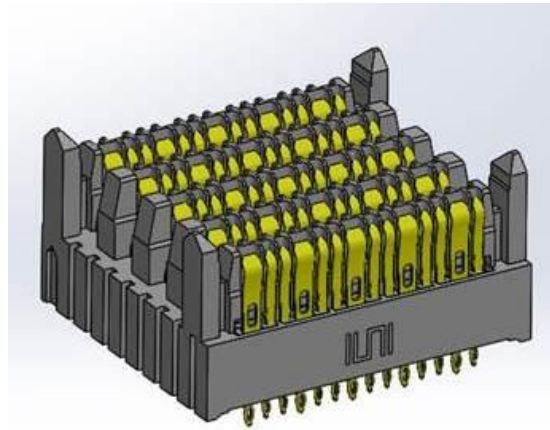
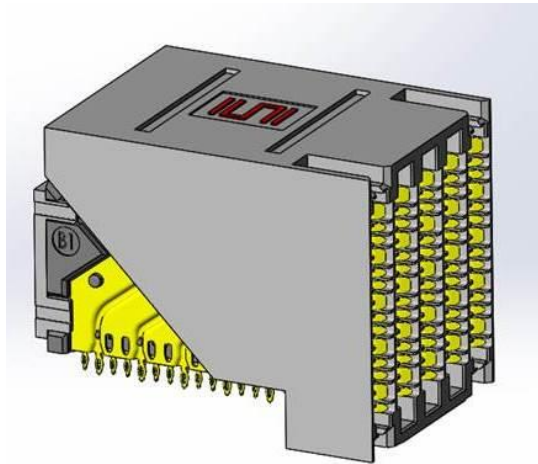




Project Number: Design Qualification Test Report	Tracking Code: 643164_Report_Rev_3
Requested by: Neal Patterson	Date: 4/29/2020
Part #: EBTF-4-10-2.0-S-RA-1/EBTM-4-10-2.0-S-VT-1	
Part description: EBTF/EBTM	Tech: Aaron McKim
Test Start: 8/25/2015	Test Completed: 9/28/2015



(Actual part not depicted)

DESIGN QUALIFICATION TEST REPORT
EBTF/EBTM
EBTF-4-10-2.0-S-RA-1/EBTM-4-10-2.0-S-VT-1

Tracking Code: 643164_Report_Rev_3	Part #: EBTF-4-10-2.0-S-RA-1/EBTM-4-10-2.0-S-VT-1
Part description: EBTF/EBTM	

REVISION HISTORY

DATE	REV.NUM.	DESCRIPTION	ENG
11/18/2015	1	Initial Issue	KH
2/26/2016	2	Updated the force unit.	KH
4/9/2020	3	Updated the CCC Charts	PC

Tracking Code: 643164_Report_Rev_3	Part #: EBTF-4-10-2.0-S-RA-1/EBTM-4-10-2.0-S-VT-1
Part description: EBTF/EBTM	

CERTIFICATION

All instruments and measuring equipment were calibrated to National Institute for Standards and Technology (NIST) traceable standards according to ISO 10012-1 and ANSI/NCSL 2540-1, as applicable.

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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-106947-TST-XX/PCB-106948-TST-XX/PCB-106949-TST-XX
PCB-106969-TST-XX.

FLOWCHARTS

Gas Tight

Group 1
 EBTF-4-10-2.0-S-RA-1
 EBTM-4-10-2.0-S-VT-1
 8 Assemblies
 Tin (IMMERSION) .016" SIG PTH, .022"
 GND PTH

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

Compliant Pin Only

Group 2
 EBTF-4-10-2.0-S-RA-1

 30 Contacts Minimum
 Tin (IMMERSION) .016" SIG PTH, .022"
 GND PTH

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

Group 3
 EBTM-4-10-2.0-S-VT-1
 30 Contacts Minimum
 Tin (IMMERSION) .016" SIG PTH, .022"
 GND PTH

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

- (1) Gas Tight = EIA-364-36
 (2) LLCR = EIA-364-23
 Open Circuit Voltage = 20 mV Max
 Test Current = 100 mA Max

FLOWCHARTS Continued

Normal Force

Group 1 EBTF-4-10-2.0-S-RA-1 8 Contacts Minimum Signal Without Thermals Wafter A <table><tr><th>Step</th><th>Description</th></tr><tr><td>1.</td><td>Contact Gaps</td></tr><tr><td>2.</td><td>Normal Force ⁽¹⁾ Deflection = 0.0112 " Expected Force at Max Deflection = 100 g</td></tr></table>	Step	Description	1.	Contact Gaps	2.	Normal Force ⁽¹⁾ Deflection = 0.0112 " Expected Force at Max Deflection = 100 g	Group 2 EBTF-4-10-2.0-S-RA-1 8 Contacts Minimum Ground Without Thermals Wafer A <table><tr><th>Step</th><th>Description</th></tr><tr><td>1.</td><td>Contact Gaps</td></tr><tr><td>2.</td><td>Normal Force ⁽¹⁾ Deflection = 0.0112 " Expected Force at Max Deflection = 100 g</td></tr></table>	Step	Description	1.	Contact Gaps	2.	Normal Force ⁽¹⁾ Deflection = 0.0112 " Expected Force at Max Deflection = 100 g	Group 3 EBTF-4-10-2.0-S-RA-1 8 Contacts Minimum Signal With Thermals Wafer A <table><tr><th>Step</th><th>Description</th></tr><tr><td>1.</td><td>Contact Gaps</td></tr><tr><td>2.</td><td>Thermal Age ⁽²⁾</td></tr><tr><td>3.</td><td>Contact Gaps</td></tr><tr><td>4.</td><td>Normal Force ⁽¹⁾ Deflection = 0.0112 " Expected Force at Max Deflection = 100 g</td></tr></table>	Step	Description	1.	Contact Gaps	2.	Thermal Age ⁽²⁾	3.	Contact Gaps	4.	Normal Force ⁽¹⁾ Deflection = 0.0112 " Expected Force at Max Deflection = 100 g	Group 4 EBTF-4-10-2.0-S-RA-1 8 Contacts Minimum Ground With Thermals Wafer A <table><tr><th>Step</th><th>Description</th></tr><tr><td>1.</td><td>Contact Gaps</td></tr><tr><td>2.</td><td>Thermal Age ⁽²⁾</td></tr><tr><td>3.</td><td>Contact Gaps</td></tr><tr><td>4.</td><td>Normal Force ⁽¹⁾ Deflection = 0.0112 " Expected Force at Max Deflection = 100 g</td></tr></table>	Step	Description	1.	Contact Gaps	2.	Thermal Age ⁽²⁾	3.	Contact Gaps	4.	Normal Force ⁽¹⁾ Deflection = 0.0112 " Expected Force at Max Deflection = 100 g
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Group 5 EBTF-4-10-2.0-S-RA-1 8 Contacts Minimum Signal Without Thermals Wafter B <table><tr><th>Step</th><th>Description</th></tr><tr><td>1.</td><td>Contact Gaps</td></tr><tr><td>2.</td><td>Normal Force ⁽¹⁾ Expected Force at Max Deflection = 100 g Deflection = 0.0112 "</td></tr></table>	Step	Description	1.	Contact Gaps	2.	Normal Force ⁽¹⁾ Expected Force at Max Deflection = 100 g Deflection = 0.0112 "	Group 6 EBTF-4-10-2.0-S-RA-1 8 Contacts Minimum Ground Without Thermals Wafer B <table><tr><th>Step</th><th>Description</th></tr><tr><td>1.</td><td>Contact Gaps</td></tr><tr><td>2.</td><td>Normal Force ⁽¹⁾ Deflection = 0.0112 " Expected Force at Max Deflection = 100 g</td></tr></table>	Step	Description	1.	Contact Gaps	2.	Normal Force ⁽¹⁾ Deflection = 0.0112 " Expected Force at Max Deflection = 100 g	Group 7 EBTF-4-10-2.0-S-RA-1 8 Contacts Minimum Signal With Thermals Wafer B <table><tr><th>Step</th><th>Description</th></tr><tr><td>1.</td><td>Contact Gaps</td></tr><tr><td>2.</td><td>Thermal Age ⁽²⁾</td></tr><tr><td>3.</td><td>Contact Gaps</td></tr><tr><td>4.</td><td>Normal Force ⁽¹⁾ Expected Force at Max Deflection = 100 g Deflection = 0.0112 "</td></tr></table>	Step	Description	1.	Contact Gaps	2.	Thermal Age ⁽²⁾	3.	Contact Gaps	4.	Normal Force ⁽¹⁾ Expected Force at Max Deflection = 100 g Deflection = 0.0112 "	Group 8 EBTF-4-10-2.0-S-RA-1 8 Contacts Minimum Ground With Thermals Wafer B <table><tr><th>Step</th><th>Description</th></tr><tr><td>1.</td><td>Contact Gaps</td></tr><tr><td>2.</td><td>Thermal Age ⁽²⁾</td></tr><tr><td>3.</td><td>Contact Gaps</td></tr><tr><td>4.</td><td>Normal Force ⁽¹⁾ Expected Force at Max Deflection = 100 g Deflection = 0.0112 "</td></tr></table>	Step	Description	1.	Contact Gaps	2.	Thermal Age ⁽²⁾	3.	Contact Gaps	4.	Normal Force ⁽¹⁾ Expected Force at Max Deflection = 100 g Deflection = 0.0112 "
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Group 9 EBTM-4-10-2.0-S-VT-1 8 Contacts Minimum Signal Without Thermals Wafter A <table><tr><th>Step</th><th>Description</th></tr><tr><td>1.</td><td>Contact Gaps</td></tr><tr><td>2.</td><td>Normal Force ⁽¹⁾ Deflection = 0.0112 " Expected Force at Max Deflection = 100 g</td></tr></table>	Step	Description	1.	Contact Gaps	2.	Normal Force ⁽¹⁾ Deflection = 0.0112 " Expected Force at Max Deflection = 100 g	Group 10 EBTM-4-10-2.0-S-VT-1 8 Contacts Minimum Ground Without Thermals Wafer A <table><tr><th>Step</th><th>Description</th></tr><tr><td>1.</td><td>Contact Gaps</td></tr><tr><td>2.</td><td>Normal Force ⁽¹⁾ Expected Force at Max Deflection = 100 g Deflection = 0.0112 "</td></tr></table>	Step	Description	1.	Contact Gaps	2.	Normal Force ⁽¹⁾ Expected Force at Max Deflection = 100 g Deflection = 0.0112 "	Group 11 EBTM-4-10-2.0-S-VT-1 8 Contacts Minimum Signal With Thermals Wafer A <table><tr><th>Step</th><th>Description</th></tr><tr><td>1.</td><td>Contact Gaps</td></tr><tr><td>2.</td><td>Thermal Age ⁽²⁾</td></tr><tr><td>3.</td><td>Contact Gaps</td></tr><tr><td>4.</td><td>Normal Force ⁽¹⁾ Expected Force at Max Deflection = 100 g Deflection = 0.0112 "</td></tr></table>	Step	Description	1.	Contact Gaps	2.	Thermal Age ⁽²⁾	3.	Contact Gaps	4.	Normal Force ⁽¹⁾ Expected Force at Max Deflection = 100 g Deflection = 0.0112 "	Group 12 EBTM-4-10-2.0-S-VT-1 8 Contacts Minimum Ground With Thermals Wafer A <table><tr><th>Step</th><th>Description</th></tr><tr><td>1.</td><td>Contact Gaps</td></tr><tr><td>2.</td><td>Thermal Age ⁽²⁾</td></tr><tr><td>3.</td><td>Contact Gaps</td></tr><tr><td>4.</td><td>Normal Force ⁽¹⁾ Expected Force at Max Deflection = 100 g Deflection = 0.0112 "</td></tr></table>	Step	Description	1.	Contact Gaps	2.	Thermal Age ⁽²⁾	3.	Contact Gaps	4.	Normal Force ⁽¹⁾ Expected Force at Max Deflection = 100 g Deflection = 0.0112 "
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Group 13 EBTM-4-10-2.0-S-VT-1 8 Contacts Minimum Signal Without Thermals Wafter B <table><tr><th>Step</th><th>Description</th></tr><tr><td>1.</td><td>Contact Gaps</td></tr><tr><td>2.</td><td>Normal Force ⁽¹⁾ Deflection = 0.0112 " Expected Force at Max Deflection = 100 g</td></tr></table>	Step	Description	1.	Contact Gaps	2.	Normal Force ⁽¹⁾ Deflection = 0.0112 " Expected Force at Max Deflection = 100 g	Group 14 EBTM-4-10-2.0-S-VT-1 8 Contacts Minimum Ground Without Thermals Wafer B <table><tr><th>Step</th><th>Description</th></tr><tr><td>1.</td><td>Contact Gaps</td></tr><tr><td>2.</td><td>Normal Force ⁽¹⁾ Expected Force at Max Deflection = 100 g Deflection = 0.0112 "</td></tr></table>	Step	Description	1.	Contact Gaps	2.	Normal Force ⁽¹⁾ Expected Force at Max Deflection = 100 g Deflection = 0.0112 "	Group 15 EBTM-4-10-2.0-S-VT-1 8 Contacts Minimum Signal With Thermals Wafer B <table><tr><th>Step</th><th>Description</th></tr><tr><td>1.</td><td>Contact Gaps</td></tr><tr><td>2.</td><td>Thermal Age ⁽²⁾</td></tr><tr><td>3.</td><td>Contact Gaps</td></tr><tr><td>4.</td><td>Normal Force ⁽¹⁾ Deflection = 0.0112 " Expected Force at Max Deflection = 100 g</td></tr></table>	Step	Description	1.	Contact Gaps	2.	Thermal Age ⁽²⁾	3.	Contact Gaps	4.	Normal Force ⁽¹⁾ Deflection = 0.0112 " Expected Force at Max Deflection = 100 g	Group 16 EBTM-4-10-2.0-S-VT-1 8 Contacts Minimum Ground With Thermals Wafer B <table><tr><th>Step</th><th>Description</th></tr><tr><td>1.</td><td>Contact Gaps</td></tr><tr><td>2.</td><td>Thermal Age ⁽²⁾</td></tr><tr><td>3.</td><td>Contact Gaps</td></tr><tr><td>4.</td><td>Normal Force ⁽¹⁾ Expected Force at Max Deflection = 100 g Deflection = 0.0112 "</td></tr></table>	Step	Description	1.	Contact Gaps	2.	Thermal Age ⁽²⁾	3.	Contact Gaps	4.	Normal Force ⁽¹⁾ Expected Force at Max Deflection = 100 g Deflection = 0.0112 "
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(1) Normal Force = EIA-364-04

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

FLOWCHARTS Continued

Thermal Aging

Group 1
EBTF-4-10-2.0-S-RA-1
EBTM-4-10-2.0-S-VT-1
8 Assemblies
Tin (IMMERSION) .016" SIG PTH, .022" GND PTH

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

Compliant Pin Only

Group 2
EBTF-4-10-2.0-S-RA-1
30 Contacts Minimum
Tin (IMMERSION) .016" SIG PTH, .022" GND PTH

Step	Description
1.	LLCR (1)
2.	Thermal Age (3)
3.	LLCR (1) Max Delta = 1 mOhm

Group 3
EBTM-4-10-2.0-S-VT-1
30 Contacts Minimum
Tin (IMMERSION) .016" SIG PTH, .022" GND PTH

Step	Description
1.	LLCR (1)
2.	Thermal Age (3)
3.	LLCR (1) Max Delta = 1 mOhm

- (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)

Tracking Code: 643164_Report_Rev_3	Part #: EBTF-4-10-2.0-S-RA-1/EBTM-4-10-2.0-S-VT-1
Part description: EBTF/EBTM	

FLOWCHARTS Continued

Mating/Unmating/Durability

Group 1

EBTF-4-10-2.0-S-RA-1

EBTM-4-10-2.0-S-VT-1

8 Assemblies

Tin (IMMERSION) .016" SIG PTH, .022"

GND PTH

Step	Description
1.	Contact Gaps
2.	LLCR (2)
3.	Mating/Unmating Force (3)
4.	Cycles Quantity = 25 Cycles
5.	Mating/Unmating Force (3)
6.	Cycles Quantity = 25 Cycles
7.	Mating/Unmating Force (3)
8.	Cycles Quantity = 25 Cycles
9.	Mating/Unmating Force (3)
10.	Cycles Quantity = 25 Cycles
11.	Mating/Unmating Force (3)
12.	Contact Gaps
13.	LLCR (2) Max Delta = 15 mOhm
14.	Thermal Shock (4)
15.	LLCR (2) Max Delta = 15 mOhm
16.	Humidity (1)
17.	LLCR (2) Max Delta = 15 mOhm
18.	Mating/Unmating Force (3)

Compliant Pin Only

Group 2

EBTF-4-10-2.0-S-RA-1

30 Contacts Minimum

Tin (IMMERSION) .016" SIG PTH, .022"
GND PTH

Step	Description
1.	LLCR (2)
2.	Thermal Shock (4)
3.	LLCR (2) Max Delta = 1 mOhm
4.	Humidity (1)
5.	LLCR (2) Max Delta = 1 mOhm

Group 3

EBTM-4-10-2.0-S-VT-1

30 Contacts Minimum

Tin (IMMERSION) .016" SIG PTH, .022"
GND PTH

Step	Description
1.	LLCR (2)
2.	Thermal Shock (4)
3.	LLCR (2) Max Delta = 1 mOhm
4.	Humidity (1)
5.	LLCR (2) Max Delta = 1 mOhm

(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

<u>Group 1</u>		<u>Group 2</u>		<u>Group 3</u>		<u>Group 4</u>	
EBTF-4-10-2.0-S-RA-1		EBTF-4-10-2.0-S-RA-1		EBTM-4-10-2.0-S-VT-1		EBTF-4-10-2.0-S-RA-1	
EBTM-4-10-2.0-S-VT-1						EBTM-4-10-2.0-S-VT-1	
2 Assemblies		2 Assemblies		2 Assemblies		2 Assemblies	
Tin (IMMERSION) .016" SIG PTH, .022" GND PTH		Tin (IMMERSION) .016" SIG PTH, .022" GND PTH		Tin (IMMERSION) .016" SIG PTH, .022" GND PTH		Tin (IMMERSION) .016" SIG PTH, .022" GND PTH	
Step	Description	Step	Description	Step	Description	Step	Description
1.	DWV Breakdown (2)	1.	DWV Breakdown (2)	1.	DWV Breakdown (2)	1.	IR (4)
						2.	DWV at Test Voltage (1)
						3.	Thermal Shock (5)
						4.	IR (4)
						5.	DWV at Test Voltage (1)
						6.	Humidity (3)
						7.	IR (4)
						8.	DWV at Test Voltage (1)

Row-to-Row

<u>Group 5</u>		<u>Group 6</u>		<u>Group 7</u>		<u>Group 8</u>	
EBTF-4-10-2.0-S-RA-1		EBTF-4-10-2.0-S-RA-1		EBTM-4-10-2.0-S-VT-1		EBTF-4-10-2.0-S-RA-1	
EBTM-4-10-2.0-S-VT-1						EBTM-4-10-2.0-S-VT-1	
2 Assemblies		2 Assemblies		2 Assemblies		2 Assemblies	
Tin (IMMERSION) .016" SIG PTH, .022" GND PTH		Tin (IMMERSION) .016" SIG PTH, .022" GND PTH		Tin (IMMERSION) .016" SIG PTH, .022" GND PTH		Tin (IMMERSION) .016" SIG PTH, .022" GND PTH	
Step	Description	Step	Description	Step	Description	Step	Description
1.	DWV Breakdown (2)	1.	DWV Breakdown (2)	1.	DWV Breakdown (2)	1.	IR (4)
						2.	DWV at Test Voltage (1)
						3.	Thermal Shock (5)
						4.	IR (4)
						5.	DWV at Test Voltage (1)
						6.	Humidity (3)
						7.	IR (4)
						8.	DWV at Test Voltage (1)

Pin-to-Ground

<u>Group 9</u>		<u>Group 10</u>		<u>Group 11</u>		<u>Group 12</u>	
EBTF-4-10-2.0-S-RA-1		EBTF-4-10-2.0-S-RA-1		EBTM-4-10-2.0-S-VT-1		EBTF-4-10-2.0-S-RA-1	
EBTM-4-10-2.0-S-VT-1						EBTM-4-10-2.0-S-VT-1	
2 Assemblies		2 Assemblies		2 Assemblies		2 Assemblies	
Tin (IMMERSION) .016" SIG PTH, .022" GND PTH		Tin (IMMERSION) .016" SIG PTH, .022" GND PTH		Tin (IMMERSION) .016" SIG PTH, .022" GND PTH		Tin (IMMERSION) .016" SIG PTH, .022" GND PTH	
Step	Description	Step	Description	Step	Description	Step	Description
1.	DWV Breakdown (2)	1.	DWV Breakdown (2)	1.	DWV Breakdown (2)	1.	IR (4)
						2.	DWV at Test Voltage (1)
						3.	Thermal Shock (5)
						4.	IR (4)
						5.	DWV at Test Voltage (1)
						6.	Humidity (3)
						7.	IR (4)
						8.	DWV at Test Voltage (1)

- (1) DWV at Test Voltage = EIA-364-20
Test Condition = 1 (Sea Level)
DWV test voltage is equal to 75% of the lowest breakdown voltage
Test voltage applied for 60 seconds
- (2) DWV Breakdown = EIA-364-20
Test Condition = 1 (Sea Level)
DWV test voltage is equal to 75% of the lowest breakdown voltage
Test voltage applied for 60 seconds
- (3) Humidity = EIA-364-31
Test Condition = B (240 Hours)
Test Method = III (+25°C to +65°C @ 90% RH to 98% RH)
Test Exceptions: ambient pre-condition and delete steps 7a and 7b
- (4) IR = EIA-364-21
Test Condition = 500 Vdc, 2 Minutes Max
- (5) Thermal Shock = EIA-364-32
Exposure Time at Temperature Extremes = 1/2 Hour
Method A, Test Condition = I (-55°C to +85°C)
Test Duration = A-3 (100 Cycles)

