



宜特科技股份有限公司



No.: T1091

Integrated Service Technology Inc.

TEL : (03) 578-2266

RA No: 9303151-E

FAX : (03) 578-2299

Date : 12/01/2004

Email: esd@isti.com.tw

Test Site Address: 1F, No.22, Pu-ding Rd., Hsin-chu, Taiwan, R.O.C.

可靠度測試報告

RELIABILITY TEST REPORT

Applicant/Department: Avant Electronics Corporation	
Address	: 6F , No.56 , Ln.258 Jui Kuang Rd. , Nei Hu District , Taipei , Taiwan
Product	: SBN6400G
Testing Item	: ESD-HBM Package/Pin Count: QFP / 100
Application Date	: 11/30/2004 Date Finished : 12/01/2004
Test Equipment	: KEYTEK ZAPMASTER
Test Condition	: MIL-STD-883D Method 3015.7
Failure Criteria	: For V Change at 1 μ A \pm 30%
Test Voltage	: 500V ~ 4000V (\pm), Step : 500V (\pm)

Testing Item

Random ESD-HBM Test.....P2

Remark:

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

Testing Engineer: **Jan Fang**

Report Review: **Kosa Liu**

Laboratory Head: **Frank Wu**



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ESD-HBM Testing Report

Test Equipment:

KEYTEK ZAPMASTER

Environmental Condition of Laboratory:

Temperature: 25°C±5°C

Humidity: 55%±10% R

Test Condition:

TEST-VSS (+)

TEST-VSS (-)

TEST-VDD(+)

TEST-VDD (-)

VDD-VSS(+)

VDD-VSS(-)

Test Result			
MODEL: HBM	ESD SENSITIVITY PASS : <u>+4000 V</u>		V CLASS : <u>3</u>
PIN COMBINATION	SAMPLE SIZE	PASSED VOLTS	NOTE: FOR MIL-STD CLASS1: 0V-1999V CLASS2: 2000V-3999V CLASS3: 4000V-TO ABOVE
VSS (+)	3	+4000 V	
VSS (-)	3	- 4000 V	
VCC (+)	3	+4000 V	
VCC (-)	3	- 4000 V	
VCC – VSS (+)	3	+4000 V	
VCC – VSS (-)	3	- 4000 V	

VCC: 28

VSS: 23,40,58

I/P:24-27,30-32,37,39,42,49,54-57

I/O:29,33,35,47,50,52

O/P:1-22,43,44,46,59-100

VEE:23,58

NC : 34,36,38,41,45,48,51,53

VSS (+) (UNIT: V)									
Test Pin	FAIL VOLTAGE	#1	#2	#3	Test Pin	FAIL VOLTAGE	#1	#2	#3
1		PASS	PASS	PASS	26		PASS	PASS	PASS
2		PASS	PASS	PASS	27		PASS	PASS	PASS
3		PASS	PASS	PASS	28		VCC	VCC	VCC
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		NC	NC	NC
10		PASS	PASS	PASS	35		PASS	PASS	PASS
11		PASS	PASS	PASS	36		NC	NC	NC
12		PASS	PASS	PASS	37		PASS	PASS	PASS
13		PASS	PASS	PASS	38		NC	NC	NC
14		PASS	PASS	PASS	39		PASS	PASS	PASS
15		PASS	PASS	PASS	40		VSS	VSS	VSS
16		PASS	PASS	PASS	41		NC	NC	NC
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		NC	NC	NC
21		PASS	PASS	PASS	46		PASS	PASS	PASS
22		PASS	PASS	PASS	47		PASS	PASS	PASS
23		VEE	VEE	VEE	48		NC	NC	NC
24		PASS	PASS	PASS	49		PASS	PASS	PASS
25		PASS	PASS	PASS	50		PASS	PASS	PASS

