

TLV1H103-SEP Neutron Displacement Damage Characterization



ABSTRACT

This report presents the effect of neutron displacement damage (NDD) on the TLV1H103-SEP device. The results show that all devices were fully functional and within production test limits after having been irradiated up to $1 \times 10^{13} \text{n/cm}^2$ (1MeV equivalent). A sample size of nine units was exposed to radiation testing per (MIL-STD-883, Method 1017 for Neutron Irradiation). The samples were dosed to exposure levels of $1 \times 10^{12} \text{n/cm}^2$, $5 \times 10^{12} \text{n/cm}^2$, and $1 \times 10^{13} \text{n/cm}^2$, with three samples evaluated per exposure level. Electrical testing was performed at Texas Instruments before and after neutron irradiation using the production test program for THLV1H103-SEP devices.

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1 Overview

The TLV1H103-SEP is a 325MHz, high speed comparator with rail-to-rail inputs and a propagation delay of 2.5ns. The combination of fast response and wide operating voltage range make the comparator suitable for narrow signal pulse detection and data and clock recovery applications. The push-pull (single-ended) outputs of the TLV1H103-SEP simplify and save cost on board-to-board wiring for I/O interfaces while reducing power consumption when compared to alternative high-speed differential output comparators. In addition, the TLV1H103-SEP offers features such as adjustable hysteresis control and output latch capability. The comparator can directly interface most prevailing digital controllers and IO expanders in the downstream. General device information and testing conditions are listed in [Table 1-1](#).

Table 1-1. Overview Information

TI Part Number	TLV1H103-SEP
Device Function	325MHz high speed comparator with 2.5ns propagation delay
Die Name	RTL3603A0SP
Technology	50BICOM3ZL
A/T Lot Number / Date Code	3080600 / 37CQCYW
Unbiased Quantity Tested	9
Exposure Facility	VPT Rad
Neutron Fluence (1-MeV Equivalent)	1.0×10^{12} , 5.0×10^{12} , 1.0×10^{13} n/cm ²
Irradiation Temperature	25°C

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2 Test Procedures

The TLV1H103-SEP was tested pre- and post-neutron radiation using the production automated test equipment program. General test procedures were IAW MIL-STD-883, Method 1017 for Neutron Irradiation of TLV1H103-SEP as shown in [Table 2-1](#).

Table 2-1. Neutron Irradiation Conditions

Group	Sample Qty	Neutron Fluence (n/cm ²)	Bias
A	3	1.0 × 10 ¹²	Unbiased
B	3	5.0 × 10 ¹²	Unbiased
C	3	1.0 × 10 ¹³	Unbiased

[Table 2-2](#) provides the list of tested parameters, typical at T_A = 25°C (unless otherwise noted).

Table 2-2. TLV1H103-SEP Data Sheet Parameters

PARAMETER	TEST CONDITION	Data sheet Lit#SNOSDGO				Test# or Name
		MIN	TYP	MAX	UNIT	
Quiescent current (IQ)	VS = 2.5V, T _A = -55°C to +125°C		5.7	7.8	mA	300001
Quiescent current (IQ)	VS = 3.3V, T _A = -55°C to +125°C		5.7	7.8	mA	300002
Quiescent current (IQ)	VS = 5V, T _A = -55°C to +125°C		5.7	7.8	mA	300003
Input hysteresis voltage (VHYST)	VS = 2.5V, RHYST = Floating		3		mV	400014
Input offset voltage (Vos)	VS = 2.5V, RHYST = Floating	-7	±0.5	7	mV	400015
Input hysteresis voltage (VHYST)	VS = 2.5V, RHYST = 150k		30		mV	400018
Input offset voltage (Vos)	VS = 2.5V, RHYST = 150k	-7	±0.5	7	mV	400019
Input hysteresis voltage (VHYST)	VS = 2.5V, RHYST = 56k		60		mV	400022
Input offset voltage (Vos)	VS = 2.5V, RHYST = 56k	-7	±0.5	7	mV	400023
Input hysteresis voltage (VHYST)	VS = 3.3V, RHYST = Floating		3		mV	400026
Input offset voltage (Vos)	VS = 3.3V, RHYST = Floating	-7	±0.5	7	mV	400027
Input hysteresis voltage (VHYST)	VS = 3.3V, RHYST = 150k		30		mV	400030
Input offset voltage (Vos)	VS = 3.3V, RHYST = 150k	-7	±0.5	7	mV	400031
Input hysteresis voltage (VHYST)	VS = 3.3V, RHYST = 56k		60		mV	400034
Input offset voltage (Vos)	VS = 3.3V, RHYST = 56k	-7	±0.5	7	mV	400035
Input hysteresis voltage (VHYST)	VS = 5V, RHYST = Floating		3		mV	400038
Input offset voltage (Vos)	VS = 5V, RHYST = Floating	-7	±0.5	7	mV	400039
Input hysteresis voltage (VHYST)	VS = 5V, RHYST = 150k		30		mV	400042
Input offset voltage (Vos)	VS = 5V, RHYST = 150k	-7	±0.5	7	mV	400043
Input hysteresis voltage (VHYST)	VS = 5V, RHYST = 56k		60		mV	400046
Input offset voltage (Vos)	VS = 5V, RHYST = 56k	-7	±0.5	7	mV	400047
Output high voltage from VCC (VOH)	VS = 2.5V, T _A = -55°C to +125°C, I _{source} = 1mA		60	80	mV	500000
Output high voltage from VCC (VOH)	VS = 3.3V, T _A = -55°C to +125°C, I _{source} = 1mA		60	80	mV	500001
Output high voltage from VCC (VOH)	VS = 5V, T _A = -55°C to +125°C, I _{source} = 1mA		60	80	mV	500002
Output low voltage from VEE (VOL)	VS = 2.5V, T _A = -55°C to +125°C, I _{sink} = 1mA		60	80	mV	500003
Output low voltage from VEE (VOL)	VS = 3.3V, T _A = -55°C to +125°C, I _{sink} = 1mA		60	80	mV	500004
Output low voltage from VEE (VOL)	VS = 5V, T _A = -55°C to +125°C, I _{sink} = 1mA		60	80	mV	500005
Output short-circuit current sink (ISC_SINK)	VS = 2.5V, T _A = -55°C to +125°C	10	30		mA	600000

Table 2-2. TLV1H103-SEP Data Sheet Parameters (continued)

PARAMETER	TEST CONDITION	Data sheet Lit#SNOSDGO				Test# or Name
		MIN	TYP	MAX	UNIT	
Output short-circuit current source (ISC_SOURCE)	VS = 2.5V, TA = -55°C to +125°C	10	30		mA	600001
Output short-circuit current sink (ISC_SINK)	VS = 3.3V, TA = -55°C to +125°C	10	30		mA	600002
Output short-circuit current source (ISC_SOURCE)	VS = 3.3V, TA = -55°C to +125°C	10	30		mA	600003
Output short-circuit current sink (ISC_SINK)	VS = 5V, TA = -55°C to +125°C	10	30		mA	600004
Output short-circuit current source (ISC_SOURCE)	VS = 5V, TA = -55°C to +125°C	10	30		mA	600005
LE pin input leakage current (IIH_LE)	VS = 2.5V, VLE = VCC, TA = -55°C to +125°C			15	μA	700000
LE pin input leakage current (IIH_LE)	VS = 3.3V, VLE = VCC, TA = -55°C to +125°C			15	μA	700001
LE pin input leakage current (IIH_LE)	VS = 5V, VLE = VCC, TA = -55°C to +125°C			15	μA	700002
LE pin input leakage current (IIL_LE)	VS = 2.5V, VLE = VEE, TA = -55°C to +125°C			40	μA	700003
LE pin input leakage current (IIL_LE)	VS = 3.3V, VLE = VEE, TA = -55°C to +125°C			40	μA	700004
LE pin input leakage current (IIL_LE)	VS = 5V, VLE = VEE, TA = -55°C to +125°C			40	μA	700005
Input bias current (IB)	VS = 2.5V, TA = -55°C to +125°C		1	5	μA	900000
Input bias current (IB)	VS = 2.5V, TA = -55°C to +125°C		1	5	μA	900001
Input offset current (IOS)	VS = 2.5V		±0.03		μA	900002
Input bias current (IB)	VS = 3.3V, TA = -55°C to +125°C		1	5	μA	900003
Input bias current (IB)	VS = 3.3V, TA = -55°C to +125°C		1	5	μA	900004
Input offset current (IOS)	VS = 3.3V		±0.03		μA	900005
Input bias current (IB)	VS = 5V, TA = -55°C to +125°C		1	5	μA	900006
Input bias current (IB)	VS = 5V, TA = -55°C to +125°C		1	5	μA	900007
Input offset current (IOS)	VS = 5V		±0.03		μA	900008
Input common mode voltage range (VCM)	TA = -55°C to +125°C, IN+ = VEE - 0.2V	VEE - 0.2		VCC + 0.2	V	1000002
Input common mode voltage range (VCM)	TA = -55°C to +125°C, IN- = VEE - 0.2V	VEE - 0.2		VCC + 0.2	V	1000005
Input common mode voltage range (VCM)	TA = -55°C to +125°C, IN- = VCC - 0.2V	VEE - 0.2		VCC + 0.2	V	1000014
Input common mode voltage range (VCM)	TA = -55°C to +125°C, IN+ = VCC - 0.2V	VEE - 0.2		VCC + 0.2	V	1000017

3 Facility

VPT Rad performed neutron displacement damage irradiations in a low-enriched, open-pool, water moderated, thermal neutron reactor at the University of Massachusetts Lowell. The reactor uses flat-plate type fuel and has a maximum thermal energy output of up to 1MW. The Fast Neutron Irradiator (FNI) faces one side of the reactor core. The experimental facility replaces three beam ports that originally existed on the left side of the research reactor. It is designed to give a fast flux level $\geq 1011\text{n/cm}^2\text{-s}$, with relatively low thermal fluence and gamma dose rates. Samples with a cross-sectional area as large as 30cm (12in) \times 30cm (12in) and up to 15cm (6in) thick can be irradiated. The fast neutron flux is designed to be nearly uniform over the 30cm (12in) \times 30cm (12in) area facing the core, and the fast fluence variation through the sample thickness is minimized via a single 180° rotation of the sample canister at the midpoint of the irradiation period. The FNI facility offers a significantly larger sample volume than previously available within the University of Massachusetts Lowell Research Reactor (UMLRR). The fluences are calculated based on 1MeV equivalences.

The neutron fluence rate is determined using the previously-measured neutron radiation field for the FNI, performed in accordance with ASTM standards (ASTM F1190), and correlated to the measured reactor power level. The neutron dose is timed to meet the fluence specified for the irradiation. Neutron dosimetry meeting ASTM standards (ASTM E265) is used to track and make sure that irradiations meet the required minimum. The facility retains source design with the Defense Logistics Agency (DLA) Laboratory Suitability Program for ASTM Test Method 1017.

4 Results

There were no functional failures at any irradiation level. All parametric measurements remained well within data sheet limits and within the production test limits, which are guard-banded from the data sheet limits for all exposure levels. The full parameter list is found in [Table 2-2](#) and graphs are found in Appendix A. In the graphs, Delta and Delta % refer to the deviation due to radiation exposure.

Delta = Pre NDD - Post NDD

Delta % = Delta / Pre NDD

% of Limit Range = ABS (Delta) / ABS (Max Limit - Min Limit)

The Fail Limit range is a guard-banded limit that Texas Instruments puts into test programs to insure device performance. It is always set within the data sheet limits to insure the device meets all data sheet parameters. In case of some parameters, the % of Limit Range is showing high due to tight test limit range, but the maximum Delta % is about 5%. Texas Instruments has collected more parameters than what is shown in this report for characterization purposes.

Please see Appendix A for NDD report.

A NDD Report

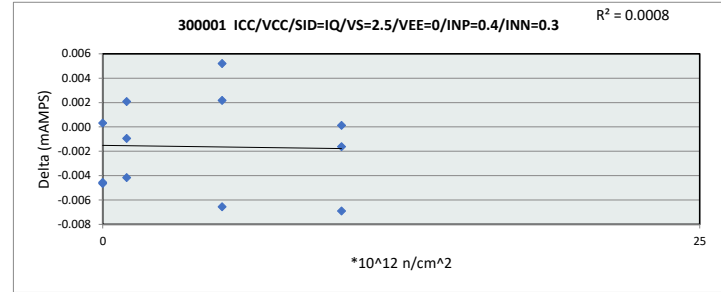
This appendix provides the NDD Report.

Delta Threshold 10.00%

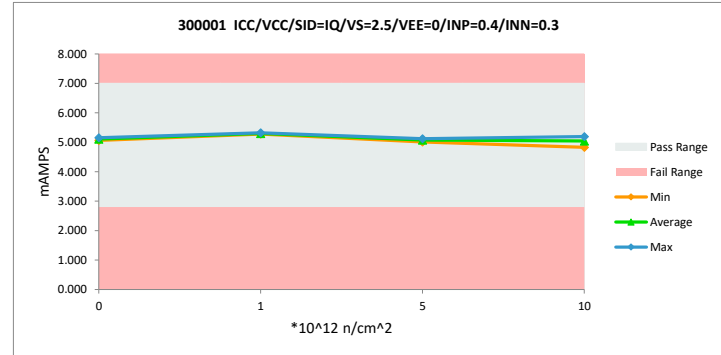
NDD Report
TLV1H103MDBVTSEP

NDD Report
TLV1H103MDBVTSEP

300001 ICC/VCC/SID=IQ/VS=2						
Unit		mAMPS	mAMPS			
Max Limit		7	7			
Min Limit		2.7999999	2.7999999			
*10^12 n/cm^2	Serial #	PRE	POST	Delta	Delta %	% of Limit Range
1	1	5.275	5.279	-0.004	-0.08%	0.10%
1	2	5.303	5.301	0.002	0.04%	0.05%
1	3	5.321	5.322	-0.001	-0.02%	0.02%
5	4	5.019	5.014	0.005	0.10%	0.12%
5	5	5.103	5.101	0.002	0.04%	0.05%
5	6	5.115	5.122	-0.007	-0.13%	0.16%
10	7	5.104	5.111	-0.007	-0.13%	0.16%
10	8	5.194	5.194	0.000	0.00%	0.00%
10	9	4.828	4.830	-0.002	-0.03%	0.04%
0	10	5.095	5.099	-0.005	-0.09%	0.11%
0	11	5.153	5.157	-0.005	-0.09%	0.11%
0	12	5.063	5.063	0.000	0.01%	0.01%
Max		5.321	5.322	0.005	0.10%	0.16%
Average		5.131	5.133	-0.002	-0.03%	0.08%
Min		4.828	4.830	-0.007	-0.13%	0.00%
Std Dev		0.136	0.136	0.004	0.07%	0.06%

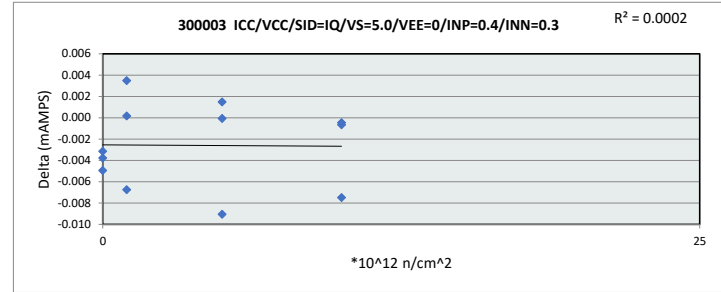


300001 ICC/VCC/SID=IQ/VS=2				
Test Site				
Tester				
Test Number				
Max Limit	7	mAMPS		
Min Limit	2.7999999	mAMPS		
*10^12 n/cm^2	0	1	5	10
LL	2.800	2.800	2.800	2.800
Min	5.063	5.279	5.014	4.830
Average	5.107	5.300	5.079	5.045
Max	5.157	5.322	5.122	5.194
UL	7.000	7.000	7.000	7.000

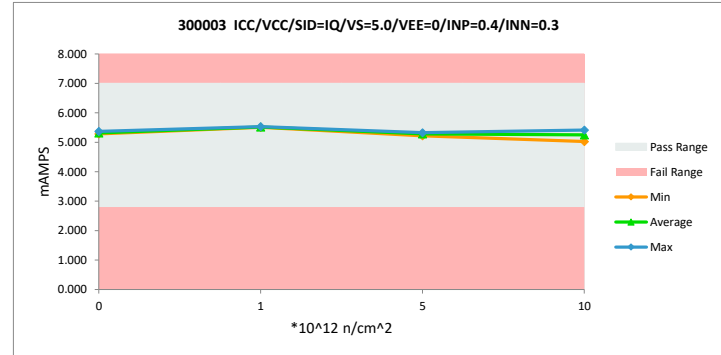


NDD Report
TLV1H103MDBVTSEP

300003 ICC/VCC/SID=IQ/VS=5						
Unit		mAMPS	mAMPS			
Max Limit		7	7			
Min Limit		2.7999999	2.7999999			
*10 ¹² n/cm ²	Serial #	PRE	POST	Delta	Delta %	% of Limit Range
1	1	5.503	5.509	-0.007	-0.12%	0.16%
1	2	5.517	5.514	0.003	0.06%	0.08%
1	3	5.532	5.532	0.000	0.00%	0.00%
5	4	5.221	5.219	0.001	0.03%	0.04%
5	5	5.306	5.306	0.000	0.00%	0.00%
5	6	5.318	5.327	-0.009	-0.17%	0.22%
10	7	5.309	5.316	-0.007	-0.14%	0.18%
10	8	5.414	5.414	0.000	-0.01%	0.01%
10	9	5.026	5.026	-0.001	-0.01%	0.02%
0	10	5.295	5.300	-0.005	-0.09%	0.12%
0	11	5.368	5.372	-0.004	-0.07%	0.09%
0	12	5.283	5.286	-0.003	-0.06%	0.07%
Max		5.532	5.532	0.003	0.06%	0.22%
Average		5.341	5.344	-0.003	-0.05%	0.08%
Min		5.026	5.026	-0.009	-0.17%	0.00%
Std Dev		0.142	0.142	0.004	0.07%	0.07%

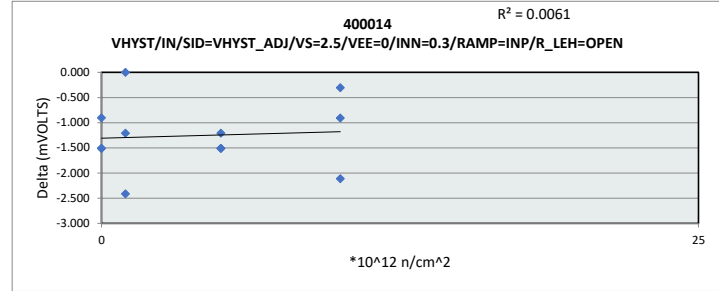


300003 ICC/VCC/SID=IQ/VS=5				
Test Site				
Tester				
Test Number				
Max Limit	7	mAMPS		
Min Limit	2.7999999	mAMPS		
*10 ¹² n/cm ²	0	1	5	10
LL	2.800	2.800	2.800	2.800
Min	5.286	5.509	5.219	5.026
Average	5.319	5.518	5.284	5.252
Max	5.372	5.532	5.327	5.414
UL	7.000	7.000	7.000	7.000

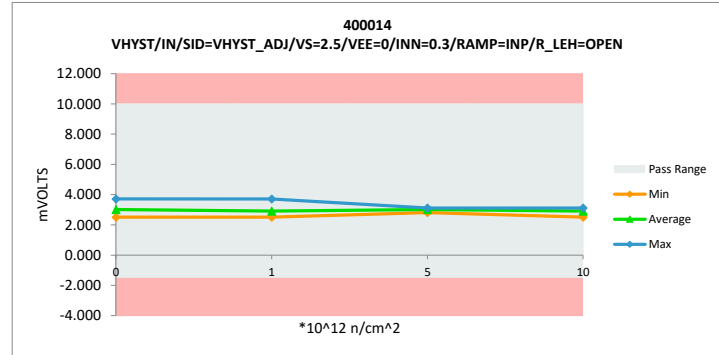


NDD Report
TLV1H103MDBVTSEP

400014 VHYST/IN/SID=VHYST						
Unit		mVOLTS	mVOLTS			
	Max Limit	9.999999776	9.999999776			
	Min Limit	-1.500000013	-1.500000013			
*10 ¹² n/cm ²	Serial #	PRE	POST	Delta	Delta %	% of Limit Range
1	1	2.513	2.513	0.000	0.00%	0.00%
1	2	1.307	3.718	-2.411	-184.47%	20.97%
1	3	1.307	2.513	-1.206	-92.27%	10.49%
5	4	1.910	3.116	-1.206	-63.14%	10.49%
5	5	1.307	2.814	-1.507	-115.30%	13.10%
5	6	1.608	3.115	-1.507	-93.72%	13.10%
10	7	1.005	3.116	-2.111	-210.05%	18.36%
10	8	2.211	3.116	-0.905	-40.93%	7.87%
10	9	2.211	2.513	-0.302	-13.66%	2.63%
0	10	1.910	2.814	-0.904	-47.33%	7.86%
0	11	1.005	2.513	-1.508	-150.05%	13.11%
0	12	2.211	3.719	-1.508	-68.20%	13.11%
	Max	2.513	3.719	0.000	0.00%	20.97%
	Average	1.709	2.965	-1.256	-89.93%	10.92%
	Min	1.005	2.513	-2.411	-210.05%	0.00%
	Std Dev	0.520	0.436	0.678	65.33%	5.90%



400014 VHYST/IN/SID=VHYST				
Test Site				
Tester				
Test Number				
Max Limit	9.999999776	mVOLTS		
Min Limit	-1.500000013	mVOLTS		
*10 ¹² n/cm ²	0	1	5	10
LL	-1.500	-1.500	-1.500	-1.500
Min	2.513	2.513	2.814	2.513
Average	3.015	2.915	3.015	2.915
Max	3.719	3.718	3.116	3.116
UL	10.000	10.000	10.000	10.000

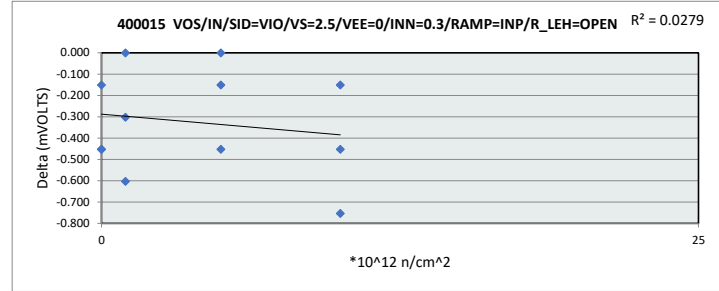


NDD Report
TLV1H103MDBVTSEP

400015 VOS/IN/SID=VIO/VS=

Unit	mVOLTS	mVOLTS
Max Limit	4.999999888	4.999999888
Min Limit	-4.999999888	-4.999999888

