

DECEMBER 14, 1998

TEST REPORT #98606

CURRENT CARRYING CAPACITY
SOLC/TOLC

SAMTEC



APPROVED BY: MAX PEEL
PRESIDENT AND DIRECTOR OF ADVANCED RESEARCH
CONTECH RESEARCH, INC.



Contech Research

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:js



Contech Research

EQUIPMENT LIST

December 03, 1998

ID#	Next Cal	Last Cal	Equipment Name	Manufacturer	Model #	Serial #	Accuracy	Freq. Cal
197	5/10/99	11/10/98	Digital Multimeter	Hewlett Packard	3478A	2301A12498	See Manual	6 mon.
251			Computer System	Packard Bell	286	105670	N/A	N/A
259			Thermocouple Scanner Card	Keithley Instr.	7057A	457250	N/A	Each Test
440	3/20/99	3/20/97	Scanner Main Frame	Keithley Co.	706	540957	See Manual	24 mon.
689	4/22/99	4/22/98	D.C. Power Supply	Hewlett Packard	6033A	2548A01848	See Cal.Cert.	12mon.

TEST RESULTS



Contech Research

PROJECT NO.: 98606 SPECIFICATION: EIA 364, TP70

PART NO.: SOLC/TOLC-125-02-L-Q PART DESCRIPTION: Connectors

SAMPLE SIZE: Three TECHNICIAN: SR

START DATE: 11-18-98 COMPLETE DATE: 11-25-98

ROOM AMBIENT: 22°C RELATIVE HUMIDITY: 38%

EQUIPMENT ID#: 197, 251, 259, 440, 689

CURRENT CARRYING CAPACITY

PROCEDURE:

1. The test was performed in accordance with 364, Test Procedure 70.
2. Three cases were evaluated as follows:
 - Case #1 : Nine contacts were prepared to carry the test current simultaneously. The contacts were in a 3 x 3 grid with the middle contact monitored for T-rise.
 - Case #2 : Five contacts were prepared to carry the test current simultaneously. The contacts were in a 3 x 3 grid pattern with the middle contact monitored for T-Rise. Contacts adjacent (North, South, East and West) of the monitored contact were not energized.
 - Case #3 : Five contacts were prepared to carry the test current simultaneously. The contacts were in a 3 x 3 grid pattern with the middle contact monitored for T-Rise. Contacts diagonally adjacent were not energized.
3. The thermocouples were attached to a data acquisition/scanner system which in turn was interconnected to a plotter.
4. 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.



Contech Research

PROCEDURE: Continued

5. The test specimen was placed in a chamber or room which prevents air currents and the like, influencing the observations.
6. Test Conditions:
 - a) Current Levels : 100ma, 500ma, 1.0 and 2.0 amps
 - b) Derating Curve : Yes
7. The current level indicated was applied until temperature stabilization was reached.
8. Temperature stabilization is defined as no change in T-Rise greater than $\pm 1^{\circ}\text{C}$ over a 15 minute interval.

REQUIREMENTS:

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

RESULTS:

The following is a summary of the data observed:

