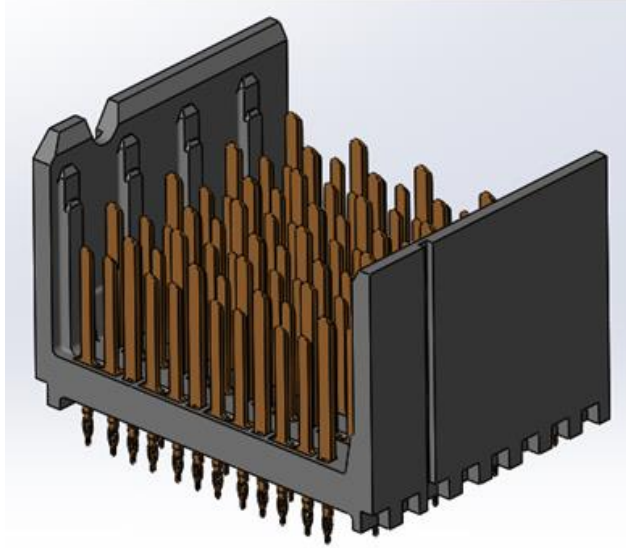


Project Number: Compliant Pin Qualification Test Report	Tracking Code: 1351917_Report_Rev_2
Requested by: Corey Rose	Date: 5/22/2018
Part #: HDTM-4-08-1-S-VT-0-1	
Part description: HDTM	Tech: Aaron McKim
Test Start: 12/20/2017	Test Completed: 2/7/2018



(Actual part not depicted)

COMPLIANT PIN QUALIFICATION TEST REPORT

**HDTM
HDTM-4-08-1-S-VT-0-1**

Tracking Code: 1351917_Report_Rev_2	Part #: HDTM-4-08-1-S-VT-0-1
Part description: HDTM	

REVISION HISTORY

DATE	REV.NUM.	DESCRIPTION	ENG
2/28/2018	1	Initial Issue	KH
5/22/2018	2	Add PCB and Press Tool part numbers; Add Visual Inspection Results	CR

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: Compliant pin 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) Any additional preparation will be noted in the individual test sequences.
- 4) Samtec Test PCBs used: PCB446BMAX (OSP Finish), PCB446BMAX (Tin Finish), PCB520H (OSP Finish), PCB520I (Tin Finish)
- 5) Connector Press Tool: HDTM Part # 694-4721-000

FLOWCHARTS

Compliant Pin Cross-Section Analysis

<u>Group 1</u> HDTM-4-08-1-S-VT-X-1	<u>Group 2</u> HDTM-4-08-1-S-VT-X-1	<u>Group 3</u> HDTM-4-08-1-S-VT-X-1	<u>Group 4</u> HDTM-4-08-1-S-VT-X-1
10 Points 0.0177" Drill / MIN Hole OSP	10 Points 0.0177" Drill / MAX Hole OSP	10 Points 0.0177" Drill / MIN Hole Immersion Tin	10 Points 0.0177" Drill / MAX Hole Immersion Tin
Step Description	Step Description	Step Description	Step Description
1. Visual Inspection	1. Visual Inspection	1. Visual Inspection	1. Visual Inspection
2. Cross-Section Compliant In PTH	2. Cross-Section Compliant In PTH	2. Cross-Section Compliant In PTH	2. Cross-Section Compliant In PTH
3. Inspect PTH Integrity And Compliant Integrity	3. Inspect PTH Integrity And Compliant Integrity	3. Inspect PTH Integrity And Compliant Integrity	3. Inspect PTH Integrity And Compliant Integrity
4. Measure Radial Deformation	4. Measure Radial Deformation	4. Measure Radial Deformation	4. Measure Radial Deformation