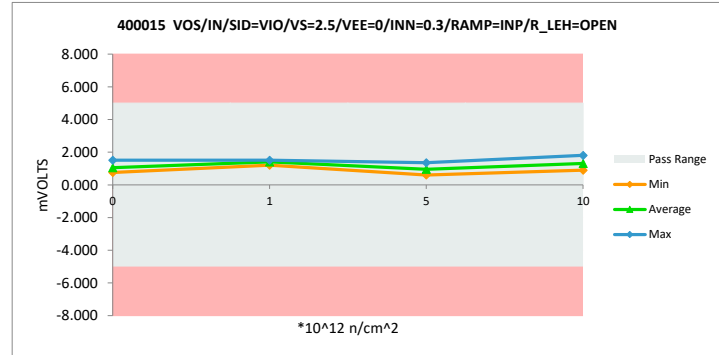
*10 ¹² n/cm ²	Serial #	PRE	POST	Delta	Delta %	% of Limit Range
1	1	1.507	1.507	0.000	0.00%	0.00%
1	2	0.905	1.206	-0.301	-33.33%	3.01%
1	3	0.905	1.507	-0.603	-66.67%	6.03%
5	4	0.603	0.603	0.000	0.00%	0.00%
5	5	0.905	1.357	-0.452	-50.03%	4.52%
5	6	0.754	0.905	-0.150	-19.96%	1.51%
10	7	0.453	1.206	-0.753	-166.52%	7.53%
10	8	1.659	1.809	-0.150	-9.07%	1.50%
10	9	0.453	0.905	-0.452	-99.89%	4.52%
0	10	0.603	0.754	-0.151	-25.04%	1.51%
0	11	1.056	1.507	-0.452	-42.82%	4.52%
0	12	0.453	0.905	-0.452	-99.89%	4.52%
Max		1.659	1.809	0.000	0.00%	7.53%
Average		0.854	1.181	-0.327	-51.10%	3.27%
Min		0.453	0.603	-0.753	-166.52%	0.00%
Std Dev		0.398	0.368	0.239	49.86%	2.39%



400015 VOS/IN/SID=VIO/VS=

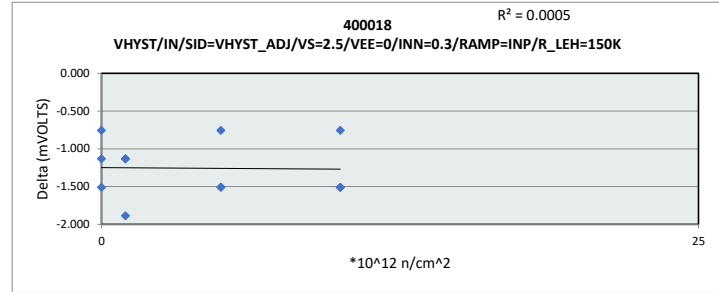
Test Site	
Tester	
Test Number	
Max Limit	4.999999888 mVOLTS
Min Limit	-4.999999888 mVOLTS

*10 ¹² n/cm ²	0	1	5	10
LL	-5.000	-5.000	-5.000	-5.000
Min	0.754	1.206	0.603	0.905
Average	1.055	1.407	0.955	1.306
Max	1.507	1.507	1.357	1.809
UL	5.000	5.000	5.000	5.000

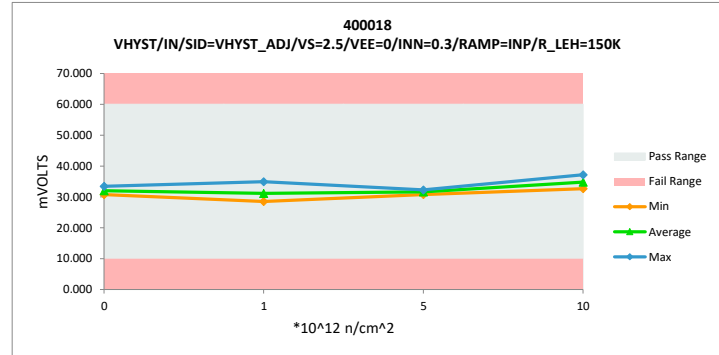


NDD Report
TLV1H103MDBVTSEP

400018 VHYST/IN/SID=VHYST						
Unit		mVOLTS	mVOLTS			
Max Limit		59.99999866	59.99999866			
Min Limit		9.999999776	9.999999776			
*10 ¹² n/cm ²	Serial #	PRE	POST	Delta	Delta %	% of Limit Range
1	1	28.895	30.025	-1.130	-3.91%	2.26%
1	2	33.040	34.925	-1.885	-5.71%	3.77%
1	3	27.387	28.518	-1.131	-4.13%	2.26%
5	4	30.025	30.779	-0.754	-2.51%	1.51%
5	5	30.402	31.909	-1.507	-4.96%	3.01%
5	6	30.779	32.286	-1.507	-4.90%	3.01%
10	7	36.432	37.186	-0.754	-2.07%	1.51%
10	8	31.155	32.663	-1.508	-4.84%	3.02%
10	9	33.040	34.548	-1.508	-4.56%	3.02%
0	10	30.402	31.910	-1.508	-4.96%	3.02%
0	11	32.286	33.417	-1.131	-3.50%	2.26%
0	12	30.025	30.779	-0.754	-2.51%	1.51%
Max		36.432	37.186	-0.754	-2.07%	3.77%
Average		31.156	32.412	-1.256	-4.05%	2.51%
Min		27.387	28.518	-1.885	-5.71%	1.51%
Std Dev		2.323	2.364	0.371	1.17%	0.74%

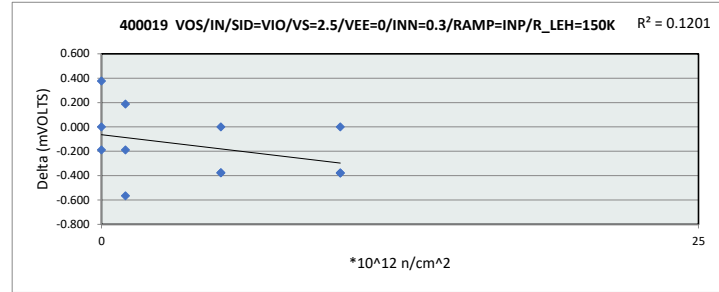


400018 VHYST/IN/SID=VHYS				
Test Site				
Tester				
Test Number				
Max Limit	59.99999866	mVOLTS		
Min Limit	9.999999776	mVOLTS		
*10 ¹² n/cm ²	0	1	5	10
LL	10.000	10.000	10.000	10.000
Min	30.779	28.518	30.779	32.663
Average	32.035	31.156	31.658	34.799
Max	33.417	34.925	32.286	37.186
UL	60.000	60.000	60.000	60.000

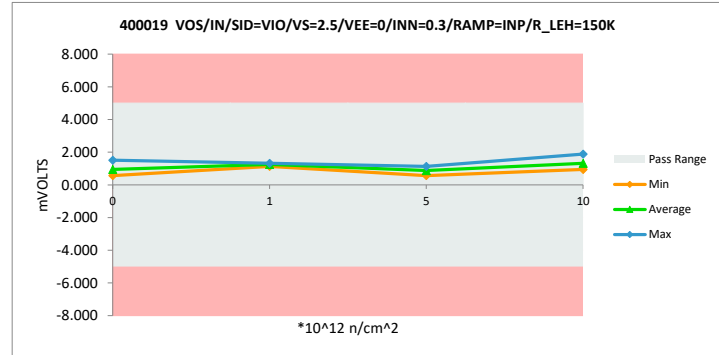


NDD Report
TLV1H103MDBVTSEP

400019 VOS/IN/SID=VIO/VS=						
Unit		mVOLTS	mVOLTS			
	Max Limit	4.999999888	4.999999888			
	Min Limit	-4.999999888	-4.999999888			
*10 ¹² n/cm ²	Serial #	PRE	POST	Delta	Delta %	% of Limit Range
1	1	1.507	1.320	0.188	12.47%	1.88%
1	2	0.942	1.130	-0.188	-20.01%	1.88%
1	3	0.753	1.319	-0.566	-75.05%	5.66%
5	4	0.566	0.566	0.000	0.00%	0.00%
5	5	0.754	1.130	-0.376	-49.93%	3.76%
5	6	0.566	0.942	-0.377	-66.58%	3.77%
10	7	0.754	1.131	-0.377	-50.00%	3.77%
10	8	1.507	1.885	-0.377	-25.01%	3.77%
10	9	0.942	0.942	0.000	0.00%	0.00%
0	10	0.754	0.754	0.000	0.00%	0.00%
0	11	1.319	1.507	-0.188	-14.29%	1.88%
0	12	0.942	0.566	0.377	40.00%	3.77%
	Max	1.507	1.885	0.377	40.00%	5.66%
	Average	0.942	1.099	-0.157	-20.70%	2.51%
	Min	0.566	0.566	-0.566	-75.05%	0.00%
	Std Dev	0.331	0.384	0.276	34.25%	1.86%

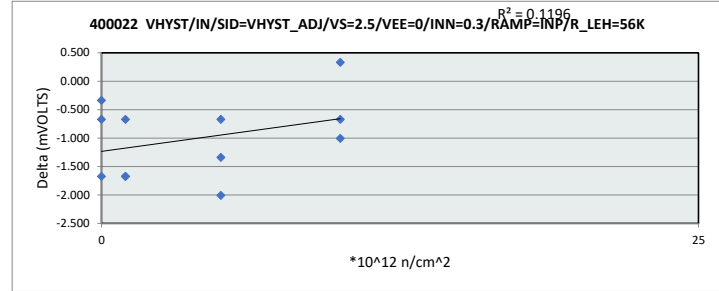


400019 VOS/IN/SID=VIO/VS=				
Test Site				
Tester				
Test Number				
Max Limit	4.999999888	mVOLTS		
Min Limit	-4.999999888	mVOLTS		
*10 ¹² n/cm ²	0	1	5	10
LL	-5.000	-5.000	-5.000	-5.000
Min	0.566	1.130	0.566	0.942
Average	0.942	1.256	0.879	1.319
Max	1.507	1.320	1.130	1.885
UL	5.000	5.000	5.000	5.000

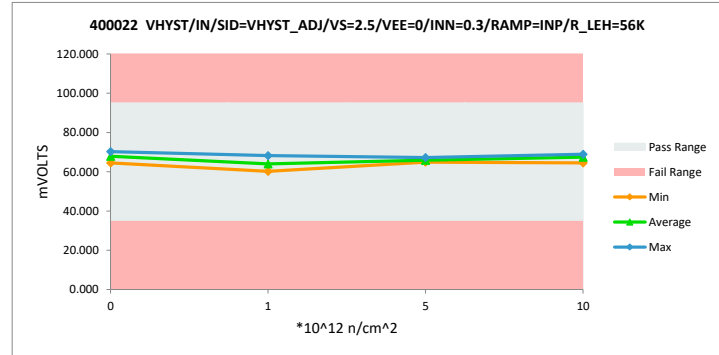


NDD Report
TLV1H103MDBVTSEP

400022 VHYST/IN/SID=VHYST						
Unit		mVOLTS	mVOLTS			
	Max Limit	94.99999881	94.99999881			
	Min Limit	35.00000015	35.00000015			
*10 ¹² n/cm ²	Serial #	PRE	POST	Delta	Delta %	% of Limit Range
1	1	61.873	63.546	-1.673	-2.70%	2.79%
1	2	67.558	68.227	-0.669	-0.99%	1.11%
1	3	58.528	60.201	-1.673	-2.86%	2.79%
5	4	64.214	64.883	-0.669	-1.04%	1.12%
5	5	65.218	67.224	-2.006	-3.08%	3.34%
5	6	64.214	65.551	-1.337	-2.08%	2.23%
10	7	63.880	64.549	-0.669	-1.05%	1.11%
10	8	69.231	68.897	0.334	0.48%	0.56%
10	9	67.893	68.897	-1.004	-1.48%	1.67%
0	10	68.562	68.896	-0.334	-0.49%	0.56%
0	11	62.877	64.548	-1.671	-2.66%	2.79%
0	12	69.565	70.234	-0.669	-0.96%	1.12%
	Max	69.565	70.234	0.334	0.48%	3.34%
	Average	65.301	66.304	-1.003	-1.58%	1.77%
	Min	58.528	60.201	-2.006	-3.08%	0.56%
	Std Dev	3.357	2.919	0.684	1.10%	0.98%



400022 VHYST/IN/SID=VHYST				
Test Site				
Tester				
Test Number				
Max Limit	94.99999881	mVOLTS		
Min Limit	35.00000015	mVOLTS		
*10 ¹² n/cm ²	0	1	5	10
LL	35.000	35.000	35.000	35.000
Min	64.548	60.201	64.883	64.549
Average	67.893	63.991	65.886	67.448
Max	70.234	68.227	67.224	68.897
UL	95.000	95.000	95.000	95.000

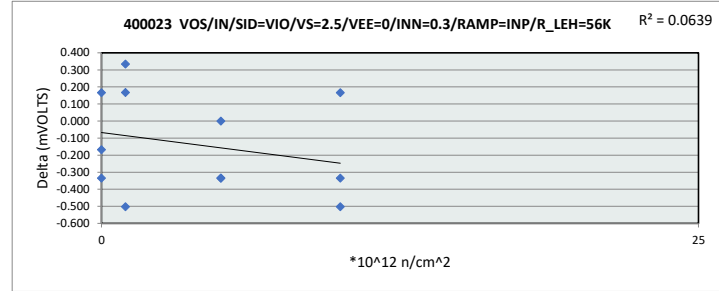


NDD Report
TLV1H103MDBVTSEP

400023 VOS/IN/SID=VIO/VS=

Unit	mVOLTS	mVOLTS
Max Limit	4.999999888	4.999999888
Min Limit	-4.999999888	-4.999999888

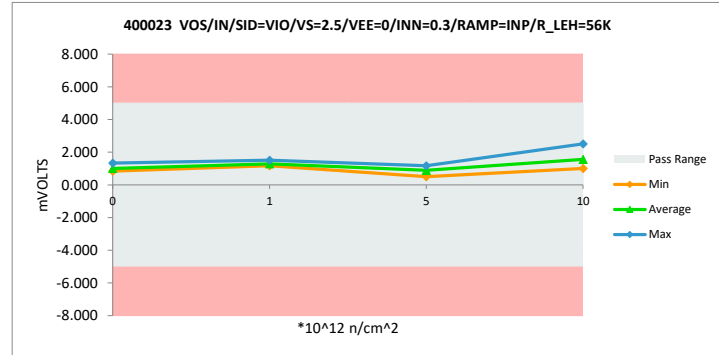
*10^12 n/cm^2	Serial #	PRE	POST	Delta	Delta %	% of Limit Range
1	1	1.673	1.505	0.168	10.01%	1.68%
1	2	1.505	1.170	0.335	22.23%	3.35%
1	3	0.669	1.170	-0.501	-74.96%	5.01%
5	4	0.502	0.501	0.001	0.10%	0.01%
5	5	0.669	1.003	-0.334	-49.93%	3.34%
5	6	0.836	1.170	-0.334	-40.01%	3.34%
10	7	0.669	1.003	-0.335	-50.00%	3.35%
10	8	2.007	2.508	-0.502	-25.02%	5.02%
10	9	1.338	1.170	0.167	12.49%	1.67%
0	10	1.003	0.836	0.167	16.65%	1.67%
0	11	1.170	1.338	-0.168	-14.31%	1.68%
0	12	0.501	0.836	-0.335	-66.70%	3.35%
Max		2.007	2.508	0.335	22.23%	5.02%
Average		1.045	1.184	-0.139	-21.62%	2.79%
Min		0.501	0.501	-0.502	-74.96%	0.01%
Std Dev		0.495	0.491	0.293	34.26%	1.48%



400023 VOS/IN/SID=VIO/VS=

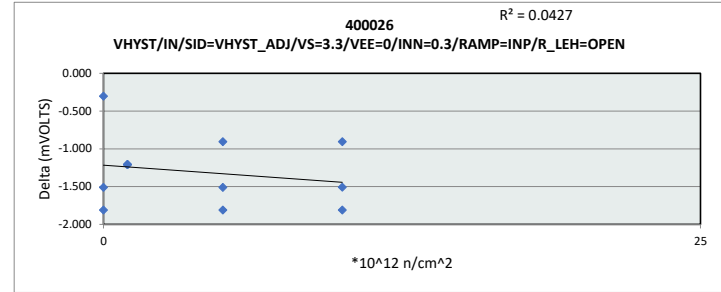
Test Site	
Tester	
Test Number	
Max Limit	4.999999888 mVOLTS
Min Limit	-4.999999888 mVOLTS

*10^12 n/cm^2	0	1	5	10
LL	-5.000	-5.000	-5.000	-5.000
Min	0.836	1.170	0.501	1.003
Average	1.003	1.282	0.892	1.561
Max	1.338	1.505	1.170	2.508
UL	5.000	5.000	5.000	5.000

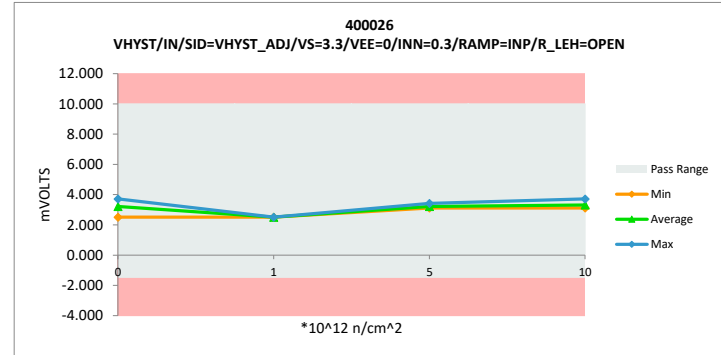


NDD Report
TLV1H103MDBVTSEP

400026 VHYST/IN/SID=VHYST						
Unit		mVOLTS	mVOLTS			
	Max Limit	9.999999776	9.999999776			
	Min Limit	-1.500000013	-1.500000013			
*10 ¹² n/cm ²	Serial #	PRE	POST	Delta	Delta %	% of Limit Range
1	1	1.307	2.513	-1.206	-92.27%	10.49%
1	2	1.307	2.513	-1.206	-92.27%	10.49%
1	3	1.307	2.513	-1.206	-92.27%	10.49%
5	4	2.211	3.116	-0.905	-40.93%	7.87%
5	5	1.608	3.116	-1.508	-93.78%	13.11%
5	6	1.608	3.417	-1.809	-112.50%	15.73%
10	7	1.608	3.115	-1.507	-93.72%	13.10%
10	8	2.211	3.116	-0.905	-40.93%	7.87%
10	9	1.910	3.719	-1.809	-94.71%	15.73%
0	10	1.608	3.417	-1.809	-112.50%	15.73%
0	11	2.211	2.513	-0.302	-13.66%	2.63%
0	12	2.211	3.719	-1.508	-68.20%	13.11%
	Max	2.211	3.719	-0.302	-13.66%	15.73%
	Average	1.759	3.066	-1.307	-78.98%	11.36%
	Min	1.307	2.513	-1.809	-112.50%	2.63%
	Std Dev	0.375	0.460	0.451	31.25%	3.92%



400026 VHYST/IN/SID=VHYST				
Test Site				
Tester				
Test Number				
Max Limit	9.999999776	mVOLTS		
Min Limit	-1.500000013	mVOLTS		
*10 ¹² n/cm ²	0	1	5	10
LL	-1.500	-1.500	-1.500	-1.500
Min	2.513	2.513	3.116	3.115
Average	3.216	2.513	3.216	3.317
Max	3.719	2.513	3.417	3.719
UL	10.000	10.000	10.000	10.000

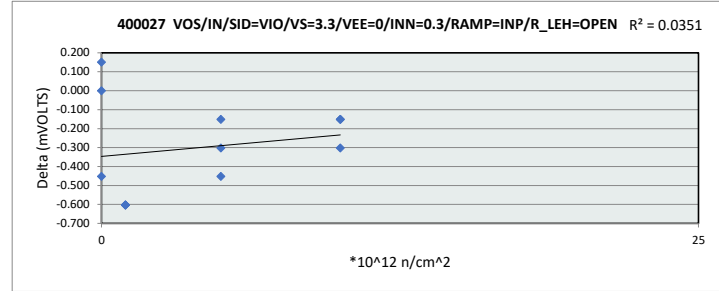


NDD Report
TLV1H103MDBVTSEP

400027 VOS/IN/SID=VIO/VS=

Unit	mVOLTS	mVOLTS
Max Limit	4.999999888	4.999999888
Min Limit	-4.999999888	-4.999999888

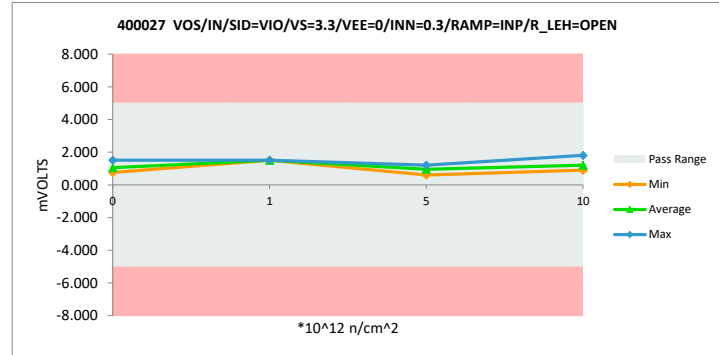
*10 ¹² n/cm ²	Serial #	PRE	POST	Delta	Delta %	% of Limit Range
1	1	0.905	1.507	-0.603	-66.67%	6.03%
1	2	0.905	1.507	-0.603	-66.67%	6.03%
1	3	0.905	1.507	-0.603	-66.67%	6.03%
5	4	0.453	0.603	-0.150	-33.26%	1.50%
5	5	0.754	1.206	-0.452	-59.95%	4.52%
5	6	0.754	1.056	-0.302	-39.99%	3.02%
10	7	0.754	0.905	-0.150	-19.96%	1.51%
10	8	1.659	1.809	-0.150	-9.07%	1.50%
10	9	0.603	0.905	-0.302	-50.00%	3.02%
0	10	0.754	0.753	0.001	0.07%	0.01%
0	11	1.659	1.507	0.151	9.10%	1.51%
0	12	0.453	0.905	-0.452	-99.89%	4.52%
Max		1.659	1.809	0.151	9.10%	6.03%
Average		0.880	1.181	-0.301	-41.91%	3.27%
Min		0.453	0.603	-0.603	-99.89%	0.01%
Std Dev		0.395	0.379	0.249	32.47%	2.12%



400027 VOS/IN/SID=VIO/VS=

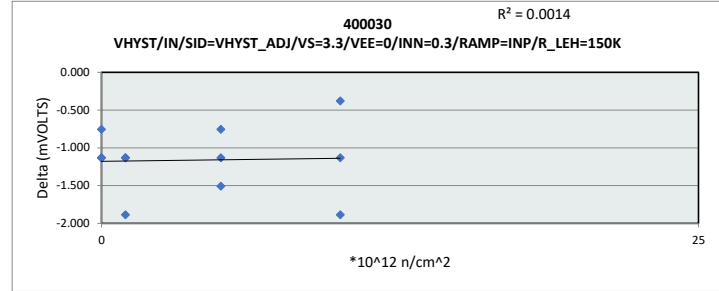
Test Site	
Tester	
Test Number	
Max Limit	4.999999888 mVOLTS
Min Limit	-4.999999888 mVOLTS

