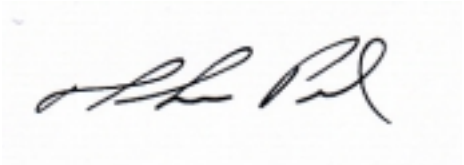
DECEMBER 17, 2001

TEST REPORT #201462B, REV.1.2

QUALIFICATION TESTING
MEC1-RA (MATED TO 0.062” BOARD
(1mm RIGHT ANGLE EDGE CONNECTOR)
P/N: MEC1-140-02-S-D-RA1-SL

SAMTEC, INC.
TC0134-105I-0501



APPROVED BY: THOMAS PEEL
VICE PRESIDENT AND
DIRECTOR OF TEST PROGRAM DEVELOPMENT
CONTECH RESEARCH, INC.

1478 - 01
ACCREDITED
1478 - 02

Contech Research

REVISION HISTORY

DATE	REV. NO.	DESCRIPTION	ENG.
12/14/2001	0.5	Draft Release (Data Files, Figures, Photo's not included)	TP
12/17/2001	1.0	Initial Release	TP
1/28/2002	1.1	Removed Wear Test per instructions from Samtec and their customer.	TP
1/31/2002	1.2	Removed Figures 8 through 15 per Samtec's request. Renamed Figures 16 through 19 to Figures 8 through 11. Added data at specific temperatures to Figures 8 through 11.	TP

CERTIFICATION

This is to certify that the 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 and ANSI/NCSL Z540-1, 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.

Thomas Peel
Vice President And
Director Of Test Program Development
Contech Research, Inc.

TP:js

SCOPE

To perform qualification testing on the MEC1-RA 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. Product Specifications: TC0134-105I-0502 Flow Chart

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)	1.0 mm, Right Angle Edge Conn.	MEC1-140-02-S-D-RA1-SL

2. The following additional materials were submitted by the test sponsor to assist and perform the testing of items listed in #1 above.

	Description	Board Thickness	Plating
a)	Mating Boards	0.062 inch	30 microinch gold

3. Test boards for mounting test samples were supplied by the test sponsor.

4. Test samples were supplied assembled and terminated to test boards by the test sponsor.

5. All test samples were coded and identified by (Contech Research or the test sponsor) to maintain continuity throughout the test sequences. Upon initiating testing, mated test samples remained with each other throughout the test sequences for which they were designated.

TEST SAMPLES AND PREPARATION – Continued

6. Figure #1 illustrates the test sample/test board assembly.

7. Special holding brackets were attached to the test units to prevent movement of the mating elements relative to each other due to handling. These holding brackets are so designed as not to prevent movement of the interconnecting surfaces normally expected when in an operational mode.

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

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

TEST SELECTION

1. See Test Plan Flow Diagram, Figure #2, for test sequences used.

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 samples have been ID'd by the test sponsor as follows:

Sequence A1(Unmounted): A1-1,A1-2,A1-3,A1-4
Sequence A2(Mounted): G1-S1,G1-S2,G1-S3,G1-S4
Sequence B (Mounted – LLCR): A2-1,A2-2,A2-3,A2-4
(Mounted–Discontinuity):G2-S1,G2-S2,G2-S3,G2-S4
Sequence C1(Mounted): G1-S1,G1-S2,G1-S3,G1-S4
Sequence C2(Mounted): G1-S1,G1-S2,G1-S3,G1-S4
Sequence D1(Unmounted): G1-S1,G1-S2,G1-S3,G1-S4
Sequence D2(Mounted): D2-1, D2-2
Sequence I1(Mounted): G1-S1,G1-S2,G1-S3,G1-S4
Sequence I2(Mounted): G1-S1,G1-S2,G1-S3,G1-S4
Sequence J (Mounted): G1-S1,G1-S2,G1-S3,G1-S4
Sequence Q (Unmounted): Q-1,Q-2,Q-3,Q-4

FIGURE #1

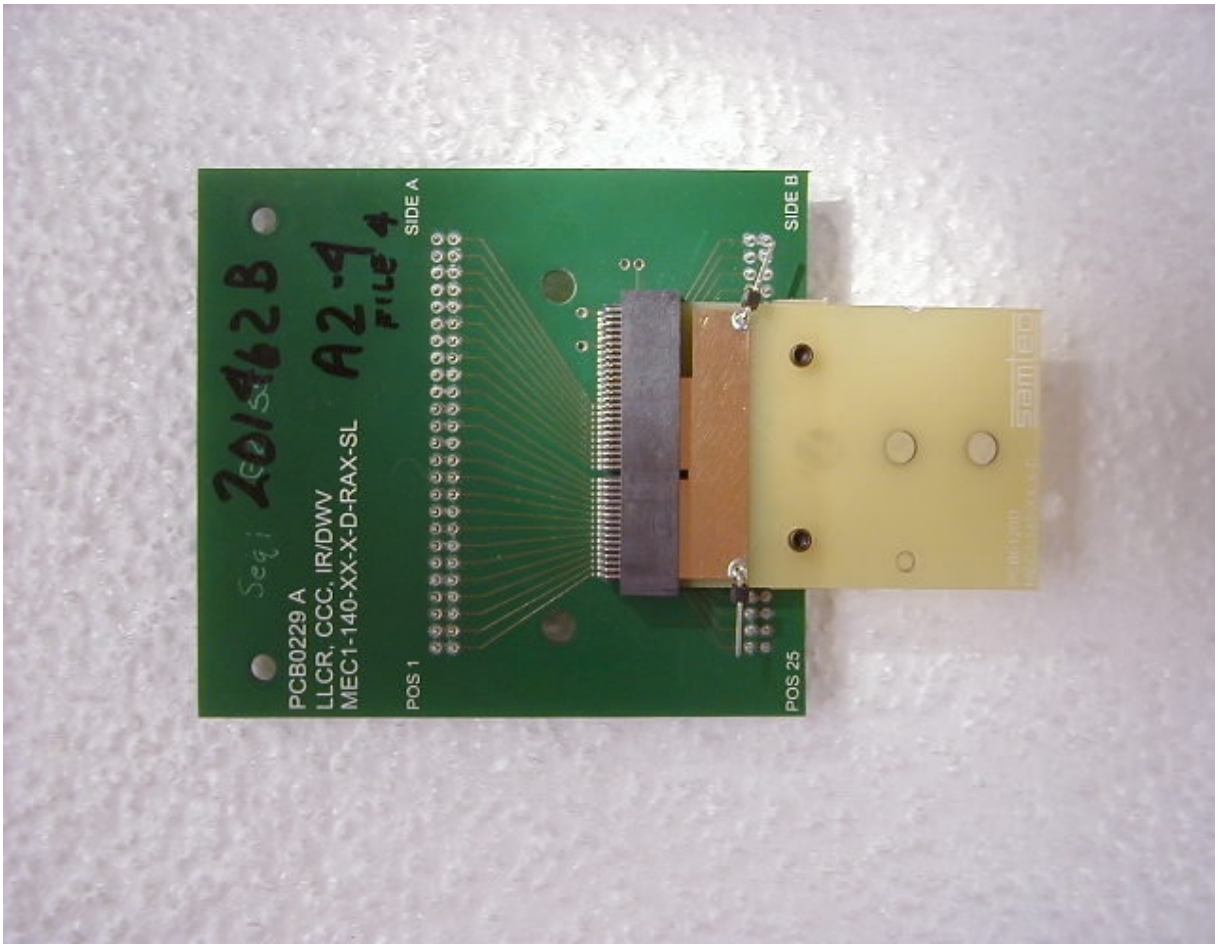
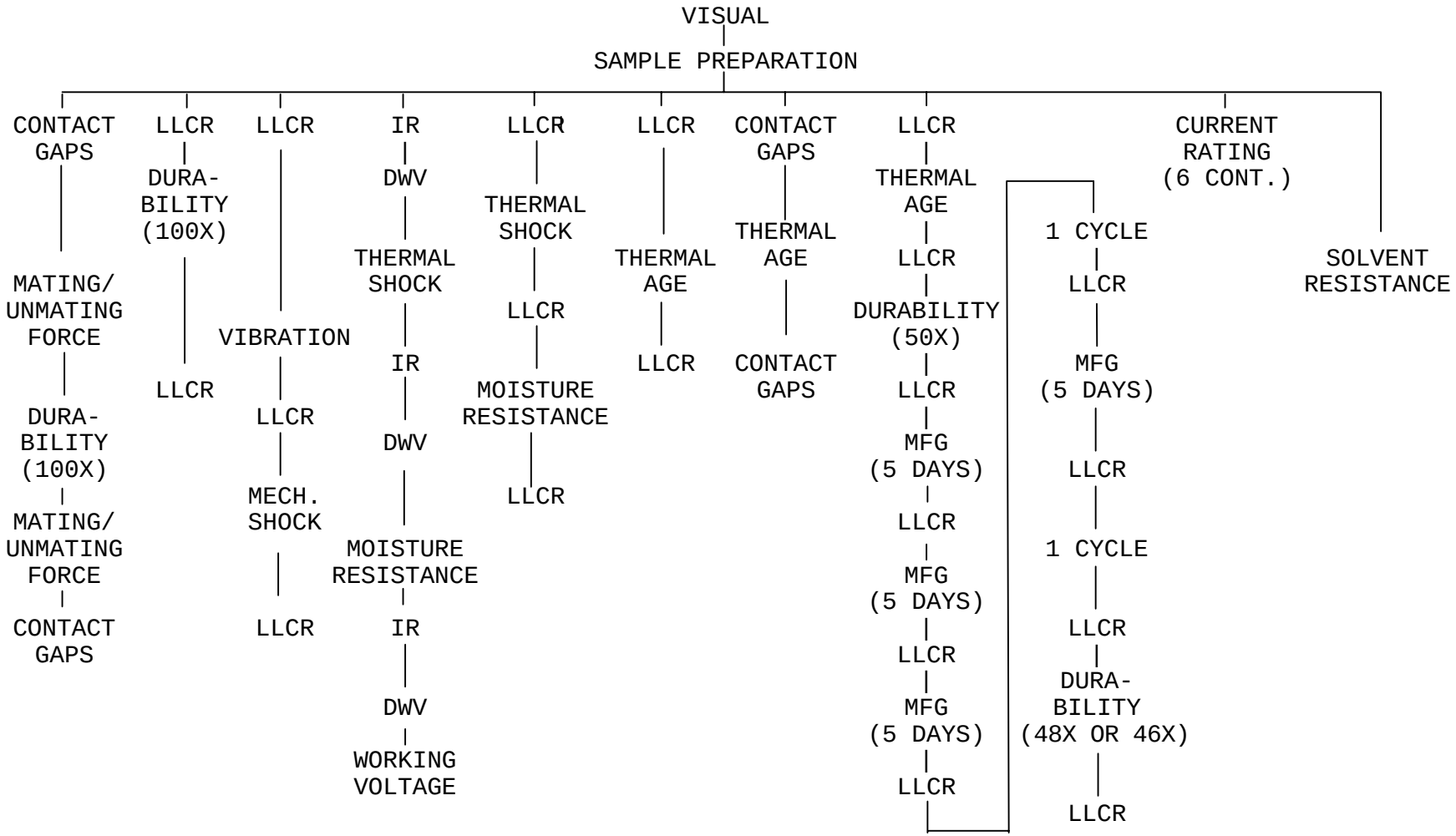

PCB0229 A
LLCR, CCC, IR/DWV
MEC1-140-XX-X-D-RAX-SL
SIDE A
SIDE B
POS 1
POS 25

FIGURE #2

TEST PLAN FLOW DIAGRAM



DATA SUMMARY

TEST	REQUIREMENT	RESULTS
GROUP A1		
CONTACT GAPS	RECORD	0.0136 INCHES MAX.
MATING FORCE	RECORD	6.7 LBS MAX.
UNMATING FORCE	RECORD	4.7 LBS MAX.
DURABILITY	NO DAMAGE	PASSED
MATING FORCE	RECORD	5.9 LBS MAX.
UNMATING FORCE	RECORD	4.2 LBS MAX.
CONTACT GAPS	RECORD	0.0174 INCHES MAX.
GROUP A2		
LLCR	RECORD	36.5 mΩ MAX.
DURABILITY	NO DAMAGE	PASSED
LLCR	+10.0 mΩ MAX.CHG.	+3.1 mΩ MAX.CHG.
GROUP B		
LLCR	RECORD	36.4 Ω MAX.
MECHANICAL SHOCK	NO DAMAGE	PASSED
	1.0 MICROSECOND	PASSED
LLCR	+10.0 mΩ MAX.CHG.	+1.3 mΩ MAX.CHG.
RANDOM VIBRATION	NO DAMAGE	PASSED
	1.0 MICROSECOND	PASSED
LLCR	+10.0 mΩ MAX.CHG.	+3.6 mΩ MAX.CHG.
GROUP C1		
INSULATION RESISTANCE	1000 MEGOHMS MIN.	>50000 MEGOHMS
DWV	RECORD BREAKDOWN	1300 VAC
	TEST VOLTAGE: 975 VAC	PASSED
THERMAL SHOCK	NO DAMAGE	PASSED
INSULATION RESISTANCE	1000 MEGOHMS MIN.	>50000 MEGOHMS
DWV	900 VAC	PASSED
MOISTURE RESISTANCE	NO DAMAGE	PASSED
INSULATION RESISTANCE	1000 MEGOHMS MIN.	>50000 MEGOHMS
DWV	900 VAC	PASSED

DATA SUMMARY - Continued

TEST	REQUIREMENT	RESULTS
GROUP C2		
LLCR	RECORD	38.1 mΩ MAX.
THERMAL SHOCK	NO DAMAGE	PASSED
LLCR	+10.0 mΩ MAX.CHG.	+1.2 mΩ MAX.CHG.
MOISTURE RESISTANCE	NO DAMAGE	PASSED
LLCR	+10.0 mΩ MAX.CHG.	+6.3 mΩ MAX.CHG.
GROUP D1		
LLCR	RECORD	37.6 mΩ MAX.
THERMAL AGE	NO DAMAGE	PASSED
LLCR	+10.0 mΩ MAX.CHG.	+0.9 mΩ MAX.CHG.
GROUP D2		
CONTACT GAPS	RECORD	0.01190 INCHES MAX.
THERMAL AGE	NO DAMAGE	PASSED
CONTACT GAPS	RECORD	0.03010 INCHES MAX.
GROUP I1 (SAMPLES EXPOSED IN MFG MATED)		
LLCR	RECORD	35.7 mΩ MAX.
THERMAL AGING	NO DAMAGE	PASSED
LLCR	+10.0 mΩ MAX.CHG.	+3.4 mΩ MAX.CHG.
DURABILITY(50 CYCLES)	NO DAMAGE	PASSED
LLCR	+10.0 mΩ MAX.CHG.	+1.7 mΩ MAX.CHG.
MFG (AT 5 DAYS)	NO DAMAGE	PASSED
LLCR	+10.0 mΩ MAX.CHG.	+2.0 mΩ MAX.CHG.
MFG (AT 10 DAYS)	NO DAMAGE	PASSED
LLCR	+10.0 mΩ MAX.CHG.	+2.3 mΩ MAX.CHG.
MFG (AT 15 DAYS)	NO DAMAGE	PASSED
LLCR	+10.0 mΩ MAX.CHG.	+4.0 mΩ MAX.CHG.
DURABILITY(1 CYCLE)	NO DAMAGE	PASSED
LLCR	+10.0 mΩ MAX.CHG.	+7.5 mΩ MAX.CHG.
MFG (AT 20 DAYS)	NO DAMAGE	PASSED
LLCR	+10.0 mΩ MAX.CHG.	+8.0 mΩ MAX.CHG.
DURABILITY(1 CYCLE)	NO DAMAGE	PASSED
LLCR	+10.0 mΩ MAX.CHG.	OPEN
DURABILITY(48 CYCLES)	NO DAMAGE	PASSED
LLCR	+10.0 mΩ MAX.CHG.	+7.6 mΩ MAX.CHG.

DATA SUMMARY – Continued

TEST	REQUIREMENT	RESULTS
GROUP I2 (SAMPLES EXPOSED IN MFG UNMATED)		
LLCR	RECORD	35.2 mΩ MAX.
THERMAL AGING	NO DAMAGE	PASSED
LLCR	+10.0 mΩ MAX.CHG.	+1.6 mΩ MAX.CHG.
DURABILITY(50 CYCLES)	NO DAMAGE	PASSED
LLCR	+10.0 mΩ MAX.CHG.	+1.9 mΩ MAX.CHG.
MFG (AT 5 DAYS)	NO DAMAGE	PASSED
LLCR	+10.0 mΩ MAX.CHG.	+5.8 mΩ MAX.CHG.
MFG (AT 10 DAYS)	NO DAMAGE	PASSED
LLCR	+10.0 mΩ MAX.CHG.	+8.2 mΩ MAX.CHG.
MFG (AT 15 DAYS)	NO DAMAGE	PASSED
LLCR	+10.0 mΩ MAX.CHG.	+13.7 mΩ MAX.CHG.
DURABILITY(1 CYCLE)	NO DAMAGE	PASSED
LLCR	+10.0 mΩ MAX.CHG.	+15.4 mΩ MAX.CHG.
MFG (AT 20 DAYS)	NO DAMAGE	PASSED
LLCR	+10.0 mΩ MAX.CHG.	+113.7 mΩ MAX.CHG.
DURABILITY(1 CYCLE)	NO DAMAGE	PASSED
LLCR	+10.0 mΩ MAX.CHG.	+5.6 mΩ MAX.CHG.
DURABILITY(48 CYCLES)	NO DAMAGE	PASSED
LLCR	+10.0 mΩ MAX.CHG.	+4.8 mΩ MAX.CHG.
GROUP J		
CURRENT RATING		
@ 0.5 AMPS	RECORD TEMP.RISE	+4.8°C ABOVE AMB.
@ 1.0 AMPS	RECORD TEMP.RISE	+15.9°C ABOVE AMB.
@ 2.0 AMPS	RECORD TEMP.RISE	+59.3°C ABOVE AMB.
GROUP Q		
SOLVENT RESISTANCE	NO DAMAGE	PASSED

EQUIPMENT LIST

ID#	Next Cal	Last Cal	Equipment Name	Manufacturer	Model #	Serial #	Accuracy	Freq.Cal
27	5/9/02	5/9/01	Temp. Humid. Chamber	Blue M Co.	FR-256PC-1	F2-249	See Cal Cert	12 mon.
30	9/26/02	9/26/01	Discontinuity Monitor	Assoc. Test Lab	DM-600-01	382-1	See Cal Cert	12mon
34			Shock Machine	Avco	SM110-3	1047	See ID# 14 & 117	Each Test
95	6/27/02	6/27/01	AC Hypot	Peschell Instr.	P10*	5570	±3%Full Scale	12 mon.
99	5/1/02	5/1/01	Toolmakers Microscope	Mitutoyo Corp.	TM111	30046	See Cal Cert	12 mon.
117	6/12/02	6/12/01	Digitizing Scope	Hewlett Packard	54200	2445A 00127	See Cal Cert	12mon.
150			Drill Press Stand	Craftsman	25921	N/A	N/A	N/A
192	6/22/02	6/22/01	Vertical Thermal Shock	Cincinnati Sub-Zero	VTS-1-5-3	88-11094	See Cal Cert	12 mon.
206	10/3/02	10/3/01	Digital Force Gage 10 lb	Chatillon Co.	DFGRS-10	2346	±.25% of full scale	12mon
236	8/1/02	8/1/01	Micro-Ohm Meter	Keithley Instr.	580	462173	See Cal Cert	12 mon
321	1/23/02	1/23/01	AC-DC Hipot/Megometer	Hipotronics Co.	H300B	DS16-201	See Cal Cert	12 mon.
340			X-Y Table	NE Affiliated Tech.	XY-6060	N/A	N/A	N/A
413			Computer	Myriad	386SX	911897	N/A	N/A
421	3/30/02	3/30/01	Megohmeter	Hipotronics Co.	HM3A	031423-00	See Cal Cert	12 mon.
436			Gas Regulator	Liquid Carboinc Co.	702-S-3	392838	N/A	N/A
440			Scanner Main Frame	Keithley Co.	706	540957	See Manual	Each Test
443			Gas Regulator Valve	Liquid Carbonic Co.	DRK-2-48	40197	See Manual	N/A
521			Sulfur Dioxide Analyzer	Polaroid C.S.I. Co.	SA285E	FE001	See Spec	Each Test
525			Gas Regulator	Superior Co.	5113A	350218	See Owners Manual	N/A
526			Gas Regulator	Matheson Co.	3813-330	R93172	See Owners Manual	N/A
543	12/11/01	12/11/00	Analytical Balance	Ohaus Co.	AP250D	MO9198	± .4mg	12 mon.
545	9/14/02	9/14/01	Event Detector	Anatech	32/64 EHD	941206	See Cal Cert	12mon
580	11/1/02	11/1/01	Digital Multimeter	Hewlett Packard Co.	3478A	2545A22620	See Cal.Cert.	12mon
601			Computer	A.M.I.	P111-450	082714	N/A	N/A
666	10/16/02	10/16/01	Digital Thermometer	Omega Eng.	DP116-KC2	7380236	±1.1DegC	12mon
677	8/15/02	8/15/01	Microohm Meter	Keithley Co.	580	0685122	See Cal Cert	12 mon
698			Oven Chamber	Blue M.	GI200A	NO7H-364434	N/A	Each Test
699			Oxident Monitor	Mast Co.	1724	12732	N/A	Each Test

EQUIPMENT LIST Continued

ID#	Next Cal	Last Cal	Equipment Name	Manufacturer	Model #	Serial #	Accuracy	Freq.Cal
1012	2/27/02	2/27/01	DC Power Supply 30 Amps	Hewlett Packard	6033A	2642A-02383	See Cal.Cert.	12 mon.
1014	1/27/02	7/27/01	Temp. Humid. Transmitter	General Eastern	850-232-5	00378	± 2%RH	6mon
1041	8/8/02	8/8/01	Force Gage	Chatillon	DFIS-50	B34054	± .15%	12 mon.
1043			MFG Flow System	Contech Research	N/A	N/A	N\A	N/A
1047	10/23/02	10/23/01	Microohm Meter	Keithley	580	0705731	See Cal Cert	12mon
1115	11/9/02	11/9/01	Digital Multimeter	Radio Shack	Auto Range	22-186A	See Cal. Cert.	12mon
1136	5/30/02	5/30/01	Signal Condt.	PCB	480EO9	23397	See Cal. Cert.	12mon
1137	4/24/02	4/24/01	Accelerometer	PCB	353BO4	57874	See Cal. Cert.	12mon
1169			Computer	ARC	PC133	none	N/A	N/A
1236			Floor Oven	Blue M.	DC166F	DC-2242	See Manual	
1271			Amplifier	Unholtz Dickie	SA15	3483	See Manual	N/A
1272			Shaker Table	Unholtz Dickie	S202PB	263	N/A	N/A
1279			Computer	ARC Co.	Pent-450	030175	N/A	N/A

TEST RESULTS

GROUP A1

PROJECT NO.: 201462B SPECIFICATION: TC0134-105I-0501

PART NO.:MEC1-140-02-S-D-RA1-SL PART DESCRIPTION: 1.0 mm Edge Conn.

SAMPLE SIZE: ID# A1-1,A1-2, A1-3,A1-4 TECHNICIAN: MOB

START DATE: 11/6/01 COMPLETE DATE: 11/6/01

ROOM AMBIENT: 22°C RELATIVE HUMIDITY: 30%

EQUIPMENT ID#: 99

CONTACT GAPS

PURPOSE:

To determine the dimensional distance between opposing contacts.

PROCEDURE:

1. The test samples were fixtured to the baseplate of the test stand.

2. The dimensional distance between opposing contacts were measured.

3. Test Conditions:

    a) Mating Conditions : Unmated
    b) Mounting Conditions : Unmounted
    c) Number of Positions Tested : 10 per test sample

REQUIREMENTS:

The dimensional distance between opposing contacts shall be measured and recorded.

RESULTS: See next page.

RESULTS:

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

Sample ID#	CONTACT GAP (Inches) Avg.	Max.	Min.
A1-1	0.0102	0.0105	0.0097
A1-2	0.0100	0.0108	0.0095
A1-3	0.0129	0.0136	0.0120
A1-4	0.0110	0.0115	0.0106

2. See data file 201462BGAP1 for individual data points.

PROJECT NO.: 201462B SPECIFICATION: TC0134-105I-0501

PART NO.:MEC1-140-02-S-D-RA1-SL PART DESCRIPTION: 1.0 mm Edge Conn.

SAMPLE SIZE: ID# A1-1,A1-2, A1-3,A1-4 TECHNICIAN: RO

START DATE: 11/7/01 COMPLETE DATE: 11/7/01

ROOM AMBIENT: 22°C RELATIVE HUMIDITY: 30%

EQUIPMENT ID#: 150, 206, 340

MATING AND UNMATING FORCE

PURPOSE:

To determine the mechanical forces required to mate and unmate mating boards to a connector.

PROCEDURE:

1. The test was performed in accordance with EIA 364, Test Procedure 13.

2. The test samples were fixtured to the base plate of the test stand and applicable force gauge.

3. The fixturing was accomplished in a manner to prevent “bowing” of the test samples during the performance of the test.

4. The fixturing was accomplished to assure axial alignment and allowed self centering movement to exist.

5. Care was taken to assure that the mating faces did not contact each other to assure proper forces were measured.

6. The test rate was 0.5 inches per minute.

REQUIREMENTS: See next page.

REQUIREMENTS:

The force required to mate and unmate the test samples shall be measured and recorded.

RESULTS:

The following is a summary of the observed data:

Sample ID#	MATING FORCE (Pounds)	UNMATING FORCE (Pounds)
A1-1	5.7	4.6
A1-2	6.6	4.7
A1-3	6.7	4.1
A1-4	5.8	4.7

PROJECT NO.: 201462B	SPECIFICATION: TC0134-105I-0501
PART NO.:MEC1-140-02-S-D-RA1-SL	PART DESCRIPTION: 1.0 mm Edge Conn.
SAMPLE SIZE: ID# A1-1,A1-2, A1-3,A1-4	TECHNICIAN: RO
START DATE: 11/7/01	COMPLETE DATE: 11/7/01
ROOM AMBIENT: 22°C	RELATIVE HUMIDITY: 30%
EQUIPMENT ID#: 99, 150, 206, 340	

DURABILITY

PURPOSE:

This is a preconditioning sequence which is used to induce the type of wear on the contacting surfaces which may occur under normal service conditions. The connectors are mated and unmated a predetermined number of cycles. Upon completion, the units being evaluated are exposed to the environments as specified to assess any impact on electrical stability resulting from wear or other wear dependent phenomenon.

PROCEDURE:

1. The test was performed in accordance with EIA 364, Test Procedure 9.

2. Test Conditions:

   a) No. of Cycles : 100
   b) Rate : 500 cycles per hour

3. The test samples were assembled to special holding devices and attached to the manual cycling equipment.

4. The test samples were axially aligned to accomplish the mating and unmating function allowing for self-centering movement.