FLOWCHARTS Continued

Insertion/Retention Force W/ Temperature Life

Insertion/Retention

Group 1 HDTM-4-08-1-S-VT-X-1 30 Points 0.0177" Drill / MIN Hole OSP		Group 2 HDTM-4-08-1-S-VT-X-1 30 Points 0.0177" Drill / MAX Hole OSP		Group 3 HDTM-4-08-1-S-VT-X-1 30 Points 0.0177" Drill / MIN Hole Immersion Tin		Group 4 HDTM-4-08-1-S-VT-X-1 30 Points 0.0177" Drill / MAX Hole Immersion Tin	
Step	Description	Step	Description	Step	Description	Step	Description
1.	Visual Inspection	1.	Visual Inspection	1.	Visual Inspection	1.	Visual Inspection
2.	1st Insertion	2.	1st Insertion	2.	1st Insertion	2.	1st Insertion
3.	1st Retention	3.	1st Retention	3.	1st Retention	3.	1st Retention
4.	2nd Insertion	4.	2nd Insertion	4.	2nd Insertion	4.	2nd Insertion
5.	2nd Retention	5.	2nd Retention	5.	2nd Retention	5.	2nd Retention
6.	3rd Insertion	6.	3rd Insertion	6.	3rd Insertion	6.	3rd Insertion
7.	Thermal Age (2) - Non Standard	7.	Thermal Age (2) - Non Standard	7.	Thermal Age (2) - Non Standard	7.	Thermal Age (2) - Non Standard
8.	3rd Retention	8.	3rd Retention	8.	3rd Retention	8.	3rd Retention

LLCR

Group 5 HDTM-4-08-1-S-VT-X-1 30 Points 0.0177" Drill / MAX Hole OSP		Group 6 HDTM-4-08-1-S-VT-X-1 30 Points 0.0177" Drill / MAX Hole Immersion Tin	
Step	Description	Step	Description
1.	Visual Inspection	1.	Visual Inspection
2.	Press 1st Connector	2.	Press 1st Connector
3.	LLCR (1) Max LLCR = 1 mOhm	3.	LLCR (1) Max LLCR = 1 mOhm
4.	Remove Connector	4.	Remove Connector
5.	Press 2nd Connector	5.	Press 2nd Connector
6.	LLCR (1) Max Delta = 1 mOhm	6.	LLCR (1) Max Delta = 1 mOhm
7.	Remove Connector	7.	Remove Connector
8.	Press 3rd Connector	8.	Press 3rd Connector
9.	LLCR (1) Max Delta = 1 mOhm	9.	LLCR (1) Max Delta = 1 mOhm
10.	Thermal Age (2) - Non Standard	10.	Thermal Age (2) - Non Standard
11.	LLCR (1) Max Delta = 1 mOhm	11.	LLCR (1) Max Delta = 1 mOhm

(1) LLCR = EIA-364-23

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

(2) Thermal Age = Other

Test Condition = 4 (105°C)
Time Condition = C (500 Hours)
EIA-364-17

ATTRIBUTE DEFINITIONS

The following is a brief, simplified description of attributes.

THERMAL:

- 1) EIA-364-17, *Temperature Life with or without Electrical Load Test Procedure for Electrical Connectors*.
- 2) Test Condition at 105° C.
- 3) Test Time Condition C for 500 hours.
- 4) All test samples are pre-conditioned at ambient.
- 5) All test samples are exposed to environmental stressing in the mated condition.

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 for compliant pin only
 - a. $\leq +1$ mOhms: ----- Stable
 - b. $> +1$ to $+7.5$ mOhms: ----- Minor
 - c. $+7.5$ to $+10$ mOhms: ----- Acceptable
 - d. $+10$ to $+50.0$ mOhms:----- Marginal
 - e. $+50.1$ to $+2000$ mOhms:----- Unstable
 - f. $>+2000$ mOhms: ----- Open Failure

RESULTS**Compliant Pin Cross Section Analysis Group****Visual Inspection: Requirements ----- No Damage****Group 1--0.0177" Drill/Min Hole OSP**