FLOWCHARTS Continued

Current Carrying Capacity

Note: Tin (IMMERSION) .016" SIG PTH, .022" GND PTH

<u>Group 1</u> EBTF-4-10-2.0-S-RA-1 EBTM-4-10-2.0-S-VT-1 1 Pins Powered Signal		<u>Group 2</u> EBTF-4-10-2.0-S-RA-1 EBTM-4-10-2.0-S-VT-1 14 Pins Powered Signal		<u>Group 3</u> EBTF-4-10-2.0-S-RA-1 EBTM-4-10-2.0-S-VT-1 28 Pins Powered Signal	
Step	Description	Step	Description	Step	Description
1.	CCC (1) Rows = 1 Number of Positions = 1 <i>Note: Center of connector location</i>	1.	CCC (1) Number of Positions = 14 Rows = 1 <i>Note: All signal pins combined carry supply while all grounds on that wafer carry return</i>	1.	CCC (1) Rows = 2 Number of Positions = 14 <i>Note: Center wafer carries supply while adjacent wafer carries return</i>

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

FLOWCHARTS Continued

Mechanical Shock/Random Vibration/LLCR

Group 1
 EBTf-4-10-2.0-S-RA-1
 EBTM-4-10-2.0-S-VT-1
 8 Assemblies
 Tin (IMMERSION) .016" Sig PTH, .022"
 Gnd PTH

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

Compliant Pin Only

Group 2
 EBTf-4-10-2.0-S-RA-1
 30 Contacts Minimum
 Tin (IMMERSION) .016" Sig PTH, .022"
 Gnd PTH

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

Group 3
 EBTM-4-10-2.0-S-VT-1
 30 Contacts Minimum
 Tin (IMMERSION) .016" Sig PTH, .022"
 Gnd PTH

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

FLOWCHARTS Continued

Mechanical Shock/Random Vibration/Event Detection

Group 1

EBTF-4-10-2.0-S-RA-1

EBTM-4-10-2.0-S-VT-1

60 Points

Tin (IMMERSION) .016" Sig PTH, .022"
Gnd PTH

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

- (1) Nanosecond Event Detection (Mechanical Shock)
Use EIA-364-87 for Nanosecond Event Detection:
Test Condition = F (50 nanoseconds at 10 ohms)
Use EIA-364-27 for Mechanical Shock:
Test Condition = C (100 G Peak, 6 milliseconds, Half Sine)
Number of Shocks = 3 Per Direction, Per Axis, 18 Total
- (2) Nanosecond Event Detection (Random Vibration)
Use EIA-364-87 for Nanosecond Event Detection:
Test Condition = F (50 nanoseconds at 10 ohms)
Use EIA-364-28 for Random Vibration:
Condition = VB (7.56 gRMS Average, 2 Hours/Axis)

FLOWCHARTS Continued

Pressfit Hole Evaluation

<u>Group 1</u> EBTF-4-10-2.0-S-RA-1 30 Contacts Minimum Tin (IMMERSION) .012" Sig PTH, .018" Gnd PTH		<u>Group 2</u> EBTF-4-10-2.0-S-RA-1 30 Contacts Minimum Tin (IMMERSION) .016" Sig PTH, .022" Gnd PTH		<u>Group 3</u> EBTM-4-10-2.0-S-VT-1 30 Contacts Minimum Tin (IMMERSION) .012" Sig PTH, .018" Gnd PTH		<u>Group 4</u> EBTM-4-10-2.0-S-VT-1 30 Contacts Minimum Tin (IMMERSION) .016" Sig PTH, .022" Gnd PTH	
Step	Description	Step	Description	Step	Description	Step	Description
1.	Insertion Force Rate = 2.54 mm/min Note: Pin 1	1.	Insertion Force Rate = 2.54 mm/min Note: Pin 1	1.	Insertion Force Rate = 2.54 mm/min Note: Pin 1	1.	Insertion Force Rate = 2.54 mm/min Note: Pin 1
2.	Retention Force Rate = 2.54 mm/min Note: Pin 1	2.	Retention Force Rate = 2.54 mm/min Note: Pin 1	2.	Retention Force Rate = 2.54 mm/min Note: Pin 1	2.	Retention Force Rate = 2.54 mm/min Note: Pin 1
3.	Cycles Quantity = 1 Cycles Note: Pin 2	3.	Cycles Quantity = 1 Cycles Note: Pin 2	3.	Cycles Quantity = 1 Cycles Note: Pin 2	3.	Cycles Quantity = 1 Cycles Note: Pin 2
4.	Insertion Force Rate = 2.54 mm/min Note: Pin 3	4.	Insertion Force Rate = 2.54 mm/min Note: Pin 3	4.	Insertion Force Rate = 2.54 mm/min Note: Pin 3	4.	Insertion Force Rate = 2.54 mm/min Note: Pin 3
5.	Retention Force Rate = 2.54 mm/min Note: Pin 3	5.	Retention Force Rate = 2.54 mm/min Note: Pin 3	5.	Retention Force Rate = 2.54 mm/min Note: Pin 3	5.	Retention Force Rate = 2.54 mm/min Note: Pin 3
6.	Hole Integrity Note: Check for distortion of the PTH according to EIA-364-96	6.	Hole Integrity Note: Check for distortion of the PTH according to EIA-364-96	6.	Hole Integrity Note: Check for distortion of the PTH according to EIA-364-96	6.	Hole Integrity Note: Check for distortion of the PTH according to EIA-364-96

<u>Group 5</u> EBTF-4-10-2.0-S-RA-1 60 Contacts Minimum Tin (IMMERSION) .012" Sig PTH, .018" Gnd PTH Note: 30 SIG & 30 GND		<u>Group 6</u> EBTF-4-10-2.0-S-RA-1 30 Contacts Minimum Tin (IMMERSION) .016" Sig PTH, .022" Gnd PTH Note: 30 SIG & 30 GND		<u>Group 7</u> EBTM-4-10-2.0-S-VT-1 30 Contacts Minimum Tin (IMMERSION) .012" Sig PTH, .018" Gnd PTH Note: 30 SIG & 30 GND		<u>Group 8</u> EBTM-4-10-2.0-S-VT-1 30 Contacts Minimum Tin (IMMERSION) .016" Sig PTH, .022" Gnd PTH Note: 30 SIG & 30 GND	
Step	Description	Step	Description	Step	Description	Step	Description
1.	LLCR ₍₁₎ Note: Part 1	1.	LLCR ₍₁₎ Note: Part 1	1.	LLCR ₍₁₎ Note: Part 1	1.	LLCR ₍₁₎ Note: Part 1
2.	Cycles Quantity = 1 Cycles Note: Part 2	2.	Cycles Quantity = 1 Cycles Note: Part 2	2.	Cycles Quantity = 1 Cycles Note: Part 2	2.	Cycles Quantity = 1 Cycles Note: Part 2
3.	LLCR ₍₁₎ Max Delta = 1 mOhm Note: Part 3	3.	LLCR ₍₁₎ Max Delta = 1 mOhm Note: Part 3	3.	LLCR ₍₁₎ Max Delta = 1 mOhm Note: Part 3	3.	LLCR ₍₁₎ Max Delta = 1 mOhm Note: Part 3
4.	Hole Integrity Note: Check for distortion of the PTH according to EIA-364-96	4.	Hole Integrity Note: Check for distortion of the PTH according to EIA-364-96	4.	Hole Integrity Note: Check for distortion of the PTH according to EIA-364-96	4.	Hole Integrity Note: Check for distortion of the PTH according to EIA-364-96

(1) LLCR = EIA-364-23

Open Circuit Voltage = 20 mV Max
Test Current = 100 mA Max

Tracking Code: 643164_Report_Rev_3	Part #: EBTf-4-10-2.0-S-RA-1/EBTM-4-10-2.0-S-VT-1
Part description: EBTf/EBTM	

ATTRIBUTE DEFINITIONS

The following is a brief, simplified description of attributes.

THERMAL SHOCK:

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

THERMAL:

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

HUMIDITY:

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

MECHANICAL SHOCK (Specified Pulse):

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

VIBRATION:

- 1) Reference document: EIA-364-28, *Vibration Test Procedure for Electrical Connectors*
- 2) Test Condition V, Letter B
- 3) Power Spectral Density: 0.04 G² / Hz
- 4) G 'RMS': 7.56
- 5) Frequency: 50 to 2000 Hz
- 6) Duration: 2.0 Hours per axis (3 axis total)

NANOSECOND-EVENT DETECTION:

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

MATING/UNMATING:

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

Tracking Code: 643164_Report_Rev_3	Part #: EBTF-4-10-2.0-S-RA-1/EBTM-4-10-2.0-S-VT-1
Part description: EBTF/EBTM	

ATTRIBUTE DEFINITIONS Continued

The following is a brief, simplified description of attributes

NORMAL FORCE (FOR CONTACTS TESTED IN THE HOUSING):

- 1) Reference document: EIA-364-04, *Normal Force Test Procedure for Electrical Connectors*.
- 2) The contacts shall be tested in the connector housing.
- 3) If necessary, a "window" shall be made in the connector body to allow a probe to engage and deflect the contact at the same attitude and distance (plus 0.05 mm [0.002"]) as would occur in actual use.
- 4) The connector housing shall be placed in a holding fixture that does not interfere with or otherwise influence the contact force or deflection.
- 5) Said holding fixture shall be mounted on a floating, adjustable, X-Y table on the base of the Dillon TC², computer controlled test stand with a deflection measurement system accuracy of 5.0 µm (0.0002").
- 6) The nominal deflection rate shall be 5 mm (0.2")/minute.
- 7) Unless otherwise noted a minimum of five contacts shall be tested.
- 8) The force/deflection characteristic to load and unload each contact shall be repeated five times.
- 9) The system shall utilize the TC² software in order to acquire and record the test data.
- 10) The permanent set of each contact shall be measured within the TC² software.
- 11) The acquired data shall be graphed with the deflection data on the X-axis and the force data on the Y-axis and a print out will be stored with the Tracking Code paperwork.

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. 65° C
 - c. 75° C
 - d. 95° 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.

1 Pin powered (center of connector location)

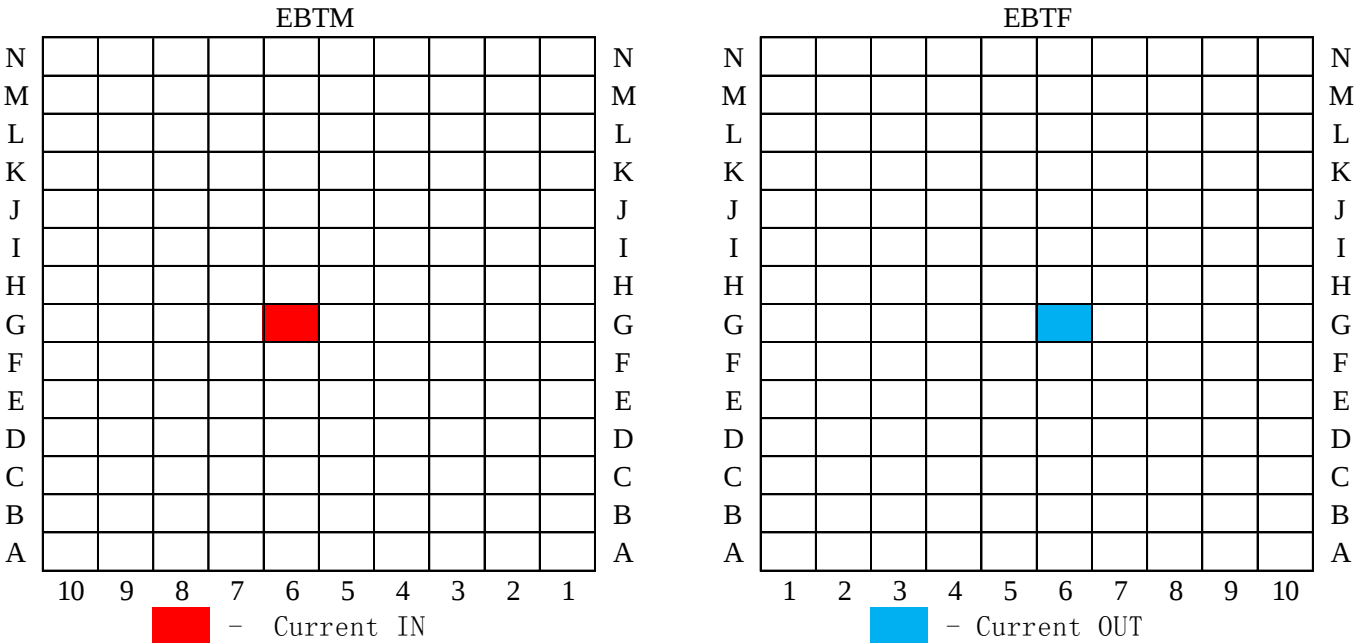


FIGURE 1

14 Pins powered (All signal pins combined to carry supply while all grounds on that wafer to carry return)

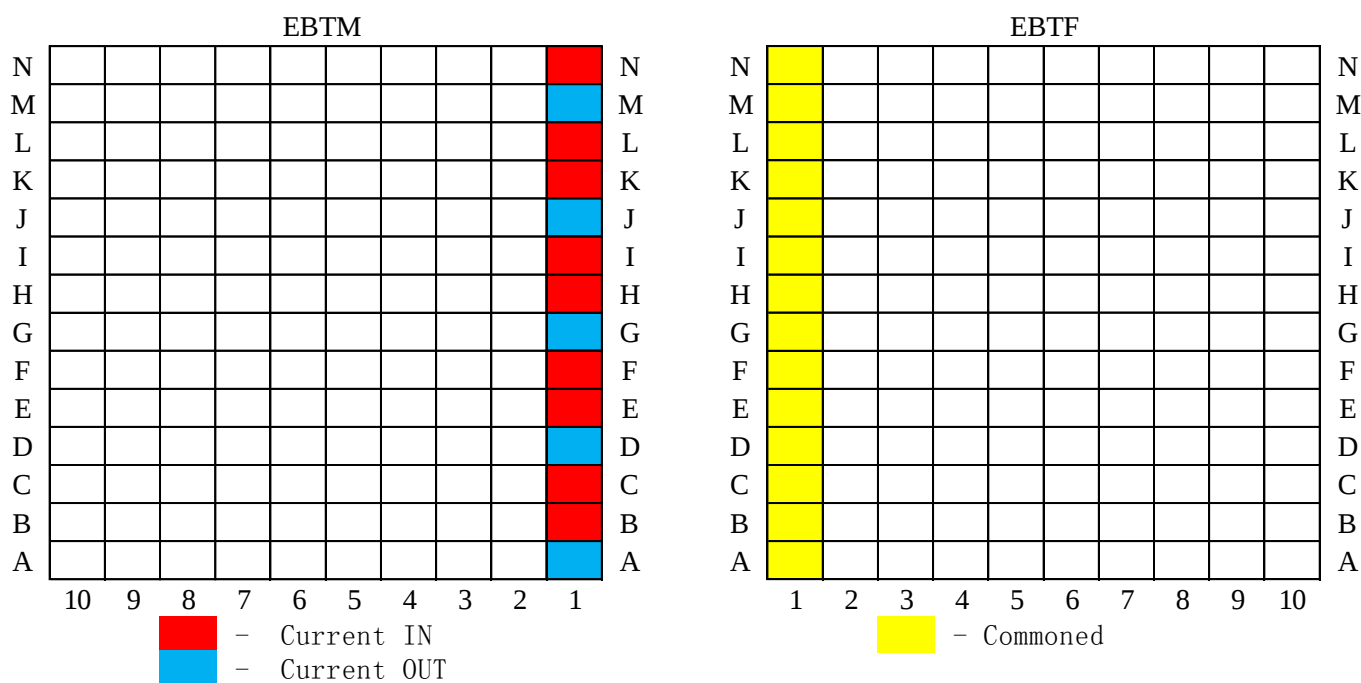


Figure 2

28 Pins powered (Center wafer carries supply while adjacent wafer to carry return)

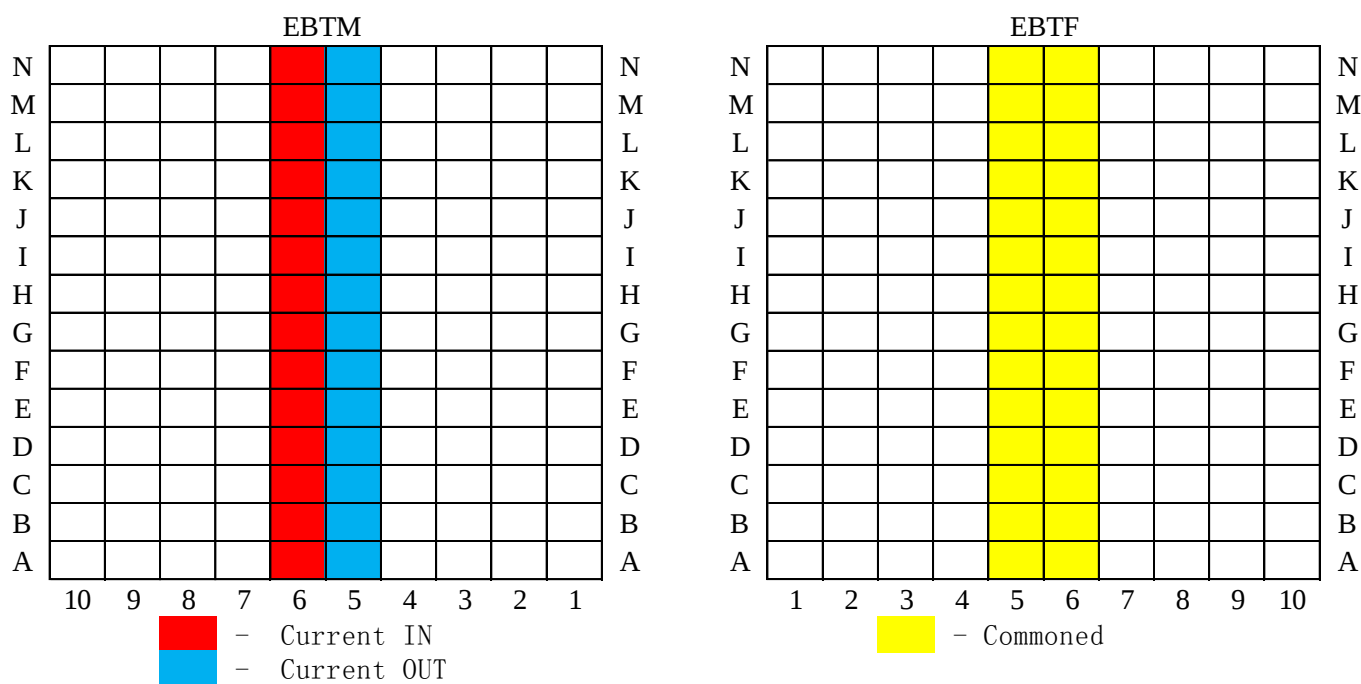


Figure 3

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. $\leq +5.0$ mOhms:----- Stable
 - b. $+5.1$ to $+10.0$ mOhms:----- Minor
 - c. $+10.1$ to $+15.0$ mOhms:----- Acceptable
 - d. $+15.1$ to $+50.0$ mOhms:----- Marginal
 - e. $+50.1$ to $+2000$ mOhms:----- Unstable
 - f. $>+2000$ mOhms:----- Open Failure
- 4) The following guidelines are used to categorize the changes in LLCR for compliant pin only
 - a. $\leq +0.33$ mOhms:----- Stable
 - b. $> +0.33$ to $+0.66$ mOhms:----- Minor
 - c. $+0.67$ to $+1$ mOhms:----- Acceptable
 - d. $+1.1$ to $+50.0$ mOhms:----- Marginal
 - e. $+50.1$ to $+2000$ mOhms:----- Unstable
 - f. $>+2000$ mOhms:----- Open Failure

ATTRIBUTE DEFINITIONS Continued

The following is a brief, simplified description of attributes

GAS TIGHT:

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

- 1) EIA-364-23, *Low Level Contact Resistance Test Procedure for Electrical Connectors and Sockets*.
- 2) A computer program, *LLCR 221.exe*, ensures repeatability for data acquisition.
- 3) The following guidelines are used to categorize the changes in LLCR as a result from stressing
 - a. $\leq +5.0$ mOhms: ----- Stable
 - b. $+5.1$ to $+10.0$ mOhms: ----- Minor
 - c. $+10.1$ to $+15.0$ mOhms: ----- Acceptable
 - d. $+15.1$ to $+50.0$ mOhms: ----- Marginal
 - e. $+50.1$ to $+2000$ mOhms: ----- Unstable
 - f. $>+2000$ mOhms: ----- Open Failure
- 4) Procedure:
 - a. Reference document: EIA-364-36, *Test Procedure for Determination of Gas-Tight Characteristics for Electrical Connectors, Sockets and/or Contact Systems*.
 - b. Test Conditions:
 - i. Class II--- Mated pairs of contacts assembled to their plastic housings.
 - ii. Reagent grade Nitric Acid shall be used of sufficient volume to saturate the test chamber
 - iii. The ratio of the volume of the test chamber to the surface area of the acid shall be 10:1.
 - iv. The chamber shall be saturated with the vapor for at least 15 minutes before samples are added.
 - v. Exposure time, 55 to 65 minutes.
 - vi. The samples shall be no closer to the chamber walls than 1 inches and no closer to the surface of the acid than 3 inches.
 - vii. The samples shall be dried after exposure for a minimum of 1 hour.
 - viii. Drying temperature 50° C
 - ix. The final LLCR shall be conducted within 1 hour after drying.
- 5) The following guidelines are used to categorize the changes in LLCR for compliant pin only
 - a. $\leq +0.33$ mOhms: ----- Stable
 - b. $> +0.33$ to $+0.66$ mOhms: ----- Minor
 - c. $+0.67$ to $+1$ mOhms: ----- Acceptable
 - d. $+1.1$ to $+50.0$ mOhms: ----- Marginal
 - e. $+50.1$ to $+2000$ mOhms: ----- Unstable
 - f. $>+2000$ mOhms: ----- Open Failure

Tracking Code: 643164_Report_Rev_3	Part #: EBTF-4-10-2.0-S-RA-1/EBTM-4-10-2.0-S-VT-1
Part description: EBTF/EBTM	

ATTRIBUTE DEFINITIONS Continued

The following is a brief, simplified description of attributes

INSULATION RESISTANCE (IR):

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

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

DIELECTRIC WITHSTANDING VOLTAGE (DWV):

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

- 1) PROCEDURE:
 - a. Reference document: EIA-364-20, *Withstanding Voltage Test Procedure for Electrical Connectors*.
 - b. Test Conditions:
 - i. Between Adjacent Contacts or Signal-to-Ground
 - ii. Barometric Test Condition 1
 - iii. Rate of Application 500 V/Sec
 - iv. Test Voltage (VAC) until breakdown occurs
- 2) MEASUREMENTS/CALCULATIONS
 - a. The breakdown voltage shall be measured and recorded.
 - b. The dielectric withstanding voltage shall be recorded as 75% of the minimum breakdown voltage.
 - c. The working voltage shall be recorded as one-third (1/3) of the dielectric withstanding voltage (one-fourth of the breakdown voltage).