5. Care was taken to prevent the mating faces of the test samples from contacting each other.

PROCEDURE:

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

REQUIREMENTS:

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

2. The force required to mate and unmate the test samples after 100 cycles of durability shall be measured and recorded.

3. The dimensional distance between opposing contacts shall be measured and recorded after 100 cycles of durability.

RESULTS:

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

2. The following is a summary of the observed mating and unmating forces:

	MATING FORCE (Pounds)		UNMATING FORCE (Pounds)	
Sample ID#	Initial	Final	Initial	Final
A1-1	5.7	4.4	4.6	3.2
A1-2	6.6	5.9	4.7	3.2
A1-3	6.7	5.5	4.1	3.7
A1-4	5.0	5.1	4.7	4.2

3. The following is a summary of the Contact Gap data observed:

	CONTACT GAPS (Inches)					
	Initial			Final		
Sample ID#	Avg.	Max.	Min.	Avg.	Max.	Min.
A1-1	0.0102	0.0105	0.0097	0.0154	0.0160	0.0149
A1-2	0.0100	0.0108	0.0095	0.0161	0.0166	0.0152
A1-3	0.0129	0.0136	0.0120	0.0165	0.0171	0.0161
A1-4	0.0110	0.0115	0.0106	0.0159	0.0174	0.0151

4. See data file 201462BGAP1 for individual data points.

GAP MEASUREMENTS

PROJECT	201462B	TEST :	Contact Gap Measurements			REQ. :	Record
CUSTOMER	Samtec	SPEC :	N/A	PAR. :	N/A	TECH :	MOB
START :	11/06/01	SAMPLE I.D. # :	A1-1,A1-2,A1-3 & A1-4				
FINISH :	11/09/01	TEMP :ºC	22	R.H. %	30	UNITS :	inches
EQUIPMENT I.D. #:	99	SEQUENCE	A1			FILE:	201462BGAP1

	A1-1		A1-2		A1-3		A1-4	
POS.	INITIAL	FINAL	INITIAL	FINAL	INITIAL	FINAL	INITIAL	FINAL
1	0.0100	0.0150	0.0100	0.0158	0.0136	0.0171	0.0115	0.0174
2	0.0097	0.0159	0.0100	0.0163	0.0131	0.0165	0.0112	0.0162
3	0.0103	0.0154	0.0095	0.0159	0.0129	0.0165	0.0106	0.0167
4	0.0104	0.0160	0.0100	0.0165	0.0131	0.0161	0.0108	0.0154
5	0.0105	0.0152	0.0100	0.0152	0.0135	0.0166	0.0110	0.0158
6	0.0104	0.0155	0.0101	0.0162	0.0134	0.0168	0.0112	0.0154
7	0.0101	0.0154	0.0097	0.0163	0.0126	0.0167	0.0112	0.0156
8	0.0104	0.0152	0.0099	0.0166	0.0124	0.0163	0.0108	0.0151
9	0.0102	0.0149	0.0108	0.0165	0.0120	0.0161	0.0112	0.0156
10	0.0104	0.0151	0.0099	0.0159	0.0128	0.0163	0.0109	0.0156
MAX:	0.0105	0.0160	0.0108	0.0166	0.0136	0.0171	0.0115	0.0174
MIN:	0.0097	0.0149	0.0095	0.0152	0.0120	0.0161	0.0106	0.0151
AVG:	0.0102	0.0154	0.0100	0.0161	0.0129	0.0165	0.0110	0.0159
STD	0.0002	0.0004	0.0003	0.0004	0.0005	0.0003	0.0003	0.0007
TECH	MOB	MOB	MOB	MOB	MOB	MOB	MOB	MOB
EQUIP	99	99	99	99	99	99	99	99

TEST RESULTS

GROUP A2

PROJECT NO.: 201462B	SPECIFICATION: TC0134-105I-0501
PART NO.:MEC1-140-02-S-D-RA1-SL	PART DESCRIPTION: 1.0 mm Edge Conn.
SAMPLE SIZE: ID# G1-S1,G1-S2, G1-S3,G1-S4	TECHNICIAN: RO
START DATE: 10/31/01	COMPLETE DATE: 10/31/01
ROOM AMBIENT: 22°C	RELATIVE HUMIDITY: 22%
EQUIPMENT ID#: 413, 1047	

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:

2. Test Conditions:

   a) Test Current : 10 milliamps
   b) Open Circuit Voltage : 20 millivolts
   c) No. of Positions Tested : 50 per test sample

PROCEDURE: Continued

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

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)

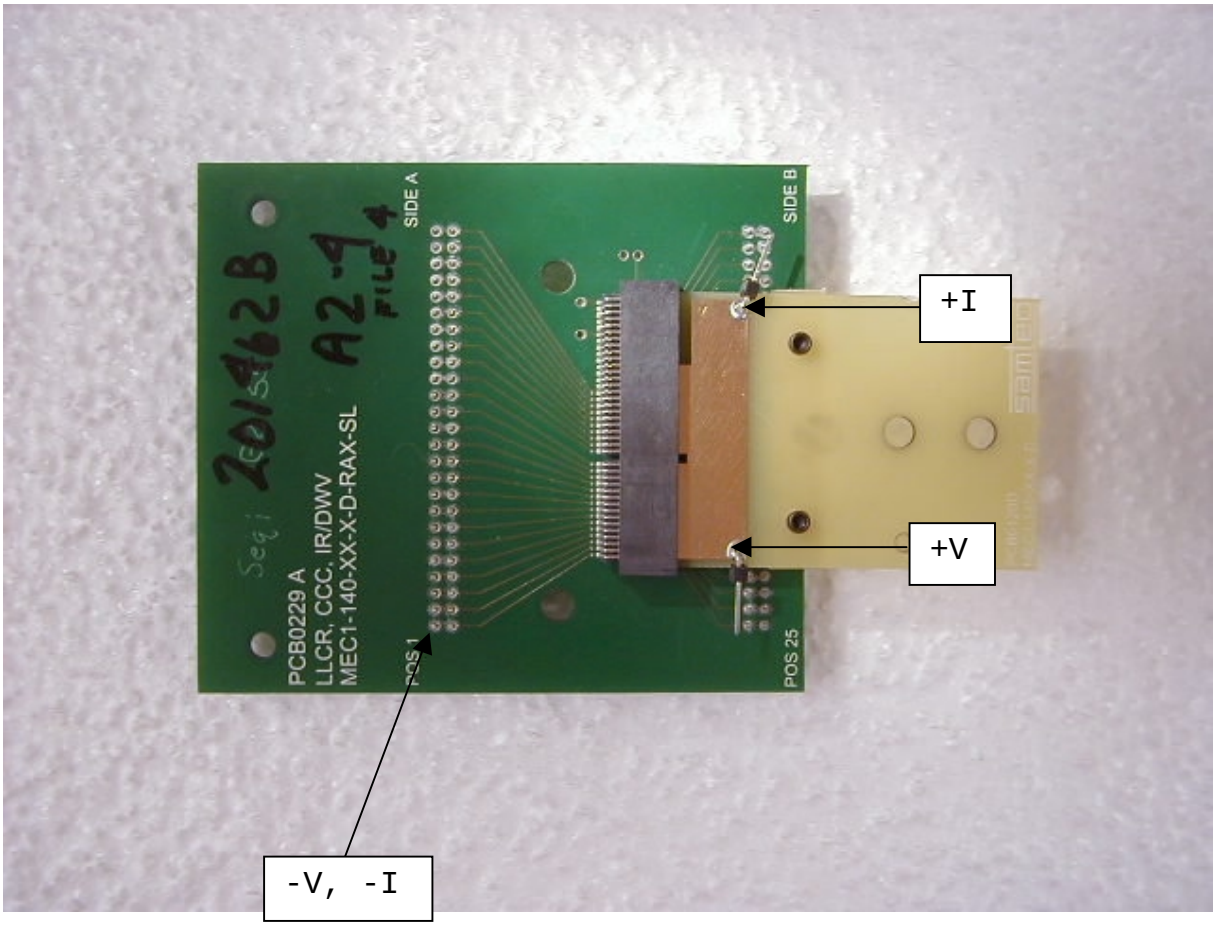
Sample ID#	Avg.	Max.	Min.
G1-S1	27.4	34.1	10.5*
G1-S2	28.1	36.5	20.2
G1-S3	28.2	35.8	20.3
G1-S4	28.1	36.5	20.2

* - The Low Level Circuit Resistance observed at positions B26 and B27 were low in comparison to other positions.

- FA revealed these positions were shorted together.

2. See data files 201462B01 through 201462B04 for individual data points.

FIGURE #3


SIDE A
SIDE B
PCB0229 A
LLCR, CCC, IR/DWV
MEC1-140-XX-X-D-RAX-SL
201462B
A2-4
FILE 4
POS 1
POS 25
+I
+V
-V, -I

PROJECT NO.: 201462B	SPECIFICATION: TC0134-105I-0501
PART NO.:MEC1-140-02-S-D-RA1-SL	PART DESCRIPTION: 1.0 mm Edge Conn.
SAMPLE SIZE: ID# G1-S1,G1-S2, G1-S3,G1-S4	TECHNICIAN: RO
START DATE: 11/6/01	COMPLETE DATE: 11/6/01
ROOM AMBIENT: 22°C	RELATIVE HUMIDITY: 30%
EQUIPMENT ID#: 150, 340, 413, 1047	

DURABILITY

PURPOSE:

This is a preconditioning sequence which is used to induce the type of wear on the contacting surfaces which may occur under normal service conditions. The connectors are mated and unmated a predetermined number of cycles. Upon completion, the units being evaluated are exposed to the environments as specified to assess any impact on electrical stability resulting from wear or other wear dependent phenomenon.

PROCEDURE:

1. The test was performed in accordance with EIA 364, Test Procedure 9.

2. Test Conditions:

   a) No. of Cycles : 100
   b) Rate : 500 cycles per hour

3. The test samples were assembled to special holding devices and attached to the manual cycling equipment.

4. The test samples were axially aligned to accomplish the mating and unmating function allowing for self-centering movement.

5. Care was taken to prevent the mating faces of the test samples from contacting each other.

PROCEDURE:

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

REQUIREMENTS:

1. There shall be no evidence of physical damage to the test samples so 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 low level circuit resistance data following 100 cycles of durability:

LOW LEVEL CIRCUIT RESISTANCE
(Milliohms)

Sample ID#	Avg. Change	Max. Change
G1-S1	+0.0	+1.9
G1-S2	+0.3	+1.2
G1-S3	+0.4	+1.6
G1-S4	+0.5	+3.1

3. See data files 201462B01 through 201462B04 for individual data points.

			Low Level Contact Resistance					
	Project:	201462B				Spec:	EIA 364 TP23	
	Customer:	Samtec				Subgroup:	Sequence A2	
	Product:	Series MEC1-RA w/0.062 mating bd				File #:	201462B01	
	Description:	MEC1-140-02-S-D-RA1-SL ID# G1-S1						
	Open circuit voltage:		20mv			Current:	10ma	
				Delta values				
				units: milliohms				
	Temp ºC	22	22					
	R.H. %	22	30					
	Date:	31Oct01	06Nov01					
	Pos. ID	Initial	100X					
	1A	33.9	0.7					
	2A	34.1	0.7					
	3A	34.7	0.0					
	4A	34.3	-0.5					
	5A	34.0	0.4					
	6A	34.1	0.2					
	7A	34.4	0.2					
	8A	34.7	0.1					
	9A	34.3	0.7					
	10A	34.4	0.3					
	11A	34.0	0.7					
	12A	35.0	-0.7					
	13A	34.2	1.0					
	14A	35.2	-0.7					
	15A	34.0	1.9					
	16A	34.3	0.2					
	17A	34.8	-0.5					
	18A	34.6	0.5					
	19A	34.6	0.5					
	20A	34.5	0.4					
	21A	34.8	0.2					
	22A	34.7	0.4					
	23A	34.7	0.4					
	24A	34.6	0.4					
	25A	34.6	0.3					
	26B	21.1	-0.3					
	27B	10.5	0.3					
	28B	10.5	0.2					
	29B	20.7	-0.4					
	30B	20.6	0.3					
	31B	21.7	-0.9					
	32B	22.2	-1.3					
	33B	20.9	-0.6					
	34B	20.8	-0.1					
	35B	22.0	-1.1					

	Temp ºC	22	22					
	R.H. %	22	30					
	Date:	31Oct01	06Nov01					
	Pos. ID	Initial	100X					
	36B	21.1	0.0					
	37B	21.8	-1.4					
	38B	21.3	-0.6					
	39B	21.5	-0.8					
	40B	20.8	0.2					
	41B	22.0	-0.5					
	42B	20.0	-0.7					
	43B	20.2	0.1					
	44B	21.1	-0.1					
	45B	20.4	0.0					
	46B	20.8	0.0					
	47B	20.9	0.3					
	48B	21.7	-0.2					
	49B	21.1	0.2					
	50B	21.0	-0.1					
	MAX	34.1	1.9					
	MIN	10.5	-1.4					
	AVG	27.4	0.0					
	STD	7.5	0.6					
	Open	0	0					
	Tech	RO	RO					
	Equip ID	413	413					
		1047	1047					

			Low Level Contact Resistance					
	Project:	201462B				Spec:	EIA 364 TP23	
	Customer:	Samtec				Subgroup:	Sequence A2	
	Product:	Series MEC1-RA w/0.062 mating bd				File #:	201462B02	
	Description:	MEC1-140-02-S-D-RA1-SL ID# G1-S2						
	Open circuit voltage:		20mv			Current:	10ma	
				Delta values				
				units: milliohms				
	Temp ºC	22	22					
	R.H. %	22	30					
	Date:	31Oct01	06Nov01					
	Pos. ID	Initial	100X					
	1A	34.0	0.9					
	2A	34.5	0.5					
	3A	34.9	0.2					
	4A	34.4	0.5					
	5A	34.1	0.1					
	6A	34.7	0.1					
	7A	35.1	0.1					
	8A	34.7	0.5					
	9A	34.8	0.3					
	10A	34.8	0.1					
	11A	34.8	0.2					
	12A	35.0	0.3					
	13A	35.1	-0.4					
	14A	35.4	-0.2					
	15A	35.8	-0.8					
	16A	34.9	0.2					
	17A	34.9	0.2					
	18A	35.0	1.2					
	19A	35.6	-0.4					
	20A	36.5	-0.9					
	21A	35.8	-0.4					
	22A	35.1	-0.4					
	23A	35.9	-0.2					
	24A	35.2	0.0					
	25A	35.4	0.6					
	26B	21.3	1.0					
	27B	20.2	0.6					
	28B	21.7	0.8					
	29B	20.9	0.5					
	30B	21.3	0.4					
	31B	20.7	0.3					
	32B	21.4	0.7					
	33B	21.3	0.5					
	34B	20.7	1.0					
	35B	20.6	0.8					

	Temp ºC	22	22					
	R.H. %	22	30					
	Date:	31Oct01	06Nov01					
	Pos. ID	Initial	100X					
	36B	20.4	0.5					
	37B	21.0	0.1					
	38B	21.2	0.8					
	39B	20.6	0.9					
	40B	20.8	0.4					
	41B	21.6	0.1					
	42B	21.1	0.3					
	43B	22.3	0.2					
	44B	21.1	-0.3					
	45B	21.6	0.1					
	46B	21.1	0.2					
	47B	21.8	0.3					
	48B	21.7	0.7					
	49B	21.1	0.3					
	50B	21.5	0.6					
	MAX	36.5	1.2					
	MIN	20.2	-0.9					
	AVG	28.1	0.3					
	STD	7.0	0.4					
	Open	0.0	0.0					
	Tech	RO	RO					
	Equip ID	413	413					
		1047	1047					

			Low Level Contact Resistance					
	Project:	201462B				Spec:	EIA 364 TP23	
	Customer:	Samtec				Subgroup:	Sequence A2	
	Product:	Series MEC1-RA w/0.062 mating bd				File #:	201462B03	
	Description:	MEC1-140-02-S-D-RA1-SL ID# G1-S3						
	Open circuit voltage:		20mv			Current:	10ma	
				Delta values				
				units: milliohms				
	Temp ºC	22	22					
	R.H. %	22	30					
	Date:	31Oct01	06Nov01					
	Pos. ID	Initial	100X					
	1A	34.7	0.1					
	2A	34.8	0.1					
	3A	34.9	-0.2					
	4A	35.2	-0.2					
	5A	35.0	0.1					
	6A	35.1	-0.2					
	7A	35.1	-0.2					
	8A	34.9	-0.1					
	9A	35.1	-0.4					
	10A	35.0	-0.2					
	11A	35.4	-0.2					
	12A	35.1	0.2					
	13A	35.3	-0.3					
	14A	35.2	0.1					
	15A	35.7	0.1					
	16A	34.8	0.4					
	17A	34.8	0.4					
	18A	35.7	0.3					
	19A	35.8	0.4					
	20A	35.5	0.0					
	21A	35.0	0.4					
	22A	35.4	0.0					
	23A	35.7	-0.1					
	24A	35.2	0.7					
	25A	35.3	0.8					
	26B	22.5	0.7					
	27B	21.4	0.1					
	28B	22.2	0.3					
	29B	21.7	1.2					
	30B	20.6	0.9					
	31B	21.4	0.8					
	32B	21.1	0.6					
	33B	21.1	1.5					
	34B	21.0	0.9					
	35B	21.0	0.6					

	Temp ºC	22	22					
	R.H. %	22	30					
	Date:	31Oct01	06Nov01					
	Pos. ID	Initial	100X					
	36B	21.3	1.1					
	37B	20.6	0.7					
	38B	20.5	0.6					
	39B	20.4	0.1					
	40B	20.9	0.5					
	41B	21.4	0.8					
	42B	21.7	0.3					
	43B	21.9	0.6					
	44B	21.9	0.5					
	45B	21.8	1.1					
	46B	21.4	1.4					
	47B	21.1	0.4					
	48B	20.3	1.4					
	49B	21.4	1.4					
	50B	20.7	1.6					
	MAX	35.8	1.6					
	MIN	20.3	-0.4					
	AVG	28.2	0.4					
	STD	7.1	0.5					
	Open	0	0					
	Tech	RO	RO					
	Equip ID	413	413					
		1047	1047					

			Low Level Contact Resistance					
	Project:	201462B				Spec:	EIA 364 TP23	
	Customer:	Samtec				Subgroup:	Sequence A2	
	Product:	Series MEC1-RA w/0.062 mating bd				File #:	201462B04	
	Description:	MEC1-140-02-S-D-RA1-SL ID# G1-S4						
	Open circuit voltage:		20mv			Current:	10ma	
				Delta values				
				units: milliohms				
	Temp ºC	22	22					
	R.H. %	22	30					
	Date:	31Oct01	06Nov01					
	Pos. ID	Initial	100X					
	1A	34.8	2.1					
	2A	35.1	2.2					
	3A	35.4	0.5					
	4A	34.9	2.5					
	5A	34.5	0.7					
	6A	35.6	2.3					
	7A	35.7	1.2					
	8A	35.1	1.7					
	9A	34.8	1.0					
	10A	35.6	1.3					
	11A	35.1	1.3					
	12A	35.1	3.1					
	13A	34.9	0.5					
	14A	35.5	1.0					
	15A	35.7	-0.1					
	16A	34.8	0.4					
	17A	35.3	0.1					
	18A	35.1	-0.8					
	19A	35.7	-0.9					
	20A	35.2	-0.3					
	21A	34.9	0.0					
	22A	35.6	-0.2					
	23A	35.5	-0.1					
	24A	35.1	-0.1					
	25A	35.2	0.1					
	26B	21.8	0.1					
	27B	21.4	0.0					
	28B	21.7	0.2					
	29B	20.9	0.2					
	30B	21.6	-0.4					
	31B	21.1	0.0					
	32B	21.6	0.1					
	33B	21.3	0.0					
	34B	21.6	0.3					
	35B	21.2	-0.1					

	Temp ºC	22	22					
	R.H. %	22	30					
	Date:	31Oct01	06Nov01					
	Pos. ID	Initial	100X					
	36B	21.3	0.8					
	37B	20.9	0.1					
	38B	21.5	-0.5					
	39B	20.4	0.3					
	40B	20.6	0.4					
	41B	22.2	1.0					
	42B	21.1	0.3					
	43B	22.0	-0.3					
	44B	20.8	0.2					
	45B	20.8	0.1					
	46B	20.7	0.5					
	47B	21.6	-0.2					
	48B	20.3	0.5					
	49B	21.0	0.4					
	50B	20.7	0.9					
	MAX	35.7	3.1					
	MIN	20.3	-0.9					
	AVG	28.2	0.5					
	STD	7.1	0.8					
	Open	0	0					
	Tech	RO	RO					
	Equip ID	413	413					
		1047	1047					

TEST RESULTS

GROUP B

PROJECT NO.: 201462B	SPECIFICATION: TC0134-105I-0501
PART NO.:MEC1-140-02-S-D-RA1-SL	PART DESCRIPTION: 1.0 mm Edge Conn.
SAMPLE SIZE: ID# A2-1,A2-2, A2-3,A2-4	TECHNICIAN: RO
START DATE: 11/1/01	COMPLETE DATE: 11/1/01
ROOM AMBIENT: 23°C	RELATIVE HUMIDITY: 36%
EQUIPMENT ID#: 413, 1047	

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:

2. Test Conditions:

   a) Test Current : 10 milliamps
   b) Open Circuit Voltage : 20 millivolts
   c) No. of Positions Tested : 50 per test sample

PROCEDURE: Continued

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

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.
A2-1*	28.1	35.6	20.7
A2-2	28.0	36.1	19.8
A2-3	28.6	36.4	20.8
A2-4	27.8	35.3	19.8

* - The Low Level Circuit Resistance open was observed at position 25A within sample ID# A2-1.

- FA revealed the open was a result of insufficient solder at the solder termination to pad site.

2. See data files 201462B05 through 201462B08 for individual data points.

PROJECT NO.: 201462B SPECIFICATION: TC0134-105I-0501

PART NO.:MEC1-140-02-S-D-RA1-SL PART DESCRIPTION: 1.0 mm Edge Conn.

SAMPLE SIZE:ID#A2-1,A2-2,A2-3, A2-4,G2-S1,G2-S2, G2-S3,G2-S4 TECHNICIAN: RO

START DATE: 11/16/01 COMPLETE DATE: 11/16/01

ROOM AMBIENT: 24°C RELATIVE HUMIDITY: 34%

EQUIPMENT ID#: 30, 34, 117, 413, 1047, 1136

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 : 11 Milliseconds
    c) Wave Form : Half-sine
    d) Velocity : 11.3 feet per second
    e) No. of Shocks : 3 Shocks/Direction, 3 Axis (18 Total)

3. The samples were fixtured to the shock table as shown in Figure #4.

4. Sample ID#'s G2-1, G2-2, G2-3, and G2-4 were wired in series for discontinuity monitoring, (Low Level Circuit Resistance was not measured on these samples).

REQUIREMENTS: See next page.

REQUIREMENTS:

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

2. There shall be no contact interruption greater than 1.0 microsecond.

3. 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. There was no contact interruption greater than 1.0 microsecond.

3. The Mechanical Shock characteristics are shown in Figures #5 (Calibration Pulse) and #6 (Test Pulse). Each figure displays the shock pulse contained within the upper and lower limits as defined by the appropriate test specification.

4. The following is a summary of the observed Low Level Circuit Resistance data following Mechanical Shock:

CHANGE IN
LOW LEVEL CIRCUIT RESISTANCE
(Milliohms)

Sample ID#	Avg. Change	Max. Change
A2-1	+0.0	+0.7
A2-2	-0.1	+1.0
A2-3	+0.2	+1.3
A2-4	+0.2	+1.0

5. See data files 201462B05 through 201462B08 for individual data points.

FIGURE #4

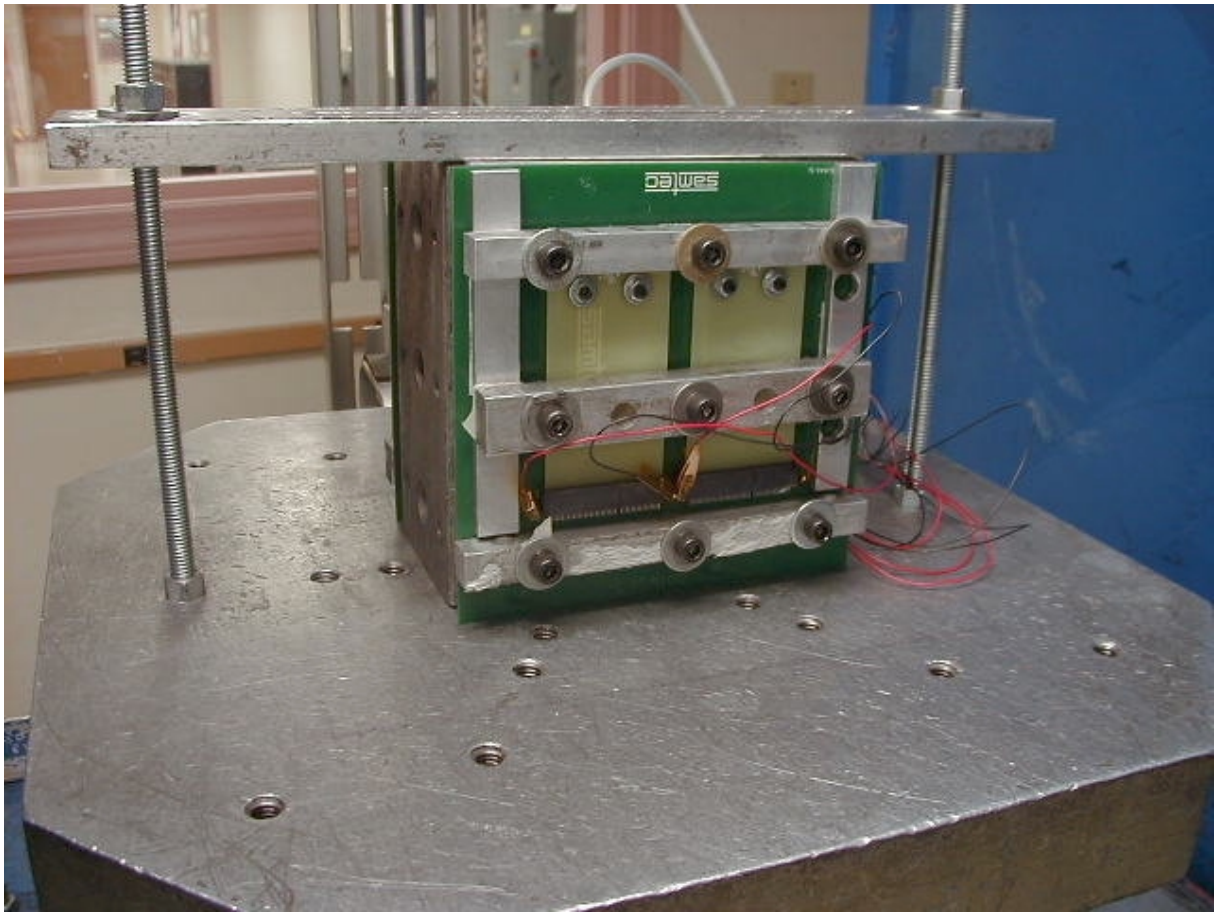


FIGURE #5

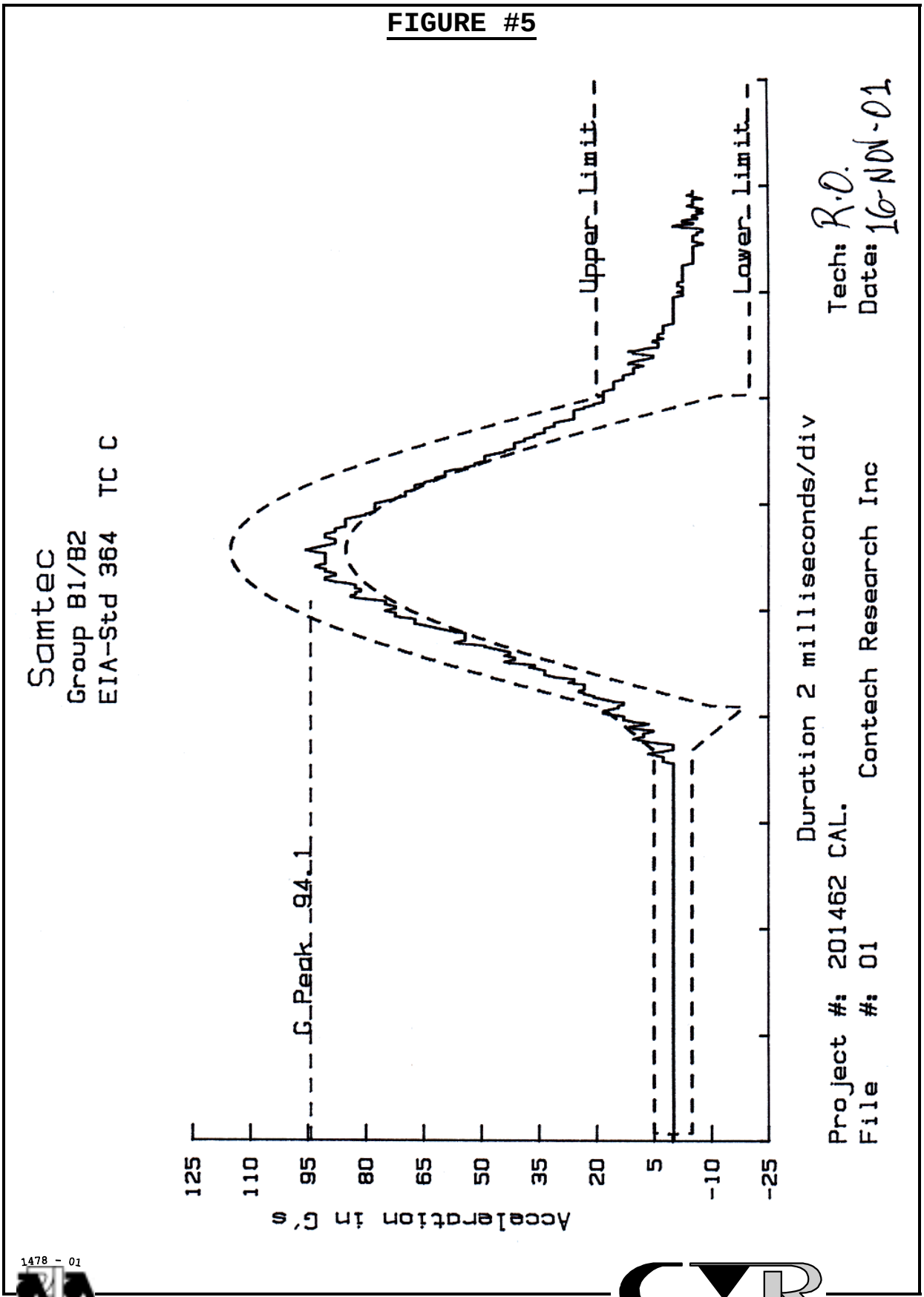
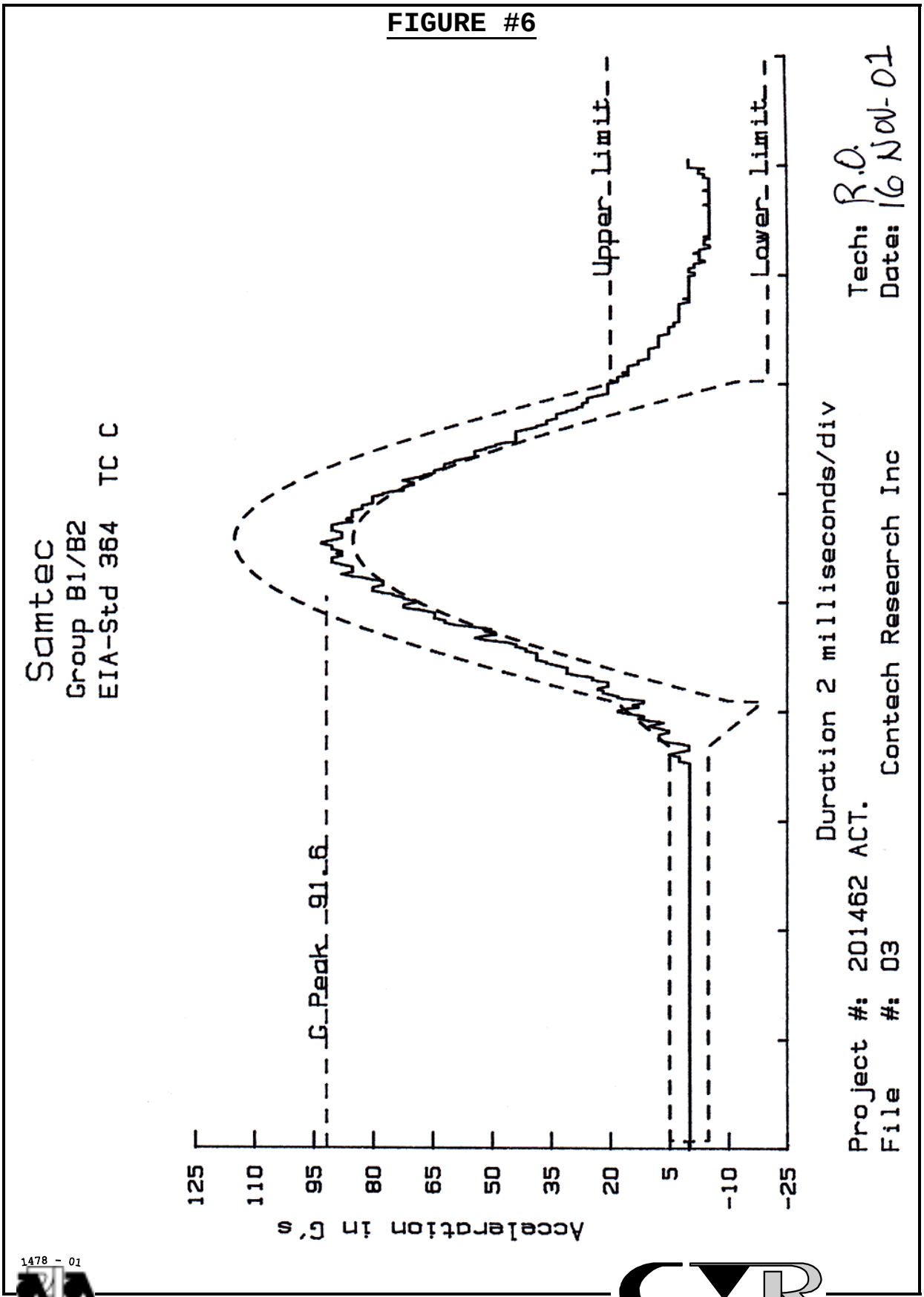

Samtec
Group B1/B2
EIA-Std 364 TC C
G_Peak 94.1
Upper_Limit
Lower_Limit
Acceleration in G's
125
110
95
80
65
50
35
20
5
-10
-25
Duration 2 milliseconds/div
Project #: 201462 CAL.
File #: 01
Contech Research Inc
Tech: R.O.
Date: 16-NOV-01

FIGURE #6


Samtec
Group B1/B2
EIA-Std 364 TC C
G_Peak 91.6
Upper_limit
Lower_limit
Tech: R.O.
Date: 16 Nov-01
Project #: 201462 ACT.
File #: 03
Contech Research Inc
Duration 2 milliseconds/div
Acceleration in G's
125
110
95
80
65
50
35
20
5
-10
-25

PROJECT NO.: 201462B	SPECIFICATION: TC0134-105I-0501
PART NO.:MEC1-140-02-S-D-RA1-SL	PART DESCRIPTION: 1.0 mm Edge Conn.
SAMPLE SIZE:ID#A2-1,A2-2,A2-3, A2-4,G2-S1,G2-S2, G2-S3,G2-S4	TECHNICIAN: RO
START DATE: 11/27/01	COMPLETE DATE: 11/28/01
ROOM AMBIENT: 24°C	RELATIVE HUMIDITY: 37%
EQUIPMENT ID#: 413, 545, 1047, 1137, 1169, 1271, 1272	

VIBRATION, RANDOM

PURPOSE:

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

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.