- Visual Inspection-----Passed

Group 2--0.0177" Drill/Max Hole OSP

- Visual Inspection-----Passed

Group 3--0.0177" Drill/Min Hole Immersion Tin

- Visual Inspection-----Passed

Group 4--0.0177" Drill/Max Hole Immersion Tin

- Visual Inspection-----Passed

PTH and Compliant Integrity Inspection**Group 1--0.0177" Drill/Min Hole OSP**

- Visual Inspection-----Passed

Group 2--0.0177" Drill/Max Hole OSP

- Visual Inspection-----Passed

Group 3--0.0177" Drill/Min Hole Immersion Tin

- Visual Inspection-----Passed

Group 4--0.0177" Drill/Max Hole Immersion Tin

- Visual Inspection-----Passed

Measure Radial Deformation**Group 1--0.0177" Drill/Min Hole OSP**

- Min-----0.0012 inch
- Max -----0.0018 inch

Group 2--0.0177" Drill/Max Hole OSP

- Min-----0.0003 inch
- Max -----0.0007 inch

Group 3--0.0177" Drill/Min Hole Immersion Tin

- Min-----0.0013 inch
- Max -----0.0019 inch

Group 4--0.0177" Drill/Max Hole Immersion Tin

- Min-----0.0001 inch
- Max -----0.0006 inch

RESULTS Continued**Insertion/Retention Force w/ Temperature life**

Visual Inspection: Requirements ----- No Damage

Group 1--0.0177" Drill/Min Hole OSP

▪ **Visual Inspection-----Passed**

Group 2--0.0177" Drill/Max Hole OSP

▪ **Visual Inspection-----Passed**

Group 3--0.0177" Drill/Min Hole Immersion Tin

▪ **Visual Inspection-----Passed**

Group 4--0.0177" Drill/Max Hole Immersion Tin

▪ **Visual Inspection-----Passed**

Group 5--0.0177" Drill/Max Hole OSP (LLCR)

▪ **Visual Inspection-----Passed**

Group 6--0.0177" Drill/Max Hole Immersion Tin (LLCR)

▪ **Visual Inspection-----Passed**

Insertion/Retention Force**0.0177" Drill/MIN Hole OSP**

- **Pin 1**
 - **Insertion**
 - **Min-----3.50 Lbs**
 - **Max -----4.47 Lbs**
 - **Retention**
 - **Min-----0.45 Lbs**
 - **Max -----1.20 Lbs**
- **Pin 2**
 - **Insertion**
 - **Min-----2.63 Lbs**
 - **Max -----3.77 Lbs**
 - **Retention**
 - **Min-----0.42 Lbs**
 - **Max -----1.32 Lbs**
- **Pin 3**
 - **Insertion**
 - **Min-----2.50 Lbs**
 - **Max -----3.67 Lbs**
 - **Retention (After Thermal)**
 - **Min-----0.29 Lbs**
 - **Max -----2.90 Lbs**

RESULTS Continued**0.0177" Drill/MAX Hole OSP**

- **Pin 1**
 - **Insertion**
 - **Min**-----1.38 Lbs
 - **Max**-----1.69 Lbs
 - **Retention**
 - **Min**-----0.65 Lbs
 - **Max**-----1.27 Lbs
- **Pin 2**
 - **Insertion**
 - **Min**-----1.31 Lbs
 - **Max**-----1.89 Lbs
 - **Retention**
 - **Min**-----0.90 Lbs
 - **Max**-----1.38 Lbs
- **Pin 3**
 - **Insertion**
 - **Min**-----1.17 Lbs
 - **Max**-----1.75 Lbs
 - **Retention (After Thermal)**
 - **Min**-----1.15 Lbs
 - **Max**-----3.16 Lbs

