #: SEAF8-50-05.0-L-10-2-K/SEAM8-50-S02.0-L-10-2-K SEAF8-50-05.0-L-10-3-K/SEAM8-50-S02.0-L-10-3-K	Tech: Peter Chen
Part description: SEAF8/SEAM8	Qty to test: 150
Test Start: 03/10/2019	Test Completed: 04/20/2019



DESIGN QUALIFICATION TEST REPORT

SEAF8/SEAM8
SEAF8-50-05.0-L-10-2-K/SEAM8-50-S02.0-L-10-2-K
SEAF8-50-05.0-L-10-3-K/SEAM8-50-S02.0-L-10-3-K

REVISION HISTORY

DATA	REV.NUM.	DESCRIPTION	ENG
6/22/2021	**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.

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SCOPE

To perform the following tests: Design Qualification test for SEAF8-50-05.0-L-10-2-K/SEAM8-50-S02.0-L-10-2-K & SEAF8-50-05.0-L-10-3-K/SEAM8-50-S02.0-L-10-3-K. Please see test plan.

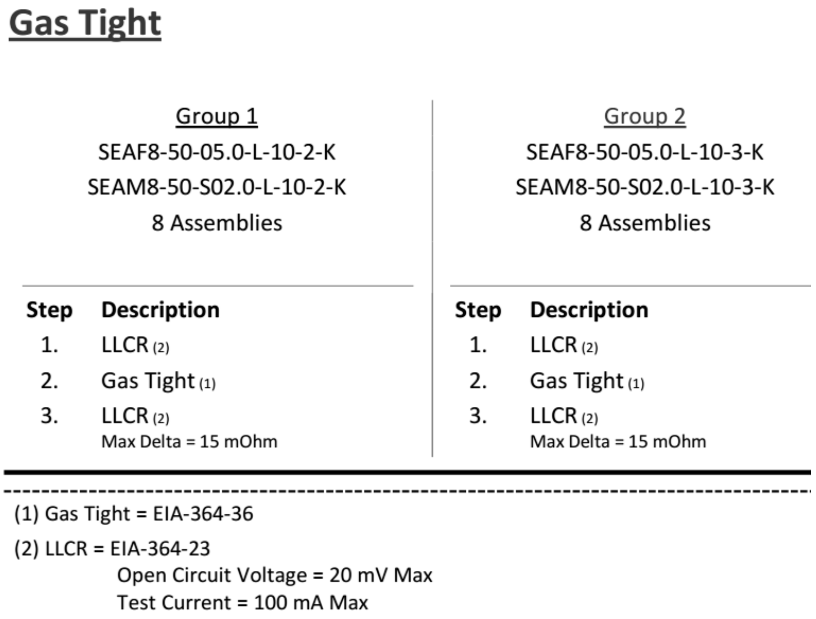
APPLICABLE DOCUMENTS

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-106075-TST-XX, PCB-107538-TST-XX, PCB-109362-TST-XX, PCB-109363-TST-XX.

FLOWCHARTS

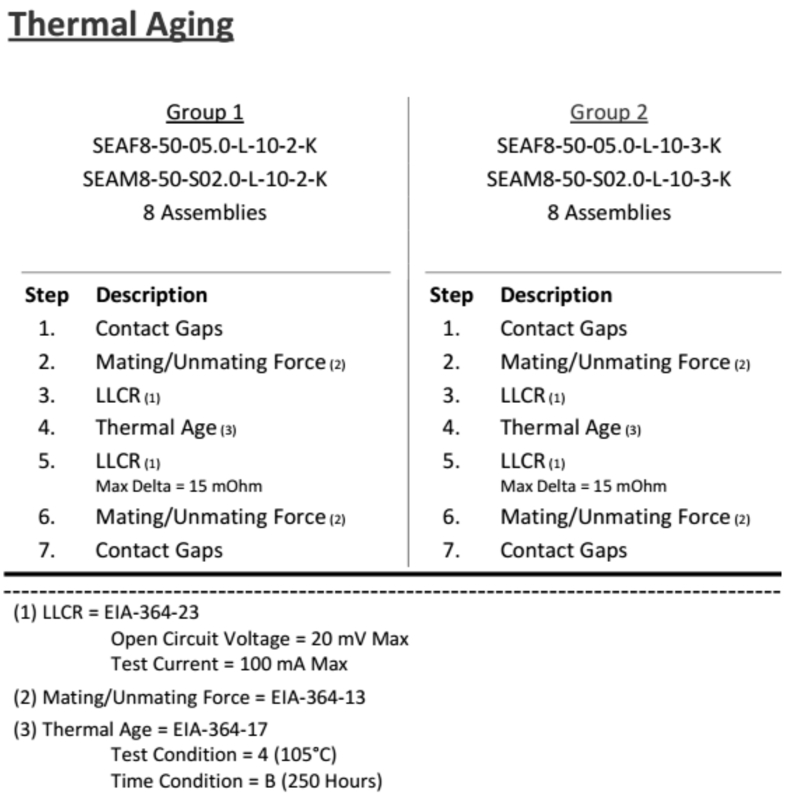


Gas Tight

Group 1 SEAF8-50-05.0-L-10-2-K SEAM8-50-S02.0-L-10-2-K 8 Assemblies		Group 2 SEAF8-50-05.0-L-10-3-K SEAM8-50-S02.0-L-10-3-K 8 Assemblies	
Step	**Description**	**Step**	**Description**
1.	LLCR (2)	1.	LLCR (2)
2.	Gas Tight (1)	2.	Gas Tight (1)
3.	LLCR (2) Max Delta = 15 mOhm	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

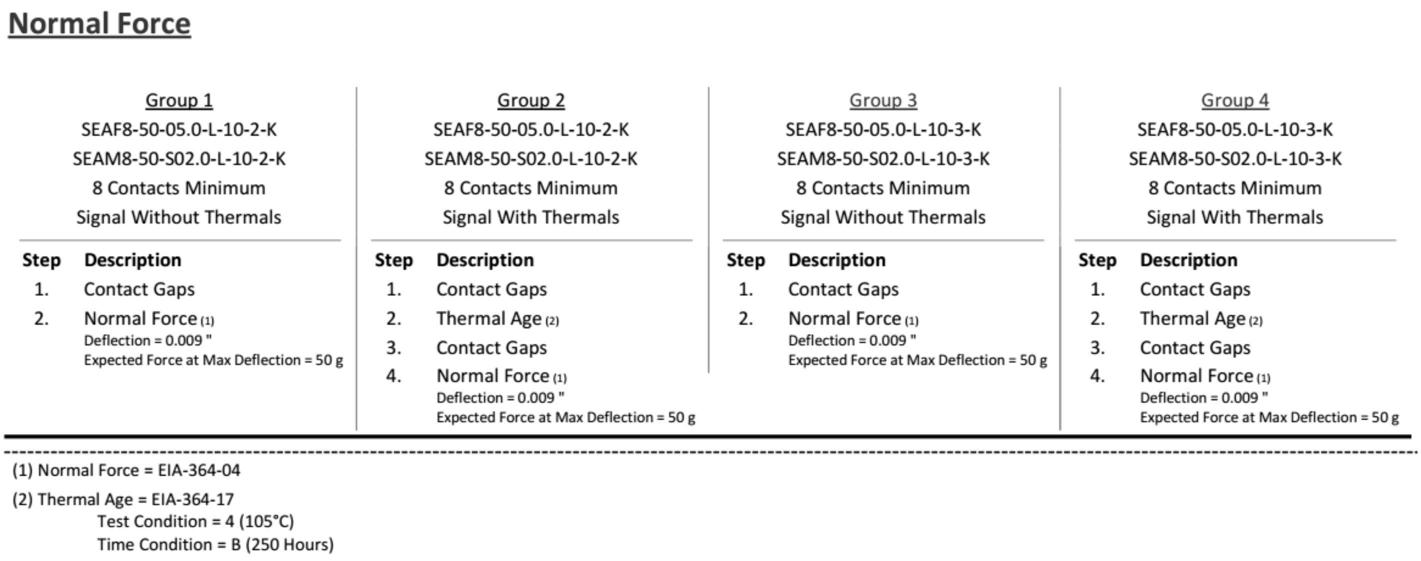
Group 1 SEAF8-50-05.0-L-10-2-K SEAM8-50-S02.0-L-10-2-K 8 Assemblies		Group 2 SEAF8-50-05.0-L-10-3-K SEAM8-50-S02.0-L-10-3-K 8 Assemblies	
Step	**Description**	**Step**	**Description**
1.	Contact Gaps	1.	Contact Gaps
2.	Mating/Unmating Force (2)	2.	Mating/Unmating Force (2)
3.	LLCR (1)	3.	LLCR (1)
4.	Thermal Age (3)	4.	Thermal Age (3)
5.	LLCR (1) Max Delta = 15 mOhm	5.	LLCR (1) Max Delta = 15 mOhm
6.	Mating/Unmating Force (2)	6.	Mating/Unmating Force (2)
7.	Contact Gaps	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



Normal Force

Group 1
SEAF8-50-05.0-L-10-2-K
SEAM8-50-S02.0-L-10-2-K
8 Contacts Minimum
Signal Without Thermals

Step	Description
1.	Contact Gaps
2.	Normal Force (1) Deflection = 0.009 " Expected Force at Max Deflection = 50 g

Group 2
SEAF8-50-05.0-L-10-2-K
SEAM8-50-S02.0-L-10-2-K
8 Contacts Minimum
Signal With Thermals

Step	Description
1.	Contact Gaps
2.	Thermal Age (2)
3.	Contact Gaps
4.	Normal Force (1) Deflection = 0.009 " Expected Force at Max Deflection = 50 g

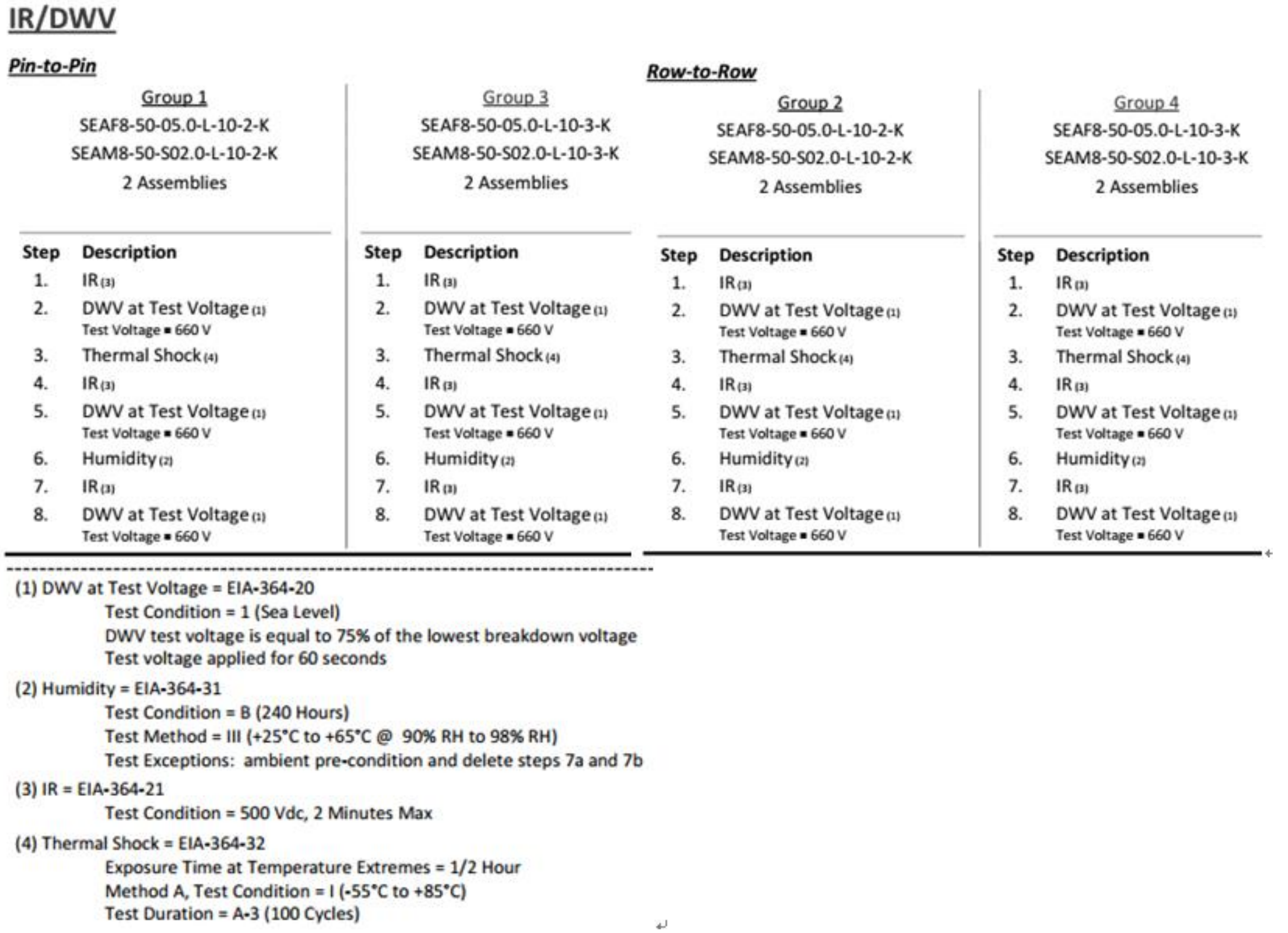
Group 3
SEAF8-50-05.0-L-10-3-K
SEAM8-50-S02.0-L-10-3-K
8 Contacts Minimum
Signal Without Thermals

Step	Description
1.	Contact Gaps
2.	Normal Force (1) Deflection = 0.009 " Expected Force at Max Deflection = 50 g

Group 4
SEAF8-50-05.0-L-10-3-K
SEAM8-50-S02.0-L-10-3-K
8 Contacts Minimum
Signal With Thermals

Step	Description
1.	Contact Gaps
2.	Thermal Age (2)
3.	Contact Gaps
4.	Normal Force (1) Deflection = 0.009 " Expected Force at Max Deflection = 50 g

(1) Normal Force = EIA-364-04
(2) Thermal Age = EIA-364-17
Test Condition = 4 (105°C)
Time Condition = B (250 Hours)



IR/DWV

Pin-to-Pin

Group 1
SEAF8-50-05.0-L-10-2-K
SEAM8-50-S02.0-L-10-2-K
2 Assemblies

Step	Description
1.	IR (3)
2.	DWV at Test Voltage (1) Test Voltage = 660 V
3.	Thermal Shock (4)
4.	IR (3)
5.	DWV at Test Voltage (1) Test Voltage = 660 V
6.	Humidity (2)
7.	IR (3)
8.	DWV at Test Voltage (1) Test Voltage = 660 V

Group 3
SEAF8-50-05.0-L-10-3-K
SEAM8-50-S02.0-L-10-3-K
2 Assemblies

Step	Description
1.	IR (3)
2.	DWV at Test Voltage (1) Test Voltage = 660 V
3.	Thermal Shock (4)
4.	IR (3)
5.	DWV at Test Voltage (1) Test Voltage = 660 V
6.	Humidity (2)
7.	IR (3)
8.	DWV at Test Voltage (1) Test Voltage = 660 V

Row-to-Row

Group 2
SEAF8-50-05.0-L-10-2-K
SEAM8-50-S02.0-L-10-2-K
2 Assemblies

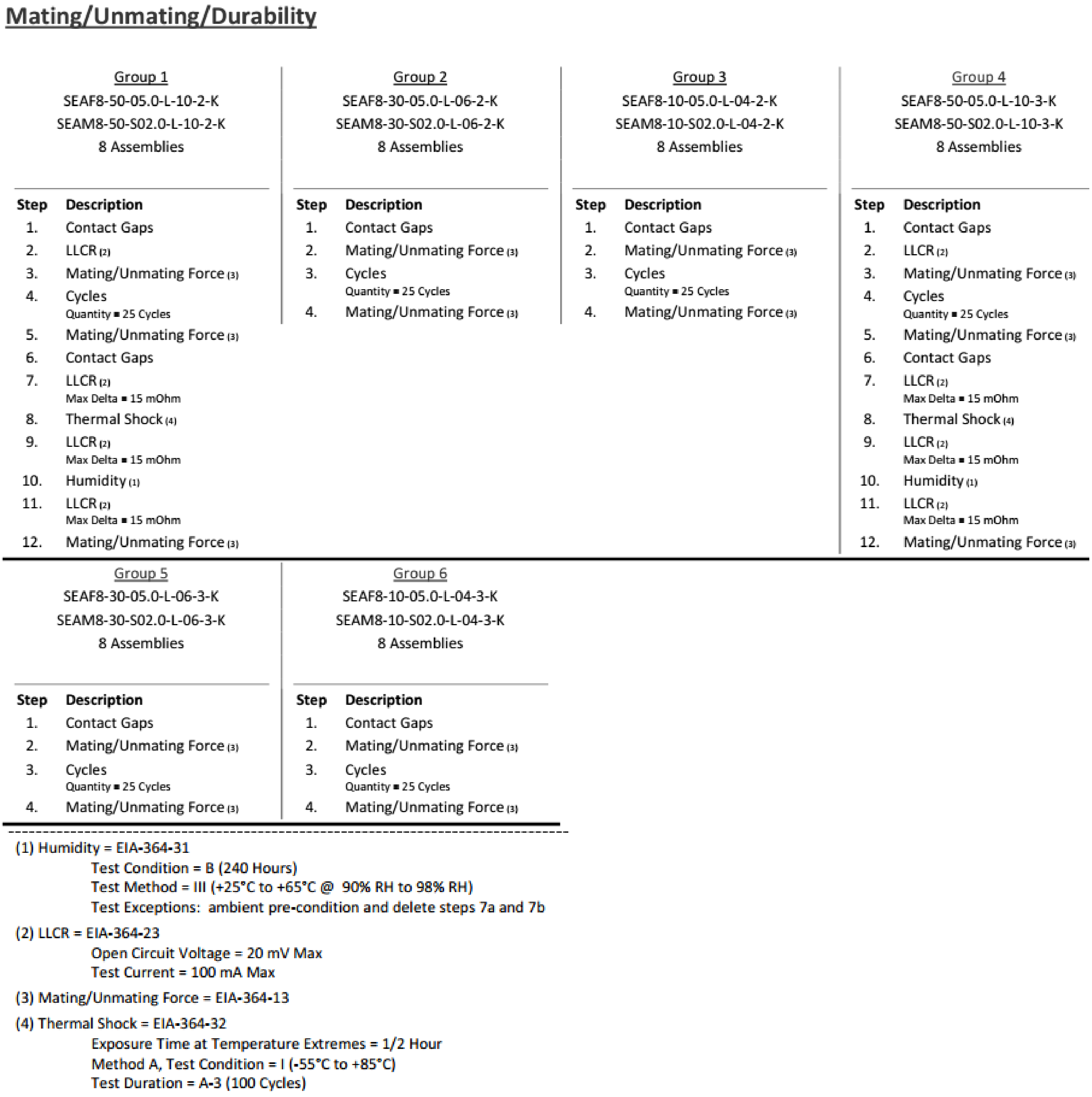
Step	Description
1.	IR (3)
2.	DWV at Test Voltage (1) Test Voltage = 660 V
3.	Thermal Shock (4)
4.	IR (3)
5.	DWV at Test Voltage (1) Test Voltage = 660 V
6.	Humidity (2)
7.	IR (3)
8.	DWV at Test Voltage (1) Test Voltage = 660 V