*10 ¹² n/cm ²	0	1	5	10
LL	-5.000	-5.000	-5.000	-5.000
Min	0.753	1.507	0.603	0.905
Average	1.055	1.507	0.955	1.206
Max	1.507	1.507	1.206	1.809
UL	5.000	5.000	5.000	5.000

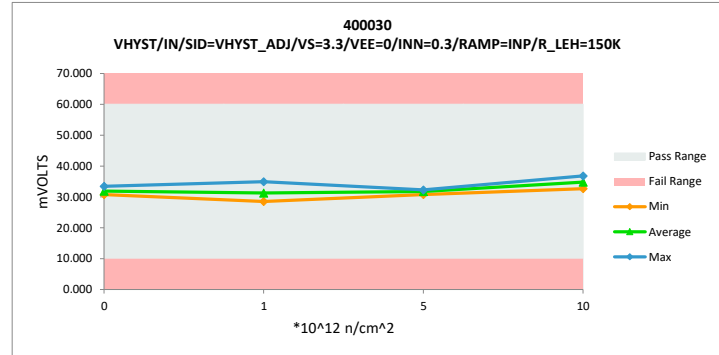


NDD Report
TLV1H103MDBVTSEP

400030 VHYST/IN/SID=VHYST						
Unit		mVOLTS	mVOLTS			
	Max Limit	59.99999866	59.99999866			
	Min Limit	9.999999776	9.999999776			
*10 ¹² n/cm ²	Serial #	PRE	POST	Delta	Delta %	% of Limit Range
1	1	29.272	30.402	-1.130	-3.86%	2.26%
1	2	33.040	34.925	-1.885	-5.71%	3.77%
1	3	27.387	28.518	-1.131	-4.13%	2.26%
5	4	29.648	30.779	-1.131	-3.81%	2.26%
5	5	30.779	32.286	-1.507	-4.90%	3.01%
5	6	31.533	32.286	-0.753	-2.39%	1.51%
10	7	36.432	36.809	-0.377	-1.03%	0.75%
10	8	31.532	32.663	-1.131	-3.59%	2.26%
10	9	33.040	34.925	-1.885	-5.71%	3.77%
0	10	30.402	31.533	-1.131	-3.72%	2.26%
0	11	32.286	33.417	-1.131	-3.50%	2.26%
0	12	30.025	30.779	-0.754	-2.51%	1.51%
	Max	36.432	36.809	-0.377	-1.03%	3.77%
	Average	31.281	32.443	-1.162	-3.74%	2.32%
	Min	27.387	28.518	-1.885	-5.71%	0.75%
	Std Dev	2.303	2.303	0.439	1.35%	0.88%



400030 VHYST/IN/SID=VHYS				
Test Site				
Tester				
Test Number				
Max Limit	59.99999866	mVOLTS		
Min Limit	9.999999776	mVOLTS		
*10 ¹² n/cm ²	0	1	5	10
LL	10.000	10.000	10.000	10.000
Min	30.779	28.518	30.779	32.663
Average	31.910	31.282	31.784	34.799
Max	33.417	34.925	32.286	36.809
UL	60.000	60.000	60.000	60.000

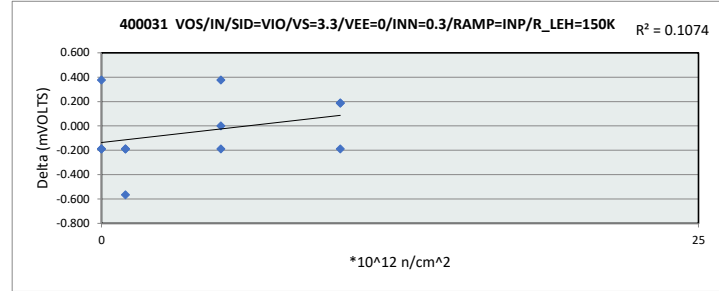


NDD Report
TLV1H103MDBVTSEP

400031 VOS/IN/SID=VIO/VS=

Unit	mVOLTS	mVOLTS
Max Limit	4.999999888	4.999999888
Min Limit	-4.999999888	-4.999999888

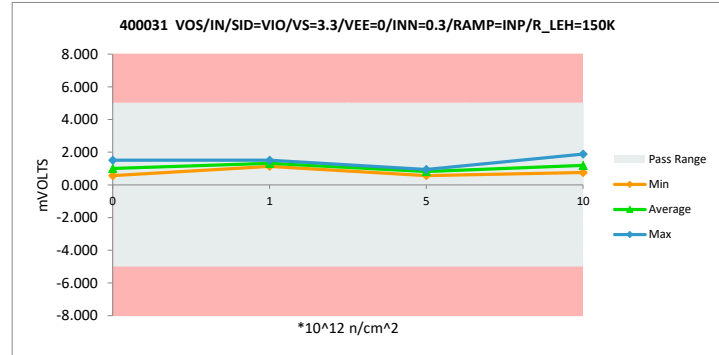
*10 ¹² n/cm ²	Serial #	PRE	POST	Delta	Delta %	% of Limit Range
1	1	1.319	1.508	-0.189	-14.33%	1.89%
1	2	0.942	1.130	-0.188	-20.01%	1.88%
1	3	0.753	1.319	-0.566	-75.05%	5.66%
5	4	0.377	0.566	-0.189	-50.00%	1.89%
5	5	1.320	0.942	0.378	28.61%	3.78%
5	6	0.942	0.942	0.000	0.05%	0.00%
10	7	1.131	0.942	0.189	16.67%	1.89%
10	8	1.696	1.885	-0.189	-11.11%	1.89%
10	9	0.942	0.753	0.189	20.01%	1.89%
0	10	0.754	0.942	-0.188	-25.00%	1.88%
0	11	1.319	1.507	-0.188	-14.29%	1.88%
0	12	0.942	0.566	0.377	40.00%	3.77%
Max		1.696	1.885	0.378	40.00%	5.66%
Average		1.037	1.084	-0.047	-8.70%	2.36%
Min		0.377	0.566	-0.566	-75.05%	0.00%
Std Dev		0.346	0.403	0.280	32.86%	1.42%



400031 VOS/IN/SID=VIO/VS=

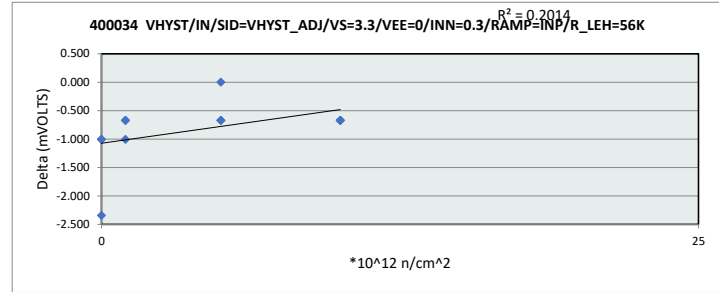
Test Site	
Tester	
Test Number	
Max Limit	4.999999888 mVOLTS
Min Limit	-4.999999888 mVOLTS

*10 ¹² n/cm ²	0	1	5	10
LL	-5.000	-5.000	-5.000	-5.000
Min	0.566	1.130	0.566	0.753
Average	1.005	1.319	0.817	1.194
Max	1.507	1.508	0.942	1.885
UL	5.000	5.000	5.000	5.000

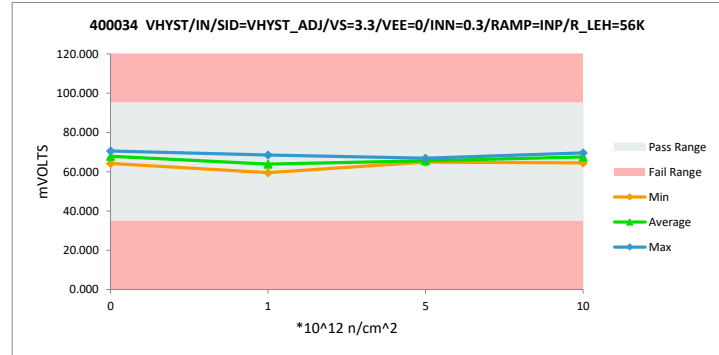


NDD Report
TLV1H103MDBVTSEP

400034 VHYST/IN/SID=VHYST						
Unit		mVOLTS	mVOLTS			
Max Limit		94.99999881	94.99999881			
Min Limit		35.00000015	35.00000015			
*10 ¹² n/cm ²	Serial #	PRE	POST	Delta	Delta %	% of Limit Range
1	1	62.542	63.546	-1.004	-1.61%	1.67%
1	2	67.893	68.562	-0.669	-0.99%	1.12%
1	3	58.863	59.531	-0.668	-1.13%	1.11%
5	4	64.214	64.883	-0.669	-1.04%	1.12%
5	5	66.220	66.890	-0.670	-1.01%	1.12%
5	6	64.883	64.882	0.001	0.00%	0.00%
10	7	63.880	64.549	-0.669	-1.05%	1.11%
10	8	68.896	69.566	-0.670	-0.97%	1.12%
10	9	67.893	68.562	-0.669	-0.99%	1.12%
0	10	67.893	68.896	-1.003	-1.48%	1.67%
0	11	61.873	64.214	-2.341	-3.78%	3.90%
0	12	69.565	70.568	-1.003	-1.44%	1.67%
Max		69.565	70.568	0.001	0.00%	3.90%
Average		65.385	66.221	-0.836	-1.29%	1.39%
Min		58.863	59.531	-2.341	-3.78%	0.00%
Std Dev		3.250	3.176	0.543	0.88%	0.90%

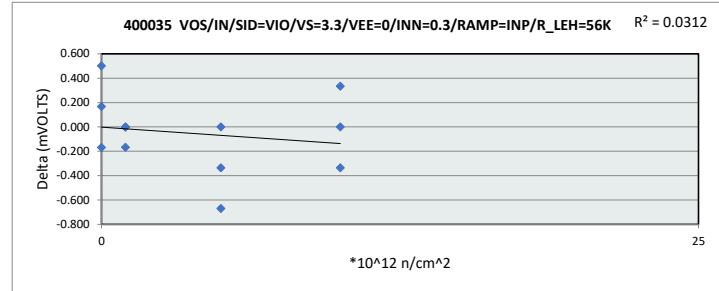


400034 VHYST/IN/SID=VHYST				
Test Site				
Tester				
Test Number				
Max Limit	94.99999881	mVOLTS		
Min Limit	35.00000015	mVOLTS		
*10 ¹² n/cm ²	0	1	5	10
LL	35.000	35.000	35.000	35.000
Min	64.214	59.531	64.882	64.549
Average	67.893	63.880	65.552	67.559
Max	70.568	68.562	66.890	69.566
UL	95.000	95.000	95.000	95.000

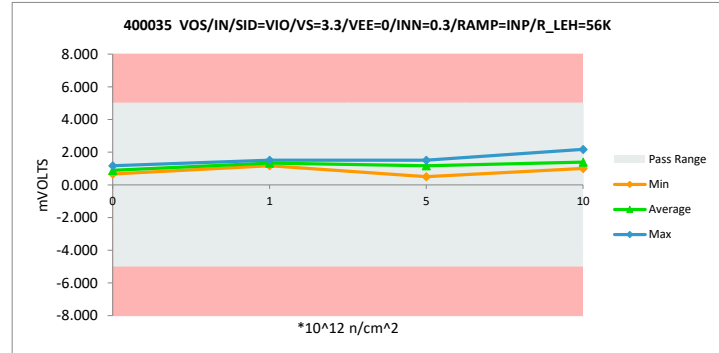


NDD Report
TLV1H103MDBVTSEP

400035 VOS/IN/SID=VIO/VS=						
Unit		mVOLTS	mVOLTS			
Max Limit		4.999999888	4.999999888			
Min Limit		-4.999999888	-4.999999888			
*10 ¹² n/cm ²	Serial #	PRE	POST	Delta	Delta %	% of Limit Range
1	1	1.338	1.505	-0.167	-12.48%	1.67%
1	2	1.338	1.338	0.000	-0.04%	0.00%
1	3	1.170	1.170	0.000	0.00%	0.00%
5	4	0.502	0.501	0.001	0.10%	0.01%
5	5	0.836	1.505	-0.669	-80.02%	6.69%
5	6	1.170	1.505	-0.335	-28.58%	3.35%
10	7	0.669	1.003	-0.335	-50.00%	3.35%
10	8	2.174	2.174	0.000	0.00%	0.00%
10	9	1.338	1.003	0.335	25.01%	3.35%
0	10	1.003	0.836	0.167	16.69%	1.67%
0	11	1.673	1.171	0.502	29.99%	5.02%
0	12	0.501	0.669	-0.168	-33.40%	1.68%
Max		2.174	2.174	0.502	29.99%	6.69%
Average		1.143	1.198	-0.056	-11.06%	2.23%
Min		0.501	0.501	-0.669	-80.02%	0.00%
Std Dev		0.488	0.450	0.314	32.09%	2.18%

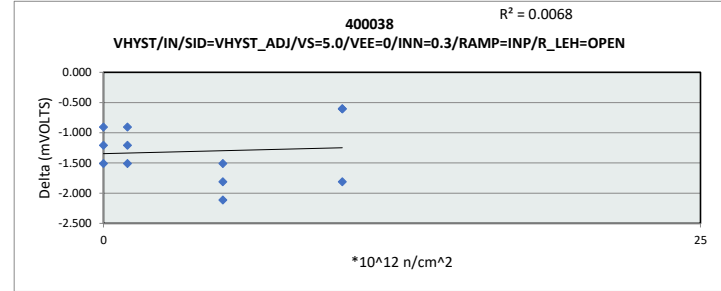


400035 VOS/IN/SID=VIO/VS=				
Test Site				
Tester				
Test Number				
Max Limit	4.999999888	mVOLTS		
Min Limit	-4.999999888	mVOLTS		
*10 ¹² n/cm ²	0	1	5	10
LL	-5.000	-5.000	-5.000	-5.000
Min	0.669	1.170	0.501	1.003
Average	0.892	1.338	1.170	1.393
Max	1.171	1.505	1.505	2.174
UL	5.000	5.000	5.000	5.000

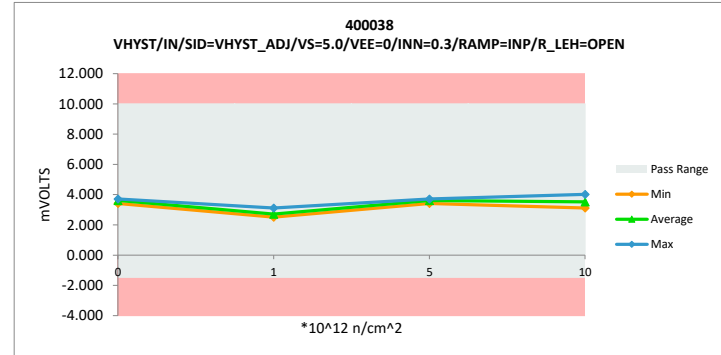


NDD Report
TLV1H103MDBVTSEP

400038 VHYST/IN/SID=VHYST						
Unit		mVOLTS	mVOLTS			
	Max Limit	9.999999776	9.999999776			
	Min Limit	-1.500000013	-1.500000013			
*10 ¹² n/cm ²	Serial #	PRE	POST	Delta	Delta %	% of Limit Range
1	1	1.307	2.513	-1.206	-92.27%	10.49%
1	2	1.608	3.116	-1.508	-93.78%	13.11%
1	3	1.608	2.513	-0.905	-56.28%	7.87%
5	4	2.211	3.718	-1.507	-68.16%	13.10%
5	5	1.608	3.719	-2.111	-131.28%	18.36%
5	6	1.608	3.417	-1.809	-112.50%	15.73%
10	7	1.608	3.417	-1.809	-112.50%	15.73%
10	8	2.513	3.116	-0.603	-24.00%	5.24%
10	9	3.417	4.020	-0.603	-17.65%	5.24%
0	10	2.211	3.719	-1.508	-68.20%	13.11%
0	11	2.513	3.417	-0.904	-35.97%	7.86%
0	12	2.513	3.719	-1.206	-47.99%	10.49%
	Max	3.417	4.020	-0.603	-17.65%	18.36%
	Average	2.060	3.367	-1.307	-71.72%	11.36%
	Min	1.307	2.513	-2.111	-131.28%	5.24%
	Std Dev	0.610	0.478	0.487	37.04%	4.23%

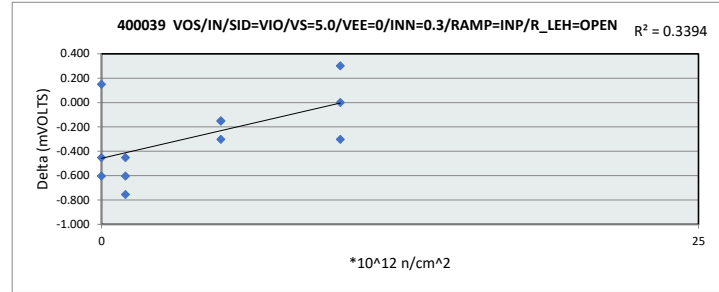


400038 VHYST/IN/SID=VHYS				
Test Site				
Tester				
Test Number				
Max Limit	9.999999776		mVOLTS	
Min Limit	-1.500000013		mVOLTS	
*10 ¹² n/cm ²	0	1	5	10
LL	-1.500	-1.500	-1.500	-1.500
Min	3.417	2.513	3.417	3.116
Average	3.618	2.714	3.618	3.518
Max	3.719	3.116	3.719	4.020
UL	10.000	10.000	10.000	10.000

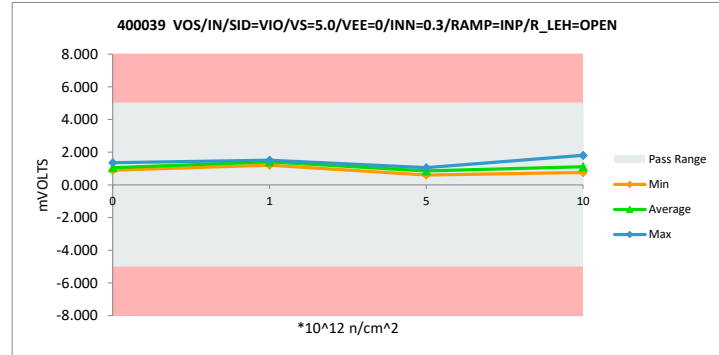


NDD Report
TLV1H103MDBVTSEP

400039 VOS/IN/SID=VIO/VS=						
Unit		mVOLTS	mVOLTS			
Max Limit		4.99999888	4.99999888			
Min Limit		-4.99999888	-4.99999888			
*10 ¹² n/cm ²	Serial #	PRE	POST	Delta	Delta %	% of Limit Range
1	1	0.905	1.507	-0.603	-66.67%	6.03%
1	2	0.754	1.206	-0.452	-59.95%	4.52%
1	3	0.754	1.507	-0.753	-99.93%	7.53%
5	4	0.453	0.603	-0.150	-33.26%	1.50%
5	5	0.754	0.905	-0.150	-19.96%	1.51%
5	6	0.754	1.056	-0.302	-39.99%	3.02%
10	7	0.754	0.753	0.001	0.07%	0.01%
10	8	1.507	1.809	-0.302	-20.00%	3.02%
10	9	1.056	0.754	0.302	28.56%	3.02%
0	10	0.453	0.905	-0.452	-99.89%	4.52%
0	11	1.507	1.356	0.151	10.02%	1.51%
0	12	0.301	0.905	-0.603	-200.00%	6.03%
Max		1.507	1.809	0.302	28.56%	7.53%
Average		0.829	1.105	-0.276	-50.08%	3.52%
Min		0.301	0.603	-0.753	-200.00%	0.01%
Std Dev		0.378	0.371	0.320	62.03%	2.26%

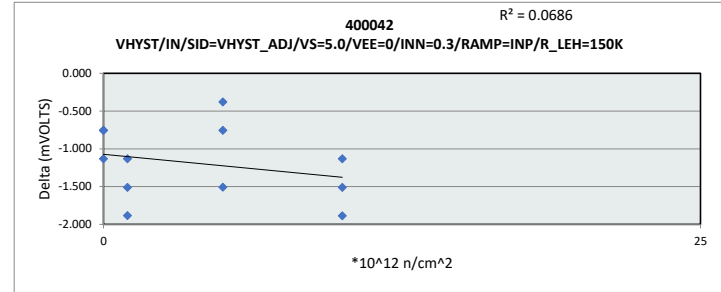


400039 VOS/IN/SID=VIO/VS=				
Test Site				
Tester				
Test Number				
Max Limit	4.99999888	mVOLTS		
Min Limit	-4.99999888	mVOLTS		
*10 ¹² n/cm ²	0	1	5	10
LL	-5.000	-5.000	-5.000	-5.000
Min	0.905	1.206	0.603	0.753
Average	1.055	1.407	0.854	1.106
Max	1.356	1.507	1.056	1.809
UL	5.000	5.000	5.000	5.000

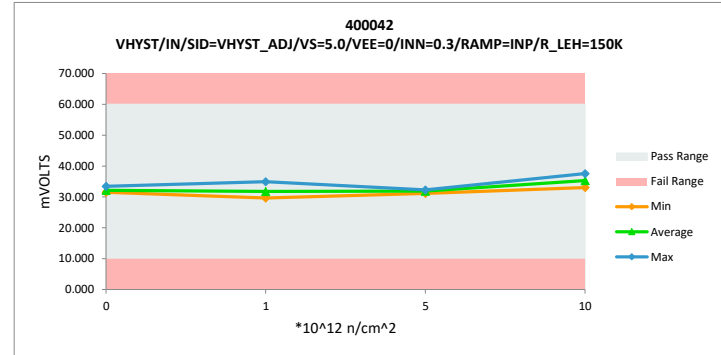


NDD Report
TLV1H103MDBVTSEP

400042 VHYST/IN/SID=VHYST						
Unit		mVOLTS	mVOLTS			
	Max Limit	59.99999866	59.99999866			
	Min Limit	9.999999776	9.999999776			
*10 ¹² n/cm ²	Serial #	PRE	POST	Delta	Delta %	% of Limit Range
1	1	29.648	30.779	-1.131	-3.81%	2.26%
1	2	33.417	34.925	-1.508	-4.51%	3.02%
1	3	27.764	29.648	-1.884	-6.79%	3.77%
5	4	30.402	31.156	-0.754	-2.48%	1.51%
5	5	30.779	32.286	-1.507	-4.90%	3.01%
5	6	31.909	32.286	-0.377	-1.18%	0.75%
10	7	36.432	37.563	-1.131	-3.10%	2.26%
10	8	31.155	33.040	-1.885	-6.05%	3.77%
10	9	33.794	35.302	-1.508	-4.46%	3.02%
0	10	30.779	31.533	-0.754	-2.45%	1.51%
0	11	32.663	33.417	-0.754	-2.31%	1.51%
0	12	30.402	31.533	-1.131	-3.72%	2.26%
	Max	36.432	37.563	-0.377	-1.18%	3.77%
	Average	31.595	32.789	-1.194	-3.81%	2.39%
	Min	27.764	29.648	-1.885	-6.79%	0.75%
	Std Dev	2.249	2.223	0.478	1.63%	0.96%