2. Test Conditions:

   a) G 'RMS' : 7.56
   b) Frequency : 50 to 2000 Hz
   c) Duration : 2 hours per axis/3 axis total
   d) Test Current : 100 milliamps

3. Figure #7 illustrates the test sample fixturing utilized during the test.

4. Sample ID# G2-S1, G2-S2, G2-S3 and G2-S4 were wired in series for discontinuity monitoring (Low Level Circuit Resistance was not measured on these samples).

PROCEDURE: Continued

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

REQUIREMENTS:

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

2. There shall be no contact interruption greater than 1.0 microsecond.

3. 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. There was no interruption greater than 1.0 microsecond.

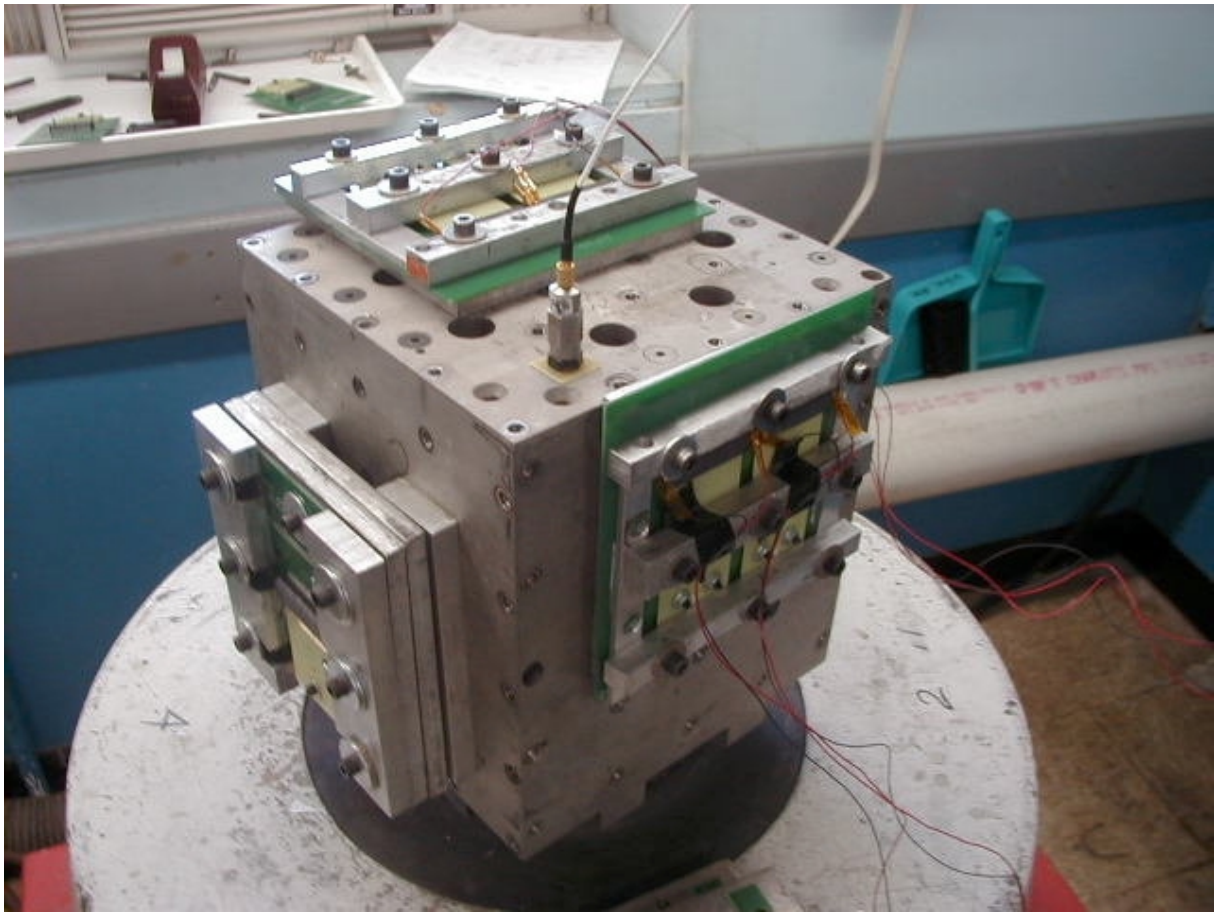
3. The following is a summary of the observed Low Level Circuit Resistance data following Random Vibration:

CHANGE IN
LOW LEVEL CIRCUIT RESISTANCE
(Milliohms)

Sample ID#	Avg. Change	Max. Change
A2-1	-0.4	+0.2
A2-2	-0.7	+0.2
A2-3	+0.3	+3.3
A2-4	+1.0	+3.6

4. See data files 201462B05 through 201462B08 for individual data points.

FIGURE #7



			Low Level Contact Resistance					
	Project:	201462B				Spec:	EIA 364 TP23	
	Customer:	Samtec				Subgroup:	Sequence B1	
	Product:	Series MEC1-RA w/0.062 mating bd				File #:	201462B05	
	Description:	MEC1-140-02-S-D-RA1-SL ID# A2-1						
	Open circuit voltage:		20mv			Current:	10ma	
				Delta values				
				units: milliohms				
	Temp ºC	23	24	24				
	R.H. %	36	34	37				
	Date:	01Nov01	16Nov01	28Nov01				
	Pos. ID	Initial	M. Shock	Vibration				
	1A	35.4	0.2	0.1				
	2A	34.7	0.2	-0.2				
	3A	35.0	0.4	0.0				
	4A	34.7	-0.3	-0.7				
	5A	35.1	0.1	-0.2				
	6A	34.6	0.4	-0.2				
	7A	34.6	0.3	-0.1				
	8A	35.0	-0.3	-0.7				
	9A	34.8	0.3	-0.2				
	10A	34.3	0.2	0.0				
	11A	34.6	-0.1	-0.2				
	12A	34.5	0.0	-0.2				
	13A	35.2	-0.3	-0.5				
	14A	34.3	-0.1	-0.2				
	15A	35.1	0.0	-0.2				
	16A	34.9	0.1	-0.3				
	17A	34.8	0.0	-0.3				
	18A	35.6	0.3	-1.0				
	19A	34.9	0.0	-0.4				
	20A	35.0	0.1	-0.6				
	21A	34.9	0.1	-0.3				
	22A	35.3	0.3	-0.1				
	23A	35.1	0.6	0.0				
	24A	35.2	0.1	-0.3				
	25A	Open	Open	Open				
	26B	21.1	0.7	0.2				
	27B	21.4	-0.1	-0.4				
	28B	21.7	-0.5	-0.8				
	29B	21.5	-0.5	-0.9				
	30B	21.7	0.0	-0.3				
	31B	21.6	0.0	-0.6				
	32B	21.2	0.1	-0.2				
	33B	22.2	-0.4	-1.0				
	34B	21.3	-0.1	-0.5				
	35B	21.9	-0.1	-0.4				

	Temp ºC	23	24	24				
	R.H. %	36	34	37				
	Date:	01Nov01	16Nov01	28Nov01				
	Pos. ID	Initial	M. Shock	Vibration				
	36B	21.2	-0.1	-0.8				
	37B	21.3	-0.2	-0.7				
	38B	21.3	0.5	-0.3				
	39B	21.8	0.0	-0.4				
	40B	21.9	-0.4	-0.7				
	41B	21.7	0.2	0.0				
	42B	21.4	-0.5	-0.6				
	43B	21.5	0.2	-0.2				
	44B	22.1	0.0	-0.3				
	45B	21.1	0.0	-0.3				
	46B	21.5	-0.2	-0.7				
	47B	21.3	0.1	-0.4				
	48B	21.6	0.1	-0.5				
	49B	20.7	0.3	-0.2				
	50B	21.2	0.2	-0.2				
	MAX	35.6	0.7	0.2				
	MIN	20.7	-0.5	-1.0				
	AVG	28.1	0.0	-0.4				
	STD	6.8	0.3	0.3				
	Open	1	1	1				
	Tech	RO	RO	RO				
	Equip ID	413	413	413				
		1047	1047	1047				

			Low Level Contact Resistance					
	Project:	201462B				Spec:	EIA 364 TP23	
	Customer:	Samtec				Subgroup:	Sequence B1	
	Product:	Series MEC1-RA w/0.062 mating bd				File #:	201462B06	
	Description:	MEC1-140-02-S-D-RA1-SL ID# A2-2						
	Open circuit voltage:		20mv			Current:	10ma	
				Delta values				
				units: milliohms				
	Temp ºC	23	24	24				
	R.H. %	36	34	37				
	Date:	01Nov01	16Nov01	28Nov01				
	Pos. ID	Initial	M. Shock	Vibration				
	1A	34.9	0.2	0.1				
	2A	35.5	0.1	-0.7				
	3A	34.0	0.3	-0.6				
	4A	35.6	0.1	-0.6				
	5A	35.0	-0.2	-0.6				
	6A	35.0	-0.1	-0.9				
	7A	34.3	-0.3	-0.8				
	8A	36.0	0.3	-0.6				
	9A	34.6	0.3	0.0				
	10A	35.4	0.2	-0.3				
	11A	34.2	0.2	-0.4				
	12A	35.7	0.0	-0.6				
	13A	34.7	-0.2	-0.6				
	14A	36.0	-0.7	-0.5				
	15A	34.9	-0.3	-1.2				
	16A	34.2	0.1	-0.7				
	17A	35.5	-0.7	-1.2				
	18A	35.1	-0.4	-1.3				
	19A	35.6	-0.3	-1.3				
	20A	34.8	-0.4	-0.9				
	21A	36.1	0.4	-0.5				
	22A	35.2	-0.5	-1.2				
	23A	35.8	0.2	-0.8				
	24A	35.0	-0.1	-0.8				
	25A	35.9	1.0	0.2				
	26B	20.6	-0.1	-0.7				
	27B	20.4	0.4	-0.2				
	28B	20.3	0.1	-0.5				
	29B	20.5	-0.3	-0.9				
	30B	19.9	0.0	-0.6				
	31B	20.3	-0.1	-0.8				
	32B	21.4	-0.4	-1.3				
	33B	20.6	0.0	-0.5				
	34B	20.0	-0.1	-0.6				
	35B	20.6	0.1	-0.8				

	Temp ºC	23	24	24				
	R.H. %	36	34	37				
	Date:	01Nov01	16Nov01	28Nov01				
	Pos. ID	Initial	M. Shock	Vibration				
	36B	24.5	-0.5	-0.7				
	37B	20.1	-0.2	-0.8				
	38B	20.3	-0.4	-0.6				
	39B	20.8	-0.5	-0.9				
	40B	19.9	0.1	-0.4				
	41B	22.4	-1.6	-1.9				
	42B	20.9	-0.5	-0.8				
	43B	24.0	0.2	0.0				
	44B	20.9	-0.5	-0.7				
	45B	20.3	-0.3	-0.3				
	46B	20.9	-1.0	-1.2				
	47B	19.8	0.1	-0.1				
	48B	20.8	-0.1	-0.5				
	49B	20.1	-0.2	-0.4				
	50B	20.3	-0.4	-0.7				
	MAX	36.1	1.0	0.2				
	MIN	19.8	-1.6	-1.9				
	AVG	28.0	-0.1	-0.7				
	STD	7.3	0.4	0.4				
	Open	0	0	0				
	Tech	RO	RO	RO				
	Equip ID	413	413	413				
		1047	1047	1047				

			Low Level Contact Resistance					
	Project:	201462B				Spec:	EIA 364 TP23	
	Customer:	Samtec				Subgroup:	Sequence B1	
	Product:	Series MEC1-RA w/0.062 mating bd				File #:	201462B07	
	Description:	MEC1-140-02-S-D-RA1-SL ID# A2-3						
	Open circuit voltage:		20mv			Current:	10ma	
				Delta values				
				units: milliohms				
	Temp ºC	23	24	24				
	R.H. %	36	34	37				
	Date:	01Nov01	16Nov01	28Nov01				
	Pos. ID	Initial	M. Shock	Vibration				
	1A	35.7	0.3	3.3				
	2A	36.0	0.2	3.0				
	3A	35.5	0.3	2.5				
	4A	36.4	1.3	2.9				
	5A	35.3	0.4	2.1				
	6A	36.4	1.0	2.8				
	7A	35.1	0.2	3.2				
	8A	35.3	0.7	2.5				
	9A	34.8	0.4	-0.1				
	10A	36.0	-0.3	0.6				
	11A	35.4	0.6	-0.5				
	12A	35.3	0.1	-0.4				
	13A	34.8	0.3	-0.2				
	14A	35.4	0.3	-0.1				
	15A	35.7	0.1	-0.4				
	16A	35.2	0.4	-0.1				
	17A	35.4	0.5	-0.2				
	18A	35.4	0.3	-0.3				
	19A	35.6	0.7	-0.3				
	20A	35.8	0.1	-0.7				
	21A	35.6	0.4	-0.3				
	22A	35.7	0.7	-0.5				
	23A	35.6	0.1	0.0				
	24A	35.8	0.2	-0.5				
	25A	36.2	0.8	-0.4				
	26B	21.0	0.2	-0.4				
	27B	20.8	-0.2	2.7				
	28B	22.3	0.0	1.0				
	29B	22.2	-0.4	2.0				
	30B	21.3	0.2	-0.2				
	31B	21.3	-0.2	0.2				
	32B	21.1	0.3	-0.4				
	33B	21.1	-0.3	-0.7				
	34B	21.5	0.0	-0.2				
	35B	21.3	0.1	0.1				

	Temp ºC	23	24	24				
	R.H. %	36	34	37				
	Date:	01Nov01	16Nov01	28Nov01				
	Pos. ID	Initial	M. Shock	Vibration				
	36B	22.7	-0.1	-0.5				
	37B	21.5	0.4	-0.7				
	38B	21.5	0.4	-0.4				
	39B	21.9	0.0	-0.6				
	40B	23.2	-0.2	-0.9				
	41B	21.2	0.1	-0.7				
	42B	21.4	-0.1	-0.9				
	43B	21.5	0.2	-0.9				
	44B	20.9	0.3	-0.4				
	45B	21.5	0.3	-0.5				
	46B	22.3	-0.2	-0.1				
	47B	21.6	0.1	-0.6				
	48B	21.7	0.1	-1.1				
	49B	21.9	0.1	-0.1				
	50B	22.4	-0.6	-0.7				
	MAX	36.4	1.3	3.3				
	MIN	20.8	-0.6	-1.1				
	AVG	28.6	0.2	0.3				
	STD	7.1	0.4	1.3				
	Open	0	0	0				
	Tech	RO	RO	RO				
	Equip ID	413	413	413				
		1047	1047	1047				

			Low Level Contact Resistance					
	Project:	201462B				Spec:	EIA 364 TP23	
	Customer:	Samtec				Subgroup:	Sequence B1	
	Product:	Series MEC1-RA w/0.062 mating bd				File #:	201462B08	
	Description:	MEC1-140-02-S-D-RA1-SL ID# A2-4						
	Open circuit voltage:		20mv			Current:	10ma	
				Delta values				
				units: milliohms				
	Temp ºC	23	24	24				
	R.H. %	36	34	37				
	Date:	01Nov01	16Nov01	28Nov01				
	Pos. ID	Initial	M. Shock	Vibration				
	1A	34.8	-0.2	3.6				
	2A	35.2	1.0	3.1				
	3A	35.1	0.1	2.8				
	4A	35.0	0.2	2.8				
	5A	34.3	0.6	1.7				
	6A	35.1	0.7	3.4				
	7A	34.8	0.3	2.2				
	8A	34.7	0.3	2.8				
	9A	34.5	0.3	2.3				
	10A	34.5	0.4	-0.4				
	11A	35.1	0.3	2.5				
	12A	34.8	0.3	2.9				
	13A	34.3	0.3	1.3				
	14A	34.9	0.2	3.4				
	15A	35.2	0.3	2.6				
	16A	35.0	0.3	0.9				
	17A	35.1	0.1	3.6				
	18A	34.9	0.2	2.3				
	19A	35.1	0.3	3.0				
	20A	34.7	0.1	2.5				
	21A	35.2	0.3	2.9				
	22A	35.3	0.9	2.6				
	23A	34.6	0.1	1.0				
	24A	35.1	0.4	2.0				
	25A	35.1	0.4	-0.8				
	26B	21.7	0.2	-0.5				
	27B	21.6	0.1	3.1				
	28B	22.0	0.1	1.3				
	29B	20.6	0.0	-0.3				
	30B	20.8	0.2	-0.6				
	31B	19.8	0.2	-0.4				
	32B	20.6	0.1	-0.4				
	33B	21.1	-0.1	-0.4				
	34B	21.0	-0.1	-0.4				
	35B	20.5	0.3	-0.4				

	Temp ºC	23	24	24				
	R.H. %	36	34	37				
	Date:	01Nov01	16Nov01	28Nov01				
	Pos. ID	Initial	M. Shock	Vibration				
	36B	21.3	-0.2	-0.5				
	37B	21.0	0.1	-0.4				
	38B	20.5	0.1	-0.2				
	39B	20.0	0.1	-0.3				
	40B	20.3	0.0	-0.2				
	41B	20.5	0.0	-0.2				
	42B	20.2	-0.6	-0.9				
	43B	20.2	0.0	-0.2				
	44B	21.3	-0.5	-0.7				
	45B	20.2	0.2	-0.2				
	46B	20.7	0.1	-0.7				
	47B	20.7	0.1	-0.3				
	48B	21.0	0.1	-0.5				
	49B	20.5	0.0	-0.3				
	50B	21.4	-0.6	-1.1				
	MAX	35.3	1.0	3.6				
	MIN	19.8	-0.6	-1.1				
	AVG	27.8	0.2	1.0				
	STD	7.1	0.3	1.6				
	Open	0	0	0				
	Tech	RO	RO	RO				
	Equip ID	413	413	413				
		1047	1047	1047				

TEST RESULTS

GROUP C1

PROJECT NO.: 201462B SPECIFICATION: TC0134-105I-0501

PART NO.:MEC1-140-02-S-D-RA1-SL PART DESCRIPTION: 1.0 mm Edge Conn.

SAMPLE SIZE: ID# C1-1,C1-2, C1-3,C1-4 TECHNICIAN: RO

START DATE: 10/18/01 COMPLETE DATE: 10/18/01

ROOM AMBIENT: 22°C RELATIVE HUMIDITY: 33%

EQUIPMENT ID#: 421

INSULATION RESISTANCE(IR)

PURPOSE:

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.

PROCEDURE:

1. The test was performed in accordance with EIA 364, Test Procedure 21.

2. Test Conditions:

    a) Between Adjacent Contacts : Yes
    b) Mated Condition : Unmated
    c) Mounting Condition : Mounted
    d) Electrification Time : 2.0 Minutes
    e) Test Voltage : 500 VAC

REQUIREMENTS:

When the specified test voltage is applied, the insulation resistance shall not be less than 1000 megohms.

RESULTS:

The insulation resistance exceeded 50,000 megohms.

PROJECT NO.: 201462B SPECIFICATION: TC0134-105I-0501

PART NO.:MEC1-140-02-S-D-RA1-SL PART DESCRIPTION: 1.0 mm Edge Conn.

SAMPLE SIZE: ID# C1-1,C1-2, C1-3,C1-4 TECHNICIAN: RO

START DATE: 10/17/01 COMPLETE DATE: 10/17/01

ROOM AMBIENT: 22°C RELATIVE HUMIDITY: 46%

EQUIPMENT ID#: 95

DIELECTRIC WITHSTANDING VOLTAGE (SEA LEVEL)

PURPOSE:

To determine if the connector can operate at its rated voltage and withstand momentary overpotentials due to switching, surges and other similar phenomenon.

PROCEDURE:

1. The test was performed in accordance with EIA 364, Test Procedure 20.

2. Test Conditions:

    a) Between Adjacent Contacts : Yes
    b) Mated Condition : Unmated
    c) Mounting Condition : Mounted
    d) Hold Time : 60 Seconds
    e) Rate of Application : 500 volts/sec.

3. The test voltage is determined by increasing the applied voltage until breakdown occurs. The test voltage is 75% of the breakdown voltage.

REQUIREMENTS: See next page.

REQUIREMENTS:

1. The breakdown voltage shall be measured and recorded.

2. When the specified test voltage is applied, there shall be no evidence of breakdown, arcing, etc.

RESULTS:

1. The breakdown voltage was 1200 VAC. The test voltage was calculated to be 900 VAC.

2. All test samples tested at 975 VAC met the requirements as specified.

PROJECT NO.: 201462B	SPECIFICATION: TC0134-105I-0501
PART NO.:MEC1-140-02-S-D-RA1-SL	PART DESCRIPTION: 1.0 mm Edge Conn.
SAMPLE SIZE: ID# C1-1,C1-2, C1-3,C1-4	TECHNICIAN: RO
START DATE: 10/19/01	COMPLETE DATE: 10/22/01
ROOM AMBIENT: 22°C	RELATIVE HUMIDITY: 43%
EQUIPMENT ID#: 95, 192, 321	

THERMAL SHOCK

PURPOSE:

To determine the resistance of a given electrical connector to exposure at extremes of high and low temperatures and the shock of alternate exposures to these extremes, simulating the worst probable conditions of storage, transportation and application.

PROCEDURE:

1. The test environment was performed in accordance with EIA 364, Test Procedure 32, with the following conditions:

2. Test Conditions:

   a) Number of Cycles : 5 Cycles
   b) Hot Extreme : +85 +3°C/-0°C
   c) Cold Extreme : -55 +0°C/-3°C
   d) Time at Temperature : 30 Minutes
   e) Mating Conditions : Unmated
   f) Mounting Conditions : Mounted
   g) Transfer Time : Instantaneous

3. The total number of cycles were performed continuously.

4. Prior to performing variable measurements, the test samples were allowed to recover to room ambient conditions.

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

REQUIREMENTS: See next page.

REQUIREMENTS:

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

2. The insulation resistance shall not be less than 1000 megohms.

3. When a 900 VAC test voltage is applied, there shall be no evidence of arcing, breakdown, etc.

RESULTS:

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

2. The insulation resistance exceeded 50000 megohms.

3. There was no evidence of arcing, breakdown, etc., when a 900 VAC voltage was applied.

PROJECT NO.: 201462B	SPECIFICATION: TC0134-105I-0501
PART NO.:MEC1-140-02-S-D-RA1-SL	PART DESCRIPTION: 1.0 mm Edge Conn.
SAMPLE SIZE: ID# C1-1,C1-2, C1-3,C1-4	TECHNICIAN: RO
START DATE: 10/23/01	COMPLETE DATE: 11/2/01
ROOM AMBIENT: 22°C	RELATIVE HUMIDITY: 42%
EQUIPMENT ID#: 27, 95, 421	

MOISTURE RESISTANCE

PURPOSE:

1. The purpose of this test is to permit evaluation of the properties of materials used in connectors as they are influenced or deteriorated by the effects of high humidity and heat conditions. Measurements made under high humidity conditions may reflect the peculiar conditions under which the readings were made, and should be compared only to initial readings when careful analysis indicates that such a comparison is valid and applicable.

2. This test obtains added effectiveness in employment of temperature cycling that provides a breathing action, inducing corrosion processes, and the introduction of moisture into partially sealed test samples. This condition imposes a vapor pressure on the samples which constitutes the major force behind the moisture migration and penetration.

PROCEDURE:

1. The test environment was performed in accordance with EIA 364, Test Procedure 31, with the following conditions:

PROCEDURE:

2. Test Conditions:

a) Relative Humidity	:	90% to 95%
b) Temperature Conditions	:	25°C to 65°C
c) Cold Cycle	:	No
d) Polarizing Voltage	:	No
e) Mating Conditions	:	Unmated
f) Mounting Conditions	:	Mounted
g) Duration	:	240 hours

3. Prior to performing variable measurements, the test samples were allowed to recover to room ambient conditions.

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

REQUIREMENTS:

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

2. The final insulation resistance shall not be less than 1000 megohms.

3. There shall be no evidence of arcing or breakdown when a 900 VAC test voltage is applied.

RESULTS:

1. The test samples as tested showed no evidence of physical deterioration.

2. The final insulation resistance exceeded 50,000 megohms when measured at high humidity.

3. There was no evidence of breakdown, arcing, etc., when a 900 VAC test voltage was applied.

TEST RESULTS

GROUP C2

PROJECT NO.: 201462B	SPECIFICATION: TC0134-105I-0501
PART NO.:MEC1-140-02-S-D-RA1-SL	PART DESCRIPTION: 1.0 mm Edge Conn.
SAMPLE SIZE: ID# G1-S1,G1-S2, G1-S3,G1-S4	TECHNICIAN: R0
START DATE: 10/17/01	COMPLETE DATE: 10/17/01
ROOM AMBIENT: 22°C	RELATIVE HUMIDITY: 46%
EQUIPMENT ID#: 236, 413	

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:

2. Test Conditions:

   a) Test Current : 10 milliamps
   b) Open Circuit Voltage : 20 millivolts
   c) No. of Positions Tested : 50 per test sample

PROCEDURE: Continued

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

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.
G1-S1	28.1	37.8	20.3
G1-S2	27.2	34.7	19.8
G1-S3	27.4	34.6	19.2
G1-S4	27.6	38.1	19.4

2. See data files 201462B09 through 201462B12 for individual data points.

PROJECT NO.: 201462B	SPECIFICATION: TC0134-105I-0501
PART NO.:MEC1-140-02-S-D-RA1-SL	PART DESCRIPTION: 1.0 mm Edge Conn.
SAMPLE SIZE: ID# G1-S1,G1-S2, G1-S3,G1-S4	TECHNICIAN: R0
START DATE: 10/19/01	COMPLETE DATE: 10/22/01
ROOM AMBIENT: 22°C	RELATIVE HUMIDITY: 42%
EQUIPMENT ID#: 192, 236, 413	

THERMAL SHOCK

PURPOSE:

To determine the resistance of a given electrical connector to exposure at extremes of high and low temperatures and the shock of alternate exposures to these extremes, simulating the worst probable conditions of storage, transportation and application.

PROCEDURE:

1. The test environment was performed in accordance with EIA 364, Test Procedure 32, with the following conditions:

2. Test Conditions:

a) Number of Cycles	:	5 Cycles
b) Hot Extreme	:	+85 +3°C/-0°C
c) Cold Extreme	:	-55 +0°C/-3°C
d) Time at Temperature	:	30 Minutes
e) Mating Conditions	:	Mated
f) Mounting Conditions	:	Mounted
G) Transfer Time	:	Instantaneous

3. The total number of cycles were performed continuously.

4. Prior to performing variable measurements, the test samples were allowed to recover to room ambient conditions.

5. All subsequent variable testing was performed in accordance with the procedures as 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 Low Level Circuit Resistance data following Thermal Shock:

CHANGE IN
LOW LEVEL CIRCUIT RESISTANCE
(Milliohms)

Sample ID#	Avg. Change	Max. Change
G1-S1	-0.1	+1.0
G1-S2	+0.0	+0.5
G1-S3	-0.1	+0.9
G1-S4	-0.1	+1.2

3. See data files 201462B09 through 201462B12 for individual data points.

PROJECT NO.: 201462B	SPECIFICATION: TC0134-105I-0501
PART NO.:MEC1-140-02-S-D-RA1-SL	PART DESCRIPTION: 1.0 mm Edge Conn.
SAMPLE SIZE: ID# G1-S1,G1-S2, G1-S3,G1-S4	TECHNICIAN: R0
START DATE: 10/23/01	COMPLETE DATE: 11/2/01
ROOM AMBIENT: 23°C	RELATIVE HUMIDITY: 45%
EQUIPMENT ID#: 27, 413, 1047	

MOISTURE RESISTANCE

PURPOSE:

To evaluate the impact on electrical stability of the contact system when exposed to any environment which may generate thermal/moisture type failure mechanisms such as:

a) Fretting corrosion due to wear resulting from micromotion, induced by thermal cycling. Humidity accelerates the oxidation process.

b) Oxidation of wear debris or from particulates from the surrounding atmosphere which may have become entrapped between the contacting surfaces.

c) Failure mechanisms resulting from a wet oxidation process.

