NOVEMBER 28, 2007

TEST REPORT #207493B

TLSD/TMM SERIES CONNECTOR TESTING

PART NUMBER

TLSD-25-00-01-L-N
TMM-125-01-L-D-SM-A

SAMTEC, INC.

APPROVED BY: DOMINIC ARPINO
PROGRAM MANAGER
CONTECH RESEARCH, INC.

ilac-MRA
1478 - 01
ACCREDITED
Test Laboratory
1478 - 02

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REVISION HISTORY

DATE	REV. NO.	DESCRIPTION	ENG.
11/28/2007	1.0	Initial Issue	DA

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Test Laboratory
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CERTIFICATION

This is to certify that the OPP connector series evaluation described herein was designed and executed by personnel of Contech Research, Inc. It was performed with the concurrence of Samtec, Inc. of New Albany, IN who was the test sponsor.

All equipment and measuring instruments used during testing were calibrated and traceable to NIST according to ISO 10012-1, ANSI/NCSL Z540-1 and MIL-STD-45662 as applicable.

All data, raw and summarized, analysis and conclusions presented herein are the property of the test sponsor. No copy of this report, except in full, shall be forwarded to any agency, customer, etc., without the written approval of the test sponsor and Contech Research.

Dominic Arpino
Program Manager
Contech Research, Inc.

DA:cf

SCOPE

To perform qualification testing on the TLSD/TMM series connector as manufactured and submitted by the test sponsor Samtec, Inc.

APPLICABLE DOCUMENTS

1. Unless otherwise specified, the following documents of issue in effect at the time of testing performed form a part of this report to the extent as specified herein. The requirements of sub-tier specifications and/or standards apply only when specifically referenced in this report.

2. Samtec Specifications: TC0735-1433 (Shock & Vibration with Event Detection)

3. Standards: EIA Publication 364

TEST SAMPLES AND PREPARATION

1. The following test samples were submitted by the test sponsor, Samtec, Inc., for the evaluation to be performed by Contech Research, Inc.

	Description	Part Number
a)	Connector	TLSD-25-D.00-01-L-N TMM-125-01-L-D-SM-A

2. Test samples were supplied assembled and soldered to test boards by the test sponsor. Specific test boards were designed for the following tests:
   - LLCR
   - Nanosecond Event Detection

3. The test samples for vibration and shock were prepared by terminating all positions in series for monitoring contact events during vibration and/or shock.

4. Unless otherwise specified in the test procedures used, no further preparation was used.

TEST SELECTION

1. See Test Plan Flow Diagram, Figure #1, for test sequences used.

TEST SELECTION –continued

2. Test set ups and/or procedures which are standard or common are not detailed or documented herein provided they are certified as being performed in accordance with the applicable (industry or military) test methods, standards and/or drawings as specified in the detail specification.

SAMPLE CODING

1. All samples were coded. Mated test samples remained with each other throughout the test group/sequences for which they were designated. Coding was performed in a manner which remained legible for the test duration.

2. The test samples were coded in the following manner:

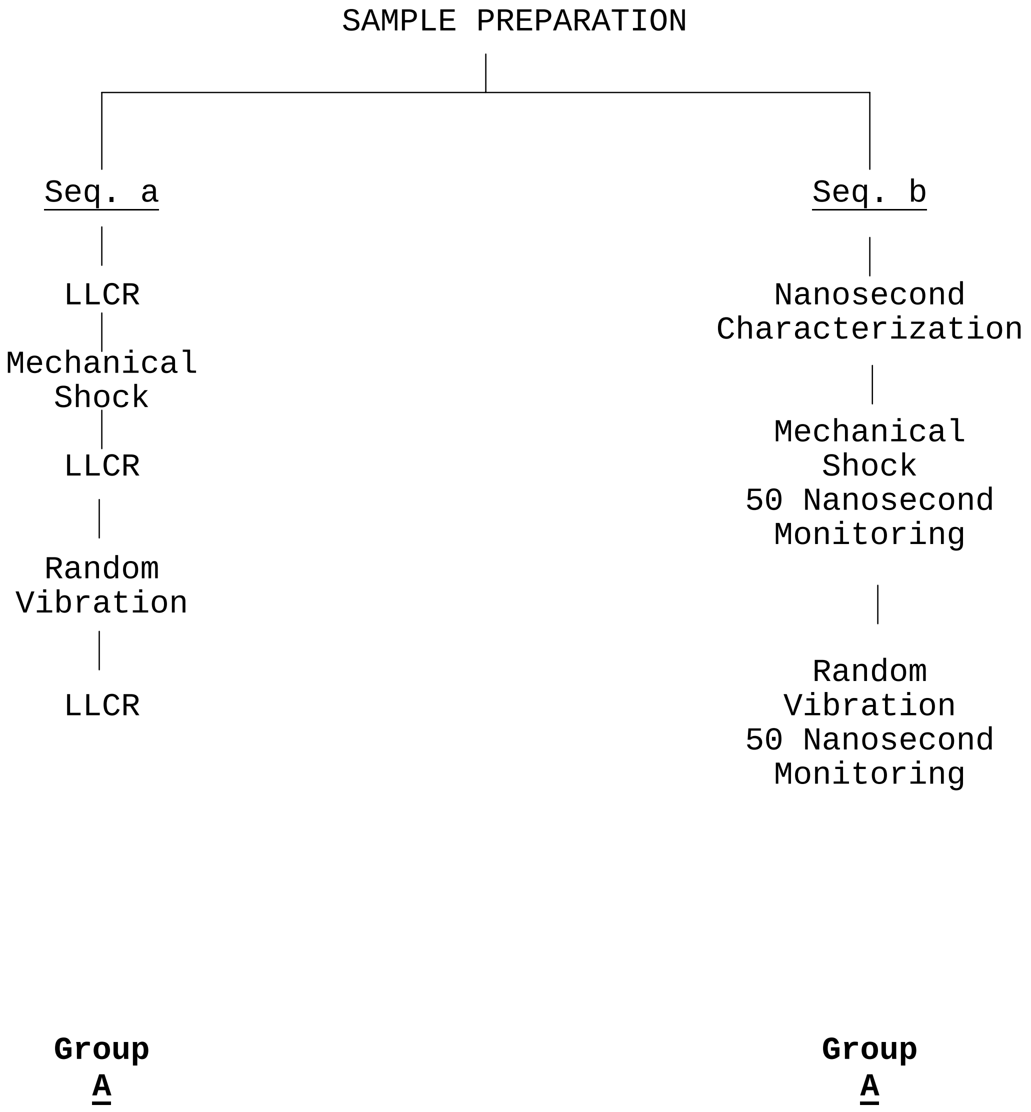
Seq a: Group A - A-A-1, A-A-2, A-A-3, A-A-4, A-A-5, A-A-6, A-A-7, A-A-8, A-A-9, A-A-10

Seq b: Group A - B-A-1, B-A-2, B-A-3, B-A-4

Sample ID Key
Board Number
Group
Seq

FIGURE #1

TEST PLAN FLOW DIAGRAM



LLCR : Low Level Circuit Resistance

DATA SUMMARY

TEST	REQUIREMENT	RESULTS
SEQUENCE a		
GROUP A		
LLCR	Record	27.4 mΩ Max.
Mechanical Shock	No Damage	Passed
LLCR	+10.0 mΩ Max.Chg.	1.5 mΩ Max.Chg.
Random Vibration	No Damage	Passed
LLCR	+10.0 mΩ Max.Chg.	11.4 mΩ Max.Chg.
SEQUENCE b		
GROUP A		
Mechanical Shock	No Damage	Passed
	50 Nanosecond	Passed
Random Vibration	No Damage	Passed
	50 Nanosecond	Passed