400042 VHYST/IN/SID=VHYST				
Test Site				
Tester				
Test Number				
Max Limit	59.99999866	mVOLTS		
Min Limit	9.999999776	mVOLTS		
*10 ¹² n/cm ²	0	1	5	10
LL	10.000	10.000	10.000	10.000
Min	31.533	29.648	31.156	33.040
Average	32.161	31.784	31.909	35.302
Max	33.417	34.925	32.286	37.563
UL	60.000	60.000	60.000	60.000

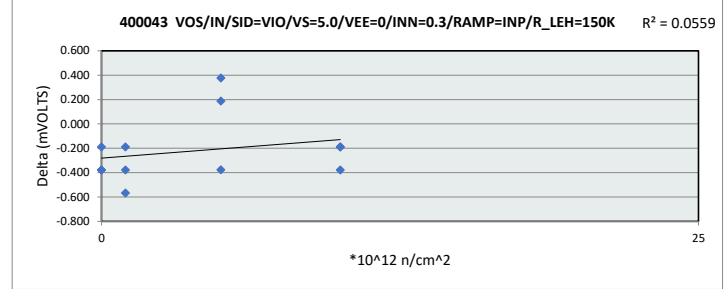


NDD Report
TLV1H103MDBVTSEP

400043 VOS/IN/SID=VIO/VS=

Unit	mVOLTS	mVOLTS
Max Limit	4.999999888	4.999999888
Min Limit	-4.999999888	-4.999999888

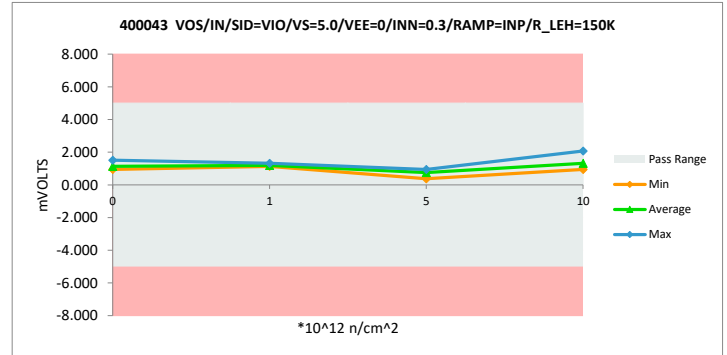
*10 ¹² n/cm ²	Serial #	PRE	POST	Delta	Delta %	% of Limit Range
1	1	1.131	1.320	-0.189	-16.67%	1.89%
1	2	0.753	1.130	-0.377	-50.03%	3.77%
1	3	0.565	1.131	-0.566	-100.18%	5.66%
5	4	0.754	0.377	0.377	50.00%	3.77%
5	5	0.566	0.942	-0.377	-66.58%	3.77%
5	6	1.130	0.942	0.188	16.67%	1.88%
10	7	0.754	0.942	-0.188	-25.00%	1.88%
10	8	1.885	2.073	-0.188	-10.00%	1.88%
10	9	0.565	0.942	-0.377	-66.73%	3.77%
0	10	0.566	0.942	-0.377	-66.67%	3.77%
0	11	1.130	1.507	-0.377	-33.35%	3.77%
0	12	0.754	0.942	-0.188	-25.00%	1.88%
Max		1.885	2.073	0.377	50.00%	5.66%
Average		0.879	1.099	-0.220	-32.79%	3.14%
Min		0.565	0.377	-0.566	-100.18%	1.88%
Std Dev		0.388	0.408	0.265	40.99%	1.23%



400043 VOS/IN/SID=VIO/VS=

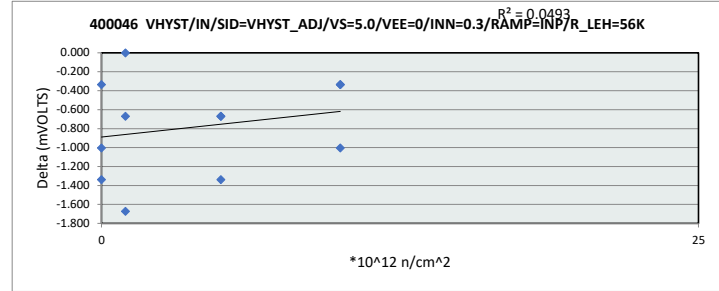
Test Site	
Tester	
Test Number	
Max Limit	4.999999888 mVOLTS
Min Limit	-4.999999888 mVOLTS

*10 ¹² n/cm ²	0	1	5	10
LL	-5.000	-5.000	-5.000	-5.000
Min	0.942	1.130	0.377	0.942
Average	1.131	1.194	0.754	1.319
Max	1.507	1.320	0.942	2.073
UL	5.000	5.000	5.000	5.000

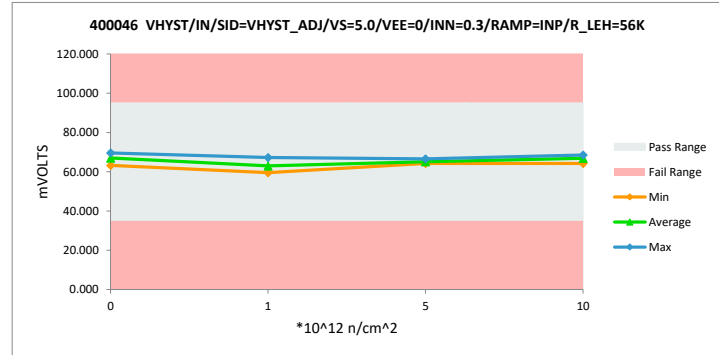


NDD Report
TLV1H103MDBVTSEP

400046 VHYST/IN/SID=VHYST						
Unit		mVOLTS	mVOLTS			
	Max Limit	94.99999881	94.99999881			
	Min Limit	35.00000015	35.00000015			
*10 ¹² n/cm ²	Serial #	PRE	POST	Delta	Delta %	% of Limit Range
1	1	62.207	62.207	0.000	0.00%	0.00%
1	2	66.555	67.224	-0.669	-1.01%	1.12%
1	3	57.859	59.531	-1.672	-2.89%	2.79%
5	4	63.545	64.214	-0.669	-1.05%	1.11%
5	5	65.217	66.555	-1.338	-2.05%	2.23%
5	6	63.880	64.549	-0.669	-1.05%	1.11%
10	7	63.211	64.214	-1.003	-1.59%	1.67%
10	8	68.228	68.562	-0.334	-0.49%	0.56%
10	9	67.559	67.893	-0.334	-0.49%	0.56%
0	10	67.224	68.228	-1.004	-1.49%	1.67%
0	11	61.873	63.211	-1.338	-2.16%	2.23%
0	12	69.230	69.565	-0.335	-0.48%	0.56%
	Max	69.230	69.565	0.000	0.00%	2.79%
	Average	64.716	65.496	-0.780	-1.23%	1.30%
	Min	57.859	59.531	-1.672	-2.89%	0.00%
	Std Dev	3.254	3.001	0.501	0.84%	0.83%



400046 VHYST/IN/SID=VHYST				
Test Site				
Tester				
Test Number				
Max Limit	94.99999881	mVOLTS		
Min Limit	35.00000015	mVOLTS		
*10 ¹² n/cm ²	0	1	5	10
LL	35.000	35.000	35.000	35.000
Min	63.211	59.531	64.214	64.214
Average	67.001	62.987	65.106	66.890
Max	69.565	67.224	66.555	68.562
UL	95.000	95.000	95.000	95.000

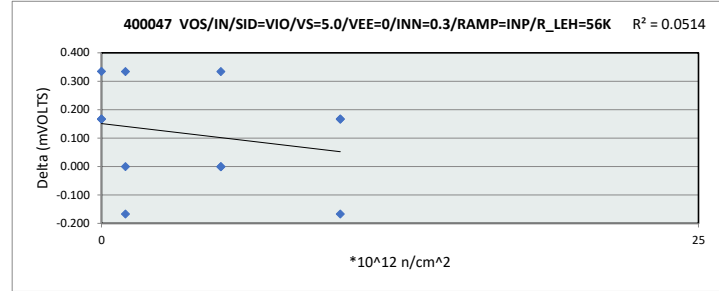


NDD Report
TLV1H103MDBVTSEP

400047 VOS/IN/SID=VIO/VS=

Unit	mVOLTS	mVOLTS
Max Limit	4.999999888	4.999999888
Min Limit	-4.999999888	-4.999999888

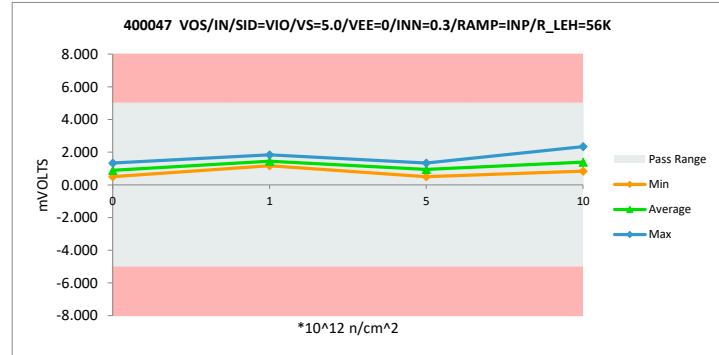
*10 ¹² n/cm ²	Serial #	PRE	POST	Delta	Delta %	% of Limit Range
1	1	1.840	1.840	0.000	0.00%	0.00%
1	2	1.673	1.338	0.335	20.00%	3.35%
1	3	1.003	1.170	-0.167	-16.64%	1.67%
5	4	0.501	0.502	-0.001	-0.10%	0.01%
5	5	1.338	1.338	0.000	0.00%	0.00%
5	6	1.338	1.003	0.334	25.00%	3.34%
10	7	1.003	0.836	0.167	16.69%	1.67%
10	8	2.174	2.341	-0.167	-7.68%	1.67%
10	9	1.170	1.003	0.167	14.27%	1.67%
0	10	1.003	0.836	0.167	16.65%	1.67%
0	11	1.673	1.338	0.335	20.03%	3.35%
0	12	0.669	0.501	0.168	25.04%	1.68%
Max		2.174	2.341	0.335	25.04%	3.35%
Average		1.282	1.171	0.112	9.44%	1.67%
Min		0.501	0.501	-0.167	-16.64%	0.00%
Std Dev		0.491	0.529	0.179	13.75%	1.24%



400047 VOS/IN/SID=VIO/VS=

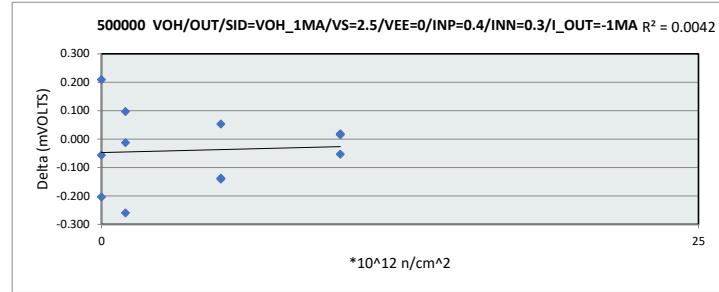
Test Site	
Tester	
Test Number	
Max Limit	4.999999888 mVOLTS
Min Limit	-4.999999888 mVOLTS

*10 ¹² n/cm ²	0	1	5	10
LL	-5.000	-5.000	-5.000	-5.000
Min	0.501	1.170	0.502	0.836
Average	0.892	1.449	0.948	1.393
Max	1.338	1.840	1.338	2.341
UL	5.000	5.000	5.000	5.000

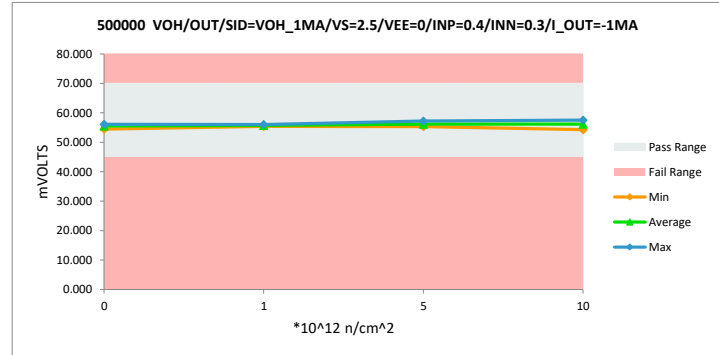


NDD Report
TLV1H103MDBVTSEP

500000 VOH/OUT/SID=VOH_1M						
Unit		mVOLTS	mVOLTS			
Max Limit		70.0000003	70.0000003			
Min Limit		45.00000179	45.00000179			
*10 ¹² n/cm ²	Serial #	PRE	POST	Delta	Delta %	% of Limit Range
1	1	55.644	55.656	-0.012	-0.02%	0.05%
1	2	55.769	56.028	-0.259	-0.47%	1.04%
1	3	55.509	55.412	0.097	0.17%	0.39%
5	4	57.066	57.203	-0.137	-0.24%	0.55%
5	5	55.200	55.341	-0.141	-0.25%	0.56%
5	6	56.013	55.959	0.053	0.10%	0.21%
10	7	56.641	56.694	-0.053	-0.09%	0.21%
10	8	54.309	54.293	0.016	0.03%	0.06%
10	9	57.547	57.528	0.019	0.03%	0.08%
0	10	55.931	55.988	-0.056	-0.10%	0.22%
0	11	56.316	56.106	0.210	0.37%	0.84%
0	12	54.303	54.506	-0.203	-0.37%	0.81%
Max		57.547	57.528	0.210	0.37%	1.04%
Average		55.854	55.893	-0.039	-0.07%	0.42%
Min		54.303	54.293	-0.259	-0.47%	0.05%
Std Dev		0.981	0.962	0.132	0.24%	0.34%

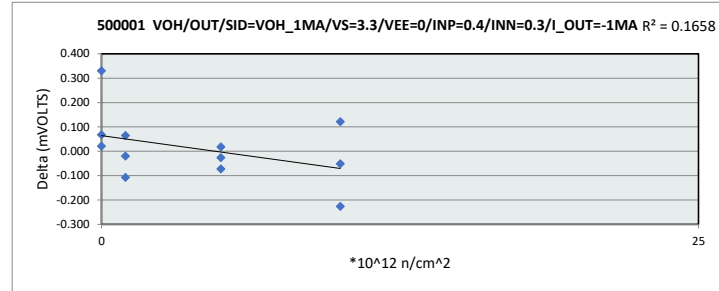


500000 VOH/OUT/SID=VOH				
Test Site				
Tester				
Test Number				
Max Limit	70.0000003	mVOLTS		
Min Limit	45.00000179	mVOLTS		
*10 ¹² n/cm ²	0	1	5	10
LL	45.000	45.000	45.000	45.000
Min	54.506	55.412	55.341	54.293
Average	55.533	55.699	56.168	56.172
Max	56.106	56.028	57.203	57.528
UL	70.000	70.000	70.000	70.000

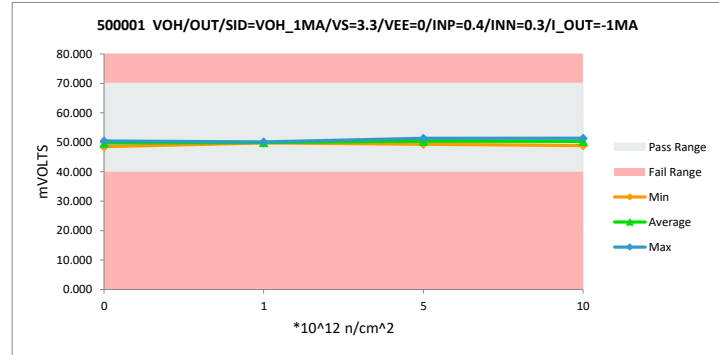


NDD Report
TLV1H103MDBVTSEP

500001 VOH/OUT/SID=VOH_1M						
Unit		mVOLTS	mVOLTS			
	Max Limit	70.0000003	70.0000003			
	Min Limit	39.99999911	39.99999911			
*10 ¹² n/cm ²	Serial #	PRE	POST	Delta	Delta %	% of Limit Range
1	1	49.667	49.774	-0.107	-0.22%	0.36%
1	2	50.111	50.130	-0.019	-0.04%	0.06%
1	3	49.973	49.908	0.065	0.13%	0.22%
5	4	51.264	51.337	-0.073	-0.14%	0.24%
5	5	49.373	49.355	0.018	0.04%	0.06%
5	6	50.380	50.405	-0.026	-0.05%	0.09%
10	7	50.711	50.762	-0.051	-0.10%	0.17%
10	8	48.654	48.880	-0.226	-0.46%	0.75%
10	9	51.502	51.381	0.121	0.24%	0.40%
0	10	50.386	50.318	0.068	0.14%	0.23%
0	11	50.436	50.415	0.021	0.04%	0.07%
0	12	48.842	48.511	0.331	0.68%	1.10%
	Max	51.502	51.381	0.331	0.68%	1.10%
	Average	50.108	50.098	0.010	0.02%	0.31%
	Min	48.654	48.511	-0.226	-0.46%	0.06%
	Std Dev	0.872	0.882	0.136	0.28%	0.32%

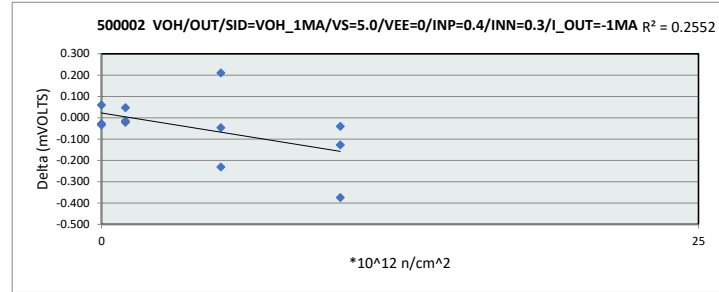


500001 VOH/OUT/SID=VOH				
Test Site				
Tester				
Test Number				
Max Limit	70.0000003	mVOLTS		
Min Limit	39.99999911	mVOLTS		
*10 ¹² n/cm ²	0	1	5	10
LL	40.000	40.000	40.000	40.000
Min	48.511	49.774	49.355	48.880
Average	49.748	49.938	50.366	50.341
Max	50.415	50.130	51.337	51.381
UL	70.000	70.000	70.000	70.000

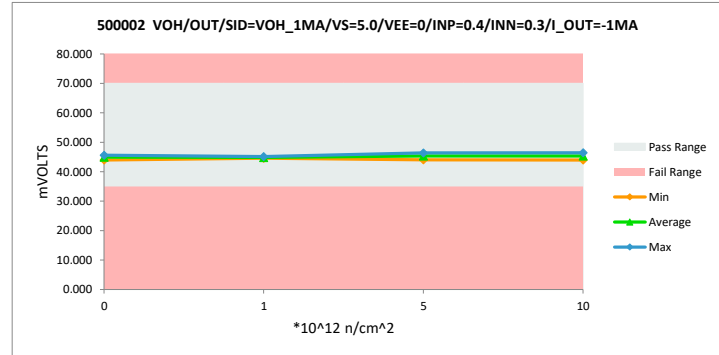


NDD Report
TLV1H103MDBVTSEP

500002 VOH/OUT/SID=VOH_1M						
Unit		mVOLTS	mVOLTS			
	Max Limit	70.0000003	70.0000003			
	Min Limit	35.00000015	35.00000015			
*10 ¹² n/cm ²	Serial #	PRE	POST	Delta	Delta %	% of Limit Range
1	1	44.579	44.600	-0.021	-0.05%	0.06%
1	2	45.133	45.147	-0.015	-0.03%	0.04%
1	3	44.876	44.828	0.048	0.11%	0.14%
5	4	46.333	46.379	-0.046	-0.10%	0.13%
5	5	44.282	44.072	0.210	0.48%	0.60%
5	6	45.389	45.619	-0.230	-0.51%	0.66%
10	7	45.436	45.563	-0.127	-0.28%	0.36%
10	8	43.601	43.975	-0.374	-0.86%	1.07%
10	9	46.395	46.435	-0.040	-0.09%	0.11%
0	10	45.564	45.591	-0.027	-0.06%	0.08%
0	11	45.333	45.366	-0.033	-0.07%	0.10%
0	12	44.064	44.003	0.060	0.14%	0.17%
	Max	46.395	46.435	0.210	0.48%	1.07%
	Average	45.082	45.132	-0.050	-0.11%	0.29%
	Min	43.601	43.975	-0.374	-0.86%	0.04%
	Std Dev	0.851	0.856	0.147	0.33%	0.32%



500002 VOH/OUT/SID=VOH				
Test Site				
Tester				
Test Number				
Max Limit	70.0000003	mVOLTS		
Min Limit	35.00000015	mVOLTS		
*10 ¹² n/cm ²	0	1	5	10
LL	35.000	35.000	35.000	35.000
Min	44.003	44.600	44.072	43.975
Average	44.987	44.859	45.357	45.324
Max	45.591	45.147	46.379	46.435
UL	70.000	70.000	70.000	70.000

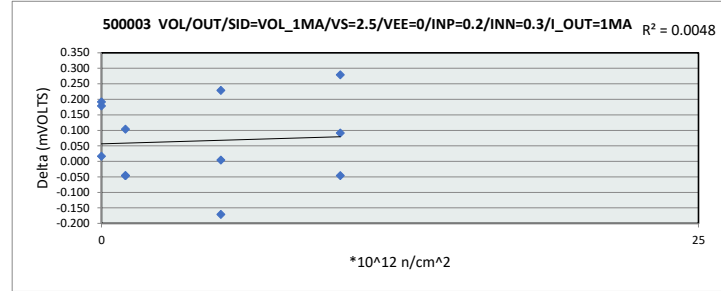


NDD Report
TLV1H103MDBVTSEP

500003 VOL/OUT/SID=VOL_1M

Unit	mVOLTS	mVOLTS
Max Limit	70.0000003	70.0000003
Min Limit	50.00000075	50.00000075

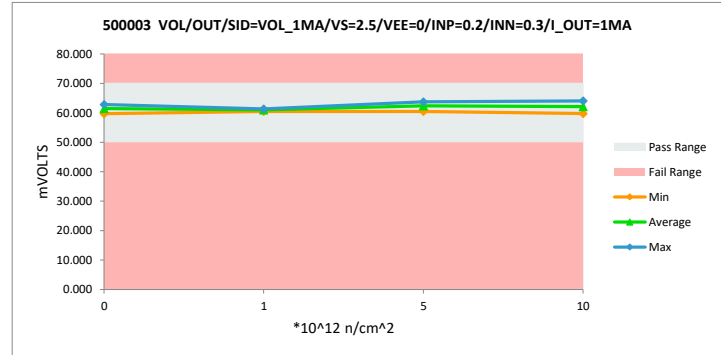
*10 ¹² n/cm ²	Serial #	PRE	POST	Delta	Delta %	% of Limit Range
1	1	60.416	60.462	-0.046	-0.08%	0.23%
1	2	61.303	61.199	0.104	0.17%	0.52%
1	3	61.291	61.337	-0.046	-0.07%	0.23%
5	4	64.004	63.775	0.229	0.36%	1.15%
5	5	60.291	60.462	-0.171	-0.28%	0.85%
5	6	62.929	62.925	0.004	0.01%	0.02%
10	7	62.741	62.462	0.279	0.45%	1.40%
10	8	59.716	59.761	-0.046	-0.08%	0.23%
10	9	64.142	64.050	0.092	0.14%	0.46%
0	10	63.054	62.862	0.192	0.30%	0.96%
0	11	61.866	61.849	0.017	0.03%	0.08%
0	12	59.891	59.711	0.179	0.30%	0.90%
Max		64.142	64.050	0.279	0.45%	1.40%
Average		61.804	61.738	0.066	0.10%	0.59%
Min		59.716	59.711	-0.171	-0.28%	0.02%
Std Dev		1.560	1.490	0.136	0.22%	0.45%