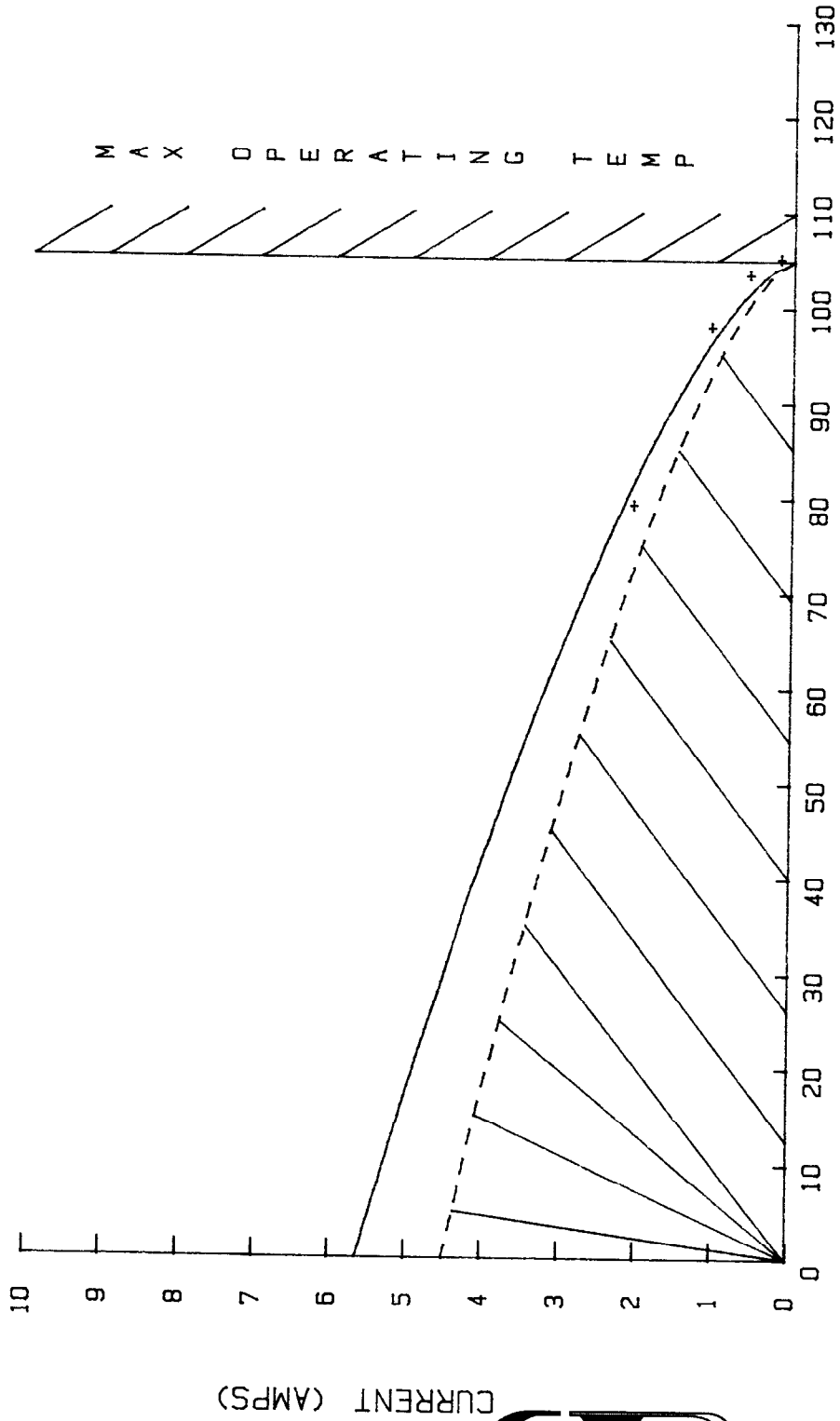
	<u>TEMPERATURE RISE ($^{\circ}\text{C}$)</u>		
<u>Current Level</u>	<u>CASE 1</u>	<u>CASE 2</u>	<u>CASE 3</u>
100ma	+0.2	+0.2	+0.1
500ma	+1.9	+1.7	+1.2
1.0 amp	+7.4	+6.0	+4.1
2.0 amp	+26.1	+19.6	+16.4



CURRENT CARRYING CAPACITY

SAMTEC
CASE 1

— Base curve. - - - - Derated curve. //// Operating range.



Project #: 98606 AMBIENT TEMPERATURE (DEGREES C)