RESULTS

Temperature Rise, CCC at a 20% de-rating

- CCC for a 30°C Temperature Rise-----4.2 A with 1 contact (1x1) powered
- CCC for a 30°C Temperature Rise-----12.0 A with 14 contacts (1x14) powered
- CCC for a 30°C Temperature Rise-----16.7 A with 28 contacts (2x14) powered

Notes: 1. 1 Pin powered at the center of connector location, please see figure 1.
2. 14 Pins powered with all signal pins combined to carry supply while all grounds on that wafer to carry return, please see figure 2.
3. 28 Pins powered with center wafer carries supply while adjacent wafer to carry return, please see figure 3.

Mating/Unmating Forces:

Thermal Aging Group

- Initial
 - Mating
 - Min-----7.94 Lbs (35.32 N)
 - Max -----8.45 Lbs (37.57 N)
 - Unmating
 - Min-----4.09 Lbs (18.17 N)
 - Max -----4.37 Lbs (19.45 N)
- After Thermal
 - Mating
 - Min-----4.73 Lbs (21.05 N)
 - Max -----5.00 Lbs (22.22 N)
 - Unmating
 - Min-----2.91 Lbs (12.94 N)
 - Max -----3.17 Lbs (14.08 N)

RESULTS Continued

Mating/Unmating Durability Group

- Initial
 - Mating
 - Min-----7.19 Lbs (31.97 N)
 - Max-----7.49 Lbs (33.32 N)
 - Unmating
 - Min-----3.90 Lbs (17.35 N)
 - Max-----4.17 Lbs (18.55 N)
- After 25 Cycles
 - Mating
 - Min-----7.36 Lbs (32.74 N)
 - Max-----8.20 Lbs (36.46 N)
 - Unmating
 - Min-----4.50 Lbs (20.00 N)
 - Max-----4.83 Lbs (21.49 N)
- After 50 Cycles
 - Mating
 - Min-----7.58 Lbs (33.69 N)
 - Max-----8.49 Lbs (37.75 N)
 - Unmating
 - Min-----4.66 Lbs (20.72 N)
 - Max-----5.17 Lbs (22.99 N)
- After 75 Cycles
 - Mating
 - Min-----7.57 Lbs (33.65 N)
 - Max-----8.55 Lbs (38.01 N)
 - Unmating
 - Min-----4.84 Lbs (21.51 N)
 - Max-----5.30 Lbs (23.59 N)
- After 100 Cycles
 - Mating
 - Min-----7.76 Lbs (34.53 N)
 - Max-----8.67 Lbs (38.56 N)
 - Unmating
 - Min-----4.85 Lbs (21.58 N)
 - Max-----5.40 Lbs (24.01 N)
- After Humidity
 - Mating
 - Min-----4.76 Lbs (21.17 N)
 - Max-----5.49 Lbs (24.42 N)
 - Unmating
 - Min-----3.64 Lbs (16.21 N)
 - Max-----4.00 Lbs (17.79 N)

RESULTS Continued

Normal Force at 0.0118 inch deflection

EBTF-4-10-2.0-S-RA-1 (Signal wafer A)

- Initial
 - Min ----- 40.10 gf Set ----- 0.0001 in
 - Max ----- 70.90 gf Set ----- 0.0007 in
- After Thermal
 - Min ----- 14.90 gf Set ----- 0.0026 in
 - Max ----- 47.80 gf Set ----- 0.0078 in

EBTF-4-10-2.0-S-RA-1 (Ground wafer A)

- Initial
 - Min ----- 45.00 gf Set ----- 0.0000 in
 - Max ----- 60.70 gf Set ----- 0.0009 in
- After Thermal
 - Min ----- 17.80 gf Set ----- 0.0028 in
 - Max ----- 40.50 gf Set ----- 0.0060 in

EBTF-4-10-2.0-S-RA-1 (Signal wafer B)

- Initial
 - Min ----- 56.80 gf Set ----- 0.0002 in
 - Max ----- 71.20 gf Set ----- 0.0012 in
- After Thermal
 - Min ----- 27.60 gf Set ----- 0.0033 in
 - Max ----- 47.50 gf Set ----- 0.0061 in

EBTF-4-10-2.0-S-RA-1 (Ground wafer B)

- Initial
 - Min ----- 48.20 gf Set ----- 0.0000 in
 - Max ----- 60.50 gf Set ----- 0.0010 in
- After Thermal
 - Min ----- 25.40 gf Set ----- 0.0046 in
 - Max ----- 47.40 gf Set ----- 0.0102 in

EBTM-4-10-2.0-S-VT-1 (Signal wafer A)

- Initial
 - Min ----- 56.40 gf Set ----- 0.0002 in
 - Max ----- 67.90 gf Set ----- 0.0010 in
- After Thermal
 - Min ----- 38.00 gf Set ----- 0.0028 in
 - Max ----- 51.30 gf Set ----- 0.0041 in

EBTM-4-10-2.0-S-VT-1 (Ground wafer A)

- Initial
 - Min ----- 50.30 gf Set ----- 0.0001 in
 - Max ----- 60.00 gf Set ----- 0.0022 in
- After Thermal
 - Min ----- 39.10 gf Set ----- 0.0004 in
 - Max ----- 63.60 gf Set ----- 0.0044 in

EBTM-4-10-2.0-S-VT-1 (Signal wafer B)

- Initial
 - Min ----- 59.20 gf Set ----- 0.0002 in
 - Max ----- 68.70 gf Set ----- 0.0004 in
- After Thermal
 - Min ----- 31.00 gf Set ----- 0.0027 in
 - Max ----- 46.20 gf Set ----- 0.0051 in

EBTM-4-10-2.0-S-VT-1 (Ground wafer B)

- **Initial**
 - **Min ----- 55.00 gf Set -----0.0003 in**
 - **Max----- 69.10 gf Set -----0.0018 in**
- **After Thermal**
 - **Min ----- 40.50 gf Set -----0.0016 in**
 - **Max----- 52.30 gf Set -----0.0042 in**

RESULTS Continued

Insulation Resistance minimums, IR

Pin to Pin

- Initial
 - Mated ----- 45000 Meg Ω ----- Passed
- Thermal
 - Mated ----- 45000 Meg Ω ----- Passed
- Humidity
 - Mated ----- 45000 Meg Ω ----- Passed

Row to Row

- Initial
 - Mated ----- 45000 Meg Ω ----- Passed
- Thermal
 - Mated ----- 45000 Meg Ω ----- Passed
- Humidity
 - Mated ----- 45000 Meg Ω ----- Passed

Pin to Ground

- Initial
 - Mated ----- 45000 Meg Ω ----- Passed
- Thermal
 - Mated ----- 45000 Meg Ω ----- Passed
- Humidity
 - Mated ----- 45000 Meg Ω ----- Passed

Dielectric Withstanding Voltage minimums, DWV

- Minimums
 - Breakdown Voltage ----- 655 VAC
 - Test Voltage ----- 495 VAC
 - Working Voltage ----- 160 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

Pin to Ground

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

RESULTS Continued

LLCR Gas Tight (192 LLCR test points)

- Row 1
- Initial ----- 11.85 mOhms Max
- Row 2
- Initial ----- 15.88 mOhms Max
- Row 3
- Initial ----- 22.25 mOhms Max
- Ground
- Initial ----- 3.34 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

LLCR Gas Tight Compliant pin (30 LLCR test points)

EBTF-4-10-2.0-S-RA-1 Tin (immersion) 0.016" Sig PTH, 0.022" Gnd PTH

- Signal
- Initial ----- 0.26 mOhms Max
- Ground
- Initial ----- 0.08 mOhms Max
 - Gas-Tight
 - <= +0.33 mOhms ----- 30 Points----- Stable
 - +0.34 to +0.66 mOhms ----- 0 Points----- Minor
 - +0.67 to +1 mOhms ----- 0 Points----- Acceptable
 - +1.1 to +50.0 mOhms ----- 0 Points----- Marginal
 - +50.1 to +2000 mOhms ----- 0 Points----- Unstable
 - >+2000 mOhms ----- 0 Points----- Open Failure

EBTM-4-10-2.0-S-VT-1 Tin (immersion) 0.016" Sig PTH, 0.022" Gnd PTH

- Signal
- Initial ----- 0.19 mOhms Max
- Ground
- Initial ----- 0.12 mOhms Max
 - Gas-Tight
 - <= +0.33 mOhms ----- 30 Points----- Stable
 - +0.34 to +0.66 mOhms ----- 0 Points----- Minor
 - +0.67 to +1 mOhms ----- 0 Points----- Acceptable
 - +1.1 to +50.0 mOhms ----- 0 Points----- Marginal
 - +50.1 to +2000 mOhms ----- 0 Points----- Unstable
 - >+2000 mOhms ----- 0 Points----- Open Failure

RESULTS Continued

LLCR Thermal Aging (192 LLCR test points)

- Row 1
 - Initial ----- 12.29 mOhms Max
- Row 2
 - Initial ----- 16.78 mOhms Max
- Row 3
 - Initial ----- 23.02 mOhms Max
- Ground
 - Initial ----- 3.80 mOhms Max
 - Thermal Aging
 - <= +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 +2000 mOhms ----- 0 Points-----Unstable
 - >+2000 mOhms ----- 0 Points-----Open Failure

LLCR Thermal Aging Compliant pin (30 LLCR test points)

EBTF-4-10-2.0-S-RA-1 Tin (immersion) 0.016" Sig PTH, 0.022" Gnd PTH

- Signal
 - Initial ----- 0.27 mOhms Max
- Ground
 - Initial ----- 0.07 mOhms Max
 - Thermal Aging
 - <= +0.33 mOhms ----- 30 Points-----Stable
 - +0.34 to +0.66 mOhms ----- 0 Points-----Minor
 - +0.67 to +1 mOhms ----- 0 Points-----Acceptable
 - +1.1 to +50.0 mOhms ----- 0 Points-----Marginal
 - +50.1 to +2000 mOhms ----- 0 Points-----Unstable
 - >+2000 mOhms ----- 0 Points-----Open Failure

EBTM-4-10-2.0-S-VT-1 Tin (immersion) 0.016" Sig PTH, 0.022" Gnd PTH

- Signal
 - Initial ----- 0.16 mOhms Max
- Ground
 - Initial ----- 0.14 mOhms Max
 - Thermal Aging
 - <= +0.33 mOhms ----- 30 Points-----Stable
 - +0.34 to +0.66 mOhms ----- 0 Points-----Minor
 - +0.67 to +1 mOhms ----- 0 Points-----Acceptable
 - +1.1 to +50.0 mOhms ----- 0 Points-----Marginal
 - +50.1 to +2000 mOhms ----- 0 Points-----Unstable
 - >+2000 mOhms ----- 0 Points-----Open Failure

RESULTS Continued

LLCR Durability (192 LLCR test points)

Row 1

- Initial ----- 12.08 mOhms Max

Row 2

- Initial ----- 16.17 mOhms Max

Row 3

- Initial ----- 22.54 mOhms Max

Ground

- Initial ----- 3.59 mOhms Max

- Durability, 100 Cycles

- <= +5.0 mOhms ----- 192 Points-----Stable
- +5.1 to +10.0 mOhms ----- 0 Points-----Minor
- +10.1 to +15.0 mOhms ----- 0 Points-----Acceptable
- +15.1 to +50.0 mOhms ----- 0 Points-----Marginal
- +50.1 to +2000 mOhms ----- 0 Points-----Unstable
- >+2000 mOhms ----- 0 Points-----Open Failure

- Thermal

- <= +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 Durability Compliant pin (30 LLCR test points)

EBTF-4-10-2.0-S-RA-1 Tin (immersion) 0.016" Sig PTH, 0.022" Gnd PTH

Signal

- Initial ----- 0.30 mOhms Max

Ground

- Initial ----- 0.07 mOhms Max
- Thermal
 - <= +0.33 mOhms ----- 30 Points ----- Stable
 - +0.34 to +0.66 mOhms ----- 0 Points ----- Minor
 - +0.67 to +1 mOhms ----- 0 Points ----- Acceptable
 - +1.1 to +50.0 mOhms ----- 0 Points ----- Marginal
 - +50.1 to +2000 mOhms ----- 0 Points ----- Unstable
 - >+2000 mOhms ----- 0 Points ----- Open Failure
- Humidity
 - <= +0.33 mOhms ----- 30 Points ----- Stable
 - +0.34 to +0.66 mOhms ----- 0 Points ----- Minor
 - +0.67 to +1 mOhms ----- 0 Points ----- Acceptable
 - +1.1 to +50.0 mOhms ----- 0 Points ----- Marginal
 - +50.1 to +2000 mOhms ----- 0 Points ----- Unstable
 - >+2000 mOhms ----- 0 Points ----- Open Failure

EBTM-4-10-2.0-S-VT-1 Tin (immersion) 0.016" Sig PTH, 0.022" Gnd PTH

Signal

- Initial ----- 0.21 mOhms Max

Ground

- Initial ----- 0.16 mOhms Max
- Thermal
 - <= +0.33 mOhms ----- 30 Points ----- Stable
 - +0.34 to +0.66 mOhms ----- 0 Points ----- Minor
 - +0.67 to +1 mOhms ----- 0 Points ----- Acceptable
 - +1.1 to +50.0 mOhms ----- 0 Points ----- Marginal
 - +50.1 to +2000 mOhms ----- 0 Points ----- Unstable
 - >+2000 mOhms ----- 0 Points ----- Open Failure
- Humidity
 - <= +0.33 mOhms ----- 30 Points ----- Stable
 - +0.34 to +0.66 mOhms ----- 0 Points ----- Minor
 - +0.67 to +1 mOhms ----- 0 Points ----- Acceptable
 - +1.1 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 (192 LLCR test points)

- Row 1
 - Initial ----- 12.25 mOhms Max
- Row 2
 - Initial ----- 16.50 mOhms Max
- Row 3
 - Initial ----- 22.63 mOhms Max
- Ground
 - Initial ----- 3.57 mOhms Max
 - Shock & Vibration
 - ≤ +5.0 mOhms ----- 192 Points ----- Stable
 - +5.1 to +10.0 mOhms ----- 0 Points ----- Minor
 - +10.1 to +15.0 mOhms ----- 0 Points ----- Acceptable
 - +15.1 to +50.0 mOhms ----- 0 Points ----- Marginal
 - +50.1 to +2000 mOhms ----- 0 Points ----- Unstable
 - >+2000 mOhms ----- 0 Points ----- Open Failure

Mechanical Shock & Random Vibration:

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

LLCR Shock & Vibration Compliant pin (30 LLCR test points)

EBTF-4-10-2.0-S-RA-1 Tin (immersion) 0.016" Sig PTH, 0.022" Gnd PTH

- Signal
 - Initial ----- 0.28 mOhms Max
- Ground
 - Initial ----- 0.08 mOhms Max
 - Shock & Vibration
 - ≤ +0.33 mOhms ----- 30 Points ----- Stable
 - +0.34 to +0.66 mOhms ----- 0 Points ----- Minor
 - +0.67 to +1 mOhms ----- 0 Points ----- Acceptable
 - +1.1 to +50.0 mOhms ----- 0 Points ----- Marginal
 - +50.1 to +2000 mOhms ----- 0 Points ----- Unstable
 - >+2000 mOhms ----- 0 Points ----- Open Failure

EBTM-4-10-2.0-S-VT-1 Tin (immersion) 0.016" Sig PTH, 0.022" Gnd PTH

- Signal
 - Initial ----- 0.26 mOhms Max
- Ground
 - Initial ----- 0.24 mOhms Max
 - Shock & Vibration
 - ≤ +0.33 mOhms ----- 30 Points ----- Stable
 - +0.34 to +0.66 mOhms ----- 0 Points ----- Minor
 - +0.67 to +1 mOhms ----- 0 Points ----- Acceptable
 - +1.1 to +50.0 mOhms ----- 0 Points ----- Marginal
 - +50.1 to +2000 mOhms ----- 0 Points ----- Unstable
 - >+2000 mOhms ----- 0 Points ----- Open Failure

RESULTS Continued

Pressfit Hole Evaluation: Insertion/Withdrawal force

Group 1 EBTF-4-10-2.0-S-RA-1 Tin (immersion) 0.012” Sig PTH, 0.018” Gnd PTH

Signal

- **Initial**
 - **Mating**
 - **Min**-----3.03 Lbs (13.48 N)
 - **Max**-----3.84 Lbs (17.08 N)
 - **Unmating**
 - **Min**-----1.31 Lbs (5.83 N)
 - **Max**-----1.66 Lbs (7.38 N)
- **After 3 Cycles**
 - **Mating**
 - **Min**-----2.55 Lbs (11.34 N)
 - **Max**-----3.03 Lbs (13.48 N)
 - **Unmating**
 - **Min**-----1.31 Lbs (5.83 N)
 - **Max**-----1.88 Lbs (8.36 N)

Ground

- **Initial**
 - **Mating**
 - **Min**-----2.73 Lbs (12.14 N)
 - **Max**-----3.59 Lbs (15.97 N)
 - **Unmating**
 - **Min**-----1.10 Lbs (4.89 N)
 - **Max**-----1.58 Lbs (7.03 N)
- **After 3 Cycles**
 - **Mating**
 - **Min**-----2.03 Lbs (9.03 N)
 - **Max**-----2.63 Lbs (11.70 N)
 - **Unmating**
 - **Min**-----1.11 Lbs (4.94 N)
 - **Max**-----1.77 Lbs (7.87 N)

RESULTS Continued

Group 2 EBTF-4-10-2.0-S-RA-1 Tin (immersion) 0.016” Sig PTH, 0.022” Gnd PTH
Signal

- **Initial**
 - **Mating**
 - **Min**-----2.19 Lbs (9.74 N)
 - **Max**-----2.43 Lbs (10.81 N)
 - **Unmating**
 - **Min**-----1.13 Lbs (5.03 N)
 - **Max**-----1.42 Lbs (6.32 N)
- **After 3 Cycles**
 - **Mating**
 - **Min**-----1.77 Lbs (7.87 N)
 - **Max**-----2.09 Lbs (9.30 N)
 - **Unmating**
 - **Min**-----1.22 Lbs (5.43 N)
 - **Max**-----1.70 Lbs (7.56 N)

Ground

- **Initial**
 - **Mating**
 - **Min**-----1.58 Lbs (7.03 N)
 - **Max**-----2.04 Lbs (9.07 N)
 - **Unmating**
 - **Min**-----0.92 Lbs (4.09 N)
 - **Max**-----1.23 Lbs (5.47 N)
- **After 3 Cycles**
 - **Mating**
 - **Min**-----1.43 Lbs (6.36 N)
 - **Max**-----1.93 Lbs (8.58 N)
 - **Unmating**
 - **Min**-----1.08 Lbs (4.80 N)
 - **Max**-----1.56 Lbs (6.94 N)

RESULTS Continued

Group 3 EBTM-4-10-2.0-S-VT-1 Tin (immersion) 0.012” Sig PTH, 0.018” Gnd PTH
Signal

- **Initial**
 - **Mating**
 - **Min**-----3.05 Lbs (13.57 N)
 - **Max**-----4.05 Lbs (18.01 N)
 - **Unmating**
 - **Min**-----1.32 Lbs (5.87 N)
 - **Max**-----1.92 Lbs (8.54 N)
- **After 3 Cycles**
 - **Mating**
 - **Min**-----2.61 Lbs (11.61 N)
 - **Max**-----3.13 Lbs (13.92 N)
 - **Unmating**
 - **Min**-----1.16 Lbs (5.16 N)
 - **Max**-----1.94 Lbs (8.63 N)

Ground

- **Initial**
 - **Mating**
 - **Min**-----3.28 Lbs (14.59 N)
 - **Max**-----3.75 Lbs (16.68 N)
 - **Unmating**
 - **Min**-----1.09 Lbs (4.85 N)
 - **Max**-----1.50 Lbs (6.67 N)
- **After 3 Cycles**
 - **Mating**
 - **Min**-----2.44 Lbs (10.85 N)
 - **Max**-----2.99 Lbs (13.30 N)
 - **Unmating**
 - **Min**-----1.25 Lbs (5.56 N)
 - **Max**-----1.86 Lbs (8.27 N)

RESULTS Continued

Group 4 EBTM-4-10-2.0-S-VT-1 Tin (immersion) 0.016” Sig PTH, 0.022” Gnd PTH

Signal

- **Initial**
 - **Mating**
 - **Min**-----2.36 Lbs (10.50 N)
 - **Max**-----2.84 Lbs (12.63 N)
 - **Unmating**
 - **Min**-----1.12 Lbs (4.98 N)
 - **Max**-----1.45 Lbs (6.45 N)
- **After 3 Cycles**
 - **Mating**
 - **Min**-----1.85 Lbs (8.23 N)
 - **Max**-----2.18 Lbs (9.70 N)
 - **Unmating**
 - **Min**-----1.29 Lbs (5.74 N)
 - **Max**-----1.85 Lbs (8.23 N)

Ground

- **Initial**
 - **Mating**
 - **Min**-----1.82 Lbs (8.10 N)
 - **Max**-----2.13 Lbs (9.47 N)
 - **Unmating**
 - **Min**-----0.91 Lbs (4.05 N)
 - **Max**-----1.17 Lbs (5.20 N)
- **After 3 Cycles**
 - **Mating**
 - **Min**-----1.69 Lbs (7.52 N)
 - **Max**-----1.93 Lbs (8.58 N)
 - **Unmating**
 - **Min**-----0.97 Lbs (4.31 N)
 - **Max**-----1.32 Lbs (5.87 N)

RESULTS Continued

Pressfit Hole Evaluation: LLCr (30 LLCr test points)

Group 1 EBTf-4-10-2.0-S-RA-1 Tin (immersion) 0.012" Sig PTH, 0.018" Gnd PTH

Signal

- Initial ----- 0.22 mOhms Max

Ground

- Initial ----- 0.54 mOhms Max
- Shock & Vibration
 - ≤ +0.33 mOhms ----- 28 Points ----- Stable
 - +0.34 to +0.66 mOhms ----- 2 Points ----- Minor
 - +0.67 to +1 mOhms ----- 0 Points ----- Acceptable
 - +1.1 to +50.0 mOhms ----- 0 Points ----- Marginal
 - +50.1 to +2000 mOhms ----- 0 Points ----- Unstable
 - >+2000 mOhms ----- 0 Points ----- Open Failure