Group 4
SEAF8-50-05.0-L-10-3-K
SEAM8-50-S02.0-L-10-3-K
2 Assemblies

Step	Description
1.	IR (3)
2.	DWV at Test Voltage (1) Test Voltage = 660 V
3.	Thermal Shock (4)
4.	IR (3)
5.	DWV at Test Voltage (1) Test Voltage = 660 V
6.	Humidity (2)
7.	IR (3)
8.	DWV at Test Voltage (1) Test Voltage = 660 V

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



Mating/Unmating/Durability

Group 1
SEAF8-50-05.0-L-10-2-K
SEAM8-50-S02.0-L-10-2-K
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)
9.	LLCR (2) Max Delta ■ 15 mOhm
10.	Humidity (1)
11.	LLCR (2) Max Delta ■ 15 mOhm
12.	Mating/Unmating Force (3)

Group 2
SEAF8-30-05.0-L-06-2-K
SEAM8-30-S02.0-L-06-2-K
8 Assemblies

Step	Description
1.	Contact Gaps
2.	Mating/Unmating Force (3)
3.	Cycles Quantity ■ 25 Cycles
4.	Mating/Unmating Force (3)

Group 3
SEAF8-10-05.0-L-04-2-K
SEAM8-10-S02.0-L-04-2-K
8 Assemblies

Step	Description
1.	Contact Gaps
2.	Mating/Unmating Force (3)
3.	Cycles Quantity ■ 25 Cycles
4.	Mating/Unmating Force (3)

Group 4
SEAF8-50-05.0-L-10-3-K
SEAM8-50-S02.0-L-10-3-K
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)
9.	LLCR (2) Max Delta ■ 15 mOhm
10.	Humidity (1)
11.	LLCR (2) Max Delta ■ 15 mOhm
12.	Mating/Unmating Force (3)

Group 5
SEAF8-30-05.0-L-06-3-K
SEAM8-30-S02.0-L-06-3-K
8 Assemblies

Step	Description
1.	Contact Gaps
2.	Mating/Unmating Force (3)
3.	Cycles Quantity ■ 25 Cycles
4.	Mating/Unmating Force (3)

Group 6
SEAF8-10-05.0-L-04-3-K
SEAM8-10-S02.0-L-04-3-K
8 Assemblies

Step	Description
1.	Contact Gaps
2.	Mating/Unmating Force (3)
3.	Cycles Quantity ■ 25 Cycles
4.	Mating/Unmating Force (3)

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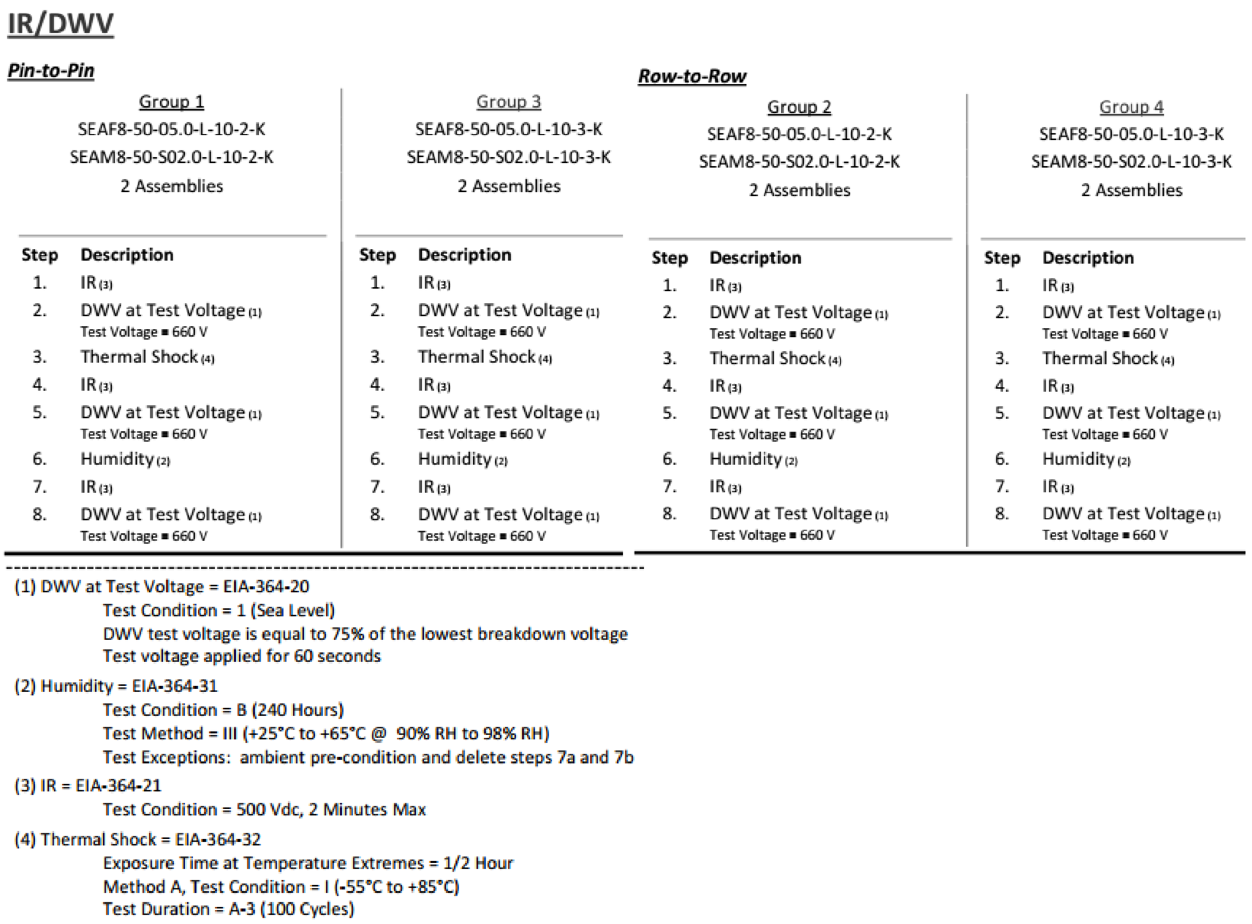
(1) Humidity = EIA-364-31
Test Condition = B (240 Hours)
Test Method = III (+25°C to +65°C @ 90% RH to 98% RH)
Test Exceptions: ambient pre-condition and delete steps 7a and 7b

(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
SEAF8-50-05.0-L-10-2-K
SEAM8-50-S02.0-L-10-2-K
2 Assemblies

Step	Description
1.	IR (3)
2.	DWV at Test Voltage (1) Test Voltage ■ 660 V
3.	Thermal Shock (4)
4.	IR (3)
5.	DWV at Test Voltage (1) Test Voltage ■ 660 V
6.	Humidity (2)
7.	IR (3)
8.	DWV at Test Voltage (1) Test Voltage ■ 660 V

Group 3
SEAF8-50-05.0-L-10-3-K
SEAM8-50-S02.0-L-10-3-K
2 Assemblies

Step	Description
1.	IR (3)
2.	DWV at Test Voltage (1) Test Voltage ■ 660 V
3.	Thermal Shock (4)
4.	IR (3)
5.	DWV at Test Voltage (1) Test Voltage ■ 660 V
6.	Humidity (2)
7.	IR (3)
8.	DWV at Test Voltage (1) Test Voltage ■ 660 V

Row-to-Row

Group 2
SEAF8-50-05.0-L-10-2-K
SEAM8-50-S02.0-L-10-2-K
2 Assemblies

Step	Description
1.	IR (3)
2.	DWV at Test Voltage (1) Test Voltage ■ 660 V
3.	Thermal Shock (4)
4.	IR (3)
5.	DWV at Test Voltage (1) Test Voltage ■ 660 V
6.	Humidity (2)
7.	IR (3)
8.	DWV at Test Voltage (1) Test Voltage ■ 660 V

Group 4
SEAF8-50-05.0-L-10-3-K
SEAM8-50-S02.0-L-10-3-K
2 Assemblies

Step	Description
1.	IR (3)
2.	DWV at Test Voltage (1) Test Voltage ■ 660 V
3.	Thermal Shock (4)
4.	IR (3)
5.	DWV at Test Voltage (1) Test Voltage ■ 660 V
6.	Humidity (2)
7.	IR (3)
8.	DWV at Test Voltage (1) Test Voltage ■ 660 V

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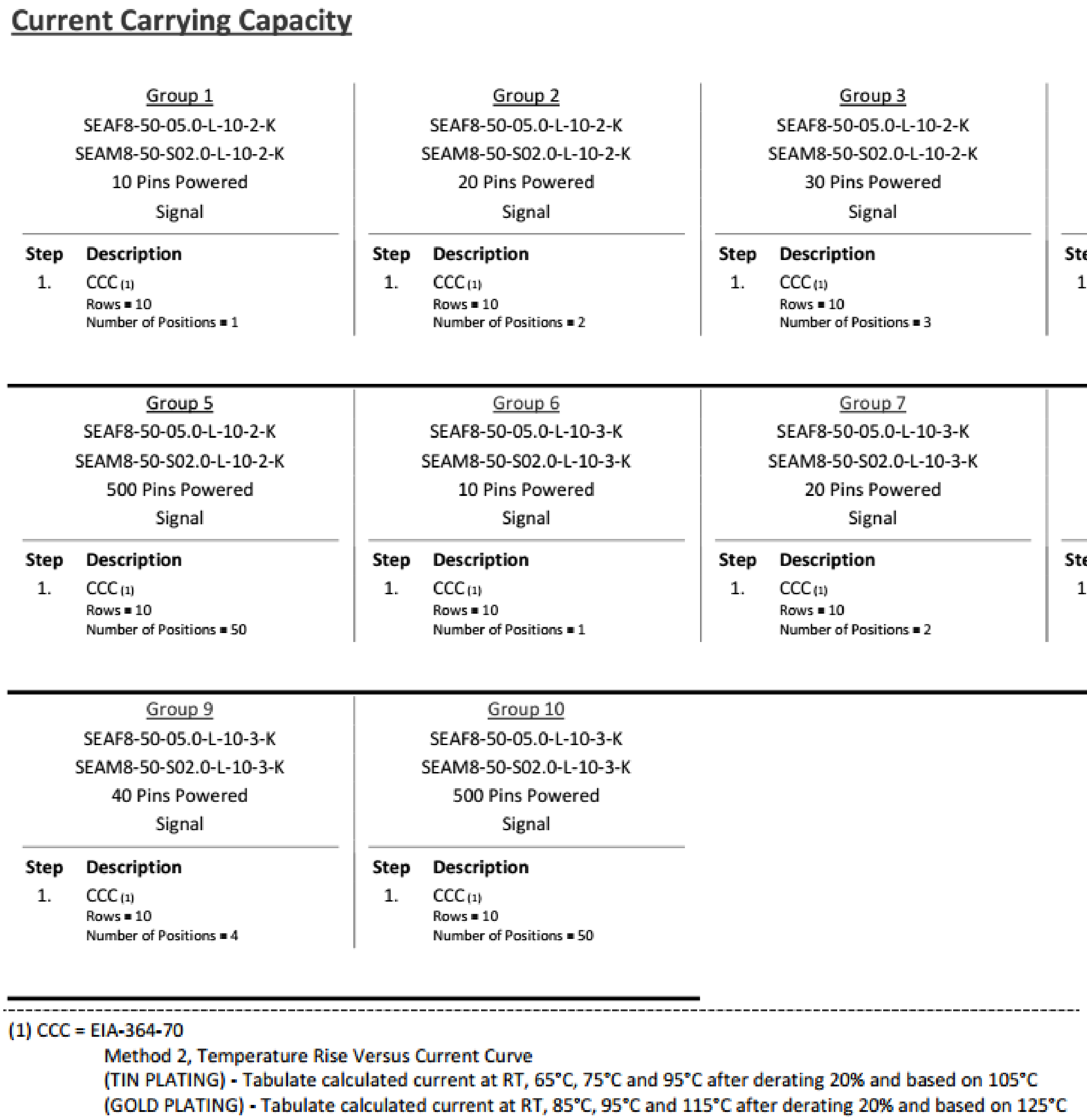
(1) DWV at Test Voltage = EIA-364-20
Test Condition = 1 (Sea Level)
DWV test voltage is equal to 75% of the lowest breakdown voltage
Test voltage applied for 60 seconds

(2) 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

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

(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



Current Carrying Capacity

Group 1
SEAF8-50-05.0-L-10-2-K
SEAM8-50-S02.0-L-10-2-K
10 Pins Powered
Signal

Step	Description
1.	CCC (1) Rows ■ 10 Number of Positions ■ 1

Group 2
SEAF8-50-05.0-L-10-2-K
SEAM8-50-S02.0-L-10-2-K
20 Pins Powered
Signal

Step	Description
1.	CCC (1) Rows ■ 10 Number of Positions ■ 2

Group 3
SEAF8-50-05.0-L-10-2-K
SEAM8-50-S02.0-L-10-2-K
30 Pins Powered
Signal

Step	Description
1.	CCC (1) Rows ■ 10 Number of Positions ■ 3

Group 4
SEAF8-50-05.0-L-10-2-K
SEAM8-50-S02.0-L-10-2-K
40 Pins Powered
Signal

Step	Description
1.	CCC (1) Rows ■ 10 Number of Positions ■ 4

Group 5
SEAF8-50-05.0-L-10-2-K
SEAM8-50-S02.0-L-10-2-K
500 Pins Powered
Signal

Step	Description
1.	CCC (1) Rows ■ 10 Number of Positions ■ 50

Group 6
SEAF8-50-05.0-L-10-3-K
SEAM8-50-S02.0-L-10-3-K
10 Pins Powered
Signal

Step	Description
1.	CCC (1) Rows ■ 10 Number of Positions ■ 1

Group 7
SEAF8-50-05.0-L-10-3-K
SEAM8-50-S02.0-L-10-3-K
20 Pins Powered
Signal

Step	Description
1.	CCC (1) Rows ■ 10 Number of Positions ■ 2

Group 8
SEAF8-50-05.0-L-10-3-K
SEAM8-50-S02.0-L-10-3-K
30 Pins Powered
Signal

Step	Description
1.	CCC (1) Rows ■ 10 Number of Positions ■ 3

Group 9
SEAF8-50-05.0-L-10-3-K
SEAM8-50-S02.0-L-10-3-K
40 Pins Powered
Signal

Step	Description
1.	CCC (1) Rows ■ 10 Number of Positions ■ 4

Group 10
SEAF8-50-05.0-L-10-3-K
SEAM8-50-S02.0-L-10-3-K
500 Pins Powered
Signal

Step	Description
1.	CCC (1) Rows ■ 10 Number of Positions ■ 50

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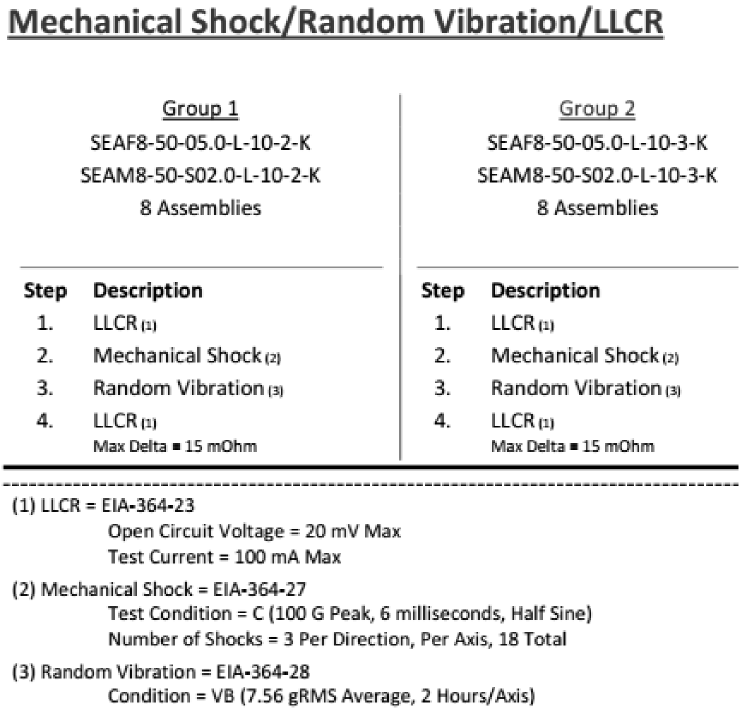
(1) CCC = EIA-364-70
Method 2, Temperature Rise Versus Current Curve
(TIN PLATING) - Tabulate calculated current at RT, 65°C, 75°C and 95°C after derating 20% and based on 105°C
(GOLD PLATING) - Tabulate calculated current at RT, 85°C, 95°C and 115°C after derating 20% and based on 125°C

