

# ***INA240-SEP wide common-mode range, high- and low-side, bidirectional, zero-drift, current-sense amplifier TID report***

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## **ABSTRACT**

This report covers the radiation characterization results of the INA240-SEP Current-Sense Amplifier. The study was done to determine Total Ionizing Dose (TID) effects under high dose rate (HDR) up to 30 krad(Si) as a one time characterization. The results show that all samples passed within the specified limits up to 30 krad(Si) with 5 minutes of anneal. However, Radiation Lot Acceptance Testing (RLAT) will be performed using 22 units at a dose level of 20 krad(Si) for future wafer lots. Furthermore, the INA240-SEP is packaged in a space enhanced plastic for low outgassing characteristics and is Single Event Latch-Up (SEL) immune up to 43 MeV-cm<sup>2</sup>/mg making the device suitable for low Earth orbit space applications. The device is ideal for application such as power supervision, motor control loop, overcurrent and undercurrent detection.

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## **Trademarks**

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## 1 Device Information

The INA240-SEP device is a voltage-output, current sense amplifier with enhanced PWM rejection that can sense drops across shunt resistors over a wide common-mode voltage range from  $-4\text{ V}$  to  $80\text{ V}$ , independent of the supply voltage.

The negative common-mode voltage allows the device to operate below ground, accommodating the flyback period of typical solenoid applications. This device operates from a single  $2.7\text{-V}$  to  $5.5\text{-V}$  power supply, drawing a maximum of  $2.4\text{ mA}$  of supply current. The fixed gain is  $20\text{ V/V}$ . The low offset of the zero-drift architecture enables current sensing with maximum drops across the shunt as low as  $10\text{-mV}$  full-scale.

### 1.1 Device Details

Table 1 lists the device information used for TID HDR characterization and qualification.

**Table 1. Device and Exposure Details**

TID HDR Details: up to 30 krad(Si)	
TI Device Number	INA240-SEP
Package	8-pin PW (TSSOP)
Technology	ABCD6
Die Lot Number	7004590
A/T Lot Number / Date Code	1084349/8AD3PDK
Quantity Tested	37 irradiated devices + 3 control
Lot Accept/Reject	Devices passed 3 krad(Si), 10 krad(Si), 20 krad(Si), 30 krad(Si)
HDR Radiation Facility	Texas Instruments SVA Group, Santa Clara, CA
HDR Dose Level	3 krad(Si), 10 krad(Si), 20 krad(Si), 30 krad(Si)
HDR Dose Rate	78 rad(Si)/s
HDR Radiation Source	Gammacell 220 Excel (GC-220E) Co-60
Irradiation Temperature	Ambient, room temperature

## 2 Total Dose Test Setup

### 2.1 Test Overview

The INA240-SEP samples were irradiated at a high dose rate of 78 rad(Si)/s up to 30 krad(Si) and then put through full electrical parametric testing on the production Automated Test Equipment (ATE). The samples were functional and passed all electrical parametric tests with readings within data sheet electrical specification limits.

### 2.2 Test Description and Facilities

The INA240-SEP HDR exposure was performed on biased devices in a Co60 gamma cell at TI SVA facility in Santa Clara, California. The unattenuated dose rate of this cell is 78 rad(Si)/s. After exposure, the devices were packed in dry ice and returned to TI Dallas for a full post irradiation electrical evaluation using Texas Instruments ATE. ATE guard band test limits are set within data sheet electrical specifications to ensure a minimum Cpk and test error margin based on initial qualification and characterization data. Post irradiation measurements were taken within 30 minutes of removal of the devices from the dry ice container. The devices were allowed to reach room temperature prior to electrical post radiation measurements.

### 2.3 Test Setup Details

The devices were tested in biased conditions as described below:

#### 2.3.1 Biased

Figure 1 shows the bias conditions for each pin during irradiation.