500003 VOL/OUT/SID=VOL_1M

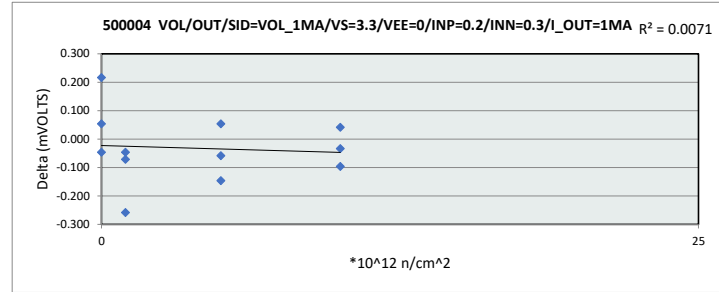
Test Site	
Tester	
Test Number	
Max Limit	70.0000003 mVOLTS
Min Limit	50.00000075 mVOLTS

*10 ¹² n/cm ²	0	1	5	10
LL	50.000	50.000	50.000	50.000
Min	59.711	60.462	60.462	59.761
Average	61.474	60.999	62.387	62.091
Max	62.862	61.337	63.775	64.050
UL	70.000	70.000	70.000	70.000

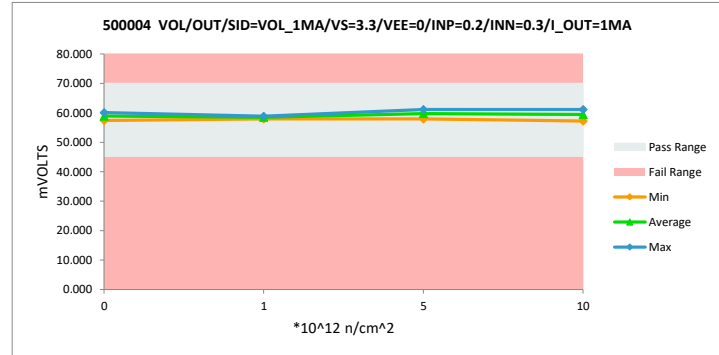


NDD Report
TLV1H103MDBVTSEP

500004 VOL/OUT/SID=VOL_1M						
Unit		mVOLTS	mVOLTS			
Max Limit		70.0000003	70.0000003			
Min Limit		45.00000179	45.00000179			
*10 ¹² n/cm ²	Serial #	PRE	POST	Delta	Delta %	% of Limit Range
1	1	57.665	57.923	-0.258	-0.45%	1.03%
1	2	58.678	58.724	-0.046	-0.08%	0.18%
1	3	58.790	58.861	-0.071	-0.12%	0.28%
5	4	61.078	61.137	-0.058	-0.10%	0.23%
5	5	57.803	57.948	-0.146	-0.25%	0.58%
5	6	60.191	60.136	0.054	0.09%	0.22%
10	7	59.778	59.874	-0.096	-0.16%	0.38%
10	8	57.265	57.223	0.042	0.07%	0.17%
10	9	61.091	61.124	-0.033	-0.05%	0.13%
0	10	60.291	60.074	0.217	0.36%	0.87%
0	11	59.278	59.224	0.054	0.09%	0.22%
0	12	57.353	57.398	-0.046	-0.08%	0.18%
Max		61.091	61.137	0.217	0.36%	1.03%
Average		59.105	59.137	-0.032	-0.06%	0.37%
Min		57.265	57.223	-0.258	-0.45%	0.13%
Std Dev		1.395	1.355	0.118	0.20%	0.30%

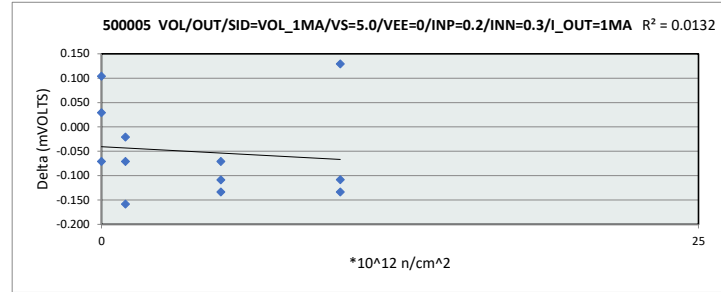


500004 VOL/OUT/SID=VOL_1M				
Test Site				
Tester				
Test Number				
Max Limit	70.0000003	mVOLTS		
Min Limit	45.00000179	mVOLTS		
*10 ¹² n/cm ²	0	1	5	10
LL	45.000	45.000	45.000	45.000
Min	57.398	57.923	57.948	57.223
Average	58.899	58.503	59.741	59.407
Max	60.074	58.861	61.137	61.124
UL	70.000	70.000	70.000	70.000

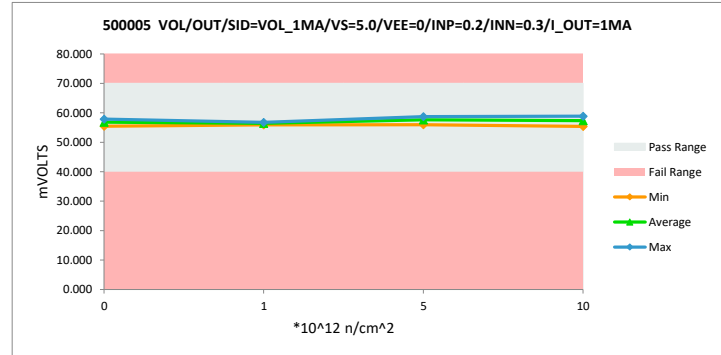


NDD Report
TLV1H103MDBVTSEP

500005 VOL/OUT/SID=VOL_1M						
Unit		mVOLTS	mVOLTS			
Max Limit		70.0000003	70.0000003			
Min Limit		39.99999911	39.99999911			
*10 ¹² n/cm ²	Serial #	PRE	POST	Delta	Delta %	% of Limit Range
1	1	55.852	55.923	-0.071	-0.13%	0.24%
1	2	56.615	56.773	-0.158	-0.28%	0.53%
1	3	56.577	56.598	-0.021	-0.04%	0.07%
5	4	58.678	58.749	-0.071	-0.12%	0.24%
5	5	55.852	55.961	-0.108	-0.19%	0.36%
5	6	58.065	58.199	-0.133	-0.23%	0.44%
10	7	57.603	57.711	-0.108	-0.19%	0.36%
10	8	55.265	55.398	-0.133	-0.24%	0.44%
10	9	59.003	58.874	0.129	0.22%	0.43%
0	10	58.003	57.898	0.104	0.18%	0.35%
0	11	57.065	57.136	-0.071	-0.12%	0.24%
0	12	55.490	55.460	0.029	0.05%	0.10%
Max		59.003	58.874	0.129	0.22%	0.53%
Average		57.006	57.057	-0.051	-0.09%	0.32%
Min		55.265	55.398	-0.158	-0.28%	0.07%
Std Dev		1.265	1.232	0.094	0.16%	0.14%

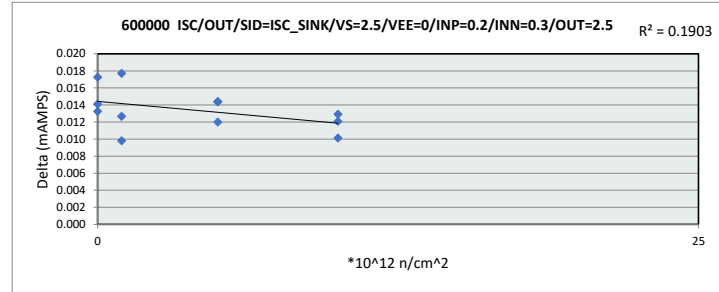


500005 VOL/OUT/SID=VOL_1M				
Test Site				
Tester				
Test Number				
Max Limit	70.0000003	mVOLTS		
Min Limit	39.99999911	mVOLTS		
*10 ¹² n/cm ²	0	1	5	10
LL	40.000	40.000	40.000	40.000
Min	55.460	55.923	55.961	55.398
Average	56.832	56.431	57.636	57.328
Max	57.898	56.773	58.749	58.874
UL	70.000	70.000	70.000	70.000

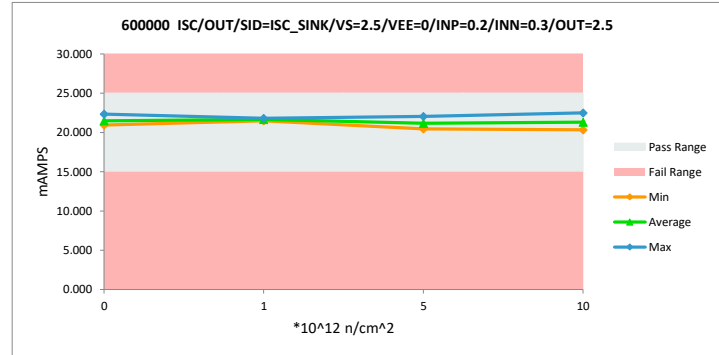


NDD Report
TLV1H103MDBVTSEP

		600000 ISC/OUT/SID=ISC_SIN				
Unit		mAMPS	mAMPS			
Max Limit		25.00000037	25.00000037			
Min Limit		14.99999967	14.99999967			
*10 ¹² n/cm ²	Serial #	PRE	POST	Delta	Delta %	% of Limit Range
1	1	21.709	21.696	0.013	0.06%	0.13%
1	2	21.505	21.487	0.018	0.08%	0.18%
1	3	21.819	21.809	0.010	0.05%	0.10%
5	4	20.459	20.447	0.012	0.06%	0.12%
5	5	22.070	22.055	0.014	0.07%	0.14%
5	6	21.035	21.021	0.014	0.07%	0.14%
10	7	21.113	21.101	0.012	0.06%	0.12%
10	8	22.507	22.496	0.010	0.05%	0.10%
10	9	20.354	20.341	0.013	0.06%	0.13%
0	10	20.964	20.950	0.014	0.07%	0.14%
0	11	21.158	21.145	0.013	0.06%	0.13%
0	12	22.350	22.333	0.017	0.08%	0.17%
	Max	22.507	22.496	0.018	0.08%	0.18%
	Average	21.420	21.407	0.013	0.06%	0.13%
	Min	20.354	20.341	0.010	0.05%	0.10%
	Std Dev	0.694	0.694	0.002	0.01%	0.02%

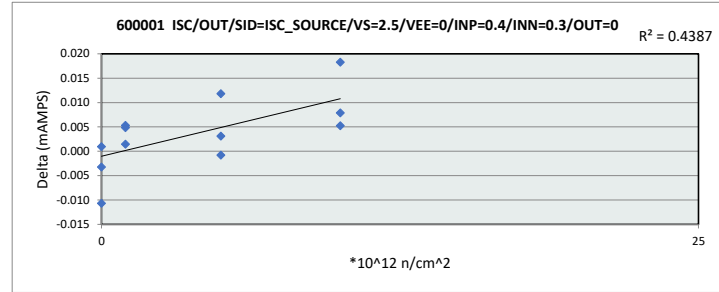


		600000 ISC/OUT/SID=ISC_S		
Test Site				
Tester				
Test Number				
Max Limit	25.00000037	mAMPS		
Min Limit	14.99999967	mAMPS		
*10 ¹² n/cm ²	0	1	5	10
LL	15.000	15.000	15.000	15.000
Min	20.950	21.487	20.447	20.341
Average	21.476	21.664	21.174	21.313
Max	22.333	21.809	22.055	22.496
UL	25.000	25.000	25.000	25.000

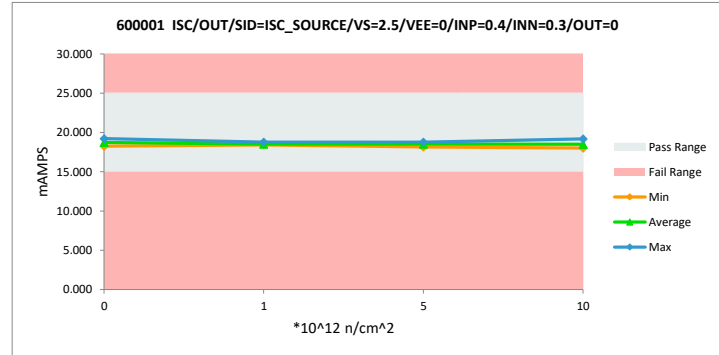


NDD Report
TLV1H103MDBVTSEP

		600001 ISC/OUT/SID=ISC_SOU				
Unit		mAMPS	mAMPS			
Max Limit		25.00000037	25.00000037			
Min Limit		14.99999967	14.99999967			
*10 ¹² n/cm ²	Serial #	PRE	POST	Delta	Delta %	% of Limit Range
1	1	18.421	18.416	0.005	0.03%	0.05%
1	2	18.422	18.417	0.005	0.03%	0.05%
1	3	18.769	18.767	0.001	0.01%	0.01%
5	4	18.165	18.153	0.012	0.07%	0.12%
5	5	18.766	18.766	-0.001	0.00%	0.01%
5	6	18.690	18.687	0.003	0.02%	0.03%
10	7	18.323	18.304	0.018	0.10%	0.18%
10	8	19.187	19.179	0.008	0.04%	0.08%
10	9	18.020	18.015	0.005	0.03%	0.05%
0	10	18.709	18.712	-0.003	-0.02%	0.03%
0	11	18.255	18.266	-0.011	-0.06%	0.11%
0	12	19.221	19.220	0.001	0.01%	0.01%
	Max	19.221	19.220	0.018	0.10%	0.18%
	Average	18.579	18.575	0.004	0.02%	0.06%
	Min	18.020	18.015	-0.011	-0.06%	0.01%
	Std Dev	0.380	0.381	0.007	0.04%	0.05%

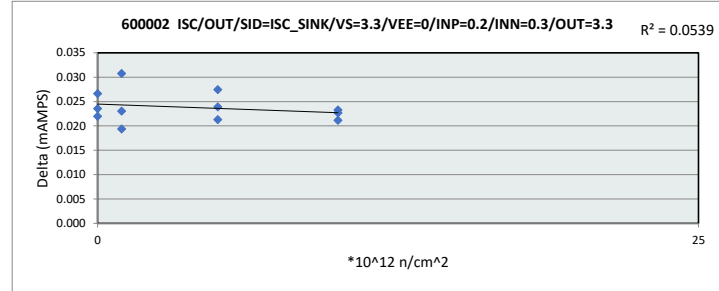


		600001 ISC/OUT/SID=ISC_SOU		
Test Site				
Tester				
Test Number				
Max Limit	25.00000037	mAMPS		
Min Limit	14.99999967	mAMPS		
*10 ¹² n/cm ²	0	1	5	10
LL	15.000	15.000	15.000	15.000
Min	18.266	18.416	18.153	18.015
Average	18.733	18.533	18.536	18.500
Max	19.220	18.767	18.766	19.179
UL	25.000	25.000	25.000	25.000

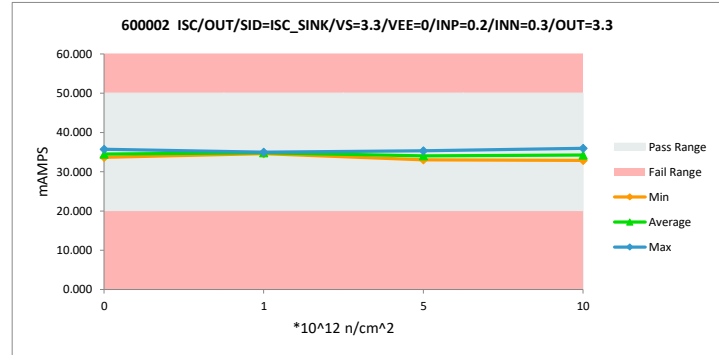


NDD Report
TLV1H103MDBVTSEP

		600002 ISC/OUT/SID=ISC_SIN				
Unit		mAMPS	mAMPS			
Max Limit		50.00000075	50.00000075			
Min Limit		19.99999955	19.99999955			
*10^12 n/cm^2	Serial #	PRE	POST	Delta	Delta %	% of Limit Range
1	1	35.009	34.986	0.023	0.07%	0.08%
1	2	34.639	34.608	0.031	0.09%	0.10%
1	3	34.945	34.925	0.019	0.06%	0.06%
5	4	33.042	33.018	0.024	0.07%	0.08%
5	5	35.387	35.359	0.027	0.08%	0.09%
5	6	33.769	33.748	0.021	0.06%	0.07%
10	7	34.003	33.982	0.021	0.06%	0.07%
10	8	35.982	35.959	0.023	0.06%	0.08%
10	9	32.905	32.882	0.023	0.07%	0.08%
0	10	33.680	33.656	0.024	0.07%	0.08%
0	11	34.145	34.123	0.022	0.06%	0.07%
0	12	35.755	35.729	0.027	0.07%	0.09%
	Max	35.982	35.959	0.031	0.09%	0.10%
	Average	34.438	34.415	0.024	0.07%	0.08%
	Min	32.905	32.882	0.019	0.06%	0.06%
	Std Dev	1.011	1.010	0.003	0.01%	0.01%

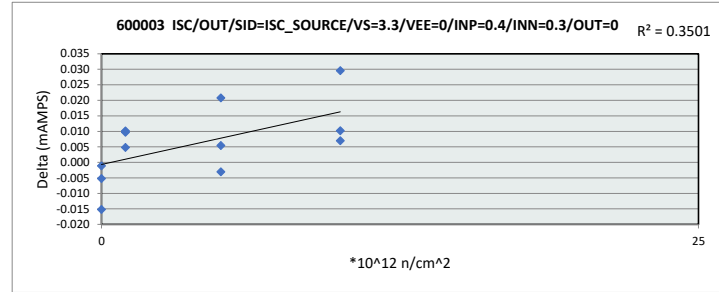


		600002 ISC/OUT/SID=ISC_S		
Test Site				
Tester				
Test Number				
Max Limit	50.00000075	mAMPS		
Min Limit	19.99999955	mAMPS		
*10^12 n/cm^2	0	1	5	10
LL	20.000	20.000	20.000	20.000
Min	33.656	34.608	33.018	32.882
Average	34.503	34.840	34.042	34.274
Max	35.729	34.986	35.359	35.959
UL	50.000	50.000	50.000	50.000

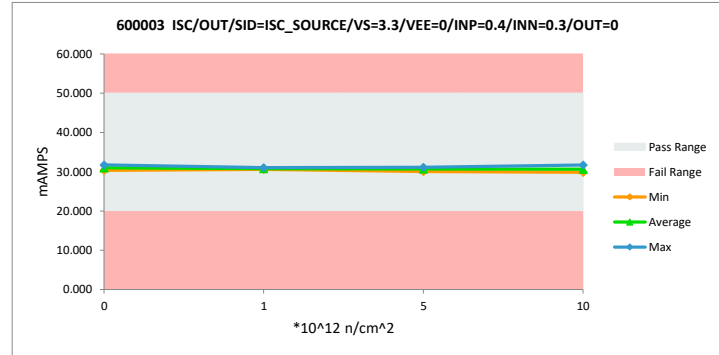


NDD Report
TLV1H103MDBVTSEP

600003 ISC/OUT/SID=ISC_SOU						
Unit		mAMPS	mAMPS			
Max Limit		50.00000075	50.00000075			
Min Limit		19.99999955	19.99999955			
*10 ¹² n/cm ²	Serial #	PRE	POST	Delta	Delta %	% of Limit Range
1	1	30.669	30.658	0.010	0.03%	0.03%
1	2	30.602	30.593	0.010	0.03%	0.03%
1	3	31.055	31.051	0.005	0.02%	0.02%
5	4	30.084	30.063	0.021	0.07%	0.07%
5	5	31.121	31.124	-0.003	-0.01%	0.01%
5	6	30.838	30.833	0.005	0.02%	0.02%
10	7	30.377	30.348	0.030	0.10%	0.10%
10	8	31.722	31.712	0.010	0.03%	0.03%
10	9	29.870	29.863	0.007	0.02%	0.02%
0	10	30.867	30.872	-0.005	-0.02%	0.02%
0	11	30.349	30.364	-0.015	-0.05%	0.05%
0	12	31.735	31.736	-0.001	0.00%	0.00%
Max		31.735	31.736	0.030	0.10%	0.10%
Average		30.774	30.768	0.006	0.02%	0.03%
Min		29.870	29.863	-0.015	-0.05%	0.00%
Std Dev		0.581	0.584	0.012	0.04%	0.03%

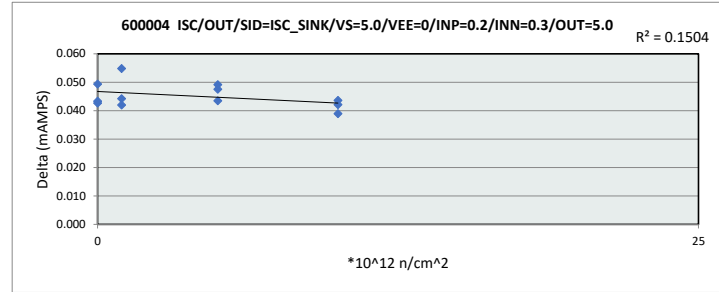


600003 ISC/OUT/SID=ISC_S				
Test Site				
Tester				
Test Number				
Max Limit	50.00000075	mAMPS		
Min Limit	19.99999955	mAMPS		
*10 ¹² n/cm ²	0	1	5	10
LL	20.000	20.000	20.000	20.000
Min	30.364	30.593	30.063	29.863
Average	30.991	30.767	30.673	30.641
Max	31.736	31.051	31.124	31.712
UL	50.000	50.000	50.000	50.000

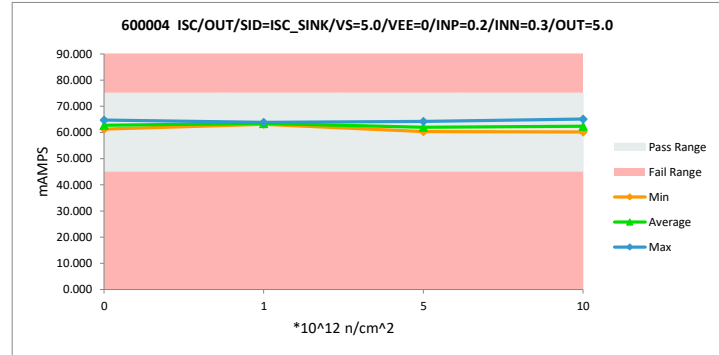


NDD Report
TLV1H103MDBVTSEP

		600004 ISC/OUT/SID=ISC_SIN				
Unit		mAMPS	mAMPS			
Max Limit		75.00000298	75.00000298			
Min Limit		45.00000179	45.00000179			
*10 ¹² n/cm ²	Serial #	PRE	POST	Delta	Delta %	% of Limit Range
1	1	63.907	63.862	0.044	0.07%	0.15%
1	2	63.170	63.115	0.055	0.09%	0.18%
1	3	63.432	63.390	0.042	0.07%	0.14%
5	4	60.414	60.366	0.048	0.08%	0.16%
5	5	64.281	64.232	0.049	0.08%	0.16%
5	6	61.432	61.389	0.043	0.07%	0.14%
10	7	62.004	61.965	0.039	0.06%	0.13%
10	8	65.178	65.134	0.044	0.07%	0.15%
10	9	60.225	60.183	0.042	0.07%	0.14%
0	10	61.300	61.257	0.043	0.07%	0.14%
0	11	62.389	62.345	0.043	0.07%	0.14%
0	12	64.805	64.756	0.049	0.08%	0.16%
	Max	65.178	65.134	0.055	0.09%	0.18%
	Average	62.711	62.666	0.045	0.07%	0.15%
	Min	60.225	60.183	0.039	0.06%	0.13%
	Std Dev	1.673	1.671	0.004	0.01%	0.01%