PROCEDURE:

1. The test environment was performed in accordance with EIA 364, Test Procedure 31, with the following conditions:

2. Test Conditions:

a) Relative Humidity	:	90% to 95%
b) Temperature Conditions	:	25°C to 65°C
c) Cold Cycle	:	No
d) Polarizing Voltage	:	No
e) Mating Conditions	:	Mated
f) Mounting Conditions	:	Mounted
g) Duration	:	240 hours

PROCEDURE: Continued

3. Prior to performing variable measurements, the test samples were allowed to recover to room ambient conditions.

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

REQUIREMENTS:

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

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

RESULTS:

1. The test samples as tested showed no evidence of physical deterioration.

2. The following is a summary of the observed Low Level Circuit Resistance data following Cyclic Humidity:

CHANGE IN
LOW LEVEL CIRCUIT RESISTANCE
(Milliohms)

Sample ID#	Avg. Change	Max. Change
G1-S1	+0.0	+6.3
G1-S2	+0.0	+0.7
G1-S3	-0.1	+0.6
G1-S4	-0.2	+3.1

3. See data files 201462B09 through 201462B12 for individual data points.

			Low Level Contact Resistance					
	Project:	201462B				Spec:	EIA 364 TP23	
	Customer:	Samtec				Subgroup:	Sequence C2	
	Product:	Series MEC1-RA w/0.062 mating bd				File #:	201462B09	
	Description:	MEC1-140-02-S-D-RA1-SL ID# G1-S1						
	Open circuit voltage:		20mv			Current:	10ma	
				Delta values				
				units: milliohms				
	Temp ºC	22	22	23				
	R.H. %	46	42	45				
	Date:	17Oct01	22Oct01	02Nov01				
	Pos. ID	Initial	T. Shock	Humidity				
	1A	34.7	-0.2	-0.4				
	2A	34.8	-0.3	-0.3				
	3A	35.0	-0.4	-0.2				
	4A	37.8	1.0	6.3				
	5A	34.5	-0.4	-0.2				
	6A	34.5	-0.1	0.0				
	7A	34.6	-0.2	0.0				
	8A	34.8	0.0	0.0				
	9A	34.5	-0.2	-0.2				
	10A	34.4	-0.3	-0.2				
	11A	34.6	-0.4	-0.2				
	12A	34.5	-0.2	0.0				
	13A	34.1	-0.3	-0.3				
	14A	34.4	-0.3	-0.3				
	15A	34.8	0.1	0.2				
	16A	34.6	-0.5	-0.5				
	17A	34.8	0.0	-0.3				
	18A	34.3	0.1	0.2				
	19A	34.8	0.2	0.2				
	20A	35.0	0.2	0.2				
	21A	34.8	-0.3	-0.2				
	22A	35.1	-0.3	-0.3				
	23A	34.9	0.1	0.1				
	24A	35.4	-0.6	-0.6				
	25A	35.1	-0.4	-0.4				
	26B	21.6	-0.1	0.0				
	27B	21.3	-0.3	-0.2				
	28B	20.4	0.4	0.6				
	29B	20.8	-0.1	-0.1				
	30B	21.5	-0.1	0.2				
	31B	21.2	0.5	-0.2				
	32B	21.5	-0.2	-0.2				
	33B	21.4	-0.2	-0.3				

	Temp ºC	22	22	23				
	R.H. %	46	42	45				
	Date:	17Oct01	22Oct01	02Nov01				
	Pos. ID	Initial	T. Shock	Humidity				
	34B	21.5	-0.1	-0.2				
	35B	21.6	0.4	-0.1				
	36B	21.3	-0.4	-0.4				
	37B	20.9	0.0	0.1				
	38B	21.4	-0.3	-0.2				
	39B	21.7	0.2	-0.3				
	40B	20.6	-0.3	-0.2				
	41B	21.0	-0.1	-0.1				
	42B	20.7	-0.6	-0.5				
	43B	20.8	-0.1	0.2				
	44B	21.0	-0.2	-0.2				
	45B	21.2	0.0	0.0				
	46B	21.4	-0.4	-0.5				
	47B	21.3	0.6	0.9				
	48B	24.3	0.5	0.5				
	49B	20.3	0.5	0.4				
	50B	21.8	-0.5	-0.5				
	MAX	37.8	1.0	6.3				
	MIN	20.3	-0.6	-0.6				
	AVG	28.1	-0.1	0.0				
	STD	6.9	0.3	1.0				
	Open	0	0	0				
	Tech	RO	RO	RO				
	Equip ID	413	413	413				
		236	236	1047				

			Low Level Contact Resistance					
	Project:	201462B				Spec:	EIA 364 TP23	
	Customer:	Samtec				Subgroup:	Sequence C2	
	Product:	Series MEC1-RA w/0.062 mating bd				File #:	201462B10	
	Description:	MEC1-140-02-S-D-RA1-SL ID# G1-S2						
	Open circuit voltage:		20mv			Current:	10ma	
				Delta values				
				units: milliohms				
	Temp ºC	22	22	23				
	R.H. %	46	42	45				
	Date:	17Oct01	22Oct01	02Nov01				
	Pos. ID	Initial	T. Shock	Humidity				
	1A	33.6	-0.2	0.0				
	2A	33.5	-0.1	0.0				
	3A	34.7	-0.4	-0.4				
	4A	33.4	-0.1	0.0				
	5A	33.5	0.1	-0.1				
	6A	33.8	0.3	0.1				
	7A	34.0	-0.1	-0.1				
	8A	33.2	0.1	0.1				
	9A	33.9	0.0	0.0				
	10A	33.8	-0.2	-0.1				
	11A	33.7	-0.2	-0.1				
	12A	33.7	-0.1	-0.2				
	13A	33.8	-0.1	-0.2				
	14A	33.8	-0.2	-0.2				
	15A	34.2	-0.2	-0.2				
	16A	34.2	-0.1	0.0				
	17A	33.9	-0.2	-0.3				
	18A	34.2	0.0	-0.1				
	19A	34.2	-0.3	-0.4				
	20A	33.7	-0.1	-0.2				
	21A	33.4	0.4	0.3				
	22A	33.9	0.4	0.3				
	23A	34.1	-0.3	-0.3				
	24A	34.0	0.4	0.4				
	25B	32.8	0.1	0.2				
	26B	19.8	0.1	0.7				
	27B	20.2	0.1	0.5				
	28B	20.6	-0.1	0.1				
	29B	21.0	-0.2	-0.7				
	30B	20.7	-0.3	0.0				
	31B	20.7	0.3	-0.1				
	32B	20.5	0.0	-0.3				
	33B	19.8	0.5	0.2				

	Temp ºC	22	22	23				
	R.H. %	46	42	45				
	Date:	17Oct01	22Oct01	02Nov01				
	Pos. ID	Initial	T. Shock	Humidity				
	34B	20.2	-0.1	0.1				
	35B	20.4	0.2	-0.5				
	36B	20.2	-0.2	0.0				
	37B	20.2	0.1	0.7				
	38B	20.5	0.4	-0.3				
	39B	20.6	-0.2	-0.1				
	40B	20.7	-0.3	-0.7				
	41B	20.7	-0.6	-0.5				
	42B	20.7	-0.6	0.0				
	43B	20.8	0.2	-0.3				
	44B	20.4	0.2	-0.1				
	45B	20.5	-0.3	0.1				
	46B	20.6	0.2	0.4				
	47B	20.7	0.4	0.3				
	48B	21.3	0.1	-0.1				
	49B	20.3	0.4	0.3				
	50B	20.9	-0.3	-0.4				
	MAX	34.7	0.5	0.7				
	MIN	19.8	-0.6	-0.7				
	AVG	27.2	0.0	0.0				
	STD	6.7	0.3	0.3				
	Open	0	0	0				
	Tech	RO	RO	RO				
	Equip ID	413	413	413				
		236	236	1047				

			Low Level Contact Resistance					
	Project:	201462B				Spec:	EIA 364 TP23	
	Customer:	Samtec				Subgroup:	Sequence C2	
	Product:	Series MEC1-RA w/0.062 mating bd				File #:	201462B11	
	Description:	MEC1-140-02-S-D-RA1-SL ID# G1-S3						
	Open circuit voltage:		20mv			Current:	10ma	
				Delta values				
				units: milliohms				
	Temp ºC	22	22	23				
	R.H. %	46	42	45				
	Date:	17Oct01	22Oct01	02Nov01				
	Pos. ID	Initial	T. Shock	Humidity				
	1A	33.2	0.0	0.0				
	2A	34.2	-0.3	-0.2				
	3A	34.2	-0.6	-0.3				
	4A	34.2	-0.2	-0.2				
	5A	34.2	-0.3	-0.2				
	6A	34.5	-0.5	-0.4				
	7A	34.6	-0.7	-0.6				
	8A	34.4	-0.3	-0.4				
	9A	34.3	-0.3	-0.3				
	10A	34.1	-0.3	-0.4				
	11A	34.1	0.0	0.0				
	12A	34.2	0.1	0.1				
	13A	34.4	-0.1	-0.2				
	14A	34.3	-0.3	-0.3				
	15A	34.6	-0.1	0.1				
	16A	34.1	-0.4	-0.1				
	17A	34.2	-0.1	0.0				
	18A	33.9	0.0	0.0				
	19A	34.2	-0.1	-0.2				
	20A	34.1	-0.4	-0.4				
	21A	34.5	-0.3	-0.1				
	22A	34.5	-0.1	-0.1				
	23A	34.5	-0.1	-0.2				
	24A	34.5	-0.3	-0.3				
	25A	34.6	-0.3	-0.2				
	26B	20.1	0.2	0.4				
	27B	19.9	0.1	0.1				
	28B	22.3	-1.2	-1.1				
	29B	20.0	0.0	0.3				
	30B	20.8	-0.1	-0.1				
	31B	20.0	-0.1	0.2				
	32B	20.5	0.7	0.5				
	33B	20.5	0.8	0.5				

	Temp ºC	22	22	23				
	R.H. %	46	42	45				
	Date:	17Oct01	22Oct01	02Nov01				
	Pos. ID	Initial	T. Shock	Humidity				
	34B	20.6	0.3	0.1				
	35B	20.7	-0.4	-0.2				
	36B	20.9	0.0	-0.1				
	37B	20.4	0.9	0.4				
	38B	21.7	-0.6	-0.5				
	39B	20.0	-0.2	-0.1				
	40B	20.3	0.2	0.2				
	41B	20.2	-0.1	-0.2				
	42B	19.2	-0.5	-0.3				
	43B	19.8	0.0	0.0				
	44B	20.2	0.3	0.5				
	45B	20.6	0.0	-0.1				
	46B	20.6	0.3	0.0				
	47B	20.3	0.6	0.6				
	48B	20.7	-0.1	0.1				
	49B	20.9	0.4	0.3				
	50B	20.6	0.5	0.6				
	MAX	34.6	0.9	0.6				
	MIN	19.2	-1.2	-1.1				
	AVG	27.4	-0.1	-0.1				
	STD	7.0	0.4	0.3				
	Open	0	0	0				
	Tech	RO	RO	RO				
	Equip ID	413	413	413				
		236	236	1047				

			Low Level Contact Resistance					
	Project:	201462B				Spec:	EIA 364 TP23	
	Customer:	Samtec				Subgroup:	Sequence C2	
	Product:	Series MEC1-RA w/0.062 mating bd				File #:	201462B12	
	Description:	MEC1-140-02-S-D-RA1-SL ID# G1-S4						
	Open circuit voltage:		20mv			Current:	10ma	
				Delta values				
				units: milliohms				
	Temp ºC	22	22	23				
	R.H. %	46	42	45				
	Date:	17Oct01	22Oct01	02Nov01				
	Pos. ID	Initial	T. Shock	Humidity				
	1A	33.8	0.0	0.1				
	2A	33.1	0.0	-0.1				
	3A	33.2	-0.3	-0.3				
	4A	33.5	-0.1	-0.1				
	5A	34.0	0.4	0.4				
	6A	33.0	0.3	0.4				
	7A	34.9	-0.8	-0.8				
	8A	34.7	-0.3	-0.4				
	9A	34.9	-0.7	-0.8				
	10A	34.5	-0.2	-0.3				
	11A	34.1	0.1	0.0				
	12A	34.8	-0.8	-0.9				
	13A	34.8	-0.5	-0.6				
	14A	35.2	-1.2	-1.3				
	15A	33.9	1.2	1.2				
	16A	34.6	-1.2	-1.0				
	17A	34.9	-0.7	-0.7				
	18A	34.8	-0.8	-0.8				
	19A	34.4	0.0	-0.1				
	20A	38.1	0.0	-3.8				
	21A	34.7	-0.3	3.1				
	22A	34.1	0.8	0.6				
	23A	34.6	-0.1	-0.2				
	24A	34.5	0.0	-0.1				
	25A	34.8	-0.1	-0.3				
	26B	22.3	-0.9	-0.7				
	27B	21.2	-0.2	-0.3				
	28B	21.0	-0.4	-0.3				
	29B	20.7	-0.8	-0.8				
	30B	20.8	-0.9	-1.0				
	31B	20.0	-0.1	-0.4				
	32B	20.1	0.6	0.1				
	33B	20.3	0.2	-0.2				

	Temp ºC	22	22	23				
	R.H. %	46	42	45				
	Date:	17Oct01	22Oct01	02Nov01				
	Pos. ID	Initial	T. Shock	Humidity				
	34B	20.8	-0.1	-0.3				
	35B	20.7	0.3	0.0				
	36B	20.5	0.6	0.0				
	37B	24.1	-0.1	0.0				
	38B	20.9	0.7	-0.1				
	39B	20.2	0.4	0.7				
	40B	20.8	-0.5	-0.7				
	41B	20.8	-0.4	-0.4				
	42B	19.8	-0.1	-0.1				
	43B	19.4	-0.1	-0.1				
	44B	20.8	-0.1	-0.1				
	45B	20.1	0.2	0.1				
	46B	20.6	0.4	0.1				
	47B	20.9	-0.1	0.0				
	48B	20.4	0.7	0.8				
	49B	20.7	0.5	0.1				
	50B	20.6	0.6	0.5				
	MAX	38.1	1.2	3.1				
	MIN	19.4	-1.2	-3.8				
	AVG	27.6	-0.1	-0.2				
	STD	7.0	0.5	0.9				
	Open	0	0	0				
	Tech	RO	RO	RO				
	Equip ID	413	413	413				
		236	236	1047				

TEST RESULTS

GROUP D1

PROJECT NO.: 201462B	SPECIFICATION: TC0134-105I-0501
PART NO.:MEC1-140-02-S-D-RA1-SL	PART DESCRIPTION: 1.0 mm Edge Conn.
SAMPLE SIZE: ID# G1-S1,G1-S2, G1-S3,G1-S4	TECHNICIAN: R0
START DATE: 10/12/01	COMPLETE DATE: 10/12/01
ROOM AMBIENT: 22°C	RELATIVE HUMIDITY: 45%
EQUIPMENT ID#: 236, 413	

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:

2. Test Conditions:

   a) Test Current : 10 milliamps
   b) Open Circuit Voltage : 20 millivolts
   c) No. of Positions Tested : 50 per test sample

PROCEDURE: Continued

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

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.
G1-S1	27.6	35.6	19.9
G1-S2	26.9	37.6	10.5*
G1-S3	27.2	35.3	19.2
G1-S4	27.6	36.1	19.4

* - The Low Level Circuit Resistance observed at positions 39B and 40B were low in comparison to other positions.
- FA revealed these positions were shorted together.
- A Low Level Circuit Resistance open was observed at position 16A.
- FA revealed the open was a result of insufficient solder at the solder termination to pad site.

2. See data files 201462B13 through 201462B16 for individual data points.

PROJECT NO.: 201462B	SPECIFICATION: TC0134-105I-0501
PART NO.:MEC1-140-02-S-D-RA1-SL	PART DESCRIPTION: 1.0 mm Edge Conn.
SAMPLE SIZE: ID# G1-S1,G1-S2, G1-S3,G1-S4	TECHNICIAN: R0
START DATE: 10/12/01	COMPLETE DATE: 10/23/01
ROOM AMBIENT: 22°C	RELATIVE HUMIDITY: 40%
EQUIPMENT ID#: 236, 413, 1236	

THERMAL AGING

PURPOSE:

To evaluate the impact on electrical stability of the contact system when exposed to a thermal environment. Said environment may generate temperature dependent failure mechanisms such as:

a) Dry oxidation of base metals and/or underplates which have reached the contacting surfaces by impurity, diffusion or pore corrosion.

b) Dry oxidation and/or film formation of particulates which may have been deposited on the contacting surfaces from the surrounding atmosphere.

c) Reduced normal (contact) force due to stress relaxation as a result of a thermal environment.

PROCEDURE:

1. The test samples were placed in the test chamber after it had reached equilibrium at the specified temperature level. The test exposure was performed in accordance with EIA 364, Test Procedure 17, with the following conditions:

2. Test Condition:

a) Temperature : 105°C ± 2°C
b) Duration : 250 hours
c) Mated Condition : Mated
d) Mounting Condition : Mounted

PROCEDURE: Continued

3. Prior to performing variable measurements, the test samples were allowed to recover to room ambient conditions.

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

REQUIREMENTS:

1. There shall be no evidence of physical damage or deterioration of the test samples so exposed.

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

RESULTS:

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

2. The following is a summary of the Low Level Circuit Resistance data observed following Thermal Aging:

CHANGE IN
LOW LEVEL CIRCUIT RESISTANCE
(Milliohms)

Sample ID#	Avg. Change	Max. Change
G1-S1	+0.1	+0.9
G1-S2	+0.0	+0.8
G1-S3	-0.1	+0.6
G1-S4	+0.0	+0.9

3. See data files 201462B13 through 201462B16 for individual data points.

			Low Level Contact Resistance					
	Project:	201462B				Spec:	EIA 364 TP23	
	Customer:	Samtec				Subgroup:	Sequence D2	
	Product:	Series MEC1-RA w/0.062 mating bd				File #:	201462B13	
	Description:	MEC1-140-02-S-D-RA1-SL ID# G1-S1						
	Open circuit voltage:		20mv			Current:	10ma	
				Delta values				
				units: milliohms				
	Temp ºC	22	22					
	R.H. %	45	40					
	Date:	12Oct01	23Oct01					
	Pos. ID	Initial	T. Aging					
	1A	35.6	-1.2					
	2A	35.2	-0.8					
	3A	34.1	0.4					
	4A	34.6	-0.2					
	5A	34.2	0.0					
	6A	35.0	-0.5					
	7A	34.4	-0.1					
	8A	34.9	-0.6					
	9A	33.7	0.3					
	10A	34.1	0.2					
	11A	33.9	0.3					
	12A	34.5	0.2					
	13A	33.5	0.6					
	14A	34.4	0.0					
	15A	35.3	-0.8					
	16A	33.7	0.1					
	17A	35.0	-1.1					
	18A	34.0	0.2					
	19A	34.6	0.1					
	20A	33.5	0.9					
	21A	34.5	0.0					
	22A	33.7	0.5					
	23A	34.2	0.9					
	24A	34.5	0.7					
	25A	34.6	0.8					
	26B	21.6	-0.1					
	27B	21.3	-0.4					
	28B	20.4	0.4					
	29B	20.5	0.4					
	30B	20.4	0.0					
	31B	21.3	-0.1					
	32B	20.5	0.5					
	33B	21.9	0.9					

	Temp ºC	22	22					
	R.H. %	45	40					
	Date:	12Oct01	23Oct01					
	Pos. ID	Initial	T. Aging					
	34B	21.9	-0.4					
	35B	21.5	0.0					
	36B	21.4	0.0					
	37B	21.5	-0.2					
	38B	21.0	-0.1					
	39B	21.3	0.1					
	40B	20.1	0.4					
	41B	20.7	0.3					
	42B	20.6	0.2					
	43B	19.9	0.2					
	44B	20.0	0.3					
	45B	20.4	0.3					
	46B	21.0	-0.2					
	47B	20.3	0.2					
	48B	20.8	-0.1					
	49B	20.9	-0.1					
	50B	21.2	-0.4					
	MAX	35.6	0.9					
	MIN	19.9	-1.2					
	AVG	27.6	0.1					
	STD	6.8	0.5					
	Open	0.0	0.0					
	Tech	RO	RO					
	Equip ID	413	413					
		236	236					

			Low Level Contact Resistance					
	Project:	201462B				Spec:	EIA 364 TP23	
	Customer:	Samtec				Subgroup:	Sequence D2	
	Product:	Series MEC1-RA w/0.062 mating bd				File #:	201462B14	
	Description:	MEC1-140-02-S-D-RA1-SL ID# G1-S2						
	Open circuit voltage:		20mv			Current:	10ma	
				Delta values				
				units: milliohms				
	Temp ºC	22	22					
	R.H. %	45	40					
	Date:	12Oct01	23Oct01					
	Pos. ID	Initial	T. Aging					
	1A	34.8	-0.2					
	2A	37.6	0.2					
	3A	34.3	0.0					
	4A	34.4	-0.2					
	5A	34.3	0.2					
	6A	34.5	-0.5					
	7A	34.3	-0.2					
	8A	33.5	0.5					
	9A	34.1	0.0					
	10A	33.8	-0.4					
	11A	33.9	0.6					
	12A	34.0	0.0					
	13A	33.8	-0.3					
	14A	31.9	0.2					
	15A	33.6	0.2					
	16A	Open	Open					
	17A	34.0	-0.1					
	18A	34.9	0.1					
	19A	34.6	-0.5					
	20A	34.9	-0.3					
	21A	33.9	0.3					
	22A	34.3	0.1					
	23A	32.9	0.1					
	24A	33.4	0.3					
	25A	34.2	0.3					
	26B	21.7	-0.1					
	27B	21.2	0.3					
	28B	20.7	-0.3					
	29B	21.1	0.5					
	30B	19.5	0.8					
	31B	21.5	-0.3					
	32B	19.9	0.1					
	33B	20.1	0.2					

	Temp ºC	22	22					
	R.H. %	45	40					
	Date:	12Oct01	23Oct01					
	Pos. ID	Initial	T. Aging					
	34B	21.6	-0.2					
	35B	21.0	-0.3					
	36B	19.8	-0.1					
	37B	21.6	-0.7					
	38B	20.5	-0.4					
	39B	10.5	0.1					
	40B	10.8	-0.2					
	41B	20.9	0.0					
	42B	20.6	0.5					
	43B	21.3	-0.4					
	44B	21.2	-0.4					
	45B	20.2	-0.1					
	46B	19.8	0.5					
	47B	20.4	-0.2					
	48B	20.9	-0.1					
	49B	19.7	0.2					
	50B	20.3	-0.6					
	MAX	37.6	0.8					
	MIN	10.5	-0.7					
	AVG	26.9	0.0					
	STD	7.5	0.3					
	Open	1.0	1.0					
	Tech	RO	RO					
	Equip ID	413	413					
		236	236					

			Low Level Contact Resistance					
	Project:	201462B				Spec:	EIA 364 TP23	
	Customer:	Samtec				Subgroup:	Sequence D2	
	Product:	Series MEC1-RA w/0.062 mating bd				File #:	201462B15	
	Description:	MEC1-140-02-S-D-RA1-SL ID# G1-S3						
	Open circuit voltage:		20mv			Current:	10ma	
				Delta values				
				units: milliohms				
	Temp ºC	22	22					
	R.H. %	45	40					
	Date:	12Oct01	23Oct01					
	Pos. ID	Initial	T. Aging					
	1A	34.1	-0.2					
	2A	34.7	-0.7					
	3A	34.6	-0.3					
	4A	33.9	0.3					
	5A	33.2	-0.1					
	6A	35.3	-1.2					
	7A	34.1	-0.4					
	8A	34.5	-0.2					
	9A	33.8	-0.6					
	10A	34.9	-0.3					
	11A	34.2	-0.5					
	12A	33.4	0.2					
	13A	34.2	-0.6					
	14A	34.4	-0.5					
	15A	33.5	0.4					
	16A	34.3	-0.5					
	17A	33.7	0.0					
	18A	33.9	0.1					
	19A	34.3	-0.4					
	20A	33.6	0.2					
	21A	33.8	0.1					
	22A	34.2	0.1					
	23A	33.4	0.6					
	24A	33.9	0.3					
	25A	34.2	0.5					
	26B	20.0	0.1					
	27B	19.2	0.4					
	28B	21.6	0.0					
	29B	20.5	-0.2					
	30B	19.8	-0.1					
	31B	20.3	0.2					
	32B	20.1	0.1					
	33B	20.2	0.3					

	Temp ºC	22	22					
	R.H. %	45	40					
	Date:	12Oct01	23Oct01					
	Pos. ID	Initial	T. Aging					
	34B	20.9	0.1					
	35B	20.0	-0.3					
	36B	20.1	-0.1					
	37B	20.9	-0.7					
	38B	20.2	0.0					
	39B	20.1	-0.4					
	40B	20.6	-0.4					
	41B	20.3	-0.2					
	42B	19.4	0.1					
	43B	19.7	0.2					
	44B	20.3	-0.3					
	45B	20.4	-0.5					
	46B	20.4	-0.2					
	47B	20.7	-0.4					
	48B	19.9	0.0					
	49B	20.2	-0.2					
	50B	21.1	-0.1					
	MAX	35.3	0.6					
	MIN	19.2	-1.2					
	AVG	27.2	-0.1					
	STD	7.0	0.4					
	Open	0.0	0.0					
	Tech	RO	RO					
	Equip ID	413	413					
		236	236					

			Low Level Contact Resistance					
	Project:	201462B				Spec:	EIA 364 TP23	
	Customer:	Samtec				Subgroup:	Sequence D2	
	Product:	Series MEC1-RA w/0.062 mating bd				File #:	201462B16	
	Description:	MEC1-140-02-S-D-RA1-SL ID# G1-S4						
	Open circuit voltage:		20mv			Current:	10ma	
				Delta values				
				units: milliohms				
	Temp ºC	22	22					
	R.H. %	45	40					
	Date:	12Oct01	23Oct01					
	Pos. ID	Initial	T. Aging					
	1A	34.0	0.0					
	2A	33.8	0.5					
	3A	35.2	-0.2					
	4A	34.1	-0.1					
	5A	34.0	0.0					
	6A	35.2	-0.4					
	7A	35.5	-0.8					
	8A	34.0	0.3					
	9A	34.6	-0.2					
	10A	34.4	-0.1					
	11A	34.1	-0.1					
	12A	34.1	0.0					
	13A	34.4	0.1					
	14A	34.5	-0.1					
	15A	34.9	-0.1					
	16A	34.3	0.0					
	17A	34.4	-0.1					
	18A	34.4	0.1					
	19A	35.8	-0.1					
	20A	36.1	-0.2					
	21A	34.5	-0.1					
	22A	35.2	0.3					
	23A	35.6	-0.1					
	24A	34.2	0.4					
	25A	35.0	0.1					
	26B	21.8	0.0					
	27B	19.4	0.3					
	28B	21.4	0.2					
	29B	20.4	0.9					
	30B	20.0	0.3					
	31B	20.2	0.3					
	32B	20.4	0.3					
	33B	20.6	-0.1					

	Temp ºC	22	22					
	R.H. %	45	40					
	Date:	12Oct01	23Oct01					
	Pos. ID	Initial	T. Aging					
	34B	19.7	0.7					
	35B	20.2	-0.2					
	36B	20.8	-0.2					
	37B	21.3	-0.2					
	38B	20.3	-0.2					
	39B	20.5	-0.2					
	40B	20.7	-0.3					
	41B	20.0	-0.2					
	42B	19.8	-0.3					
	43B	20.2	-0.2					
	44B	20.3	-0.3					
	45B	21.5	-0.5					
	46B	21.0	-0.5					
	47B	20.5	0.0					
	48B	20.8	0.2					
	49B	21.2	-0.2					
	50B	21.7	-0.8					
	MAX	36.1	0.9					
	MIN	19.4	-0.8					
	AVG	27.6	0.0					
	STD	7.1	0.3					
	Open	0.0	0.0					
	Tech	RO	RO					
	Equip ID	413	413					
		236	236					

TEST RESULTS

GROUP D2

PROJECT NO.: 201462B SPECIFICATION: TC0134-105I-0501

PART NO.:MEC1-140-02-S-D-RA1-SL PART DESCRIPTION: 1.0 mm Edge Conn.

SAMPLE SIZE: ID# D2-1,D2-2 TECHNICIAN: RO

START DATE: 10/12/01 COMPLETE DATE: 10/12/01

ROOM AMBIENT: 22°C RELATIVE HUMIDITY: 45%

EQUIPMENT ID#: 99

CONTACT GAPS

PURPOSE:

To determine the dimensional distance between opposing contacts.

PROCEDURE:

1. The test samples were fixtured to the baseplate of the test stand.

2. The dimensional distance between opposing contacts were measured.

3. Test Conditions:

    a) Mating Conditions : Unmated
    b) Mounting Conditions : Unmounted
    c) Number of Positions Tested : 10 per test sample

REQUIREMENTS:

The dimensional distance between opposing contacts shall be measured and recorded.

RESULTS: See next page.

RESULTS:

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

Sample ID#	CONTACT GAP (Inches) Avg.	Max.	Min.
D2-1	0.01071	0.01175	0.01010
D2-2	0.01127	0.01190	0.01055

2. See data file 201462BGAP2 for individual data points.

PROJECT NO.: 201462B	SPECIFICATION: TC0134-105I-0501
PART NO.:MEC1-140-02-S-D-RA1-SL	PART DESCRIPTION: 1.0 mm Edge Conn.
SAMPLE SIZE: ID# D2-1,D2-2	TECHNICIAN: RO
START DATE: 10/12/01	COMPLETE DATE: 10/23/01
ROOM AMBIENT: 22°C	RELATIVE HUMIDITY: 40%
EQUIPMENT ID#: 99, 1236	

THERMAL AGING

PURPOSE:

To evaluate the impact on mechanical stability of the contact system when exposed to a thermal environment. Said environment may generate temperature dependent failure mechanisms such as:

a) Reduced normal (contact) force due to stress relaxation as a result of a thermal environment.