EQUIPMENT LIST

ID#	Next Cal	Last Cal	Equipment Name	Manufacturer	Model #	Serial #	Accuracy	Freq.Cal
11	5/15/2008	5/15/2007	Force Gage - 25 lbs	Chatillon	DPP-25	20723	±.25LBS	12 mon.
14	6/26/2008	6/26/2007	Accelerometer	PCB Piezotronics	302A	7040	See Cal Cert	12mon
67			Wire Wrap Tool	OK Machine Co.	EW-8BF	7150	N/A	N/A
545	12/20/2007	12/20/2006	Event Detector	Anatech	32/64 EHD	941206	See Cal Cert	12mon
553	1/8/2008	1/8/2007	12 channel Power Unit	PCB Co.	483A	1303	See Cal Cert	12mon
673	8/7/2008	8/7/2007	Microohm Meter	Keithley Co.	580	0681911	See Cal Cert	12 mon.
681			Computer	ARC Co.	P166	N/A	N/A	N/A
1166	9/6/2008	9/6/2007	Sine/Rndm Vib Control Digitizer	Hewlett Packard	E1432A	US39342279	See Cal Cert	12mon
1167			Interface	Hewlett Packard	E8491B	US390100753	N/A	N/A
1168			Mainframe	Hewlett Packard	E8408A	US39000357	N/A	N/A
1169			Computer	ARC	PC133	none	N/A	N/A
1271			Amplifier	Unholtz Dickie	SA15	3483	See Manual	N/A
1272			Shaker Table	Unholtz Dickie	S202PB	263	N/A	N/A

TEST RESULTS

SEQUENCE A

Group A

PROJECT NO.: 207493B SPECIFICATION: TC0735-1433

PART NO.: see page 4 PART DESCRIPTION:TLSD/TMM Series

SAMPLE SIZE: 10 Samples TECHNICIAN: DH

START DATE: 10/31/07 COMPLETE DATE: 11/20/07

ROOM AMBIENT: 24°C RELATIVE HUMIDITY: 34%

EQUIPMENT ID#: 673, 681

LOW LEVEL CIRCUIT RESISTANCE (LLCR)

PURPOSE:

1. To evaluate contact resistance characteristics of the contact systems under conditions where applied voltages and currents do not alter the physical contact interface and will detect oxides and films which degrade electrical stability. It is also sensitive to and may detect the presence of fretting corrosion induced by mechanical or thermal environments as well as any significant loss of contact pressure.

2. This attribute was monitored after each preconditioning and/or test exposure in order to determine said stability of the contact systems as they progress through the applicable test sequences.

3. The electrical stability of the system is determined by comparing the initial resistance value to that observed after a given test exposure. The difference is the change in resistance occurring whose magnitude establishes the stability of the interface being evaluated.

PROCEDURE:

1. The test was performed in accordance with EIA 364, Test Procedure 23, with the following conditions:

-continued on next page.

PROCEDURE: -continued

2. Test Conditions:

a) Test Current : 10 milliamps
b) Open Circuit Voltage : 20 millivolts

3. The points of application are shown in Figure #2.

REQUIREMENTS:

Low level circuit resistance shall be measured and recorded.

RESULTS:

1. The following is a summary of the data observed:

LOW LEVEL CIRCUIT RESISTANCE
(Milliohms)

Sample ID#	Avg.	Max.	Min.
A-A-1	24.2	26.9	23.3
A-A-2	24.4	25.9	23.5
A-A-3	24.0	27.4	22.8
A-A-4	23.8	25.4	23.0
A-A-5	24.2	25.3	23.4
A-A-6	23.8	25.4	23.2
A-A-7	23.3	24.5	22.7
A-A-8	24.1	25.1	23.5
A-A-9	24.5	26.0	23.8
A-A-10	24.6	27.0	23.5

2. See data files 207493B01 through 207493B10 for individual data points.

PROJECT NO.: 207493B SPECIFICATION: TCO735-1433

PART NO.: see page 4 PART DESCRIPTION:TLSD/TMM Series

SAMPLE SIZE: 10 Samples TECHNICIAN: DH

START DATE: 11/2/07 COMPLETE DATE: 11/13/07

ROOM AMBIENT: 24°C RELATIVE HUMIDITY: 37%

EQUIPMENT ID#: 11, 14, 67, 545, 553, 1166, 1168, 1169, 1271, 1272

MECHANICAL SHOCK (SPECIFIED PULSE)

PURPOSE:

To determine the mechanical and electrical integrity of connectors for use with electronic equipment subjected to shocks such as those expected from handling, transportation, etc.

PROCEDURE:

1. The test was performed in accordance with EIA 364, Test Procedure 27, Test Condition C.

2. Test Conditions:
   a) Peak Value : 100 G
   b) Duration : 6 Milliseconds
   c) Wave Form : Half-Sine
   d) Velocity : 12.3 feet per second
   e) No. of Shocks : 3 Shocks/Direction, 3 Axis (18 Total)

3. A stabilizing medium was used such that the mated test samples did not separate during the test.

4. The test sample fixturing was approved by the Test Sponsor.

5. All subsequent variable testing was performed in accordance with the procedures previously indicated.

REQUIREMENTS: See next page.

REQUIREMENTS:

1. There shall be no evidence of physical damage to the test samples as tested.

2. The change in low level circuit resistance shall not exceed +10.0 milliohms.

RESULTS:

1. There was no evidence of physical damage to the test samples as tested.

2. The following is a summary of the data observed:

CHANGE IN
LOW LEVEL CIRCUIT RESISTANCE
(Milliohms)

Sample ID#	Avg. Change	Max. Change
A-A-1	-0.4	+0.4
A-A-2	-0.2	+1.2
A-A-3	-0.3	+0.8
A-A-4	-0.5	+0.8
A-A-5	-0.2	+0.9
A-A-6	-0.2	+1.0
A-A-7	-0.3	+1.3
A-A-8	-0.5	+0.3
A-A-9	-0.1	+1.5
A-A-10	-0.3	+0.6

3. See data files 207493B01 through 207493B10 for individual data points.

4. The Mechanical Shock characteristics are shown in Figures #3 (Calibration Pulse) and #4 (Test Pulse). Each figure displays the shock pulse contained within the upper and lower limits as defined by the appropriate test specification.