Group 2 EBTf-4-10-2.0-S-RA-1 Tin (immersion) 0.016" Sig PTH, 0.022" Gnd PTH

Signal

- Initial ----- 0.29 mOhms Max

Ground

- Initial ----- 0.65 mOhms Max
- Shock & Vibration
 - ≤ +0.33 mOhms ----- 21 Points ----- Stable
 - +0.34 to +0.66 mOhms ----- 9 Points ----- Minor
 - +0.67 to +1 mOhms ----- 0 Points ----- Acceptable
 - +1.1 to +50.0 mOhms ----- 0 Points ----- Marginal
 - +50.1 to +2000 mOhms ----- 0 Points ----- Unstable
 - >+2000 mOhms ----- 0 Points ----- Open Failure

Group 3 EBTM-4-10-2.0-S-VT-1 Tin (immersion) 0.012" Sig PTH, 0.018" Gnd PTH

Signal

- Initial ----- 0.24 mOhms Max

Ground

- Initial ----- 0.07 mOhms Max
- Shock & Vibration
 - ≤ +0.33 mOhms ----- 30 Points ----- Stable
 - +0.34 to +0.66 mOhms ----- 0 Points ----- Minor
 - +0.67 to +1 mOhms ----- 0 Points ----- Acceptable
 - +1.1 to +50.0 mOhms ----- 0 Points ----- Marginal
 - +50.1 to +2000 mOhms ----- 0 Points ----- Unstable
 - >+2000 mOhms ----- 0 Points ----- Open Failure

Group 4 EBTM-4-10-2.0-S-VT-1 Tin (immersion) 0.016" Sig PTH, 0.022" Gnd PTH

Signal

- Initial ----- 0.31 mOhms Max

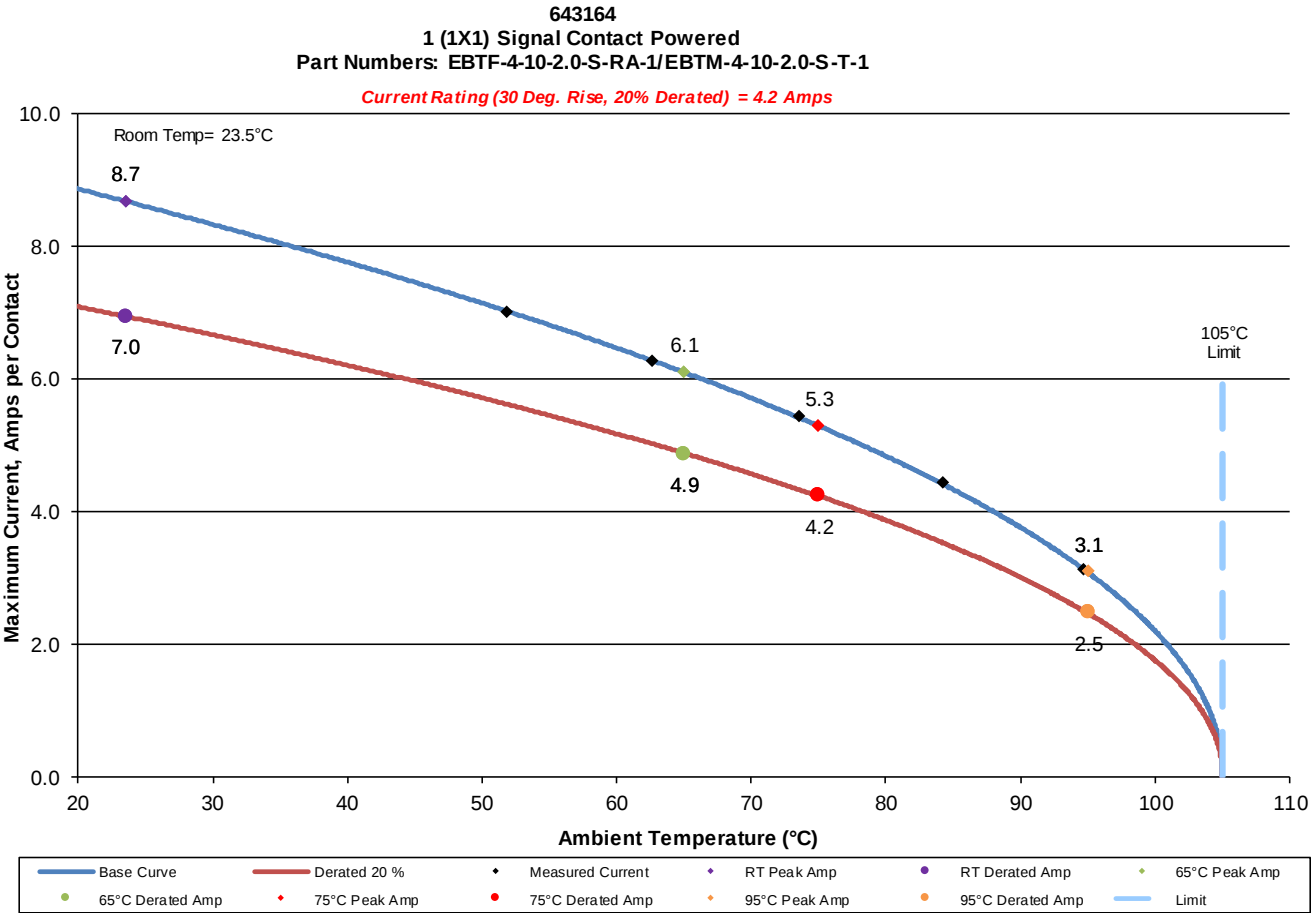
Ground

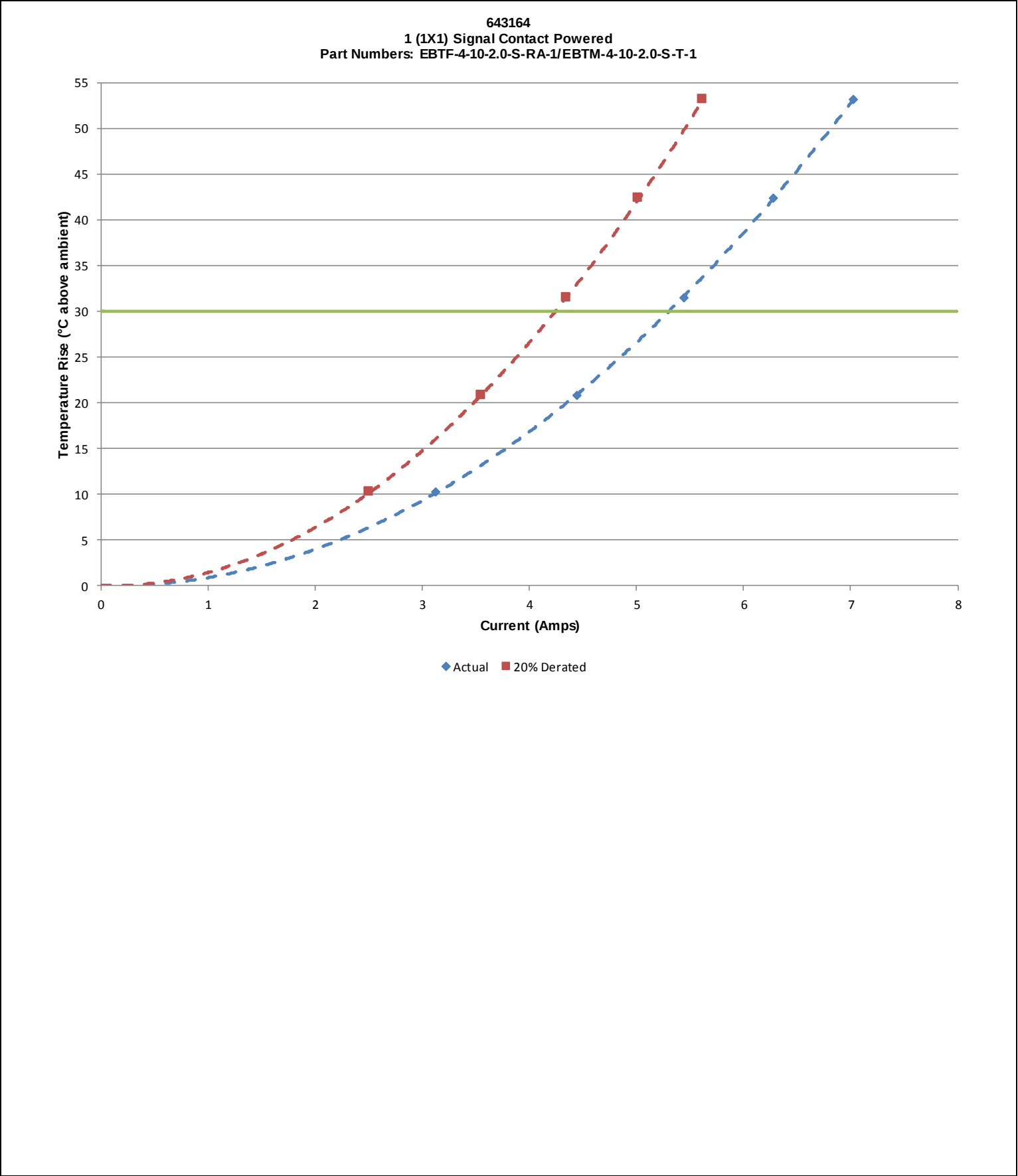
- Initial ----- 0.11 mOhms Max
- Shock & Vibration
 - ≤ +0.33 mOhms ----- 30 Points ----- Stable
 - +0.34 to +0.66 mOhms ----- 0 Points ----- Minor
 - +0.67 to +1 mOhms ----- 0 Points ----- Acceptable
 - +1.1 to +50.0 mOhms ----- 0 Points ----- Marginal
 - +50.1 to +2000 mOhms ----- 0 Points ----- Unstable
 - >+2000 mOhms ----- 0 Points ----- Open Failure

DATA SUMMARIES

TEMPERATURE RISE (Current Carrying Capacity, CCC):

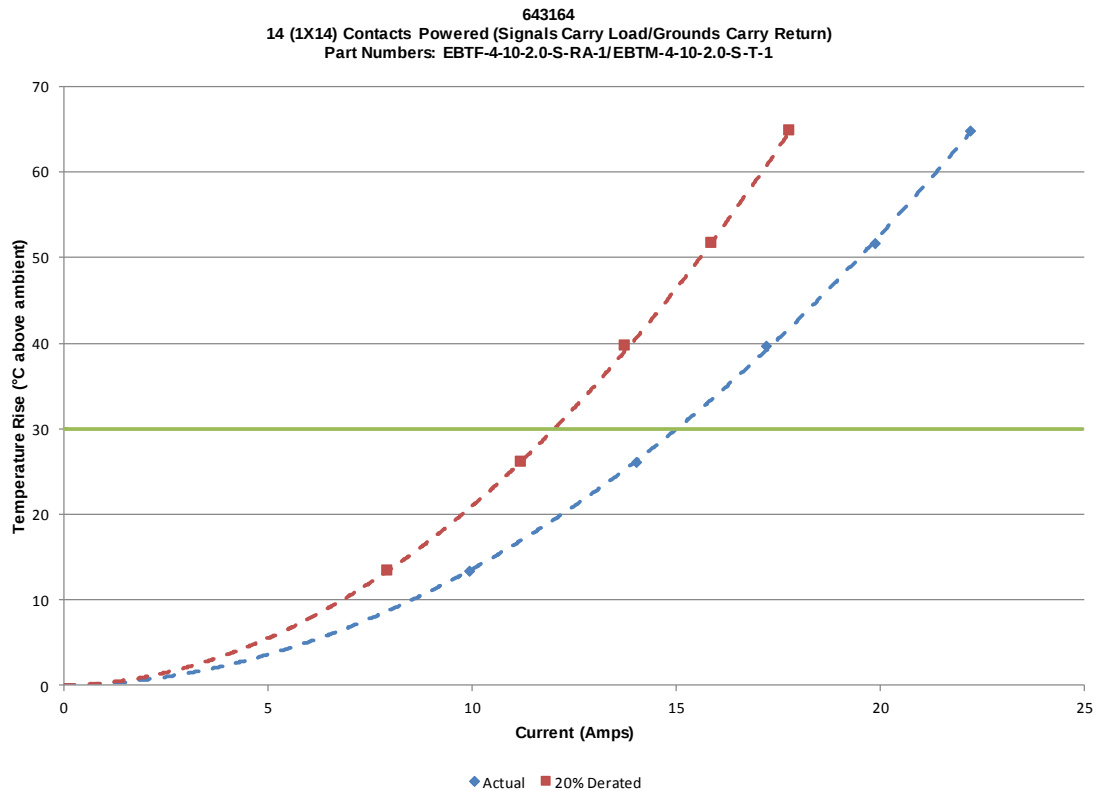
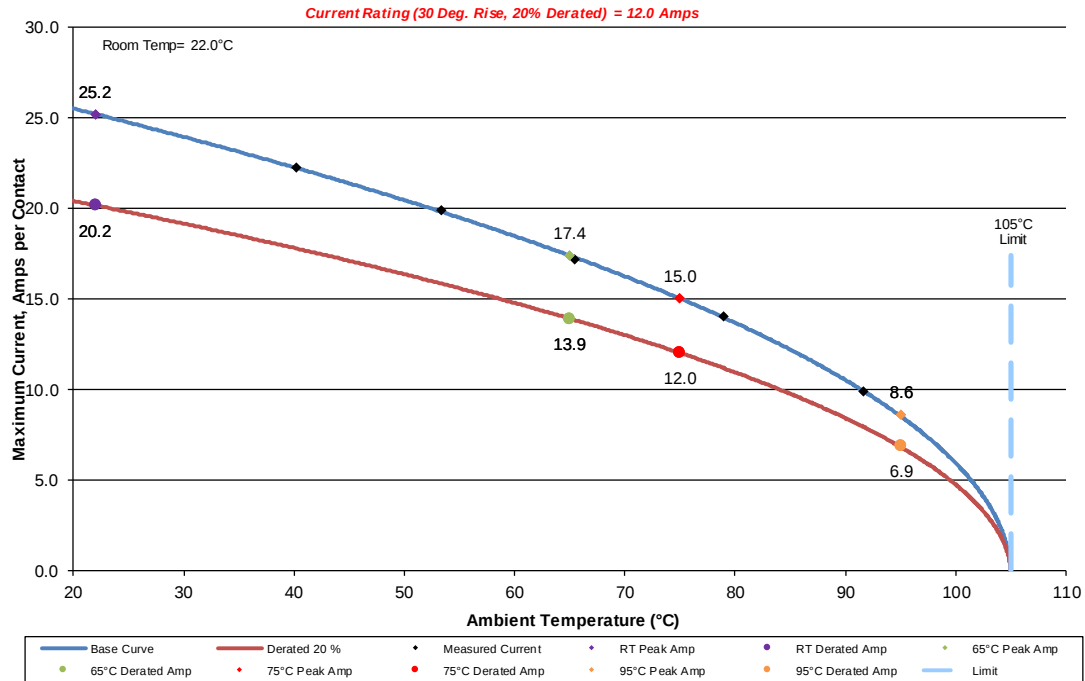
- High quality thermocouples whose temperature slopes track one another were used for temperature monitoring.
- The thermocouples were placed at a location to sense the maximum temperature generated during testing.
- Temperature readings recorded are those for which three successive readings, 15 minutes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





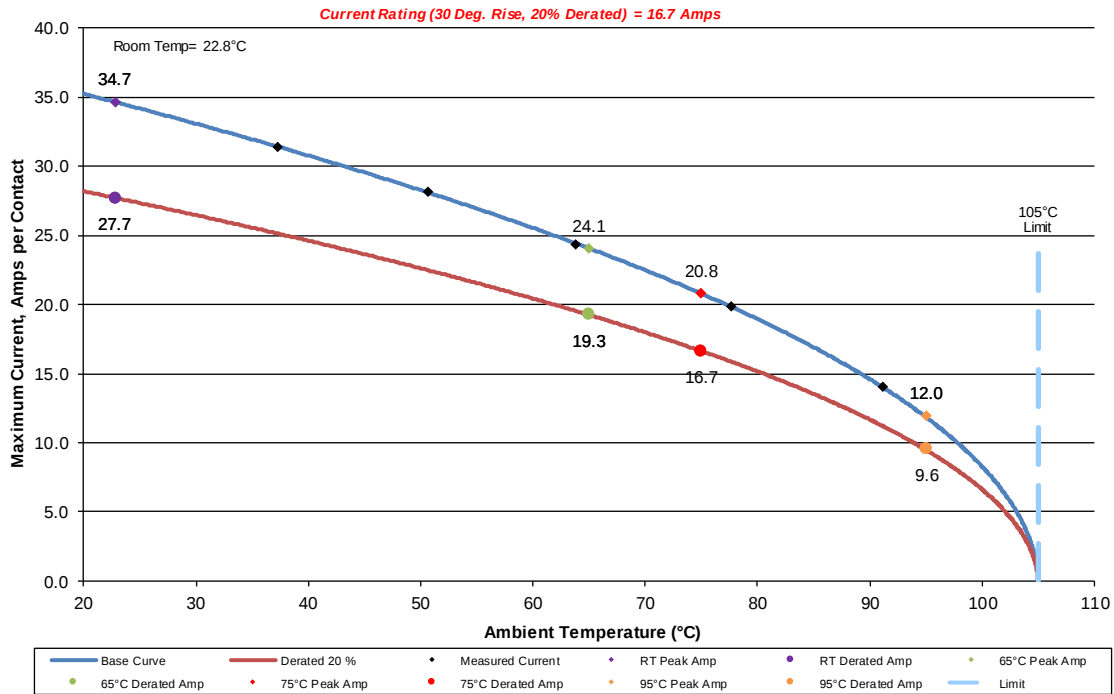
DATA SUMMARIES Continued**b. 14 Contacts powered (Signal carry load/grounds carry return)**

643164
14 (1X14) Contacts Powered (Signals Carry Load/Grounds Carry Return)
Part Numbers: EBTf-4-10-2.0-S-RA-1/EBTM-4-10-2.0-S-T-1

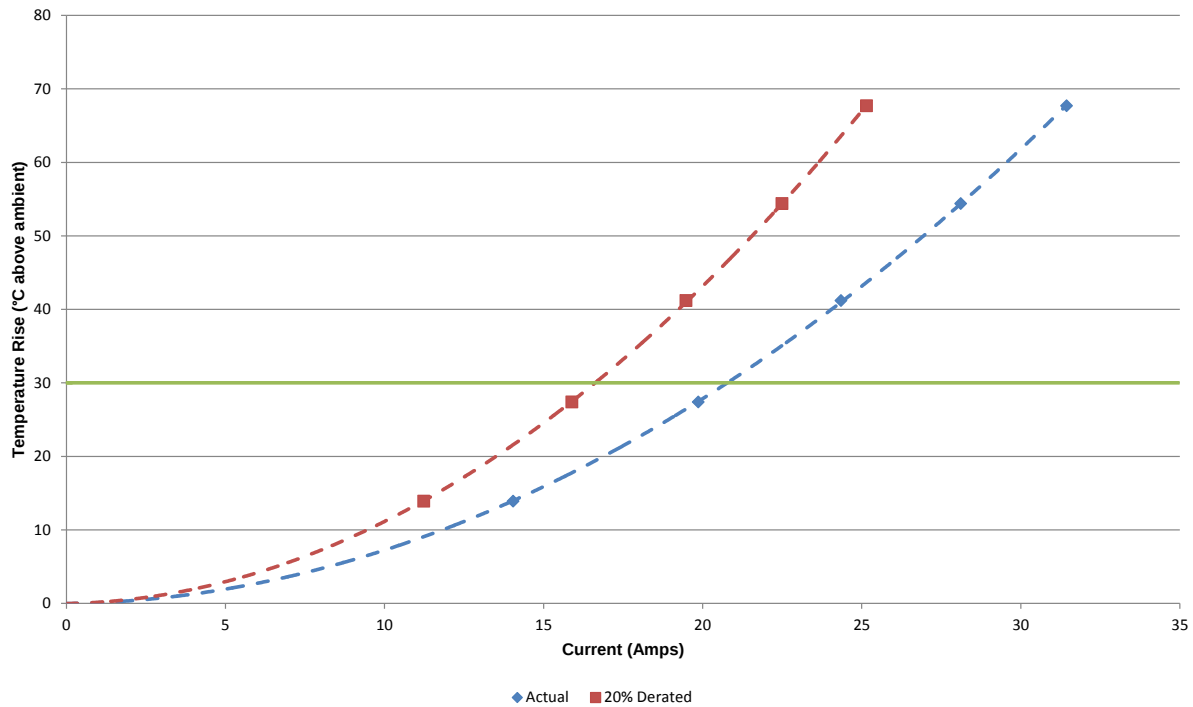


DATA SUMMARIES Continued**c. 28 Contacts powered (1 Wafer carrying load/Adjacet wafer carrying return)**

643164
28 (2X14) Contacts Powered (1 Wafer Carrying load/Adjacet Wafer Carrying Return)
Part Numbers: EBTF-4-10-2.0-S-RA-1/EBTM-4-10-2.0-S-T-1



643164
28 (2X14) Contacts Powered (1 Wafer Carrying load/Adjacet Wafer Carrying Return)
Part Numbers: EBTF-4-10-2.0-S-RA-1/EBTM-4-10-2.0-S-T-1



DATA SUMMARIES Continued

Mating\Unmating Force: Thermal Aging Group

	Initial				After Thermals			
	Mating		Unmating		Mating		Unmating	
	Newton's	Force (Lbs)	Newton's	Force (Lbs)	Newton's	Force (Lbs)	Newton's	Force (Lbs)
Minimum	35.32	7.94	18.17	4.09	21.05	4.73	12.94	2.91
Maximum	37.57	8.45	19.45	4.37	22.22	5.00	14.08	3.17
Average	36.44	8.19	18.70	4.20	21.57	4.85	13.32	2.99
St Dev	0.63	0.14	0.44	0.10	0.45	0.10	0.40	0.09
Count	8	8	8	8	8	8	8	8

Mating\Unmating Durability Group

	Initial				After 25 Cycles			
	Mating		Unmating		Mating		Unmating	
	Newton's	Force (Lbs)	Newton's	Force (Lbs)	Newton's	Force (Lbs)	Newton's	Force (Lbs)
Minimum	31.97	7.19	17.35	3.90	32.74	7.36	20.00	4.50
Maximum	33.32	7.49	18.55	4.17	36.46	8.20	21.49	4.83
Average	32.73	7.36	18.10	4.07	35.08	7.89	20.91	4.70
St Dev	0.49	0.11	0.37	0.08	1.32	0.30	0.60	0.14
Count	8	8	8	8	8	8	8	8