FLOWCHARTS Continued



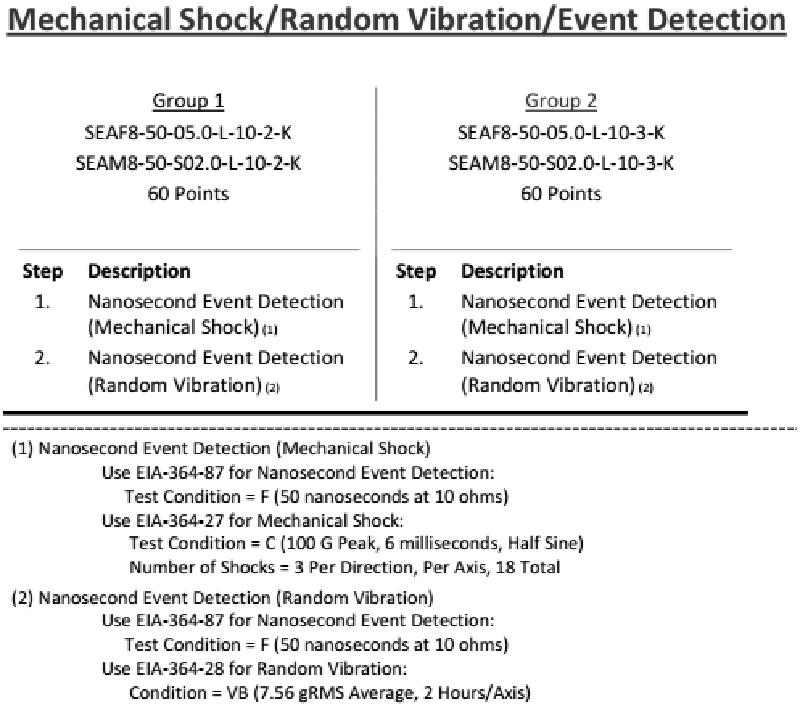
Mechanical Shock/Random Vibration/LLCR

Group 1 SEAF8-50-05.0-L-10-2-K SEAM8-50-S02.0-L-10-2-K 8 Assemblies		Group 2 SEAF8-50-05.0-L-10-3-K SEAM8-50-S02.0-L-10-3-K 8 Assemblies	
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 SEAF8-50-05.0-L-10-2-K SEAM8-50-S02.0-L-10-2-K 60 Points		Group 2 SEAF8-50-05.0-L-10-3-K SEAM8-50-S02.0-L-10-3-K 60 Points	
Step	**Description**	**Step**	**Description**
1.	Nanosecond Event Detection (Mechanical Shock) (1)	1.	Nanosecond Event Detection (Mechanical Shock) (1)
2.	Nanosecond Event Detection (Random Vibration) (2)	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: 50 G
4) Duration: 11 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': 3.1
5) Frequency: 20 to 500 Hz
6) Duration: 15 Min 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 +1000 mOhms: -------------------Unstable
   f. >+1000 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 +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.

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.
14) The permanent set of each contact shall be measured within the TC^2 software.
15) The acquired data shall be graphed with the deflection data on the X-axis and the force data on the Y-axis and a print out will be stored with the Tracking Code paperwork.

INSULATION RESISTANCE (IR):

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

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

ATTRIBUTE DEFINITIONS Continued

The following is a brief, simplified description of attributes

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

SEAF8-50-05.0-L-10-2-K/SEAM8-50-S02.0-L-10-2-K

- **CCC for a 30°C Temperature Rise----------1.33 A per contact with 10 contacts (10x1) powered**
- **CCC for a 30°C Temperature Rise----------0.99 A per contact with 20 contacts (10x2) powered**
- **CCC for a 30°C Temperature Rise----------0.79 A per contact with 30 contacts (10x3) powered**
- **CCC for a 30°C Temperature Rise----------0.72 A per contact with 40 contacts (10x4) powered**
- **CCC for a 30°C Temperature Rise----------0.30 A per contact with 500 contacts (10x50) powered**

SEAF8-50-05.0-L-10-3-K/SEAM8-50-S02.0-L-10-3-K

- **CCC for a 30°C Temperature Rise----------1.22 A per contact with 10 contacts (10x1) powered**
- **CCC for a 30°C Temperature Rise----------0.88 A per contact with 20 contacts (10x2) powered**
- **CCC for a 30°C Temperature Rise----------0.72 A per contact with 30 contacts (10x3) powered**
- **CCC for a 30°C Temperature Rise----------0.64 A per contact with 40 contacts (10x4) powered**
- **CCC for a 30°C Temperature Rise----------0.27 A per contact with 500 contacts (10x50) powered**

Mating – Unmating Forces

Thermal Aging Group

SEAF8-50-05.0-L-10-2-K/SEAM8-50-S02.0-L-10-2-K

- **Initial**
  - **Mating**
    - **Min -------------------------------------13.82 Lbs**
    - **Max-------------------------------------18.33 Lbs**
  - **Unmating**
    - **Min -------------------------------------- 9.55 Lbs**
    - **Max-------------------------------------17.25 Lbs**
- **After Thermal**
  - **Mating**
    - **Min -------------------------------------17.16 Lbs**
    - **Max-------------------------------------21.67 Lbs**
  - **Unmating**
    - **Min -------------------------------------- 8.93 Lbs**
    - **Max-------------------------------------18.04 Lbs**

SEAF8-50-05.0-L-10-3-K/SEAM8-50-S02.0-L-10-3-K

- **Initial**
  - **Mating**
    - **Min -------------------------------------14.77 Lbs**
    - **Max-------------------------------------17.11 Lbs**
  - **Unmating**
    - **Min -------------------------------------- 9.63 Lbs**
    - **Max-------------------------------------12.81 Lbs**
- **After Thermal**
  - **Mating**
    - **Min -------------------------------------17.96 Lbs**
    - **Max-------------------------------------21.00 Lbs**
  - **Unmating**
    - **Min -------------------------------------- 8.96 Lbs**
    - **Max-------------------------------------10.15 Lbs**

RESULTS Continued

Mating-Unmating Durability Group
SEAF8-50-05.0-L-10-2-K/SEAM8-50-S02.0-L-10-2-K

- **Initial**
  - **Mating**
    - **Min -------------------------------------25.19 lbs**
    - **Max-------------------------------------33.87 lbs**
  - **Unmating**
    - **Min -------------------------------------16.75 lbs**
    - **Max-------------------------------------23.57 lbs**
- **After 25 Cycles**
  - **Mating**
    - **Min -------------------------------------36.73 lbs**
    - **Max-------------------------------------41.45 lbs**
  - **Unmating**
    - **Min -------------------------------------14.30 lbs**
    - **Max-------------------------------------26.25 lbs**
- **Humidity**
  - **Mating**
    - **Min -------------------------------------17.95 lbs**
    - **Max-------------------------------------20.13 lbs**
  - **Unmating**
    - **Min -------------------------------------- 8.66 lbs**
    - **Max-------------------------------------11.24 lbs**

SEAF8-50-05.0-L-10-3-K/SEAM8-50-S02.0-L-10-3-K

- **Initial**
  - **Mating**
    - **Min -------------------------------------28.50 lbs**
    - **Max-------------------------------------33.16 lbs**
  - **Unmating**
    - **Min -------------------------------------11.72 lbs**
    - **Max-------------------------------------14.47 lbs**
- **After 25 Cycles**
  - **Mating**
    - **Min -------------------------------------29.04 lbs**
    - **Max-------------------------------------33.74 lbs**
  - **Unmating**
    - **Min -------------------------------------16.13 lbs**
    - **Max-------------------------------------20.63 lbs**
- **Humidity**
  - **Mating**
    - **Min -------------------------------------21.06 lbs**
    - **Max-------------------------------------22.28 lbs**
  - **Unmating**
    - **Min -------------------------------------11.27 lbs**
    - **Max-------------------------------------12.72 lbs**

RESULTS Continued

Mating-Unmating Basic Group

SEAF8-30-05.0-L-06-2-K/SEAM8-30-S02.0-L-06-2-K

- **Initial**
    - **Mating**
        - **Min -------------------------------------11.09 lbs**
        - **Max-------------------------------------12.98 lbs**
    - **Unmating**
        - **Min --------------------------------------- 4.71 lbs**
        - **Max--------------------------------------- 6.43 lbs**
- **After 25 Cycles**
    - **Mating**
        - **Min -------------------------------------12.87 lbs**
        - **Max-------------------------------------18.00 lbs**
    - **Unmating**
        - **Min --------------------------------------- 4.96 lbs**
        - **Max--------------------------------------- 6.84 lbs**

SEAF8-10-05.0-L-04-2-K/SEAM8-10-S02.0-L-04-2-K

- **Initial**
    - **Mating**
        - **Min --------------------------------------- 1.58 lbs**
        - **Max--------------------------------------- 1.97 lbs**
    - **Unmating**
        - **Min --------------------------------------- 1.15 lbs**
        - **Max--------------------------------------- 1.58 lbs**
- **After 25 Cycles**
    - **Mating**
        - **Min --------------------------------------- 1.72 lbs**
        - **Max--------------------------------------- 2.50 lbs**
    - **Unmating**
        - **Min --------------------------------------- 1.27 lbs**
        - **Max--------------------------------------- 1.76 lbs**

SEAF8-30-05.0-L-06-3-K/SEAM8-30-S02.0-L-06-3-K

- **Initial**
    - **Mating**
        - **Min -------------------------------------11.03 lbs**
        - **Max-------------------------------------12.21 lbs**
    - **Unmating**
        - **Min --------------------------------------- 4.72 lbs**
        - **Max--------------------------------------- 5.70 lbs**
- **After 25 Cycles**
    - **Mating**
        - **Min -------------------------------------14.21 lbs**
        - **Max-------------------------------------15.75 lbs**
    - **Unmating**
        - **Min --------------------------------------- 7.22 lbs**
        - **Max--------------------------------------- 8.52 lbs**

RESULTS Continued

SEAF8-10-05.0-L-04-3-K/SEAM8-10-S02.0-L-04-3-K

- **Initial**
    - **Mating**
        - **Min --------------------------------------- 2.26 lbs**
        - **Max--------------------------------------- 2.80 lbs**
    - **Unmating**
        - **Min --------------------------------------- 1.21 lbs**
        - **Max--------------------------------------- 1.41 lbs**
- **After 25 Cycles**
    - **Mating**
        - **Min --------------------------------------- 3.01 lbs**
        - **Max--------------------------------------- 3.61 lbs**
    - **Unmating**
        - **Min --------------------------------------- 1.55 lbs**
        - **Max--------------------------------------- 1.79 lbs**

Normal Force at 0.009 inch deflection

SEAF8-50-05.0-L-10-2-K/SEAM8-50-S02.0-L-10-2-K

- **Initial**
    - **Min ---55.20 gf Set ----- 0.0001 inch**
    - **Max ---60.00 gf Set ----- 0.0003 inch**

- **After Thermal**
    - **Min ---49.00 gf Set ----- 0.0005 inch**
    - **Max ---54.20 gf Set ----- 0.0012 inch**

Normal Force at 0.0081 inch deflection

SEAF8-50-05.0-L-10-3-K/SEAM8-50-S02.0-L-10-3-K

- **Initial**
    - **Min ---57.10 gf Set ----- 0.0007 inch**
    - **Max ---58.90 gf Set ----- 0.0008 inch**

- **After Thermal**
    - **Min ---40.90 gf Set ----- 0.0015 inch**
    - **Max ---47.80 gf Set ----- 0.0026 inch**

RESULTS Continued

Insulation Resistance minimums, IR

SEAF8-50-05.0-L-10-2-K/SEAM8-50-S02.0-L-10-2-K

Pin to Pin

- **Initial**
  - **Mated**--45000 Meg Ω ----------------------- Passed
  - **Unmated** --45000 Meg Ω ----------------------- Passed
- **Thermal Shock**
  - **Mated**--45000 Meg Ω ----------------------- Passed
  - **Unmated** --45000 Meg Ω ----------------------- Passed
- **Humidity**
  - **Mated**--36000 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** --45000 Meg Ω ----------------------- Passed
- **Humidity**
  - **Mated**--45000 Meg Ω ----------------------- Passed
  - **Unmated** --45000 Meg Ω ----------------------- Passed

SEAF8-50-05.0-L-10-3-K/SEAM8-50-S02.0-L-10-3-K

Pin to Pin

- **Initial**
  - **Mated**--45000 Meg Ω ----------------------- Passed
  - **Unmated** --45000 Meg Ω ----------------------- Passed
- **Thermal Shock**
  - **Mated**--45000 Meg Ω ----------------------- Passed
  - **Unmated** --45000 Meg Ω ----------------------- Passed
- **Humidity**
  - **Mated**--45000 Meg Ω ----------------------- Passed
  - **Unmated** --17900 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** --45000 Meg Ω ----------------------- Passed
- **Humidity**
  - **Mated**--45000 Meg Ω ----------------------- Passed
  - **Unmated** --45000 Meg Ω ----------------------- Passed

RESULTS Continued

Dielectric Withstanding Voltage minimums, DWV

SEAF8-50-05.0-L-10-2-K/SEAM8-50-S02.0-L-10-2-K

- **Minimums**
  - **Breakdown Voltage---------------------------------880 VAC**
  - **Test Voltage --660 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**

SEAF8-50-05.0-L-10-3-K/SEAM8-50-S02.0-L-10-3-K

- **Minimums**
  - **Breakdown Voltage---------------------------------880 VAC**
  - **Test Voltage --660 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

LLCR Thermal Aging Group (192 LLCR test points)

SEAF8-50-05.0-L-10-2-K/SEAM8-50-S02.0-L-10-2-K

- **Initial -- 15.74 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**

SEAF8-50-05.0-L-10-3-K/SEAM8-50-S02.0-L-10-3-K

- **Initial -- 21.89 mOhms Max**
- **Thermal**
    - **<= +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 +2000 mOhms--------------------------------0 Points ------------------------ Unstable**
    - **>+2000 mOhms--0 Points ------------------------ Open Failure**

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

SEAF8-50-05.0-L-10-2-K/SEAM8-50-S02.0-L-10-2-K

- **Initial -- 17.00 mOhms Max**
- **Durability, 25 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 ---------------------------------- 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)

SEAF8-50-05.0-L-10-3-K/SEAM8-50-S02.0-L-10-3-K

- **Initial -- 20.20 mOhms Max**
- **Durability, 25 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 ------------------------------------ 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)

SEAF8-50-05.0-L-10-2-K/SEAM8-50-S02.0-L-10-2-K

- **Initial -- 16.76 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**

SEAF8-50-05.0-L-10-3-K/SEAM8-50-S02.0-L-10-3-K

- **Initial -- 18.42 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 +2000 mOhms -------------------------------- 0 Points ------------------------ Unstable**
    - **>+2000 mOhms --- 0 Points ------------------------ Open Failure**

RESULTS Continued

LLCR Shock & Vibration Group (192 LLCR test points)

SEAF8-50-05.0-L-10-2-K/SEAM8-50-S02.0-L-10-2-K

- **Initial -- 15.96 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**

SEAF8-50-05.0-L-10-3-K/SEAM8-50-S02.0-L-10-3-K

- **Initial -- 19.27 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:

SEAF8-50-05.0-L-10-2-K/SEAM8-50-S02.0-L-10-2-K

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

SEAF8-50-05.0-L-10-3-K/SEAM8-50-S02.0-L-10-3-K

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

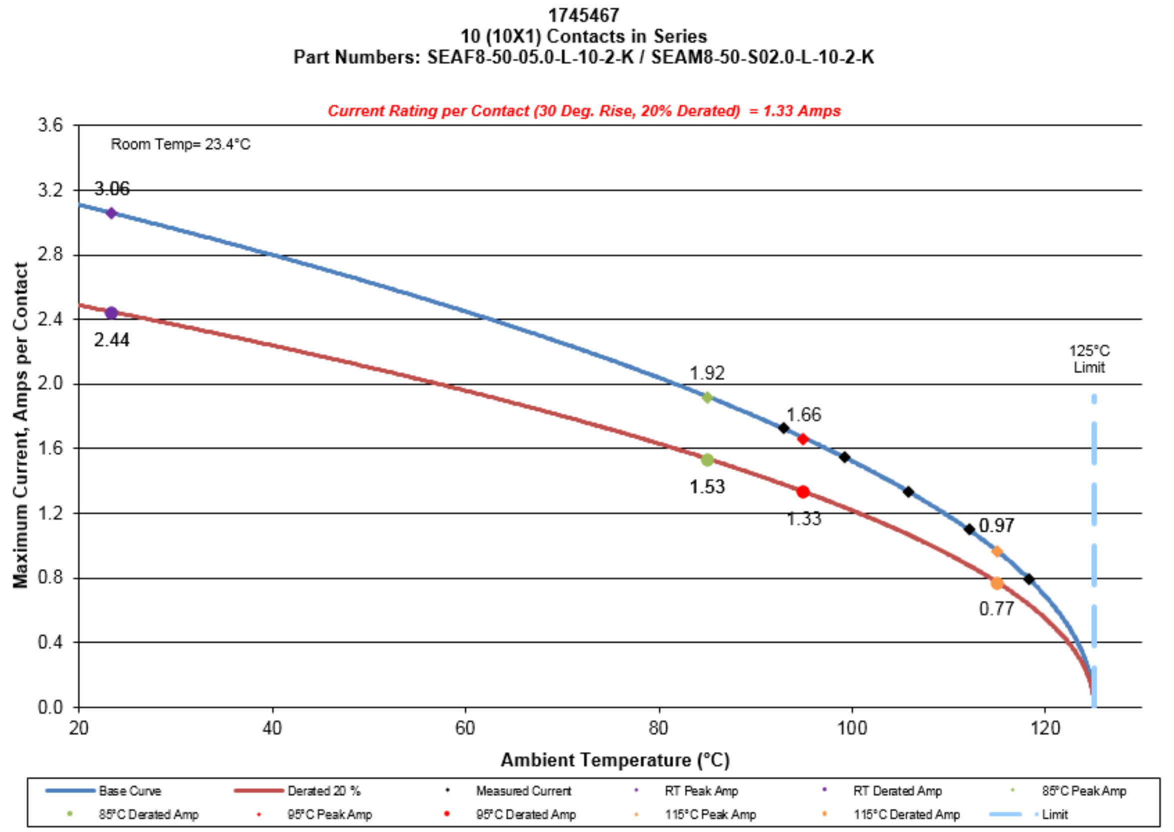
DATA SUMMARIES

TEMPERATURE RISE (Current Carrying Capacity, CCC):

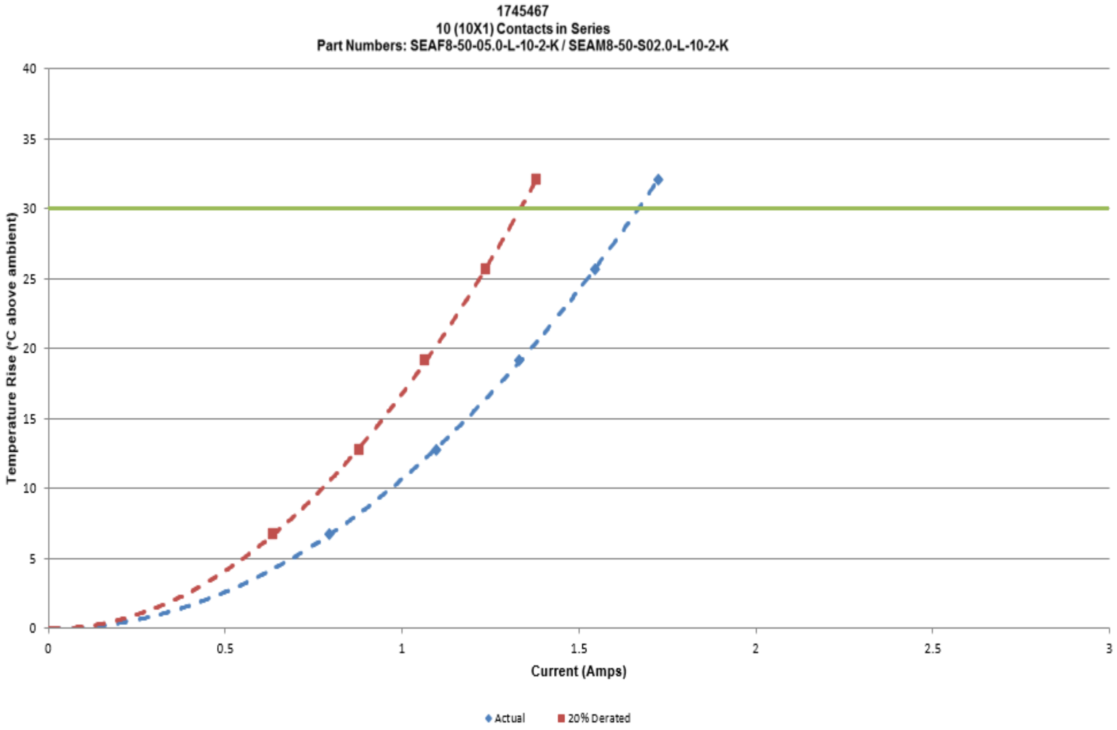
1) High quality thermocouples whose temperature slopes track one another were used for temperature monitoring.
2) The thermocouples were placed at a location to sense the maximum temperature generated during testing.
3) Temperature readings recorded are those for which three successive readings, 15 minutes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

SEAF8-50-05.0-L-10-2-K/SEAM8-50-S02.0-L-10-2-K

a. Linear configuration with 10 adjacent conductors/contacts powered

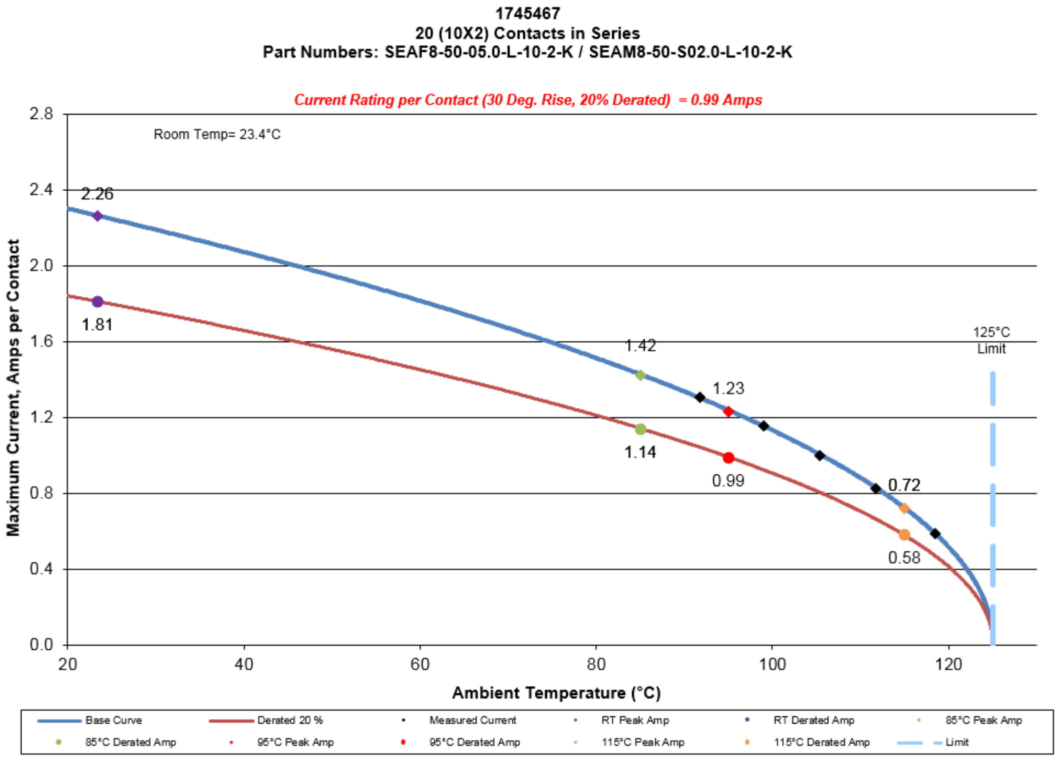


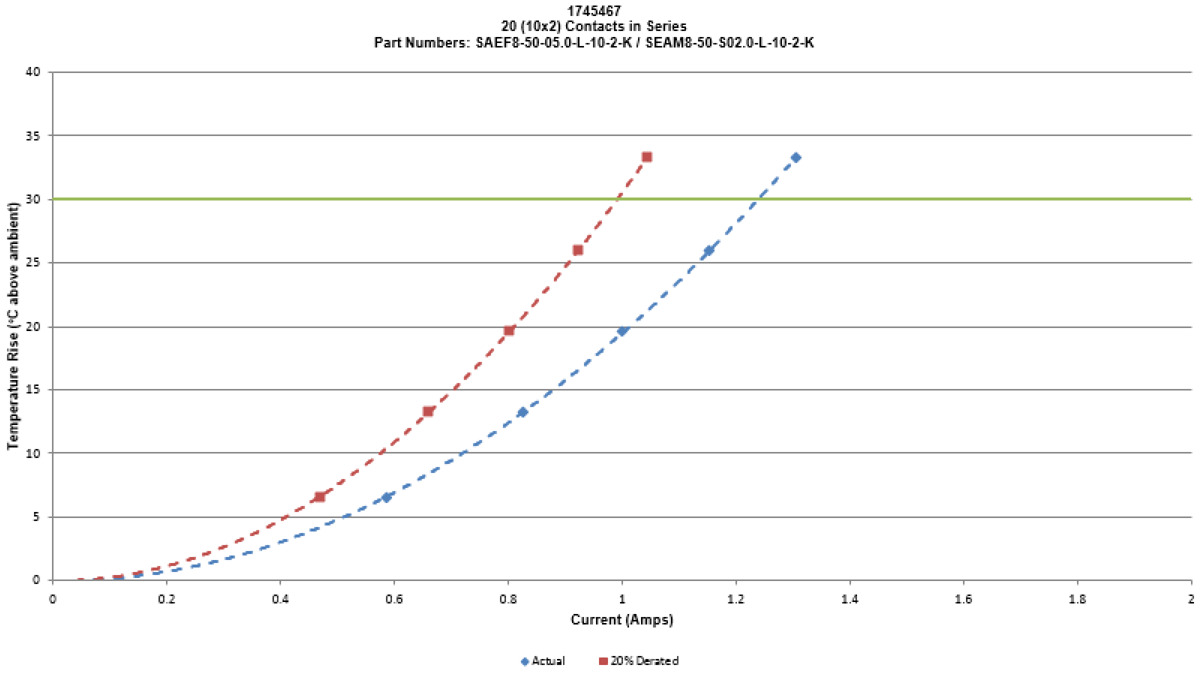
DATA SUMMARIES Continued



DATA SUMMARIES Continued

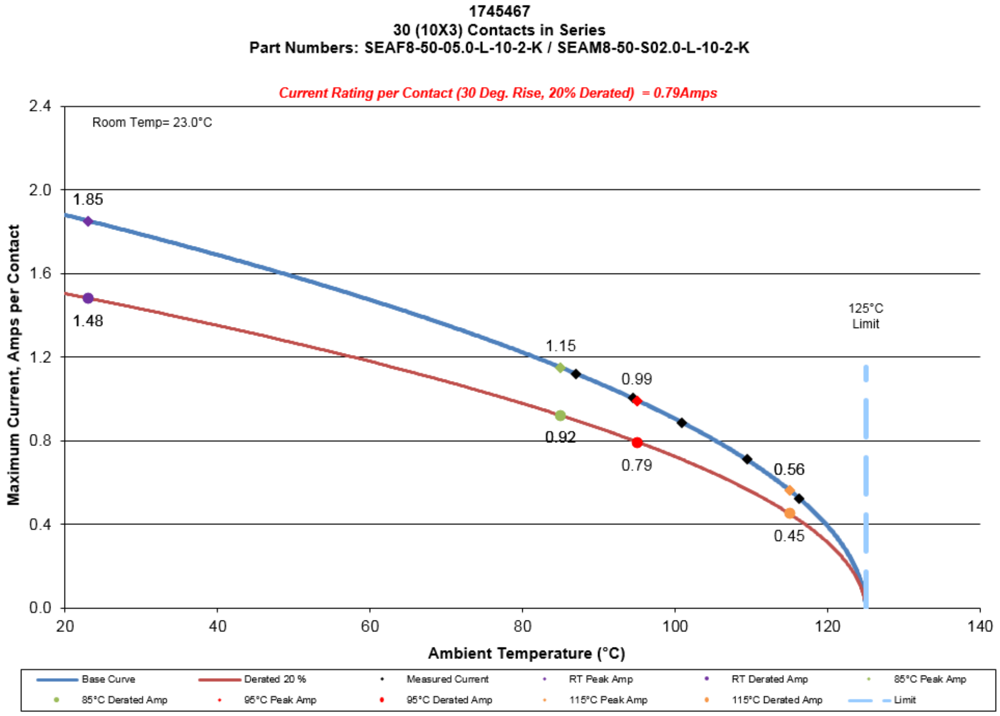
b. Linear configuration with 20 adjacent conductors/contacts powered

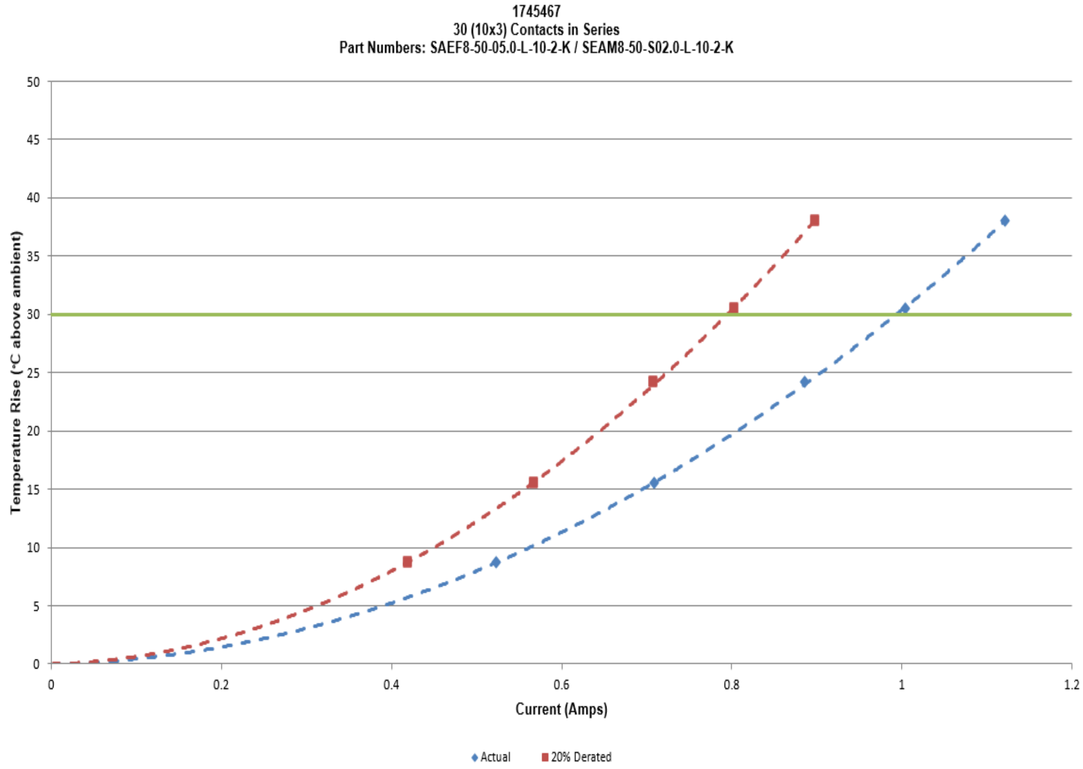




DATA SUMMARIES Continued

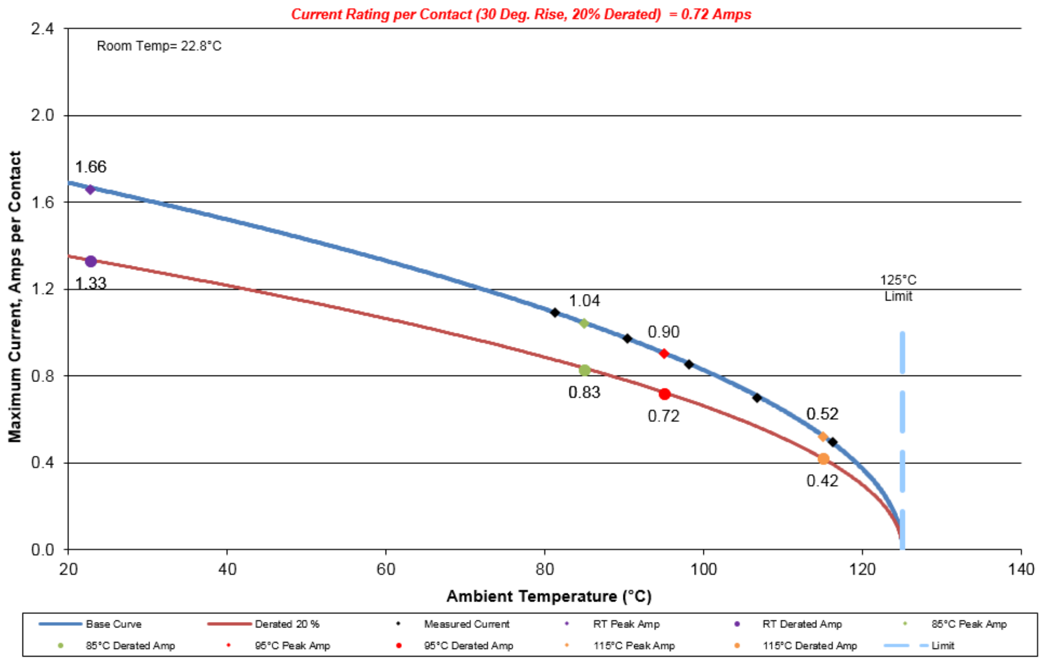
c. Linear configuration with 30 adjacent conductors/contacts powered