FIGURE #2

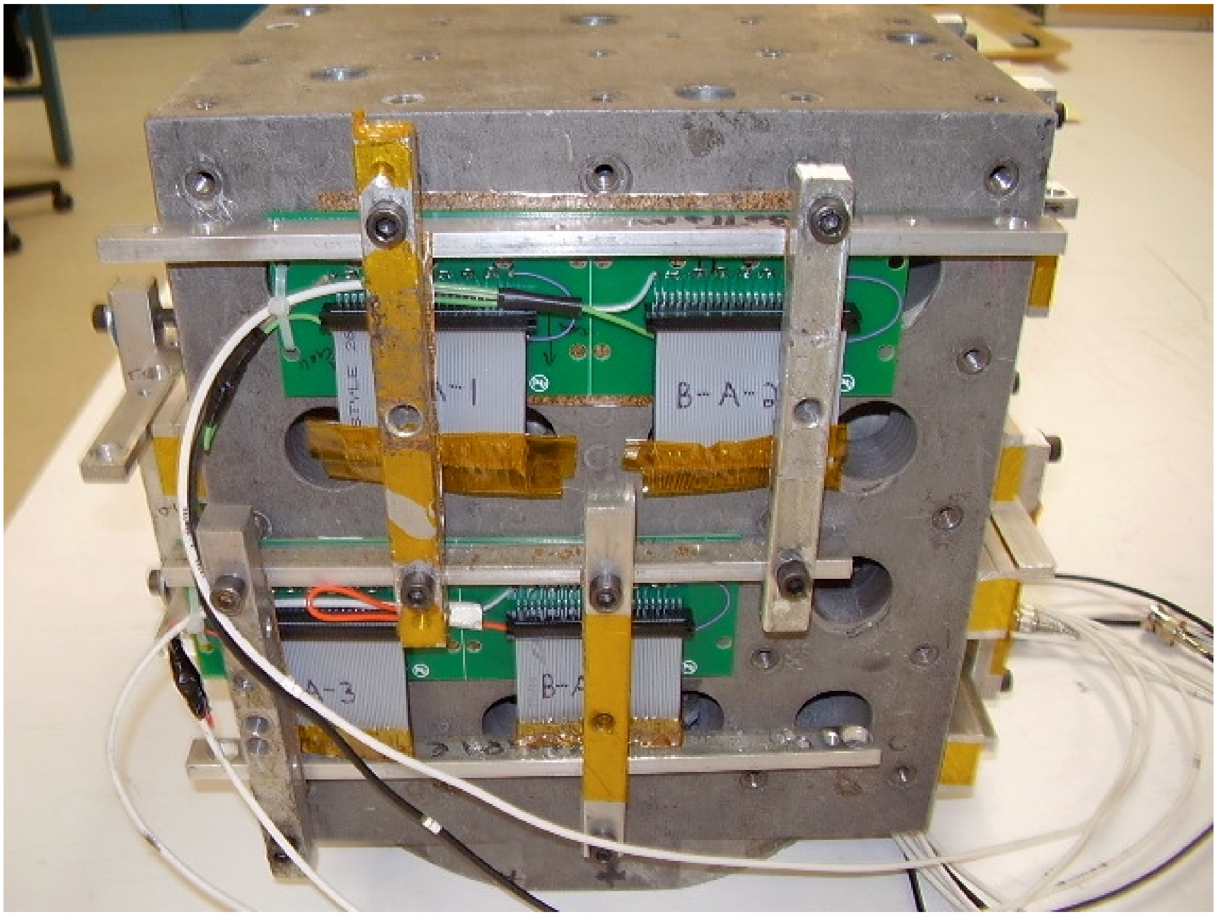
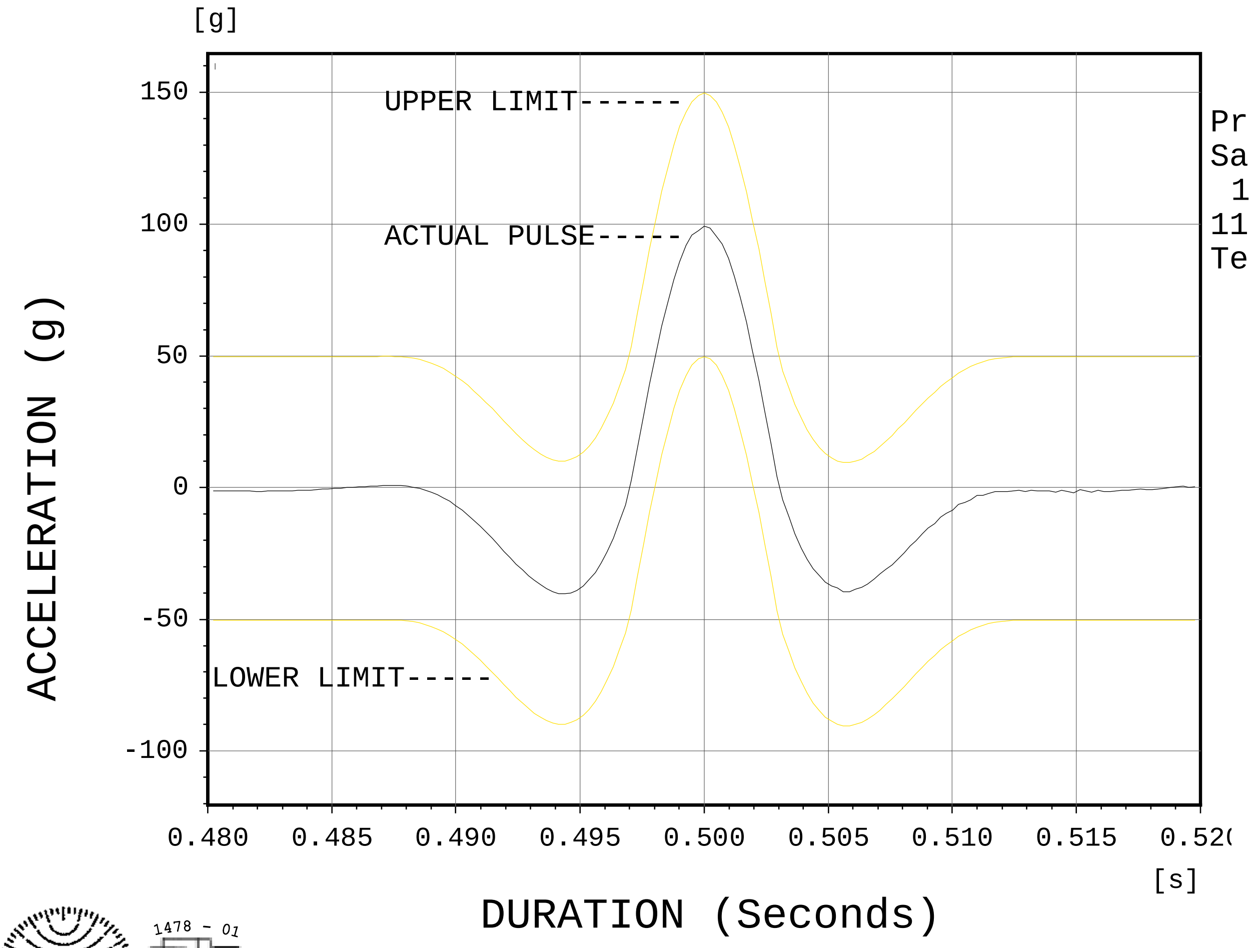


FIGURE #3

Classical Shock

Channel 1



Project 207493B
Samtec
100G's 6mS Half Sine
11-13-07 Cal Wave 1
Tech: /DH

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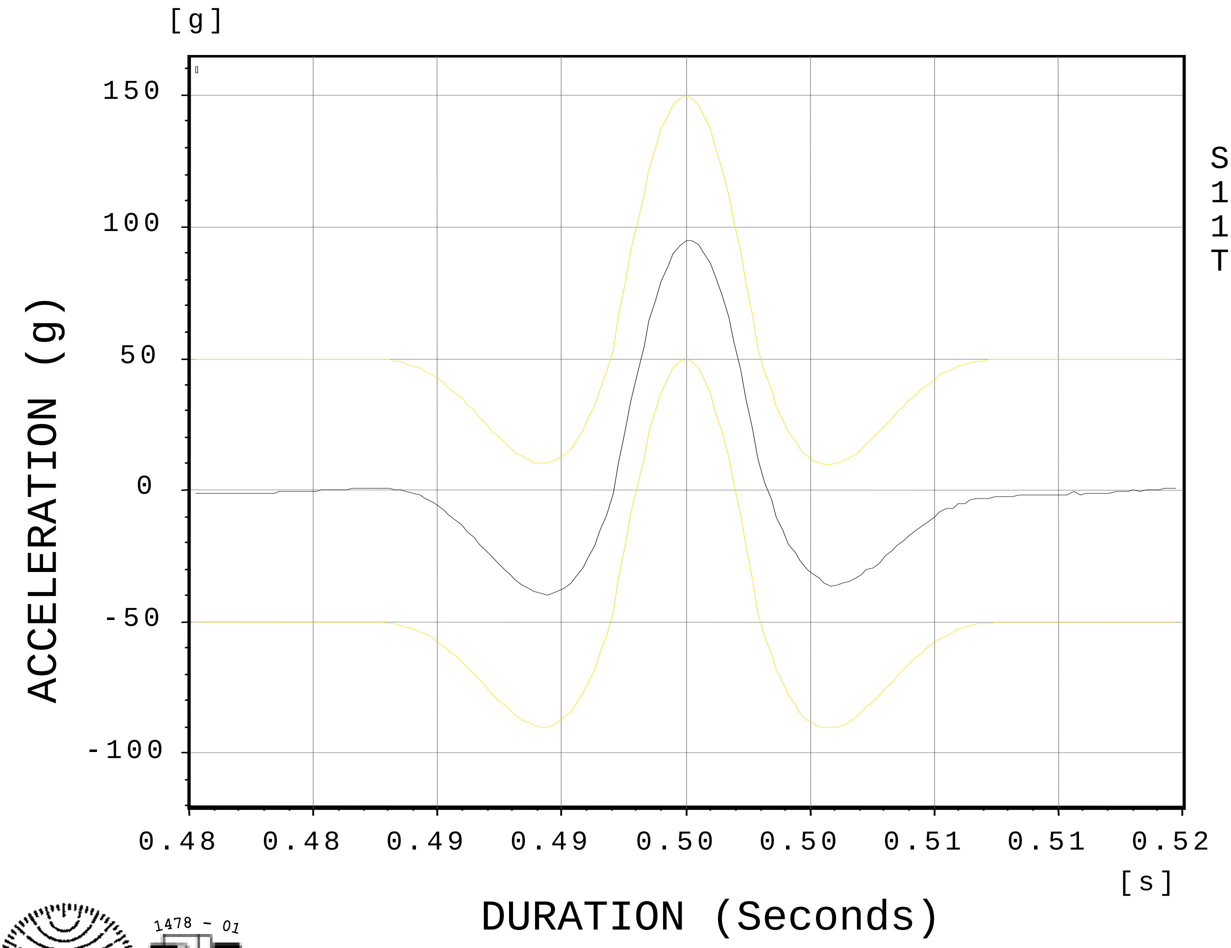
FIGURE #4