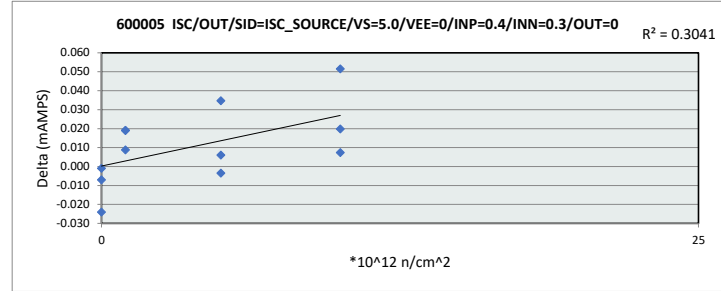


		600004 ISC/OUT/SID=ISC_S		
Test Site				
Tester				
Test Number				
Max Limit		75.00000298	mAMPS	
Min Limit		45.00000179	mAMPS	
*10 ¹² n/cm ²	0	1	5	10
LL	45.000	45.000	45.000	45.000
Min	61.257	63.115	60.366	60.183
Average	62.786	63.456	61.996	62.427
Max	64.756	63.862	64.232	65.134
UL	75.000	75.000	75.000	75.000

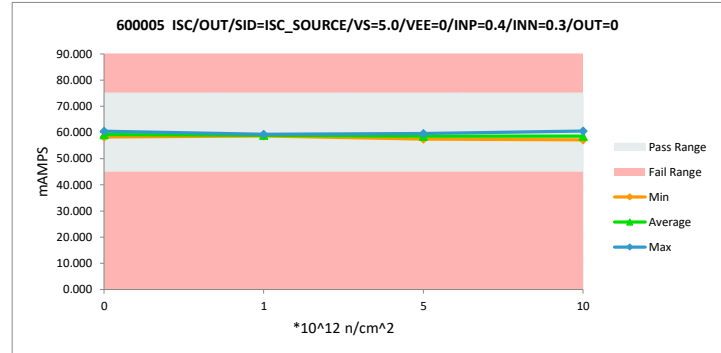


NDD Report
TLV1H103MDBVTSEP

		600005 ISC/OUT/SID=ISC_SOU				
Unit		mAMPS	mAMPS			
Max Limit		75.00000298	75.00000298			
Min Limit		45.00000179	45.00000179			
*10 ¹² n/cm ²	Serial #	PRE	POST	Delta	Delta %	% of Limit Range
1	1	58.922	58.903	0.019	0.03%	0.06%
1	2	58.679	58.660	0.019	0.03%	0.06%
1	3	59.331	59.322	0.009	0.01%	0.03%
5	4	57.528	57.493	0.035	0.06%	0.12%
5	5	59.580	59.583	-0.003	-0.01%	0.01%
5	6	58.768	58.762	0.006	0.01%	0.02%
10	7	58.144	58.092	0.052	0.09%	0.17%
10	8	60.561	60.542	0.020	0.03%	0.07%
10	9	57.175	57.167	0.007	0.01%	0.02%
0	10	58.816	58.823	-0.007	-0.01%	0.02%
0	11	58.232	58.256	-0.024	-0.04%	0.08%
0	12	60.511	60.512	-0.001	0.00%	0.00%
	Max	60.561	60.542	0.052	0.09%	0.17%
	Average	58.854	58.843	0.011	0.02%	0.06%
	Min	57.175	57.167	-0.024	-0.04%	0.00%
	Std Dev	1.041	1.046	0.020	0.03%	0.05%

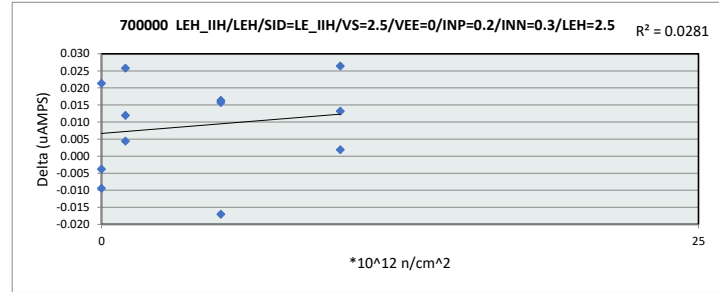


		600005 ISC/OUT/SID=ISC_SOU		
Test Site				
Tester				
Test Number				
Max Limit		75.00000298	mAMPS	
Min Limit		45.00000179	mAMPS	
*10 ¹² n/cm ²	0	1	5	10
LL	45.000	45.000	45.000	45.000
Min	58.256	58.660	57.493	57.167
Average	59.197	58.962	58.613	58.600
Max	60.512	59.322	59.583	60.542
UL	75.000	75.000	75.000	75.000

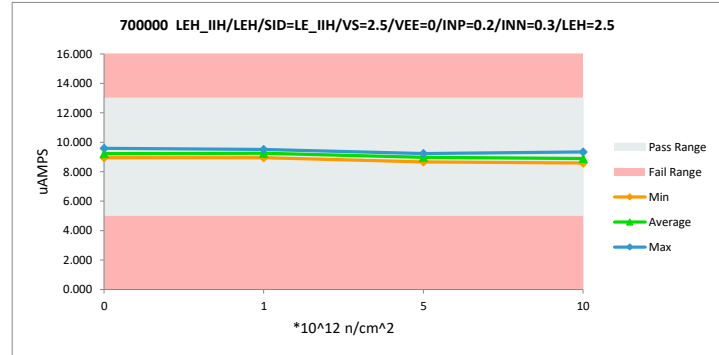


NDD Report
TLV1H103MDBVTSEP

700000 LEH_IIH/LEH/SID=LE						
Unit		uAMPS	uAMPS			
	Max Limit	12.99999985	12.99999985			
	Min Limit	4.999999874	4.999999874			
*10 ¹² n/cm ²	Serial #	PRE	POST	Delta	Delta %	% of Limit Range
1	1	9.319	9.307	0.012	0.13%	0.15%
1	2	9.536	9.510	0.026	0.27%	0.32%
1	3	8.959	8.954	0.004	0.05%	0.06%
5	4	8.679	8.663	0.016	0.18%	0.20%
5	5	9.217	9.234	-0.017	-0.18%	0.21%
5	6	9.051	9.034	0.016	0.18%	0.20%
10	7	8.764	8.750	0.013	0.15%	0.17%
10	8	9.344	9.343	0.002	0.02%	0.02%
10	9	8.620	8.594	0.026	0.31%	0.33%
0	10	9.145	9.124	0.021	0.23%	0.27%
0	11	8.944	8.954	-0.009	-0.11%	0.12%
0	12	9.586	9.590	-0.004	-0.04%	0.05%
	Max	9.586	9.590	0.026	0.31%	0.33%
	Average	9.097	9.088	0.009	0.10%	0.17%
	Min	8.620	8.594	-0.017	-0.18%	0.02%
	Std Dev	0.319	0.322	0.014	0.15%	0.10%

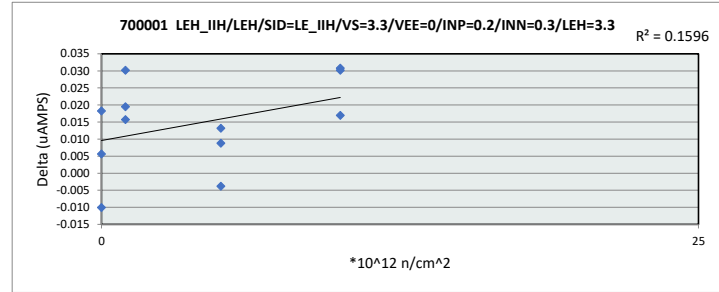


700000 LEH_IIH/LEH/SID=LE				
Test Site				
Tester				
Test Number				
Max Limit	12.99999985	uAMPS		
Min Limit	4.999999874	uAMPS		
*10 ¹² n/cm ²	0	1	5	10
LL	5.000	5.000	5.000	5.000
Min	8.954	8.954	8.663	8.594
Average	9.222	9.257	8.977	8.896
Max	9.590	9.510	9.234	9.343
UL	13.000	13.000	13.000	13.000

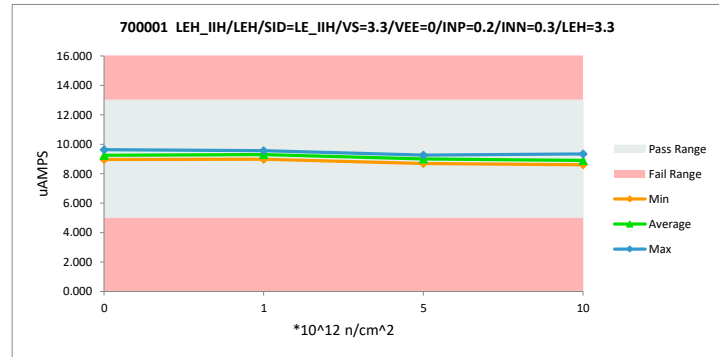


NDD Report
TLV1H103MDBVTSEP

700001 LEH_IIH/LEH/SID=LE						
Unit		uAMPS	uAMPS			
Max Limit		12.99999985	12.99999985			
Min Limit		4.999999874	4.999999874			
*10 ¹² n/cm ²	Serial #	PRE	POST	Delta	Delta %	% of Limit Range
1	1	9.376	9.357	0.020	0.21%	0.24%
1	2	9.592	9.561	0.030	0.31%	0.38%
1	3	9.000	8.984	0.016	0.17%	0.20%
5	4	8.705	8.692	0.013	0.15%	0.17%
5	5	9.261	9.265	-0.004	-0.04%	0.05%
5	6	9.084	9.075	0.009	0.10%	0.11%
10	7	8.782	8.752	0.030	0.34%	0.38%
10	8	9.366	9.349	0.017	0.18%	0.21%
10	9	8.641	8.610	0.031	0.36%	0.39%
0	10	9.175	9.157	0.018	0.20%	0.23%
0	11	8.974	8.969	0.006	0.06%	0.07%
0	12	9.624	9.634	-0.010	-0.10%	0.13%
Max		9.624	9.634	0.031	0.36%	0.39%
Average		9.132	9.117	0.015	0.16%	0.21%
Min		8.641	8.610	-0.010	-0.10%	0.05%
Std Dev		0.327	0.332	0.013	0.14%	0.12%

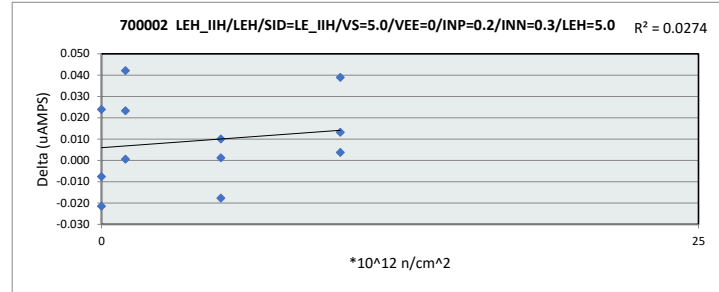


700001 LEH_IIH/LEH/SID=LE				
Test Site				
Tester				
Test Number				
Max Limit	12.99999985	uAMPS		
Min Limit	4.999999874	uAMPS		
*10 ¹² n/cm ²	0	1	5	10
LL	5.000	5.000	5.000	5.000
Min	8.969	8.984	8.692	8.610
Average	9.253	9.301	9.011	8.904
Max	9.634	9.561	9.265	9.349
UL	13.000	13.000	13.000	13.000

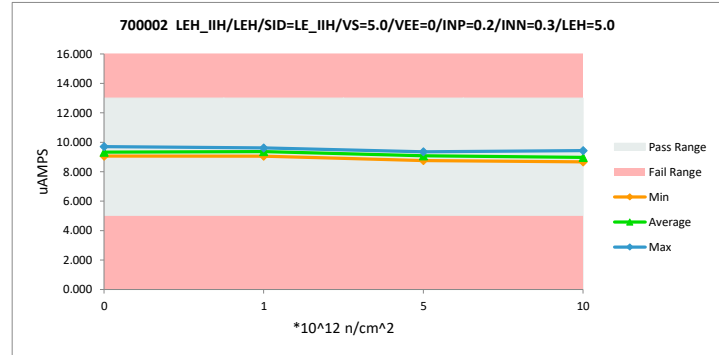


NDD Report
TLV1H103MDBVTSEP

700002 LEH_IIH/LEH/SID=LE						
Unit		uAMPS	uAMPS			
Max Limit		12.99999985	12.99999985			
Min Limit		4.999999874	4.999999874			
*10 ¹² n/cm ²	Serial #	PRE	POST	Delta	Delta %	% of Limit Range
1	1	9.429	9.429	0.001	0.01%	0.01%
1	2	9.663	9.621	0.042	0.44%	0.53%
1	3	9.083	9.059	0.023	0.26%	0.29%
5	4	8.765	8.764	0.001	0.01%	0.02%
5	5	9.337	9.354	-0.018	-0.19%	0.22%
5	6	9.150	9.140	0.010	0.11%	0.13%
10	7	8.835	8.821	0.013	0.15%	0.17%
10	8	9.434	9.430	0.004	0.04%	0.05%
10	9	8.709	8.670	0.039	0.45%	0.49%
0	10	9.237	9.214	0.024	0.26%	0.30%
0	11	9.042	9.064	-0.021	-0.24%	0.27%
0	12	9.697	9.705	-0.008	-0.08%	0.09%
Max		9.697	9.705	0.042	0.45%	0.53%
Average		9.198	9.189	0.009	0.10%	0.21%
Min		8.709	8.670	-0.021	-0.24%	0.01%
Std Dev		0.329	0.332	0.020	0.22%	0.17%

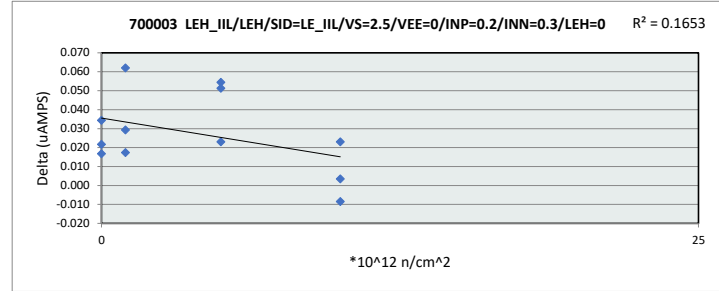


700002 LEH_IIH/LEH/SID=LE				
Test Site				
Tester				
Test Number				
Max Limit	12.99999985	uAMPS		
Min Limit	4.999999874	uAMPS		
*10 ¹² n/cm ²	0	1	5	10
LL	5.000	5.000	5.000	5.000
Min	9.064	9.059	8.764	8.670
Average	9.327	9.370	9.086	8.974
Max	9.705	9.621	9.354	9.430
UL	13.000	13.000	13.000	13.000

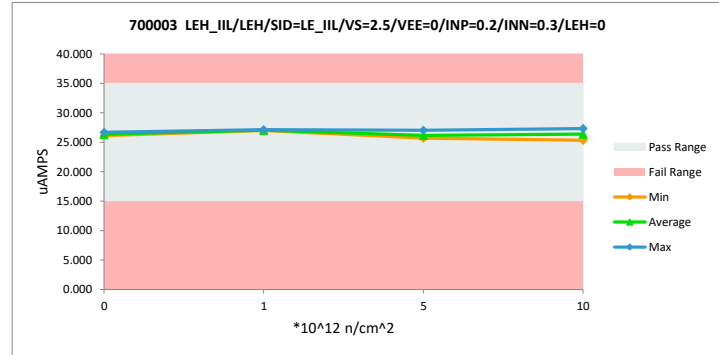


NDD Report
TLV1H103MDBVTSEP

700003 LEH_IIL/LEH/SID=LE						
Unit		uAMPS	uAMPS			
	Max Limit	35.00000093	35.00000093			
	Min Limit	14.99999962	14.99999962			
*10 ¹² n/cm ²	Serial #	PRE	POST	Delta	Delta %	% of Limit Range
1	1	27.024	27.006	0.017	0.06%	0.09%
1	2	27.198	27.136	0.062	0.23%	0.31%
1	3	27.049	27.020	0.029	0.11%	0.15%
5	4	25.774	25.719	0.055	0.21%	0.27%
5	5	27.107	27.055	0.051	0.19%	0.26%
5	6	25.750	25.727	0.023	0.09%	0.12%
10	7	26.531	26.508	0.023	0.09%	0.12%
10	8	27.322	27.330	-0.008	-0.03%	0.04%
10	9	25.346	25.342	0.004	0.01%	0.02%
0	10	26.170	26.149	0.022	0.08%	0.11%
0	11	26.263	26.247	0.017	0.06%	0.08%
0	12	26.734	26.700	0.034	0.13%	0.17%
	Max	27.322	27.330	0.062	0.23%	0.31%
	Average	26.522	26.495	0.027	0.10%	0.14%
	Min	25.346	25.342	-0.008	-0.03%	0.02%
	Std Dev	0.657	0.654	0.021	0.08%	0.09%

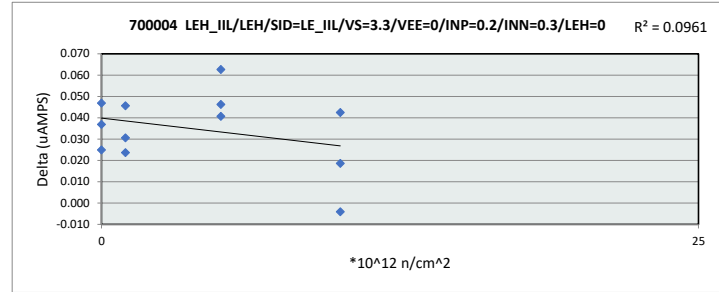


700003 LEH_IIL/LEH/SID=LE				
Test Site				
Tester				
Test Number				
Max Limit	35.00000093	uAMPS		
Min Limit	14.99999962	uAMPS		
*10 ¹² n/cm ²	0	1	5	10
LL	15.000	15.000	15.000	15.000
Min	26.149	27.006	25.719	25.342
Average	26.365	27.054	26.167	26.394
Max	26.700	27.136	27.055	27.330
UL	35.000	35.000	35.000	35.000

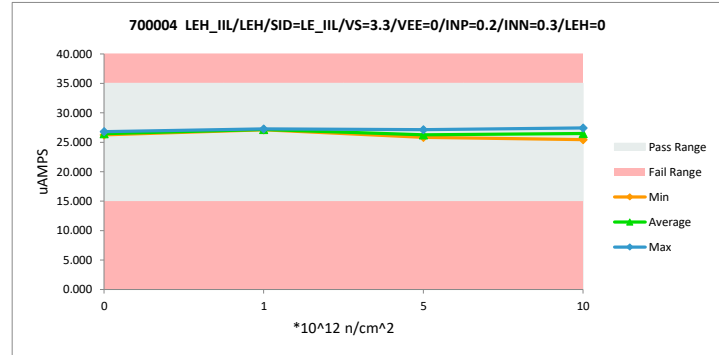


NDD Report
TLV1H103MDBVTSEP

700004 LEH_IIL/LEH/SID=LE						
Unit		uAMPS	uAMPS			
Max Limit		35.00000093	35.00000093			
Min Limit		14.99999962	14.99999962			
*10 ¹² n/cm ²	Serial #	PRE	POST	Delta	Delta %	% of Limit Range
1	1	27.153	27.122	0.031	0.11%	0.15%
1	2	27.306	27.260	0.046	0.17%	0.23%
1	3	27.153	27.130	0.024	0.09%	0.12%
5	4	25.876	25.836	0.041	0.16%	0.20%
5	5	27.218	27.155	0.063	0.23%	0.31%
5	6	25.870	25.824	0.046	0.18%	0.23%
10	7	26.625	26.582	0.043	0.16%	0.21%
10	8	27.436	27.440	-0.004	-0.01%	0.02%
10	9	25.468	25.449	0.019	0.07%	0.09%
0	10	26.302	26.255	0.047	0.18%	0.23%
0	11	26.350	26.325	0.025	0.09%	0.12%
0	12	26.841	26.804	0.037	0.14%	0.18%
Max		27.436	27.440	0.063	0.23%	0.31%
Average		26.633	26.599	0.035	0.13%	0.18%
Min		25.468	25.449	-0.004	-0.01%	0.02%
Std Dev		0.655	0.657	0.017	0.06%	0.08%

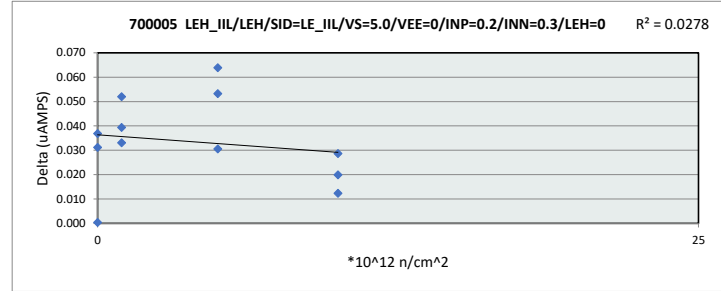


700004 LEH_IIL/LEH/SID=LE				
Test Site				
Tester				
Test Number				
Max Limit	35.00000093	uAMPS		
Min Limit	14.99999962	uAMPS		
*10 ¹² n/cm ²	0	1	5	10
LL	15.000	15.000	15.000	15.000
Min	26.255	27.122	25.824	25.449
Average	26.462	27.171	26.272	26.491
Max	26.804	27.260	27.155	27.440
UL	35.000	35.000	35.000	35.000