0.0177" Drill/MIN Hole Immersion Tin

- **Pin 1**
 - **Insertion**
 - **Min**-----3.89 Lbs
 - **Max**-----5.61 Lbs
 - **Retention**
 - **Min**-----0.78 Lbs
 - **Max**-----1.98 Lbs
- **Pin 2**
 - **Insertion**
 - **Min**-----2.61 Lbs
 - **Max**-----3.96 Lbs
 - **Retention**
 - **Min**-----0.55 Lbs
 - **Max**-----2.52 Lbs
- **Pin 3**
 - **Insertion**
 - **Min**-----2.57 Lbs
 - **Max**-----3.42 Lbs
 - **Retention (After Thermal)**
 - **Min**-----1.84 Lbs
 - **Max**-----3.28 Lbs

RESULTS Continued**0.0177" Drill/MAX Hole Immersion Tin**

- **Pin 1**
 - **Insertion**
 - **Min**-----2.27 Lbs
 - **Max**-----2.67 Lbs
 - **Retention**
 - **Min**-----1.55 Lbs
 - **Max**-----2.73 Lbs
- **Pin 2**
 - **Insertion**
 - **Min**-----1.54 Lbs
 - **Max**-----2.16 Lbs
 - **Retention**
 - **Min**-----0.65 Lbs
 - **Max**-----1.71 Lbs
- **Pin 3**
 - **Insertion**
 - **Min**-----1.53 Lbs
 - **Max**-----2.05 Lbs
 - **Retention (After Thermal)**
 - **Min**-----1.01 Lbs
 - **Max**-----2.46 Lbs

RESULTS Continued**LLCR (40 LLCR test points)****0.0177" Drill/ MAX Hole OSP**

- **1st Connector** ----- 0.74 mOhms Max
- **2nd Connector**
 - **<= +1 mOhms** -----40 Points-----Stable
 - **+1 to +7.5 mOhms** ----- 0 Points-----Minor
 - **+7.5 to +10 mOhms**----- 0 Points-----Acceptable
 - **+10 to +50.0 mOhms** ----- 0 Points-----Marginal
 - **+50.1 to +2000 mOhms** ----- 0 Points-----Unstable
 - **>+2000 mOhms** ----- 0 Points-----Open Failure
- **3rd Connector**
 - **<= +1 mOhms** -----40 Points-----Stable
 - **+1 to +7.5 mOhms** ----- 0 Points-----Minor
 - **+7.5 to +10 mOhms**----- 0 Points-----Acceptable
 - **+10 to +50.0 mOhms** ----- 0 Points-----Marginal
 - **+50.1 to +2000 mOhms** ----- 0 Points-----Unstable
 - **>+2000 mOhms** ----- 0 Points-----Open Failure
- **After Thermals**
 - **<= +1 mOhms** -----40 Points-----Stable
 - **+1 to +7.5 mOhms** ----- 0 Points-----Minor
 - **+7.5 to +10 mOhms**----- 0 Points-----Acceptable
 - **+10 to +50.0 mOhms** ----- 0 Points-----Marginal
 - **+50.1 to +2000 mOhms** ----- 0 Points-----Unstable
 - **>+2000 mOhms** ----- 0 Points-----Open Failure