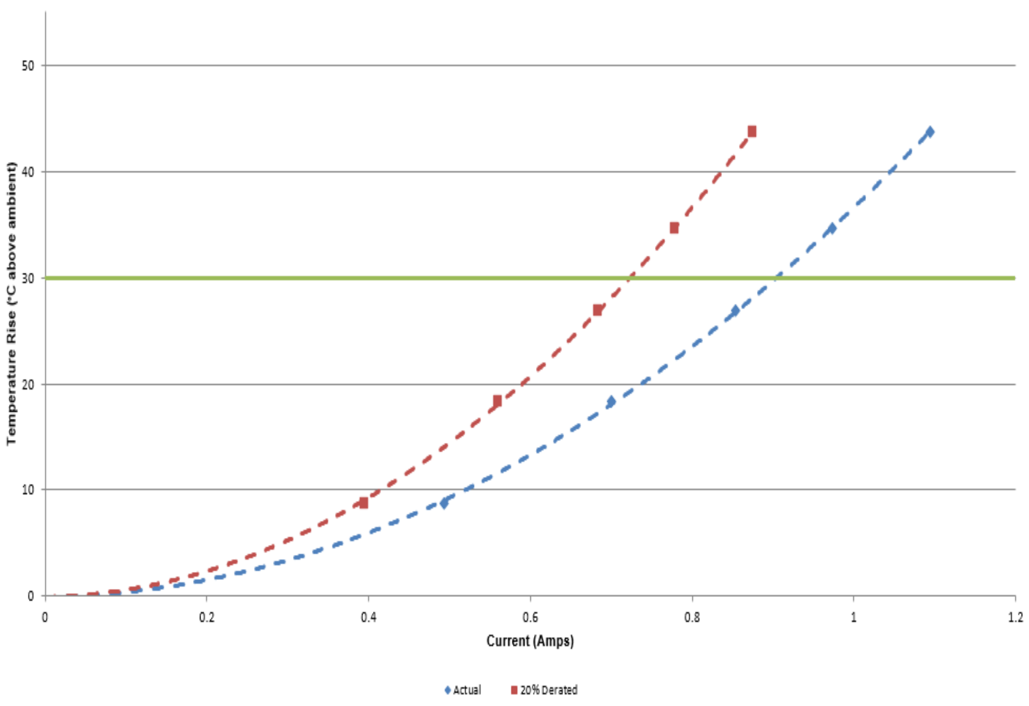


DATA SUMMARIES Continued

d. Linear configuration with 40 adjacent conductors/contacts powered



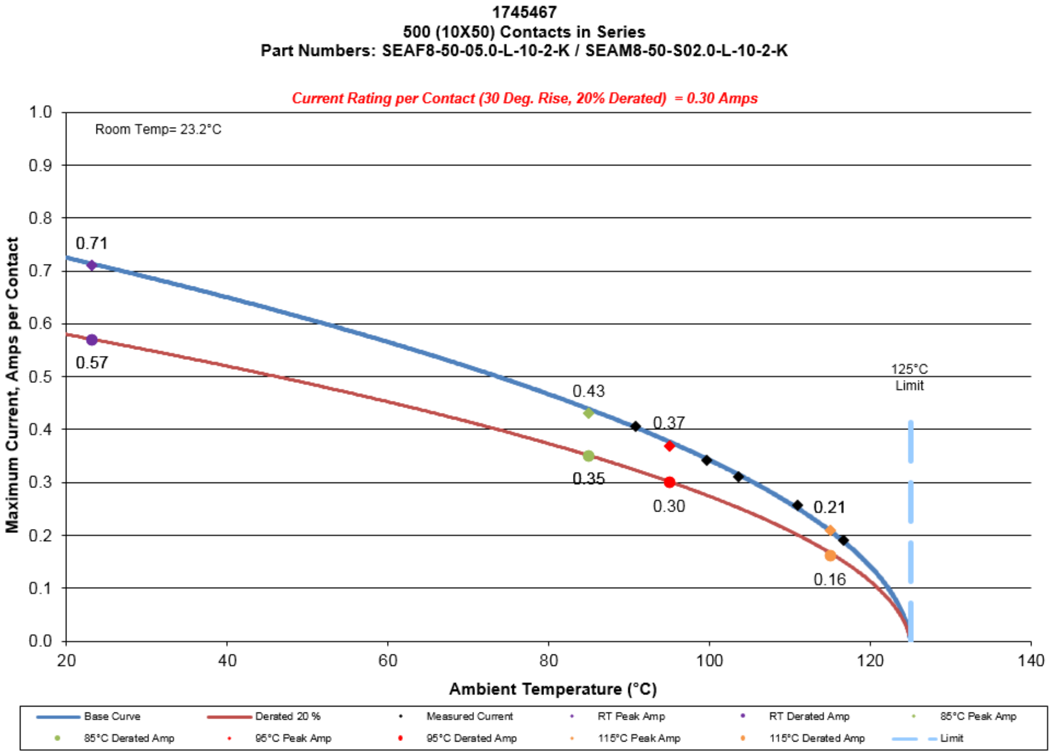
1745467
40 (10X4) Contacts in Series
Part Numbers: SEAF8-50-05.0-L-10-2-K / SEAM8-50-S02.0-L-10-2-K

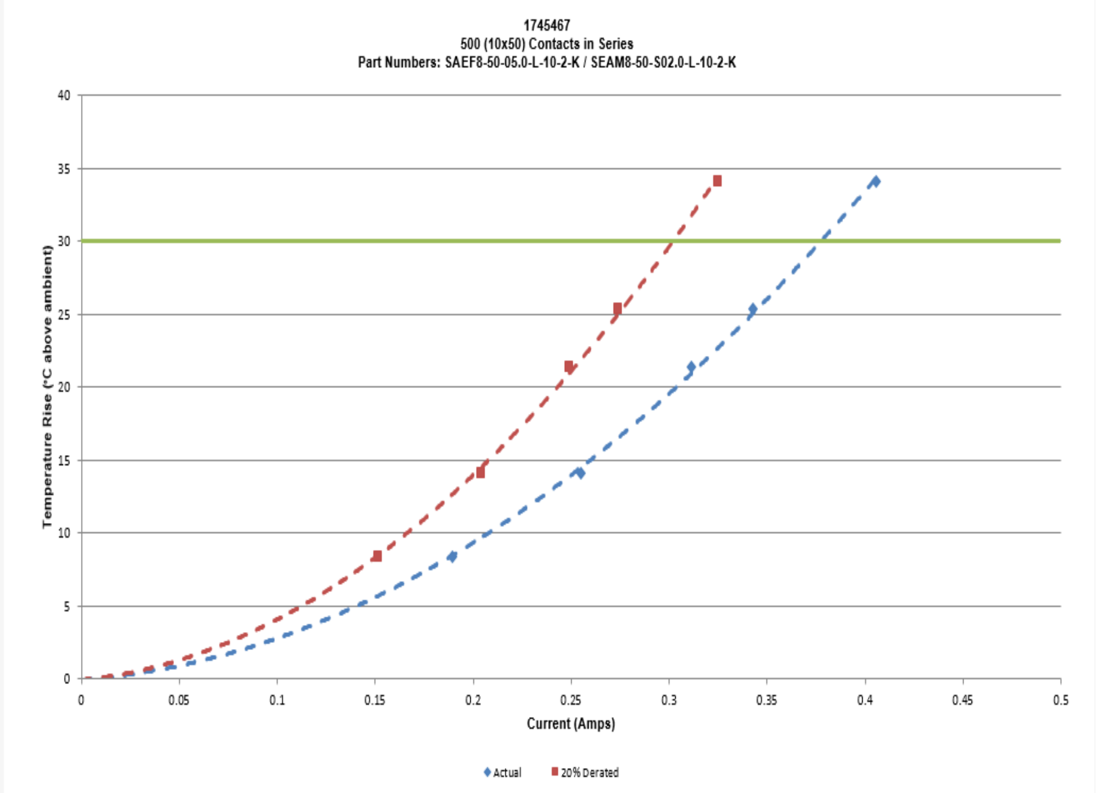


1745467
40 (10x4) Contacts in Series
Part Numbers: SAEF8-50-05.0-L-10-2-K / SEAM8-50-S02.0-L-10-2-K

DATA SUMMARIES Continued

e. Linear configuration with all adjacent conductors/contacts powered

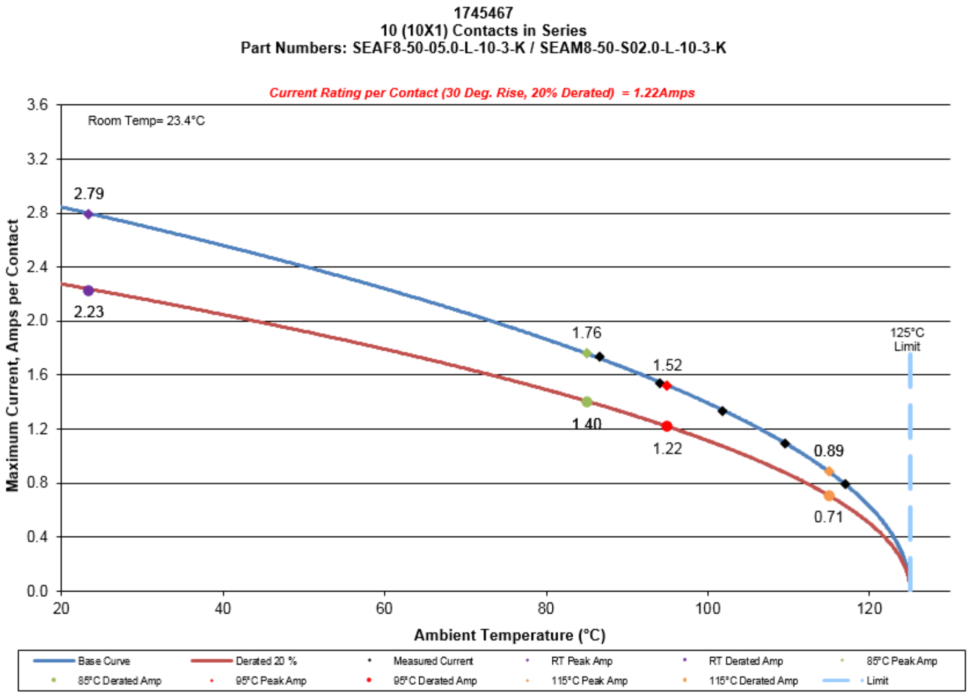


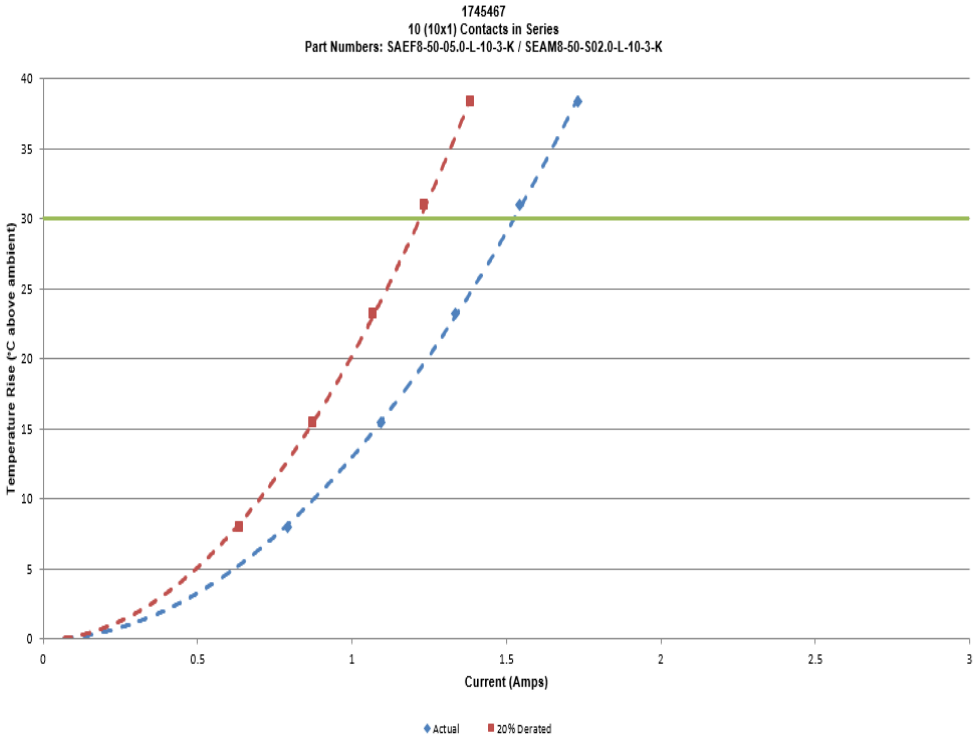


DATA SUMMARIES Continued

SEAF8-50-05.0-L-10-3-K/SEAM8-50-S02.0-L-10-3-K

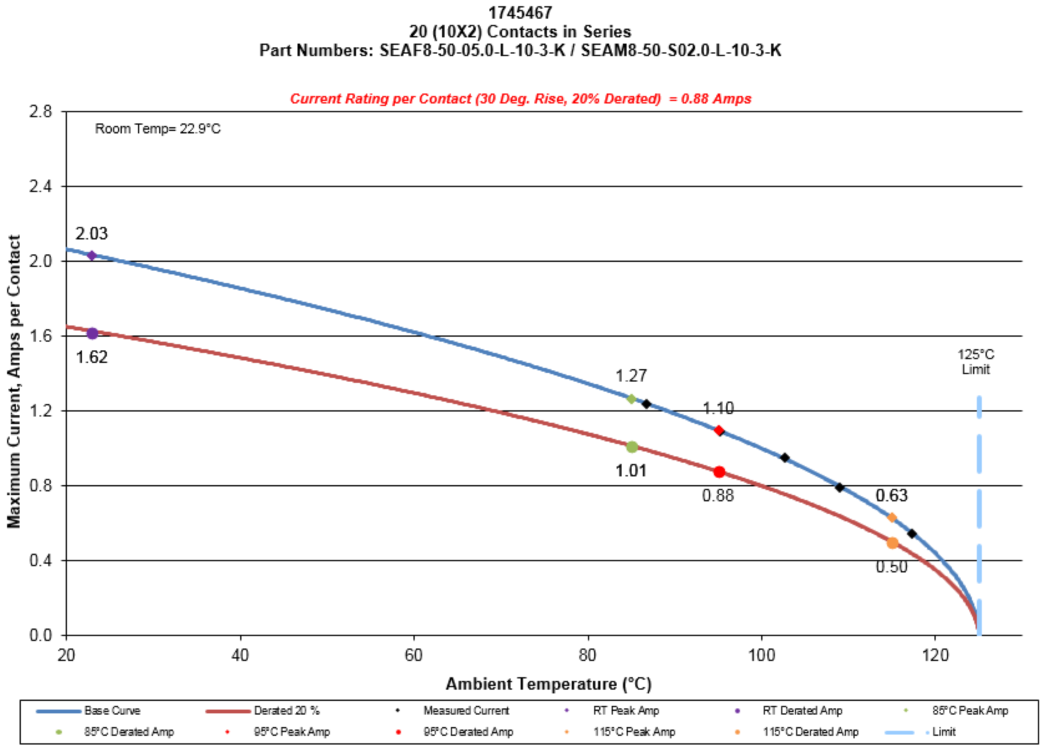
a) Linear configuration with 10 adjacent conductors/contacts powered