VSS (+)									
(UNIT: V)									
Test Pin	FAIL VOLTAGE	#1	#2	#3	Test Pin	FAIL VOLTAGE	#1	#2	#3
51		NC	NC	NC	76		PASS	PASS	PASS
52		PASS	PASS	PASS	77		PASS	PASS	PASS
53		NC	NC	NC	78		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		VEE	VEE	VEE	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	87		PASS	PASS	PASS
63		PASS	PASS	PASS	88		PASS	PASS	PASS
64		PASS	PASS	PASS	89		PASS	PASS	PASS
65		PASS	PASS	PASS	90		PASS	PASS	PASS
66		PASS	PASS	PASS	91		PASS	PASS	PASS
67		PASS	PASS	PASS	92		PASS	PASS	PASS
68		PASS	PASS	PASS	93		PASS	PASS	PASS
69		PASS	PASS	PASS	94		PASS	PASS	PASS
70		PASS	PASS	PASS	95		PASS	PASS	PASS
71		PASS	PASS	PASS	96		PASS	PASS	PASS
72		PASS	PASS	PASS	97		PASS	PASS	PASS
73		PASS	PASS	PASS	98		PASS	PASS	PASS
74		PASS	PASS	PASS	99		PASS	PASS	PASS
75		PASS	PASS	PASS	100		PASS	PASS	PASS

VSS (-) (UNIT: V)									
Test Pin	FAIL VOLTAGE	#1	#2	#3	Test Pin	FAIL VOLTAGE	#1	#2	#3
1		PASS	PASS	PASS	26		PASS	PASS	PASS
2		PASS	PASS	PASS	27		PASS	PASS	PASS
3		PASS	PASS	PASS	28		VCC	VCC	VCC
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		NC	NC	NC
10		PASS	PASS	PASS	35		PASS	PASS	PASS
11		PASS	PASS	PASS	36		NC	NC	NC
12		PASS	PASS	PASS	37		PASS	PASS	PASS
13		PASS	PASS	PASS	38		NC	NC	NC
14		PASS	PASS	PASS	39		PASS	PASS	PASS
15		PASS	PASS	PASS	40		VSS	VSS	VSS
16		PASS	PASS	PASS	41		NC	NC	NC
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		NC	NC	NC
21		PASS	PASS	PASS	46		PASS	PASS	PASS
22		PASS	PASS	PASS	47		PASS	PASS	PASS
23		VEE	VEE	VEE	48		NC	NC	NC
24		PASS	PASS	PASS	49		PASS	PASS	PASS
25		PASS	PASS	PASS	50		PASS	PASS	PASS

VSS (-)									
				(UNIT: V)					
Test Pin	FAIL VOLTAGE	#1	#2	#3	Test Pin	FAIL VOLTAGE	#1	#2	#3
51		NC	NC	NC	76		PASS	PASS	PASS
52		PASS	PASS	PASS	77		PASS	PASS	PASS
53		NC	NC	NC	78		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		VEE	VEE	VEE	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	87		PASS	PASS	PASS
63		PASS	PASS	PASS	88		PASS	PASS	PASS
64		PASS	PASS	PASS	89		PASS	PASS	PASS
65		PASS	PASS	PASS	90		PASS	PASS	PASS
66		PASS	PASS	PASS	91		PASS	PASS	PASS
67		PASS	PASS	PASS	92		PASS	PASS	PASS
68		PASS	PASS	PASS	93		PASS	PASS	PASS
69		PASS	PASS	PASS	94		PASS	PASS	PASS
70		PASS	PASS	PASS	95		PASS	PASS	PASS
71		PASS	PASS	PASS	96		PASS	PASS	PASS
72		PASS	PASS	PASS	97		PASS	PASS	PASS
73		PASS	PASS	PASS	98		PASS	PASS	PASS
74		PASS	PASS	PASS	99		PASS	PASS	PASS
75		PASS	PASS	PASS	100		PASS	PASS	PASS

VCC (+)									
(UNIT: V)									
Test Pin	FAIL VOLTAGE	#1	#2	#3	Test Pin	FAIL VOLTAGE	#1	#2	#3
1		PASS	PASS	PASS	26		PASS	PASS	PASS
2		PASS	PASS	PASS	27		PASS	PASS	PASS
3		PASS	PASS	PASS	28		VCC	VCC	VCC
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		NC	NC	NC
10		PASS	PASS	PASS	35		PASS	PASS	PASS
11		PASS	PASS	PASS	36		NC	NC	NC
12		PASS	PASS	PASS	37		PASS	PASS	PASS
13		PASS	PASS	PASS	38		NC	NC	NC
14		PASS	PASS	PASS	39		PASS	PASS	PASS
15		PASS	PASS	PASS	40		VSS	VSS	VSS
16		PASS	PASS	PASS	41		NC	NC	NC
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		NC	NC	NC
21		PASS	PASS	PASS	46		PASS	PASS	PASS
22		PASS	PASS	PASS	47		PASS	PASS	PASS
23		VEE	VEE	VEE	48		NC	NC	NC
24		PASS	PASS	PASS	49		PASS	PASS	PASS
25		PASS	PASS	PASS	50		PASS	PASS	PASS