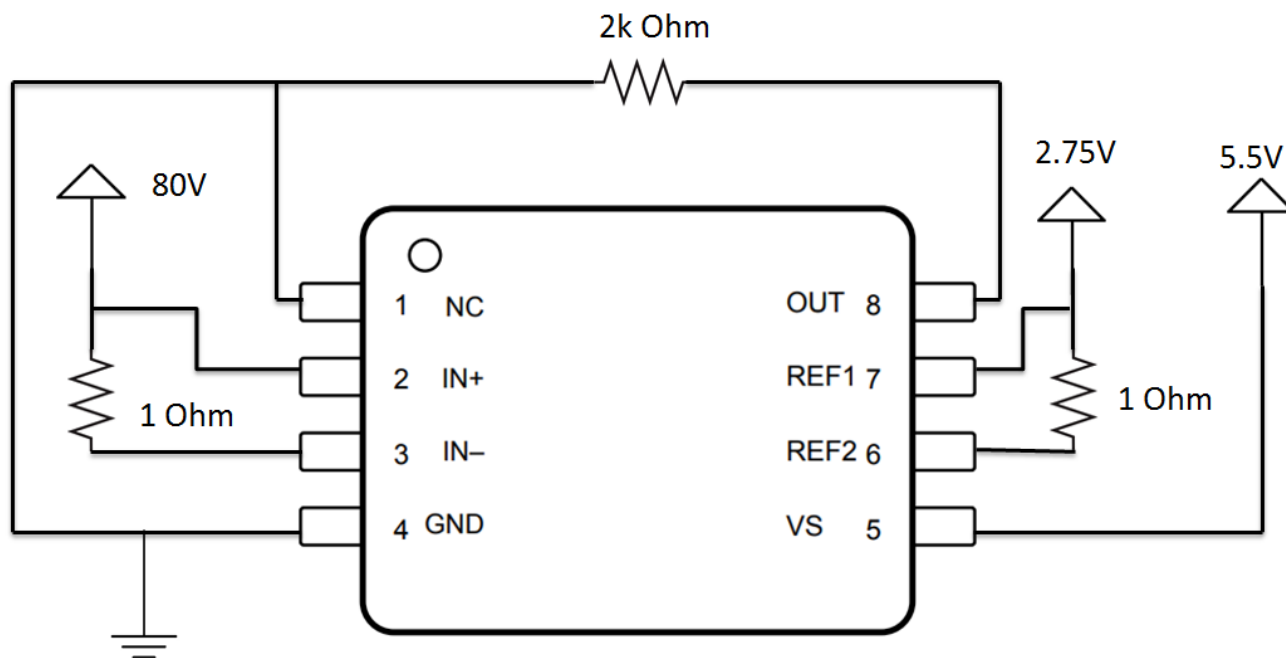


Figure 1. INA240-SEP Biased Diagram

## 2.4 Test Configuration and Condition

A step-stress (3k, 10k, 20k, and 30k) test method was used to determine the TID hardness level. That is, after a predetermined TID level was reached, an electrical test was performed on a given sample of parts to verify that the units are within specified data sheet electrical test limits. From initial feasibility studies the difference between pre and post irradiation was greater for samples that were biased, hence for RLAT 22 sample units were used at the 20-krad(Si) dose level with biased setup conditions and this will be repeated for each wafer lot.

Table 2 list the serialized samples used for RHA characterization.

**Table 2. HDR = 78 rad(Si)/s Biased Device Information**

HDR = 78 rad(Si)/s			
Total Samples: 37			
Exposure Levels			
3 krad(Si)	10 krad(Si)	20 krad(Si)	30 krad(Si)
Biased	Biased	Biased	Biased
001, 002, 003, 004, 005	006, 007, 008, 009, 010	011, 012, 013, 014, 015, 016, 017, 018, 019, 020, 021, 022, 023, 024, 025, 026, 027, 028, 029, 030, 031, 032	033, 034, 035, 036, 037

### 3 Tested Parameters

Table 3 links the test numbers for each test condition with the data sheet parameters.