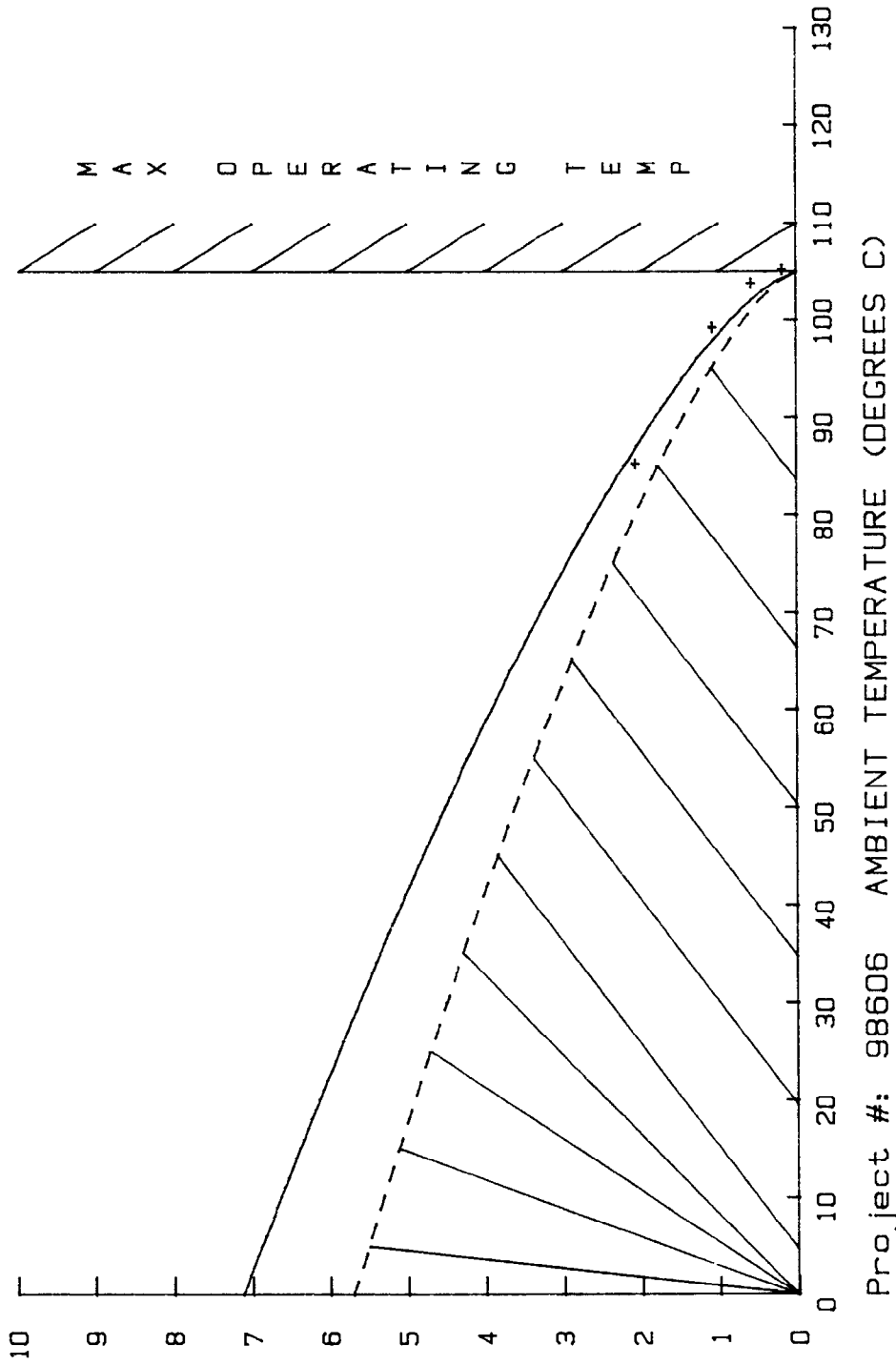


Contech Research

CURRENT CARRYING CAPACITY

SAMTEC
CASE 2

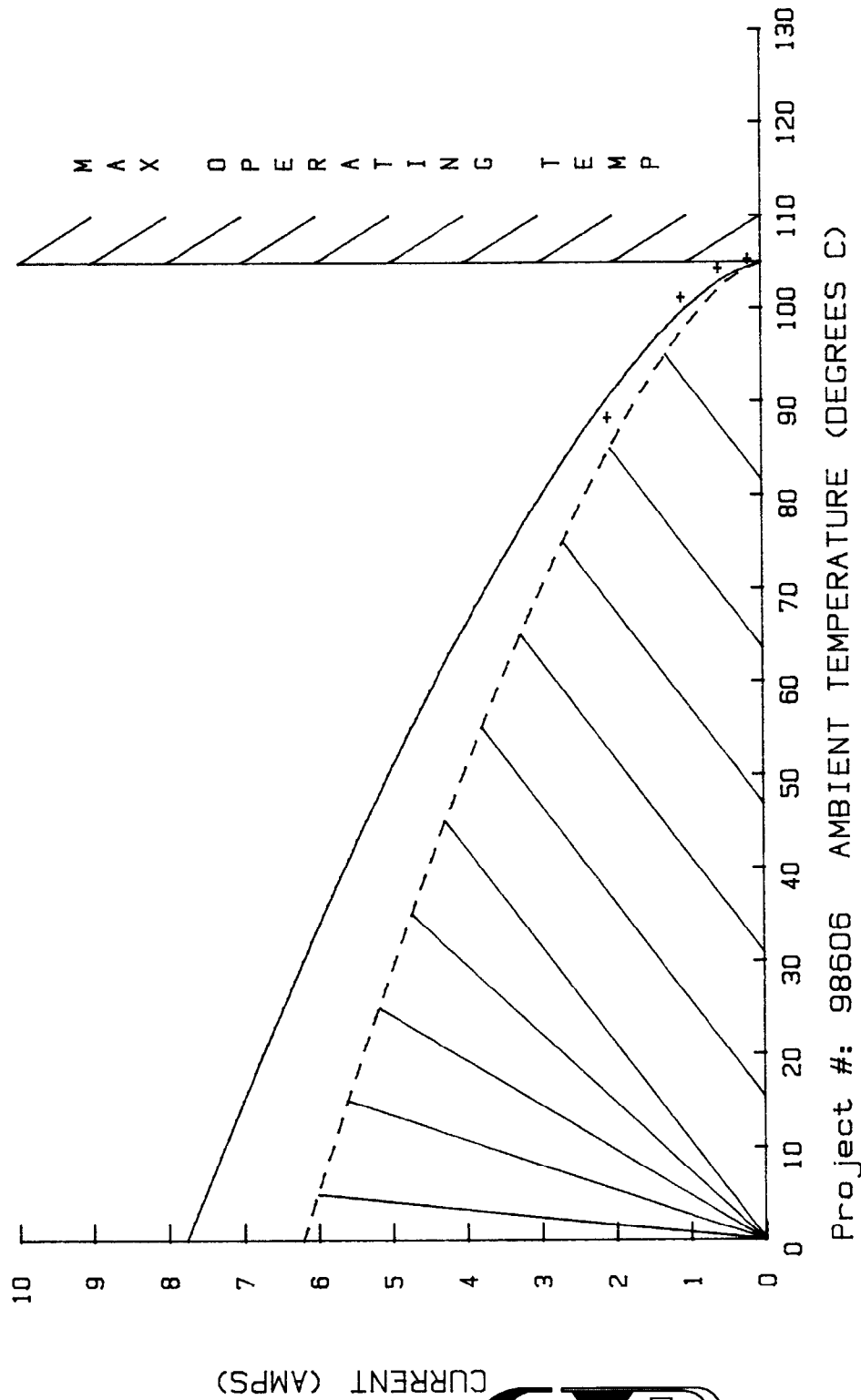
— Base curve. - - - - - Derated curve. /// Operating range.