Classical

Channel 1



Project 20793B
Samtec
100G's 6mS Half Sine
11-13-07 Actual Wave 1
Tech: / DH

PROJECT NO.: 207493B SPECIFICATION: TC0735-1433

PART NO.: see page 4 PART DESCRIPTION:TLSD/TMM Series

SAMPLE SIZE: 10 Samples TECHNICIAN: DH

START DATE: 11/19/07 COMPLETE DATE: 11/20/07

ROOM AMBIENT: 25°C RELATIVE HUMIDITY: 26%

EQUIPMENT ID#: 11, 14, 67, 545, 553, 1166, 1168, 1169, 1271, 1272

VIBRATION, RANDOM

PURPOSE:

1. To establish the mechanical integrity of the test samples exposed to external mechanical stresses.
2. To determine if the contact system is susceptible to fretting corrosion.
3. To determine if the electrical stability of the system has degraded when exposed to a vibratory environment.

PROCEDURE:

1. The test was performed in accordance with EIA 364, Test Procedure 28, Test Condition V, Letter B.
2. Test Conditions:
   a) G ’RMS’ : 7.56
   b) Frequency : 50 to 2000 Hz
   c) Duration : 2.0 hours per axis, 3 axis total
3. A stabilizing medium was used such that the mated test samples did not separate during the test.
4. Figure #2 illustrates the test sample fixturing utilized during the test.
5. The test sample fixturing was approved by the test sponsor.
6. All subsequent variable testing was performed in accordance with procedures previously indicated.

REQUIREMENTS: See next page.

REQUIREMENTS:

1. There shall be no evidence of physical damage to the test samples as tested.

2. The change in low level circuit resistance shall not exceed +10.0 milliohms.

RESULTS:

1. There was no evidence of physical damage to the test samples as tested.

2. The following is a summary of the observed data:

CHANGE IN
LOW LEVEL CIRCUIT RESISTANCE
(Milliohms)

Sample ID#	Avg. Change	Max. Change
A-A-1	-0.8	-0.1
A-A-2	-0.2	+11.4
A-A-3	-0.2	+0.9
A-A-4	-0.3	+1.2
A-A-5	-0.1	+1.2
A-A-6	+0.0	+1.8
A-A-7	+0.0	+1.3
A-A-8	-0.3	+0.8
A-A-9	+0.2	+3.1
A-A-10	+0.6	+3.8

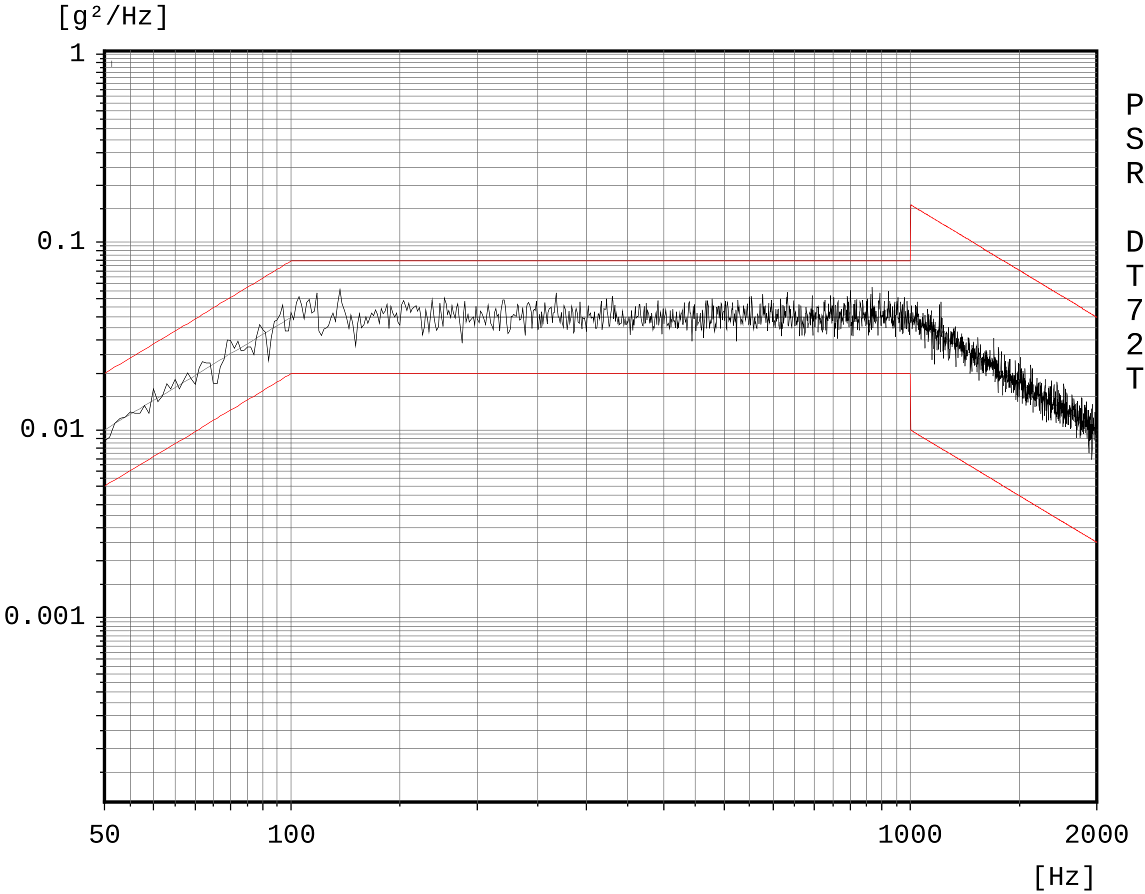
3. See data files 207493B01 through 207493B10 for individual data points.

4. The Random vibration characteristics are shown in Figures #5 #6 and #7. Each figure displays the waveform contained within the upper and lower limits as defined by the appropriate test specification.

FIGURE #5

Random

Control channel



Project# 207493B
Samtec
Run1
X-Axis
Date: 11-20-07
Test Conditions:
7.56Grms, 50-2000Hz.
2Hr's per. Axis
Tech: DH