**Table 3. INA240-SEP Data Sheet Parameters with Test Numbers**

PARAMETER	TEST CONDITION	Data sheet Lit# <a href="#">SLVSER5</a> - November 2018				Test Number	Test Name
		MIN	TYP	MAX	UNIT		
Common-mode rejection ratio	VIN+ = -4 V to 80 V, VSENSE = 0 mV	120	132		dB	1071.3	CMRR test VCM_-4V_->_80V
Offset voltage, input-referred	VSENSE = 0 mV		±5	±25	µV	1081.1	VOS_chopped_test_5.0_2.50_12.00
Power-supply rejection ratio	VS = 2.7 V to 5.5 V, VSENSE = 0 mV		±1	±10	µV/V	1061.3	PSRR_test
Gain error	GND + 50 mV ≤ VOUT ≤ VS - 200 mV		±0.05%	±0.20%		1101.6	GAIN_Error_5.0_2.50_12.00_0.050
Reference divider accuracy	VOUT =   (VREF1 - VREF2)   / 2 at VSENSE = 0 mV		0.02%	0.1%		1131.6	Accuracy_5.00_5.00_12.00_VOS
Swing to VS power-supply rail	RL = 10 kΩ to GND		VS - 0.05	VS - 0.2	V	1121.1	Swing_test_5.0_2.50_12.00_1.00_10K_VCC-OUT
Swing to GND	RL = 10 kΩ to GND, VSENSE = 0 mV VREF1 = VREF2 = 0 V		VGND + 1	VGND + 10	mV	1121.3	Swing_test_5.0_2.50_12.00_1.00_10K_OUT-VEE
Quiescent current	VSENSE = 0 mV		1.8	2.4	mA	611.1	IQ_5.0_2.50_12.00_Post_Trim

## 4 Total Ionizing Dose (RHA) Characterization Test Results

### 4.1 Total Ionizing Dose RHA Characterization Summary Results

The parametric data for the INA240-SEP is within data sheet limits up to 30 krad(Si) for biased setup conditions.

#### 1. Offset Voltage

Offset voltage showed little variation at 30 krad(Si) but is still within data sheet limits. The graphs below show the min, average, and max data post irradiation for each dose level.