	After 50 Cycles				After 75 Cycles			
	Mating		Unmating		Mating		Unmating	
	Newton's	Force (Lbs)	Newton's	Force (Lbs)	Newton's	Force (Lbs)	Newton's	Force (Lbs)
Minimum	33.69	7.58	20.72	4.66	33.65	7.57	21.51	4.84
Maximum	37.75	8.49	22.99	5.17	38.01	8.55	23.59	5.30
Average	36.10	8.12	22.02	4.95	36.46	8.20	22.72	5.11
St Dev	1.57	0.35	0.86	0.19	1.64	0.37	0.77	0.17
Count	8	8	8	8	8	8	8	8

	After 100 Cycles				After Humidity			
	Mating		Unmating		Mating		Unmating	
	Newton's	Force (Lbs)	Newton's	Force (Lbs)	Newton's	Force (Lbs)	Newton's	Force (Lbs)
Minimum	34.53	7.76	21.58	4.85	21.17	4.76	16.21	3.64
Maximum	38.56	8.67	24.01	5.40	24.42	5.49	17.79	4.00
Average	36.79	8.27	22.87	5.14	23.17	5.21	16.86	3.79
St Dev	1.58	0.36	0.81	0.18	1.24	0.28	0.57	0.13
Count	8	8	8	8	8	8	8	8

DATA SUMMARIES Continued

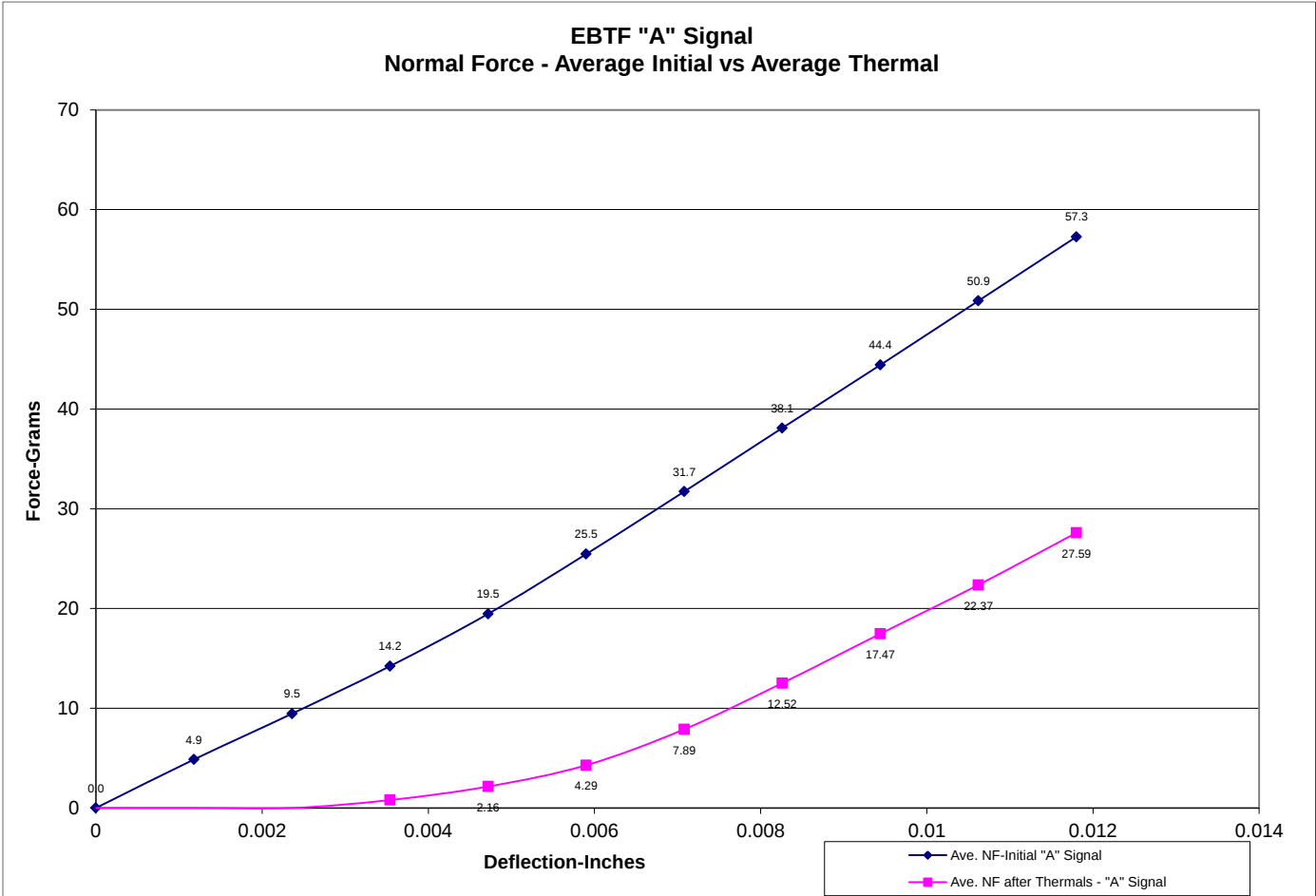
NORMAL FORCE (FOR CONTACTS TESTED IN THE HOUSING):

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

EBTF-4-10-2.0-S-RA-1 (Signal wafer A)

Initial-"A"-Signal	Deflections in inches Forces in Grams										
	0.0012	0.0024	0.0035	0.0047	0.0059	0.0071	0.0083	0.0094	0.0106	0.0118	SET
Averages	4.87	9.46	14.23	19.47	25.46	31.73	38.10	44.42	50.85	57.27	0.0002
Min	4.50	8.10	12.10	15.70	19.80	23.90	28.20	32.70	36.30	40.10	0.0001
Max	5.40	11.40	18.30	25.70	33.40	40.90	48.30	55.90	63.30	70.90	0.0007
St. Dev	0.311	0.924	1.706	2.771	3.756	4.712	5.698	6.674	7.776	8.810	0.0002
Count	12	12	12	12	12	12	12	12	12	12	12

After Thermals	Deflections in inches Forces in Grams										
	0.0012	0.0024	0.0035	0.0047	0.0059	0.0071	0.0083	0.0094	0.0106	0.0118	SET
Averages	0.00	0.00	0.80	2.16	4.29	7.89	12.52	17.47	22.37	27.59	0.0054
Min	0.00	0.00	0.00	0.00	0.00	0.00	1.90	6.80	11.20	14.90	0.0026
Max	0.00	0.00	4.50	9.60	14.20	19.20	26.00	32.80	40.40	47.80	0.0078
St. Dev	0.000	0.000	1.650	3.814	5.608	6.735	7.456	8.084	9.269	10.649	0.0017
Count	9	9	9	9	9	9	9	9	9	9	9

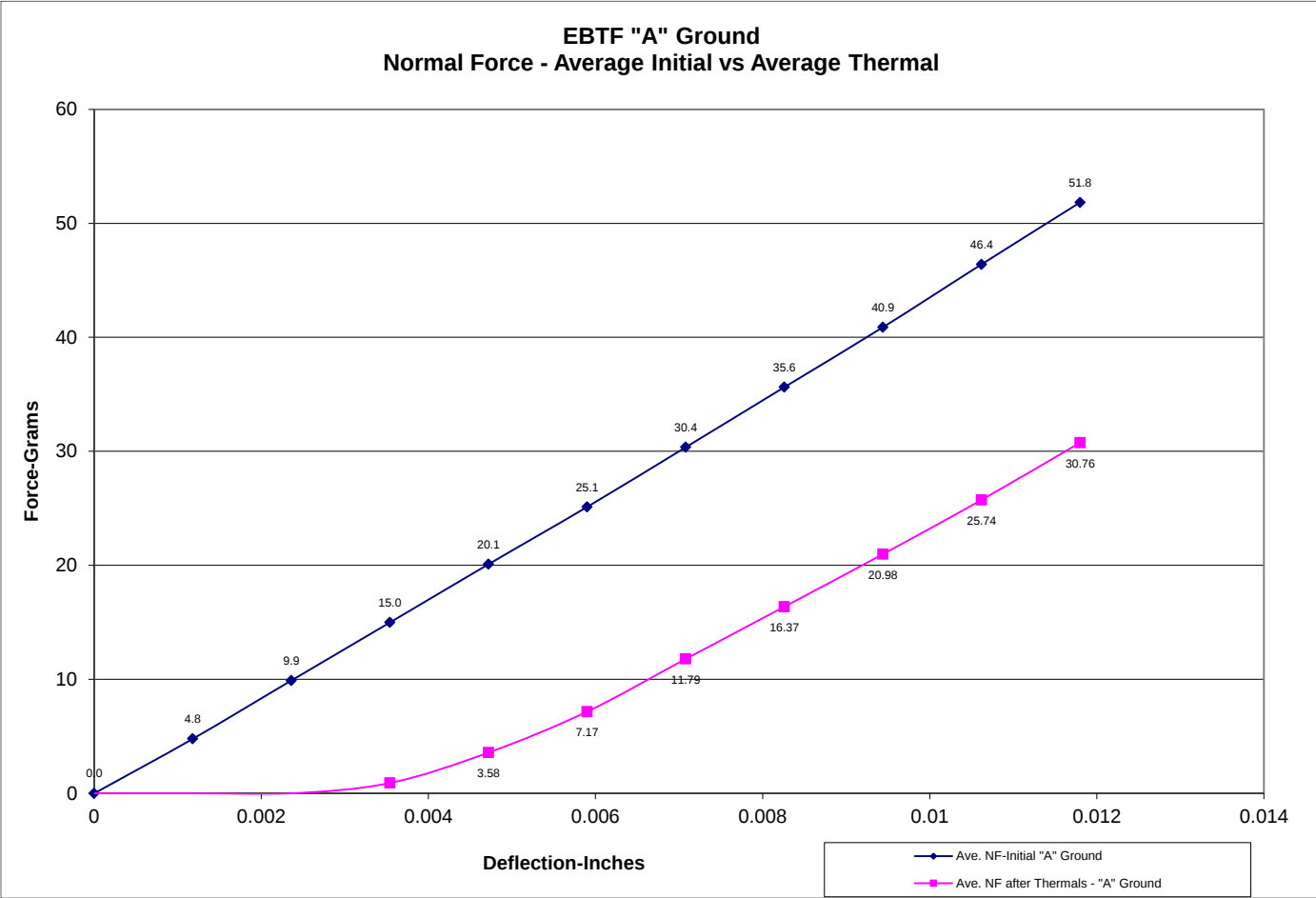


DATA SUMMARIES Continued

EBTF-4-10-2.0-S-RA-1 (Ground wafer A)

Initial-"A"-Ground	Deflections in inches Forces in Grams										
	0.0012	0.0024	0.0035	0.0047	0.0059	0.0071	0.0083	0.0094	0.0106	0.0118	SET
Averages	4.78	9.90	14.99	20.10	25.13	30.36	35.63	40.88	46.40	51.83	0.0002
Min	4.20	8.70	12.80	17.60	21.90	26.40	31.20	35.80	40.30	45.00	0.0000
Max	5.30	11.00	16.50	22.00	27.10	33.20	39.80	46.40	53.80	60.70	0.0009
St. Dev	0.354	0.694	1.146	1.343	1.637	2.110	2.626	3.223	4.118	4.826	0.0003
Count	12	12	12	12	12	12	12	12	12	12	12

After Thermals	Deflections in inches Forces in Grams										
	0.0012	0.0024	0.0035	0.0047	0.0059	0.0071	0.0083	0.0094	0.0106	0.0118	SET
Averages	0.00	0.00	0.91	3.58	7.17	11.79	16.37	20.98	25.74	30.76	0.0041
Min	0.00	0.00	0.00	-0.20	-0.10	4.00	7.60	10.80	14.30	17.80	0.0028
Max	0.00	0.00	3.40	8.00	12.60	17.80	23.10	28.50	33.70	40.50	0.0060
St. Dev	0.000	0.000	1.271	3.160	4.617	5.003	5.330	5.741	6.060	6.750	0.0012
Count	10	10	10	10	10	10	10	10	10	10	10

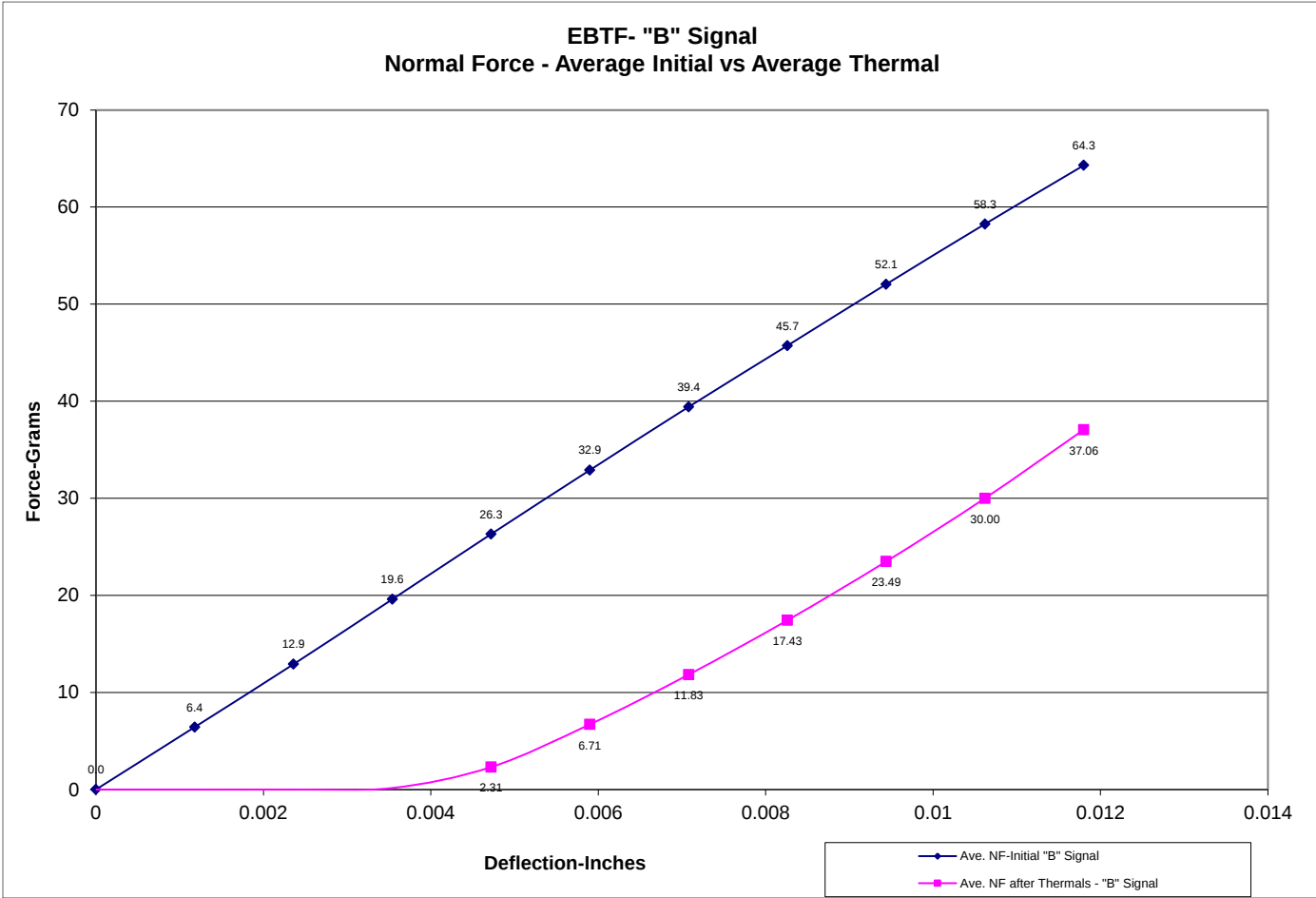


DATA SUMMARIES Continued

EBTF-4-10-2.0-S-RA-1 (Signal wafer B)

Initial-"B"-Signal	Deflections in inches Forces in Grams										
	0.0012	0.0024	0.0035	0.0047	0.0059	0.0071	0.0083	0.0094	0.0106	0.0118	SET
Averages	6.43	12.91	19.59	26.31	32.90	39.42	45.73	52.05	58.25	64.29	0.0008
Min	5.20	10.80	17.10	22.90	28.80	34.40	40.20	45.70	51.30	56.80	0.0002
Max	7.70	15.30	22.80	30.10	37.80	45.10	51.90	58.50	65.10	71.20	0.0012
St. Dev	0.851	1.439	1.906	2.380	2.760	3.264	3.667	4.164	4.700	5.155	0.0004
Count	12	12	12	12	12	12	12	12	12	12	12

After Thermals	Deflections in inches Forces in Grams										
	0.0012	0.0024	0.0035	0.0047	0.0059	0.0071	0.0083	0.0094	0.0106	0.0118	SET
Averages	0.00	0.00	0.16	2.31	6.71	11.83	17.43	23.49	30.00	37.06	0.0045
Min	0.00	0.00	0.00	0.00	1.70	6.40	10.60	15.60	21.00	27.60	0.0033
Max	0.00	0.00	1.40	6.70	12.40	18.50	25.00	32.40	39.70	47.50	0.0061
St. Dev	0.000	0.000	0.467	2.009	3.004	3.535	4.427	5.087	5.614	5.940	0.0008
Count	9	9	9	9	9	9	9	9	9	9	9

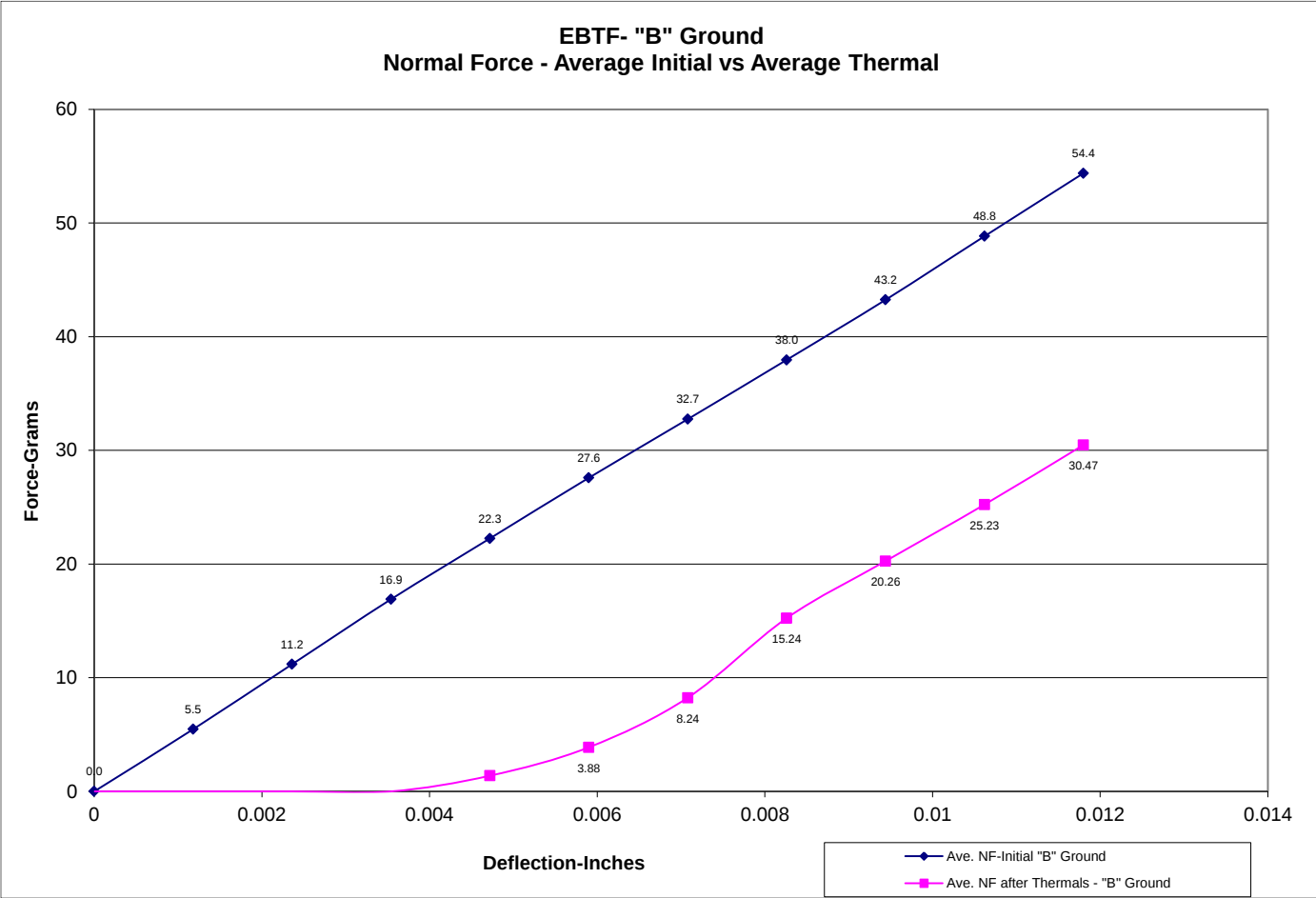


DATA SUMMARIES Continued

EBTF-4-10-2.0-S-RA-1 (Ground wafer B)

Initial-"B"-Ground	Deflections in inches Forces in Grams										
	0.0012	0.0024	0.0035	0.0047	0.0059	0.0071	0.0083	0.0094	0.0106	0.0118	SET
Averages	5.47	11.18	16.90	22.25	27.58	32.74	37.96	43.24	48.83	54.38	0.0003
Min	5.00	10.10	15.10	19.70	25.30	30.10	34.30	38.90	43.70	48.20	0.0000
Max	6.90	13.80	19.20	25.70	30.90	35.80	41.50	48.10	53.60	60.50	0.0010
St. Dev	0.658	1.292	1.618	2.029	1.878	2.023	2.343	2.954	3.436	4.373	0.0003
Count	12	12	12	12	12	12	12	12	12	12	12

After Thermals	Deflections in inches Forces in Grams										
	0.0012	0.0024	0.0035	0.0047	0.0059	0.0071	0.0083	0.0094	0.0106	0.0118	SET
Averages	0.00	0.00	0.00	1.38	3.88	8.24	15.24	20.26	25.23	30.47	0.0061
Min	0.00	0.00	0.00	0.00	0.00	0.30	9.50	14.50	19.80	25.40	0.0046
Max	0.00	0.00	0.00	13.80	18.40	24.30	30.20	35.40	41.30	47.40	0.0102
St. Dev	0.000	0.000	0.000	4.364	5.701	6.421	6.581	6.578	6.486	6.624	0.0016
Count	10	10	10	10	10	10	10	10	10	10	10