PROCEDURE:

1. The test samples were placed in the test chamber after it had reached equilibrium at the specified temperature level. The test exposure was performed in accordance with EIA 364, Test Procedure 17, with the following conditions:

2. Test Condition:

   a) Temperature : 105°C ± 2°C
   b) Duration : 250 hours
   c) Mated Condition : Mated
   d) Mounting Condition : Unmounted

3. Prior to performing variable measurements, the test samples were allowed to recover to room ambient conditions.

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

REQUIREMENTS: See next page.

REQUIREMENTS:

The dimensional distance between opposing contacts shall be measured and recorded.

RESULTS:

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

	CONTACT GAPS (Inches)					
	Initial			Final		
Sample ID#	Avg.	Max.	Min.	Avg.	Max.	Min.
D2-1	0.01071	0.01175	0.01010	0.02836	0.02970	0.02755
D2-2	0.01127	0.01190	0.01055	0.02913	0.03010	0.02820

2. See data file 201462BGAP2 for individual data points.

DATA SHEET

PROJECT 201462B | TEST : CONTACT GAPS | REQ. : N/A

SPEC : N/A | PAR. : N/A | T.P. N/A | TECH : MOB

START : 10/12/01 | SAMPLE I.D. # : D1, D2

FINISH : 10/24/01 | TEMP :ºC 22 | R.H. % 45 | UNITS : INCHES

EQUIPMENT I.D. #: 99 | FILE : 201462BGAP2

	SAMPLE D1			SAMPLE D2				
	INITIAL	FINAL		INITIAL	FINAL			
1	0.01040	0.02970		0.01190	0.03000			
2	0.01120	0.02825		0.01155	0.02895			
3	0.01065	0.02780		0.01120	0.02820			
4	0.01015	0.02785		0.01120	0.02895			
5	0.01010	0.02800		0.01145	0.02895			
6	0.01090	0.02755		0.01055	0.02880			
7	0.01060	0.02880		0.01085	0.02900			
8	0.01035	0.02870		0.01090	0.02900			
9	0.01095	0.02845		0.01130	0.02930			
10	0.01175	0.02845		0.01180	0.03010			
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								
21								
22								
23								
24								
25								
26								
27								
28								
29								
30								
31								
32								
33								
34								
35								
36								
37								
38								
AVG:	0.01071	0.02836		0.01127	0.02913			
MAX:	0.01175	0.02970		0.01190	0.03010			
MIN:	0.01010	0.02755		0.01055	0.02820			

TEST RESULTS

GROUP I1

PROJECT NO.: 201462B	SPECIFICATION: TC0134-105I-0501
PART NO.:MEC1-140-02-S-D-RA1-SL	PART DESCRIPTION: 1.0 mm Edge Conn.
SAMPLE SIZE: ID# G1-S1,G1-S2, G1-S3,G1-S4	TECHNICIAN: BE
START DATE: 10/12/01	COMPLETE DATE: 10/12/01
ROOM AMBIENT: 22°C	RELATIVE HUMIDITY: 45%
EQUIPMENT ID#: 601, 677	

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:

2. Test Conditions:

   a) Test Current : 10 milliamps
   b) Open Circuit Voltage : 20 millivolts
   c) No. of Positions Tested : 50 per test sample

PROCEDURE: Continued

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

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.
G1-S1	27.5	35.1	19.5
G1-S2	27.2	34.6	19.3
G1-S3	27.7	35.7	20.0
G1-S4	27.6	35.4	19.1

2. See data files 201462B17 through 201462B20 for individual data points.

PROJECT NO.: 201462B	SPECIFICATION: TC0134-105I-0501
PART NO.:MEC1-140-02-S-D-RA1-SL	PART DESCRIPTION: 1.0 mm Edge Conn.
SAMPLE SIZE: ID# G1-S1,G1-S2, G1-S3,G1-S4	TECHNICIAN: RO
START DATE: 10/12/01	COMPLETE DATE: 10/23/01
ROOM AMBIENT: 22°C	RELATIVE HUMIDITY: 40%
EQUIPMENT ID#: 236, 413, 1236	

THERMAL AGING

PURPOSE:

To evaluate the impact on electrical stability of the contact system when exposed to a thermal environment. Said environment may generate temperature dependent failure mechanisms such as:

a) Dry oxidation of base metals and/or underplates which have reached the contacting surfaces by impurity, diffusion or pore corrosion.

b) Dry oxidation and/or film formation of particulates which may have been deposited on the contacting surfaces from the surrounding atmosphere.

c) Reduced normal (contact) force due to stress relaxation as a result of a thermal environment.

PROCEDURE:

1. The test samples were placed in the test chamber after it had reached equilibrium at the specified temperature level. The test exposure was performed in accordance with EIA 364, Test Procedure 17, with the following conditions:

2. Test Condition:

a) Temperature : 105°C ± 2°C
b) Duration : 250 hours
c) Mated Condition : Mated
d) Mounting Condition : Mounted

PROCEDURE: Continued

3. Prior to performing variable measurements, the test samples were allowed to recover to room ambient conditions.

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

REQUIREMENTS:

1. There shall be no evidence of physical damage or deterioration of the test samples so exposed.

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

RESULTS:

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

2. The following is a summary of the Low Level Circuit Resistance data observed following Thermal Aging:

CHANGE IN
LOW LEVEL CIRCUIT RESISTANCE
(Milliohms)

Sample ID#	Avg. Change	Max. Change
G1-S1	-0.3	+3.4
G1-S2	+0.0	+1.1
G1-S3	+0.0	+1.8
G1-S4	+0.0	+1.0

3. See data files 201462B17 through 201462B20 for individual data points.

PROJECT NO.: 201462B	SPECIFICATION: TC0134-105I-0501
PART NO.:MEC1-140-02-S-D-RA1-SL	PART DESCRIPTION: 1.0 mm Edge Conn.
SAMPLE SIZE: ID# G1-S1,G1-S2, G1-S3,G1-S4	TECHNICIAN: RO
START DATE: 10/24/01	COMPLETE DATE: 10/24/01
ROOM AMBIENT: 23°C	RELATIVE HUMIDITY: 50%
EQUIPMENT ID#: 150, 236, 340, 413	

DURABILITY

PURPOSE:

This is a preconditioning sequence which is used to induce the type of wear on the contacting surfaces which may occur under normal service conditions. The connectors are mated and unmated a predetermined number of cycles. Upon completion, the units being evaluated are exposed to the environments as specified to assess any impact on electrical stability resulting from wear or other wear dependent phenomenon.

PROCEDURE:

1. The test was performed in accordance with EIA 364, Test Procedure 9.

2. Test Conditions:

   a) No. of Cycles : 50
   b) Rate : 500 cycles per hour

3. The test samples were assembled to special holding devices and attached to the manual cycling equipment.

4. The test samples were axially aligned to accomplish the mating and unmating function allowing for self-centering movement.

5. Care was taken to prevent the mating faces of the test samples from contacting each other.

PROCEDURE:

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

REQUIREMENTS:

1. There shall be no evidence of physical damage to the test samples so 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 low level circuit resistance data following 100 cycles of durability:

LOW LEVEL CIRCUIT RESISTANCE
(Milliohms)

Sample ID#	Avg. Change	Max. Change
G1-S1	+0.0	+0.6
G1-S2	+0.1	+1.7
G1-S3	+0.4	+1.1
G1-S4	+0.4	+1.3

3. See data files 201462B17 through 201462B20 for individual data points.

PROJECT NO.: 201462B	SPECIFICATION: TC0134-105I-0501
PART NO.:MEC1-140-02-S-D-RA1-SL	PART DESCRIPTION: 1.0 mm Edge Conn.
SAMPLE SIZE: ID# G1-S1,G1-S2, G1-S3,G1-S4	TECHNICIAN: RO/DA
START DATE: 10/30/01	COMPLETE DATE: 11/29/01
ROOM AMBIENT: 23°C	RELATIVE HUMIDITY: 30%
EQUIPMENT ID#: 236, 413, 436, 443, 521, 525, 526, 543, 698, 699, 1014, 1043, 1047, 1115	

MIXED FLOWING GAS

PURPOSE:

1. To determine the impact on electrical stability of contact interfaces when the test samples are exposed to a mixed flowing gas environment. Said environment is based on field data simulating typical, severe, non-benign environments. Said exposure is indicative of expected behavior in the field.

2. Mixed flowing gas tests (MFG) are environmental test procedures whose primary purpose is to evaluate product performance under simulated storage or operating (field) conditions. For parts involving plated contact surfaces, such tests are also used to measure the effect of plating degradation (due to the environment) on the electrical and durability properties of a contact or connector system. The specific test conditions are usually chosen so as to simulate, in the test laboratory, the effects of certain representative field environments or environmental severity levels on standard metallic surfaces.

PROCEDURE:

1. The test environment was performed in accordance with EIA 364, Test Procedure 65 with the following conditions.

PROCEDURE: Continued

2. Environmental Conditions:

a) Temperature	:	30°C ± 1°C
b) Relative Humidity	:	70% ± 2%
c) $C1_2$	:	10 ± 3 ppb
d) NO_2	:	200 ± 50 ppb
e) H_2S	:	10 ± 5 ppb
f) SO_2	:	100 ± 20 ppb
g) Exposure Time	:	20 days
h) Mating Conditions	:	Mated
i) Mounting Conditions	:	Mounted

3. The test chamber was allowed to stabilize at the specified conditions indicated.

4. After stabilization, the test samples and control coupons were placed in the chamber such that they were no closer than 2.0" from each other and/or the chamber walls.

5. The test samples were handled in a manner so as not to disturb the contact interface.

6. After placement of the test samples in the chamber, it was allowed to re-stabilize and adjusted as required to maintain the specified concentrations and conditions.

7. The test chamber was monitored periodically during the exposure period to assure the environmental conditions as specified were maintained.

8. The test samples were removed from the chamber every 5 days for intermediate low level circuit resistance measurements.

9. Durability was performed on each sample after 15 and 20 days of exposure as indicated below:

AFTER 15 DAYS OF MFG	AFTER 20 DAYS OF MFG
LLCR	LLCR
DURABILITY (1 CYCLE)	DURABILITY (1 CYCLE)
LLCR	LLCR
	DURABILITY (48 CYCLES)
	LLCR

10. Prior to performing variable measurements, the test samples were allowed to recover to room ambient conditions.

PROCEDURE: Continued

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

REQUIREMENTS:

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

RESULTS:

1. The following is a summary of the low level circuit resistance data observed:

CHANGE IN
LOW LEVEL CIRCUIT RESISTANCE
(Milliohms)

	ID #G1-S1		ID #G1-S2		ID #G1-S3		ID #G1-S4	
LLCR @	Avg. Chg.	Max. Chg.	Avg. Chg.	Max. Chg.	Avg. Chg.	Max. Chg.	Avg. Chg.	Max. Chg.
5 Days	+0.4	+2.0	+0.2	+1.5	+0.4	+1.1	+0.3	+1.4
10 Days	+0.5	+1.7	+0.6	+2.1	+1.0	+2.3	+0.6	+2.1
15 Days	+0.5	+1.6	+0.4	+0.9	+0.9	+2.1	+0.6	+4.0
Durab.(1 Cycle)	+1.5	+3.6	+1.7	+5.0	+1.2	+3.3	+1.8	+7.5
20 Days	+1.1	+4.6	+2.0	+7.3	+1.3	+8.0	+1.6	+5.3
Durab.(1 Cycle)	+1.6	Open*	+1.6	+5.7	+2.0	+4.3	+2.3	+8.7
Durab.(48 Cycles)	+1.3	+3.2	+1.7	+3.7	+1.2	+7.6	+1.7	+3.3

* A low level circuit resistance open was observed at Position 13A within Sample ID #G1-S3 after 1 cycle of durability following the 20 day mixed flowing gas exposure. The open was no longer observed after the final 48 cycles of durability. The low level circuit resistance observed at this position is summarized below:

Initial	T.Aging	Durab.	5 Day	10 Day	15 Day	1 Cycle	20 Day	1 Cycle	48 Cycles
33.8	-0.2	+0.4	+2.0	+1.3	+0.8	+3.4	+1.2	Open	+1.4

2. See data files 201462B17 through 201462B20 for individual data points.

RESULTS: Continued

3. Five copper coupons were placed in the chamber. Upon removal said coupons were evaluated via weight gain technique with the following results:

	WEIGHT GAIN (µgm/cm^2/Day)			
Coupon No.	@ 5 Days	@ 10 Days	@ 15 Days	@ 20 Days
1	14+	14	14+	14
2	15	12+	14+	13
3	12+	14+	12	12+
4	13	13	13	15
5	14	15	13+	14

Requirement: 12 to 16 µgm/cm^2/Day

		Low Level Contact Resistance								
Project:	201462B				Spec:	EIA 364 TP23				
Customer: Samtec					Subgroup: Sequence I1					
Product:	Series MEC1-RA w/0.062 mating bd				File #:	201462B17				
Description: MEC1-140-02-S-D-RA1-SL ID# G1-S1										
Open circuit voltage: 20mv					Current:	10ma				
			Delta values							
			units: milliohms							
Temp ºC	22	22	23	22	20	23	23	23	23	23
R.H. %	45	40	50	39	23	30	30	34	34	30
Date:	12Oct01	23Oct01	24Oct01	05Nov01	13Nov01	19Nov01	19Nov01	27Nov01	27Nov01	29Nov01
Pos. ID	Initial	T. Aging	Durability	MFG 5	MFG 10	MFG 15	1 X	MFG 20	1 X	48 X
1A	34.1	0.5	-0.5	0.2	-0.1	0.1	0.1	0.3	1.0	1.4
2A	34.5	-0.2	0.0	1.2	0.6	0.6	0.9	0.8	1.8	2.0
3A	34.2	0.1	0.0	0.4	0.6	0.8	2.7	1.6	1.7	3.0
4A	35.1	-1.0	-0.6	0.1	-0.3	-0.3	0.5	0.4	0.6	0.6
5A	33.9	0.4	0.1	0.7	0.3	0.4	1.3	0.9	0.8	2.3
6A	35.0	-1.3	0.5	1.2	0.7	0.6	2.7	0.9	1.5	1.6
7A	34.1	-0.1	0.0	0.8	0.2	0.2	1.9	1.4	0.9	0.8
8A	34.0	0.0	0.3	1.3	0.6	0.7	1.4	0.8	1.8	1.1
9A	33.6	0.8	0.3	0.7	0.6	0.5	1.8	1.3	3.2	1.4
10A	35.0	-1.4	-0.3	0.9	0.7	0.5	2.1	4.6	6.6	0.8
11A	33.8	0.3	-0.1	1.0	0.8	0.5	2.4	2.4	5.6	1.9
12A	34.4	-0.7	-0.1	0.8	0.2	0.1	1.0	1.1	1.3	0.9
13A	33.8	-0.2	0.4	2.0	1.3	0.8	3.4	1.2	Open	1.4
14A	34.3	-0.3	0.6	1.3	1.5	1.4	3.6	2.9	4.2	3.2
15A	34.1	-0.6	0.2	0.6	0.7	0.8	1.7	0.7	3.1	1.5
16A	34.1	0.3	0.1	0.4	0.5	0.2	0.8	0.4	1.2	2.0
17A	34.3	-0.9	0.3	0.6	0.7	0.9	2.9	1.9	2.3	1.0
18A	34.1	-0.3	0.0	0.2	0.2	0.2	0.9	0.4	0.7	0.7
19A	34.4	-0.8	0.0	0.0	0.3	0.6	1.3	0.9	1.2	0.7
20A	33.9	0.9	0.0	0.2	0.4	0.4	1.0	0.5	0.7	1.2
21A	34.4	-0.6	0.0	0.2	0.3	0.3	1.1	0.8	1.2	1.1
22A	34.3	0.0	-0.2	0.1	-0.1	0.0	0.8	0.4	0.7	0.6
23A	34.4	-0.7	0.4	1.5	1.1	1.0	1.4	1.3	1.4	1.1
24A	34.5	-0.4	-0.1	0.3	0.2	0.2	1.4	1.1	1.0	0.6
25A	34.5	-0.9	0.3	1.8	1.7	1.4	3.0	1.9	3.8	0.5
26B	20.5	-0.2	0.6	1.1	1.0	1.0	1.8	2.1	1.5	2.4
27B	20.1	0.0	-0.2	0.0	0.1	0.1	0.4	0.4	0.5	0.7
28B	21.6	-1.0	0.1	0.0	0.0	0.4	1.0	0.7	0.8	0.7
29B	23.9	-3.7	-3.4	-3.1	-3.1	-3.1	-2.6	-2.6	-2.5	-2.2
30B	20.4	-0.1	0.0	0.1	0.3	0.4	1.8	1.5	1.2	2.0
31B	20.1	-0.3	0.2	0.4	0.4	0.5	2.0	1.6	0.9	2.3
32B	20.5	-0.3	0.3	0.5	0.8	0.5	2.2	2.2	1.3	2.4
33B	20.9	-0.8	0.2	0.3	0.3	0.3	1.1	1.6	2.3	2.7
34B	21.1	-1.6	-0.1	0.3	0.5	0.7	1.3	1.4	2.5	2.1
35B	20.9	-0.6	0.1	0.6	1.1	1.6	2.0	2.3	2.9	1.4
36B	20.3	-1.1	0.3	0.5	0.8	1.2	2.6	2.5	2.8	1.7
37B	20.9	-1.2	0.2	0.8	1.5	1.2	1.8	1.6	1.4	1.8

Temp ºC	22	22	23	22	20	23	23	23	23	23
R.H. %	45	40	50	39	23	30	30	34	34	30
Date:	12Oct01	23Oct01	24Oct01	05Nov01	13Nov01	19Nov01	19Nov01	27Nov01	27Nov01	29Nov01
Pos. ID	Initial	T. Aging	Durability	MFG 5	MFG 10	MFG 15	1 X	MFG 20	1 X	48 X
38B	20.9	-0.2	0.0	-0.1	0.3	0.2	1.5	1.4	1.2	2.0
39B	20.2	0.2	-0.4	-0.4	0.2	-0.1	0.8	0.7	1.4	1.3
40B	19.5	0.7	0.3	0.2	1.0	0.7	1.2	0.8	2.4	1.4
41B	20.8	-0.1	-0.4	-0.5	0.0	-0.2	0.5	0.3	0.7	1.5
42B	19.7	1.3	0.0	0.0	0.6	0.3	1.5	0.6	0.9	0.9
43B	20.5	0.6	0.0	-0.2	0.8	0.3	0.9	0.4	1.1	0.8
44B	20.9	-0.4	-0.3	-0.2	0.3	0.3	0.4	0.3	0.7	2.2
45B	20.0	0.2	0.1	0.2	1.1	0.8	2.9	1.8	1.5	1.1
46B	20.7	-0.2	-0.3	-0.3	0.0	0.0	1.8	0.6	1.2	0.6
47B	20.5	3.4	0.3	0.4	1.1	1.2	1.9	1.1	1.4	1.1
48B	21.3	0.3	-0.5	-0.6	-0.1	-0.2	0.3	-0.1	0.3	1.4
49B	20.6	-0.8	-0.1	0.0	0.8	1.0	2.5	2.7	3.5	1.2
50B	20.8	-0.3	0.1	0.4	0.7	0.8	0.6	0.2	0.8	0.3
MAX	35.1	3.4	0.6	2.0	1.7	1.6	3.6	4.6	6.6	3.2
MIN	19.5	-3.7	-3.4	-3.1	-3.1	-3.1	-2.6	-2.6	-2.5	-2.2
AVG	27.5	-0.3	0.0	0.4	0.5	0.5	1.5	1.1	1.6	1.3
STD	6.9	0.9	0.6	0.8	0.7	0.7	1.0	1.0	1.4	0.9
Open	0	0	0	0	0	0	0	0	1	0
Tech	BE	RO	RO	RO	RO	RO	RO	RO	RO	RO
Equip ID	601	413	413	413	413	413	413	413	413	413
	677	236	236	1047	1047	1047	1047	1047	1047	1047

		Low Level Contact Resistance								
Project:	201462B				Spec:	EIA 364 TP23				
Customer: Samtec					Subgroup: Sequence I1					
Product:	Series MEC1-RA w/0.062 mating bd				File #:	201462B18				
Description: MEC1-140-02-S-D-RA1-SL ID# G1-S2										
Open circuit voltage: 20mv					Current:	10ma				
			Delta values							
			units: milliohms							
Temp ºC	22	22	23	22	20	23	23	23	23	23
R.H. %	45	40	50	39	23	30	30	34	34	30
Date:	12Oct01	23Oct01	24Oct01	05Nov01	13Nov01	19Nov01	19Nov01	27Nov01	27Nov01	29Nov01
Pos. ID	Initial	T. Aging	Durability	MFG 5	MFG 10	MFG 15	1 X	MFG 20	1 X	48 X
1A	33.0	0.2	1.7	1.5	2.1	0.9	2.6	1.3	0.5	1.1
2A	33.7	0.2	0.6	0.7	1.3	0.7	1.5	1.5	1.0	1.4
3A	34.6	0.0	0.2	0.2	0.4	0.2	0.7	2.1	0.6	1.6
4A	34.5	0.2	0.3	0.7	1.3	0.6	0.7	2.6	1.9	2.1
5A	33.3	0.0	0.5	0.6	0.9	0.7	2.0	2.1	1.4	1.1
6A	34.6	0.0	0.1	0.3	0.7	0.3	0.9	2.2	1.7	2.9
7A	34.5	-0.2	-0.2	-0.3	0.0	-0.1	0.8	1.7	1.4	2.3
8A	34.2	-0.1	0.3	0.4	1.4	0.6	1.0	1.7	0.9	1.4
9A	33.7	-0.4	-0.2	-0.2	0.1	0.0	1.2	0.5	1.1	1.9
10A	34.1	0.2	0.0	0.2	0.8	0.5	2.5	0.7	0.8	1.8
11A	34.1	0.0	0.1	0.2	0.6	0.3	2.7	1.4	0.8	2.7
12A	34.4	-0.1	-0.1	0.0	0.5	0.2	1.9	1.2	1.3	1.5
13A	33.5	-0.1	0.2	0.2	0.8	0.5	2.4	1.2	0.8	2.1
14A	34.3	0.1	0.0	0.1	1.2	0.5	2.6	1.0	0.9	1.6
15A	34.3	-0.3	0.1	0.2	0.7	0.7	5.0	0.9	0.6	0.9
16A	33.7	0.2	0.4	0.5	1.1	0.7	4.4	3.7	3.1	2.4
17A	33.8	0.0	0.5	0.5	1.2	0.7	2.2	3.1	3.3	3.4
18A	33.9	0.0	0.1	0.2	0.7	0.3	2.3	2.1	1.0	1.2
19A	34.3	0.0	0.1	0.2	1.0	0.5	3.4	2.7	2.9	1.6
20A	33.9	0.2	0.4	0.5	1.5	0.7	4.0	4.5	3.3	2.2
21A	33.9	0.1	0.2	0.2	1.6	0.8	3.3	1.6	1.1	1.4
22A	34.2	-0.1	-0.1	-0.1	0.5	0.2	2.9	2.6	2.5	1.3
23A	34.0	0.6	0.5	0.7	1.8	0.9	2.9	7.3	5.7	2.6
24A	34.4	0.3	0.3	0.3	1.1	0.7	4.1	2.5	3.0	1.7
25A	34.3	0.3	0.5	0.6	1.2	0.6	3.9	4.6	5.0	2.8
26B	20.2	0.3	0.2	0.3	0.5	0.6	1.0	1.6	1.6	1.3
27B	19.3	0.5	0.2	0.2	0.4	0.5	1.1	2.3	1.4	1.4
28B	20.3	0.5	0.1	0.1	0.3	0.4	1.3	1.6	1.5	1.4
29B	20.0	0.3	0.4	0.3	0.4	0.5	0.1	1.2	1.8	1.4
30B	20.4	0.5	0.1	0.1	0.3	0.6	0.3	1.4	1.1	1.3
31B	20.1	0.3	0.8	0.9	1.2	0.9	1.0	2.1	1.0	0.8
32B	20.3	0.8	0.2	0.3	0.4	0.5	0.7	1.4	1.1	0.6
33B	20.4	0.1	-0.2	-0.1	-0.2	0.1	0.6	3.7	3.3	1.5
34B	20.5	1.1	0.3	0.4	0.5	0.9	0.7	1.4	2.0	2.2
35B	21.3	-0.2	-0.1	0.0	0.0	0.0	0.2	0.6	0.3	0.6
36B	20.7	0.3	0.2	0.1	0.1	0.2	0.1	1.1	0.5	1.0
37B	20.5	-0.1	0.0	0.0	0.1	0.2	0.4	0.4	0.1	0.7

Temp ºC	22	22	23	22	20	23	23	23	23	23
R.H. %	45	40	50	39	23	30	30	34	34	30
Date:	12Oct01	23Oct01	24Oct01	05Nov01	13Nov01	19Nov01	19Nov01	27Nov01	27Nov01	29Nov01
Pos. ID	Initial	T. Aging	Durability	MFG 5	MFG 10	MFG 15	1 X	MFG 20	1 X	48 X
38B	20.6	0.0	-0.1	-0.1	-0.1	0.2	1.1	2.0	1.4	2.5
39B	20.8	-0.5	-0.2	-0.2	-0.1	-0.1	1.1	2.5	1.5	2.2
40B	19.8	-0.4	-0.3	-0.2	0.0	-0.1	1.5	1.5	0.6	2.8
41B	21.3	-0.6	-0.5	-0.7	-0.3	0.2	0.0	0.8	1.3	2.4
42B	19.6	-0.8	-0.8	-0.7	-0.2	-0.6	2.0	1.3	0.8	1.1
43B	19.6	-0.3	0.1	0.1	0.3	0.5	1.2	3.7	2.9	3.7
44B	19.4	-0.3	0.1	0.0	0.4	0.1	1.6	2.0	0.8	1.4
45B	20.2	-0.4	0.2	0.5	0.8	0.7	1.2	1.6	1.4	1.2
46B	20.3	-0.3	-0.2	-0.1	0.2	0.1	1.6	1.5	0.3	0.6
47B	20.1	-0.3	0.0	0.0	1.2	0.5	0.9	4.0	2.2	0.9
48B	20.2	-0.4	0.0	0.1	0.8	0.2	0.9	1.3	1.4	2.3
49B	20.4	-0.4	-0.2	-0.1	0.4	0.1	1.1	0.8	0.6	0.9
50B	20.3	-0.2	-0.2	-0.1	0.4	0.0	0.6	0.7	0.8	1.6
MAX	34.6	1.1	1.7	1.5	2.1	0.9	5.0	7.3	5.7	3.7
MIN	19.3	-0.8	-0.8	-0.7	-0.3	-0.6	0.0	0.4	0.1	0.6
AVG	27.2	0.0	0.1	0.2	0.6	0.4	1.7	2.0	1.6	1.7
STD	7.0	0.4	0.4	0.4	0.6	0.3	1.2	1.3	1.2	0.7
Open	0	0	0	0	0	0	0	0	0	0
Tech	BE	RO	RO	RO	RO	RO	RO	RO	RO	RO
Equip ID	601	413	413	413	413	413	413	413	413	413
	677	236	236	1047	1047	1047	1047	1047	1047	1047

		Low Level Contact Resistance								
Project:	201462B				Spec:	EIA 364 TP23				
Customer: Samtec					Subgroup: Sequence I1					
Product:	Series MEC1-RA w/0.062 mating bd				File #:	201462B19				
Description: MEC1-140-02-S-D-RA1-SL ID# G1-S3										
Open circuit voltage: 20mv					Current:	10ma				
			Delta values							
			units: milliohms							
Temp ºC	22	22	23	22	20	23	23	23	23	23
R.H. %	45	40	50	39	23	30	30	34	34	30
Date:	12Oct01	23Oct01	24Oct01	05Nov01	13Nov01	19Nov01	19Nov01	27Nov01	27Nov01	29Nov01
Pos. ID	Initial	T. Aging	Durability	MFG 5	MFG 10	MFG 15	1 X	MFG 20	1 X	48 X
1A	34.8	0.6	1.1	1.1	1.3	0.9	0.9	1.0	2.4	1.7
2A	34.3	1.8	0.7	0.9	1.8	1.2	1.2	1.3	2.4	1.4
3A	34.8	0.7	0.4	0.5	0.7	0.7	0.6	0.7	1.6	0.6
4A	35.2	-0.1	-0.3	-0.2	0.5	0.6	0.2	0.8	2.2	0.6
5A	34.4	0.6	0.4	0.9	1.0	1.1	0.7	1.1	4.3	1.5
6A	34.7	0.7	0.4	0.3	1.0	1.3	0.9	1.1	2.8	1.3
7A	35.1	-0.8	-0.1	0.0	0.1	0.2	0.5	0.4	1.3	0.1
8A	34.5	0.1	0.6	0.6	1.5	1.2	1.6	1.9	2.2	1.2
9A	34.6	0.0	0.7	0.2	0.9	0.6	0.8	0.7	2.1	1.5
10A	34.4	0.5	0.5	0.4	1.2	0.7	0.9	1.0	2.2	1.0
11A	34.6	0.5	0.3	0.4	0.9	0.6	0.8	0.8	1.3	0.9
12A	34.5	-0.3	0.2	0.4	0.9	0.7	1.1	1.1	1.0	0.7
13A	34.8	-0.1	0.2	0.7	1.2	0.5	1.0	0.9	1.3	1.2
14A	34.7	-0.3	0.3	0.6	1.3	0.7	1.0	1.0	1.6	1.0
15A	35.1	-0.6	0.4	0.2	0.9	0.6	1.1	0.8	1.3	1.3
16A	35.1	-0.6	0.4	0.2	0.5	0.1	1.1	1.1	1.6	1.1
17A	34.9	-0.3	0.4	0.1	0.9	0.6	1.6	1.5	1.8	1.1
18A	34.8	-0.3	0.3	0.7	0.9	0.6	0.9	1.1	1.3	1.3
19A	34.3	0.5	0.5	0.5	1.3	0.8	2.4	3.0	2.0	2.3
20A	35.3	-0.4	0.3	0.1	0.9	0.5	1.8	1.6	0.6	1.9
21A	34.4	0.2	0.6	0.8	1.2	0.8	1.6	3.0	2.1	2.1
22A	34.7	0.4	0.7	0.5	0.9	0.9	1.4	1.7	1.5	2.7
23A	35.2	-0.2	0.1	0.1	0.4	0.3	1.0	1.6	1.2	2.0
24A	35.7	-1.2	0.3	0.1	0.8	1.6	1.5	1.7	1.5	2.8
25A	34.5	0.4	0.9	0.7	1.3	1.8	3.0	8.0	4.0	7.6
26B	21.0	0.1	0.4	0.3	0.6	0.8	0.5	0.4	2.2	1.8
27B	20.7	0.3	0.4	0.3	0.5	0.5	0.7	0.6	0.5	0.6
28B	20.8	0.3	0.4	0.3	0.7	0.6	0.8	1.1	2.6	1.2
29B	20.8	0.2	0.2	0.3	0.5	0.6	0.5	0.7	1.8	0.9
30B	20.6	0.4	0.6	0.4	0.7	0.7	0.9	1.2	2.6	1.4
31B	20.4	0.5	0.9	0.8	1.3	1.3	1.0	1.2	3.2	2.0
32B	21.5	0.0	0.3	0.3	1.8	1.5	0.8	1.5	2.2	0.9
33B	20.8	0.5	0.4	0.1	1.4	1.3	0.8	1.3	1.9	1.3
34B	20.3	0.2	0.6	0.3	2.3	1.5	1.1	1.3	2.8	2.2
35B	20.8	-0.1	1.0	0.7	1.6	1.7	2.0	2.0	4.0	1.6
36B	20.7	0.2	0.6	0.4	1.2	1.2	1.4	1.8	1.6	1.0
37B	21.0	-0.5	-0.1	-0.1	0.7	0.6	0.5	0.6	1.0	0.5