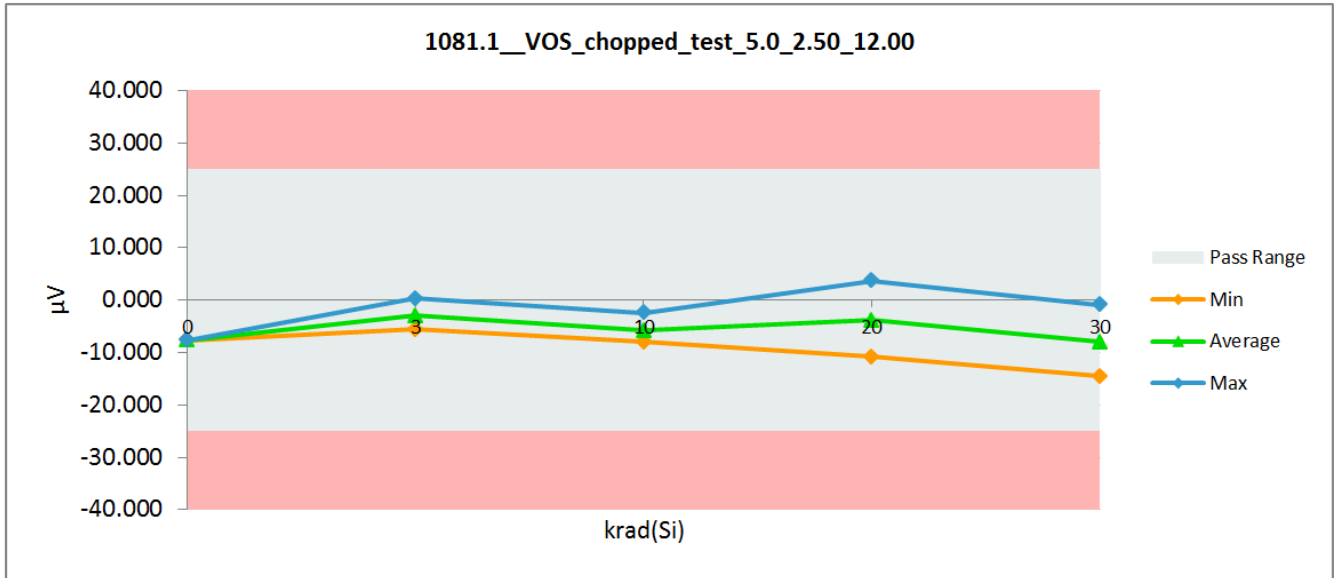
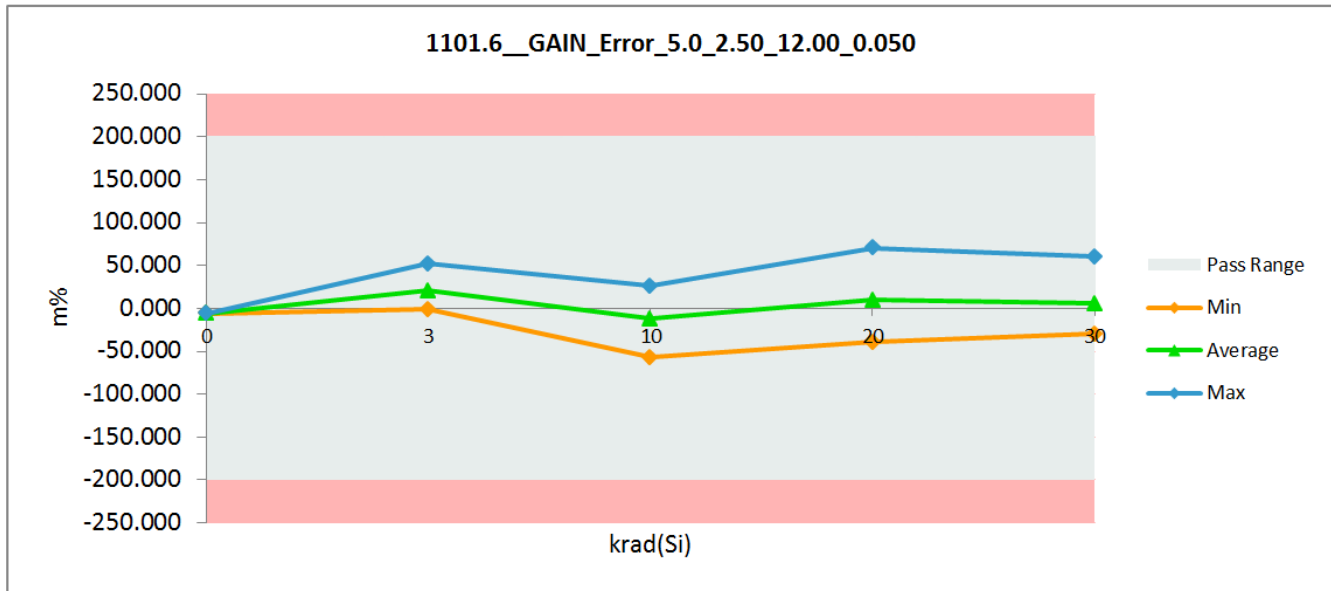


Figure 2. Radiation Exposure Effect on Offset Voltage

**2. Gain Error**

Gain Error showed little variation at 30 krad(Si) but is still within data sheet limits. The graphs below show the min, average, and max data post irradiation for each dose level.



**Figure 3. Radiation Exposure Effect on Gain Error**



## ***Total Ionizing Dose HDR Report***

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This appendix provides the INA240-SEP TID HDR report. The report shows the variation for each parameter up to 30 krad(Si).

