



# 宜特科技股份有限公司



## Integrated Service Technology Inc.

No.:T1091

TEL : (02) 2656-2289

TRA No: 9400277-E

FAX : (02) 2656-2285

Date : 02/02/2005

Email: [esd@isti.com.tw](mailto:esd@isti.com.tw)

Test Site Address: 1F, No. 9, Alley 2, Lane 35, Jihu Rd., Neihu District, Taipei City, Taiwan, R.O.C.

### 可靠度測試報告

### RELIABILITY TEST REPORT

<b>Applicant/Department:</b> Avant Electronics Corporation	
<b>Address</b> : 6F , No.56 , Ln.258 Jui Kuang Rd. , Nei Hu District , Taipei , Taiwan	
<b>Product</b> : SBN1661G	
<b>Testing Item</b> : LATCH-UP	<b>Package/Pin Count:</b> QFP - 100
<b>Application Date</b> : 02/01/2005	<b>Date Finished</b> : 02/10/2005
<b>Test Condition</b> : JEDEC STANDARD NO.78 MARCH 1997	
<b>Failure Criteria</b>	< 25mA 10mA + I normal
	> 25mA 1.4 x I normal
<b>Trigger Current</b> : 25mA~200mA(±) , Step : 25mA(±)	
<b>V<sub>supply</sub> OVERVOLTAGE TEST</b> :5V~7.5V(+) , Step : 0.5V(+)	

#### Testing Item

Random LATCH-UP Test.....P2

#### Remark:

Ground pins are not latch-up tested.

The positive or negative current pulse (I-Test) or voltage pulse (V<sub>supply</sub> overvoltage test) applied to any pin under test in an attempt to induce latch-up.

This report refers only to the specimen submitted to testing, and be invalid as separately used.

**Testing Engineer:** Jay Fang

**Report Review:** Kosa Liu

**Laboratory Head:** Frank Wu



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### LATCH-UP Testing Report

#### Test Equipment:

KEYTEK ZAPMASTER

#### Environmental Condition of Laboratory:

Temperature: 25°C±5°C

Humidity: 55%±10% RH

#### Test Condition:

POSITIVE I

NEGATIVE I

Vsupply OVERVOLTAGE TEST

#### Test Result:

TRIGGER MODEL	TEST PIN	SAMPLE SIZE	TRIGGER SOURCE INDUCE LATCH-UP	IT CLASS: <u>3</u>
+IT	I/O	3	PASS	<b>NOTE:</b> CLASS1: +IT:0mA~39mA -IT:0mA~ -39mA CLASS2: +IT: 40mA~+99mA -IT: -40mA~-99mA CLASS3: +IT:>100mA -IT:<-100mA
	I/P		PASS	
	O/P		PASS	
-IT	I/O	3	PASS	
	I/P		PASS	
	O/P		PASS	
V <sub>supply</sub> OVER VOLTAGE TEST	VCC	3	PASS	

I/O:79-86

I/P:73-77,88-89,91-95

O/P:1-72,96-100

VDD:87  
VSS:78,90

POSITIVE I									
(UNIT: mA)									
Test Pin	TRIGGER CURRENT	#1	#2	#3	Test Pin	TRIGGER CURRENT	#1	#2	#3
1		PASS	PASS	PASS	26		PASS	PASS	PASS
2		PASS	PASS	PASS	27		PASS	PASS	PASS
3		PASS	PASS	PASS	28		PASS	PASS	PASS
4		PASS	PASS	PASS	29		PASS	PASS	PASS
5		PASS	PASS	PASS	30		PASS	PASS	PASS
6		PASS	PASS	PASS	31		PASS	PASS	PASS
7		PASS	PASS	PASS	32		PASS	PASS	PASS
8		PASS	PASS	PASS	33		PASS	PASS	PASS
9		PASS	PASS	PASS	34		PASS	PASS	PASS
10		PASS	PASS	PASS	35		PASS	PASS	PASS
11		PASS	PASS	PASS	36		PASS	PASS	PASS
12		PASS	PASS	PASS	37		PASS	PASS	PASS
13		PASS	PASS	PASS	38		PASS	PASS	PASS
14		PASS	PASS	PASS	39		PASS	PASS	PASS
15		PASS	PASS	PASS	40		PASS	PASS	PASS
16		PASS	PASS	PASS	41		PASS	PASS	PASS
17		PASS	PASS	PASS	42		PASS	PASS	PASS
18		PASS	PASS	PASS	43		PASS	PASS	PASS
19		PASS	PASS	PASS	44		PASS	PASS	PASS
20		PASS	PASS	PASS	45		PASS	PASS	PASS
21		PASS	PASS	PASS	46		PASS	PASS	PASS
22		PASS	PASS	PASS	47		PASS	PASS	PASS
23		PASS	PASS	PASS	48		PASS	PASS	PASS
24		PASS	PASS	PASS	49		PASS	PASS	PASS
25		PASS	PASS	PASS	50		PASS	PASS	PASS