0.0177" Drill/ MAX Hole Immersion Tin

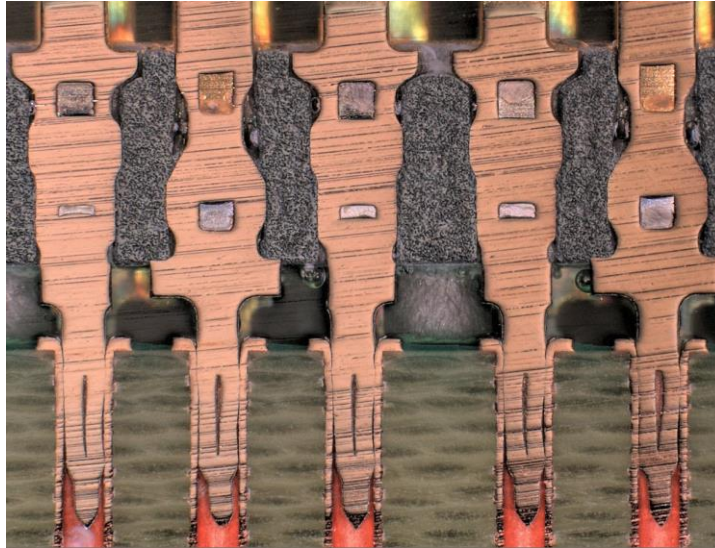
- **1st Connector** ----- 0.84 mOhms Max
- **2nd Connector**
 - **<= +1 mOhms** -----40 Points-----Stable
 - **+1 to +7.5 mOhms** ----- 0 Points-----Minor
 - **+7.5 to +10 mOhms**----- 0 Points-----Acceptable
 - **+10 to +50.0 mOhms** ----- 0 Points-----Marginal
 - **+50.1 to +2000 mOhms** ----- 0 Points-----Unstable
 - **>+2000 mOhms** ----- 0 Points-----Open Failure
- **3rd Connector**
 - **<= +1 mOhms** -----40 Points-----Stable
 - **+1 to +7.5 mOhms** ----- 0 Points-----Minor
 - **+7.5 to +10 mOhms**----- 0 Points-----Acceptable
 - **+10 to +50.0 mOhms** ----- 0 Points-----Marginal
 - **+50.1 to +2000 mOhms** ----- 0 Points-----Unstable
 - **>+2000 mOhms** ----- 0 Points-----Open Failure
- **After Thermals**
 - **<= +1 mOhms** -----40 Points-----Stable
 - **+1 to +7.5 mOhms** ----- 0 Points-----Minor
 - **+7.5 to +10 mOhms**----- 0 Points-----Acceptable
 - **+10 to +50.0 mOhms** ----- 0 Points-----Marginal
 - **+50.1 to +2000 mOhms** ----- 0 Points-----Unstable
 - **>+2000 mOhms** ----- 0 Points-----Open Failure

DATA SUMMARIES

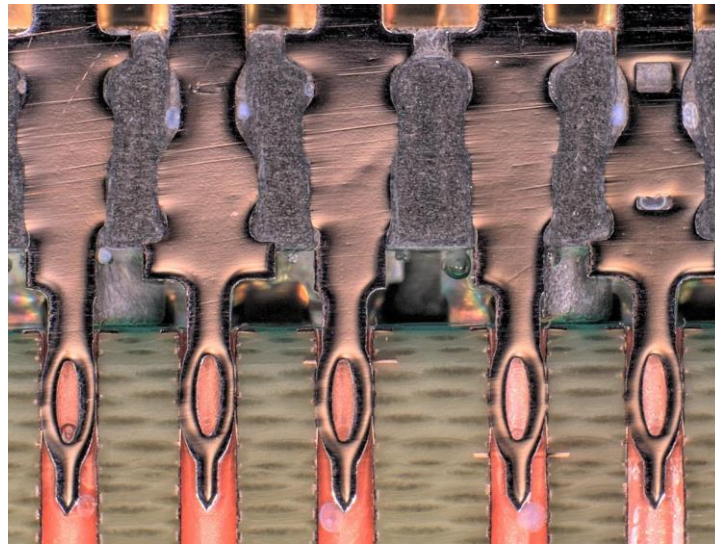
Compliant Pin Cross Section Analysis Group