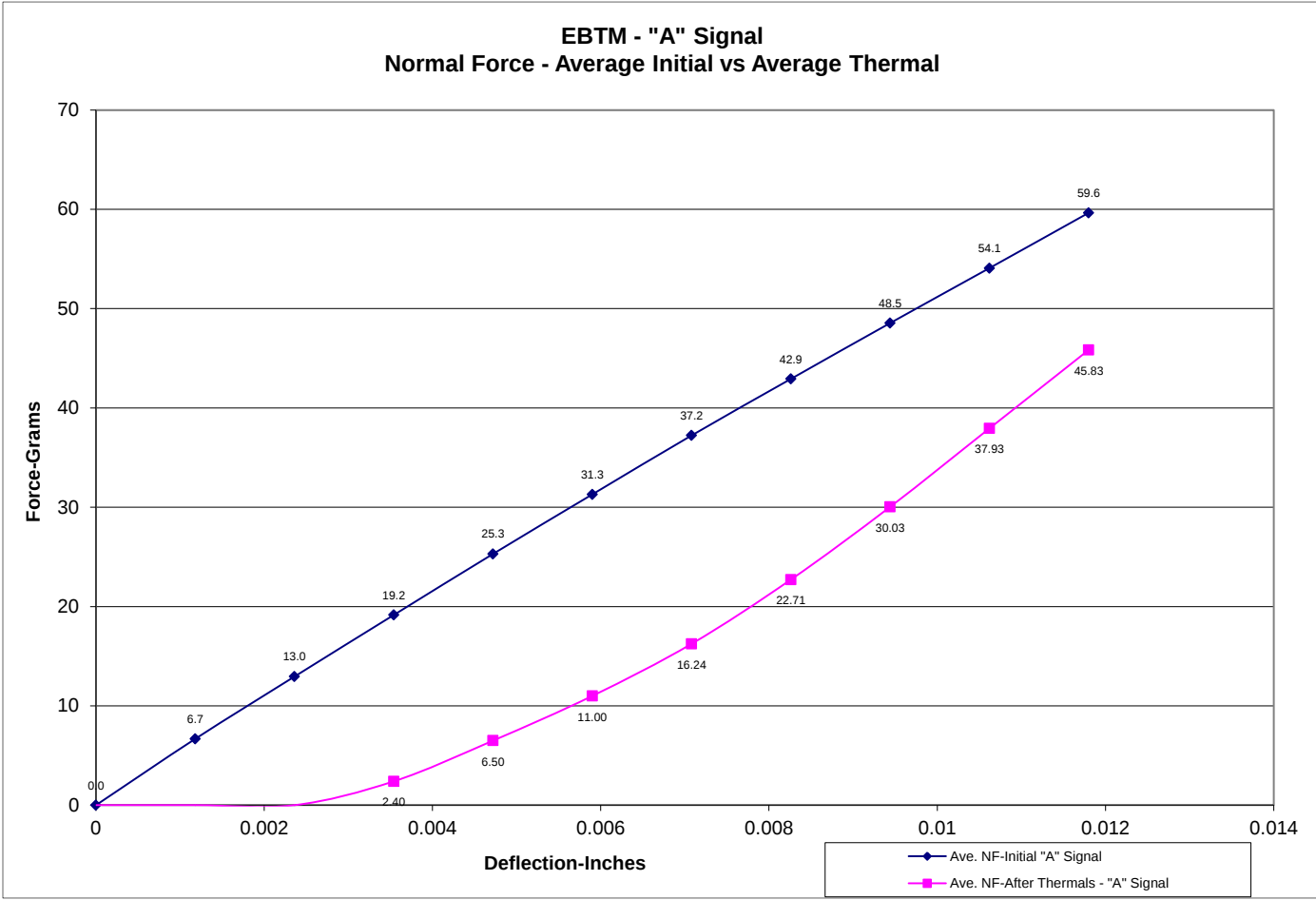


DATA SUMMARIES Continued

EBTM-4-10-2.0-S-VT-1 (Signal wafer A)

Initial-"A"-Signal	Deflections in inches Forces in Grams										
	0.0012	0.0024	0.0035	0.0047	0.0059	0.0071	0.0083	0.0094	0.0106	0.0118	SET
Averages	6.68	12.95	19.15	25.30	31.29	37.23	42.92	48.54	54.08	59.64	0.0008
Min	6.00	11.50	16.90	22.20	27.70	33.00	38.50	44.50	51.20	56.40	0.0002
Max	7.60	14.20	21.50	28.60	35.60	42.80	49.30	55.90	61.90	67.90	0.0010
St. Dev	0.445	0.732	1.191	1.639	2.018	2.409	2.709	2.929	3.048	3.211	0.0003
Count	12	12	12	12	12	12	12	12	12	12	12

After Thermals	Deflections in inches Forces in Grams										
	0.0012	0.0024	0.0035	0.0047	0.0059	0.0071	0.0083	0.0094	0.0106	0.0118	SET
Averages	0.00	0.00	2.40	6.50	11.00	16.24	22.71	30.03	37.93	45.83	0.0032
Min	0.00	0.00	0.00	2.10	5.80	10.00	16.10	23.00	30.70	38.00	0.0028
Max	0.00	0.00	4.30	8.70	13.50	19.50	27.20	35.10	43.20	51.30	0.0041
St. Dev	0.000	0.000	1.841	2.344	2.583	3.000	3.490	3.975	4.247	4.401	0.0004
Count	9	9	9	9	9	9	9	9	9	9	9

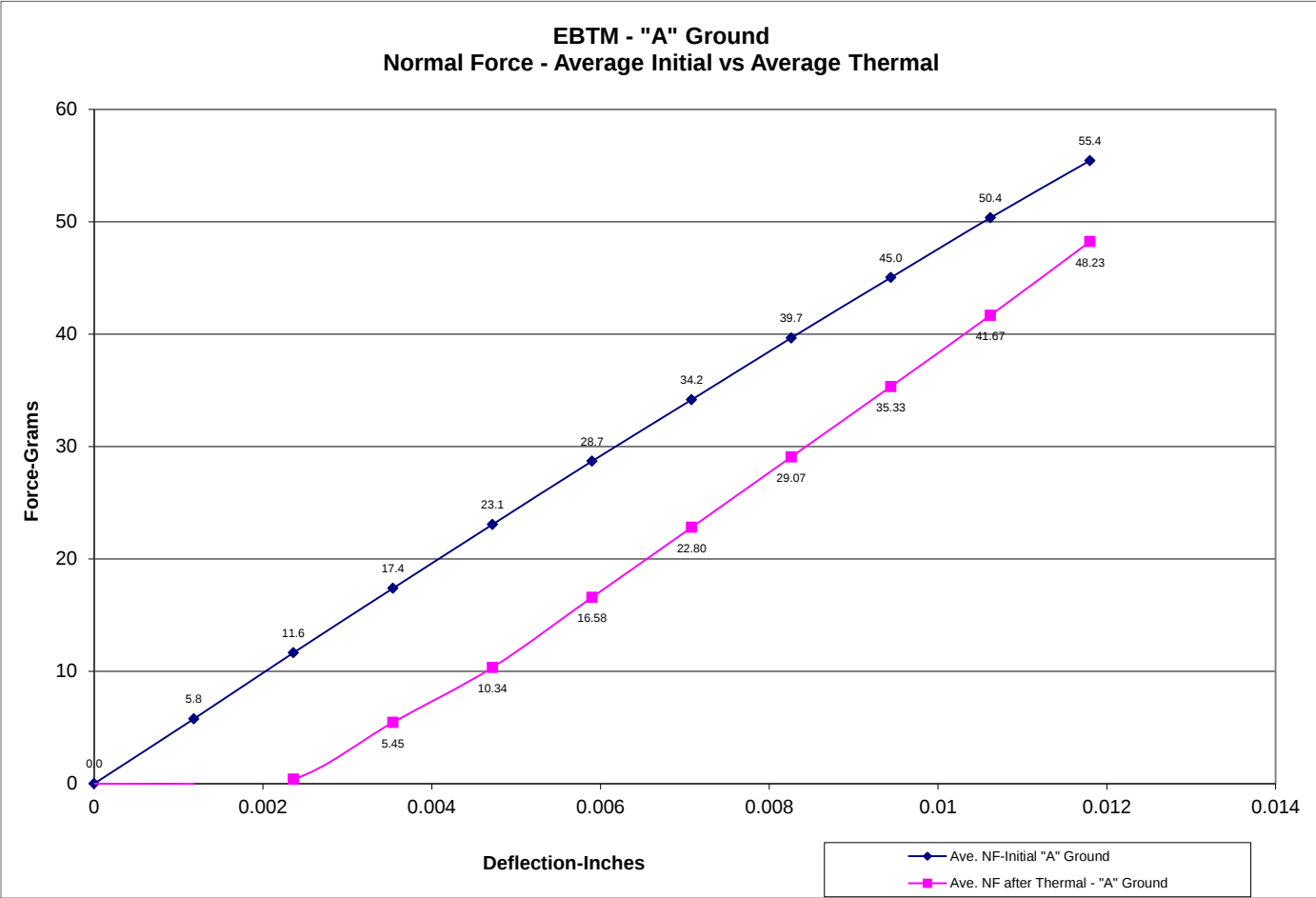


DATA SUMMARIES Continued

EBTM-4-10-2.0-S-VT-1 (Ground wafer A)

Initial-"A"-Ground	Deflections in inches Forces in Grams										
	0.0012	0.0024	0.0035	0.0047	0.0059	0.0071	0.0083	0.0094	0.0106	0.0118	SET
Averages	5.76	11.64	17.38	23.06	28.69	34.16	39.66	45.03	50.35	55.43	0.0011
Min	5.40	10.70	16.30	21.80	26.90	31.80	36.80	41.30	46.00	50.30	0.0001
Max	6.10	12.30	18.50	24.50	30.60	36.80	42.50	48.30	54.30	60.00	0.0022
St. Dev	0.207	0.460	0.837	1.129	1.537	1.914	2.326	2.794	3.282	3.775	0.0008
Count	12	12	12	12	12	12	12	12	12	12	12

After Thermals	Deflections in inches Forces in Grams										
	0.0012	0.0024	0.0035	0.0047	0.0059	0.0071	0.0083	0.0094	0.0106	0.0118	SET
Averages	0.00	0.40	5.45	10.34	16.58	22.80	29.07	35.33	41.67	48.23	0.0029
Min	0.00	0.00	0.00	0.60	6.90	13.40	20.50	26.90	33.00	39.10	0.0004
Max	0.00	3.20	18.20	24.10	30.40	36.50	43.10	49.70	56.30	63.60	0.0044
St. Dev	0.000	1.008	7.150	8.348	8.215	8.117	7.993	8.032	8.146	8.368	0.0015
Count	10	10	10	10	10	10	10	10	10	10	10

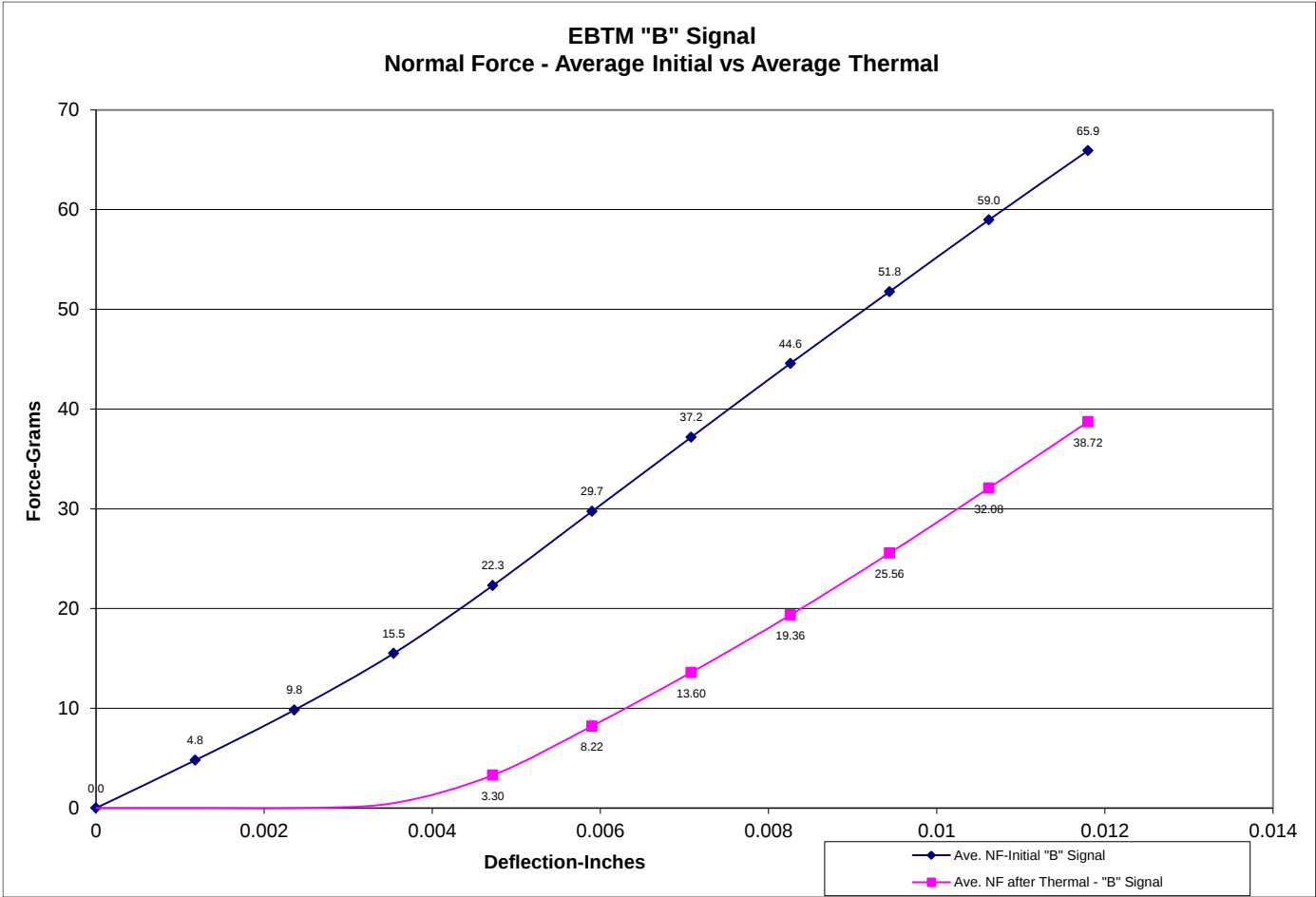


DATA SUMMARIES Continued

EBTM-4-10-2.0-S-VT-1 (Signal wafer B)

Initial-"B"-Signal	Deflections in inches Forces in Grams										
	0.0012	0.0024	0.0035	0.0047	0.0059	0.0071	0.0083	0.0094	0.0106	0.0118	SET
Averages	4.79	9.83	15.50	22.31	29.74	37.18	44.58	51.78	58.96	65.91	0.0003
Min	4.00	8.70	13.60	19.50	26.50	33.40	40.30	46.70	53.00	59.20	0.0002
Max	5.30	11.00	17.60	24.90	32.40	39.60	46.60	54.00	61.50	68.70	0.0004
St. Dev	0.363	0.584	1.147	1.645	1.866	2.010	2.133	2.349	2.520	2.778	0.0001
Count	12	12	12	12	12	12	12	12	12	12	12

After Thermals	Deflections in inches Forces in Grams										
	0.0012	0.0024	0.0035	0.0047	0.0059	0.0071	0.0083	0.0094	0.0106	0.0118	SET
Averages	0.00	0.00	0.50	3.30	8.22	13.60	19.36	25.56	32.08	38.72	0.0040
Min	0.00	0.00	0.00	0.00	3.20	8.10	12.70	18.50	24.80	31.00	0.0027
Max	0.00	0.00	3.60	8.40	14.00	19.80	25.60	32.20	38.80	46.20	0.0051
St. Dev	0.000	0.000	1.200	2.802	3.251	3.671	3.987	4.295	4.529	4.859	0.0007
Count	9	9	9	9	9	9	9	9	9	9	9

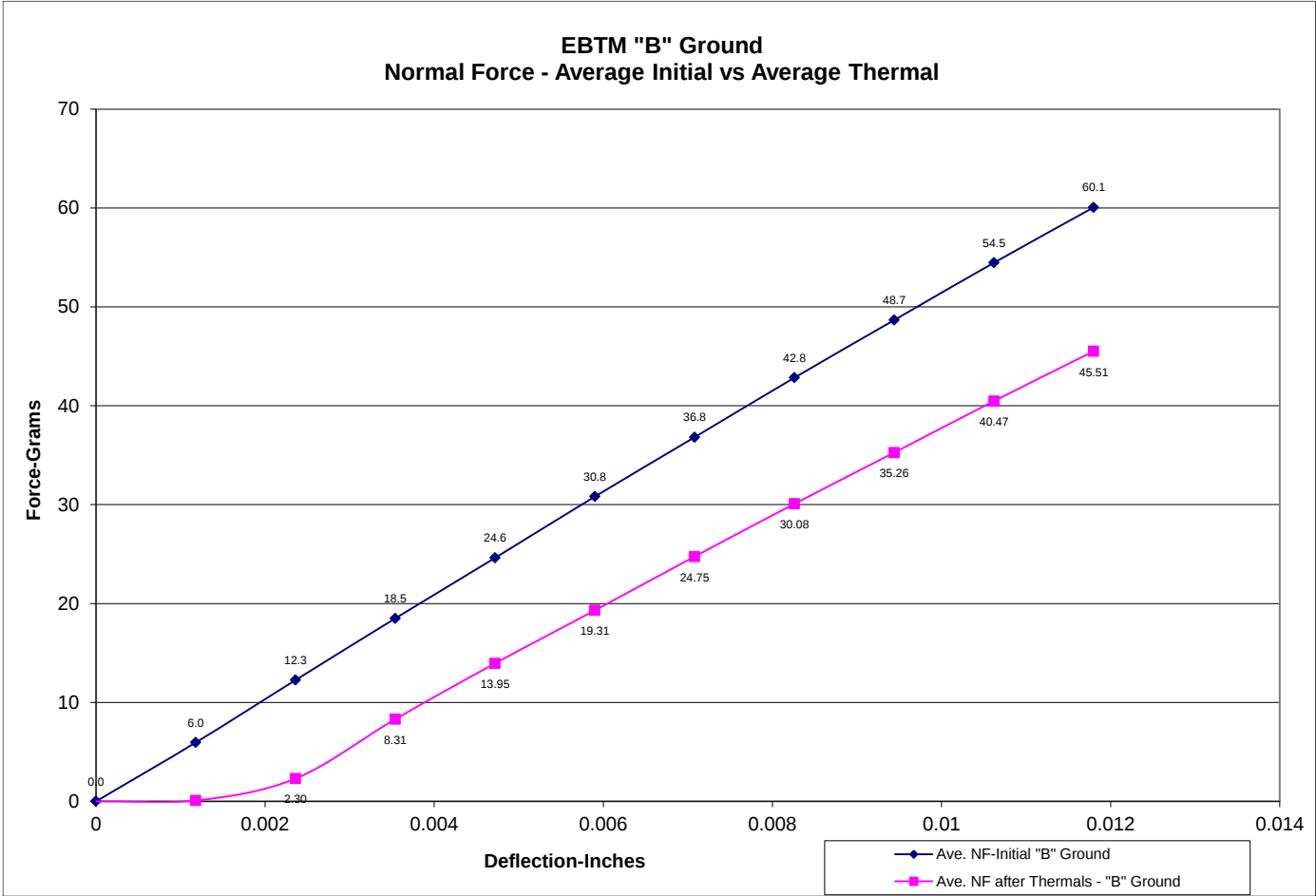


DATA SUMMARIES Continued

EBTM-4-10-2.0-S-VT-1 (Ground wafer B)

Initial-"B"-Ground	Deflections in inches Forces in Grams										
	0.0012	0.0024	0.0035	0.0047	0.0059	0.0071	0.0083	0.0094	0.0106	0.0118	SET
Averages	5.95	12.26	18.50	24.62	30.82	36.82	42.83	48.66	54.46	60.06	0.0005
Min	5.60	11.50	17.20	22.80	28.40	34.20	39.60	45.00	50.40	55.00	0.0003
Max	6.80	14.10	21.50	28.50	35.40	42.40	49.50	56.20	62.70	69.10	0.0018
St. Dev	0.321	0.734	1.169	1.524	1.910	2.146	2.557	2.835	3.129	3.526	0.0004
Count	12	12	12	12	12	12	12	12	12	12	12

After Thermals	Deflections in inches Forces in Grams										
	0.0012	0.0024	0.0035	0.0047	0.0059	0.0071	0.0083	0.0094	0.0106	0.0118	SET
Averages	0.08	2.30	8.31	13.95	19.31	24.75	30.08	35.26	40.47	45.51	0.0030
Min	0.00	0.00	2.50	8.60	14.00	19.60	25.10	30.10	35.40	40.50	0.0016
Max	0.80	7.00	16.00	21.80	27.60	33.20	38.20	42.70	47.50	52.30	0.0042
St. Dev	0.253	2.675	4.339	4.174	4.294	4.250	4.009	3.862	3.777	3.580	0.0007
Count	10	10	10	10	10	10	10	10	10	10	10



DATA SUMMARIES Continued

INSULATION RESISTANCE (IR):

Pin to Pin			
	Mated	Unmated	Unmated
Minimum	EBTf/EBTM	EBTf	EBTM
Initial	45000	45000	45000
Thermal	45000	45000	45000
Humidity	45000	45000	45000

Row to Row			
	Mated	Unmated	Unmated
Minimum	EBTf/EBTM	EBTf	EBTM
Initial	45000	45000	45000
Thermal	45000	45000	45000
Humidity	45000	45000	45000

Pin to Ground			
	Mated	Unmated	Unmated
Minimum	EBTf/EBTM	EBTf	EBTM
Initial	45000	45000	45000
Thermal	45000	45000	45000
Humidity	45000	45000	45000

DIELECTRIC WITHSTANDING VOLTAGE (DWV):

Voltage Rating Summary	
Minimum	EBTf/EBTM
Break Down Voltage	655
Test Voltage	495
Working Voltage	160

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

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

Tracking Code: 643164_Report_Rev_3	Part #: EBTF-4-10-2.0-S-RA-1/EBTM-4-10-2.0-S-VT-1
Part description: EBTF/EBTM	