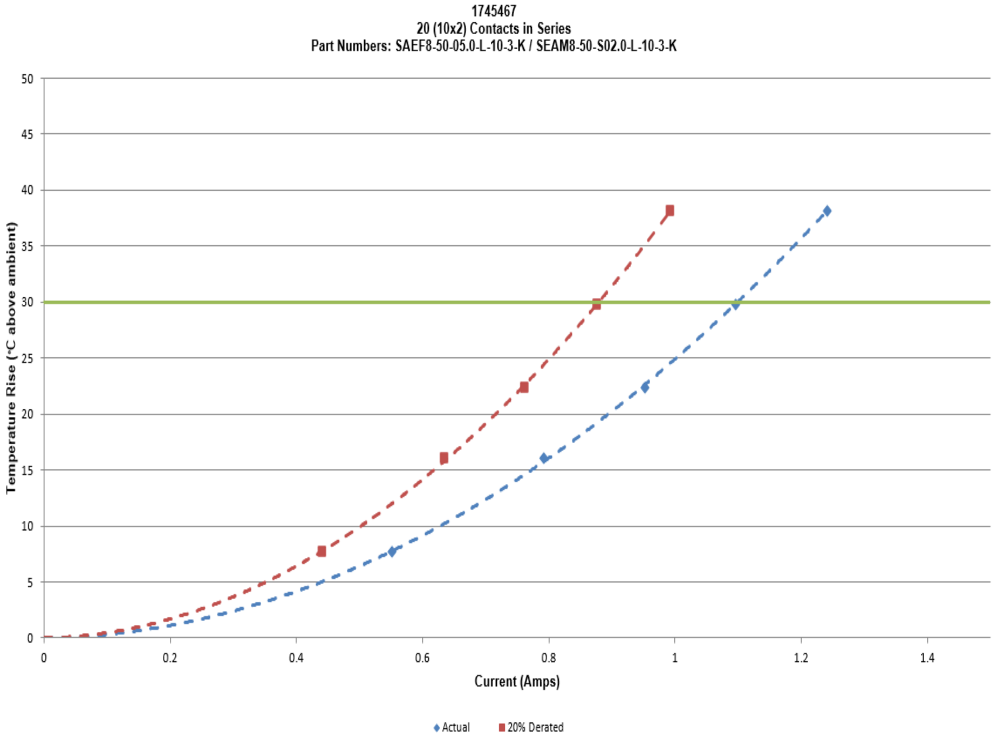




DATA SUMMARIES Continued

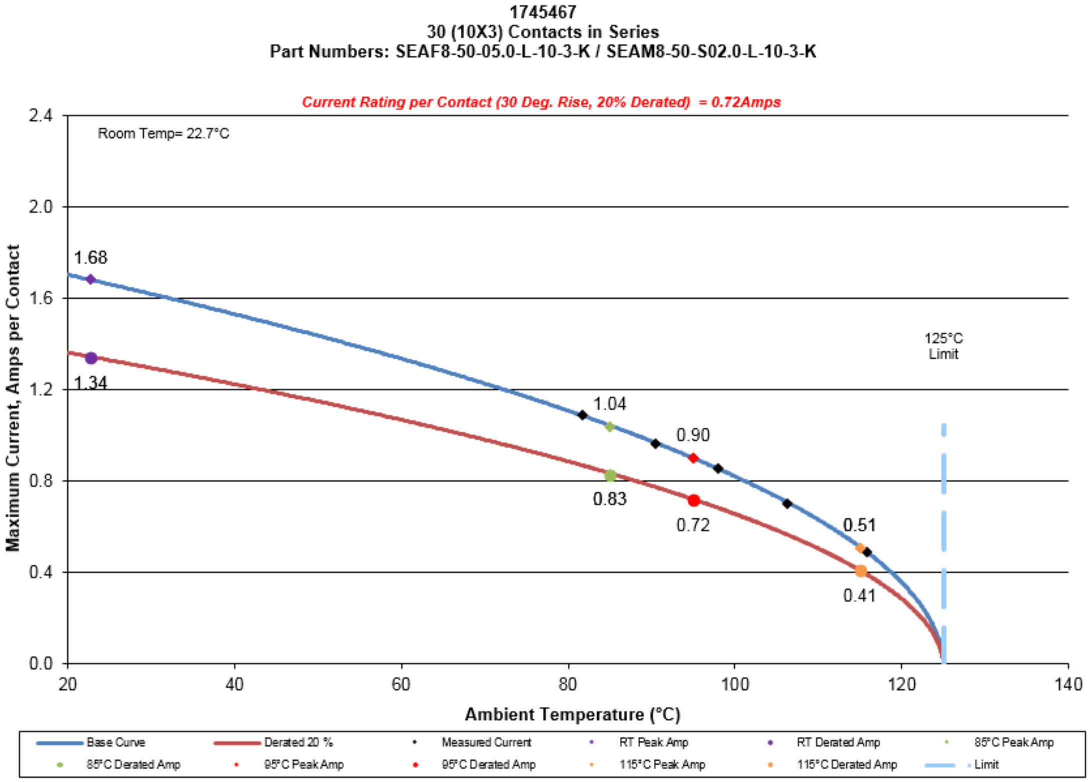
b) Linear configuration with 20 adjacent conductors/contacts powered

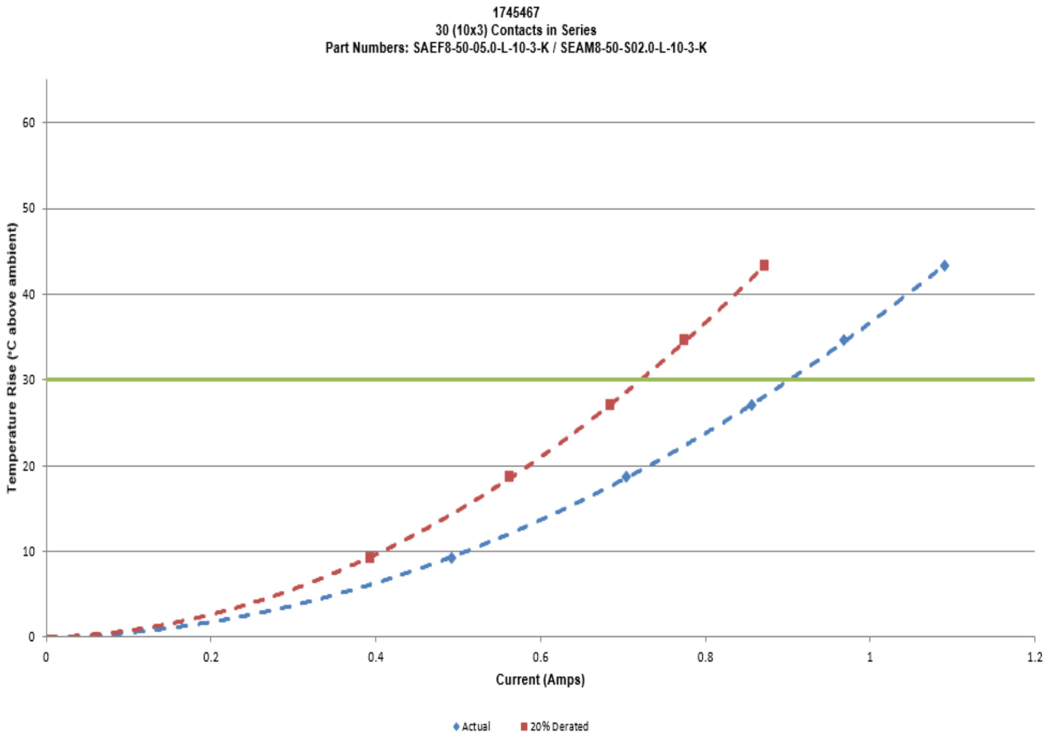




DATA SUMMARIES Continued

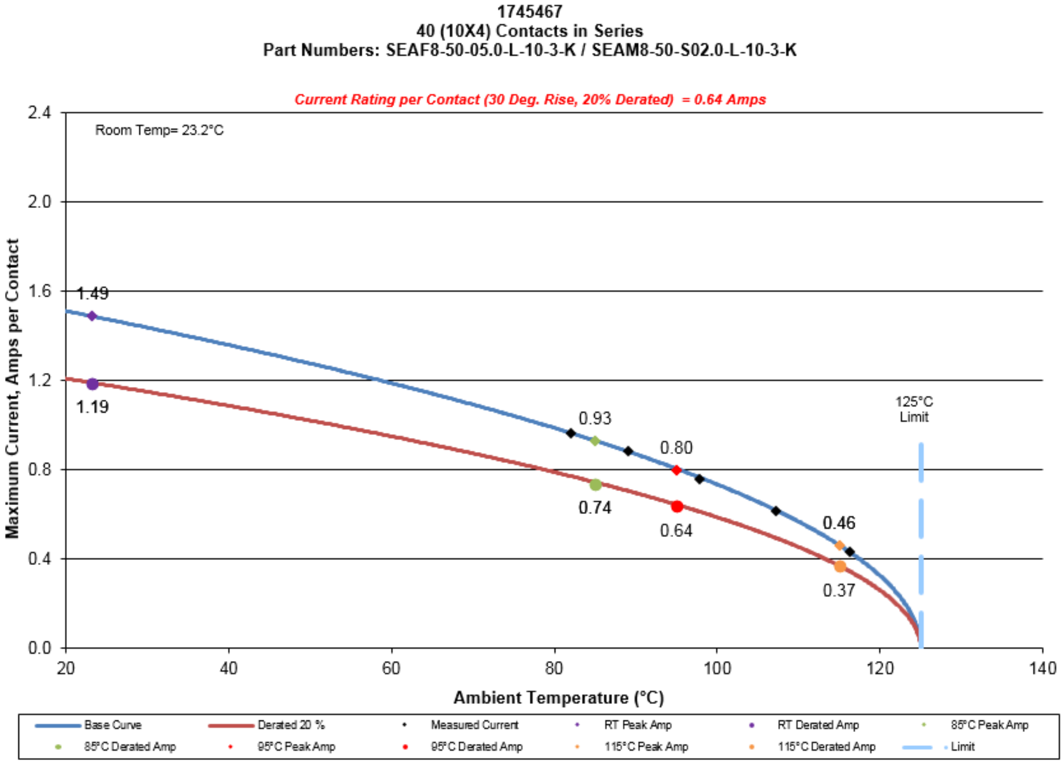
c) Linear configuration with 30 adjacent conductors/contacts powered

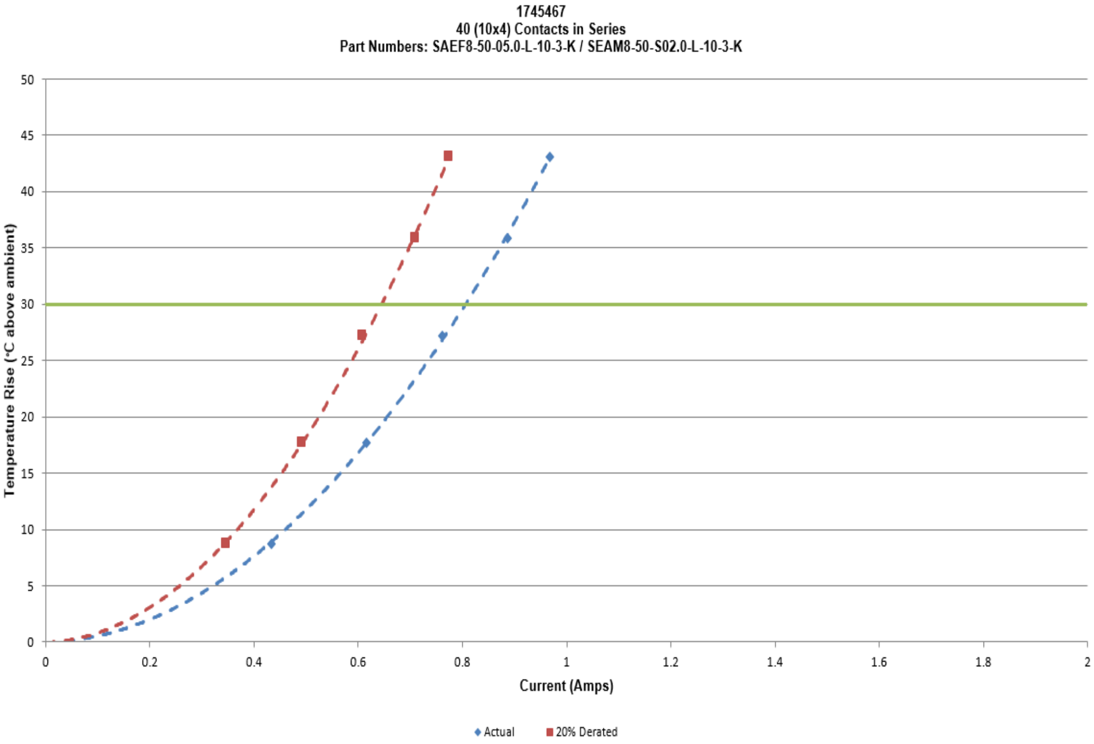




DATA SUMMARIES Continued

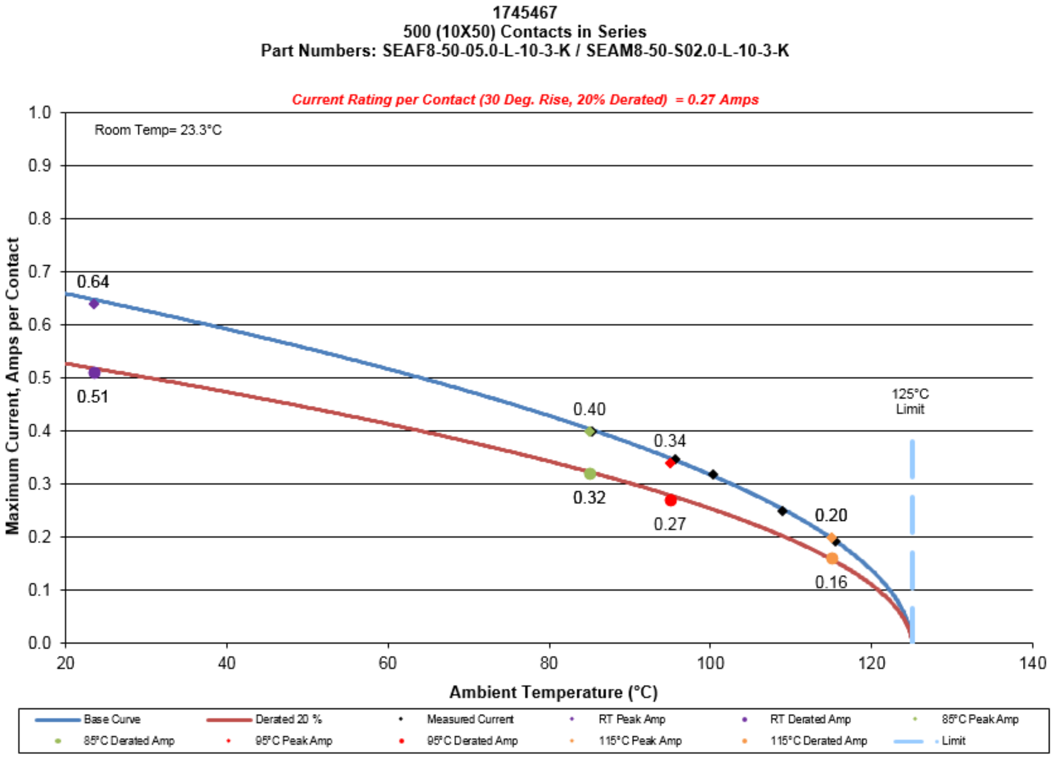
d) Linear configuration with 40 adjacent conductors/contacts powered

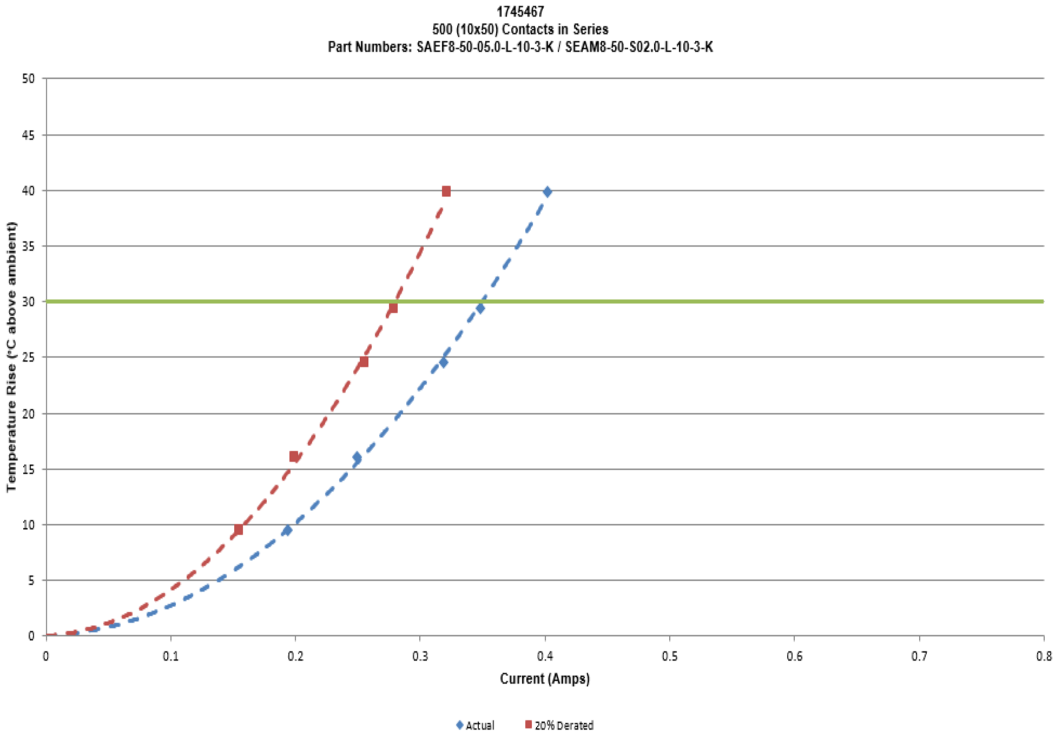




DATA SUMMARIES Continued

e) Linear configuration with all adjacent conductors/contacts powered





DATA SUMMARIES Continued

MATING-UNMATING FORCE:

Thermal Aging Group

SEAF8-50-05.0-L-10-2-K/SEAM8-50-S02.0-L-10-2-K

	Initial				After Thermals			
	Mating		**Unmating**		**Mating**		**Unmating**	
	Newtons	Force (Lbs)	Newtons	Force (Lbs)	Newtons	Force (Lbs)	Newtons	Force (Lbs)
Minimum	61.47	13.82	42.48	9.55	76.32	17.16	39.71	8.93
Maximum	81.53	18.33	76.73	17.25	96.41	21.67	80.25	18.04
Average	72.56	**16.31**	64.93	**14.60**	84.92	**19.09**	51.33	**11.54**
St Dev	6.53	1.47	13.03	2.93	6.60	1.48	14.30	3.22
Count	8	8	8	8	8	8	8	8