Temp ºC	22	22	23	22	20	23	23	23	23	23
R.H. %	45	40	50	39	23	30	30	34	34	30
Date:	12Oct01	23Oct01	24Oct01	05Nov01	13Nov01	19Nov01	19Nov01	27Nov01	27Nov01	29Nov01
Pos. ID	Initial	T. Aging	Durability	MFG 5	MFG 10	MFG 15	1 X	MFG 20	1 X	48 X
38B	20.3	0.1	0.5	0.3	0.8	0.6	0.8	0.5	2.1	3.0
39B	21.1	-0.3	-0.1	-0.3	0.6	0.2	0.2	0.5	1.3	0.7
40B	20.8	0.0	0.6	0.4	1.1	0.8	3.3	2.2	3.5	2.1
41B	20.0	-0.1	0.5	0.3	1.2	1.0	2.6	1.5	3.6	3.9
42B	20.7	-0.5	-0.2	-0.3	0.3	0.0	0.6	0.1	1.0	0.5
43B	20.5	-0.3	0.9	0.5	1.3	0.8	2.3	2.0	2.1	1.7
44B	20.0	0.0	0.4	0.3	0.8	0.7	1.4	1.0	1.1	4.1
45B	21.0	-0.2	0.3	0.2	0.5	0.5	0.9	0.6	1.1	1.9
46B	20.5	0.0	0.5	0.2	0.7	0.7	1.2	0.9	1.5	2.0
47B	21.0	-0.2	0.8	0.4	1.1	1.2	1.0	0.7	1.4	1.5
48B	20.7	-0.4	0.2	0.2	0.9	1.5	0.8	0.6	1.6	2.4
49B	20.4	-0.2	0.9	0.6	1.3	1.3	1.3	0.7	1.9	1.8
50B	20.5	-0.2	0.8	0.4	1.3	2.1	1.5	1.6	2.0	2.1
MAX	35.7	1.8	1.1	1.1	2.3	2.1	3.3	8.0	4.3	7.6
MIN	20.0	-1.2	-0.3	-0.3	0.1	0.0	0.2	0.1	0.5	0.1
AVG	27.7	0.0	0.4	0.4	1.0	0.9	1.2	1.3	2.0	1.7
STD	7.1	0.5	0.3	0.3	0.4	0.5	0.7	1.1	0.9	1.2
Open	0	0	0	0	0	0	0	0	0	0
Tech	BE	RO	RO	RO	RO	RO	RO	RO	RO	RO
Equip ID	601	413	413	413	413	413	413	413	413	413
	677	236	236	1047	1047	1047	1047	1047	1047	1047

		Low Level Contact Resistance								
Project:	201462B				Spec:	EIA 364 TP23				
Customer: Samtec					Subgroup: Sequence I1					
Product:	Series MEC1-RA w/0.062 mating bd				File #:	201462B20				
Description: MEC1-140-02-S-D-RA1-SL ID# G1-S4										
Open circuit voltage: 20mv					Current:	10ma				
			Delta values							
			units: milliohms							
Temp ºC	22	22	23	22	20	23	23	23	23	23
R.H. %	45	40	50	39	23	30	30	34	34	30
Date:	12Oct01	23Oct01	24Oct01	05Nov01	13Nov01	19Nov01	19Nov01	27Nov01	27Nov01	29Nov01
Pos. ID	Initial	T. Aging	Durability	MFG 5	MFG 10	MFG 15	1 X	MFG 20	1 X	48 X
1A	34.9	-0.2	-0.1	0.0	0.1	-0.1	1.2	1.0	4.1	1.8
2A	35.4	-0.5	-0.5	-0.6	-0.4	-0.6	0.2	0.0	3.9	1.2
3A	34.8	0.2	-0.1	-0.2	0.1	0.1	0.9	0.7	1.7	2.1
4A	35.3	0.2	-0.1	0.3	0.6	0.6	0.5	0.7	5.1	1.6
5A	34.4	-0.1	0.3	0.0	0.3	0.0	1.3	1.1	2.8	1.5
6A	35.2	-0.1	1.3	0.3	2.1	4.0	2.3	1.6	8.7	2.5
7A	35.1	-0.3	-0.5	-0.3	-0.2	-0.4	0.1	0.3	0.4	0.6
8A	35.0	0.0	-0.2	0.2	0.3	0.2	0.5	0.9	3.6	2.4
9A	34.8	-0.1	0.1	-0.2	0.1	0.0	1.0	0.9	2.5	2.0
10A	34.5	0.1	0.1	0.4	0.2	0.4	1.2	1.2	2.8	3.0
11A	34.5	-0.1	0.3	0.3	0.4	0.5	1.0	1.2	1.3	2.2
12A	35.0	-0.5	0.3	-0.1	0.0	0.0	1.5	0.8	6.3	2.6
13A	34.4	-0.2	0.3	0.2	0.6	0.5	2.1	1.5	7.0	2.7
14A	35.0	-0.4	0.0	0.1	0.2	0.1	0.7	0.8	2.3	1.6
15A	35.1	-0.6	-0.3	-0.4	-0.1	-0.2	1.1	0.6	1.5	1.5
16A	34.5	-0.2	-0.4	-0.1	-0.1	-0.1	0.7	0.1	0.3	1.2
17A	35.2	-0.1	0.1	-0.1	-0.1	-0.1	0.9	0.7	2.1	1.3
18A	34.4	-0.2	0.3	0.1	0.4	0.3	1.1	0.8	1.0	1.0
19A	34.7	0.1	0.1	0.0	0.4	0.2	2.3	1.7	3.2	1.4
20A	35.2	-0.1	0.1	0.1	0.1	0.0	1.2	0.6	0.9	0.9
21A	35.2	-0.2	0.0	0.0	0.1	0.0	1.0	0.5	1.4	1.0
22A	34.9	-0.1	-0.1	0.2	0.6	0.5	1.0	0.8	1.1	1.3
23A	34.8	0.7	0.6	0.4	0.4	0.5	1.8	1.6	1.7	1.6
24A	35.2	0.4	0.2	0.1	0.7	0.4	0.8	0.5	1.0	1.8
25A	34.6	0.4	0.1	0.5	0.7	0.8	2.4	1.7	2.8	2.3
26B	20.3	0.2	0.6	0.7	0.8	0.8	1.3	1.7	2.1	2.1
27B	19.3	0.3	0.9	1.1	1.7	1.2	1.2	0.8	1.6	1.1
28B	20.8	0.4	0.4	0.7	0.9	1.0	1.3	1.0	1.5	2.0
29B	20.4	0.3	1.0	0.8	1.4	1.2	1.6	1.4	1.3	1.2
30B	20.4	1.0	1.0	0.2	0.4	0.8	1.9	1.9	1.3	0.8
31B	20.2	0.4	0.2	-0.1	0.4	0.2	1.4	0.8	1.1	1.2
32B	20.4	0.4	0.6	0.5	0.8	1.0	1.7	1.7	1.4	0.9
33B	20.3	0.9	0.4	0.3	0.9	0.6	3.2	2.9	2.1	2.0
34B	20.5	0.3	0.6	0.4	1.0	1.2	3.2	4.4	1.5	1.5
35B	20.8	0.0	0.6	0.5	0.7	0.6	2.2	2.7	1.0	1.3
36B	19.8	0.3	0.3	0.4	1.8	1.1	1.9	3.2	1.5	2.1
37B	20.5	-0.4	0.2	0.1	0.7	0.3	2.1	2.0	1.1	1.1

Temp ºC	22	22	23	22	20	23	23	23	23	23
R.H. %	45	40	50	39	23	30	30	34	34	30
Date:	12Oct01	23Oct01	24Oct01	05Nov01	13Nov01	19Nov01	19Nov01	27Nov01	27Nov01	29Nov01
Pos. ID	Initial	T. Aging	Durability	MFG 5	MFG 10	MFG 15	1 X	MFG 20	1 X	48 X
38B	20.4	-0.1	0.1	0.1	0.8	1.0	7.5	5.3	1.6	3.3
39B	20.6	0.3	0.4	0.8	1.1	1.1	2.4	2.4	1.9	1.8
40B	20.7	-0.2	0.4	0.3	0.5	0.7	1.4	1.9	1.4	1.9
41B	20.1	-0.3	0.6	0.7	1.0	1.6	3.9	3.1	2.2	2.2
42B	19.1	-0.1	0.6	1.4	1.6	1.4	2.2	2.1	1.9	1.4
43B	20.1	-0.1	0.6	0.3	0.8	1.1	2.5	2.1	1.5	1.0
44B	20.9	-0.3	0.5	0.4	1.0	0.9	2.7	2.3	2.0	2.2
45B	20.3	-0.3	0.4	0.3	1.3	1.2	2.4	1.8	2.3	1.0
46B	20.5	0.0	0.5	1.3	1.6	1.3	2.2	1.9	2.5	1.5
47B	20.8	-0.3	0.4	0.8	0.8	1.2	3.9	3.3	3.1	1.6
48B	20.6	-0.5	0.5	0.9	1.0	0.9	3.1	1.6	2.7	2.4
49B	20.9	-0.2	0.3	0.9	0.9	1.1	2.3	2.1	1.9	1.4
50B	20.8	-0.2	0.7	1.3	0.6	0.7	1.9	2.1	1.8	1.8
MAX	35.4	1.0	1.3	1.4	2.1	4.0	7.5	5.3	8.7	3.3
MIN	19.1	-0.6	-0.5	-0.6	-0.4	-0.6	0.1	0.0	0.3	0.6
AVG	27.6	0.0	0.3	0.3	0.6	0.6	1.8	1.6	2.3	1.7
STD	7.3	0.4	0.4	0.4	0.6	0.7	1.2	1.1	1.6	0.6
Open	0	0	0	0	0	0	0	0	0	0
Tech	BE	RO	RO	RO	RO	RO	RO	RO	RO	RO
Equip ID	601	413	413	413	413	413	413	413	413	413
	677	236	236	1047	1047	1047	1047	1047	1047	1047

TEST RESULTS

GROUP I2

PROJECT NO.: 201462B	SPECIFICATION: TC0134-105I-0501
PART NO.:MEC1-140-02-S-D-RA1-SL	PART DESCRIPTION: 1.0 mm Edge Conn.
SAMPLE SIZE: ID# G1-S1,G1-S2, G1-S3,G1-S4	TECHNICIAN: RO
START DATE: 10/12/01	COMPLETE DATE: 10/12/01
ROOM AMBIENT: 22°C	RELATIVE HUMIDITY: 45%
EQUIPMENT ID#: 236, 413	

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:

2. Test Conditions:

   a) Test Current : 10 milliamps
   b) Open Circuit Voltage : 20 millivolts
   c) No. of Positions Tested : 50 per test sample

PROCEDURE: Continued

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

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.
G1-S1	27.1	34.4	18.6
G1-S2	27.1	35.2	18.3
G1-S3	27.5	34.8	19.2
G1-S4	26.9	35.2	18.6

2. See data files 201462B21 through 201462B24 for individual data points.

PROJECT NO.: 201462B	SPECIFICATION: TC0134-105I-0501
PART NO.:MEC1-140-02-S-D-RA1-SL	PART DESCRIPTION: 1.0 mm Edge Conn.
SAMPLE SIZE: ID# G1-S1,G1-S2, G1-S3,G1-S4	TECHNICIAN: R0
START DATE: 10/12/01	COMPLETE DATE: 10/23/01
ROOM AMBIENT: 22°C	RELATIVE HUMIDITY: 40%
EQUIPMENT ID#: 236, 413, 1236	

THERMAL AGING

PURPOSE:

To evaluate the impact on electrical stability of the contact system when exposed to a thermal environment. Said environment may generate temperature dependent failure mechanisms such as:

a) Dry oxidation of base metals and/or underplates which have reached the contacting surfaces by impurity, diffusion or pore corrosion.

b) Dry oxidation and/or film formation of particulates which may have been deposited on the contacting surfaces from the surrounding atmosphere.

c) Reduced normal (contact) force due to stress relaxation as a result of a thermal environment.

PROCEDURE:

1. The test samples were placed in the test chamber after it had reached equilibrium at the specified temperature level. The test exposure was performed in accordance with EIA 364, Test Procedure 17, with the following conditions:

2. Test Condition:

a) Temperature : 105°C ± 2°C
b) Duration : 250 hours
c) Mated Condition : Mated
d) Mounting Condition : Mounted

PROCEDURE: Continued

3. Prior to performing variable measurements, the test samples were allowed to recover to room ambient conditions.

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

REQUIREMENTS:

1. There shall be no evidence of physical damage or deterioration of the test samples so exposed.

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

RESULTS:

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

2. The following is a summary of the Low Level Circuit Resistance data observed following Thermal Aging:

CHANGE IN
LOW LEVEL CIRCUIT RESISTANCE
(Milliohms)

Sample ID#	Avg. Change	Max. Change
G1-S1	+0.0	+0.8
G1-S2	-0.1	+1.6
G1-S3	+0.5	+1.6
G1-S4	+0.3	+1.1

3. See data files 201462B21 through 201462B24 for individual data points.

PROJECT NO.: 201462B	SPECIFICATION: TC0134-105I-0501
PART NO.:MEC1-140-02-S-D-RA1-SL	PART DESCRIPTION: 1.0 mm Edge Conn.
SAMPLE SIZE: ID# G1-S1,G1-S2, G1-S3,G1-S4	TECHNICIAN: RO
START DATE: 10/24/01	COMPLETE DATE: 10/24/01
ROOM AMBIENT: 23°C	RELATIVE HUMIDITY: 50%
EQUIPMENT ID#: 150, 236, 340, 413	

DURABILITY

PURPOSE:

This is a preconditioning sequence which is used to induce the type of wear on the contacting surfaces which may occur under normal service conditions. The connectors are mated and unmated a predetermined number of cycles. Upon completion, the units being evaluated are exposed to the environments as specified to assess any impact on electrical stability resulting from wear or other wear dependent phenomenon.

PROCEDURE:

1. The test was performed in accordance with EIA 364, Test Procedure 9.

2. Test Conditions:

   a) No. of Cycles : 50
   b) Rate : 500 cycles per hour

3. The test samples were assembled to special holding devices and attached to the manual cycling equipment.

4. The test samples were axially aligned to accomplish the mating and unmating function allowing for self-centering movement.

5. Care was taken to prevent the mating faces of the test samples from contacting each other.

PROCEDURE:

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

REQUIREMENTS:

1. There shall be no evidence of physical damage to the test samples so 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 low level circuit resistance data following 100 cycles of durability:

CHANGE IN
LOW LEVEL CIRCUIT RESISTANCE
(Milliohms)

Sample ID#	Avg. Change	Max. Change
G1-S1	+0.5	+1.3
G1-S2	+0.5	+1.9
G1-S3	+0.3	+1.4
G1-S4	+0.5	+1.9

3. See data files 201462B21 through 201462B24 for individual data points.

PROJECT NO.: 201462B	SPECIFICATION: TC0134-105I-0501
PART NO.:MEC1-140-02-S-D-RA1-SL	PART DESCRIPTION: 1.0 mm Edge Conn.
SAMPLE SIZE: ID# G1-S1,G1-S2, G1-S3,G1-S4	TECHNICIAN: RO
START DATE: 10/30/01	COMPLETE DATE: 11/29/01
ROOM AMBIENT: 23°C	RELATIVE HUMIDITY: 30%
EQUIPMENT ID#: 236, 413, 436, 443, 521, 525, 526, 543, 698, 699, 1014, 1043, 1047, 1115	

MIXED FLOWING GAS

PURPOSE:

1. To determine the impact on electrical stability of contact interfaces when the test samples are exposed to a mixed flowing gas environment. Said environment is based on field data simulating typical, severe, non-benign environments. Said exposure is indicative of expected behavior in the field.

2. Mixed flowing gas tests (MFG) are environmental test procedures whose primary purpose is to evaluate product performance under simulated storage or operating (field) conditions. For parts involving plated contact surfaces, such tests are also used to measure the effect of plating degradation (due to the environment) on the electrical and durability properties of a contact or connector system. The specific test conditions are usually chosen so as to simulate, in the test laboratory, the effects of certain representative field environments or environmental severity levels on standard metallic surfaces.

PROCEDURE:

1. The test environment was performed in accordance with EIA 364, Test Procedure 65 with the following conditions.

PROCEDURE: Continued

2. Environmental Conditions:

a)	Temperature	: 30°C ± 1°C
b)	Relative Humidity	: 70% ± 2%
c)	$C1_2$	: 10 ± 3 ppb
d)	NO_2	: 200 ± 50 ppb
e)	H_2S	: 10 ± 5 ppb
f)	SO_2	: 100 ± 20 ppb
g)	Exposure Time	: 20 days
h)	Mating Conditions	: Unmated (Mating Boards not exposed)
i)	Mounting Conditions	: Mounted

3. The test chamber was allowed to stabilize at the specified conditions indicated.

4. After stabilization, the test samples and control coupons were placed in the chamber such that they were no closer than 2.0" from each other and/or the chamber walls.

5. The test samples were handled in a manner so as not to disturb the contact interface.

6. After placement of the test samples in the chamber, it was allowed to re-stabilize and adjusted as required to maintain the specified concentrations and conditions.

7. The test chamber was monitored periodically during the exposure period to assure the environmental conditions as specified were maintained.

8. The test samples were removed from the chamber every 5 days for intermediate low level circuit resistance measurements.

9. Durability was performed on each sample after 15 and 20 days of exposure as indicated below:

AFTER 15 DAYS OF MFG	AFTER 20 DAYS OF MFG
LLCR	LLCR
DURABILITY (1 CYCLE)	DURABILITY (1 CYCLE)
LLCR	LLCR
	DURABILITY (46 CYCLES)
	LLCR

10. Prior to performing variable measurements, the test samples were allowed to recover to room ambient conditions.

PROCEDURE: Continued

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

REQUIREMENTS:

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

RESULTS:

1. The following is a summary of the low level circuit resistance data observed:

CHANGE IN
LOW LEVEL CIRCUIT RESISTANCE
(Milliohms)

	ID #G1-S1		ID #G1-S2		ID #G1-S3		ID #G1-S4	
LLCR @	Avg. Chg.	Max. Chg.	Avg. Chg.	Max. Chg.	Avg. Chg.	Max. Chg.	Avg. Chg.	Max. Chg.
5 Days	+1.4	+5.8	+0.9	+2.9	+1.2	+3.2	+1.5	+4.6
10 Days	+2.8	+5.2	+2.4	+5.1	+2.1	+4.9	+3.9	+8.2
15 Days	+3.9	+13.7	+2.9	+5.7	+3.3	+5.7	+3.1	+5.1
Durab.(1 Cycle)	+2.5	+15.4	+2.4	+14.0	+1.8	+4.6	+1.8	+4.4
20 Days	+7.8	+113.7	+6.9	+97.0	+2.2	+6.3	+3.8	+12.3
Durab.(1 Cycle)	+2.3	+5.6	+2.9	+5.6	+1.7	+4.6	+2.7	+5.2
Durab.(46 Cycles)	+1.5	+4.1	+1.6	+3.5	+1.6	+4.8	+1.4	+3.7

2. See data files 201462B21 through 201462B24 for individual data points.

		Low Level Contact Resistance								
Project:	201462B				Spec:	EIA 364 TP23				
Customer: Samtec					Subgroup: Sequence I2					
Product:	Series MEC1-RA w/0.062 mating bd				File #:	201462B21				
Description: MEC1-140-02-S-D-RA1-SL ID# G1-S1										
Open circuit voltage: 20mv					Current:	10ma				
			Delta values							
			units: milliohms							
Temp ºC	22	22	23	22	20	23	23	23	24	23
R.H. %	45	40	50	39	23	30	30	34	37	30
Date:	12Oct01	23Oct01	24Oct01	05Nov01	13Nov01	19Nov01	19Nov01	27Nov01	28Nov01	29Nov01
Pos. ID	Initial	T. Aging	Durability	MFG 5	MFG 10	MFG 15	1 X	MFG 20	1 X	46 X
1A	34.1	-0.3	1.2	0.5	1.4	2.8	2.2	6.0	1.0	1.0
2A	34.3	-0.7	0.1	0.5	2.2	13.7	15.4	19.7	0.9	0.4
3A	33.7	-0.1	1.0	0.9	1.5	4.0	2.3	6.2	2.5	0.5
4A	34.0	-0.1	0.5	0.7	2.1	3.7	1.5	2.7	1.3	0.9
5A	34.4	0.0	0.2	0.4	2.0	2.7	0.7	3.3	1.4	0.6
6A	33.9	0.3	1.1	1.2	4.1	11.1	3.8	12.8	2.8	1.3
7A	34.0	-0.1	0.8	1.5	2.4	4.5	4.1	6.1	4.6	1.6
8A	33.7	0.1	1.2	1.3	1.9	3.2	1.9	9.8	2.4	1.7
9A	33.7	0.3	0.6	1.7	3.6	5.3	1.6	5.5	2.6	2.6
10A	34.0	0.0	1.0	1.8	2.1	4.3	2.2	113.7	2.7	3.7
11A	33.6	0.2	0.7	1.5	3.0	5.2	4.7	5.5	3.0	2.0
12A	33.9	0.1	0.9	0.9	3.0	4.0	1.5	5.5	1.9	1.2
13A	33.7	0.0	1.1	0.7	3.0	5.6	2.0	4.8	3.1	3.5
14A	34.0	-0.2	0.5	1.2	5.2	4.2	2.3	4.8	1.8	3.2
15A	34.2	-0.1	0.6	1.4	2.7	4.1	1.9	3.9	3.5	3.0
16A	33.4	0.0	0.8	1.1	2.7	4.8	4.1	34.1	3.9	4.1
17A	33.7	0.0	0.7	0.9	3.4	5.9	4.1	6.5	4.5	2.3
18A	34.3	0.1	0.4	1.5	4.8	4.6	4.5	4.8	4.1	2.4
19A	34.2	-0.3	0.5	1.0	3.8	4.4	4.0	7.3	4.5	2.6
20A	33.8	0.3	1.0	1.2	3.6	4.6	4.2	6.3	4.5	1.8
21A	33.9	0.3	0.5	1.5	2.3	3.6	2.8	4.2	2.0	1.7
22A	34.4	-0.1	0.2	0.7	2.3	4.3	3.0	5.9	3.3	1.6
23A	33.9	0.1	0.5	1.4	4.9	5.9	4.1	10.3	3.4	3.1
24A	33.8	0.3	1.3	1.5	3.7	4.7	4.4	4.1	3.2	1.7
25A	33.9	0.5	1.2	5.8	4.5	6.8	5.0	8.0	5.6	3.3
26B	21.1	0.0	-0.2	0.8	3.2	0.5	0.9	6.3	1.0	0.8
27B	18.6	0.2	0.3	0.9	1.8	1.6	0.8	1.8	0.8	1.1
28B	21.3	0.2	0.3	1.1	1.9	2.4	1.1	3.6	2.2	1.1
29B	19.9	0.8	0.8	1.2	2.5	1.6	0.3	2.0	0.6	1.1
30B	20.1	0.7	0.4	1.2	4.3	2.8	1.0	3.2	1.4	1.8
31B	20.4	0.0	-0.1	0.5	1.9	1.8	0.4	2.2	0.6	0.4
32B	20.2	0.3	0.2	1.6	2.6	1.9	1.9	4.8	1.3	1.2
33B	19.6	0.7	0.7	2.6	5.1	4.4	2.3	3.4	1.3	1.5
34B	20.3	0.4	0.6	0.9	1.3	2.0	1.0	3.6	1.4	0.9
35B	20.2	-0.4	-0.4	0.8	1.4	1.4	1.1	3.8	1.2	1.1
36B	20.2	0.0	0.4	1.3	2.5	2.1	1.5	5.1	2.1	1.0
37B	20.7	-0.2	0.6	0.7	2.8	3.9	1.8	4.7	0.9	0.7
38B	20.7	-0.3	0.1	1.2	2.9	2.2	1.6	2.5	1.5	0.5
39B	20.1	-0.4	0.2	2.6	2.7	2.1	1.8	2.8	1.1	1.0
40B	21.0	-0.4	-0.3	1.1	3.1	2.9	1.4	2.6	1.4	0.6

Temp ºC	22	22	23	22	20	23	23	23	24	23
R.H. %	45	40	50	39	23	30	30	34	37	30
Date:	12Oct01	23Oct01	24Oct01	05Nov01	13Nov01	19Nov01	19Nov01	27Nov01	28Nov01	29Nov01
Pos. ID	Initial	T. Aging	Durability	MFG 5	MFG 10	MFG 15	1 X	MFG 20	1 X	46 X
41B	21.1	-0.8	-0.4	2.4	2.8	3.8	2.0	4.1	2.9	1.1
42B	20.9	-0.9	-0.7	0.2	1.2	1.7	0.7	2.7	2.2	-0.2
43B	19.7	0.5	0.9	3.3	3.7	4.8	2.1	7.9	3.7	2.0
44B	20.2	-0.7	-0.5	0.8	0.8	1.7	0.3	2.5	1.1	-0.2
45B	19.4	0.4	0.5	2.6	3.5	4.7	2.6	5.5	3.0	1.3
46B	19.8	0.4	0.8	1.8	2.1	3.1	1.2	3.3	2.0	1.5
47B	20.2	0.5	0.4	1.3	2.1	6.1	2.3	4.1	3.5	1.2
48B	20.8	-1.3	-1.1	0.2	0.5	2.1	0.3	0.4	0.5	-0.1
49B	19.6	0.7	0.8	2.0	4.6	3.9	3.0	4.7	3.3	1.8
50B	20.2	0.1	0.1	1.4	2.6	3.5	1.8	2.8	1.6	0.9
MAX	34.4	0.8	1.3	5.8	5.2	13.7	15.4	113.7	5.6	4.1
MIN	18.6	-1.3	-1.1	0.2	0.5	0.5	0.3	0.4	0.5	-0.2
AVG	27.1	0.0	0.5	1.4	2.8	3.9	2.5	7.8	2.3	1.5
STD	6.9	0.4	0.5	0.9	1.1	2.3	2.3	16.1	1.3	1.0
Open	0	0	0	0	0	0	0	0	0	0
Tech	RO	RO	RO	RO	RO	RO	RO	RO	RO	RO
Equip ID	413	413	413	413	413	413	413	413	413	413
	236	236	236	1047	1047	1047	1047	1047	1047	1047