DATA SUMMARIES Continued

Pressfit Hole Evaluation: Insertion/Withdrawal force

Group 1 EBTF-4-10-2.0-S-RA-1

Tin (immersion) 0.012" Sig PTH, 0.018" Gnd PTH

.012 Signal PTH								
1st CYCLE					3rd CYCLE			
	Insertion (Newtons.)	Insertion (lbs.)	Withdrawal (Newtons.)	Withdrawal (lbs.)	Insertion (Newtons.)	Insertion (lbs.)	Withdrawal (Newtons.)	Withdrawal (lbs.)
Min.	13.48	3.03	5.83	1.31	11.34	2.55	5.83	1.31
Max.	17.08	3.84	7.38	1.66	13.48	3.03	8.36	1.88
Ave.	15.75	3.54	6.49	1.46	12.19	2.74	6.85	1.54

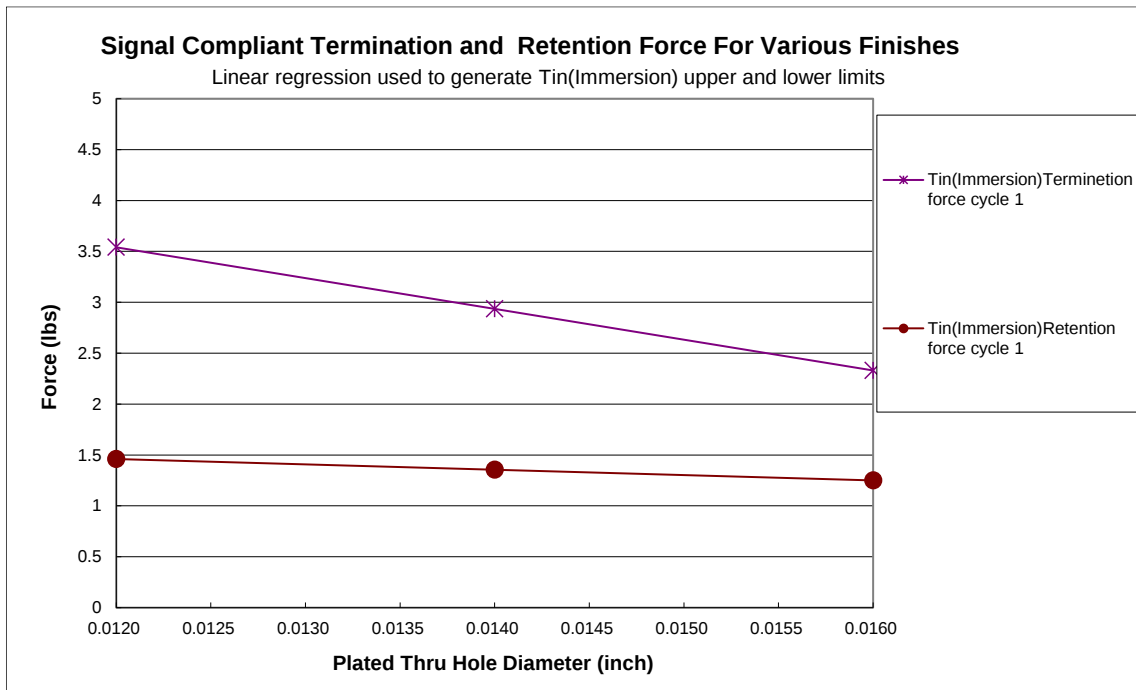
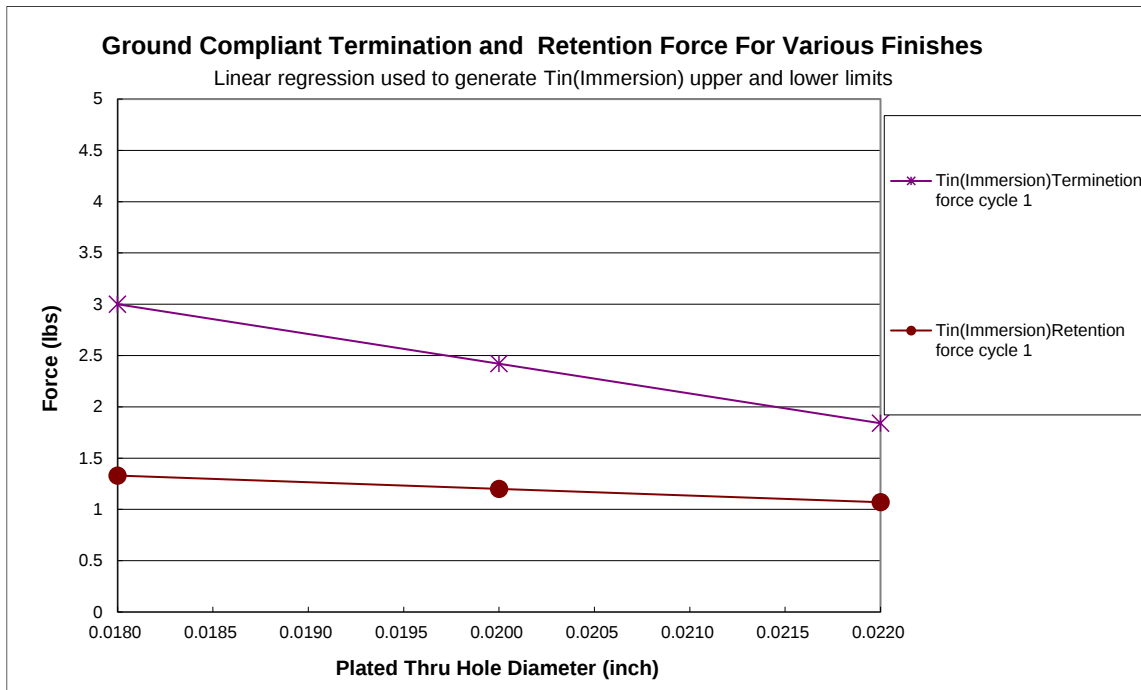
.018 Ground PTH								
1st CYCLE					3rd CYCLE			
	Insertion (Newtons.)	Insertion (lbs.)	Withdrawal (Newtons.)	Withdrawal (lbs.)	Insertion (Newtons.)	Insertion (lbs.)	Withdrawal (Newtons.)	Withdrawal (lbs.)
Min.	12.14	2.73	4.89	1.10	9.03	2.03	4.94	1.11
Max.	15.97	3.59	7.03	1.58	11.70	2.63	7.87	1.77
Ave.	13.34	3.00	5.92	1.33	10.23	2.30	6.67	1.50

Group 2 EBTF-4-10-2.0-S-RA-1

Tin (immersion) 0.016" Sig PTH, 0.022" Gnd PTH

.016 Signal PTH								
1st CYCLE					3rd CYCLE			
	Insertion (Newtons.)	Insertion (lbs.)	Withdrawal (Newtons.)	Withdrawal (lbs.)	Insertion (Newtons.)	Insertion (lbs.)	Withdrawal (Newtons.)	Withdrawal (lbs.)
Min.	9.74	2.19	5.03	1.13	7.87	1.77	5.43	1.22
Max.	10.81	2.43	6.32	1.42	9.30	2.09	7.56	1.70
Ave.	10.36	2.33	5.56	1.25	8.50	1.91	6.41	1.44

.022 Ground PTH								
1st CYCLE					3rd CYCLE			
	Insertion (Newtons.)	Insertion (lbs.)	Withdrawal (Newtons.)	Withdrawal (lbs.)	Insertion (Newtons.)	Insertion (lbs.)	Withdrawal (Newtons.)	Withdrawal (lbs.)
Min.	7.03	1.58	4.09	0.92	6.36	1.43	4.80	1.08
Max.	9.07	2.04	5.47	1.23	8.58	1.93	6.94	1.56
Ave.	8.18	1.84	4.76	1.07	7.47	1.68	5.52	1.24

DATA SUMMARIES Continued**Compliant pin summary graph-EBTf Signal pin****Compliant pin summary graph-EBTf Ground pin**

Tracking Code: 643164_Report_Rev_3	Part #: EBTf-4-10-2.0-S-RA-1/EBTM-4-10-2.0-S-VT-1
Part description: EBTf/EBTM	

DATA SUMMARIES Continued

Group 3 EBTM-4-10-2.0-S-VT-1

Tin (immersion) 0.012" Sig PTH, 0.018" Gnd PTH

.012 Signal PTH								
1st CYCLE					3rd CYCLE			
	Insertion (Newtons.)	Insertion (lbs.)	Withdrawal (Newtons.)	Withdrawal (lbs.)	Insertion (Newtons.)	Insertion (lbs.)	Withdrawal (Newtons.)	Withdrawal (lbs.)
Min.	13.57	3.05	5.87	1.32	11.61	2.61	5.16	1.16
Max.	18.01	4.05	8.54	1.92	13.92	3.13	8.63	1.94
Ave.	15.57	3.5	7.03	1.58	12.59	2.83	7.21	1.62

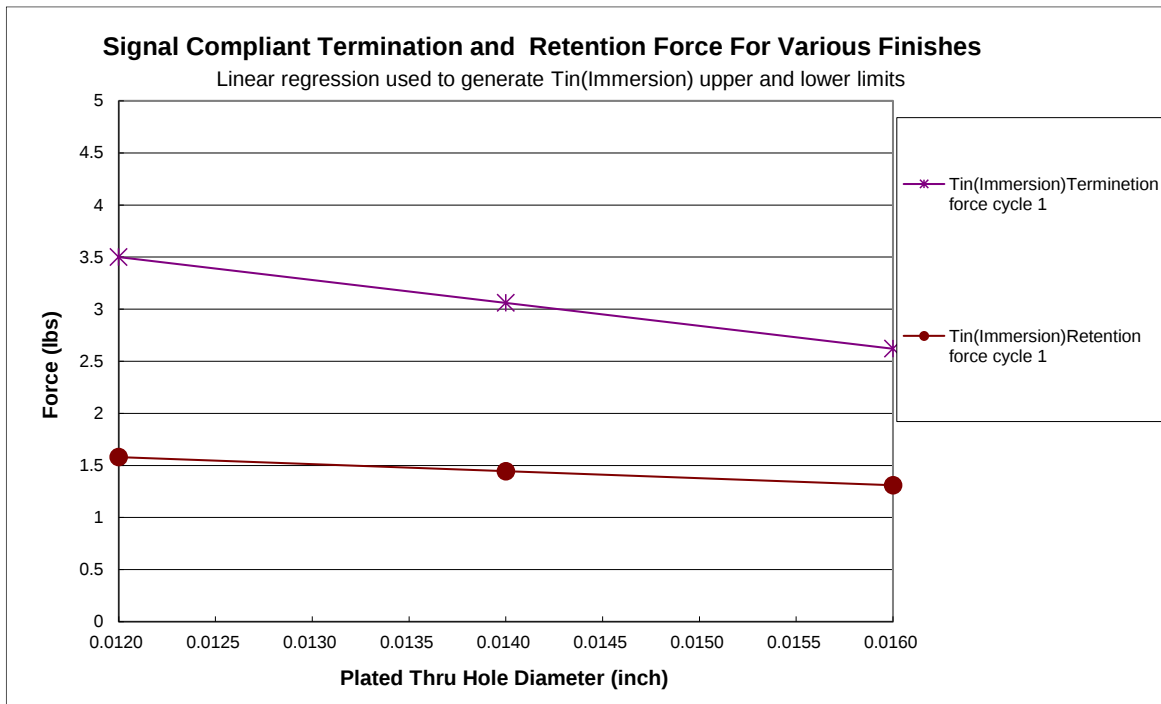
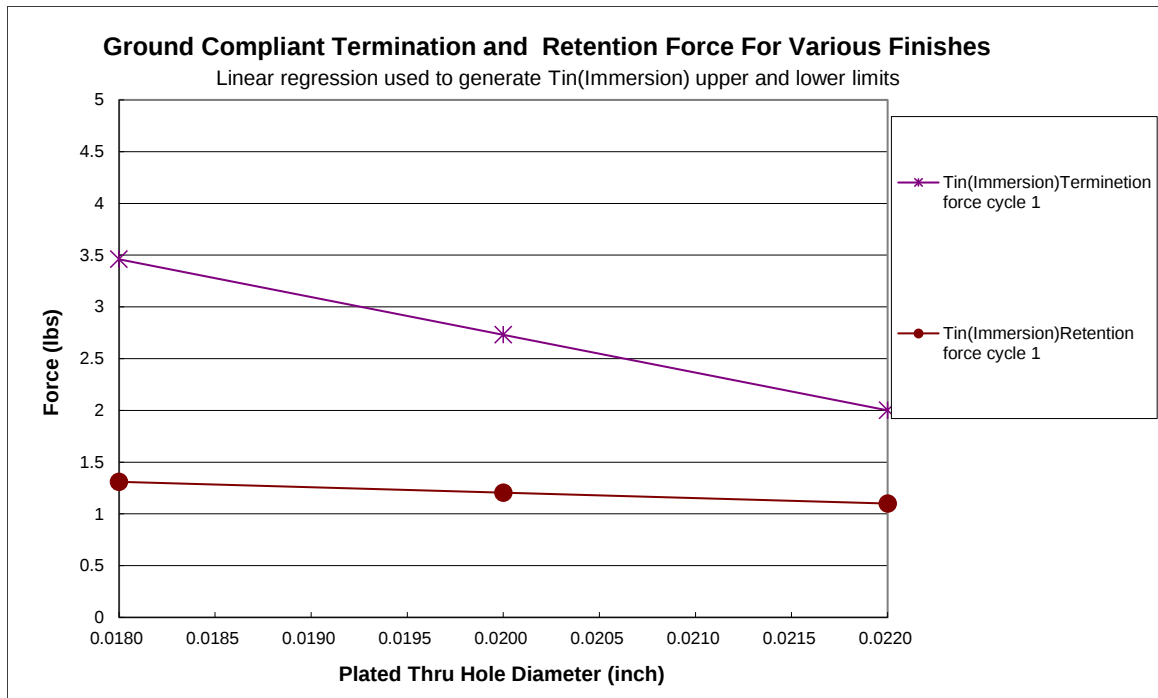
.018 Ground PTH								
1st CYCLE					3rd CYCLE			
	Insertion (Newtons.)	Insertion (lbs.)	Withdrawal (Newtons.)	Withdrawal (lbs.)	Insertion (Newtons.)	Insertion (lbs.)	Withdrawal (Newtons.)	Withdrawal (lbs.)
Min.	14.59	3.28	4.85	1.09	10.85	2.44	5.56	1.25
Max.	16.68	3.75	6.67	1.5	13.30	2.99	8.27	1.86
Ave.	15.39	3.46	5.83	1.31	11.65	2.62	6.49	1.46

Group 4 EBTM-4-10-2.0-S-VT-1

Tin (immersion) 0.016" Sig PTH, 0.022" Gnd PTH

.016 Signal PTH								
1st CYCLE					3rd CYCLE			
	Insertion (Newtons.)	Insertion (lbs.)	Withdrawal (Newtons.)	Withdrawal (lbs.)	Insertion (Newtons.)	Insertion (lbs.)	Withdrawal (Newtons.)	Withdrawal (lbs.)
Min.	10.50	2.36	4.98	1.12	8.23	1.85	5.74	1.29
Max.	12.63	2.84	6.45	1.45	9.70	2.18	8.23	1.85
Ave.	11.65	2.62	5.83	1.31	8.90	2.00	7.07	1.59

.022 Ground PTH								
1st CYCLE					3rd CYCLE			
	Insertion (Newtons.)	Insertion (lbs.)	Withdrawal (Newtons.)	Withdrawal (lbs.)	Insertion (Newtons.)	Insertion (lbs.)	Withdrawal (Newtons.)	Withdrawal (lbs.)
Min.	8.10	1.82	4.05	0.91	7.52	1.69	4.31	0.97
Max.	9.47	2.13	5.20	1.17	8.58	1.93	5.87	1.32
Ave.	8.90	2.00	4.89	1.10	8.01	1.80	5.03	1.13

DATA SUMMARIES Continued**Compliant pin summary graph-EBTM Signal pin****Compliant pin summary graph-EBTM Ground pin**

DATA SUMMARIES Continued

Pressfit Hole Evaluation: LLCR

Group 1 EBTF-4-10-2.0-S-RA-1

Tin (immersion) 0.012" Sig PTH, 0.018" Gnd PTH

- 1) A total of 30 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 for compliant pin only
 - a. $\leq +0.33$ mOhms: ----- Stable
 - b. $> +0.33$ to $+0.66$ mOhms: ----- Minor
 - c. $+0.67$ to $+1$ mOhms: ----- Acceptable
 - d. $+1.1$ to $+50.0$ mOhms: ----- Marginal
 - e. $+50.1$ to $+2000$ mOhms: ----- Unstable
 - f. $>+2000$ mOhms: ----- Open Failure

LLCR Measurement Summaries by Pin Type				
Date	9/18/2015	9/23/2015		
Room Temp (Deg C)	21	22		
Rel Humidity (%)	46	46		
Technician	Aaron McKim	Aaron McKim		
mOhm values	Actual Initial	Delta 1 Cycle	Delta	Delta
.012/.018 PTH	Pin Type 1: Signal			
Average	0.13	0.04		
St. Dev.	0.04	0.02		
Min	0.08	0.01		
Max	0.22	0.07		
Summary Count	15	15		
Total Count	15	15		
	Pin Type 2: Ground			
Average	0.12	0.09		
St. Dev.	0.17	0.16		
Min	0.01	0.00		
Max	0.54	0.50		
Summary Count	15	15		
Total Count	15	15		

LLCR Delta Count by Category						
	Stable	Minor	Acceptable	Marginal	Unstable	Open
mOhms	$\leq .33$	$>.34$ & $\leq .66$	$>.67$ & ≤ 1	>1 & ≤ 50	>50 & ≤ 1000	>1000
1 cycle	28	2	0	0	0	0

DATA SUMMARIES Continued

Pressfit Hole Evaluation: LLCR

Group 2 EBTF-4-10-2.0-S-RA-1

Tin (immersion) 0.016" Sig PTH, 0.022" Gnd PTH

- 1) A total of 30 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 for compliant pin only
 - a. $\leq +0.33$ mOhms: ----- Stable
 - b. $> +0.33$ to $+0.66$ mOhms: ----- Minor
 - c. $+0.67$ to $+1$ mOhms: ----- Acceptable
 - d. $+1.1$ to $+50.0$ mOhms: ----- Marginal
 - e. $+50.1$ to $+2000$ mOhms: ----- Unstable
 - f. $>+2000$ mOhms: ----- Open Failure

LLCR Measurement Summaries by Pin Type				
Date	9/21/2015	9/23/2015		
Room Temp (Deg C)	23	22		
Rel Humidity (%)	45	45		
Technician	Aaron McKim	Aaron McKim		
mOhm values	Actual Initial	Delta 1 Cycle	Delta	Delta
.016/.022 PTH				
Pin Type 1: Signal				
Average	0.18	0.03		
St. Dev.	0.04	0.02		
Min	0.13	0.00		
Max	0.29	0.06		
Summary Count	15	15		
Total Count	15	15		
Pin Type 2: Ground				
Average	0.45	0.41		
St. Dev.	0.17	0.17		
Min	0.22	0.19		
Max	0.65	0.63		
Summary Count	15	15		
Total Count	15	15		

LLCR Delta Count by Category						
mOhms	Stable	Minor	Acceptable	Marginal	Unstable	Open
	$\leq .33$	$>.34 \text{ \& } \leq .66$	$>.67 \text{ \& } \leq 1$	$>1 \text{ \& } \leq 50$	$>50 \text{ \& } \leq 1000$	>1000
1 Cycle	21	9	0	0	0	0

DATA SUMMARIES Continued

Pressfit Hole Evaluation: LLCR

Group 3 EBTM-4-10-2.0-S-VT-1

Tin (immersion) 0.012" Sig PTH, 0.018" Gnd PTH

- 1) A total of 30 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 for compliant pin only
 - a. $\leq +0.33$ mOhms: ----- Stable
 - b. $> +0.33$ to $+0.66$ mOhms: ----- Minor
 - c. $+0.67$ to $+1$ mOhms: ----- Acceptable
 - d. $+1.1$ to $+50.0$ mOhms: ----- Marginal
 - e. $+50.1$ to $+2000$ mOhms: ----- Unstable
 - f. $>+2000$ mOhms: ----- Open Failure

LLCR Measurement Summaries by Pin Type				
Date	9/18/2015	9/23/2015		
Room Temp (Deg C)	23	22		
Rel Humidity (%)	45	45		
Technician	Aaron McKim	Aaron McKim		
mOhm values	Actual	Delta	Delta	Delta
	Initial	1 Cycle		
Pin Type 1: Signal				
Average	0.15	0.05		
St. Dev.	0.05	0.05		
Min	0.07	0.00		
Max	0.24	0.14		
Summary Count	15	15		
Total Count	15	15		
Pin Type 2: Ground				
Average	0.04	0.02		
St. Dev.	0.02	0.01		
Min	0.01	0.00		
Max	0.07	0.04		
Summary Count	15	15		
Total Count	15	15		

LLCR Delta Count by Category						
	Stable	Minor	Acceptable	Marginal	Unstable	Open
mOhms	$\leq .33$	$>.34 \text{ \& } \leq .66$	$>.67 \text{ \& } \leq 1$	$>1 \text{ \& } \leq 50$	$>50 \text{ \& } \leq 1000$	>1000
1 Cycle	30	0	0	0	0	0

DATA SUMMARIES Continued

Pressfit Hole Evaluation: LLCR

Group 4 EBTM-4-10-2.0-S-VT-1

Tin (immersion) 0.016" Sig PTH, 0.022" Gnd PTH

- 1) A total of 30 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 for compliant pin only
 - a. $\leq +0.33$ mOhms: ----- Stable
 - b. $> +0.33$ to $+0.66$ mOhms: ----- Minor
 - c. $+0.67$ to $+1$ mOhms: ----- Acceptable
 - d. $+1.1$ to $+50.0$ mOhms: ----- Marginal
 - e. $+50.1$ to $+2000$ mOhms: ----- Unstable
 - f. $>+2000$ mOhms: ----- Open Failure