Cross Section Picture

Min OSP

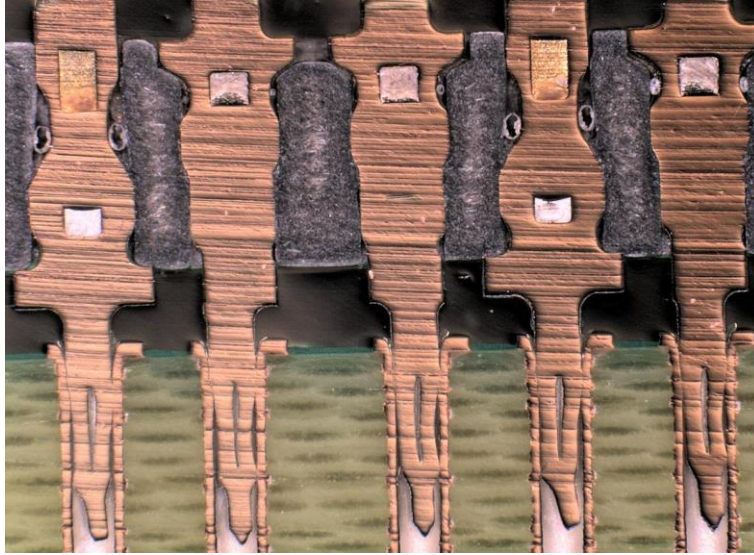


Max OSP

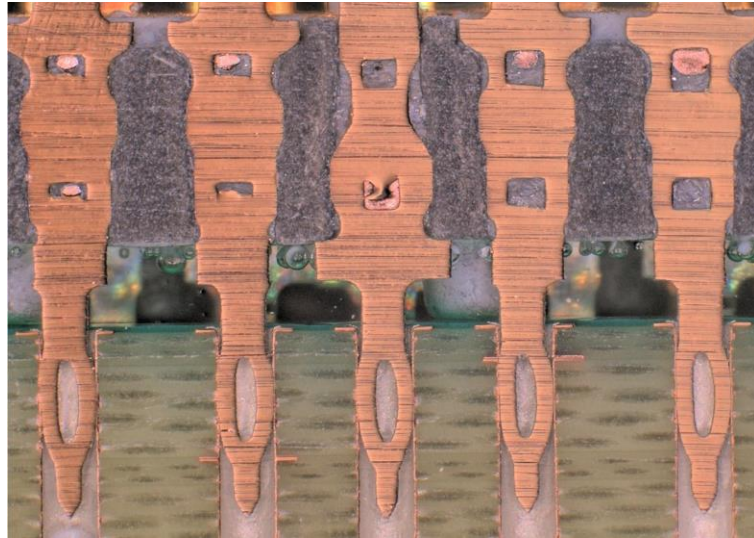


DATA SUMMARIES Continued

Min Tin



Max Tin



DATA SUMMARIES Continued**Measure radial deformation****Hole Deformation Inspection Min/Max OSP**

Sample:	.012 PTH	.016 PTH
1	0.0018	0.0003
2	0.0014	0.0006
3	0.0012	0.0007
4	0.0013	0.0006
5	0.0012	0.0006
6	0.0013	0.0004
7	0.0012	0.0005
8	0.0012	0.0006
9	0.0015	0.0004
10	0.0013	0.0005
minimum:	0.0012	0.0003
maximum:	0.0018	0.0007
average:	0.0013	0.0005

Hole Deformation Inspection Min/Max Tin

Sample:	.012 PTH	.016 PTH
1	0.0019	0.0006
2	0.0013	0.0004
3	0.0018	0.0003
4	0.0016	0.0004
5	0.0018	0.0003
6	0.0018	0.0003
7	0.0013	0.0002
8	0.0016	0.0001
9	0.0018	0.0002
10	0.0013	0.0002
minimum:	0.0013	0.0001
maximum:	0.0019	0.0006
average:	0.0016	0.0003

DATA SUMMARIES Continued**Insertion/Retention Force w/ Temperature life****Insertion/Retention Force
0.0177" Drill/MIN Hole OSP**