POSITIVE I									
(UNIT: mA)									
Test Pin	TRIGGER CURRENT	#1	#2	#3	Test Pin	TRIGGER CURRENT	#1	#2	#3
51		PASS	PASS	PASS	75		PASS	PASS	PASS
52		PASS	PASS	PASS	76		PASS	PASS	PASS
53		PASS	PASS	PASS	77		PASS	PASS	PASS
54		PASS	PASS	PASS	79		PASS	PASS	PASS
55		PASS	PASS	PASS	80		PASS	PASS	PASS
56		PASS	PASS	PASS	81		PASS	PASS	PASS
57		PASS	PASS	PASS	82		PASS	PASS	PASS
58		PASS	PASS	PASS	83		PASS	PASS	PASS
59		PASS	PASS	PASS	84		PASS	PASS	PASS
60		PASS	PASS	PASS	85		PASS	PASS	PASS
61		PASS	PASS	PASS	86		PASS	PASS	PASS
62		PASS	PASS	PASS	88		PASS	PASS	PASS
63		PASS	PASS	PASS	89		PASS	PASS	PASS
64		PASS	PASS	PASS	91		PASS	PASS	PASS
65		PASS	PASS	PASS	92		PASS	PASS	PASS
66		PASS	PASS	PASS	93		PASS	PASS	PASS
67		PASS	PASS	PASS	94		PASS	PASS	PASS
68		PASS	PASS	PASS	95		PASS	PASS	PASS
69		PASS	PASS	PASS	96		PASS	PASS	PASS
70		PASS	PASS	PASS	97		PASS	PASS	PASS
71		PASS	PASS	PASS	98		PASS	PASS	PASS
72		PASS	PASS	PASS	99		PASS	PASS	PASS
73		PASS	PASS	PASS	100		PASS	PASS	PASS
74		PASS	PASS	PASS					

NEGATIVE I								
(UNIT: mA)								
Test TRIGGER Pin CURRENT	#1	#2	#3	Test TRIGGER Pin CURRENT	#1	#2	#3	
1	PASS	PASS	PASS	26	PASS	PASS	PASS	
2	PASS	PASS	PASS	27	PASS	PASS	PASS	
3	PASS	PASS	PASS	28	PASS	PASS	PASS	
4	PASS	PASS	PASS	29	PASS	PASS	PASS	
5	PASS	PASS	PASS	30	PASS	PASS	PASS	
6	PASS	PASS	PASS	31	PASS	PASS	PASS	
7	PASS	PASS	PASS	32	PASS	PASS	PASS	
8	PASS	PASS	PASS	33	PASS	PASS	PASS	
9	PASS	PASS	PASS	34	PASS	PASS	PASS	
10	PASS	PASS	PASS	35	PASS	PASS	PASS	
11	PASS	PASS	PASS	36	PASS	PASS	PASS	
12	PASS	PASS	PASS	37	PASS	PASS	PASS	
13	PASS	PASS	PASS	38	PASS	PASS	PASS	
14	PASS	PASS	PASS	39	PASS	PASS	PASS	
15	PASS	PASS	PASS	40	PASS	PASS	PASS	
16	PASS	PASS	PASS	41	PASS	PASS	PASS	
17	PASS	PASS	PASS	42	PASS	PASS	PASS	
18	PASS	PASS	PASS	43	PASS	PASS	PASS	
19	PASS	PASS	PASS	44	PASS	PASS	PASS	
20	PASS	PASS	PASS	45	PASS	PASS	PASS	
21	PASS	PASS	PASS	46	PASS	PASS	PASS	
22	PASS	PASS	PASS	47	PASS	PASS	PASS	
23	PASS	PASS	PASS	48	PASS	PASS	PASS	
24	PASS	PASS	PASS	49	PASS	PASS	PASS	
25	PASS	PASS	PASS	50	PASS	PASS	PASS	

NEGATIVE I								
				(UNIT: mA)				
Test TRIGGER Pin CURRENT	#1	#2	#3	Test TRIGGER Pin CURRENT	#1	#2	#3	
51	PASS	PASS	PASS	75	PASS	PASS	PASS	
52	PASS	PASS	PASS	76	PASS	PASS	PASS	
53	PASS	PASS	PASS	77	PASS	PASS	PASS	
54	PASS	PASS	PASS	79	PASS	PASS	PASS	
55	PASS	PASS	PASS	80	PASS	PASS	PASS	
56	PASS	PASS	PASS	81	PASS	PASS	PASS	
57	PASS	PASS	PASS	82	PASS	PASS	PASS	
58	PASS	PASS	PASS	83	PASS	PASS	PASS	
59	PASS	PASS	PASS	84	PASS	PASS	PASS	
60	PASS	PASS	PASS	85	PASS	PASS	PASS	
61	PASS	PASS	PASS	86	PASS	PASS	PASS	
62	PASS	PASS	PASS	88	PASS	PASS	PASS	
63	PASS	PASS	PASS	89	PASS	PASS	PASS	
64	PASS	PASS	PASS	91	PASS	PASS	PASS	
65	PASS	PASS	PASS	92	PASS	PASS	PASS	
66	PASS	PASS	PASS	93	PASS	PASS	PASS	
67	PASS	PASS	PASS	94	PASS	PASS	PASS	
68	PASS	PASS	PASS	95	PASS	PASS	PASS	
69	PASS	PASS	PASS	96	PASS	PASS	PASS	
70	PASS	PASS	PASS	97	PASS	PASS	PASS	
71	PASS	PASS	PASS	98	PASS	PASS	PASS	
72	PASS	PASS	PASS	99	PASS	PASS	PASS	
73	PASS	PASS	PASS	100	PASS	PASS	PASS	
74	PASS	PASS	PASS					

$V_{\text{supply}}$ OVERVOLTAGE TEST (UNIT: V)				
Test pin	TRIGGER VOLTAGE	#1	#2	#3
	87	PASS	PASS	PASS