SEAF8-50-05.0-L-10-3-K/SEAM8-50-S02.0-L-10-3-K

	Initial				After Thermals			
	Mating		**Unmating**		**Mating**		**Unmating**	
	Newtons	Force (Lbs)	Newtons	Force (Lbs)	Newtons	Force (Lbs)	Newtons	Force (Lbs)
Minimum	65.70	14.77	42.83	9.63	79.89	17.96	39.85	8.96
Maximum	76.11	17.11	56.98	12.81	93.41	21.00	45.13	10.15
Average	70.48	**15.85**	49.01	**11.02**	87.23	**19.61**	41.54	**9.34**
St Dev	3.81	0.86	6.18	1.39	4.67	1.05	1.62	0.36
Count	8	8	8	8	8	8	8	8

DATA SUMMARIES Continued

Mating-Unmating Durability Group
SEAF8-50-05.0-L-10-2-K/SEAM8-50-S02.0-L-10-2-K

	Initial				After 25 Cycles			
	Mating		**Unmating**		**Mating**		**Unmating**	
	Newtons	Force (Lbs)	Newtons	Force (Lbs)	Newtons	Force (Lbs)	Newtons	Force (Lbs)
Minimum	112.03	25.19	74.48	16.75	163.37	36.73	63.61	14.30
Maximum	150.63	33.87	104.82	23.57	184.37	41.45	116.74	26.25
Average	128.93	**28.99**	82.47	**18.54**	173.08	**38.91**	98.03	**22.04**
St Dev	14.69	3.30	9.95	2.24	6.84	1.54	19.09	4.29
Count	8	8	8	8	8	8	8	8

	After Humidity			
	Mating		**Unmating**	
	Newtons	Force (Lbs)	Newtons	Force (Lbs)
Minimum	79.79	17.94	38.52	8.66
Maximum	89.53	20.13	50.00	11.24
Average	85.02	**19.12**	43.87	**9.86**
St Dev	3.68	0.83	4.23	0.95
Count	8	8	8	8

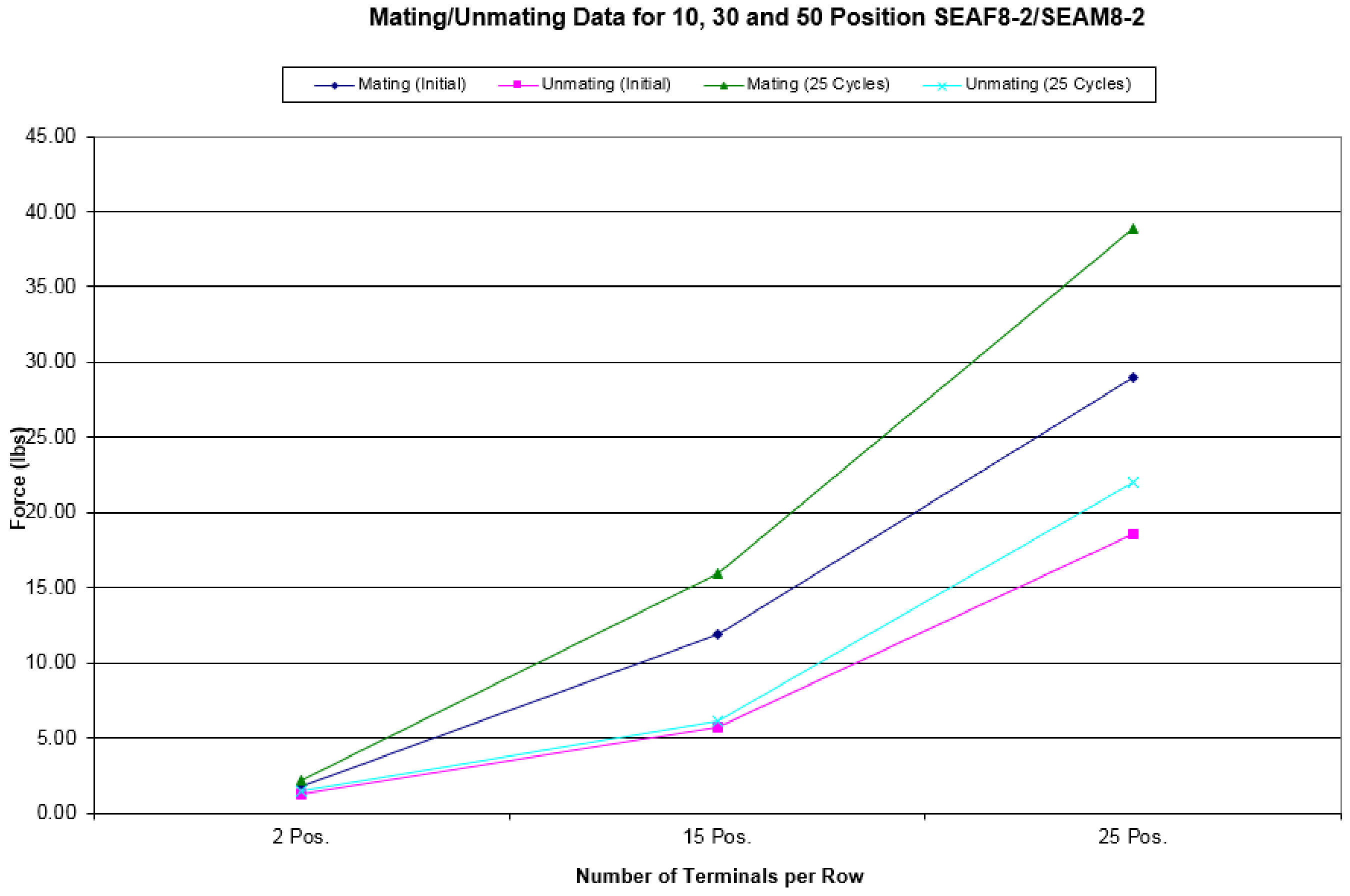
Mating-Unmating Basic Group
SEAF8-30-05.0-L-06-2-K/SEAM8-30-S02.0-L-06-2-K

	Initial				25 Cycles			
	Mating		**Unmating**		**Mating**		**Unmating**	
	New tons	Force (Lbs)	New tons	Force (Lbs)	New tons	Force (Lbs)	New tons	Force (Lbs)
Minimum	49.33	11.09	20.95	4.71	57.25	12.87	22.06	4.96
Maximum	57.74	12.98	28.60	6.43	80.06	18.00	30.42	6.84
Average	52.95	**11.91**	25.38	**5.71**	70.85	**15.93**	27.18	**6.11**
St Dev	3.38	0.76	2.15	0.48	7.54	1.70	2.93	0.66
Count	8	8	8	8	8	8	8	8

SEAF8-10-05.0-L-04-2-K/SEAM8-10-S02.0-L-04-2-K

	Initial				25 Cycles			
	Mating		**Unmating**		**Mating**		**Unmating**	
	New tons	Force (Lbs)	New tons	Force (Lbs)	New tons	Force (Lbs)	New tons	Force (Lbs)
Minimum	7.01	1.58	5.12	1.15	7.63	1.72	5.64	1.27
Maximum	8.75	1.97	7.01	1.58	11.11	2.50	7.85	1.76
Average	7.72	**1.74**	5.77	**1.30**	9.53	**2.14**	6.55	**1.47**
St Dev	0.62	0.14	0.70	0.16	1.11	0.25	0.80	0.18
Count	8	8	8	8	8	8	8	8

DATA SUMMARIES Continued


Mating/Unmating Data for 10, 30 and 50 Position SEAF8-2/SEAM8-2

DATA SUMMARIES Continued

SEAF8-50-05.0-L-10-3-K/SEAM8-50-S02.0-L-10-3-K

	Initial				After 25 Cycles			
	Mating		Unmating		Mating		Unmating	
	Newtons	Force (Lbs)	Newtons	Force (Lbs)	Newtons	Force (Lbs)	Newtons	Force (Lbs)
Minimum	126.76	28.50	52.14	11.72	129.17	29.04	71.73	16.13
Maximum	147.48	33.16	64.36	14.47	150.14	33.75	91.75	20.63
Average	137.27	**30.86**	56.54	**12.71**	141.16	**31.74**	83.87	**18.85**
St Dev	6.46	1.45	3.71	0.83	6.18	1.39	6.62	1.49
Count	8	8	8	8	8	8	8	8

	After Humidity			
	Mating		Unmating	
	Newtons	Force (Lbs)	Newtons	Force (Lbs)
Minimum	93.67	21.06	50.13	11.27
Maximum	99.09	22.28	56.60	12.72
Average	97.13	**21.84**	52.56	**11.82**
St Dev	1.77	0.40	2.12	0.48
Count	8	8	8	8

Mating-Unmating Basic Group

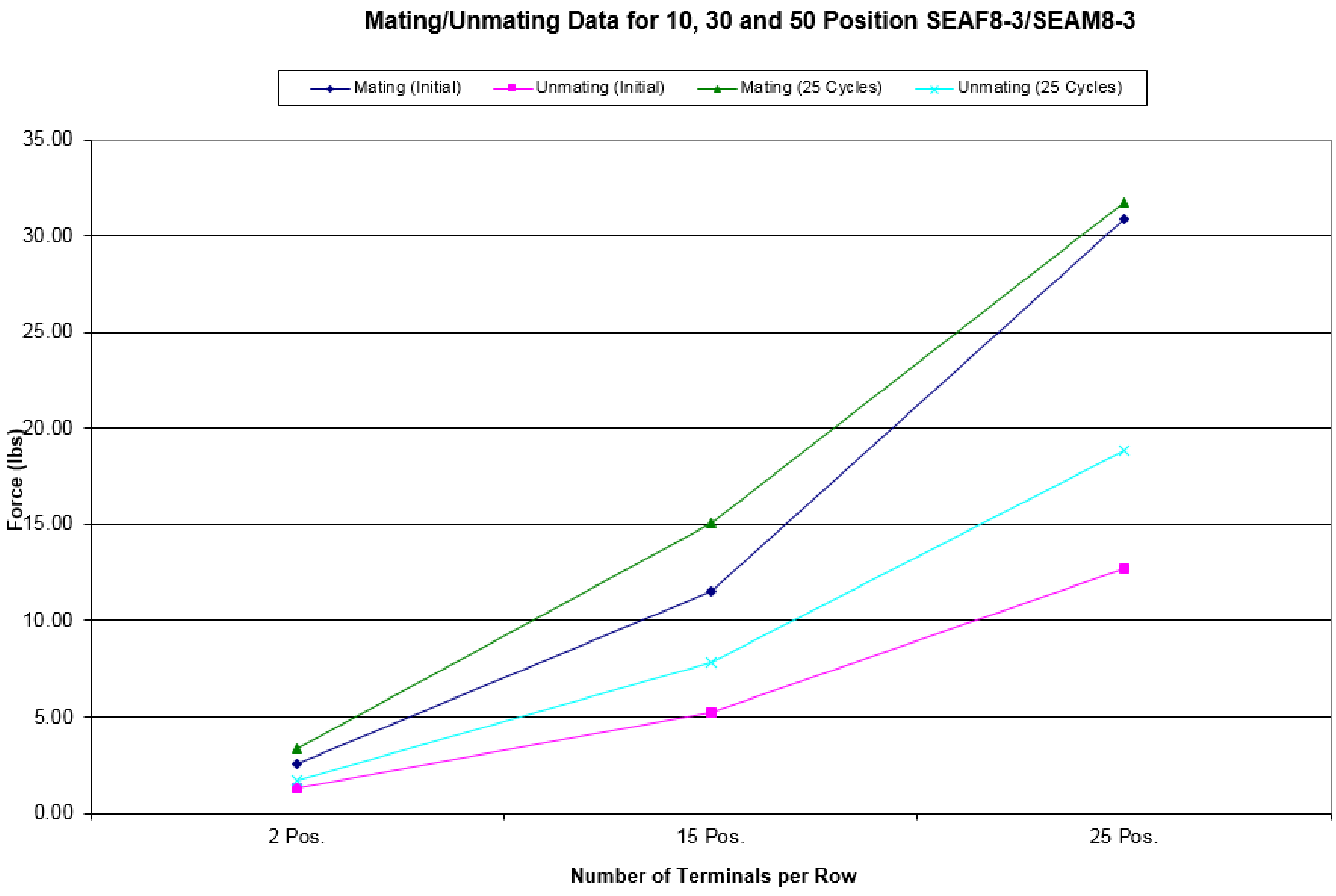
SEAF8-30-05.0-L-06-3-K/SEAM8-30-S02.0-L-06-3-K

	Initial				25 Cycles			
	Mating		Unmating		Mating		Unmating	
	Newtons	Force (Lbs)	Newtons	Force (Lbs)	Newtons	Force (Lbs)	Newtons	Force (Lbs)
Minimum	49.05	11.03	21.00	4.72	63.22	14.21	32.11	7.22
Maximum	54.30	12.21	25.34	5.70	70.04	15.75	37.87	8.52
Average	51.24	**11.52**	23.39	**5.26**	66.92	**15.04**	34.78	**7.82**
St Dev	1.70	0.38	1.51	0.34	2.67	0.60	2.21	0.50
Count	8	8	8	8	8	8	8	8

SEAF8-10-05.0-L-04-3-K/SEAM8-10-S02.0-L-04-3-K

	Initial				25 Cycles			
	Mating		Unmating		Mating		Unmating	
	Newtons	Force (Lbs)	Newtons	Force (Lbs)	Newtons	Force (Lbs)	Newtons	Force (Lbs)
Minimum	10.04	2.26	5.38	1.21	13.38	3.01	6.89	1.55
Maximum	12.44	2.80	6.28	1.41	16.07	3.61	7.96	1.79
Average	11.25	**2.53**	5.90	**1.33**	14.72	**3.31**	7.53	**1.69**
St Dev	0.74	0.17	0.37	0.08	0.81	0.18	0.39	0.09
Count	8	8	8	8	8	8	8	8

DATA SUMMARIES Continued



DATA SUMMARIES Continued

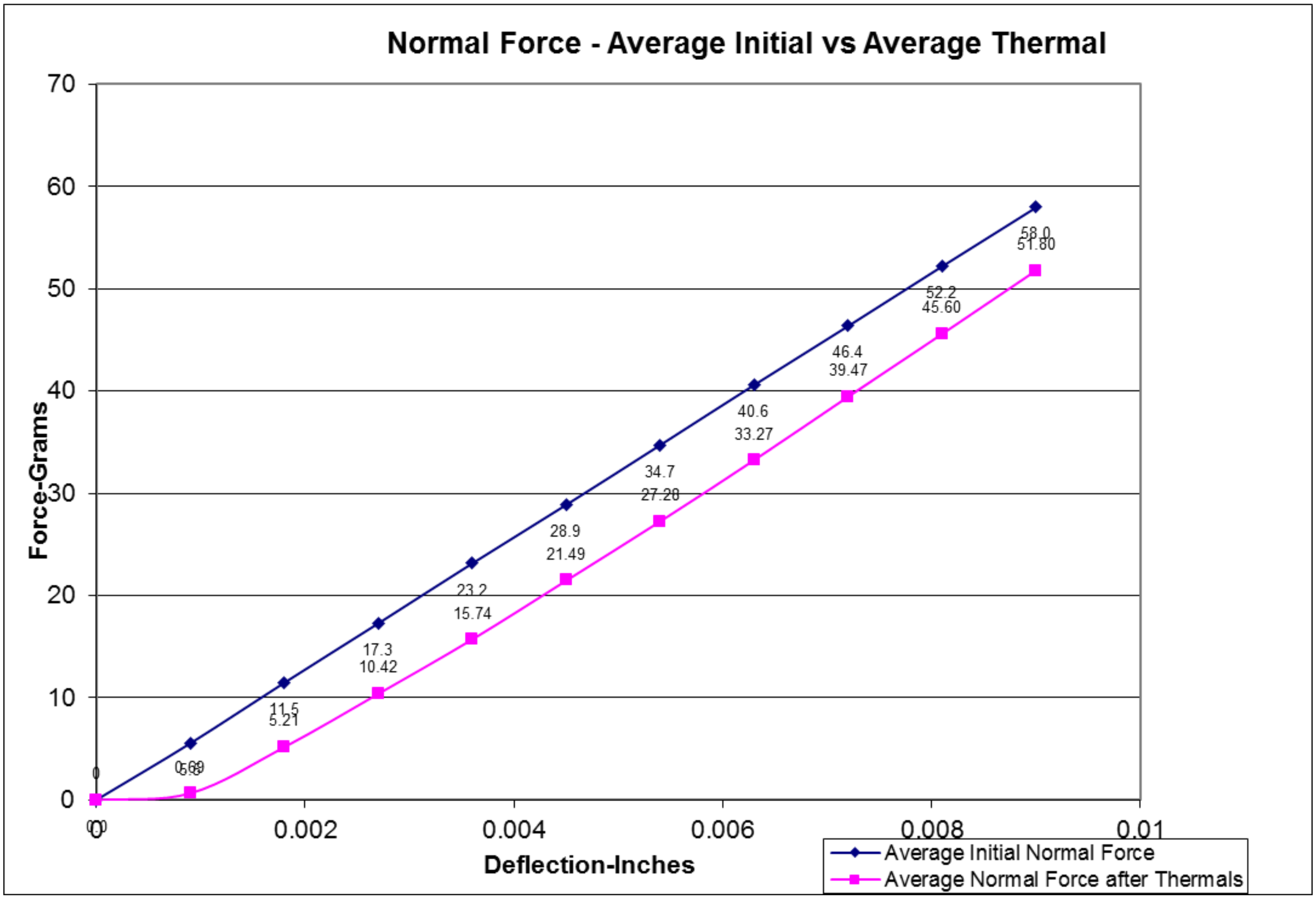
NORMAL FORCE (FOR CONTACTS TESTED OUT THE HOUSING):

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.