	Pin 1				Pin 2			
	Mating		Unmating		Mating		Unmating	
	Newton's	Force (Lbs)	Newton's	Force (Lbs)	Newton's	Force (Lbs)	Newton's	Force (Lbs)
Minimum	15.57	3.50	1.99	0.45	11.71	2.63	1.87	0.42
Maximum	19.90	4.47	5.35	1.20	16.76	3.77	5.87	1.32
Average	17.25	3.88	3.67	0.83	14.20	3.19	3.88	0.87
St Dev	1.09	0.25	0.81	0.18	1.15	0.26	0.88	0.20
Count	40	40	40	40	40	40	40	40

	Pin 3			
	Mating		Unmating	
	Newton's	Force (Lbs)	Newton's	Force (Lbs)
Minimum	11.12	2.50	1.27	0.29
Maximum	16.31	3.67	12.90	2.90
Average	13.18	2.96	8.61	1.94
St Dev	1.13	0.25	2.50	0.56
Count	40	40	40	40

0.0177" Drill/MAX Hole OSP

	Pin 1				Pin 2			
	Mating		Unmating		Mating		Unmating	
	Newton's	Force (Lbs)	Newton's	Force (Lbs)	Newton's	Force (Lbs)	Newton's	Force (Lbs)
Minimum	6.15	1.38	2.88	0.65	5.83	1.31	3.99	0.90
Maximum	7.51	1.69	5.65	1.27	8.41	1.89	6.12	1.38
Average	6.76	1.52	4.49	1.01	7.10	1.60	4.96	1.11
St Dev	0.36	0.08	0.68	0.15	0.73	0.16	0.57	0.13
Count	40	40	40	40	40	40	40	40

	Pin 3			
	Mating		Unmating	
	Newton's	Force (Lbs)	Newton's	Force (Lbs)
Minimum	5.20	1.17	5.13	1.15
Maximum	7.80	1.75	14.05	3.16
Average	6.28	1.41	11.47	2.58
St Dev	0.67	0.15	1.95	0.44
Count	40	40	40	40

DATA SUMMARIES Continued**0.0177" Drill/MIN Hole Immersion Tin**

	Pin 1				Pin 2			
	Mating		Unmating		Mating		Unmating	
	Newton's	Force (Lbs)	Newton's	Force (Lbs)	Newton's	Force (Lbs)	Newton's	Force (Lbs)
Minimum	17.29	3.89	3.48	0.78	11.63	2.61	2.43	0.55
Maximum	24.95	5.61	8.81	1.98	17.61	3.96	11.22	2.52
Average	19.60	4.41	7.35	1.65	13.88	3.12	7.50	1.69
St Dev	1.45	0.33	1.15	0.26	1.38	0.31	1.77	0.40
Count	40	40	40	40	40	40	40	40

	Pin 3			
	Mating		Unmating	
	Newton's	Force (Lbs)	Newton's	Force (Lbs)
Minimum	11.43	2.57	8.18	1.84
Maximum	15.21	3.42	14.58	3.28
Average	12.73	2.86	11.32	2.55
St Dev	0.95	0.21	1.25	0.28
Count	40	40	40	40

0.0177" Drill/MAX Hole Immersion Tin

	Pin 1				Pin 2			
	Mating		Unmating		Mating		Unmating	
	Newton's	Force (Lbs)	Newton's	Force (Lbs)	Newton's	Force (Lbs)	Newton's	Force (Lbs)
Minimum	10.09	2.27	6.91	1.55	6.84	1.54	2.87	0.65
Maximum	11.86	2.67	12.15	2.73	9.59	2.16	7.61	1.71
Average	11.09	2.49	10.07	2.26	8.10	1.82	6.10	1.37
St Dev	0.47	0.11	1.21	0.27	0.70	0.16	0.87	0.20
Count	40	40	40	40	40	40	40	40

	Pin 3			
	Mating		Unmating	
	Newton's	Force (Lbs)	Newton's	Force (Lbs)
Minimum	6.78	1.53	4.48	1.01
Maximum	9.10	2.05	10.96	2.46
Average	8.02	1.80	8.68	1.95
St Dev	0.58	0.13	1.40	0.32
Count	40	40	40	40