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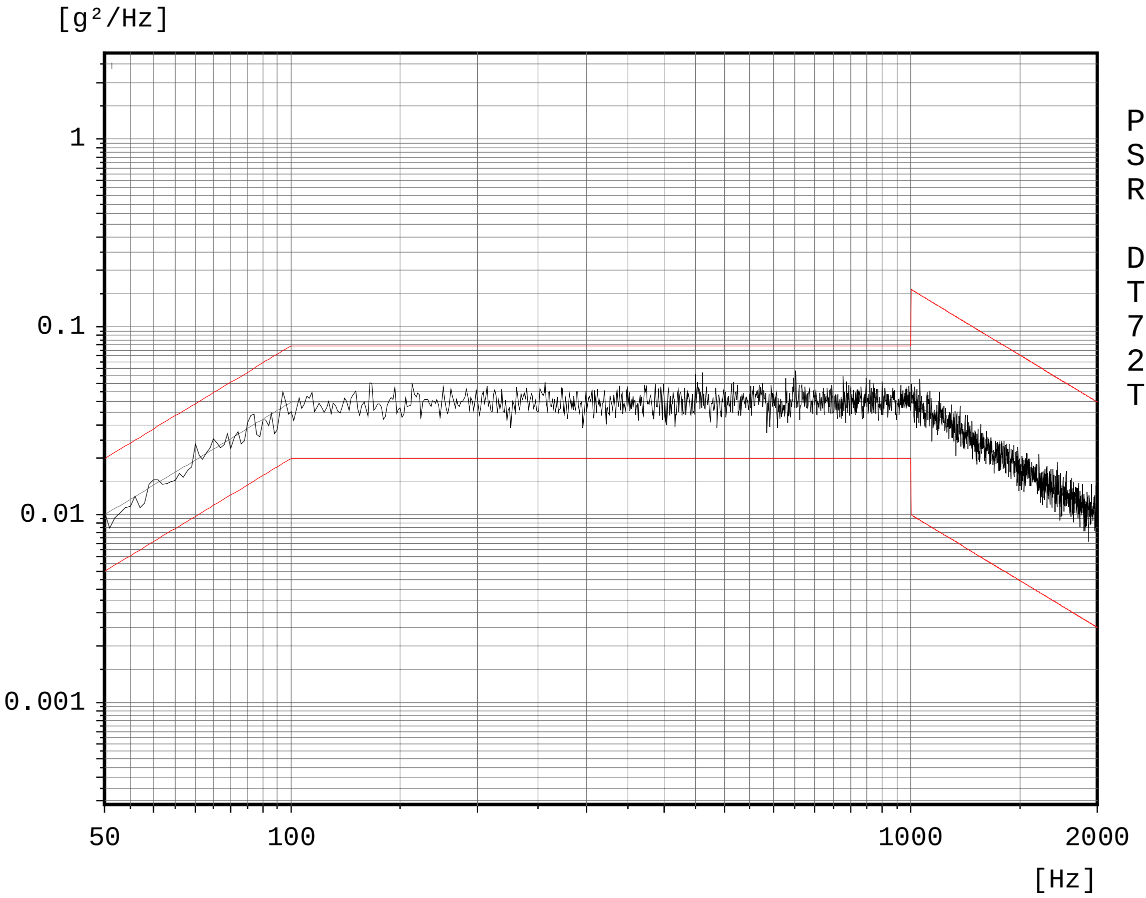
FIGURE #6

Random

Control channel



Project# 207493B
Samtec
Run2
Y-Axis
Date: 11-20-07
Test Conditions:
7.56Grms, 50-2000Hz.
2Hr's per. Axis
Tech: DH

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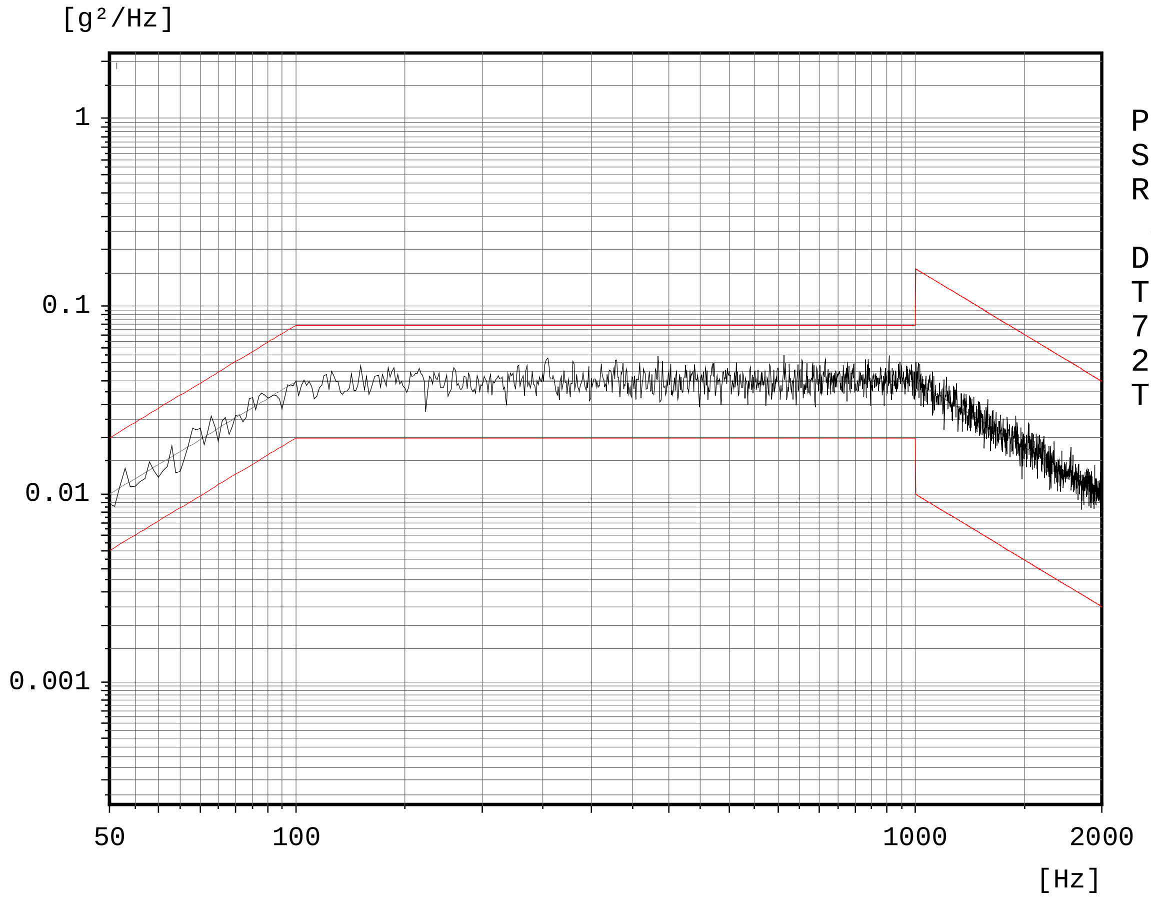
FIGURE #7

Random

Control channel



Project# 207493B
Samtec
Run3
Z-Axis
Date: 11-20-07
Test Conditions:
7.56Grms, 50-2000Hz.
2Hr's per. Axis
Tech: DH

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LLCR DATA FILES

DATA FILE NUMBERS

207493B01
207493B02
207493B03
207493B04
207493B05
207493B06
207493B07
207493B08
207493B09
207493B010

			Low Level Contact Resistance				
	Project:	207493B				Spec: EIA 364, TP 23	
	Customer:	Samtec				Subgroup:	Seq. A
	Product:	Series TLSD / TMM				File #:	207493B01
	Description:	A-A-1					
	Open circuit voltage:		20mv			Current:	10mA
				Delta values			
				units: milliohms			
	Temp ºC	24	24	24			
	R.H. %	34	34	26			
	Date:	31Oct07	13Nov07	20Nov07			
	Pos. ID	Initial	Mech.	Random			
Board No.			Shock	Vib.			
1	1	26.9	-3.0	-4.0			
	2	23.8	-0.4	-1.1			
	3	24.5	0.4	-0.4			
	4	24.4	0.2	-0.7			
	5	24.8	-0.1	-0.9			
	6	23.3	0.2	-0.8			
	7	23.9	-0.4	-1.1			
	8	24.2	0.1	-0.3			
	9	23.5	0.1	-0.7			
	10	24.0	0.4	-0.6			
	11	24.3	0.0	-1.2			
	12	23.4	-0.1	-0.6			
	13	25.2	0.4	-1.5			
	14	24.4	0.1	-0.5			
	15	24.8	-0.6	-0.7			
	16	23.7	-0.8	-0.9			
	17	23.4	-0.6	-0.6			
	18	23.4	-0.4	-0.3			
	19	24.0	-0.4	-0.1			
	20	23.8	-1.0	-0.6			
	21	23.9	-0.4	-0.5			
	22	23.6	-0.4	-0.4			
	23	24.7	-0.9	-0.6			
	24	25.0	-0.9	-1.2			
	25	23.4	-0.5	-0.4			