		Low Level Contact Resistance								
Project:	201462B				Spec:	EIA 364 TP23				
Customer: Samtec					Subgroup: Sequence I2					
Product:	Series MEC1-RA w/0.062 mating bd				File #:	201462B22				
Description: MEC1-140-02-S-D-RA1-SL ID# G1-S2										
Open circuit voltage: 20mv					Current:	10ma				
			Delta values							
			units: milliohms							
Temp ºC	22	22	23	22	20	23	23	23	24	23
R.H. %	45	40	50	39	23	30	30	34	37	30
Date:	12Oct01	23Oct01	24Oct01	05Nov01	13Nov01	19Nov01	19Nov01	27Nov01	28Nov01	29Nov01
Pos. ID	Initial	T. Aging	Durability	MFG 5	MFG 10	MFG 15	1 X	MFG 20	1 X	46 X
1A	34.2	0.0	0.4	0.1	3.5	5.5	-0.2	3.5	2.4	0.7
2A	33.8	-0.1	0.9	0.6	1.8	3.4	1.3	22.9	2.9	1.3
3A	34.0	0.1	0.6	0.4	2.3	2.1	1.8	4.4	2.0	1.3
4A	34.1	0.0	0.5	0.8	1.9	1.7	2.9	1.9	2.1	1.4
5A	34.1	0.0	0.5	0.6	1.9	2.2	0.5	2.4	3.0	0.7
6A	34.5	-0.4	-0.2	0.0	2.5	2.3	2.1	10.8	1.7	2.4
7A	34.3	-0.3	0.4	0.1	1.3	1.7	2.3	4.3	2.6	1.8
8A	33.3	0.2	0.6	0.9	3.9	2.6	2.0	8.4	4.3	1.5
9A	34.0	0.1	0.2	0.8	1.7	1.5	1.7	4.4	2.5	1.3
10A	34.0	-0.3	0.7	0.9	2.1	2.6	0.9	97.0	4.6	1.2
11A	34.4	0.1	0.9	1.1	2.0	3.0	0.8	4.3	3.0	1.6
12A	34.5	-0.5	0.1	-0.2	2.1	3.2	1.1	4.1	2.3	1.4
13A	33.7	0.1	1.2	1.2	3.9	3.6	1.7	4.4	4.1	2.1
14A	33.5	0.2	0.5	1.4	4.7	5.7	1.9	4.8	5.6	3.5
15A	34.3	0.4	1.1	2.0	3.8	4.9	1.5	3.4	4.3	1.9
16A	33.5	0.3	0.8	1.3	3.2	4.9	2.9	28.0	4.8	2.1
17A	34.2	0.3	0.7	0.4	2.4	2.6	4.2	5.5	2.8	2.3
18A	34.0	0.0	0.6	1.2	3.3	2.7	2.1	4.9	4.3	1.2
19A	34.0	0.4	0.3	0.9	3.8	3.9	5.9	6.9	4.6	3.0
20A	34.1	-0.3	0.2	1.1	3.8	4.4	14.0	5.6	4.2	3.2
21A	33.8	0.2	0.5	0.7	4.1	4.0	3.9	3.7	3.7	2.1
22A	35.2	-0.3	-0.5	0.3	2.9	2.2	7.2	4.7	2.9	0.7
23A	34.2	0.3	0.3	0.4	2.8	4.4	6.9	8.6	4.1	2.2
24A	34.5	0.1	0.4	0.8	3.0	4.5	6.8	2.9	5.4	2.7
25A	34.8	-0.3	-0.2	0.9	3.4	3.6	8.2	5.3	3.9	2.4
26B	18.3	1.6	1.9	2.9	5.1	4.3	2.7	8.4	2.8	3.0
27B	19.3	0.6	0.7	1.3	2.6	2.1	1.2	0.6	1.5	3.1
28B	21.0	-0.6	-0.6	0.3	0.5	1.2	1.1	3.5	0.3	0.9
29B	18.8	0.8	1.3	1.5	2.3	1.9	2.6	2.7	2.5	2.4
30B	20.6	-0.3	-0.2	0.1	1.7	2.5	0.9	2.5	1.4	1.0
31B	20.5	-0.1	0.2	0.3	1.9	1.0	0.4	2.0	1.2	0.8
32B	23.9	-3.6	-3.1	-2.7	-2.0	-1.4	-2.8	0.4	0.2	-2.6
33B	20.2	-0.3	0.3	0.6	2.8	3.0	2.3	2.6	3.6	1.8
34B	20.1	-0.1	0.8	1.0	1.7	3.2	2.0	3.4	2.7	1.2
35B	19.6	0.1	1.3	1.3	2.1	4.1	1.9	4.3	2.3	2.1
36B	19.9	0.2	0.6	1.2	1.5	2.3	2.3	5.3	2.3	1.1
37B	21.0	-1.3	-0.7	-0.4	1.5	1.6	0.1	3.8	0.5	0.4
38B	19.9	-0.1	0.6	0.6	1.7	3.6	1.9	3.1	2.7	1.8
39B	20.8	-0.9	0.6	0.2	1.5	2.9	1.3	2.0	2.1	1.8
40B	20.1	0.2	0.4	0.7	1.5	2.7	2.4	3.0	2.0	2.0

Temp ºC	22	22	23	22	20	23	23	23	24	23
R.H. %	45	40	50	39	23	30	30	34	37	30
Date:	12Oct01	23Oct01	24Oct01	05Nov01	13Nov01	19Nov01	19Nov01	27Nov01	28Nov01	29Nov01
Pos. ID	Initial	T. Aging	Durability	MFG 5	MFG 10	MFG 15	1 X	MFG 20	1 X	46 X
41B	19.4	0.0	1.0	1.8	3.4	2.4	2.3	5.3	2.7	1.1
42B	19.4	-0.5	1.2	1.4	2.7	2.8	1.2	4.0	3.4	1.4
43B	19.4	-0.1	1.1	1.8	2.2	2.7	3.0	7.2	1.8	2.7
44B	19.6	0.1	1.3	1.4	1.8	2.6	1.7	2.7	3.1	1.7
45B	19.7	-0.3	0.8	2.3	3.2	3.2	1.8	4.5	3.0	1.3
46B	20.5	-0.4	0.8	1.1	1.1	2.1	1.0	2.4	2.4	0.8
47B	19.5	-0.2	1.3	2.8	3.3	3.5	2.2	4.4	3.0	2.0
48B	19.9	0.0	1.0	1.6	1.6	1.6	1.6	1.2	3.3	1.3
49B	20.4	-0.4	1.6	2.6	1.4	1.6	0.8	3.6	4.2	1.2
50B	20.2	-0.3	0.6	1.6	2.3	2.8	0.9	2.7	3.2	1.1
MAX	35.2	1.6	1.9	2.9	5.1	5.7	14.0	97.0	5.6	3.5
MIN	18.3	-3.6	-3.1	-2.7	-2.0	-1.4	-2.8	0.4	0.2	-2.6
AVG	27.1	-0.1	0.5	0.9	2.4	2.9	2.4	6.9	2.9	1.6
STD	7.1	0.7	0.7	0.9	1.2	1.3	2.6	13.8	1.2	1.0
Open	0	0	0	0	0	0	0	0	0	0
Tech	RO	RO	RO	RO	RO	RO	RO	RO	RO	RO
Equip ID	413	413	413	413	413	413	413	413	413	413
	236	236	236	1047	1047	1047	1047	1047	1047	1047

		Low Level Contact Resistance								
Project:	201462B				Spec:	EIA 364 TP23				
Customer: Samtec					Subgroup: Sequence I2					
Product:	Series MEC1-RA w/0.062 mating bd				File #:	201462B23				
Description: MEC1-140-02-S-D-RA1-SL ID# G1-S3										
Open circuit voltage: 20mv					Current:	10ma				
			Delta values							
			units: milliohms							
Temp ºC	22	22	23	22	20	23	22	23	24	23
R.H. %	45	40	50	39	23	30	30	34	37	30
Date:	12Oct01	23Oct01	24Oct01	05Nov01	13Nov01	19Nov01	20Nov01	27Nov01	28Nov01	29Nov01
Pos. ID	Initial	T. Aging	Durability	MFG 5	MFG 10	MFG 15	1 X	MFG 20	1 X	46 X
1A	34.1	0.2	0.3	0.9	2.5	5.7	1.7	4.3	1.3	1.9
2A	34.5	0.2	0.1	1.2	2.2	4.6	3.4	2.8	1.5	1.4
3A	34.4	0.5	0.3	0.6	2.2	3.4	2.1	3.1	1.2	0.9
4A	34.4	0.6	0.5	0.6	2.2	3.8	1.9	3.2	1.0	1.2
5A	34.1	0.2	0.1	0.8	1.7	3.3	1.2	3.3	1.0	1.1
6A	34.4	0.2	0.2	0.8	2.4	3.7	1.8	4.2	2.9	1.6
7A	34.1	0.5	0.5	0.5	2.0	5.1	2.6	2.5	1.1	1.2
8A	34.4	0.4	0.3	1.0	2.8	3.4	1.6	2.8	1.1	1.3
9A	33.3	0.9	0.9	1.6	2.6	3.8	1.9	3.4	2.0	2.7
10A	34.2	0.7	0.6	0.7	1.5	3.5	1.8	4.0	3.7	1.4
11A	34.1	0.7	0.2	0.8	2.0	4.4	1.9	1.5	1.9	1.7
12A	34.2	0.4	0.3	1.0	2.2	2.9	1.5	3.8	2.0	2.2
13A	34.6	0.1	0.0	0.6	1.3	3.4	1.3	4.6	3.4	1.6
14A	34.4	0.2	0.4	0.9	2.1	4.9	2.1	1.8	3.1	4.2
15A	34.6	1.6	0.5	1.6	2.7	3.6	2.3	1.7	1.7	1.3
16A	34.7	0.1	-0.2	0.2	1.1	2.2	0.8	1.9	0.9	1.1
17A	34.5	0.9	0.5	0.9	1.8	4.6	3.4	3.1	3.2	3.0
18A	34.4	0.3	0.2	0.4	1.3	3.5	1.5	1.0	1.8	1.9
19A	34.4	0.5	0.4	1.0	1.3	2.7	1.6	2.6	1.6	1.4
20A	34.2	0.2	0.5	0.5	1.4	2.0	1.4	1.5	1.3	1.7
21A	34.2	0.8	1.1	0.9	1.8	3.6	2.6	4.2	2.9	2.6
22A	34.4	0.5	0.1	0.6	2.2	1.8	1.2	2.1	0.9	1.6
23A	33.8	1.3	1.4	1.7	3.4	5.5	4.2	5.0	4.6	4.8
24A	34.4	0.7	0.7	1.0	2.6	5.2	4.6	4.9	3.3	2.1
25A	34.8	0.2	0.4	1.1	3.6	4.4	4.1	6.3	4.6	2.3
26B	20.9	0.6	0.0	1.4	2.8	2.5	1.5	1.8	1.9	3.0
27B	20.8	0.4	0.4	0.8	0.9	3.7	0.9	1.7	0.8	1.2
28B	20.2	0.9	0.3	1.6	3.5	5.0	3.3	2.2	1.6	1.0
29B	23.8	0.5	0.3	0.6	0.7	0.5	0.9	0.7	0.4	-2.4
30B	20.4	1.1	0.4	2.1	4.9	1.1	2.7	1.5	1.3	1.7
31B	19.2	1.6	0.7	3.2	2.4	4.6	2.1	2.0	1.8	2.2
32B	20.9	0.5	0.3	1.1	1.4	3.0	1.6	2.5	1.1	1.0
33B	20.9	0.5	0.1	1.5	2.4	2.8	2.4	1.5	1.4	2.1
34B	21.0	0.4	0.4	2.0	1.0	1.9	1.1	0.9	1.1	1.1
35B	20.4	0.6	0.3	1.2	2.3	3.4	1.3	1.4	1.2	1.6
36B	20.7	0.6	0.6	1.5	3.0	3.2	1.5	1.2	1.6	1.4
37B	20.7	0.3	0.7	1.8	1.7	2.8	1.4	2.6	1.3	2.3
38B	20.6	0.2	0.1	1.4	0.6	2.0	1.1	0.6	0.9	1.1
39B	19.8	0.7	0.9	1.1	3.2	4.3	1.3	1.5	1.5	1.5
40B	21.5	-0.2	-0.9	0.2	0.5	1.4	0.2	-0.5	0.8	0.4

Temp ºC	22	22	23	22	20	23	22	23	24	23
R.H. %	45	40	50	39	23	30	30	34	37	30
Date:	12Oct01	23Oct01	24Oct01	05Nov01	13Nov01	19Nov01	20Nov01	27Nov01	28Nov01	29Nov01
Pos. ID	Initial	T. Aging	Durability	MFG 5	MFG 10	MFG 15	1 X	MFG 20	1 X	46 X
41B	20.1	0.6	0.4	2.5	3.1	2.4	1.1	0.9	1.3	1.1
42B	20.3	0.4	0.3	1.0	2.0	2.2	1.1	0.2	1.1	0.6
43B	20.3	0.5	-0.1	0.7	1.0	2.4	1.0	0.7	0.8	1.0
44B	20.9	0.3	-0.1	0.7	1.4	2.2	0.6	0.3	0.7	0.4
45B	20.4	0.6	0.1	1.3	2.3	3.5	0.9	0.8	1.7	1.7
46B	20.8	0.4	0.2	2.5	1.9	3.2	1.3	0.8	1.4	2.3
47B	20.7	0.6	0.3	1.3	1.2	3.3	1.3	0.5	1.2	1.0
48B	21.0	0.1	-0.1	2.1	0.9	2.8	1.5	0.7	1.2	1.9
49B	21.3	0.7	0.5	1.5	3.4	3.5	1.8	2.3	1.5	1.7
50B	20.4	-0.1	0.4	2.7	1.5	3.3	2.2	1.2	1.3	2.1
MAX	34.8	1.6	1.4	3.2	4.9	5.7	4.6	6.3	4.6	4.8
MIN	19.2	-0.2	-0.9	0.2	0.5	0.5	0.2	-0.5	0.4	-2.4
AVG	27.5	0.5	0.3	1.2	2.1	3.3	1.8	2.2	1.7	1.6
STD	6.9	0.4	0.4	0.7	0.9	1.1	0.9	1.5	1.0	1.0
Open	0	0	0	0	0	0	0	0	0	0
Tech	RO	RO	RO	RO	RO	RO	RO	RO	RO	RO
Equip ID	413	413	413	413	413	413	413	413	413	413
	236	236	236	1047	1047	1047	1047	1047	1047	1047

		Low Level Contact Resistance								
Project:	201462B				Spec:	EIA 364 TP23				
Customer: Samtec					Subgroup: Sequence I2					
Product:	Series MEC1-RA w/0.062 mating bd				File #:	201462B24				
Description: MEC1-140-02-S-D-RA1-SL ID# G1-S4										
Open circuit voltage: 20mv					Current:	10ma				
			Delta values							
			units: milliohms							
Temp ºC	22	22	23	22	20	23	22	23	24	23
R.H. %	45	40	50	39	23	30	30	34	37	30
Date:	12Oct01	23Oct01	24Oct01	05Nov01	13Nov01	19Nov01	20Nov01	27Nov01	28Nov01	29Nov01
Pos. ID	Initial	T. Aging	Durability	MFG 5	MFG 10	MFG 15	1 X	MFG 20	1 X	46 X
1A	33.8	0.2	0.1	2.0	3.1	2.2	0.6	3.5	1.2	0.6
2A	33.5	0.6	0.2	2.2	4.6	4.6	1.2	2.4	2.3	1.1
3A	33.8	0.0	0.5	1.2	4.1	5.1	2.6	4.0	3.7	0.9
4A	33.4	0.5	0.5	1.0	2.6	3.1	1.8	4.8	3.9	1.5
5A	33.8	0.0	0.4	1.2	3.8	4.6	4.2	4.3	4.2	1.5
6A	33.8	0.4	0.9	2.0	3.9	4.9	3.1	5.4	4.1	1.9
7A	33.3	0.2	0.9	2.1	4.1	3.8	2.0	5.6	4.8	1.9
8A	34.4	0.0	0.4	3.3	7.5	3.8	1.2	5.9	5.2	1.4
9A	33.7	-0.1	0.6	1.6	8.2	4.2	3.1	4.5	2.6	2.2
10A	34.2	0.1	0.4	0.9	3.9	3.1	2.5	5.6	4.0	0.8
11A	33.7	0.3	0.8	1.4	4.9	4.3	4.1	4.3	3.8	1.3
12A	33.9	0.1	0.6	2.1	4.9	2.8	2.3	4.7	2.9	1.0
13A	33.7	0.2	0.6	2.1	3.7	5.1	3.4	5.0	3.4	0.7
14A	34.2	0.0	0.4	1.1	3.5	2.8	1.7	4.7	3.5	0.8
15A	34.3	0.4	1.4	2.7	3.4	3.7	1.8	12.3	4.6	0.6
16A	33.4	0.2	1.9	2.6	6.0	2.6	1.6	5.3	1.8	1.0
17A	33.5	0.2	1.4	0.9	3.3	4.3	2.2	3.5	4.1	-0.1
18A	33.5	0.5	0.5	1.2	3.8	4.5	3.5	4.8	4.3	1.1
19A	34.8	0.2	0.6	1.1	2.5	4.6	3.8	5.6	2.7	0.6
20A	35.2	0.8	0.4	1.6	3.9	3.3	2.4	4.2	2.7	0.3
21A	34.5	0.2	1.2	2.3	3.6	4.6	2.5	4.9	4.7	0.6
22A	34.9	0.3	0.3	2.0	2.9	2.1	0.9	2.8	2.2	0.2
23A	34.6	1.1	1.1	4.6	4.5	3.1	2.3	4.8	3.5	2.6
24A	34.5	0.4	1.0	1.1	3.3	2.0	1.4	1.6	0.8	0.6
25A	34.9	0.9	0.5	1.7	1.3	4.3	1.9	3.9	2.6	0.9
26B	20.6	0.5	0.2	1.6	4.2	1.9	0.8	3.5	2.3	2.2
27B	19.5	0.7	0.2	0.7	2.8	1.9	1.0	2.0	2.6	2.3
28B	18.9	0.9	0.7	1.3	3.3	2.2	1.1	3.5	2.4	2.5
29B	19.6	0.2	0.2	0.6	2.9	2.1	0.3	2.5	2.3	1.0
30B	19.6	0.4	0.7	0.9	3.5	2.9	1.1	3.7	2.2	1.8
31B	19.9	0.5	0.2	0.9	2.7	2.9	1.1	4.2	2.5	1.7
32B	20.1	0.3	0.2	1.6	3.6	2.1	1.1	2.4	2.7	2.9
33B	19.6	0.4	0.2	2.4	4.4	3.9	1.3	3.5	3.6	2.3
34B	20.1	0.4	0.4	1.9	5.2	4.0	2.2	2.9	3.6	3.7
35B	20.2	-0.2	-0.1	1.1	3.4	2.7	1.1	3.1	2.7	1.9
36B	19.9	-0.1	0.1	1.3	4.6	1.9	0.9	3.5	2.0	2.0
37B	20.6	0.1	0.4	0.9	1.8	2.2	1.3	3.2	2.6	1.4
38B	20.8	0.1	0.4	0.9	3.2	3.7	1.8	3.5	2.5	1.9
39B	19.3	0.2	0.4	1.3	2.9	4.6	4.4	4.5	4.0	1.9
40B	20.2	-0.1	-0.2	2.3	5.2	2.3	0.5	2.5	1.1	0.7

Temp ºC	22	22	23	22	20	23	22	23	24	23
R.H. %	45	40	50	39	23	30	30	34	37	30
Date:	12Oct01	23Oct01	24Oct01	05Nov01	13Nov01	19Nov01	20Nov01	27Nov01	28Nov01	29Nov01
Pos. ID	Initial	T. Aging	Durability	MFG 5	MFG 10	MFG 15	1 X	MFG 20	1 X	46 X
41B	20.5	0.1	0.5	0.4	3.3	2.0	1.2	3.3	1.2	1.4
42B	18.6	0.3	0.6	0.9	4.3	1.2	0.6	1.1	1.4	1.4
43B	19.1	0.4	0.5	1.1	3.5	1.4	1.4	3.6	2.5	1.4
44B	19.9	-0.1	0.3	0.3	2.8	2.1	0.8	2.2	1.6	1.7
45B	19.5	0.0	0.3	1.5	3.4	3.5	2.0	3.3	1.6	1.8
46B	19.8	-0.1	0.9	2.5	4.9	2.4	1.7	3.7	1.6	0.9
47B	19.9	0.0	0.7	1.0	4.3	4.0	2.1	1.6	1.3	0.9
48B	20.1	0.1	0.4	1.0	3.2	3.6	2.5	2.7	2.0	1.8
49B	19.8	-0.2	0.8	1.7	4.2	1.4	0.7	1.1	0.7	1.2
50B	19.9	0.0	0.8	1.7	4.7	0.9	0.7	2.2	0.9	1.3
MAX	35.2	1.1	1.9	4.6	8.2	5.1	4.4	12.3	5.2	3.7
MIN	18.6	-0.2	-0.2	0.3	1.3	0.9	0.3	1.1	0.7	-0.1
AVG	26.9	0.3	0.5	1.5	3.9	3.1	1.8	3.8	2.7	1.4
STD	7.2	0.3	0.4	0.8	1.2	1.1	1.0	1.7	1.2	0.7
Open	0	0	0	0	0	0	0	0	0	0
Tech	RO	RO	RO	RO	RO	RO	RO	RO	RO	RO
Equip ID	413	413	413	413	413	413	413	413	413	413
	236	236	236	1047	1047	1047	1047	1047	1047	1047

TEST RESULTS

GROUP J

PROJECT NO.: 201462B	SPECIFICATION: TC0134-105I-0501
PART NO.:MEC1-140-02-S-D-RA1-SL	PART DESCRIPTION: 1.0 mm Edge Conn.
SAMPLE SIZE: ID# J-1,J-2, J-3,J-4	TECHNICIAN: RO
START DATE: 11/7/01	COMPLETE DATE: 11/9/01
ROOM AMBIENT: 22°C	RELATIVE HUMIDITY: 30%
EQUIPMENT ID#: 440, 580, 1012, 1279	

CURRENT CARRYING CAPACITY

PURPOSE:

To establish the current carrying capacity of the test sample under evaluation. This is achieved by determining the temperature rise resulting at the contact interface at specified current levels. The temperature rise at a given current level plus the ambient operating temperature should not exceed the temperature rating of the test sample. Thus, the current rating of the system decreases as the operating ambient increases. This data can also be used to determine potential local “hot spot” internal to the test sample, possible degradation factors, thermal effects on adjacent areas and/or the acceptability for use of pulsing techniques.

PROCEDURE:

1. The test was performed in accordance with EIA 364, Test Procedure 70.

2. The test samples were prepared to accept thermocouples by drilling a hole in the connector housing at the center of the circuit under test.

3. An additional thermocouple was placed 2” outside of the test samples adjacent to the locations to be monitored. This is accomplished to evaluate the impact of ambient conditions.

4. The thermocouples were attached to a data acquisition/ scanner system.

PROCEDURE: Continued

5. The test specimen was placed in a chamber or room which prevents air currents and the like from influencing the observations.

6. Test Conditions:

   a) Current Levels : 0.5,1.0 and 2.0 amps
   b) No. of Contacts in Series : 6
   c) Derating Curve : Yes

7. The current level indicated was applied until temperature stabilization was reached.

8. Temperature stabilization is defined as no change in temperature rise greater than ± 1°C over a 15 minute interval.

REQUIREMENTS:

The temperature rise shall be measured and recorded and a current derating curve established.

RESULTS:

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

	TEMPERATURE RISE ABOVE AMBIENT (DEGREE C)		
Sample ID#	0.5 Amps	1.0 Amp	2.0 Amps
J-1	+4.8	+15.9	+57.1
J-2	+4.6	+15.4	+55.0
J-3	+4.5	+14.7	+51.9
J-4	+4.4	+15.9	+59.3

2. See data files 201462B10T through 201462B21T for individual data points.

RESULTS: Continued

3. The following Figure #'s are the current derating curves for connectors evaluated with maximum operating temperature of 60°C, 85°C and 105°C.

    Figure #'s 8, 9, 10, 11 @ 105°C

    The base curve is created by the data from Data File #'s 201462B10T through 201462B21T. The derated curve is 20% from the base curve.

FIGURE #8

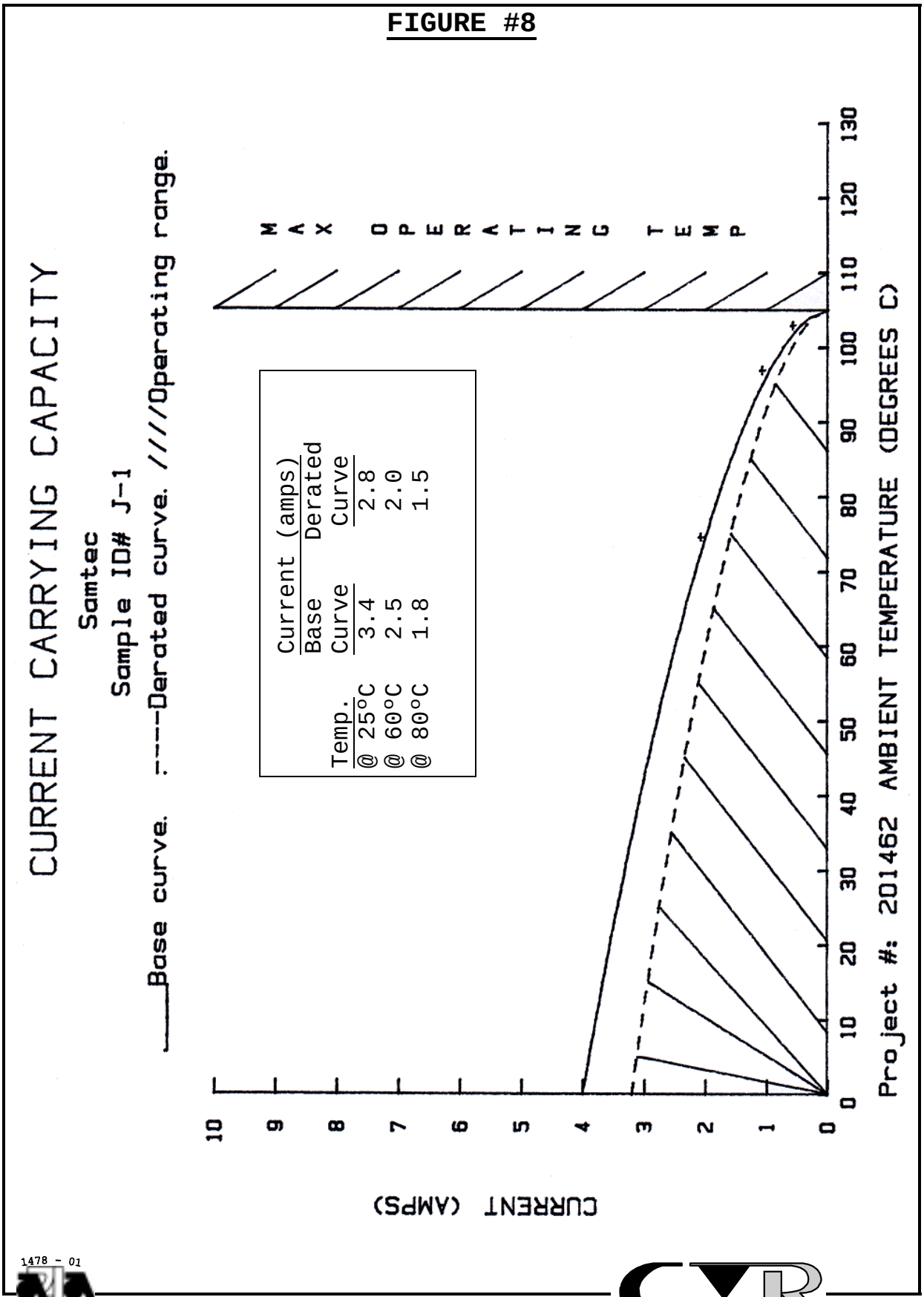

CURRENT CARRYING CAPACITY
Samtec
Sample ID# J-1
Base curve. ----Derated curve. ////Operating range.
MAX OPERATING TEMP
Current (amps)
Base Derated
Temp. Curve Curve
@ 25°C 3.4 2.8
@ 60°C 2.5 2.0
@ 80°C 1.8 1.5
CURRENT (AMPS)
Project #: 201462 AMBIENT TEMPERATURE (DEGREES C)

FIGURE #9

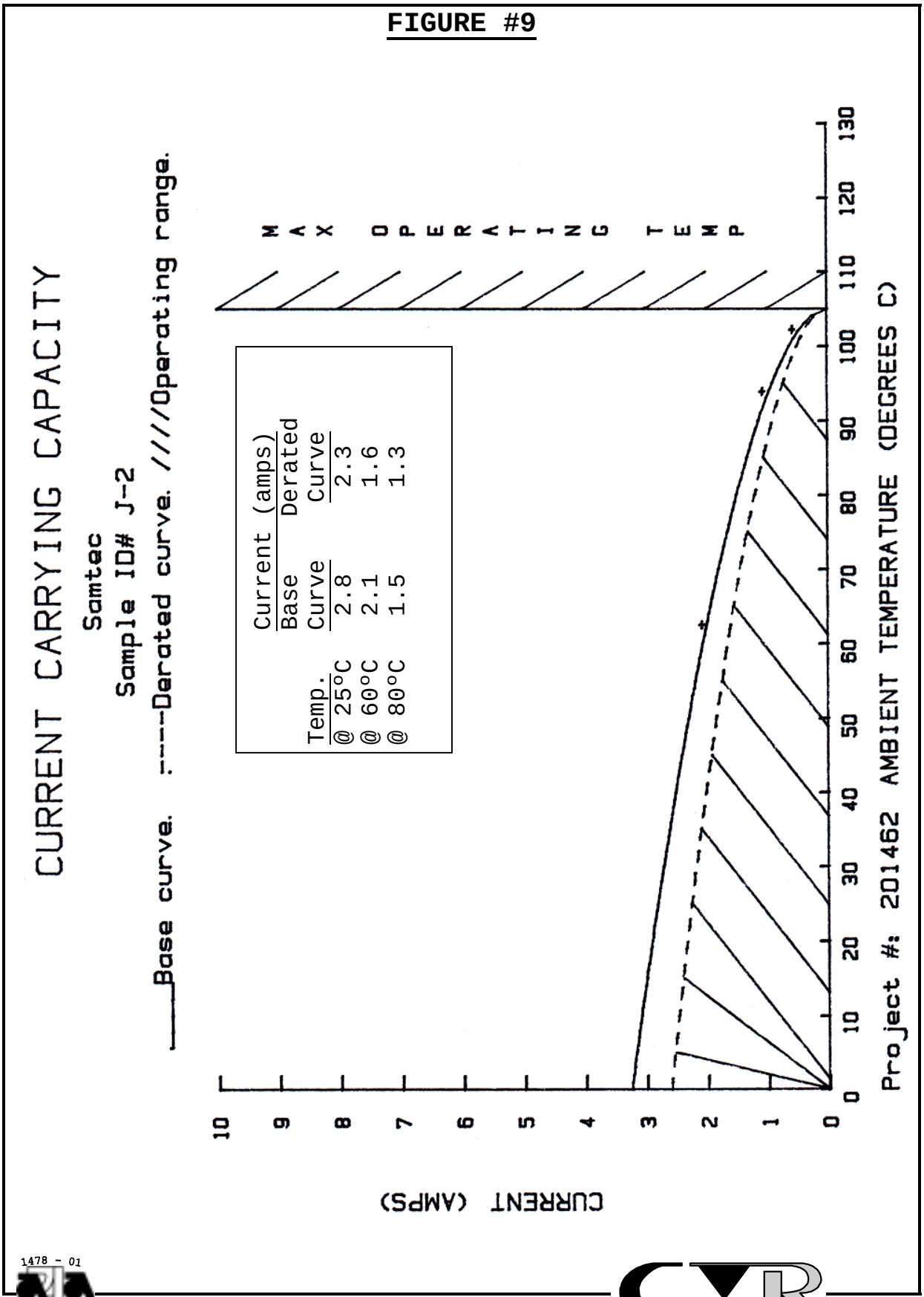

CURRENT CARRYING CAPACITY
Samtec
Sample ID# J-2
Base curve. ----Derated curve. ////Operating range.
MAX OPERATING TEMP
Current (amps)
Base Curve
Derated Curve
Temp.
@ 25°C 2.8 2.3
@ 60°C 2.1 1.6
@ 80°C 1.5 1.3
CURRENT (AMPS)
AMBIENT TEMPERATURE (DEGREES C)
Project #: 201462