CURRENT CARRYING CAPACITY

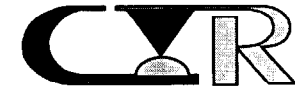
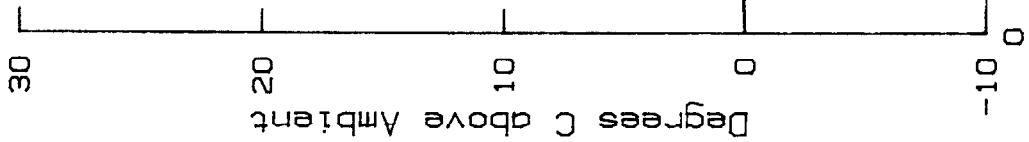
SAMTEC
CASE 3

— Base curve. - - - - Derated curve. /// Operating range.



Project #: 98606 AMBIENT TEMPERATURE (DEGREES C)

SAMTEC
SOLC AND TOLC
TEST CURRENT 0.1 AMPS
CASE1/CASE2/CASE3



Contech Research

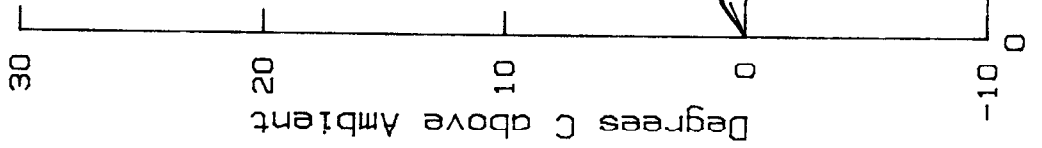
Ambient 22.4 C

Project #: 98606
File #: 01

TIME (in minutes)
Contech Research Inc

Tech: S-R
Date: 18-Nov-98

SAMTEC
SOLC AND TOLC
TEST CURRENT 0.50 AMPS
CASE1/CASE2/CASE3



Contech Research

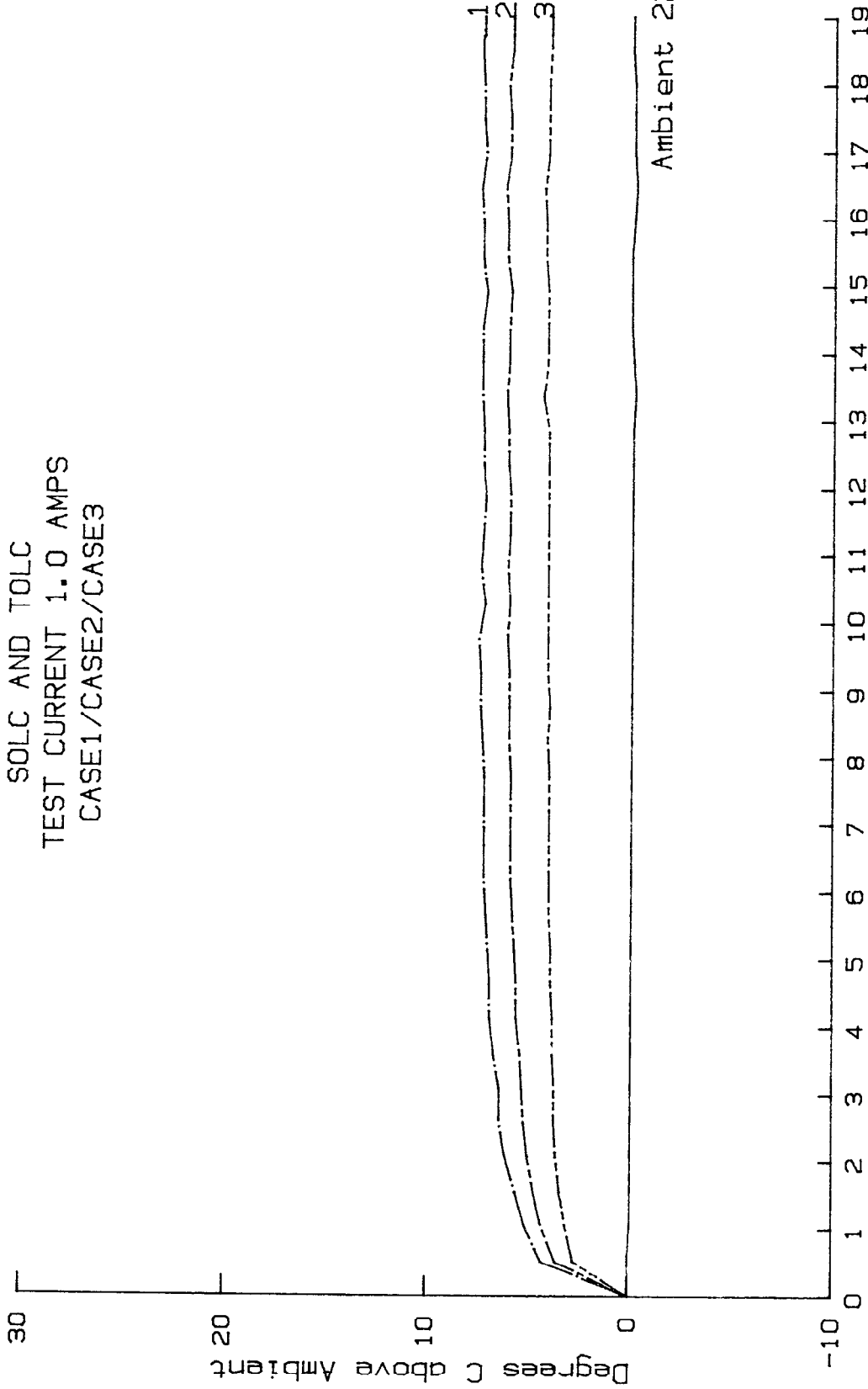
Project #: 98606
File #: 02

TIME (in minutes)
Contech Research Inc

Tech: S-R
Date: 18-Nov-98

Ambient 22.3 C

SANTEC
SOLC AND TOLC
TEST CURRENT 1.0 AMPS
CASE1/CASE2/CASE3