						File #:	207493B01
	Temp ºC	24	24	24			
	R.H. %	34	34	26			
	Date:	31Oct07	13Nov07	20Nov07			
	Pos. ID	Initial	Mech.	Random			
Board No.			Shock	Vib.			
	MAX	26.9	0.4	-0.1			
	MIN	23.3	-3.0	-4.0			
	AVG	24.2	-0.4	-0.8			
	STD	0.8	0.7	0.7			
	Open	0.0	0.0	0.0			
	Tech	DH	DH	DH			
	Equip ID	681	681	681			
		673	673	673			

			Low Level Contact Resistance				
	Project:	207493B				Spec: EIA 364, TP 23	
	Customer:	Samtec				Subgroup:	Seq. A
	Product:	Series TLSD / TMM				File #:	207493B02
	Description:	A-A-2					
	Open circuit voltage:		20mv			Current:	10mA
				Delta values			
				units: milliohms			
	Temp ºC	24	24	24			
	R.H. %	34	34	26			
	Date:	31Oct07	13Nov07	20Nov07			
	Pos. ID	Initial	Mech.	Random			
Board No.			Shock	Vib.			
2	1	24.4	0.2	-0.2			
	2	24.0	0.1	0.5			
	3	24.9	-1.1	-1.1			
	4	24.5	-0.9	-1.1			
	5	24.3	-0.6	-0.8			
	6	24.7	-0.2	-0.1			
	7	25.9	1.2	-0.3			
	8	24.3	0.4	0.3			
	9	23.8	0.0	-0.6			
	10	24.2	0.0	-0.3			
	11	23.8	0.9	-0.3			
	12	24.8	1.1	-0.1			
	13	24.8	-0.5	-0.7			
	14	24.0	-0.3	-0.7			
	15	24.6	-0.8	-1.2			
	16	25.1	-0.9	-1.9			
	17	24.9	-0.7	-1.5			
	18	25.5	-0.8	-2.1			
	19	25.2	-0.4	-2.2			
	20	23.5	-0.6	-0.1			
	21	23.7	-0.2	-0.7			
	22	24.4	-0.1	-1.0			
	23	24.0	-0.2	-0.4			
	24	23.9	0.2	0.0			
	25	23.7	0.0	11.4			

						File #:	207493B02
	Temp ºC	24	24	24			
	R.H. %	34	34	26			
	Date:	31Oct07	13Nov07	20Nov07			
	Pos. ID	Initial	Mech.	Random			
Board No.			Shock	Vib.			
	MAX	25.9	1.2	11.4			
	MIN	23.5	-1.1	-2.2			
	AVG	24.4	-0.2	-0.2			
	STD	0.6	0.6	2.5			
	Open	0.0	0.0	0.0			
	Tech	DH	DH	DH			
	Equip ID	681	681	681			
		673	673	673			

			Low Level Contact Resistance				
	Project:	207493B				Spec: EIA 364, TP 23	
	Customer:	Samtec				Subgroup:	Seq. A
	Product:	Series TLSD / TMM				File #:	207493B03
	Description:	A-A-3					
	Open circuit voltage:		20mv			Current:	10mA
				Delta values			
				units: milliohms			
	Temp ºC	24	24	24			
	R.H. %	34	34	26			
	Date:	31Oct07	13Nov07	20Nov07			
	Pos. ID	Initial	Mech.	Random			
Board No.			Shock	Vib.			
3	1	23.8	-0.1	0.6			
	2	24.7	-0.2	-0.1			
	3	23.7	-0.3	0.2			
	4	24.4	-0.3	0.4			
	5	24.1	-0.5	-0.4			
	6	27.4	0.8	0.9			
	7	24.0	-0.1	-0.1			
	8	24.7	-0.5	-0.3			
	9	24.8	-1.2	-0.7			
	10	23.9	-0.9	-0.9			
	11	23.5	-0.4	-0.5			
	12	24.9	-1.3	-0.5			
	13	25.3	-1.4	-1.1			
	14	24.0	-0.2	0.1			
	15	23.4	0.1	0.2			
	16	23.0	-0.2	0.1			
	17	23.1	-0.1	-0.1			
	18	23.1	-0.1	-0.2			
	19	22.8	-0.2	-0.1			
	20	23.2	0.4	0.3			
	21	23.1	-0.3	-0.3			
	22	23.1	-0.2	-0.3			
	23	23.8	0.0	0.0			
	24	25.2	-0.6	-1.4			
	25	23.2	0.1	0.1			

						File #:	207493B03
	Temp ºC	24	24	24			
	R.H. %	34	34	26			
	Date:	31Oct07	13Nov07	20Nov07			
	Pos. ID	Initial	Mech.	Random			
Board No.			Shock	Vib.			
	MAX	27.4	0.8	0.9			
	MIN	22.8	-1.4	-1.4			
	AVG	24.0	-0.3	-0.2			
	STD	1.0	0.5	0.5			
	Open	0.0	0.0	0.0			
	Tech	DH	DH	DH			
	Equip ID	681	681	681			
		673	673	673			

			Low Level Contact Resistance				
	Project:	207493B				Spec: EIA 364, TP 23	
	Customer:	Samtec				Subgroup:	Seq. A
	Product:	Series TLSD / TMM				File #:	207493B04
	Description:	A-A-4					
	Open circuit voltage:		20mv			Current:	10mA
				Delta values			
				units: milliohms			
	Temp ºC	24	24	24			
	R.H. %	34	34	26			
	Date:	31Oct07	13Nov07	20Nov07			
	Pos. ID	Initial	Mech.	Random			
Board No.			Shock	Vib.			
4	1	24.1	0.3	1.2			
	2	23.0	-0.1	0.1			
	3	23.0	-0.3	-0.4			
	4	23.6	-0.7	-0.1			
	5	23.3	-0.5	-0.4			
	6	24.1	-0.7	-0.3			
	7	24.0	-0.2	0.2			
	8	23.6	-0.9	-0.9			
	9	23.1	-0.6	-0.3			
	10	23.7	-1.0	-0.8			
	11	23.6	-0.2	-0.3			
	12	23.7	-0.3	-0.5			
	13	24.0	-0.2	-0.6			
	14	23.5	0.8	0.7			
	15	23.8	-0.4	-0.3			
	16	24.0	-0.1	0.1			
	17	23.6	-0.7	-0.6			
	18	23.7	-0.5	-0.7			
	19	23.7	-0.3	-0.2			
	20	25.4	-0.8	-0.5			
	21	23.7	-0.7	0.2			
	22	24.7	-1.1	0.2			
	23	23.3	-0.4	-0.3			
	24	23.6	-0.5	0.1			
	25	25.2	-2.3	-2.2			

						File #:	207493B04
	Temp ºC	24	24	24			
	R.H. %	34	34	26			
	Date:	31Oct07	13Nov07	20Nov07			
	Pos. ID	Initial	Mech.	Random			
Board No.			Shock	Vib.			
	MAX	25.4	0.8	1.2			
	MIN	23.0	-2.3	-2.2			
	AVG	23.8	-0.5	-0.3			
	STD	0.6	0.5	0.6			
	Open	0.0	0.0	0.0			
	Tech	DH	DH	DH			
	Equip ID	681	681	681			
		673	673	673			

			Low Level Contact Resistance				
	Project:	207493B				Spec: EIA 364, TP 23	
	Customer:	Samtec				Subgroup:	Seq. A
	Product:	Series TLSD / TMM				File #:	207493B05
	Description:	A-A-5					
	Open circuit voltage:		20mv			Current:	10mA
				Delta values			
				units: milliohms			
	Temp ºC	24	24	24			
	R.H. %	34	34	26			
	Date:	31Oct07	13Nov07	20Nov07			
	Pos. ID	Initial	Mech.	Random			
Board No.			Shock	Vib.			
5	1	23.7	-0.1	0.2			
	2	24.2	-0.6	-0.4			
	3	24.1	-0.7	-0.6			
	4	23.9	0.9	1.2			
	5	24.0	-0.2	-0.1			
	6	24.3	0.4	0.6			
	7	24.9	0.1	0.9			
	8	24.1	0.0	0.7			
	9	23.4	-0.2	-0.2			
	10	24.7	0.6	0.8			
	11	23.9	-0.3	-0.2			
	12	23.4	-0.4	-0.3			
	13	25.0	-1.2	-1.1			
	14	23.7	-0.3	-0.4			
	15	24.8	-0.9	-0.3			
	16	23.6	-0.1	-0.2			
	17	25.3	-0.7	-0.8			
	18	24.4	-0.5	-0.4			
	19	25.0	-0.6	-0.9			
	20	23.8	-0.5	-0.1			
	21	23.4	-0.3	-0.4			
	22	23.7	-0.5	-0.3			
	23	24.7	-0.4	0.2			
	24	24.4	-0.4	-0.2			
	25	24.4	0.6	0.2			