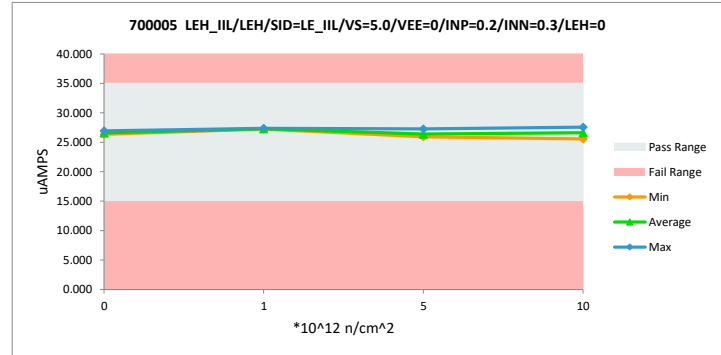


NDD Report
TLV1H103MDBVTSEP

700005 LEH_IIL/LEH/SID=LE						
Unit		uAMPS	uAMPS			
	Max Limit	35.00000093	35.00000093			
	Min Limit	14.99999962	14.99999962			
*10 ¹² n/cm ²	Serial #	PRE	POST	Delta	Delta %	% of Limit Range
1	1	27.288	27.249	0.039	0.14%	0.20%
1	2	27.407	27.374	0.033	0.12%	0.17%
1	3	27.311	27.259	0.052	0.19%	0.26%
5	4	26.034	25.981	0.053	0.20%	0.27%
5	5	27.350	27.286	0.064	0.23%	0.32%
5	6	25.966	25.935	0.031	0.12%	0.15%
10	7	26.750	26.722	0.029	0.11%	0.14%
10	8	27.582	27.569	0.012	0.04%	0.06%
10	9	25.590	25.570	0.020	0.08%	0.10%
0	10	26.398	26.367	0.031	0.12%	0.16%
0	11	26.463	26.463	0.000	0.00%	0.00%
0	12	26.971	26.934	0.037	0.14%	0.18%
	Max	27.582	27.569	0.064	0.23%	0.32%
	Average	26.759	26.726	0.033	0.12%	0.17%
	Min	25.590	25.570	0.000	0.00%	0.00%
	Std Dev	0.662	0.658	0.018	0.07%	0.09%

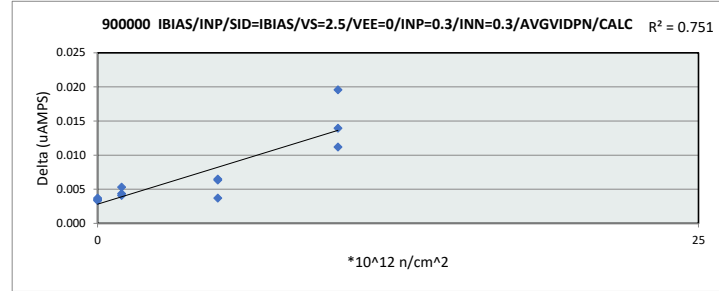


700005 LEH_IIL/LEH/SID=LE				
Test Site				
Tester				
Test Number				
Max Limit	35.00000093	uAMPS		
Min Limit	14.99999962	uAMPS		
*10 ¹² n/cm ²	0	1	5	10
LL	15.000	15.000	15.000	15.000
Min	26.367	27.249	25.935	25.570
Average	26.588	27.294	26.401	26.620
Max	26.934	27.374	27.286	27.569
UL	35.000	35.000	35.000	35.000

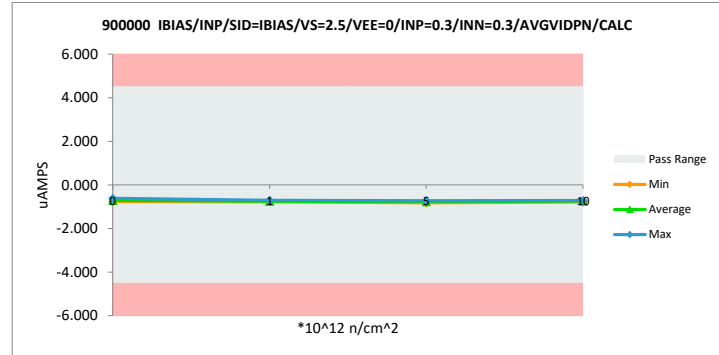


NDD Report
TLV1H103MDBVTSEP

900000 IBIAS/INP/SID=IBIAS						
Unit		uAMPS	uAMPS			
Max Limit		4.500000159	4.500000159			
Min Limit		-4.500000159	-4.500000159			
*10^12 n/cm^2	Serial #	PRE	POST	Delta	Delta %	% of Limit Range
1	1	-0.703	-0.708	0.005	-0.76%	0.06%
1	2	-0.772	-0.777	0.004	-0.56%	0.05%
1	3	-0.769	-0.773	0.004	-0.53%	0.05%
5	4	-0.762	-0.766	0.004	-0.49%	0.04%
5	5	-0.816	-0.822	0.006	-0.78%	0.07%
5	6	-0.721	-0.727	0.007	-0.90%	0.07%
10	7	-0.771	-0.785	0.014	-1.81%	0.15%
10	8	-0.707	-0.718	0.011	-1.59%	0.12%
10	9	-0.720	-0.740	0.020	-2.72%	0.22%
0	10	-0.747	-0.750	0.004	-0.47%	0.04%
0	11	-0.755	-0.758	0.003	-0.44%	0.04%
0	12	-0.613	-0.617	0.004	-0.61%	0.04%
	Max	-0.613	-0.617	0.020	-0.44%	0.22%
	Average	-0.738	-0.745	0.007	-0.97%	0.08%
	Min	-0.816	-0.822	0.003	-2.72%	0.04%
	Std Dev	0.051	0.051	0.005	0.71%	0.06%

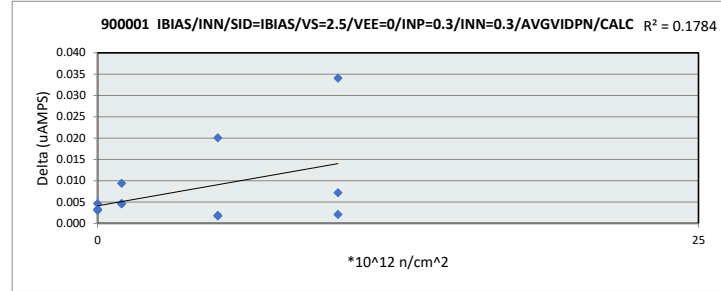


900000 IBIAS/INP/SID=IBIAS				
Test Site				
Tester				
Test Number				
Max Limit	4.500000159	uAMPS		
Min Limit	-4.500000159	uAMPS		
*10^12 n/cm^2	0	1	5	10
LL	-4.500	-4.500	-4.500	-4.500
Min	-0.758	-0.777	-0.822	-0.785
Average	-0.708	-0.753	-0.772	-0.748
Max	-0.617	-0.708	-0.727	-0.718
UL	4.500	4.500	4.500	4.500

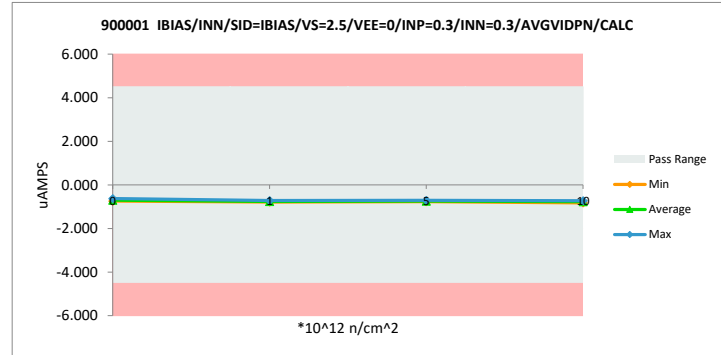


NDD Report
TLV1H103MDBVTSEP

900001 IBIAS/INN/SID=IBIAS						
Unit		uAMPS	uAMPS			
Max Limit		4.500000159	4.500000159			
Min Limit		-4.500000159	-4.500000159			
*10 ¹² n/cm ²	Serial #	PRE	POST	Delta	Delta %	% of Limit Range
1	1	-0.712	-0.722	0.009	-1.32%	0.10%
1	2	-0.783	-0.787	0.005	-0.60%	0.05%
1	3	-0.780	-0.784	0.005	-0.59%	0.05%
5	4	-0.709	-0.711	0.002	-0.25%	0.02%
5	5	-0.770	-0.771	0.002	-0.25%	0.02%
5	6	-0.739	-0.759	0.020	-2.72%	0.22%
10	7	-0.792	-0.826	0.034	-4.30%	0.38%
10	8	-0.725	-0.727	0.002	-0.29%	0.02%
10	9	-0.748	-0.755	0.007	-0.96%	0.08%
0	10	-0.734	-0.738	0.005	-0.63%	0.05%
0	11	-0.739	-0.742	0.003	-0.41%	0.03%
0	12	-0.624	-0.627	0.003	-0.53%	0.04%
Max		-0.624	-0.627	0.034	-0.25%	0.38%
Average		-0.738	-0.746	0.008	-1.07%	0.09%
Min		-0.792	-0.826	0.002	-4.30%	0.02%
Std Dev		0.045	0.050	0.010	1.23%	0.11%

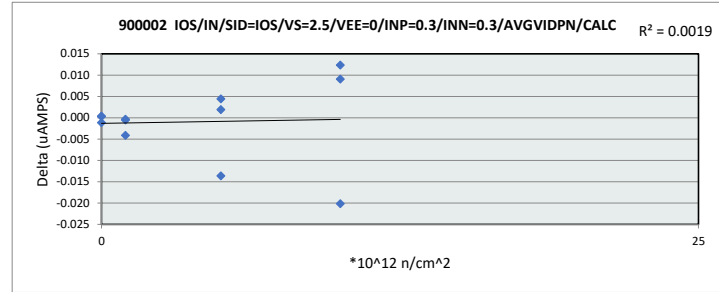


900001 IBIAS/INN/SID=IBIAS				
Test Site				
Tester				
Test Number				
Max Limit	4.500000159	uAMPS		
Min Limit	-4.500000159	uAMPS		
*10 ¹² n/cm ²	0	1	5	10
LL	-4.500	-4.500	-4.500	-4.500
Min	-0.742	-0.787	-0.771	-0.826
Average	-0.702	-0.764	-0.747	-0.769
Max	-0.627	-0.722	-0.711	-0.727
UL	4.500	4.500	4.500	4.500

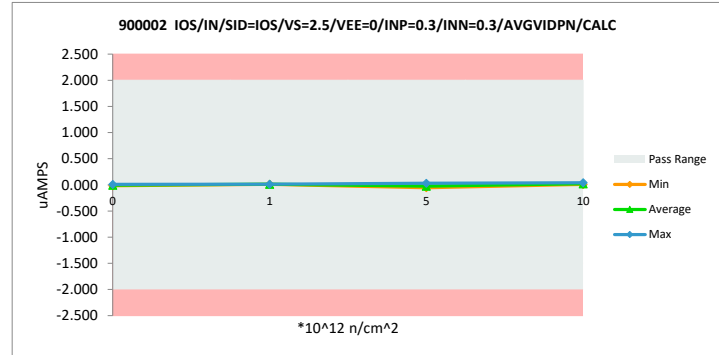


NDD Report
TLV1H103MDBVTSEP

900002 IOS/IN/SID=IOS/VS=2						
Unit		uAMPS	uAMPS			
Max Limit		1.999999995	1.999999995			
Min Limit		-1.999999995	-1.999999995			
*10 ¹² n/cm ²	Serial #	PRE	POST	Delta	Delta %	% of Limit Range
1	1	0.009	0.013	-0.004	-43.98%	0.10%
1	2	0.010	0.011	0.000	-3.22%	0.01%
1	3	0.010	0.011	0.000	-4.77%	0.01%
5	4	-0.053	-0.055	0.002	-3.68%	0.05%
5	5	-0.046	-0.051	0.004	-9.58%	0.11%
5	6	0.019	0.032	-0.014	-72.42%	0.34%
10	7	0.021	0.041	-0.020	-96.84%	0.50%
10	8	0.018	0.009	0.009	50.72%	0.23%
10	9	0.028	0.015	0.012	44.70%	0.31%
0	10	-0.013	-0.012	-0.001	8.62%	0.03%
0	11	-0.016	-0.017	0.000	-1.87%	0.01%
0	12	0.011	0.010	0.000	3.74%	0.01%
Max		0.028	0.041	0.012	50.72%	0.50%
Average		0.000	0.001	-0.001	-10.71%	0.14%
Min		-0.053	-0.055	-0.020	-96.84%	0.01%
Std Dev		0.026	0.029	0.009	42.62%	0.17%

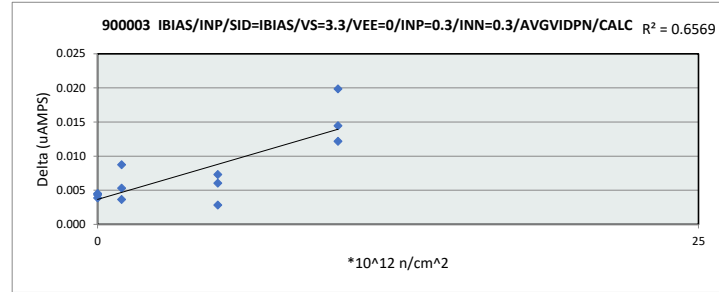


900002 IOS/IN/SID=IOS/VS=2				
Test Site				
Tester				
Test Number				
Max Limit	1.999999995	uAMPS		
Min Limit	-1.999999995	uAMPS		
*10 ¹² n/cm ²	0	1	5	10
LL	-2.000	-2.000	-2.000	-2.000
Min	-0.017	0.011	-0.055	0.009
Average	-0.006	0.012	-0.024	0.022
Max	0.010	0.013	0.032	0.041
UL	2.000	2.000	2.000	2.000

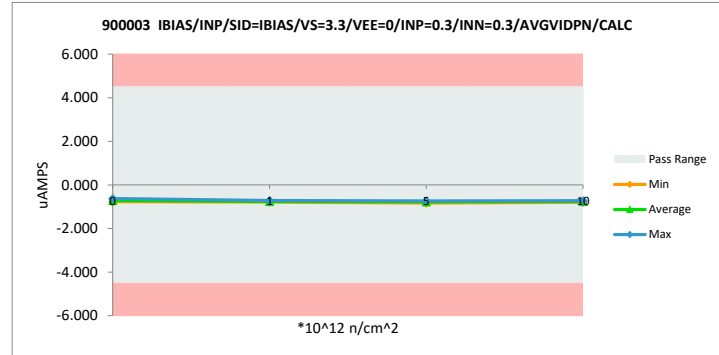


NDD Report
TLV1H103MDBVTSEP

900003 IBIAS/INP/SID=IBIAS						
Unit		uAMPS	uAMPS			
Max Limit		4.500000159	4.500000159			
Min Limit		-4.500000159	-4.500000159			
*10^12 n/cm^2	Serial #	PRE	POST	Delta	Delta %	% of Limit Range
1	1	-0.712	-0.721	0.009	-1.23%	0.10%
1	2	-0.782	-0.787	0.005	-0.68%	0.06%
1	3	-0.780	-0.784	0.004	-0.47%	0.04%
5	4	-0.771	-0.774	0.003	-0.37%	0.03%
5	5	-0.825	-0.833	0.007	-0.89%	0.08%
5	6	-0.731	-0.737	0.006	-0.83%	0.07%
10	7	-0.781	-0.796	0.014	-1.85%	0.16%
10	8	-0.716	-0.728	0.012	-1.70%	0.14%
10	9	-0.730	-0.750	0.020	-2.72%	0.22%
0	10	-0.756	-0.760	0.004	-0.57%	0.05%
0	11	-0.765	-0.769	0.005	-0.59%	0.05%
0	12	-0.623	-0.627	0.004	-0.62%	0.04%
Max		-0.623	-0.627	0.020	-0.37%	0.22%
Average		-0.748	-0.755	0.008	-1.04%	0.09%
Min		-0.825	-0.833	0.003	-2.72%	0.03%
Std Dev		0.051	0.051	0.005	0.71%	0.06%

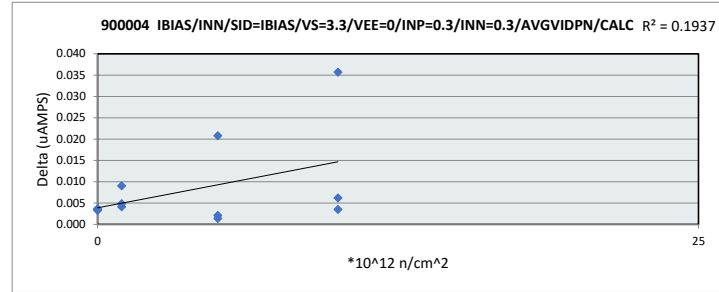


900003 IBIAS/INP/SID=IBIAS				
Test Site				
Tester				
Test Number				
Max Limit	4.500000159	uAMPS		
Min Limit	-4.500000159	uAMPS		
*10^12 n/cm^2	0	1	5	10
LL	-4.500	-4.500	-4.500	-4.500
Min	-0.769	-0.787	-0.833	-0.796
Average	-0.719	-0.764	-0.781	-0.758
Max	-0.627	-0.721	-0.737	-0.728
UL	4.500	4.500	4.500	4.500

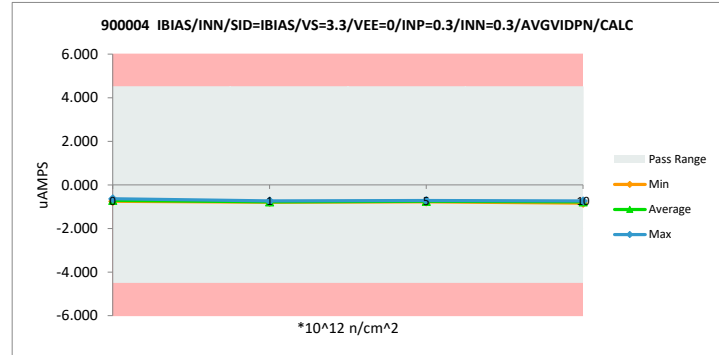


NDD Report
TLV1H103MDBVTSEP

900004 IBIAS/INN/SID=IBIAS						
Unit		uAMPS	uAMPS			
Max Limit		4.500000159	4.500000159			
Min Limit		-4.500000159	-4.500000159			
*10^12 n/cm^2	Serial #	PRE	POST	Delta	Delta %	% of Limit Range
1	1	-0.723	-0.732	0.009	-1.25%	0.10%
1	2	-0.793	-0.797	0.004	-0.52%	0.05%
1	3	-0.790	-0.795	0.005	-0.62%	0.05%
5	4	-0.718	-0.720	0.002	-0.30%	0.02%
5	5	-0.779	-0.781	0.001	-0.18%	0.02%
5	6	-0.749	-0.769	0.021	-2.78%	0.23%
10	7	-0.802	-0.838	0.036	-4.45%	0.40%
10	8	-0.733	-0.737	0.004	-0.48%	0.04%
10	9	-0.758	-0.764	0.006	-0.82%	0.07%
0	10	-0.743	-0.746	0.004	-0.48%	0.04%
0	11	-0.749	-0.752	0.003	-0.44%	0.04%
0	12	-0.633	-0.637	0.004	-0.58%	0.04%
Max		-0.633	-0.637	0.036	-0.18%	0.40%
Average		-0.747	-0.756	0.008	-1.08%	0.09%
Min		-0.802	-0.838	0.001	-4.45%	0.02%
Std Dev		0.045	0.050	0.010	1.27%	0.11%

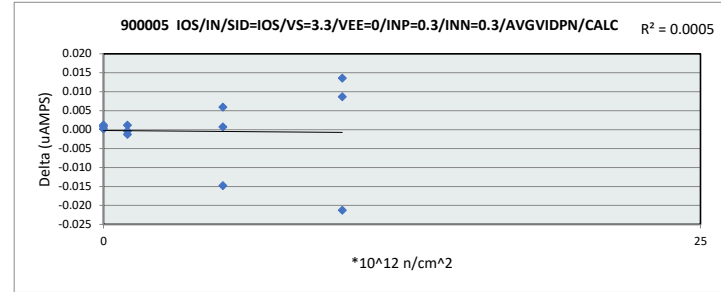


900004 IBIAS/INN/SID=IBIAS				
Test Site				
Tester				
Test Number				
Max Limit	4.500000159	uAMPS		
Min Limit	-4.500000159	uAMPS		
*10^12 n/cm^2	0	1	5	10
LL	-4.500	-4.500	-4.500	-4.500
Min	-0.752	-0.797	-0.781	-0.838
Average	-0.712	-0.775	-0.757	-0.780
Max	-0.637	-0.732	-0.720	-0.737
UL	4.500	4.500	4.500	4.500

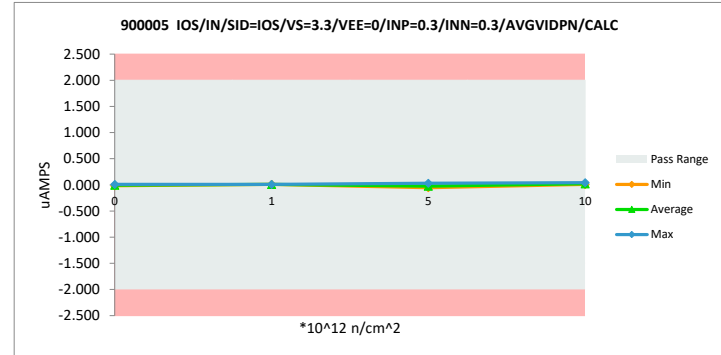


NDD Report
TLV1H103MDBVTSEP

900005 IOS/IN/SID=IOS/VS=3						
Unit		uAMPS	uAMPS			
Max Limit		1.999999995	1.999999995			
Min Limit		-1.999999995	-1.999999995			
*10 ¹² n/cm ²	Serial #	PRE	POST	Delta	Delta %	% of Limit Range
1	1	0.011	0.011	0.000	-2.91%	0.01%
1	2	0.012	0.010	0.001	10.36%	0.03%
1	3	0.009	0.011	-0.001	-12.95%	0.03%
5	4	-0.054	-0.054	0.001	-1.33%	0.02%
5	5	-0.046	-0.052	0.006	-13.00%	0.15%
5	6	0.018	0.033	-0.015	-82.24%	0.37%
10	7	0.021	0.042	-0.021	-101.12%	0.53%
10	8	0.017	0.009	0.009	50.33%	0.22%
10	9	0.028	0.014	0.014	48.72%	0.34%
0	10	-0.013	-0.013	0.001	-6.23%	0.02%
0	11	-0.016	-0.017	0.001	-7.75%	0.03%
0	12	0.010	0.010	0.000	1.80%	0.00%
Max		0.028	0.042	0.014	50.33%	0.53%
Average		0.000	0.000	0.000	-9.69%	0.15%
Min		-0.054	-0.054	-0.021	-101.12%	0.00%
Std Dev		0.026	0.030	0.009	44.03%	0.18%

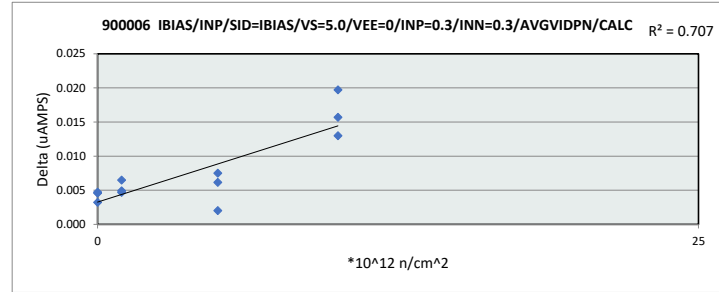


900005 IOS/IN/SID=IOS/VS=3				
Test Site				
Tester				
Test Number				
Max Limit	1.999999995	uAMPS		
Min Limit	-1.999999995	uAMPS		
*10 ¹² n/cm ²	0	1	5	10
LL	-2.000	-2.000	-2.000	-2.000
Min	-0.017	0.010	-0.054	0.009
Average	-0.007	0.011	-0.024	0.022
Max	0.010	0.011	0.033	0.042
UL	2.000	2.000	2.000	2.000