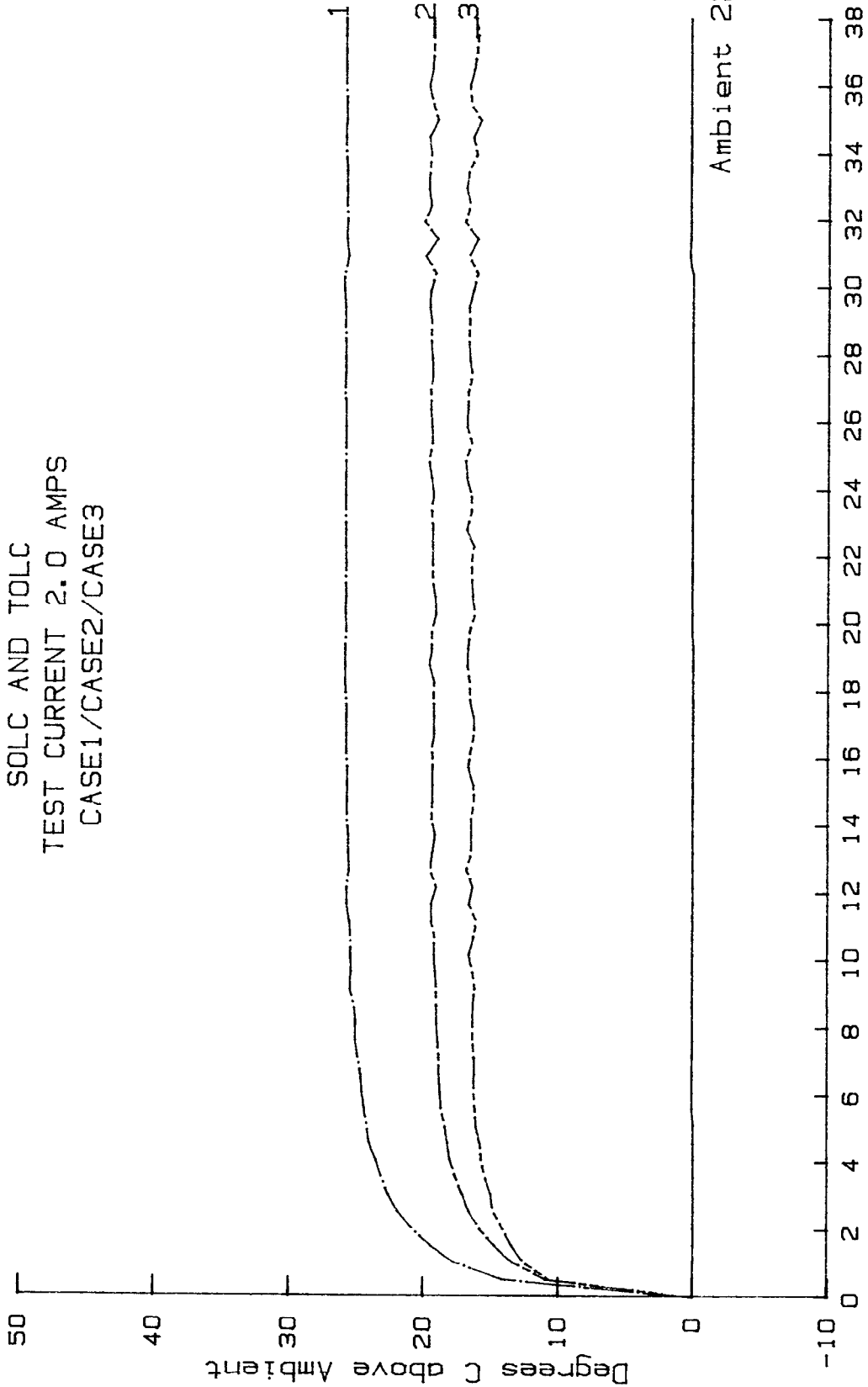
Ambient 22.5 C

Project #: 98606
File #: 03
TIME (in minutes)
Contech Research Inc
Tech: S-R
Date: 18-Nov-98



Contech Research

SAMTEC
SOLC AND TOLC
TEST CURRENT 2.0 AMPS
CASE1/CASE2/CASE3



Project #: 98606 TIME (in minutes) Tech: S-R
File #: 04 Contech Research Inc Date: 25-Nov-98

Ambient 22 C

TEMPERATURE RISE TEST

Project #: 98606
Customer: SAMTEC
Product: SOLC AND TOLC
Description: CASE1/CASE2/CASE3
Technician: S-R

Spec: N/A
SubGroup: N/A
File #: 860601.TRD
Thermocouple type : J
Test current: 0.1

Delta values

Temperature Rise Data (C)				
CYCLE	Amb	1	2	3
1	22.5	+0.1	+0.1	+0.0
2	22.4	+0.2	+0.2	+0.1
3	22.4	+0.2	+0.2	+0.1
4	22.4	+0.2	+0.2	+0.1
5	22.3	+0.3	+0.3	+0.2
6	22.3	+0.3	+0.3	+0.2