						File #:	207493B05
	Temp ºC	24	24	24			
	R.H. %	34	34	26			
	Date:	31Oct07	13Nov07	20Nov07			
	Pos. ID	Initial	Mech.	Random			
Board No.			Shock	Vib.			
	MAX	25.3	0.9	1.2			
	MIN	23.4	-1.2	-1.1			
	AVG	24.2	-0.2	-0.1			
	STD	0.6	0.5	0.6			
	Open	0.0	0.0	0.0			
	Tech	DH	DH	DH			
	Equip ID	681	681	681			
		673	673	673			

			Low Level Contact Resistance				
	Project:	207493B				Spec: EIA 364, TP 23	
	Customer:	Samtec				Subgroup:	Seq. A
	Product:	Series TLSD / TMM				File #:	207493B06
	Description:	A-A-6					
	Open circuit voltage:		20mv			Current:	10mA
				Delta values			
				units: milliohms			
	Temp ºC	24	24	24			
	R.H. %	34	34	26			
	Date:	31Oct07	13Nov07	20Nov07			
	Pos. ID	Initial	Mech.	Random			
Board No.			Shock	Vib.			
6	1	24.1	0.7	0.0			
	2	23.6	-0.5	-0.6			
	3	23.2	-0.1	-0.3			
	4	23.4	-0.6	-0.5			
	5	24.0	-0.6	0.5			
	6	24.4	1.0	-0.3			
	7	24.2	-0.3	-0.6			
	8	24.1	-0.1	0.8			
	9	23.5	-0.5	-0.1			
	10	24.5	-1.1	-0.4			
	11	23.7	-0.7	-0.7			
	12	23.6	-0.6	-0.5			
	13	25.4	-1.1	1.4			
	14	23.8	-0.2	0.1			
	15	23.9	-0.3	0.5			
	16	23.3	-0.3	-0.1			
	17	23.9	0.6	1.8			
	18	23.7	-0.2	0.3			
	19	23.4	0.0	0.5			
	20	23.7	-0.1	-0.2			
	21	23.7	-0.7	-0.7			
	22	23.4	0.9	0.2			
	23	23.9	0.4	0.4			
	24	24.1	0.0	-0.2			
	25	23.7	-0.4	-0.6			

						File #:	207493B06
	Temp ºC	24	24	24			
	R.H. %	34	34	26			
	Date:	31Oct07	13Nov07	20Nov07			
	Pos. ID	Initial	Mech.	Random			
Board No.			Shock	Vib.			
	MAX	25.4	1.0	1.8			
	MIN	23.2	-1.1	-0.7			
	AVG	23.8	-0.2	0.0			
	STD	0.5	0.6	0.6			
	Open	0.0	0.0	0.0			
	Tech	DH	DH	DH			
	Equip ID	681	681	681			
		673	673	673			

			Low Level Contact Resistance				
	Project:	207493B				Spec: EIA 364, TP 23	
	Customer:	Samtec				Subgroup:	Seq. A
	Product:	Series TLSD / TMM				File #:	207493B07
	Description:	A-A-7					
	Open circuit voltage:		20mv			Current:	10mA
				Delta values			
				units: milliohms			
	Temp ºC	24	24	24			
	R.H. %	34	34	26			
	Date:	31Oct07	13Nov07	20Nov07			
	Pos. ID	Initial	Mech.	Random			
Board No.			Shock	Vib.			
7	1	22.9	-0.4	-0.1			
	2	24.5	-1.0	-0.8			
	3	23.8	-0.8	-0.6			
	4	23.3	-0.5	-0.4			
	5	23.4	-0.4	0.3			
	6	23.0	-0.4	-0.2			
	7	23.0	-0.3	0.1			
	8	22.7	-0.3	0.1			
	9	23.1	-0.1	-0.5			
	10	23.1	0.1	0.2			
	11	23.2	-0.4	1.0			
	12	23.2	-0.6	-0.2			
	13	23.1	-0.4	-0.5			
	14	23.0	0.2	-0.3			
	15	23.0	-0.3	-0.1			
	16	22.8	0.0	0.1			
	17	22.7	1.3	-0.1			
	18	24.1	-1.4	1.3			
	19	23.3	-0.5	-0.3			
	20	22.9	0.4	0.0			
	21	23.3	-0.2	0.7			
	22	23.4	0.0	-0.3			
	23	23.8	-0.3	-0.1			
	24	24.3	-0.3	0.1			
	25	23.1	-0.5	-0.6			

						File #:	207493B07
	Temp ºC	24	24	24			
	R.H. %	34	34	26			
	Date:	31Oct07	13Nov07	20Nov07			
	Pos. ID	Initial	Mech.	Random			
Board No.			Shock	Vib.			
	MAX	24.5	1.3	1.3			
	MIN	22.7	-1.4	-0.8			
	AVG	23.3	-0.3	0.0			
	STD	0.5	0.5	0.5			
	Open	0.0	0.0	0.0			
	Tech	DH	DH	DH			
	Equip ID	681	681	681			
		673	673	673			

			Low Level Contact Resistance				
	Project:	207493B				Spec: EIA 364, TP 23	
	Customer:	Samtec				Subgroup:	Seq. A
	Product:	Series TLSD / TMM				File #:	207493B08
	Description:	A-A-8					
	Open circuit voltage:		20mv			Current:	10mA
				Delta values			
				units: milliohms			
	Temp ºC	24	24	24			
	R.H. %	34	34	26			
	Date:	31Oct07	13Nov07	20Nov07			
	Pos. ID	Initial	Mech.	Random			
Board No.			Shock	Vib.			
8	1	24.4	-0.5	0.8			
	2	24.2	-0.6	-0.1			
	3	24.5	-0.1	0.4			
	4	24.2	-0.4	-0.1			
	5	23.7	-0.5	-0.4			
	6	23.9	-0.4	-0.3			
	7	23.7	-0.1	0.1			
	8	24.3	-0.2	0.1			
	9	23.8	-0.7	-0.3			
	10	23.6	-0.8	-0.4			
	11	24.1	-1.1	-0.9			
	12	24.1	-1.3	-1.1			
	13	24.4	-1.3	-1.1			
	14	24.6	-1.1	-1.0			
	15	24.2	-0.1	0.5			
	16	23.5	0.3	0.7			
	17	23.6	-0.4	-0.3			
	18	24.1	-0.3	0.2			
	19	24.1	-0.4	-0.3			
	20	24.2	-0.6	-0.3			
	21	24.4	-0.2	-0.3			
	22	23.8	-0.3	-0.5			
	23	25.0	-0.5	-0.3			
	24	25.1	-0.9	-0.7			
	25	24.3	-0.9	-0.9			

						File #:	207493B08
	Temp ºC	24	24	24			
	R.H. %	34	34	26			
	Date:	31Oct07	13Nov07	20Nov07			
	Pos. ID	Initial	Mech.	Random			
Board No.			Shock	Vib.			
	MAX	25.1	0.3	0.8			
	MIN	23.5	-1.3	-1.1			
	AVG	24.1	-0.5	-0.3			
	STD	0.4	0.4	0.5			
	Open	0.0	0.0	0.0			
	Tech	DH	DH	DH			
	Equip ID	681	681	681			
		673	673	673			