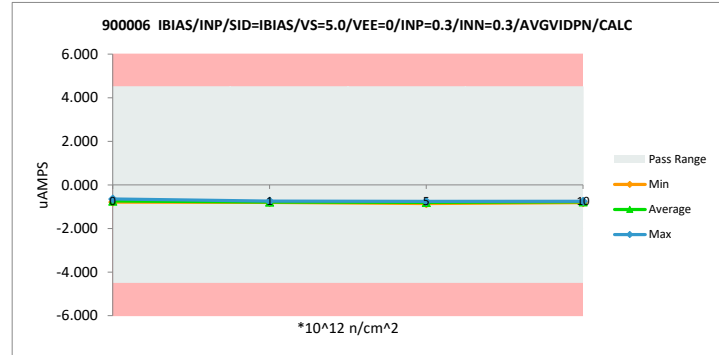


NDD Report
TLV1H103MDBVTSEP

900006 IBIAS/INP/SID=IBIAS						
Unit		uAMPS	uAMPS			
Max Limit		4.500000159	4.500000159			
Min Limit		-4.500000159	-4.500000159			
*10^12 n/cm^2	Serial #	PRE	POST	Delta	Delta %	% of Limit Range
1	1	-0.734	-0.741	0.007	-0.89%	0.07%
1	2	-0.803	-0.808	0.005	-0.61%	0.05%
1	3	-0.801	-0.806	0.005	-0.59%	0.05%
5	4	-0.794	-0.796	0.002	-0.26%	0.02%
5	5	-0.848	-0.856	0.008	-0.89%	0.08%
5	6	-0.751	-0.757	0.006	-0.82%	0.07%
10	7	-0.803	-0.818	0.016	-1.96%	0.17%
10	8	-0.737	-0.750	0.013	-1.76%	0.14%
10	9	-0.750	-0.770	0.020	-2.63%	0.22%
0	10	-0.777	-0.782	0.005	-0.59%	0.05%
0	11	-0.787	-0.790	0.003	-0.41%	0.04%
0	12	-0.642	-0.647	0.005	-0.74%	0.05%
Max		-0.642	-0.647	0.020	-0.26%	0.22%
Average		-0.769	-0.777	0.008	-1.01%	0.09%
Min		-0.848	-0.856	0.002	-2.63%	0.02%
Std Dev		0.052	0.052	0.005	0.72%	0.06%

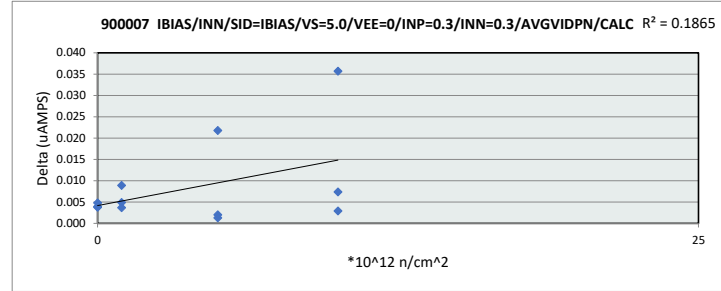


900006 IBIAS/INP/SID=IBIAS				
Test Site				
Tester				
Test Number				
Max Limit	4.500000159	uAMPS		
Min Limit	-4.500000159	uAMPS		
*10^12 n/cm^2	0	1	5	10
LL	-4.500	-4.500	-4.500	-4.500
Min	-0.790	-0.808	-0.856	-0.818
Average	-0.740	-0.785	-0.803	-0.780
Max	-0.647	-0.741	-0.757	-0.750
UL	4.500	4.500	4.500	4.500

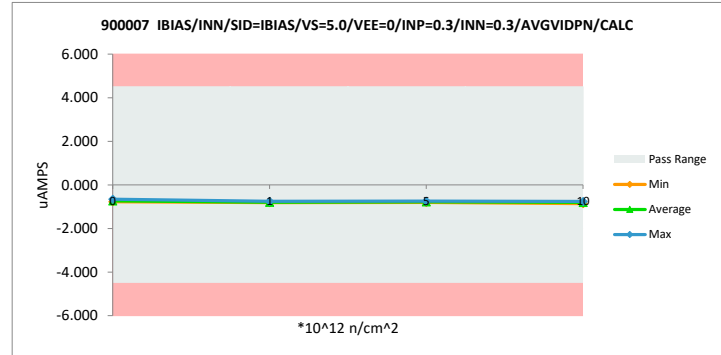


NDD Report
TLV1H103MDBVTSEP

900007 IBIAS/INN/SID=IBIAS						
Unit		uAMPS	uAMPS			
Max Limit		4.500000159	4.500000159			
Min Limit		-4.500000159	-4.500000159			
*10^12 n/cm^2	Serial #	PRE	POST	Delta	Delta %	% of Limit Range
1	1	-0.744	-0.753	0.009	-1.20%	0.10%
1	2	-0.815	-0.818	0.004	-0.45%	0.04%
1	3	-0.811	-0.816	0.005	-0.60%	0.05%
5	4	-0.739	-0.741	0.001	-0.18%	0.01%
5	5	-0.801	-0.803	0.002	-0.26%	0.02%
5	6	-0.769	-0.791	0.022	-2.83%	0.24%
10	7	-0.824	-0.859	0.036	-4.34%	0.40%
10	8	-0.756	-0.758	0.003	-0.39%	0.03%
10	9	-0.778	-0.785	0.007	-0.95%	0.08%
0	10	-0.764	-0.768	0.004	-0.52%	0.04%
0	11	-0.770	-0.774	0.004	-0.49%	0.04%
0	12	-0.652	-0.657	0.005	-0.74%	0.05%
Max		-0.652	-0.657	0.036	-0.18%	0.40%
Average		-0.769	-0.777	0.008	-1.08%	0.09%
Min		-0.824	-0.859	0.001	-4.34%	0.01%
Std Dev		0.046	0.050	0.010	1.25%	0.11%

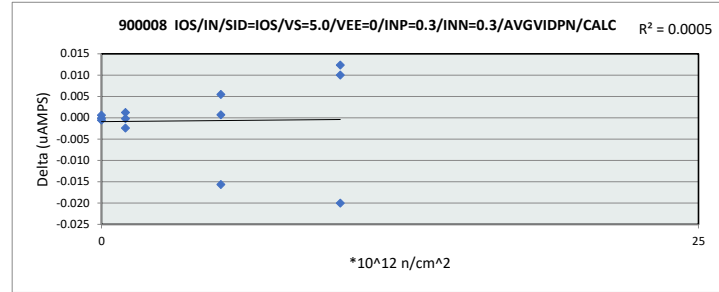


900007 IBIAS/INN/SID=IBIAS				
Test Site				
Tester				
Test Number				
Max Limit	4.500000159	uAMPS		
Min Limit	-4.500000159	uAMPS		
*10^12 n/cm^2	0	1	5	10
LL	-4.500	-4.500	-4.500	-4.500
Min	-0.774	-0.818	-0.803	-0.859
Average	-0.733	-0.796	-0.778	-0.801
Max	-0.657	-0.753	-0.741	-0.758
UL	4.500	4.500	4.500	4.500

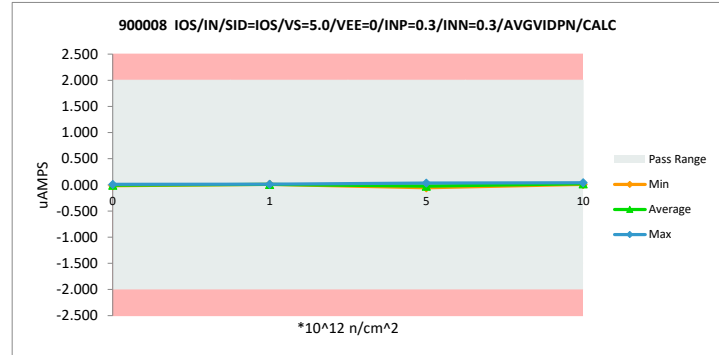


NDD Report
TLV1H103MDBVTSEP

900008 IOS/IN/SID=IOS/VS=5						
Unit		uAMPS	uAMPS			
Max Limit		1.999999995	1.999999995			
Min Limit		-1.999999995	-1.999999995			
*10 ¹² n/cm ²	Serial #	PRE	POST	Delta	Delta %	% of Limit Range
1	1	0.010	0.012	-0.002	-23.96%	0.06%
1	2	0.011	0.010	0.001	10.97%	0.03%
1	3	0.010	0.010	0.000	-1.95%	0.00%
5	4	-0.055	-0.055	0.001	-1.33%	0.02%
5	5	-0.047	-0.053	0.005	-11.53%	0.14%
5	6	0.018	0.034	-0.016	-85.14%	0.39%
10	7	0.021	0.041	-0.020	-95.40%	0.50%
10	8	0.018	0.008	0.010	55.73%	0.25%
10	9	0.027	0.015	0.012	45.06%	0.31%
0	10	-0.013	-0.014	0.001	-4.54%	0.02%
0	11	-0.017	-0.017	-0.001	3.24%	0.01%
0	12	0.010	0.011	0.000	-0.93%	0.00%
Max		0.027	0.041	0.012	55.73%	0.50%
Average		0.000	0.000	-0.001	-9.15%	0.14%
Min		-0.055	-0.055	-0.020	-95.40%	0.00%
Std Dev		0.027	0.030	0.009	44.05%	0.17%

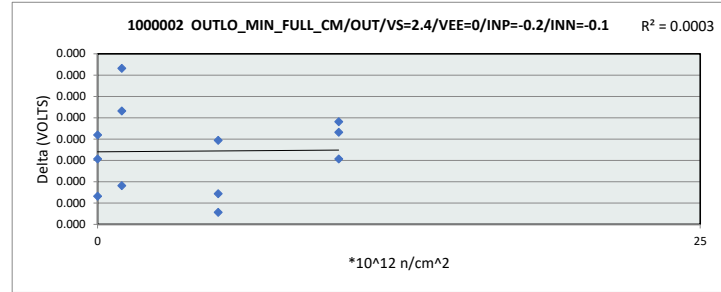


900008 IOS/IN/SID=IOS/VS=5				
Test Site				
Tester				
Test Number				
Max Limit	1.999999995	uAMPS		
Min Limit	-1.999999995	uAMPS		
*10 ¹² n/cm ²	0	1	5	10
LL	-2.000	-2.000	-2.000	-2.000
Min	-0.017	0.010	-0.055	0.008
Average	-0.007	0.011	-0.025	0.021
Max	0.011	0.012	0.034	0.041
UL	2.000	2.000	2.000	2.000

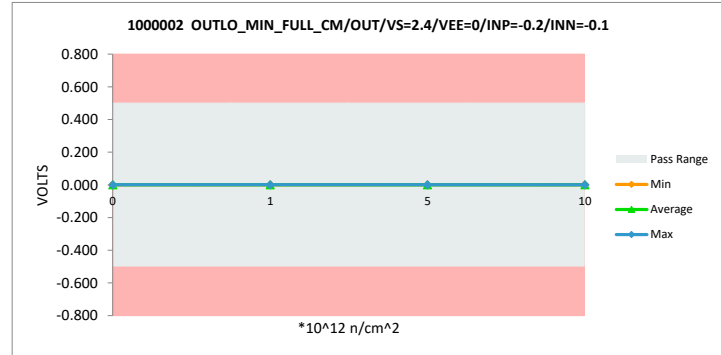


NDD Report
TLV1H103MDBVTSEP

1000002 OUTLO_MIN_FULL_CM						
Unit		VOLTS	VOLTS			
	Max Limit	0.5	0.5			
	Min Limit	-0.5	-0.5			
*10 ¹² n/cm ²	Serial #	PRE	POST	Delta	Delta %	% of Limit Range
1	1	0.001	0.001	0.000	16.48%	0.02%
1	2	0.001	0.001	0.000	6.81%	0.01%
1	3	0.001	0.001	0.000	-11.30%	0.01%
5	4	0.001	0.001	0.000	-15.44%	0.01%
5	5	0.001	0.001	0.000	-0.30%	0.00%
5	6	0.001	0.001	0.000	-21.72%	0.02%
10	7	0.001	0.001	0.000	1.80%	0.00%
10	8	0.001	0.001	0.000	4.05%	0.00%
10	9	0.001	0.001	0.000	-5.29%	0.00%
0	10	0.001	0.001	0.000	1.08%	0.00%
0	11	0.001	0.001	0.000	-20.16%	0.01%
0	12	0.001	0.001	0.000	-5.08%	0.00%
	Max	0.001	0.001	0.000	16.48%	0.02%
	Average	0.001	0.001	0.000	-4.09%	0.01%
	Min	0.001	0.001	0.000	-21.72%	0.00%
	Std Dev	0.000	0.000	0.000	11.43%	0.01%

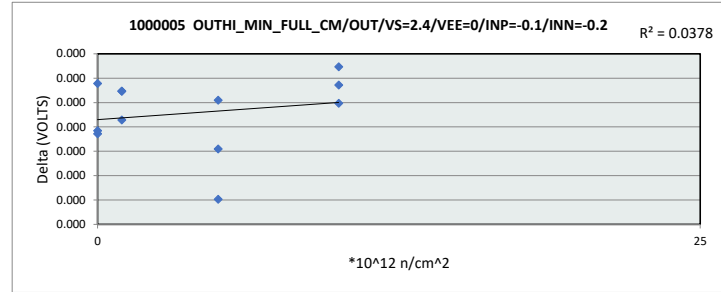


1000002 OUTLO_MIN_FULL_CM				
Test Site				
Tester				
Test Number				
Max Limit	0.5	VOLTS		
Min Limit	-0.5	VOLTS		
*10 ¹² n/cm ²	0	1	5	10
LL	-0.500	-0.500	-0.500	-0.500
Min	0.001	0.001	0.001	0.001
Average	0.001	0.001	0.001	0.001
Max	0.001	0.001	0.001	0.001
UL	0.500	0.500	0.500	0.500

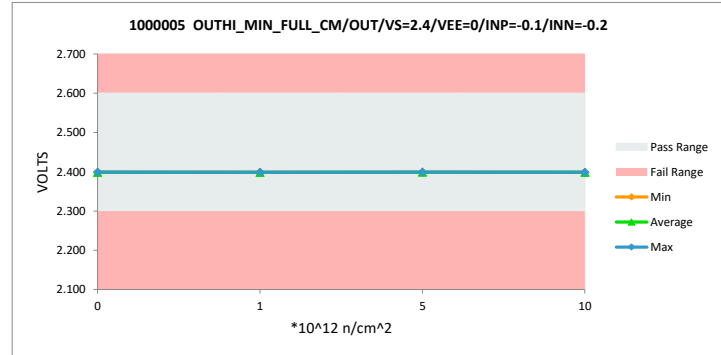


NDD Report
TLV1H103MDBVTSEP

		1000005 OUTHI_MIN_FULL_CM				
Unit		VOLTS	VOLTS			
Max Limit		2.599999905	2.599999905			
Min Limit		2.299999952	2.299999952			
*10 ¹² n/cm ²	Serial #	PRE	POST	Delta	Delta %	% of Limit Range
1	1	2.399	2.399	0.000	0.00%	0.01%
1	2	2.399	2.399	0.000	0.01%	0.05%
1	3	2.399	2.399	0.000	0.01%	0.05%
5	4	2.399	2.399	0.000	-0.01%	0.10%
5	5	2.399	2.399	0.000	0.00%	0.04%
5	6	2.399	2.399	0.000	0.00%	0.03%
10	7	2.399	2.399	0.000	0.01%	0.08%
10	8	2.399	2.399	0.000	0.01%	0.06%
10	9	2.399	2.399	0.000	0.00%	0.03%
0	10	2.399	2.399	0.000	0.00%	0.01%
0	11	2.399	2.399	0.000	0.00%	0.01%
0	12	2.399	2.399	0.000	0.01%	0.06%
	Max	2.399	2.399	0.000	0.01%	0.10%
	Average	2.399	2.399	0.000	0.00%	0.04%
	Min	2.399	2.399	0.000	-0.01%	0.01%
	Std Dev	0.000	0.000	0.000	0.01%	0.03%

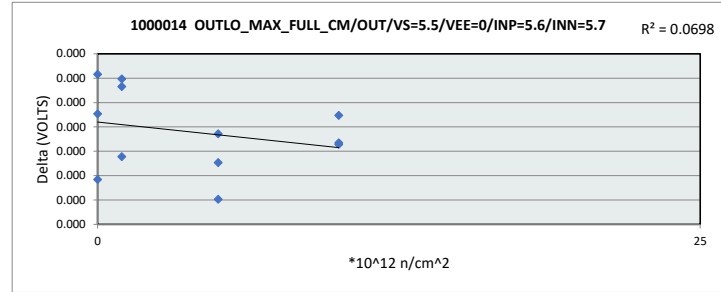


		1000005 OUTHI_MIN_FULL_CM		
Test Site				
Tester				
Test Number				
Max Limit	2.599999905	VOLTS		
Min Limit	2.299999952	VOLTS		
*10 ¹² n/cm ²	0	1	5	10
LL	2.300	2.300	2.300	2.300
Min	2.399	2.399	2.399	2.399
Average	2.399	2.399	2.399	2.399
Max	2.399	2.399	2.399	2.399
UL	2.600	2.600	2.600	2.600

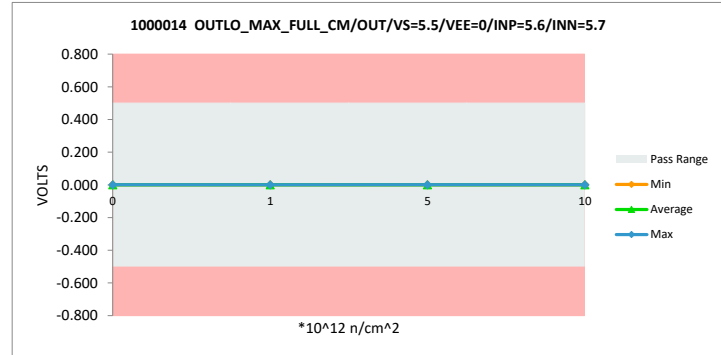


NDD Report
TLV1H103MDBVTSEP

		1000014 OUTLO_MAX_FULL_CM				
Unit		VOLTS	VOLTS			
Max Limit		0.5	0.5			
Min Limit		-0.5	-0.5			
*10 ¹² n/cm ²	Serial #	PRE	POST	Delta	Delta %	% of Limit Range
1	1	0.001	0.001	0.000	18.68%	0.02%
1	2	0.001	0.001	0.000	20.60%	0.02%
1	3	0.001	0.001	0.000	-14.05%	0.01%
5	4	0.001	0.001	0.000	-39.11%	0.03%
5	5	0.001	0.001	0.000	-3.51%	0.00%
5	6	0.001	0.001	0.000	-19.00%	0.01%
10	7	0.001	0.001	0.000	-6.72%	0.01%
10	8	0.001	0.001	0.000	-7.87%	0.01%
10	9	0.001	0.001	0.000	5.52%	0.00%
0	10	0.001	0.001	0.000	5.49%	0.01%
0	11	0.001	0.001	0.000	20.92%	0.02%
0	12	0.001	0.001	0.000	-29.36%	0.02%
Max		0.001	0.001	0.000	20.92%	0.03%
Average		0.001	0.001	0.000	-4.03%	0.01%
Min		0.001	0.001	0.000	-39.11%	0.00%
Std Dev		0.000	0.000	0.000	19.41%	0.01%

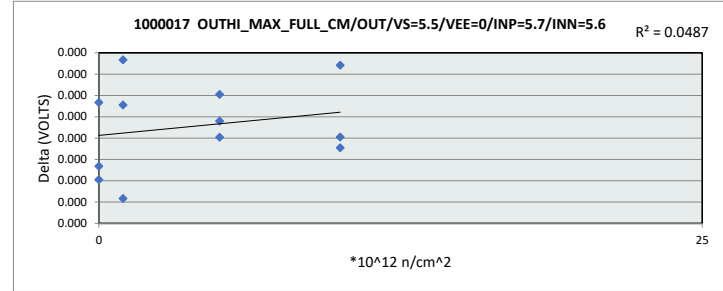


		1000014 OUTLO_MAX_FULL_CM		
Test Site				
Tester				
Test Number				
Max Limit	0.5	VOLTS		
Min Limit	-0.5	VOLTS		
*10 ¹² n/cm ²	0	1	5	10
LL	-0.500	-0.500	-0.500	-0.500
Min	0.001	0.001	0.001	0.001
Average	0.001	0.001	0.001	0.001
Max	0.001	0.001	0.001	0.001
UL	0.500	0.500	0.500	0.500

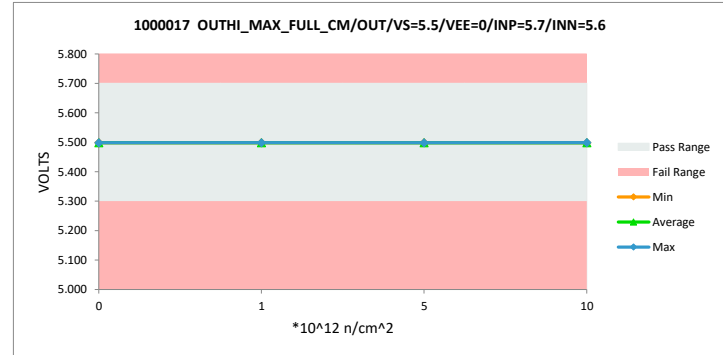


NDD Report
TLV1H103MDBVTSEP

1000017 OUTHI_MAX_FULL_CM						
Unit		VOLTS	VOLTS			
	Max Limit	5.699999809	5.699999809			
	Min Limit	5.300000191	5.300000191			
*10 ¹² n/cm ²	Serial #	PRE	POST	Delta	Delta %	% of Limit Range
1	1	5.499	5.499	0.000	0.00%	0.04%
1	2	5.499	5.499	0.000	0.00%	0.05%
1	3	5.499	5.499	0.000	0.00%	0.02%
5	4	5.499	5.499	0.000	0.00%	0.01%
5	5	5.499	5.499	0.000	0.00%	0.03%
5	6	5.499	5.499	0.000	0.00%	0.00%
10	7	5.499	5.499	0.000	0.00%	0.01%
10	8	5.499	5.499	0.000	0.00%	0.04%
10	9	5.499	5.499	0.000	0.00%	0.00%
0	10	5.499	5.499	0.000	0.00%	0.02%
0	11	5.499	5.499	0.000	0.00%	0.02%
0	12	5.499	5.499	0.000	0.00%	0.02%
	Max	5.499	5.499	0.000	0.00%	0.05%
	Average	5.499	5.499	0.000	0.00%	0.02%
	Min	5.499	5.499	0.000	0.00%	0.00%
	Std Dev	0.000	0.000	0.000	0.00%	0.02%



1000017 OUTHI_MAX_FULL_CM				
Test Site				
Tester				
Test Number				
Max Limit	5.699999809	VOLTS		
Min Limit	5.300000191	VOLTS		
*10 ¹² n/cm ²	0	1	5	10
LL	5.300	5.300	5.300	5.300
Min	5.499	5.499	5.499	5.499
Average	5.499	5.499	5.499	5.499
Max	5.499	5.499	5.499	5.499
UL	5.700	5.700	5.700	5.700



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