7	22.4	+0.2	+0.2	+0.1
8	22.4	+0.2	+0.2	+0.1
9	22.3	+0.3	+0.3	+0.2
10	22.4	+0.1	+0.2	+0.1
11	22.3	+0.2	+0.3	+0.2
12	22.3	+0.3	+0.3	+0.2
13	22.4	+0.2	+0.2	+0.1
14	22.3	+0.3	+0.3	+0.2
15	22.3	+0.3	+0.3	+0.2
16	22.3	+0.2	+0.3	+0.2
17	22.3	+0.2	+0.3	+0.2
18	22.3	+0.3	+0.3	+0.2
19	22.3	+0.3	+0.3	+0.2
20	22.3	+0.2	+0.3	+0.2
21	22.3	+0.2	+0.3	+0.2
22	22.3	+0.3	+0.3	+0.2
23	22.3	+0.3	+0.3	+0.2
24	22.3	+0.3	+0.3	+0.2
25	22.3	+0.3	+0.3	+0.2
26	22.3	+0.3	+0.3	+0.2
27	22.3	+0.3	+0.3	+0.2
28	22.3	+0.3	+0.3	+0.2
29	22.4	+0.1	+0.2	+0.1
30	22.4	+0.2	+0.2	+0.1

TEMPERATURE RISE TEST

Project #: 98606
Customer: SAMTEC
Product: SOLC AND TOLC
Description: CASE1/CASE2/CASE3
Technician: S-R

Spec: N/A
SubGroup: N/A
File #: 860602.TRD
Thermocouple type : J
Test current: 0.50