VCC (+)									
									(UNIT: V)
Test Pin	FAIL VOLTAGE	#1	#2	#3	Test Pin	FAIL VOLTAGE	#1	#2	#3
51		NC	NC	NC	76		PASS	PASS	PASS
52		PASS	PASS	PASS	77		PASS	PASS	PASS
53		NC	NC	NC	78		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		VEE	VEE	VEE	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	87		PASS	PASS	PASS
63		PASS	PASS	PASS	88		PASS	PASS	PASS
64		PASS	PASS	PASS	89		PASS	PASS	PASS
65		PASS	PASS	PASS	90		PASS	PASS	PASS
66		PASS	PASS	PASS	91		PASS	PASS	PASS
67		PASS	PASS	PASS	92		PASS	PASS	PASS
68		PASS	PASS	PASS	93		PASS	PASS	PASS
69		PASS	PASS	PASS	94		PASS	PASS	PASS
70		PASS	PASS	PASS	95		PASS	PASS	PASS
71		PASS	PASS	PASS	96		PASS	PASS	PASS
72		PASS	PASS	PASS	97		PASS	PASS	PASS
73		PASS	PASS	PASS	98		PASS	PASS	PASS
74		PASS	PASS	PASS	99		PASS	PASS	PASS
75		PASS	PASS	PASS	100		PASS	PASS	PASS

VCC (-)									
				(UNIT: V)					
Test Pin	FAIL VOLTAGE	#1	#2	#3	Test Pin	FAIL VOLTAGE	#1	#2	#3
1		PASS	PASS	PASS	26		PASS	PASS	PASS
2		PASS	PASS	PASS	27		PASS	PASS	PASS
3		PASS	PASS	PASS	28		VCC	VCC	VCC
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		NC	NC	NC
10		PASS	PASS	PASS	35		PASS	PASS	PASS
11		PASS	PASS	PASS	36		NC	NC	NC
12		PASS	PASS	PASS	37		PASS	PASS	PASS
13		PASS	PASS	PASS	38		NC	NC	NC
14		PASS	PASS	PASS	39		PASS	PASS	PASS
15		PASS	PASS	PASS	40		VSS	VSS	VSS
16		PASS	PASS	PASS	41		NC	NC	NC
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		NC	NC	NC
21		PASS	PASS	PASS	46		PASS	PASS	PASS
22		PASS	PASS	PASS	47		PASS	PASS	PASS
23		VEE	VEE	VEE	48		NC	NC	NC
24		PASS	PASS	PASS	49		PASS	PASS	PASS
25		PASS	PASS	PASS	50		PASS	PASS	PASS

VCC (-)									
				(UNIT: V)					
Test Pin	FAIL VOLTAGE	#1	#2	#3	Test Pin	FAIL VOLTAGE	#1	#2	#3
51		NC	NC	NC	76		PASS	PASS	PASS
52		PASS	PASS	PASS	77		PASS	PASS	PASS
53		NC	NC	NC	78		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		VEE	VEE	VEE	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	87		PASS	PASS	PASS
63		PASS	PASS	PASS	88		PASS	PASS	PASS
64		PASS	PASS	PASS	89		PASS	PASS	PASS
65		PASS	PASS	PASS	90		PASS	PASS	PASS
66		PASS	PASS	PASS	91		PASS	PASS	PASS
67		PASS	PASS	PASS	92		PASS	PASS	PASS
68		PASS	PASS	PASS	93		PASS	PASS	PASS
69		PASS	PASS	PASS	94		PASS	PASS	PASS
70		PASS	PASS	PASS	95		PASS	PASS	PASS
71		PASS	PASS	PASS	96		PASS	PASS	PASS
72		PASS	PASS	PASS	97		PASS	PASS	PASS
73		PASS	PASS	PASS	98		PASS	PASS	PASS
74		PASS	PASS	PASS	99		PASS	PASS	PASS
75		PASS	PASS	PASS	100		PASS	PASS	PASS

VCC – VSS (+)				(UNIT: V)
Test Pin	FAIL VOLTAGE	#1	#2	#3
28		PASS	PASS	PASS

VCC – VSS (-)				(UNIT: V)
Test Pin	FAIL VOLTAGE	#1	#2	#3
28		PASS	PASS	PASS