

FEBRUARY 2, 2000

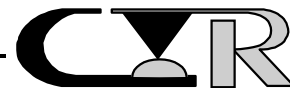
TEST REPORT #200028 REV 1.1

PULL AND SHEAR AND
ENGAGEMENT SEPARATION TEST
ROLC-140-L2-S-Q

SAMTEC



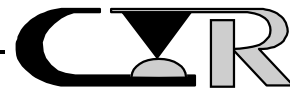
APPROVED BY: MAX PEEL
PRESIDENT AND DIRECTOR OF ADVANCED RESEARCH



Contech Research

REVISION HISTORY

DATE	REV. NO.	DESCRIPTION	ENG.
2/2/2000	1.0	Initial Issue	MP
7/31/2001	1.1	Replaced correct Part Number ROLC-140-L2-S-Q on applicable pages. Added Engagement Separation to title page.	LEW



CERTIFICATION

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

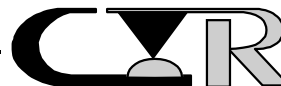
All equipment and measuring instruments used during testing were calibrated and traceable to NIST according to ISO 10012-1 and ANSI/NCSL Z540-1, as applicable.

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



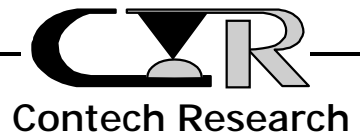
Max Peel
President And Director Of Advanced Research
Contech Research, Inc.

MP:dl/js



EQUIPMENT LIST

ID#	Next Cal	Last Cal	Equipment Name	Manufacturer	Model #	Serial #	Accuracy	Freq.Cal
38	12/01/2000	12/01/1999	Universal Test Stand	Chatillon	UTSM-SS	1030	±.05 in.	12 mon.
114	06/15/2000	06/15/1999	Digital Force Gage 2 lb	Chatillon	DFG-2	3985	±.25% Full Scale	6mon
150			Drill Press Stand	Craftsman	25921	N/A	N/A	N/A
340			X-Y Table	NE Affiliated Tech.	XY-6060	N/A	N/A	N/A
398	02/17/2000	08/17/1999	500 Pound Force Gage	Chatillon	DFI-500	11792	±1.25 LBS	6 mon.
486	05/17/2000	11/17/1999	Digital Force Gage 100 lbs.	Chatillon Co.	DFIS-100	23084	±.25lbs	6 mon.



TEST RESULTS

PROJECT NO.: 200028 SPECIFICATION: N/A

PART NO.: ROLC-140-L2-S-Q PART DESCRIPTION: Connectors
(SMT Type)

SAMPLE SIZE: 24 TECHNICIAN: SR

START DATE: 1-26-00 COMPLETE DATE: 1-26-00

ROOM AMBIENT: 22°C RELATIVE HUMIDITY: 24%

EQUIPMENT ID#: 38, 398, 486

PULL AND SHEAR TEST

Test Conditions:

No. of Samples : 3 (Pull Test), 2 (Shear Test)
Rate : 1.0 lb/second
Application : Until contacts fracture or housing
pulls free

RESULTS:

<u>Conn. ID</u>	<u>PULL TEST (Pounds)</u>	<u>SHEAR TEST (Pounds)</u>
1	100.5	- (body pulled off)
2	99.0	- (body pulled off)
3	99.5	- (body pulled off)
4	-	429.0 (contacts fractured at pad)
5	-	412.0 (contacts fractured at pad)



PROJECT NO.: 200028 SPECIFICATION: N/A

PART NO.: ROLC-140-L2-S-Q PART DESCRIPTION: Receptacle Conn.