Delta values

Temperature Rise Data (C)				
CYCLE	Amb	1	2	3
1	22.5	+1.0	+0.9	+0.6
2	22.3	+1.4	+1.2	+0.9
3	22.4	+1.4	+1.2	+0.9
4	22.4	+1.5	+1.3	+0.9
5	22.4	+1.6	+1.3	+0.9
6	22.4	+1.6	+1.4	+0.9
7	22.4	+1.6	+1.4	+0.9
8	22.4	+1.7	+1.4	+1.0
9	22.4	+1.7	+1.4	+1.0
10	22.4	+1.7	+1.5	+1.0
11	22.4	+1.7	+1.5	+1.0
12	22.4	+1.7	+1.5	+1.0
13	22.4	+1.8	+1.5	+1.0
14	22.4	+1.7	+1.5	+1.0
15	22.4	+1.8	+1.5	+1.0
16	22.4	+1.8	+1.5	+1.0
17	22.4	+1.8	+1.5	+1.0
18	22.4	+1.9	+1.6	+1.0
19	22.4	+1.9	+1.5	+1.0
20	22.4	+1.8	+1.6	+1.0
21	22.4	+1.9	+1.6	+1.0
22	22.4	+1.9	+1.6	+1.0
23	22.4	+1.9	+1.6	+1.0
24	22.3	+2.0	+1.7	+1.1
25	22.4	+1.9	+1.6	+1.0
26	22.4	+1.9	+1.6	+1.0
27	22.4	+1.9	+1.6	+1.1
28	22.4	+1.8	+1.6	+1.1
29	22.4	+1.8	+1.6	+1.0
30	22.4	+1.9	+1.6	+1.0
31	22.4	+1.9	+1.6	+1.0
32	22.4	+1.8	+1.6	+1.1
33	22.4	+1.9	+1.6	+1.1
34	22.3	+2.0	+1.7	+1.1
35	22.3	+2.0	+1.7	+1.1
36	22.4	+1.9	+1.6	+1.0
37	22.4	+1.9	+1.6	+1.0
38	22.4	+1.9	+1.6	+1.1
39	22.4	+1.9	+1.6	+1.1
40	22.3	+2.0	+1.7	+1.1

Project #: 98606
Customer : SAMTEC

File:860602.TRD

Temperature Rise Data (C)

CYCLE	Amb	Delta values		
		1	2	3
41	22.4	+1.8	+1.6	+1.1
42	22.4	+1.9	+1.6	+1.1
43	22.3	+2.0	+1.7	+1.2
44	22.4	+1.9	+1.6	+1.1
45	22.4	+1.9	+1.6	+1.1
46	22.4	+1.9	+1.6	+1.1
47	22.3	+1.9	+1.7	+1.2
48	22.3	+1.9	+1.7	+1.2

TEMPERATURE RISE TEST

Project #: 98606
Customer: SANTEC
Product: SOLC AND TOLC
Description: CASE1/CASE2/CASE3
Technician: S-R

Spec: N/A
SubGroup: N/A
File #: 860603.TRD
Thermocouple type : J
Test current: 1.0

Delta values

Temperature Rise Data (C)				
CYCLE	Amb	1	2	3
1	22.5	+4.3	+3.6	+2.7
2	22.4	+5.1	+4.3	+3.1
3	22.4	+5.6	+4.7	+3.4
4	22.4	+6.1	+5.0	+3.6
5	22.4	+6.4	+5.2	+3.7
6	22.4	+6.4	+5.3	+3.7
7	22.4	+6.7	+5.4	+3.8
8	22.4	+6.9	+5.6	+3.8
9	22.4	+6.9	+5.6	+3.9
10	22.4	+7.0	+5.7	+3.9
11	22.4	+7.1	+5.8	+4.0
12	22.4	+7.2	+5.9	+4.0
13	22.4	+7.2	+5.9	+4.0
14	22.4	+7.2	+5.9	+4.0
15	22.4	+7.2	+5.9	+4.0
16	22.4	+7.3	+6.0	+4.1
17	22.4	+7.4	+6.0	+4.0
18	22.4	+7.4	+6.0	+4.1
19	22.4	+7.5	+6.1	+4.1
20	22.4	+7.2	+6.0	+4.1
21	22.4	+7.4	+6.1	+4.1
22	22.4	+7.3	+6.0	+4.1
23	22.4	+7.2	+6.0	+4.1
24	22.4	+7.3	+6.1	+4.1
25	22.4	+7.3	+6.1	+4.1
26	22.3	+7.4	+6.2	+4.4
27	22.4	+7.4	+6.1	+4.2
28	22.5	+7.4	+6.1	+4.2
29	22.5	+7.2	+6.0	+4.2
30	22.5	+7.4	+6.2	+4.3
31	22.4	+7.4	+6.2	+4.3
32	22.3	+7.5	+6.3	+4.4
33	22.4	+7.3	+6.1	+4.2
34	22.4	+7.4	+6.1	+4.2
35	22.4	+7.4	+6.2	+4.2
36	22.5	+7.5	+6.0	+4.1
37	22.5	+7.4	+6.0	+4.1