SEAF8-50-05.0-L-10-2-K/SEAM8-50-S02.0-L-10-2-K

Initial	Deflections in inches Forces in Grams										
	0.0009	**0.0018**	**0.0027**	**0.0036**	**0.0045**	**0.0054**	**0.0063**	**0.0072**	**0.0081**	**0.0090**	***SET***
Averages	5.54	11.47	17.28	23.15	28.88	34.73	40.61	46.38	52.22	57.98	0.0002
Min	5.10	11.00	16.60	22.40	27.60	33.30	39.10	44.60	49.90	55.20	0.0001
Max	5.80	12.10	17.90	24.00	29.90	35.80	41.80	47.50	53.50	60.00	0.0003
St. Dev	0.222	0.295	0.379	0.481	0.676	0.658	0.749	0.931	1.253	1.445	0.0001
Count	10	10	10	10	10	10	10	10	10	10	10

After Thermals	Deflections in inches Forces in Grams										
	0.0009	**0.0018**	**0.0027**	**0.0036**	**0.0045**	**0.0054**	**0.0063**	**0.0072**	**0.0081**	**0.0090**	***SET***
Averages	0.69	5.21	10.42	15.74	21.49	27.28	33.27	39.47	45.60	51.80	0.0008
Min	0.00	3.30	8.20	13.40	19.00	24.70	30.80	37.00	43.00	49.00	0.0005
Max	1.80	7.10	12.30	17.40	23.30	29.30	35.20	41.80	48.10	54.20	0.0012
St. Dev	0.692	1.314	1.369	1.413	1.498	1.459	1.474	1.507	1.519	1.637	0.0002
Count	10	10	10	10	10	10	10	10	10	10	10

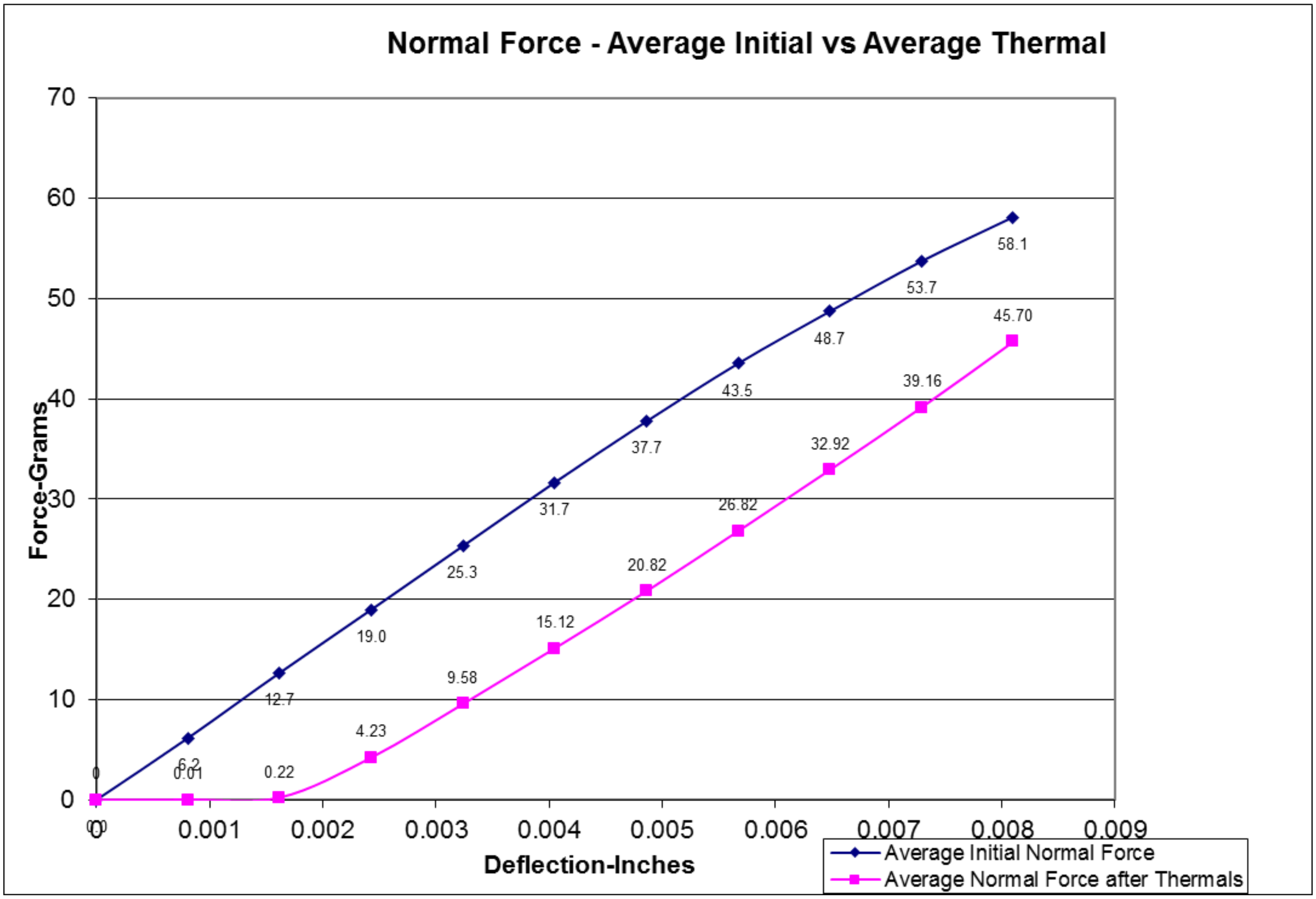


DATA SUMMARIES Continued

SEAF8-50-05.0-L-10-3-K/SEAM8-50-S02.0-L-10-3-K

Initial	**Deflections in inches Forces in Grams**										
	0.0008	**0.0016**	**0.0024**	**0.0032**	**0.0041**	**0.0049**	**0.0057**	**0.0065**	**0.0073**	**0.0081**	***SET***
Averages	6.18	12.68	18.98	25.33	31.66	37.74	43.51	48.70	53.70	58.10	0.0008
Min	5.80	12.40	18.60	24.70	30.80	37.10	42.70	48.00	52.50	57.10	0.0007
Max	6.40	12.90	19.40	25.80	32.30	38.70	44.50	49.70	54.60	58.90	0.0008
St. Dev	0.169	0.175	0.290	0.368	0.538	0.580	0.593	0.596	0.631	0.533	0.0001
Count	10	10	10	10	10	10	10	10	10	10	10

After Thermals	**Deflections in inches Forces in Grams**										
	0.0008	**0.0016**	**0.0024**	**0.0032**	**0.0041**	**0.0049**	**0.0057**	**0.0065**	**0.0073**	**0.0081**	***SET***
Averages	0.01	0.22	4.23	9.58	15.12	20.82	26.82	32.92	39.16	45.70	0.0018
Min	0.00	0.00	0.00	4.30	9.90	15.60	21.40	27.40	34.40	40.90	0.0015
Max	0.10	0.70	6.10	11.70	17.40	23.20	29.20	35.10	41.30	47.80	0.0026
St. Dev	0.032	0.262	1.968	2.271	2.172	2.175	2.295	2.309	2.037	2.089	0.0004
Count	10	10	10	10	10	10	10	10	10	10	10



DATA SUMMARIES Continued

INSULATION RESISTANCE (IR):

SEAF8-50-05.0-L-10-2-K/SEAM8-50-S02.0-L-10-2-K

	Pin to Pin		
	Mated	Unmated	Unmated
Minimum	**SEAF8/SEAM8**	**SEAF8**	**SEAM8**
Initial	45000	45000	45000
Thermal	45000	45000	45000
Humidity	36000	45000	45000

	Row to Row		
	Mated	Unmated	Unmated
Minimum	**SEAF8/SEAM8**	**SEAF8**	**SEAM8**
Initial	45000	45000	45000
Thermal	45000	45000	45000
Humidity	45000	45000	45000

SEAF8-50-05.0-L-10-3-K/SEAM8-50-S02.0-L-10-3-K

	Pin to Pin		
	Mated	Unmated	Unmated
Minimum	**SEAF8/SEAM8**	**SEAF8**	**SEAM8**
Initial	45000	45000	45000
Thermal	45000	45000	45000
Humidity	17900	45000	45000

	Row to Row		
	Mated	Unmated	Unmated
Minimum	**SEAF8/SEAM8**	**SEAF8**	**SEAM8**
Initial	45000	45000	45000
Thermal	45000	45000	45000
Humidity	45000	45000	45000

DATA SUMMARIES Continued

DIELECTRIC WITHSTANDING VOLTAGE (DWV):

SEAF8-50-05.0-L-10-2-K/SEAM8-50-S02.0-L-10-2-K

Voltage Rating Summary	
Minimum	SEAF8/SEAM8
Break Down Voltage	880
Test Voltage	660
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

SEAF8-50-05.0-L-10-3-K/SEAM8-50-S02.0-L-10-3-K

Voltage Rating Summary	
Minimum	SEAF8/SEAM8
Break Down Voltage	880
Test Voltage	660
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

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

SEAF8-50-05.0-L-10-2-K/SEAM8-50-S02.0-L-10-2-K

	LLCR Measurement Summaries by Pin Type			
Date	3/7/2019	3/22/2019		
Room Temp (Deg C)	23	22		
Rel Humidity (%)	32	35		
Technician	Joe Schoettmer	Tony Wagoner		
mOhm values	**Actual Initial**	**Delta Thermal**	**Delta**	**Delta**
	Pin Type 1: Signal			
Average	13.78	0.29		
St. Dev.	0.75	0.27		
Min	11.99	0.00		
Max	15.74	1.63		
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

SEAF8-50-05.0-L-10-3-K/SEAM8-50-S02.0-L-10-3-K

	LLCR Measurement Summaries by Pin Type			
Date	3/11/2019	3/22/2019		
Room Temp (Deg C)	23	22		
Rel Humidity (%)	35	35		
Technician	Tony Wagoner	Tony Wagoner		
mOhm values	**Actual Initial**	**Delta Thermal**	**Delta**	**Delta**
	Pin Type 1: Signal			
Average	16.97	0.67		
St. Dev.	1.57	0.76		
Min	14.04	0.01		
Max	21.89	7.88		
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	**191**	**1**	**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 +1000 mOhms:-----------------------------Unstable
  f. >+1000 mOhms:---------------------------------------Open Failure

SEAF8-50-05.0-L-10-2-K/SEAM8-50-S02.0-L-10-2-K

	LLCR Measurement Summaries by Pin Type			
Date	3/15/2019	3/25/2019	4/3/2019	4/18/2019
Room Temp (Deg C)	22	23	23	23
Rel Humidity (%)	36	44	35	45
Technician	Tony Wagoner	Tony Wagoner	Tony Wagoner	Joe Schoettmer
mOhm values	**Actual Initial**	**Delta 25 Cycles**	**Delta Therm Shck**	**Delta Humidity**
	Pin Type 1: Signal			
Average	14.27	0.46	0.77	0.84
St. Dev.	0.87	0.37	0.59	0.62
Min	12.07	0.00	0.00	0.00
Max	17.00	1.96	3.18	3.16
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**
25 Cycles	**192**	**0**	**0**	**0**	**0**	**0**
Therm Shck	**192**	**0**	**0**	**0**	**0**	**0**
Humidity	**192**	**0**	**0**	**0**	**0**	**0**

DATA SUMMARIES Continued

SEAF8-50-05.0-L-10-3-K/SEAM8-50-S02.0-L-10-3-K

	LLCR Measurement Summaries by Pin Type			
Date	3/15/2019	3/25/2019	4/3/2019	4/18/2019
Room Temp (Deg C)	22	23	23	23
Rel Humidity (%)	36	44	35	45
Technician	Tony Wagoner	Tony Wagoner	Tony Wagoner	Joe Schoettmer
mOhm values	**Actual Initial**	**Delta 25 Cycles**	**Delta Therm Shck**	**Delta Humidity**
	Pin Type 1: Signal			
Average	16.32	0.77	1.51	1.45
St. Dev.	1.09	0.63	0.72	0.77
Min	13.89	0.01	0.02	0.06
Max	20.20	4.08	4.75	4.89
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**
25 Cycles	**192**	**0**	**0**	**0**	**0**	**0**
Therm Shck	**192**	**0**	**0**	**0**	**0**	**0**
Humidity	**192**	**0**	**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 +1000 mOhms: -------------------Unstable
    f. >+1000 mOhms:-----------------------------Open Failure

SEAF8-50-05.0-L-10-2-K/SEAM8-50-S02.0-L-10-2-K

	LLCR Measurement Summaries by Pin Type			
Date	3/15/2019	3/27/2019		
Room Temp (Deg C)	22	22		
Rel Humidity (%)	37	38		
Technician	Tony Wagoner	Tony Wagoner		
mOhm values	**Actual Initial**	**Delta Acid Vapor**	**Delta**	**Delta**
	Pin Type 1: Signal			
Average	14.23	0.17		
St. Dev.	0.79	0.14		
Min	12.04	0.00		
Max	16.76	1.06		
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

SEAF8-50-05.0-L-10-3-K/SEAM8-50-S02.0-L-10-3-K

	LLCR Measurement Summaries by Pin Type			
Date	3/26/2019	3/27/2019		
Room Temp (Deg C)	23	22		
Rel Humidity (%)	33	38		
Technician	Joe Schoettmer	Tony Wagoner		
mOhm values	**Actual Initial**	**Delta Acid Vapor**	**Delta**	**Delta**
	Pin Type 1: Signal			
Average	16.04	0.13		
St. Dev.	0.89	0.12		
Min	13.45	0.00		
Max	18.42	0.73		
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 +1000 mOhms:-------------------Unstable
   f. >+1000 mOhms:----------------------------Open Failure

SEAF8-50-05.0-L-10-2-K/SEAM8-50-S02.0-L-10-2-K

	LLCR Measurement Summaries by Pin Type			
Date	3/28/2019	3/29/2019		
Room Temp (Deg C)	23	23		
Rel Humidity (%)	35	44		
Technician	Joe Schoettmer	Joe Schoettmer		
mOhm values	**Actual Initial**	**Delta Shock-Vib**	**Delta**	**Delta**
	Pin Type 1: Signal			
Average	13.92	0.20		
St. Dev.	0.72	0.15		
Min	11.97	0.00		
Max	15.96	0.67		
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

SEAF8-50-05.0-L-10-3-K/SEAM8-50-S02.0-L-10-3-K

	LLCR Measurement Summaries by Pin Type			
Date	4/22/2019	4/29/2019		
Room Temp (Deg C)	22	23		
Rel Humidity (%)	38	43		
Technician	Tony Wagoner	Tony Wagoner		
mOhm values	**Actual Initial**	**Delta Shock-Vib**	**Delta**	**Delta**
	Pin Type 1: Signal			
Average	16.48	0.42		
St. Dev.	0.99	0.36		
Min	14.45	0.00		
Max	19.27	2.15		
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

EQUIPMENT AND CALIBRATION SCHEDULES

Equipment #: TCT-04
Description: Dillon Quantrol TC21 25-1000 mm/min series test stand
Manufacturer: Dillon Quantrol
Model: TC2 I series test stand
Serial #: 04-1041-04
Accuracy: Speed Accuracy: +/- 5% of indicated speed; Speed Accuracy: +/- 5% of indicated speed;
… Last Cal: 05/29/2018, Next Cal: 05/29/2019

Equipment #: MO-11
Description: Switch/Multimeter
Manufacturer: Keithley
Model: 3706
Serial #: 120169
Accuracy: See Manual
… Last Cal: 09/11/2018, Next Cal: 09/11/2019

Equipment #: THC-05
Description: Temperature/Humidity Chamber (Chamber Room)
Manufacturer: Thermotron
Model: SM-8-3800
Serial #: 05 23 00 02
Accuracy: See Manual
… Last Cal: 05/31/2018, Next Cal: 05/31/2019

Equipment #: TSC-01
Description: Vertical Thermal Shock Chamber
Manufacturer: Cincinnati Sub Zero
Model: VTS-3-6-6-SC/AC
Serial #: 10-VT14993
Accuracy: See Manual
… Last Cal: 06/30/2018, Next Cal: 06/30/2019

Equipment #: HPT-01
Description: Hipot Safety Tester
Manufacturer: Vitrek
Model: V73
Serial #: 019808
Accuracy:
… Last Cal: 05/15/2018, Next Cal: 05/15/2019

EQUIPMENT AND CALIBRATION SCHEDULES

Equipment #: SVC-01
Description: Shock & Vibration Table
Manufacturer: Data Physics
Model: LE-DSA-10-20K
Serial #: 10037
Accuracy: See Manual
… Last Cal: 04/22/2019, Next Cal: 04/22/2020

Equipment #: ACLM-01
Description: Accelerometer
Manufacturer: PCB Piezotronics
Model: 352C03
Serial #: 115819
Accuracy: See Manual
… Last Cal: 07/18/2018, Next Cal: 07/18/2019

Equipment #: ED-03
Description: Event Detector
Manufacturer: Analysis Tech
Model: 32EHD
Serial #: 1100604
Accuracy: See Manual
… Last Cal: 10/31/2018, Next Cal: 10/31/2019

Equipment #: MO-04
Description: Multimeter /Data Acquisition System
Manufacturer: Keithley
Model: 2700
Serial #: 0798688
Accuracy: See Manual
… Last Cal: 09/11/2018, Next Cal: 09/11/2019