FIGURE #10

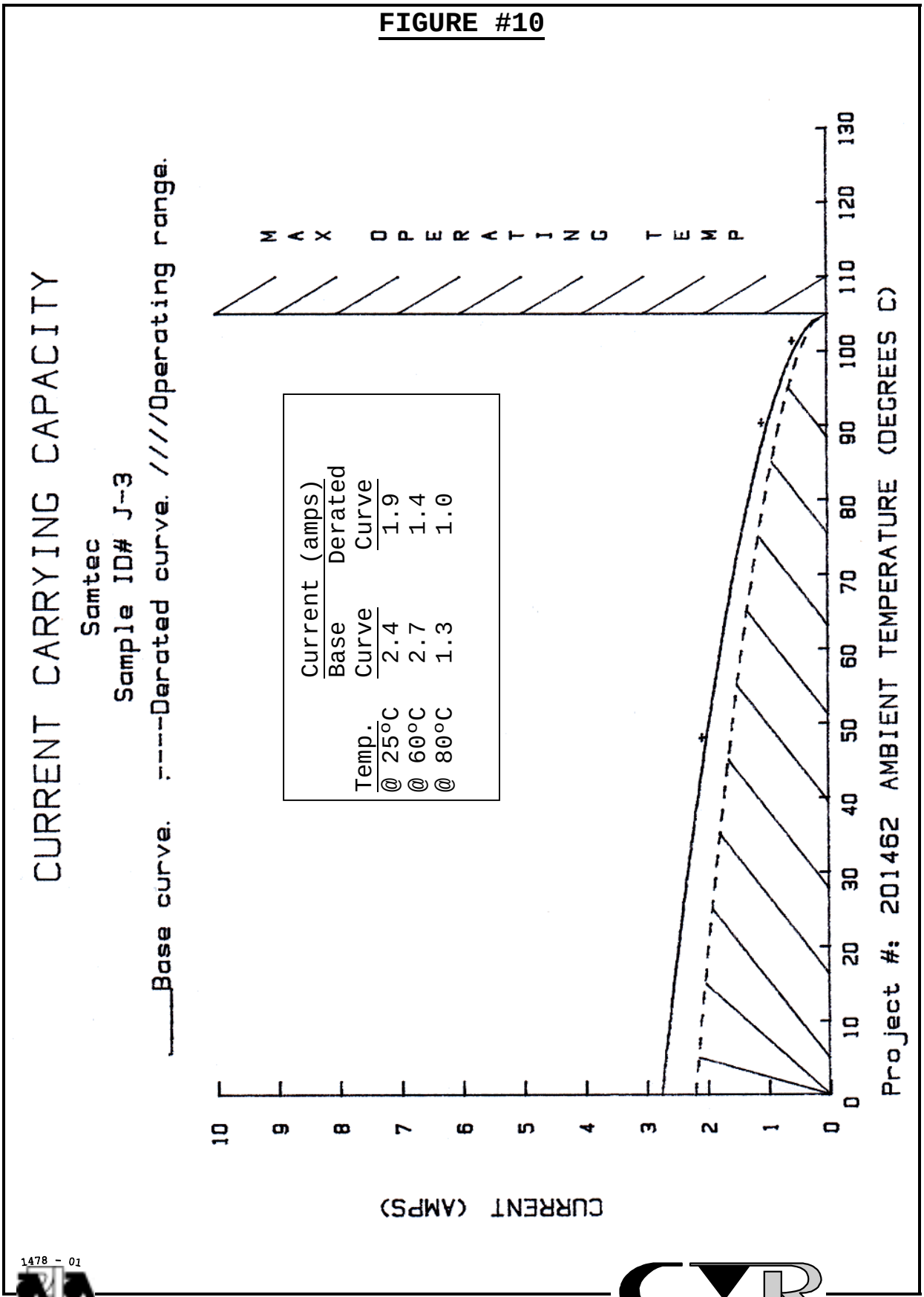
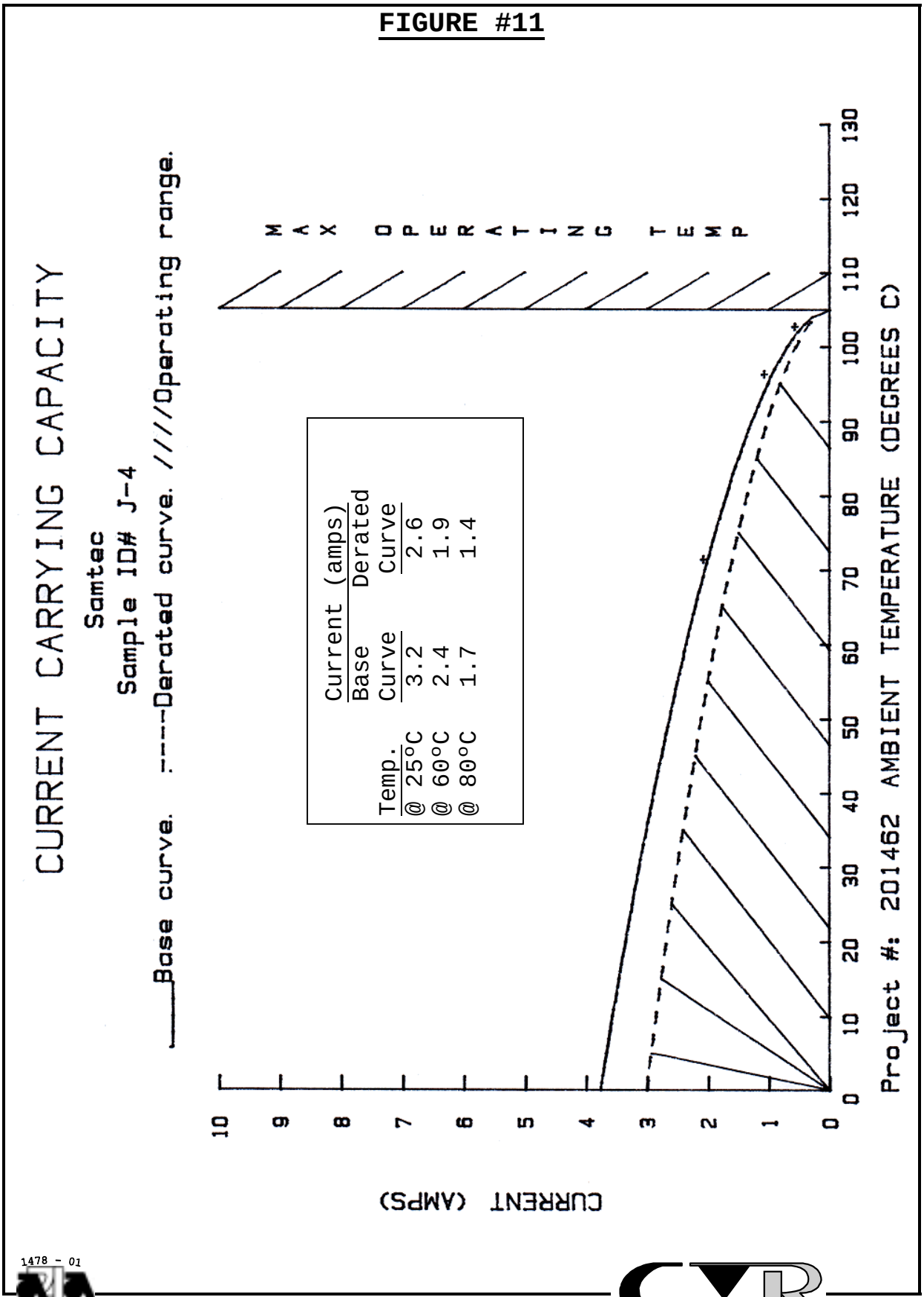

CURRENT CARRYING CAPACITY
Samtec
Sample ID# J-3
Base curve. ----Derated curve. ////Operating range.
MAX OPERATING TEMP
Current (amps)
Base Curve
Derated Curve
Temp.
@ 25°C 2.4 1.9
@ 60°C 2.7 1.4
@ 80°C 1.3 1.0
CURRENT (AMPS)
0 1 2 3 4 5 6 7 8 9 10
0 10 20 30 40 50 60 70 80 90 100 110 120 130
Project #: 201462 AMBIENT TEMPERATURE (DEGREES C)

FIGURE #11


CURRENT CARRYING CAPACITY
Samtec
Sample ID# J-4
Base curve. ----Derated curve. ////Operating range.
MAX OPERATING TEMP
Current (amps)
Temp. | Base Curve | Derated Curve
@ 25°C | 3.2 | 2.6
@ 60°C | 2.4 | 1.9
@ 80°C | 1.7 | 1.4
CURRENT (AMPS)
0 1 2 3 4 5 6 7 8 9 10
0 10 20 30 40 50 60 70 80 90 100 110 120 130
Project #: 201462 AMBIENT TEMPERATURE (DEGREES C)

			Temperature Rise Test					
	Project #:	201462B				Spec:	MEC1-RA	
	Customer:	Samtec				Subgroup:	J	
	Product:	Current Rating				File#:	201462B10T	
	Description:	Sample ID# J-1				TC Type:	J	
	Technician:	RO				Current:	0.5 amps	
			Temperature Rise Data (C) above ambient					
	Cycle	Amb	T.C. 1					
	1	23.0	3.4					
	2	23.0	4.0					
	3	23.0	4.2					
	4	23.0	4.3					
	5	23.1	4.3					
	6	22.9	4.6					
	7	22.9	4.6					
	8	22.9	4.7					
	9	22.9	4.7					
	10	22.8	4.7					
	11	22.8	4.8					
	12	22.8	4.8					
	13	22.9	4.7					
	14	22.8	4.7					
	15	22.8	4.7					
	16	22.8	4.7					
	17	22.8	4.8					
	18	22.8	4.8					
	19	23.0	4.6					
	20	22.9	4.7					
	21	22.9	4.7					
	22	22.9	4.7					
	23	22.8	4.8					
	24	23.0	4.5					
	25	22.8	4.8					
	26	22.9	4.7					
	27	22.8	4.8					
	28	22.9	4.7					
	29	22.8	4.7					
	30	22.9	4.7					
	31	22.9	4.6					
	32	22.9	4.7					
	33	22.9	4.6					
	34	22.8	4.6					
	35	22.8	4.8					
	36	22.7	4.8					

			Temperature Rise Test					
	Project #:	201462B				Spec:	MEC1-RA	
	Customer:	Samtec				Subgroup:	J	
	Product:	Current Rating				File#:	201462B11T	
	Description:	Sample ID# J-1				TC Type:	J	
	Technician:	RO				Current:	1.0 amp	
			Temperature Rise Data (C) above ambient					
	Cycle	Amb	T.C. 1					
	1	22.9	8.9					
	2	23.0	11.2					
	3	22.9	12.7					
	4	23.1	13.5					
	5	23.0	13.9					
	6	22.9	14.3					
	7	23.0	14.5					
	8	22.9	14.6					
	9	22.7	15.3					
	10	22.9	15.0					
	11	22.9	15.4					
	12	22.9	15.4					
	13	22.9	15.3					
	14	22.9	15.4					
	15	22.8	15.6					
	16	22.8	15.6					
	17	22.9	15.7					
	18	23.0	15.6					
	19	23.0	15.5					
	20	22.8	15.9					
	21	22.8	15.7					
	22	22.8	15.9					
	23	22.8	15.8					
	24	22.8	15.9					
	25	22.8	15.9					
	26	22.8	15.9					
	27	22.8	15.7					
	28	22.8	15.6					
	29	22.8	15.8					
	30	22.9	15.7					
	31	22.9	15.5					
	32	22.8	15.7					
	33	22.8	15.8					
	34	22.9	15.6					
	35	22.8	15.7					
	36	22.9	15.7					
	37	22.9	15.9					
	38	22.8	15.8					
	39	22.9	15.7					

			Temperature Rise Test					
	Project #:	201462B				Spec:	MEC1-RA	
	Customer:	Samtec				Subgroup:	J	
	Product:	Current Rating				File#:	201462B12T	
	Description:	Sample ID# J-1				TC Type:	J	
	Technician:	RO				Current:	2.0 amps	
			Temperature Rise Data (C) above ambient					
	Cycle	Amb	T.C. 1					
	1	22.9	47.4					
	2	22.8	50.3					
	3	22.9	51.4					
	4	22.8	52.6					
	5	22.9	53.3					
	6	22.9	54.3					
	7	22.9	54.9					
	8	22.9	55.3					
	9	22.8	55.6					
	10	22.8	56.4					
	11	22.8	56.3					
	12	22.8	56.0					
	13	22.8	56.4					
	14	22.8	56.2					
	15	22.8	56.2					
	16	22.8	56.5					
	17	22.8	56.5					
	18	22.8	56.7					
	19	22.8	56.7					
	20	22.8	56.4					
	21	22.8	56.4					
	22	22.9	56.5					
	23	22.8	56.5					
	24	22.8	56.7					
	25	22.8	56.5					
	26	22.8	56.6					
	27	22.9	56.3					
	28	22.8	56.7					
	29	22.8	56.5					
	30	22.7	56.9					
	31	22.7	56.9					
	32	22.8	56.5					
	33	22.8	56.5					
	34	22.7	56.5					
	35	22.8	56.9					
	36	22.7	55.3					
	37	22.8	56.7					
	38	22.7	58.3					
	39	22.8	55.0					
	40	22.8	56.6					

	Cycle	Amb	T.C. 1					
	41	22.8	56.6					
	42	22.9	56.5					
	43	22.7	57.1					
	44	22.8	56.9					
	45	22.7	56.8					
	46	22.8	57.1					
	47	22.7	57.0					
	48	22.8	56.3					
	49	22.7	57.1					
	50	22.7	57.0					
	51	22.7	56.7					
	52	22.8	56.5					
	53	22.8	56.8					
	54	22.7	56.7					
	55	22.8	56.6					
	56	22.7	56.6					
	57	22.7	56.5					
	58	22.8	56.8					
	59	22.8	56.5					
	60	22.7	56.8					
	61	22.8	56.6					
	62	22.7	56.6					
	63	22.8	56.5					
	64	22.8	57.1					
	65	22.7	57.1					
	66	22.8	56.2					
	67	22.7	56.3					
	68	22.8	56.2					
	69	22.7	56.7					
	70	22.8	56.6					

			Temperature Rise Test					
	Project #:	201462B				Spec:	MEC1-RA	
	Customer:	Samtec				Subgroup:	J	
	Product:	Current Rating				File#:	201462B13T	
	Description:	Sample ID# J-2				TC Type:	J	
	Technician:	RO				Current:	0.5 amp	
			Temperature Rise Data (C) above ambient					
	Cycle	Amb	T.C. 1					
	1	21.9	3.7					
	2	21.8	3.9					
	3	21.9	3.9					
	4	21.8	4.2					
	5	21.8	4.4					
	6	21.8	4.2					
	7	21.7	4.5					
	8	21.6	4.6					
	9	21.6	4.7					
	10	21.7	4.5					
	11	21.7	4.4					
	12	21.7	4.5					
	13	21.6	4.6					
	14	21.7	4.5					
	15	21.7	4.5					
	16	21.7	4.7					
	17	21.7	4.6					
	18	21.6	4.8					
	19	21.7	4.7					
	20	21.7	4.6					
	21	21.7	4.7					
	22	21.7	4.5					
	23	21.8	4.5					
	24	21.7	4.5					
	25	21.7	4.6					
	26	21.7	4.6					
	27	21.7	4.6					
	28	21.8	4.5					
	29	21.7	4.7					
	30	21.7	4.7					
	31	21.7	4.6					
	32	21.7	4.7					
	33	21.7	4.5					
	34	21.8	4.5					
	35	21.7	4.5					
	36	21.7	4.6					
	37	21.7	4.6					
	38	21.7	4.5					
	39	21.7	4.6					
	40	21.7	4.6					
	41	21.8	4.4					
	42	21.8	4.4					
	43	21.8	4.4					
	44	21.8	4.5					
	45	21.8	4.5					
	46	21.8	4.6					

			Temperature Rise Test					
	Project #:	201462B				Spec:	MEC1-RA	
	Customer:	Samtec				Subgroup:	J	
	Product:	Current Rating				File#:	201462B14T	
	Description:	Sample ID# J-2				TC Type:	J	
	Technician:	RO				Current:	1.0 amp	
			Temperature Rise Data (C) above ambient					
	Cycle	Amb	T.C. 1					
	1	22.0	8.6					
	2	22.0	10.7					
	3	22.1	12.2					
	4	21.9	13.3					
	5	22.0	13.4					
	6	22.0	13.9					
	7	22.0	13.8					
	8	22.0	14.5					
	9	21.9	14.6					
	10	21.9	14.7					
	11	21.9	14.7					
	12	21.9	14.8					
	13	21.9	14.9					
	14	22.0	14.7					
	15	22.0	14.7					
	16	22.0	14.8					
	17	21.9	15.1					
	18	21.9	14.9					
	19	21.9	15.1					
	20	22.0	15.1					
	21	21.9	15.0					
	22	22.0	14.9					
	23	21.9	15.0					
	24	21.9	14.9					
	25	21.9	15.1					
	26	21.8	13.7					
	27	21.8	15.1					
	28	21.9	14.8					
	29	22.1	15.0					
	30	22.0	14.9					
	31	21.9	15.0					
	32	21.9	14.9					
	33	22.0	15.2					
	34	21.9	15.3					
	35	22.0	15.1					
	36	22.0	15.2					
	37	22.0	15.1					
	38	22.0	15.4					

			Temperature Rise Test					
	Project #:	201462B				Spec:	MEC1-RA	
	Customer:	Samtec				Subgroup:	J	
	Product:	Current Rating				File#:	201462B15T	
	Description:	Sample ID# J-2				TC Type:	J	
	Technician:	RO				Current:	2.0 amps	
			Temperature Rise Data (C) above ambient					
	Cycle	Amb	T.C. 1					
	1	22.2	33.2					
	2	22.1	40.7					
	3	22.2	44.8					
	4	22.1	47.0					
	5	22.2	47.9					
	6	22.1	49.5					
	7	22.0	50.2					
	8	22.1	50.4					
	9	22.0	50.7					
	10	22.0	51.5					
	11	22.1	51.2					
	12	22.1	51.4					
	13	22.1	54.2					
	14	22.1	54.8					
	15	22.1	53.6					
	16	22.0	53.7					
	17	22.1	53.8					
	18	22.1	54.4					
	19	22.1	54.3					
	20	22.0	54.2					
	21	22.1	55.4					
	22	22.1	55.1					
	23	22.1	55.6					
	24	22.1	54.6					
	25	22.1	54.8					
	26	22.0	54.7					
	27	22.1	54.2					
	28	22.0	54.4					
	29	22.1	55.1					
	30	22.1	55.5					
	31	22.1	55.5					
	32	22.1	55.6					
	33	22.1	55.3					
	34	22.1	54.5					
	35	22.1	54.4					
	36	22.1	54.8					

	Cycle	Amb	T.C. 1					
	37	22.0	55.2					
	38	22.1	54.1					
	39	22.1	54.4					
	40	22.0	54.2					
	41	22.1	54.9					
	42	22.1	54.8					
	43	22.1	55.2					
	44	22.1	54.8					
	45	22.1	55.0					
	46	22.1	54.6					
	47	22.1	54.6					
	48	22.1	54.3					
	49	22.0	53.0					
	50	22.5	53.9					
	51	22.4	53.7					

			Temperature Rise Test					
	Project #:	201462B				Spec:	MEC1-RA	
	Customer:	Samtec				Subgroup:	J	
	Product:	Current Rating				File#:	201462B16T	
	Description:	Sample ID# J-3				TC Type:	J	
	Technician:	RO				Current:	0.5 amp	
			Temperature Rise Data (C) above ambient					
	Cycle	Amb	T.C. 1					
	1	20.3	4.2					
	2	20.4	4.0					
	3	20.5	3.6					
	4	20.4	4.1					
	5	20.6	4.0					
	6	20.5	4.1					
	7	20.4	4.4					
	8	20.5	4.2					
	9	20.5	4.3					
	10	20.5	4.1					
	11	20.5	4.3					
	12	20.6	4.2					
	13	20.6	4.0					
	14	20.5	4.4					
	15	20.5	4.3					
	16	20.5	4.3					
	17	20.5	4.3					
	18	20.7	4.0					
	19	20.6	4.3					
	20	20.4	4.5					
	21	20.6	4.3					
	22	20.5	4.3					
	23	20.6	4.1					
	24	20.5	4.3					
	25	20.6	4.2					
	26	20.4	4.5					
	27	20.7	4.1					
	28	20.5	4.4					
	29	20.7	4.1					
	30	20.5	4.3					

			Temperature Rise Test					
	Project #:	201462B				Spec:	MEC1-RA	
	Customer:	Samtec				Subgroup:	J	
	Product:	Current Rating				File#:	201462B17T	
	Description:	Sample ID# J-3				TC Type:	J	
	Technician:	RO				Current:	1.0 amp	
			Temperature Rise Data (C) above ambient					
	Cycle	Amb	T.C. 1					
	1	20.6	8.8					
	2	20.8	10.4					
	3	20.8	11.6					
	4	20.7	12.3					
	5	20.8	12.5					
	6	20.8	13.1					
	7	20.7	13.8					
	8	20.8	13.5					
	9	20.8	13.8					
	10	20.7	13.9					
	11	20.8	13.8					
	12	20.6	14.2					
	13	20.8	13.9					
	14	20.6	14.5					
	15	20.6	14.3					
	16	20.6	14.4					
	17	20.9	14.4					
	18	20.7	14.1					
	19	20.8	14.1					
	20	20.7	14.4					
	21	20.8	14.2					
	22	20.9	14.6					
	23	20.8	14.3					
	24	20.9	14.4					
	25	20.6	14.2					
	26	20.8	14.5					
	27	20.9	14.4					
	28	20.8	14.9					
	29	20.7	14.4					
	30	21.0	14.2					
	31	20.8	14.3					
	32	20.9	14.4					
	33	20.7	14.4					
	34	20.7	14.5					
	35	20.6	14.7					
	36	20.9	14.3					
	37	21.0	14.1					
	38	20.7	14.4					
	39	20.7	14.3					
	40	20.8	14.2					
	41	20.8	14.7					
	42	20.9	14.4					
	43	20.9	14.2					
	44	20.9	14.4					

			Temperature Rise Test					
	Project #:	201462B				Spec:	MEC1-RA	
	Customer:	Samtec				Subgroup:	J	
	Product:	Current Rating				File#:	201462B18T	
	Description:	Sample ID# J-3				TC Type:	J	
	Technician:	RO				Current:	2.0 amps	
			Temperature Rise Data (C) above ambient					
	Cycle	Amb	T.C. 1					
	1	20.9	30.7					
	2	21.0	39.6					
	3	21.1	44.3					
	4	20.7	45.8					
	5	21.0	47.2					
	6	21.0	48.0					
	7	20.8	49.4					
	8	20.9	50.2					
	9	21.0	51.2					
	10	21.0	50.0					
	11	20.9	52.0					
	12	20.9	52.1					
	13	21.0	52.4					
	14	21.0	50.7					
	15	21.0	53.3					
	16	20.8	53.3					
	17	20.7	51.0					
	18	21.1	51.9					
	19	21.1	52.1					
	20	20.8	52.9					
	21	21.0	51.5					
	22	20.8	51.6					
	23	20.9	52.2					
	24	21.0	53.8					
	25	21.0	51.5					
	26	21.2	50.6					
	27	21.0	51.5					
	28	21.1	51.3					
	29	21.2	50.8					
	30	21.0	50.8					
	31	21.0	52.1					
	32	20.9	51.7					
	33	20.8	51.2					
	34	21.1	51.1					
	35	21.2	51.4					
	36	21.3	51.3					
	37	20.9	50.2					
	38	21.0	50.3					
	39	21.2	51.4					
	40	21.0	50.5					
	41	21.1	50.1					
	42	21.0	51.9					
	43	21.1	49.3					
	44	21.3	50.8					
	45	21.0	51.4					

			Temperature Rise Test					
	Project #:	201462B				Spec:	MEC1-RA	
	Customer:	Samtec				Subgroup:	J	
	Product:	Current Rating				File#:	201462B19T	
	Description:	J-4				TC Type:	J	
	Technician:	RO				Current:	0.5 amp	
			Temperature Rise Data (C) above ambient					
	Cycle	Amb	T.C. 1					
	1	21.4	4.4					
	2	21.5	4.6					
	3	21.5	4.6					
	4	21.6	4.4					
	5	21.4	4.7					
	6	21.8	4.2					
	7	21.5	4.6					
	8	21.7	4.3					
	9	21.7	4.4					
	10	21.5	4.3					
	11	21.5	4.4					
	12	21.4	4.4					
	13	21.5	4.4					
	14	21.4	4.5					
	15	21.7	4.3					
	16	21.3	4.6					
	17	21.3	4.5					
	18	21.5	4.3					
	19	21.4	4.3					
	20	21.4	4.3					
	21	21.5	4.4					
	22	21.5	4.3					
	23	21.4	4.4					
	24	21.4	4.3					
	25	21.5	4.2					
	26	21.3	4.4					
	27	21.6	4.1					
	28	21.6	4.2					
	29	21.3	4.4					
	30	21.6	4.2					

			Temperature Rise Test					
	Project #:	201462B				Spec:	MEC1-RA	
	Customer:	Samtec				Subgroup:	J	
	Product:	Current Rating				File#:	201462B20T	
	Description:	Sample ID# J-4				TC Type:	J	
	Technician:	RO				Current:	1.0 amp	
			Temperature Rise Data (C) above ambient					
	Cycle	Amb	T.C. 1					
	1	21.7	8.9					
	2	21.6	11.1					
	3	21.7	12.0					
	4	21.6	13.0					
	5	21.6	13.6					
	6	21.6	13.9					
	7	21.6	14.1					
	8	21.4	14.6					
	9	21.3	14.9					
	10	21.4	15.1					
	11	21.6	14.9					
	12	21.5	15.0					
	13	21.6	15.1					
	14	21.6	15.2					
	15	21.5	15.3					
	16	21.4	15.3					
	17	21.8	15.1					
	18	21.6	15.2					
	19	21.7	15.2					
	20	21.6	15.3					
	21	21.7	15.5					
	22	21.7	15.3					
	23	21.4	15.6					
	24	21.5	15.6					
	25	21.4	15.7					
	26	21.3	15.9					
	27	21.5	15.8					
	28	21.5	15.6					
	29	21.4	15.3					
	30	21.5	15.6					
	31	21.4	15.6					
	32	21.5	15.5					
	33	21.5	15.6					
	34	21.7	15.5					
	35	21.6	15.3					
	36	21.4	15.1					
	37	21.4	15.6					
	38	21.6	15.5					
	39	21.5	15.6					
	40	21.5	15.7					
	41	21.6	15.7					
	42	21.7	15.5					
	43	21.6	15.5					
	44	21.7	15.5					

			Temperature Rise Test					
	Project #:	201462B				Spec:	MEC1-RA	
	Customer:	Samtec				Subgroup:	J	
	Product:	Current Rating				File#:	201462B21T	
	Description:	Sample ID# J-4				TC Type:	J	
	Technician:	RO				Current:	2.0 amps	
			Temperature Rise Data (C) above ambient					
	Cycle	Amb	T.C. 1					
	1	21.7	50.8					
	2	21.6	52.8					
	3	21.7	53.6					
	4	21.8	53.3					
	5	21.8	54.1					
	6	21.7	55.3					
	7	21.6	55.5					
	8	21.6	57.2					
	9	21.7	54.9					
	10	21.7	57.6					
	11	21.7	57.5					
	12	21.6	58.3					
	13	21.7	57.2					
	14	21.7	59.1					
	15	21.6	59.0					
	16	21.7	58.2					
	17	21.8	57.8					
	18	21.7	57.7					
	19	21.7	57.1					
	20	21.8	57.0					
	21	21.6	56.4					
	22	21.7	58.4					
	23	21.7	58.1					
	24	21.7	57.3					
	25	21.6	57.4					
	26	21.8	56.8					
	27	21.8	58.2					
	28	21.7	58.2					
	29	21.9	58.4					
	30	21.6	58.8					
	31	21.6	57.5					
	32	21.7	57.6					
	33	21.7	57.6					
	34	21.7	57.7					
	35	21.7	58.8					
	36	21.7	57.8					
	37	21.8	56.8					
	38	21.8	58.3					
	39	21.7	59.3					
	40	21.7	58.3					
	41	21.7	58.1					
	42	21.7	57.6					
	43	21.8	57.9					
	44	21.9	57.7					

TEST RESULTS

GROUP Q

PROJECT NO.: 201462B SPECIFICATION: TC0134-105I-0501

PART NO.:MEC1-140-02-S-D-RA1-SL PART DESCRIPTION: 1.0 mm Edge Conn.

SAMPLE SIZE: ID# Q-1,Q-2, Q-3,Q-4 TECHNICIAN: RO

START DATE: 12/3/01 COMPLETE DATE: 12/3/01

ROOM AMBIENT: 22°C RELATIVE HUMIDITY: 30%

EQUIPMENT ID#: 666

SOLVENT RESISTANCE

PURPOSE:

To determine the ability of the plastic housing to withstand normal cleaning solvents without damage. The solvent used is considered severe. If, however, the plastic remains stable and undamaged when so exposed it is considered to be immune to all the common solutions available.

PROCEDURE:

The test was performed in accordance with EIA 364, Test Procedure 11C.

REQUIREMENTS:

There shall be no evidence of discoloration, degradation or physical damage to the plastic housing.

RESULTS:

All samples so tested met the requirements specified.