TEMPERATURE RISE TEST

Project #: 98606
Customer: SAMTEC
Product: SOLC AND TOLC
Description: CASE1/CASE2/CASE3
Technician: S-R

Spec: N/A
SubGroup: N/A
File #: 860604.TRD
Thermocouple type : J
Test current: 2.0

Delta values

Temperature Rise Data (C)				
CYCLE	Amb	1	2	3
1	21.7	+14.1	+10.9	+10.7
2	21.6	+17.6	+13.3	+12.5
3	21.6	+19.4	+14.7	+13.4
4	21.7	+20.8	+15.8	+14.1
5	21.6	+21.9	+16.6	+14.8
6	21.7	+22.6	+17.1	+15.0
7	21.7	+23.1	+17.6	+15.4
8	21.7	+23.5	+18.0	+15.7
9	21.7	+24.0	+18.2	+15.8
10	21.7	+24.2	+18.4	+16.1
11	21.8	+24.4	+18.7	+16.2
12	21.8	+24.6	+18.8	+16.3
13	21.8	+24.7	+18.9	+16.2
14	21.8	+24.9	+18.9	+16.3
15	21.7	+25.1	+19.0	+16.4
16	21.8	+25.1	+19.1	+16.4
17	21.8	+25.2	+19.1	+16.3
18	21.7	+25.5	+19.1	+16.2
19	21.8	+25.4	+19.2	+16.4
20	21.8	+25.5	+19.3	+16.7
21	21.8	+25.5	+19.2	+16.3
22	21.8	+25.6	+19.5	+16.1
23	21.7	+25.8	+19.5	+16.7
24	21.8	+25.8	+19.1	+16.4
25	21.8	+25.6	+19.6	+16.9
26	21.8	+25.7	+19.4	+16.5
27	21.8	+25.7	+19.2	+16.5
28	21.8	+25.8	+19.5	+16.5
29	21.8	+25.8	+19.4	+16.3
30	21.8	+25.8	+19.4	+16.4
31	21.8	+25.8	+19.4	+16.8
32	21.8	+25.9	+19.5	+16.6
33	21.8	+25.9	+19.3	+16.3
34	21.8	+25.9	+19.3	+16.4
35	21.8	+25.9	+19.4	+16.7
36	21.8	+26.0	+19.3	+16.7
37	21.8	+26.0	+19.7	+16.9
38	21.8	+26.0	+19.5	+16.8
39	21.9	+25.9	+19.5	+16.7
40	21.8	+26.0	+19.2	+16.3

Project #: 98606

File:860604.TRD

Customer : SAMTEC

Temperature Rise Data (C)

CYCLE	Amb	Delta values		
		1	2	3
41	21.9	+25.9	+19.3	+16.5
42	21.8	+26.0	+19.5	+16.6
43	21.9	+25.9	+19.5	+16.6
44	21.8	+26.0	+19.5	+16.4
45	21.9	+26.0	+19.5	+17.0
46	21.9	+26.0	+19.6	+16.6
47	21.9	+26.0	+19.4	+16.6
48	21.9	+26.0	+19.6	+17.0
49	21.9	+26.0	+19.8	+17.1
50	21.9	+26.0	+19.5	+16.6
51	21.9	+26.0	+19.6	+17.0
52	21.9	+26.0	+19.7	+16.9
53	21.9	+26.1	+19.7	+16.9
54	21.9	+26.0	+19.5	+16.6
55	21.9	+26.0	+19.6	+16.8
56	21.9	+26.0	+19.7	+16.9
57	21.9	+26.1	+19.6	+16.8
58	21.9	+26.1	+19.8	+16.9
59	21.8	+26.2	+19.7	+16.5
60	21.9	+26.1	+19.3	+16.2
61	22.1	+25.8	+20.1	+16.9
62	22.0	+26.0	+19.2	+16.2
63	22.0	+25.9	+20.2	+17.2
64	22.0	+26.0	+19.7	+16.8
65	22.0	+26.0	+19.9	+17.1
66	22.0	+26.0	+19.8	+16.9
67	22.0	+26.1	+19.7	+16.3
68	22.0	+26.1	+19.9	+16.6
69	22.0	+26.0	+19.2	+16.0
70	22.0	+26.0	+19.6	+16.8
71	22.0	+26.1	+19.9	+16.9
72	22.0	+26.1	+19.6	+16.5
73	22.0	+26.1	+19.5	+16.3
74	22.0	+26.1	+19.5	+16.2
75	22.0	+26.1	+19.6	+16.4