ELECTRICAL OVER STRESS (EOS) TESTING REPORT

Applicant/Department: Nations Technologies Inc.	
Product: N32G030F6S7	**LOT:**
Case NO: S210319134	**Quantity:** 3 ea
Test Item: Electrical Over Stress (EOS)	**Package/Pin Count:** TSSOP20
Application Date: 2021/3/19	**Date Finished:** 2021/3/30
Reference: IEC 61000-4-5	**Temperature:** 25 ± 5 °C **Humidity:** 55 ± 5%
Test Instrument: EOS, TVS8/20TC	**Test Voltage:** +8V
Failure Criteria: compliance within 10% V+I envelope around REFERENCE I-V curve (pre-zap) and Customer FunctionTest.	
EOS Testing Result: Minimum Pass Level = +8V	

NOTE 1: MA-tek sample storage policy is 14 days after the test data delivery. Prolonged storage can be arranged per client's request.

WE HEREBY CERTIFY THAT:

The test(s) was/were conducted according to test conditions provided by customer.Testing was performed on calibrated and JEDEC-ESDA qualified ESD instruments.The quality and comprehensiveness of this test(s) were delivered by qualified personnel.

Tested by	Reviewed by	Approved by
Joe_Xu		

CERTIFICATE of APPROVAL INDEPENDENT TESTING LABORATORY:

ISO9001:2015 Certificate Registration No. 20001845 QM08, issued by UL DQS Inc.
IEC/IECQ17025 Certificate No. IECQ-L ULTW 09.0009, approved by Certification Body (CB): UL Registered Firm

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2.坚持独立检测、独立判断，保持和发展认可的分析检测能力；
3.坚持公平、公正、对所有客户一视同仁的分析检测服务原则；
4.不从事与客户送检产品相关的研发、生产、销售等活动；
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保护客户机密讯息和所有权的承诺 Confidentiality

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1. TEST SUMMARY

	Pin Combination	Sample	Pass Level
Sensitivity Pass: +8V	VDD to VSS(+)	3	+8V
NOTE:			
FOR IEC 61000-4-5			

* DUT failed at the first level of test condition, defined by client.

NOTE: Red color in raw data indicates failed pins, if any.

2. Pin ASSIGNMENT

Pin Group	PAD Pins
VDD	16
VSS	15
IO	1-14,17,18,19,20

3. EOS TEST CONDITIONS

EOS Zap Interval: **3 S** **Zap:** **5 pulse.**

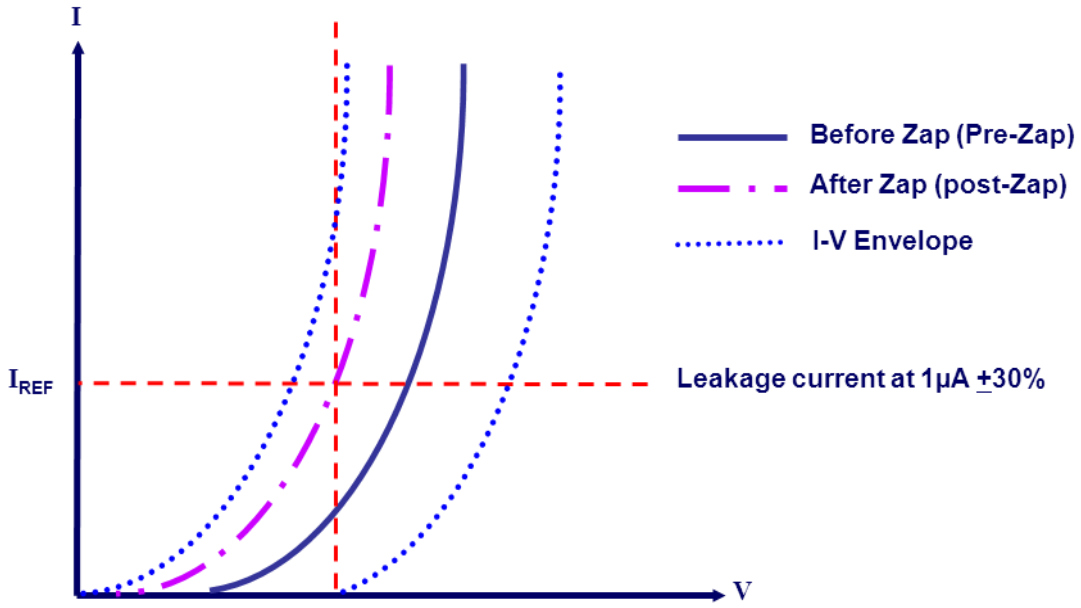
VDD to VSS(+)

4. Raw Data - 2

EOS VDD to VSS _+8V (Unit: V)				
Test Pin Fail Voltage		#31	#32	#33
	VDD	Pass	Pass	Pass
	VSS	Pass	Pass	Pass

5. APPENDIX-1 (PASS/FAIL CRITERIA)

FAILURE CRITERIA	**compliance within 10% V+I envelope around REFERENCE I-V curve (pre-zap) and Customer FunctionTest.**
Note	**For custom designed ESD testing customers may select variation in Idd, and leakage current as criteria to determine pass/fail results of ESD testing.**



Pass/Fail Criteria:
Variation of Leakage Current and I-V Shift in Pre-Zap and Post-Zap curves

6. APPENDIX-2 (ESD INSTRUMENTATION AT MA-TEK)

No.	Test Tools	Vendors	System Specification
1	Zapmaster	Thermo Keytek	256 Pin Count, HBM Pulse 30V to 8KV, MM Pulse 30V to 2KV
2	MK1	Thermo Scientific	256 Pin Count, HBM Pulse 30V to 8KV, MM Pulse 30V to 1KV
3	MK2	Thermo Keytek	768 Pin Count, HBM Pulse 30V to 8KV, MM Pulse 30V to 2KV
4	MK4	Thermo Scientific	2304 Pin Count, HBM Pulse 25V to 8KV, MM Pulse 25V to 1.5KV
5	CDM Tester	Oryx Orion	25V to 2KV
6	CDM Tester	Oryx Orion 3	25V to 2KV
7	High Temp. Test Module	Thermonics	Maximum temperature = 150°C
8	ESD Gun	Noiseken	Voltage = 1KV to 30KV
9	TLP Tester	Thermo Scientific	Voltage = 1V to 2KV, Current = up to 40A
10	EOS Tester	Prima	Voltage = 3V to 1000V

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