



ELECTRICAL OVER STRESS (EOS) TESTING REPORT

Applicant/Department: Nations Technologies Inc.	
Product: N32G030C8L7	LOT:
Case NO: S201216071	Quantity: 3 ea
Test Item: Electrical Over Stress (EOS)	Package/Pin Count: LQFP48
Application Date: 2020/12/16	Date Finished: 2020/12/22
Reference: IEC 61000-4-5	Temperature: 25 ± 5 °C Humidity: 55 ± 5%
Test Instrument: EOS, TVS8/20TC	Test Voltage: +8V
Failure Criteria:	
After testing, compliance within 10% V+I envelope around REFERENCE I-V curve (pre-zap).	
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	Wan Zhu	Zhen-zhu

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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1. TEST SUMMARY

[illegible]

* 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	1,24,48
VSS	8,23,47
IO	2-7,9-22,25-46



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

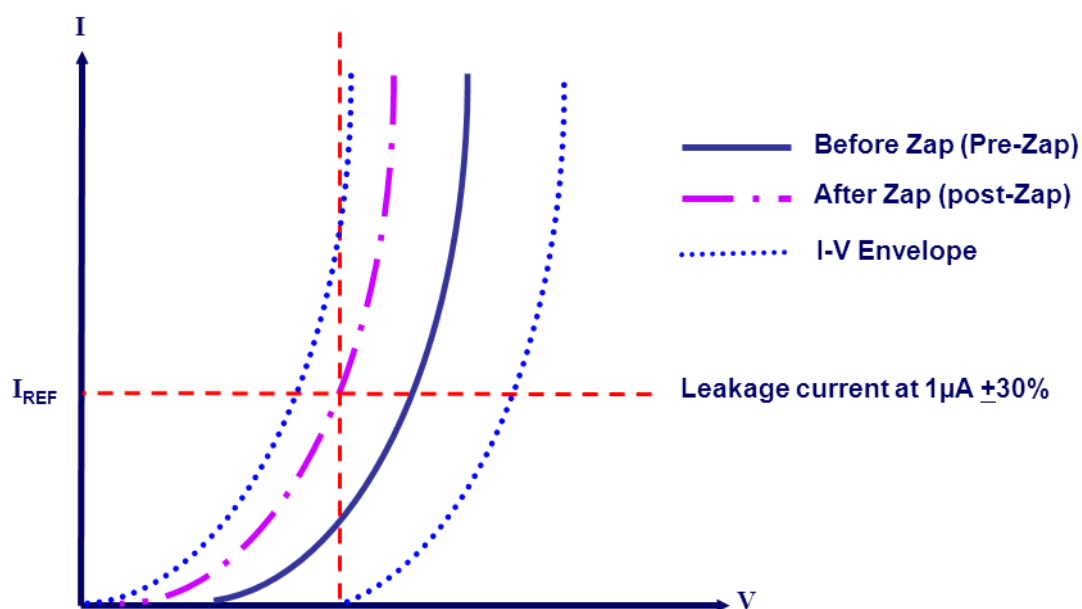
5. APPENDIX-1 (PASS/FAIL CRITERIA)

FAILURE CRITERIA

After testing, compliance within 10% V+I envelope around REFERENCE I-V curve (pre-zap).

Note

For custom designed ESD testing customers may select variation in I_{dd} , 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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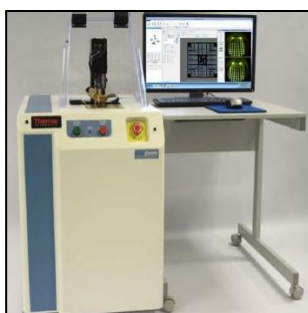
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