SAMPLE SIZE: Two TECHNICIAN: SR

START DATE: 1-26-00 COMPLETE DATE: 1-26-00

ROOM AMBIENT: 22°C RELATIVE HUMIDITY: 24%

EQUIPMENT ID#: 114, 150, 340

ENGAGEMENT AND SEPARATION FORCE

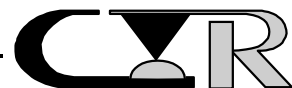
PROCEDURE:

1. The test was performed in accordance with EIA 364, TP37.
2. Test Conditions:
 - a) Test Pin Diameter : Actual Pin (new pin every five measurements)
 - b) No. of Observations : 25 per sample
 - c) Rate : 1.0 inch/minute
3. The test samples were fixtured in a manner to minimize eccentric loading and to allow self centering.

REQUIREMENTS:

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

RESULTS: see next page



RESULTS:

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

	ENGAGEMENT FORCE (Ounces)			
	<u>Avg.</u>	<u>Max.</u>	<u>Min.</u>	Std. <u>Dev.</u>
Conn. Mtd. on Board	1.9	2.4	1.6	0.2
Conn. Not Mtd. on Board	2.7	3.0	2.4	0.2

	SEPARATION FORCE (Ounces)			
	<u>Avg.</u>	<u>Max.</u>	<u>Min.</u>	Std. <u>Dev.</u>
Conn. Mtd. on Board	1.0	1.3	0.8	0.1
Conn. Not Mtd. on Board	1.3	1.6	1.0	0.2

2. See data files 1 and 3 individual data points.



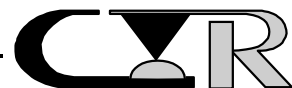
ENGAGEMENT-SEPARATION F.

Project : 200028
 Customer : SAMTEC
 Product : ROLC-140-L2-S-Q
 Description: CONN.MOUTED ON BOARD
 Equipment: 340,114,150
 ID.# 1 and 2

Spec: N/A
 Subgroup : N/A
 File #: 1
 Tech: S-R

Actual values
 UNITS : OZ

Temp °C	22	
R.H. %	24	
Date :	01/26/2000	
Posi ID	IF	WF
1	1.9	0.8
2	2.1	1.1
3	1.6	0.8
4	1.8	0.8
5	1.6	1.1
6	1.6	0.8
7	1.8	0.8
8	1.9	1.1
9	2.1	1.0
10	1.6	1.0
11	2.1	1.0
12	2.1	1.1
13	1.6	0.8
14	1.9	1.0
15	1.6	1.0
16	2.1	1.1
17	2.2	1.1
18	2.1	1.1
19	2.1	1.0
20	1.9	1.0
21	2.2	1.1
22	2.2	1.1
23	2.4	1.3
24	1.8	0.8
25	1.9	1.0
MAX	2.4	1.3
MIN	1.6	0.8
AVG	1.9	1.0
STD	0.2	0.1



ENGAGEMENT-SEPARATION F.

Project :	200028	Spec:	N/A
Customer :	SAMTEC	Subgroup :	N/A
Product :	ROLC-140-L2-S-Q	File #:	3
Description:	CONN.UNMOUNTED ON BOARD	Tech:	S-R
Equipment:	340,114,150		
ID.# 1 and 2			

Actual values
UNITS : OZ

Temp 'C	22	
R.H. %	24	
Date :	01/26/2000	
Posi ID		
	IF	WF
1	2.7	1.3
2	3.0	1.6
3	2.9	1.4
4	2.7	1.3
5	3.0	1.4
6	2.7	1.1
7	2.6	1.1
8	2.6	1.3
9	3.0	1.6
10	2.4	1.1
11	2.6	1.1
12	2.4	1.1
13	2.4	1.0
14	2.4	1.0
15	2.9	1.3
16	3.0	1.6
17	2.9	1.4
18	3.0	1.6
19	2.4	1.1
20	2.9	1.3
21	2.6	1.1
22	2.7	1.4
23	2.9	1.3
24	2.6	1.1
25	2.4	1.3
MAX	3.0	1.6
MIN	2.4	1.0
AVG	2.7	1.3
STD	0.2	0.2