			Low Level Contact Resistance				
	Project:	207493B				Spec: EIA 364, TP 23	
	Customer:	Samtec				Subgroup:	Seq. A
	Product:	Series TLSD / TMM				File #:	207493B09
	Description:	A-A-9					
	Open circuit voltage:		20mv			Current:	10mA
				Delta values			
				units: milliohms			
	Temp ºC	24	24	24			
	R.H. %	34	34	26			
	Date:	31Oct07	13Nov07	20Nov07			
	Pos. ID	Initial	Mech.	Random			
Board No.			Shock	Vib.			
9	1	24.8	-0.3	0.0			
	2	24.4	0.0	-0.1			
	3	24.3	0.2	0.7			
	4	25.3	1.5	3.1			
	5	26.0	-0.3	-0.2			
	6	24.5	-0.1	0.0			
	7	24.7	-0.8	-0.8			
	8	24.3	-0.2	-0.5			
	9	24.1	-0.5	-0.4			
	10	24.1	-0.1	-0.2			
	11	25.3	-1.0	-1.0			
	12	25.4	-0.5	-0.6			
	13	25.1	-0.5	-1.1			
	14	24.3	-0.3	-0.1			
	15	24.0	0.1	-0.1			
	16	24.0	0.1	0.1			
	17	24.8	0.1	0.9			
	18	24.1	0.0	0.9			
	19	23.8	-0.2	0.3			
	20	24.0	-0.2	0.2			
	21	24.0	-0.1	0.2			
	22	25.0	-0.1	0.3			
	23	24.7	0.0	0.5			
	24	24.2	1.0	1.5			
	25	23.8	0.6	0.9			

						File #:	207493B09
	Temp ºC	24	24	24			
	R.H. %	34	34	26			
	Date:	31Oct07	13Nov07	20Nov07			
	Pos. ID	Initial	Mech.	Random			
Board No.			Shock	Vib.			
	MAX	26.0	1.5	3.1			
	MIN	23.8	-1.0	-1.1			
	AVG	24.5	-0.1	0.2			
	STD	0.6	0.5	0.9			
	Open	0.0	0.0	0.0			
	Tech	DH	DH	DH			
	Equip ID	681	681	681			
		673	673	673			

			Low Level Contact Resistance				
	Project:	207493B				Spec: EIA 364, TP 23	
	Customer:	Samtec				Subgroup:	Seq. A
	Product:	Series TLSD / TMM				File #:	207493B10
	Description:	A-A-10					
	Open circuit voltage:		20mv			Current:	10mA
				Delta values			
				units: milliohms			
	Temp ºC	24	24	24			
	R.H. %	34	34	26			
	Date:	31Oct07	13Nov07	20Nov07			
	Pos. ID	Initial	Mech.	Random			
Board No.			Shock	Vib.			
10	1	24.7	-0.5	0.2			
	2	25.5	-0.7	-1.0			
	3	24.5	-0.7	1.4			
	4	23.8	-0.1	-0.2			
	5	25.0	-0.5	-0.3			
	6	24.9	-0.9	-0.2			
	7	24.8	-0.6	0.2			
	8	24.7	0.0	1.1			
	9	25.2	-0.9	-0.4			
	10	27.0	-2.8	3.8			
	11	25.1	-0.4	1.7			
	12	25.0	0.6	2.4			
	13	25.2	0.1	0.3			
	14	23.8	0.1	0.2			
	15	24.9	0.1	1.7			
	16	24.8	0.5	1.0			
	17	23.8	-0.1	0.4			
	18	23.5	0.3	0.6			
	19	23.9	0.2	0.5			
	20	24.4	-0.6	-0.3			
	21	23.6	-0.2	0.2			
	22	23.7	-0.4	0.1			
	23	24.0	-0.1	0.5			
	24	24.4	0.4	0.7			
	25	23.8	-0.1	-0.2			

						File #:	207493B10
	Temp ºC	24	24	24			
	R.H. %	34	34	26			
	Date:	31Oct07	13Nov07	20Nov07			
	Pos. ID	Initial	Mech.	Random			
Board No.			Shock	Vib.			
	MAX	27.0	0.6	3.8			
	MIN	23.5	-2.8	-1.0			
	AVG	24.6	-0.3	0.6			
	STD	0.8	0.7	1.0			
	Open	0.0	0.0	0.0			
	Tech	DH	DH	DH			
	Equip ID	681	681	681			
		673	673	673			

TEST RESULTS

SEQUENCE B

Group A

PROJECT NO.: 207493B	SPECIFICATION: TCO735-1433
PART NO.: see page 4	PART DESCRIPTION:TLSD/TMM Series
SAMPLE SIZE: 4 Samples	TECHNICIAN: DH
START DATE: 11/19/07	COMPLETE DATE: 11/10/07
ROOM AMBIENT: 24°C	RELATIVE HUMIDITY: 37%

EQUIPMENT ID#: 11, 14, 67, 545, 553, 1166, 1168, 1169, 1271, 1272

MECHANICAL SHOCK (SPECIFIED PULSE)

PURPOSE:

To determine the mechanical and electrical integrity of connectors for use with electronic equipment subjected to shocks such as those expected from handling, transportation, etc.

PROCEDURE:

1. The test was performed in accordance with EIA 364, Test Procedure 27.

2. Test Conditions:

   a) Peak Value : 100 G
   b) Duration : 6 Milliseconds
   c) Wave Form : Half-Sine
   d) Velocity : 12.3 feet Per Second
   e) No. of Shocks : 3 Shocks/Direction, 3 Axis (18 Total)

3. A stabilizing medium was used such that the mated test samples did not separate during the test.

4. Figure #2 illustrates the test sample fixturing utilized during the test.

5. The samples were characterized to determine nanosecond event requirement. Following characterization the requirement level was established at 50 nanoseconds.

PROCEDURE: -continued

6. The low nanosecond monitoring was performed in accordance with EIA 364, Test Procedure 87.

7. The test sample fixturing was approved by the test sponsor.

REQUIREMENTS:

1. There shall be no evidence of physical damage to the test samples as tested.

2. There shall be no low nanosecond event detected greater than 50 nanoseconds.

RESULTS:

1. There was no evidence of physical damage to the test samples as tested.

2. There was no low nanosecond event detected greater than 50 nanoseconds.

3. The Mechanical Shock characteristics are shown in Figures #3 (Calibration Pulse) and #4 (Test Pulse). Each figure displays the shock pulse contained within the upper and lower limits as defined by the appropriate test specification.

PROJECT NO.: 207493B SPECIFICATION: TCO735-1433

PART NO.: see page 4 PART DESCRIPTION:TLSD/TMM Series

SAMPLE SIZE: 4 Samples TECHNICIAN: DH

START DATE: 11/19/07 COMPLETE DATE: 11/20/07

ROOM AMBIENT: 24°C RELATIVE HUMIDITY: 26%

EQUIPMENT ID#: 11, 14, 67, 545, 553, 1166, 1168, 1169, 1271, 1272

VIBRATION, RANDOM

PURPOSE:

1. To establish the mechanical integrity of the test samples exposed to external mechanical stresses.

2. To determine if the contact system is susceptible to fretting corrosion.

3. To determine if electrical discontinuities at the level specified exist.

PROCEDURE:

1. The test was performed in accordance with Specification EIA 364, Test Procedure 28, Test Condition V, Letter B.

2. Test Conditions:

   a) G ’RMS’ : 7.56
   b) Frequency : 50 to 2000 Hz
   c) Duration : 2.0 Hours per Axis, 3 Axis Total
   d) Test Current : 100 mA

3. A stabilizing medium was used such that the mated test samples did not separate during the test.

4. Figure #2 illustrates the test sample fixturing utilized during the test.

5. The samples were characterized prior to test to determine nanosecond event requirement. Following characterization the requirement level was established at 50 nanoseconds.

PROCEDURE: -continued

6. The low nanosecond monitoring was performed in accordance with EIA 364, Test Procedure 87.

7. The test sample fixturing was approved by the test sponsor.

REQUIREMENTS:

1. There shall be no evidence of physical damage to the test samples as tested.

2. There shall be no low nanosecond event detected greater than 50 nanoseconds.

RESULTS:

1. There was no evidence of physical damage to the test samples as tested.

2. There was no low nanosecond event detected greater than 50 nanoseconds.

3. The Random vibration characteristics are shown in Figures #5 #6 and #7. Each figure displays the waveform contained within the upper and lower limits as defined by the appropriate test specification.