DATA SUMMARIES Continued

LLCR

- 1) A total of 40 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. $\leq +1$ mOhms: ----- Stable
 - b. $> +1$ to $+7.5$ mOhms: ----- Minor
 - c. $+7.5$ to $+10$ mOhms: ----- Acceptable
 - d. $+10$ to $+50.0$ mOhms: ----- Marginal
 - e. $+50.1$ to $+1000$ mOhms: ----- Unstable
 - f. $>+1000$ mOhms: ----- Open Failure

0.0177" Drill/ MAX Hole OSP

LLCR Measurement Summaries by Pin Type				
Date	12/20/2017	1/10/2018	1/31/2018	2/7/2018
Room Temp (Deg C)	23	23	23	22
Rel Humidity (%)	34	35	32	33
Technician	Aaron McKim	Aaron McKim	Aaron McKim	Aaron McKim
mOhm values	Actual	Delta	Delta	Delta
	1st Connector	2nd Connector	3rd Connector	After Thermals
Max (.0162") OSP	Pin Type 1: Signal			
Average	0.42	0.08	0.10	0.13
St. Dev.	0.14	0.06	0.08	0.08
Min	0.21	0.01	0.00	0.01
Max	0.74	0.23	0.36	0.42
Summary Count	40	40	40	40
Total Count	40	40	40	40

LLCR Delta Count by Category						
mOhms	Stable	Minor	Acceptable	Marginal	Unstable	Open
	≤ 1	>1 & ≤ 7.5	>7.5 & ≤ 10	>10 & ≤ 50	>50 & ≤ 1000	>1000
2nd Connector	40	0	0	0	0	0
3rd Connector	40	0	0	0	0	0
After Thermals	40	0	0	0	0	0

DATA SUMMARIES Continued**0.0177" Drill/ MAX Hole Immersion Tin****LLCR Measurement Summaries by Pin Type**

	12/20/2017	1/10/2018	1/31/2018	2/7/2018
Date	12/20/2017	1/10/2018	1/31/2018	2/7/2018
Room Temp (Deg C)	23	23	23	22
Rel Humidity (%)	34	35	32	33
Technician	Aaron McKim	Aaron McKim	Aaron McKim	Aaron McKim
mOhm values	Actual	Delta	Delta	Delta
	1st Connector	2nd Connector	3rd Connector	After Thermals
Max (.0162") Immersion Tin	Pin Type 1: Signal			
Average	0.54	0.05	0.04	0.08
St. Dev.	0.16	0.05	0.05	0.09
Min	0.29	0.00	0.00	0.00
Max	0.84	0.22	0.23	0.41
Summary Count	40	40	40	40
Total Count	40	40	40	40

LLCR Delta Count by Category

	Stable	Minor	Acceptable	Marginal	Unstable	Open
mOhms	<=1	>1 & <=7.5	>7.5 & <=10	>10 & <=50	>50 & <=1000	>1000
2nd Connector	40	0	0	0	0	0
3rd Connector	40	0	0	0	0	0
After Thermals	40	0	0	0	0	0

EQUIPMENT AND CALIBRATION SCHEDULES**Equipment #:** TCT-04**Description:** Automated Test Stand**Manufacturer:** Chatillon/Lloyd**Model:** LF Plus**Serial #:** LF1310**Accuracy:** See Manual

... Last Cal: 11/14/2017, Next Cal: 11/14/2018

Equipment #: MO-04**Description:** Multimeter /Data Acquisition System**Manufacturer:** Keithley**Model:** 2700**Serial #:** 0798688**Accuracy:** See Manual

... Last Cal: 09/11/2017, Next Cal: 09/11/2018

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: 03/18/2017, Next Cal: 03/18/2018