LLCR Measurement Summaries by Pin Type				
Date	9/21/2015	9/23/2015		
Room Temp (Deg C)	22	22		
Rel Humidity (%)	48	45		
Technician	Aaron McKim	Aaron McKim		
mOhm values	Actual	Delta	Delta	Delta
	Initial	1 Cycle		
Pin Type 1: Signal				
Average	0.20	0.08		
St. Dev.	0.07	0.05		
Min	0.10	0.01		
Max	0.31	0.20		
Summary Count	15	15		
Total Count	15	15		
Pin Type 2: Ground				
Average	0.08	0.03		
St. Dev.	0.03	0.03		
Min	0.02	0.00		
Max	0.11	0.11		
Summary Count	15	15		
Total Count	15	15		

LLCR Delta Count by Category						
	Stable	Minor	Acceptable	Marginal	Unstable	Open
mOhms	$\leq .33$	$>.34 \text{ \& } \leq .66$	$>.67 \text{ \& } \leq 1$	$>1 \text{ \& } \leq 50$	$>50 \text{ \& } \leq 1000$	>1000
1 Cycle	30	0	0	0	0	0

DATA SUMMARIES Continued

LLCR Durability:

- 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. $\leq +5.0$ mOhms: ----- Stable
 - b. $+5.1$ to $+10.0$ mOhms: ----- Minor
 - c. $+10.1$ to $+15.0$ mOhms: ----- Acceptable
 - d. $+15.1$ to $+50.0$ mOhms: ----- Marginal
 - e. $+50.1$ to $+2000$ mOhms ----- Unstable
 - f. $>+2000$ mOhms: ----- Open Failure
- 5) The following guidelines are used to categorize the changes in LLCR for compliant pin only
 - a. $\leq +0.33$ mOhms: ----- Stable
 - b. $> +0.33$ to $+0.66$ mOhms: ----- Minor
 - c. $+0.67$ to $+1$ mOhms: ----- Acceptable
 - d. $+1.1$ to $+50.0$ mOhms: ----- Marginal
 - e. $+50.1$ to $+2000$ mOhms: ----- Unstable
 - f. $>+2000$ mOhms: ----- Open Failure

LLCR Measurement Summaries by Pin Type				
Date	9/9/2015	9/11/2015	9/15/2015	9/28/2015
Room Temp (Deg C)	23	23	22	22
Rel Humidity (%)	48	47	46	54
Technician	Aaron McKim	Aaron McKim	Aaron McKim	Aaron McKim
mOhm values	Actual Initial	Delta 100 Cycles	Delta Therm Shck	Delta Humidity
Pin Type 1: Row 1				
Average	9.83	0.23	0.77	0.35
St. Dev.	1.28	0.22	0.35	0.35
Min	8.60	0.01	0.06	0.02
Max	12.08	1.01	2.10	1.33
Summary Count	40	40	40	40
Total Count	40	40	40	40
Pin Type 2: Row 2				
Average	13.80	0.22	0.71	0.26
St. Dev.	1.49	0.19	0.30	0.28
Min	11.79	0.00	0.09	0.00
Max	16.17	0.90	1.21	1.02
Summary Count	48	48	48	48
Total Count	48	48	48	48
Pin Type 3: Row 3				
Average	20.39	0.20	1.04	0.26
St. Dev.	1.07	0.19	0.32	0.23
Min	19.06	0.01	0.44	0.00
Max	22.54	0.84	1.68	0.85
Summary Count	48	48	48	48
Total Count	48	48	48	48
Pin Type 4: Ground				
Average	2.27	0.05	0.16	0.14
St. Dev.	0.51	0.06	0.22	0.31
Min	1.84	0.00	0.00	0.01
Max	3.59	0.20	1.20	1.99
Summary Count	56	56	56	56
Total Count	56	56	56	56

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

EBTF Compliant LLCR:

LLCR Measurement Summaries by Pin Type				
Date	9/10/2015		9/16/2015	9/28/2015
Room Temp (Deg C)	23		22	22
Rel Humidity (%)	48		46	54
Technician	Aaron McKim		Aaron McKim	Aaron McKim
mOhm values	Actual Initial	Delta	Delta Therm Shck	Delta Humidity
EBTF CP	Pin Type 1: Signal			
Average	0.24		0.03	0.04
St. Dev.	0.04		0.02	0.04
Min	0.17		0.00	0.00
Max	0.30		0.07	0.15
Summary Count	15		15	15
Total Count	15		15	15
	Pin Type 2: Ground			
Average	0.04		0.01	0.01
St. Dev.	0.01		0.01	0.01
Min	0.02		0.00	0.00
Max	0.07		0.03	0.03
Summary Count	15		15	15
Total Count	15		15	15

LLCR Delta Count by Category						
	Stable	Minor	Acceptable	Marginal	Unstable	Open
mOhms	<=.33	>.34 & <=.66	>.67 & <=1	>1 & <=50	>50 & <=1000	>1000
Therm Shck	30	0	0	0	0	0
Humidity	30	0	0	0	0	0

DATA SUMMARIES Continued

EBTM Compliant LLCR:

LLCR Measurement Summaries by Pin Type				
Date	9/10/2015		9/16/2015	9/28/2015
Room Temp (Deg C)	23		23	22
Rel Humidity (%)	48		42	54
Technician	Aaron McKim		Aaron McKim	Aaron McKim
mOhm values	Actual Initial	Delta	Delta Therm Shck	Delta Humidity
EBTM CP	Pin Type 1: Signal			
Average	0.18		0.02	0.04
St. Dev.	0.03		0.02	0.02
Min	0.11		0.00	0.01
Max	0.21		0.07	0.07
Summary Count	15		15	15
Total Count	15		15	15
	Pin Type 2: Ground			
Average	0.14		0.03	0.05
St. Dev.	0.02		0.03	0.03
Min	0.11		0.00	0.01
Max	0.16		0.08	0.10
Summary Count	15		15	15
Total Count	15		15	15

LLCR Delta Count by Category						
	Stable	Minor	Acceptable	Marginal	Unstable	Open
mOhms	<=.33	>.34 & <=.66	>.67 & <=1	>1 & <=50	>50 & <=1000	>1000
Therm Shck	30	0	0	0	0	0
Humidity	30	0	0	0	0	0

Tracking Code: 643164_Report_Rev_3	Part #: EBTF-4-10-2.0-S-RA-1/EBTM-4-10-2.0-S-VT-1
Part description: EBTF/EBTM	

DATA SUMMARIES Continued

LLCR Thermal Aging:

- 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. $\leq +5.0$ mOhms:----- Stable
 - b. $+5.1$ to $+10.0$ mOhms:----- Minor
 - c. $+10.1$ to $+15.0$ mOhms:----- Acceptable
 - d. $+15.1$ to $+50.0$ mOhms:----- Marginal
 - e. $+50.1$ to $+2000$ mOhms:----- Unstable
 - f. $>+2000$ mOhms:----- Open Failure
- 5) The following guidelines are used to categorize the changes in LLCR for compliant pin only
 - a. $\leq +0.33$ mOhms:----- Stable
 - b. $> +0.33$ to $+0.66$ mOhms:----- Minor
 - c. $+0.67$ to $+1$ mOhms:----- Acceptable
 - d. $+1.1$ to $+50.0$ mOhms:----- Marginal
 - e. $+50.1$ to $+2000$ mOhms:----- Unstable
 - f. $>+2000$ mOhms:----- Open Failure

LLCR Measurement Summaries by Pin Type				
Date	9/11/2015	9/22/2015		
Room Temp (Deg C)	23	22		
Rel Humidity (%)	41	45		
Technician	Aaron McKim	Aaron McKim		
mOhm values	Actual Initial	Delta Thermal	Delta	Delta
Pin Type 1: Row 1				
Average	9.86	1.12		
St. Dev.	1.29	0.77		
Min	8.53	0.02		
Max	12.29	3.26		
Summary Count	40	40		
Total Count	40	40		
Pin Type 2: Row 2				
Average	13.90	1.70		
St. Dev.	1.48	1.14		
Min	11.78	0.06		
Max	16.78	5.65		
Summary Count	48	48		
Total Count	48	48		
Pin Type 3: Row 3				
Average	20.48	1.66		
St. Dev.	1.12	1.10		
Min	18.82	0.05		
Max	23.02	5.54		
Summary Count	48	48		
Total Count	48	48		
Pin Type 4: Ground				
Average	2.24	0.26		
St. Dev.	0.48	0.13		
Min	1.87	0.02		
Max	3.80	0.63		
Summary Count	56	56		
Total Count	56	56		

LLCR Delta Count by Category						
	Stable	Minor	Acceptable	Marginal	Unstable	Open
mOhms	<=5	>5 & <=10	>10 & <=15	>15 & <=50	>50 & <=1000	>1000
Thermal	190	2	0	0	0	0

DATA SUMMARIES Continued

EBTF Compliant LLCR:

LLCR Measurement Summaries by Pin Type				
Date	9/11/2015	9/22/2015		
Room Temp (Deg C)	23	22		
Rel Humidity (%)	41	45		
Technician	Aaron McKim	Aaron McKim		
mOhm values	Actual Initial	Delta Thermal	Delta	Delta
Pin Type 1: Signal				
Average	0.21	0.02		
St. Dev.	0.03	0.02		
Min	0.16	0.00		
Max	0.27	0.07		
Summary Count	15	15		
Total Count	15	15		
Pin Type 2: Ground				
Average	0.04	0.01		
St. Dev.	0.02	0.01		
Min	0.02	0.00		
Max	0.07	0.03		
Summary Count	15	15		
Total Count	15	15		

LLCR Delta Count by Category						
	Stable	Minor	Acceptable	Marginal	Unstable	Open
mOhms	<=.33	>.34 & <=.66	>.67 & <=1	>1 & <=50	>50 & <=1000	>1000
Thermal	30	0	0	0	0	0

DATA SUMMARIES Continued

EBTM Compliant LLCR:

LLCR Measurement Summaries by Pin Type				
Date	9/11/2015	9/22/2015		
Room Temp (Deg C)	23	22		
Rel Humidity (%)	41	45		
Technician	Aaron McKim	Aaron McKim		
mOhm values	Actual	Delta	Delta	Delta
	Initial	Thermal		
EBTM CP	Pin Type 1: Signal			
Average	0.12	0.02		
St. Dev.	0.02	0.02		
Min	0.09	0.00		
Max	0.16	0.06		
Summary Count	15	15		
Total Count	15	15		
	Pin Type 2: Ground			
Average	0.10	0.03		
St. Dev.	0.02	0.03		
Min	0.07	0.00		
Max	0.14	0.13		
Summary Count	15	15		
Total Count	15	15		

LLCR Delta Count by Category						
	Stable	Minor	Acceptable	Marginal	Unstable	Open
mOhms	<=.33	>.34 & <=.66	>.67 & <=1	>1 & <=50	>50 & <=1000	>1000
Thermal	30	0	0	0	0	0

Tracking Code: 643164_Report_Rev_3	Part #: EBTF-4-10-2.0-S-RA-1/EBTM-4-10-2.0-S-VT-1
Part description: EBTF/EBTM	

DATA SUMMARIES Continued

LLCR Gas Tight:

- 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. $\leq +5.0$ mOhms: ----- Stable
 - b. $+5.1$ to $+10.0$ mOhms: ----- Minor
 - c. $+10.1$ to $+15.0$ mOhms: ----- Acceptable
 - d. $+15.1$ to $+50.0$ mOhms: ----- Marginal
 - e. $+50.1$ to $+2000$ mOhms: ----- Unstable
 - f. $>+2000$ mOhms: ----- Open Failure
- 5) The following guidelines are used to categorize the changes in LLCR for compliant pin only
 - a. $\leq +0.33$ mOhms: ----- Stable
 - b. $> +0.33$ to $+0.66$ mOhms: ----- Minor
 - c. $+0.67$ to $+1$ mOhms: ----- Acceptable
 - d. $+1.1$ to $+50.0$ mOhms: ----- Marginal
 - e. $+50.1$ to $+2000$ mOhms: ----- Unstable
 - f. $>+2000$ mOhms: ----- Open Failure

LLCR Measurement Summaries by Pin Type				
Date	9/14/2015	9/14/2015		
Room Temp (Deg C)	22	22		
Rel Humidity (%)	44	44		
Technician	Aaron McKim	Aaron McKim		
mOhm values	Actual	Delta	Delta	Delta
	Initial	Acid Vapor		
Contact Resistance	Pin Type 1: Row 1			
Average	9.66	0.16		
St. Dev.	1.26	0.13		
Min	8.30	0.01		
Max	11.85	0.46		
Summary Count	40	40		
Total Count	40	40		
	Pin Type 2: Row 2			
Average	13.52	0.22		
St. Dev.	1.44	0.30		
Min	11.87	0.00		
Max	15.88	1.88		
Summary Count	48	48		
Total Count	48	48		
	Pin Type 3: Row 3			
Average	20.08	0.22		
St. Dev.	1.04	0.22		
Min	18.72	0.00		
Max	22.25	0.99		
Summary Count	48	48		
Total Count	48	48		
	Pin Type 4: Ground			
Average	2.15	0.04		
St. Dev.	0.44	0.05		
Min	1.78	0.00		
Max	3.34	0.33		
Summary Count	56	56		
Total Count	56	56		

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

EBTF Compliant LLCR:

LLCR Measurement Summaries by Pin Type				
Date	9/14/2015	9/14/2015		
Room Temp (Deg C)	22	22		
Rel Humidity (%)	44	44		
Technician	Aaron McKim	Aaron McKim		
mOhm values	Actual Initial	Delta Acid Vapor	Delta	Delta
EBTF CP	Pin Type 1: Signal			
Average	0.19	0.02		
St. Dev.	0.03	0.02		
Min	0.16	0.00		
Max	0.26	0.06		
Summary Count	15	15		
Total Count	15	15		
	Pin Type 2: Ground			
Average	0.04	0.01		
St. Dev.	0.02	0.01		
Min	0.02	0.00		
Max	0.08	0.02		
Summary Count	15	15		
Total Count	15	15		

LLCR Delta Count by Category						
	Stable	Minor	Acceptable	Marginal	Unstable	Open
mOhms	<=.33	>.34 & <=.66	>.67 & <=1	>1 & <=50	>50 & <=1000	>1000
Acid Vapor	30	0	0	0	0	0

DATA SUMMARIES Continued

EBTM Compliant LLCR:

LLCR Measurement Summaries by Pin Type				
Date	9/14/2015	9/14/2015		
Room Temp (Deg C)	22	22		
Rel Humidity (%)	44	44		
Technician	Aaron McKim	Aaron McKim		
mOhm values	Actual Initial	Delta Acid Vapor	Delta	Delta
EBTM CP	Pin Type 1: Signal			
Average	0.16	0.02		
St. Dev.	0.02	0.01		
Min	0.13	0.00		
Max	0.19	0.05		
Summary Count	15	15		
Total Count	15	15		
	Pin Type 2: Ground			
Average	0.09	0.01		
St. Dev.	0.01	0.01		
Min	0.06	0.00		
Max	0.12	0.04		
Summary Count	15	15		
Total Count	15	15		

LLCR Delta Count by Category						
	Stable	Minor	Acceptable	Marginal	Unstable	Open
mOhms	<=.33	>.34 & <=.66	>.67 & <=1	>1 & <=50	>50 & <=1000	>1000
Acid Vapor	30	0	0	0	0	0

Tracking Code: 643164_Report_Rev_3	Part #: EBTF-4-10-2.0-S-RA-1/EBTM-4-10-2.0-S-VT-1
Part description: EBTF/EBTM	

DATA SUMMARIES Continued

LLCR Shock & Vibration:

- 1). A total of 192 points were measured.
- 2). EIA-364-23, *Low Level Contact Resistance Test Procedure for Electrical Connectors and Sockets*.
- 3). The following guidelines are used to categorize the changes in LLCR as a result from stressing.
 - a. $\leq +5.0$ mOhms: ----- Stable
 - b. $+5.1$ to $+10.0$ mOhms: ----- Minor
 - c. $+10.1$ to $+15.0$ mOhms: ----- Acceptable
 - d. $+15.1$ to $+50.0$ mOhms: ----- Marginal
 - e. $+50.1$ to $+2000$ mOhms ----- Unstable
 - f. $>+2000$ mOhms: ----- Open Failure
- 4). The following guidelines are used to categorize the changes in LLCR for compliant pin only
 - a. $\leq +0.33$ mOhms: ----- Stable
 - b. $> +0.33$ to $+0.66$ mOhms: ----- Minor
 - c. $+0.67$ to $+1$ mOhms: ----- Acceptable
 - d. $+1.1$ to $+50.0$ mOhms: ----- Marginal
 - e. $+50.1$ to $+2000$ mOhms: ----- Unstable
 - f. $>+2000$ mOhms: ----- Open Failure

LLCR Measurement Summaries by Pin Type				
Date	8/25/2015	9/3/2015		
Room Temp (Deg C)	22	23		
Rel Humidity (%)	45	46		
Technician	Aaron McKim	Aaron McKim		
mOhm values	Actual	Delta	Delta	Delta
	Initial	Shock-Vib		
Contact Resistance	Pin Type 1: Row 1			
Average	9.99	0.52		
St. Dev.	1.22	0.37		
Min	8.48	0.07		
Max	12.25	1.86		
Summary Count	40	40		
Total Count	40	40		
	Pin Type 2: Row 2			
Average	13.85	0.48		
St. Dev.	1.44	0.27		
Min	11.66	0.03		
Max	16.50	1.11		
Summary Count	48	48		
Total Count	48	48		
	Pin Type 3: Row 3			
Average	20.34	0.26		
St. Dev.	1.03	0.26		
Min	18.78	0.00		
Max	22.63	1.18		
Summary Count	48	48		
Total Count	48	48		
	Pin Type 4: Ground			
Average	2.28	0.09		
St. Dev.	0.46	0.08		
Min	1.69	0.00		
Max	3.57	0.38		
Summary Count	56	56		
Total Count	56	56		

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

EBTF Compliant LLCR:

LLCR Measurement Summaries by Pin Type				
Date	8/31/2015	9/3/2015		
Room Temp (Deg C)	22	23		
Rel Humidity (%)	45	48		
Technician	Aaron McKim	Aaron McKim		
mOhm values	Actual	Delta	Delta	Delta
	Initial	Shock-Vib		
EBTF CP	Pin Type 1: Signal			
Average	0.23	0.02		
St. Dev.	0.04	0.01		
Min	0.15	0.00		
Max	0.28	0.03		
Summary Count	15	15		
Total Count	15	15		
	Pin Type 2: Ground			
Average	0.05	0.02		
St. Dev.	0.02	0.01		
Min	0.02	0.00		
Max	0.08	0.04		
Summary Count	15	15		
Total Count	15	15		

LLCR Delta Count by Category						
	Stable	Minor	Acceptable	Marginal	Unstable	Open
mOhms	<=.33	>.34 & <=.66	>.67 & <=1	>1 & <=50	>50 & <=1000	>1000
Shock-Vib	30	0	0	0	0	0

DATA SUMMARIES Continued

EBTM Compliant LLCR:

LLCR Measurement Summaries by Pin Type				
Date	8/31/2015	9/3/2015		
Room Temp (Deg C)	23	23		
Rel Humidity (%)	45	48		
Technician	Aaron McKim	Aaron McKim		
mOhm values	Actual	Delta	Delta	Delta
	Initial	Shock-Vib		
EBTM CP	Pin Type 1: Signal			
Average	0.20	0.04		
St. Dev.	0.04	0.03		
Min	0.12	0.00		
Max	0.26	0.09		
Summary Count	15	15		
Total Count	15	15		
	Pin Type 2: Ground			
Average	0.14	0.01		
St. Dev.	0.05	0.01		
Min	0.08	0.00		
Max	0.24	0.04		
Summary Count	15	15		
Total Count	15	15		

LLCR Delta Count by Category						
	Stable	Minor	Acceptable	Marginal	Unstable	Open
mOhms	<=.33	>.34 & <=.66	>.67 & <=1	>1 & <=50	>50 & <=1000	>1000
Shock-Vib	30	0	0	0	0	0

Tracking Code: 643164_Report_Rev_3	Part #: EBTf-4-10-2.0-S-RA-1/EBTM-4-10-2.0-S-VT-1
Part description: EBTf/EBTM	

EQUIPMENT AND CALIBRATION SCHEDULES

Equipment #: TCT-07

Description: Automated Test Stand

Manufacturer: Chatillon/Lloyd

Model: LF Plus

Serial #: LF1310

Accuracy: See Manual

... Last Cal: 11/14/2014, Next Cal: 11/14/2015

Equipment #: HPT-01

Description: Hipot Safety Tester

Manufacturer: Vitrek

Model: V73

Serial #: 019808

Accuracy:

... Last Cal: 05/15/2015, Next Cal: 05/15/2016

Equipment #: MO-04

Description: Multimeter /Data Acquisition System

Manufacturer: Keithley

Model: 2700

Serial #: 0798688

Accuracy: See Manual

... Last Cal: 09/11/2015, Next Cal: 09/11/2016

Equipment #: PS-02

Description: Power Supply

Manufacturer: Hewlett-Packard

Model: 6033A

Serial #: N/A

Accuracy: See Manual

... Last Cal: NOT CALIBRATED

Equipment #: MO-10

Description: Model 2750 Multimeter/Switch System (Integra Series)

Manufacturer: Keithley

Model: 2750

Serial #: 1215161

Accuracy: See Manual

... Last Cal: 09/11/2015, Next Cal: 09/11/2016

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: 11/14/2014, Next Cal: 11/14/2015

Tracking Code: 643164_Report_Rev_3	Part #: EBTF-4-10-2.0-S-RA-1/EBTM-4-10-2.0-S-VT-1
Part description: EBTF/EBTM	

EQUIPMENT AND CALIBRATION SCHEDULES

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: 06/30/2015, Next Cal: 06/30/2016

Equipment #: OV-05

Description: Forced Air Oven, 5 Cu. Ft., 120 V (Chamber Room)

Manufacturer: Sheldon Mfg.

Model: CE5F

Serial #: 02008008

Accuracy: +/- 5 deg. C

... Last Cal: 02/18/2015, Next Cal: 02/18/2016

Equipment #: SVC-01

Description: Shock & Vibration Table

Manufacturer: Data Physics

Model: LE-DSA-10-20K

Serial #: 10037

Accuracy: See Manual

... Last Cal: 04/22/2015, Next Cal: 04/22/2016

Equipment #: ACLM-01

Description: Accelerometer

Manufacturer: PCB Piezotronics

Model: 352C03

Serial #: 115819

Accuracy: See Manual

... Last Cal: 07/18/2015, Next Cal: 07/18/2016

Equipment #: ED-03

Description: Event Detector

Manufacturer: Analysis Tech

Model: 32EHD

Serial #: 1100604

Accuracy: See Manual

... Last Cal: 10/31/2014, Next Cal: 10/31/2015