Delta Threshold

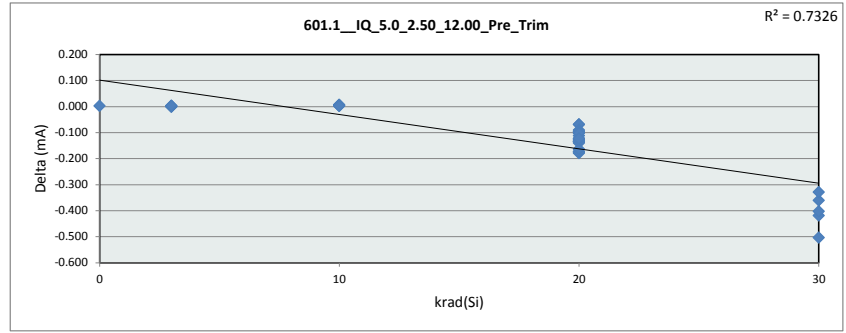
10.00%

TID Report  
Device Name

TID Report  
Device Name

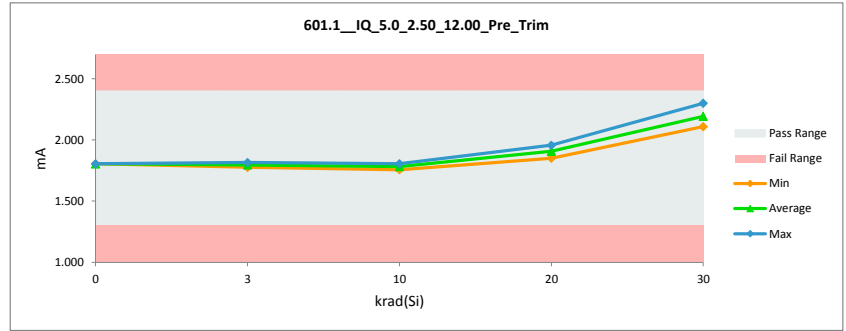
601.1 IQ 5.0 2.50 12.00 Pre Trim	
Test Site	Dallas Junkins
Tester	ETS06
Test Number	EB128801
Unit	mA
Max Limit	2.4
Min Limit	1.3

krad(Si)	Serial #	PRE DATA.txt	POST DATA.txt	Delta
0		1.807	1.805	0.002
3	1	1.806	1.804	0.002
3	2	1.797	1.797	0.000
3	3	1.775	1.776	-0.001
3	4	1.788	1.787	0.002
3	5	1.818	1.815	0.003
10	6	1.808	1.805	0.003
10	7	1.788	1.783	0.005
10	8	1.763	1.756	0.007
10	9	1.799	1.794	0.005
10	10	1.772	1.769	0.003
20	11	1.788	1.858	-0.070
20	12	1.813	1.882	-0.069
20	13	1.802	1.897	-0.095
20	14	1.834	1.956	-0.122
20	15	1.795	1.897	-0.101
20	16	1.779	1.870	-0.091
20	17	1.790	1.886	-0.096
20	18	1.799	1.912	-0.112
20	19	1.772	1.908	-0.135
20	20	1.792	1.919	-0.127
20	21	1.762	1.897	-0.135
20	22	1.757	1.930	-0.173
20	23	1.781	1.957	-0.175
20	24	1.765	1.944	-0.179
20	25	1.769	1.943	-0.174
20	26	1.789	1.924	-0.135
20	27	1.759	1.893	-0.133
20	28	1.761	1.901	-0.140
20	29	1.769	1.933	-0.164
20	30	1.788	1.918	-0.130
20	31	1.748	1.850	-0.103
20	32	1.780	1.903	-0.123
30	33	1.795	2.213	-0.419
30	34	1.797	2.300	-0.504
30	35	1.776	2.136	-0.360
30	36	1.780	2.109	-0.329
30	37	1.800	2.202	-0.403
Max		1.834	2.300	0.007
Average		1.786	1.911	-0.125
Min		1.748	1.756	-0.504
Std Dev		0.019	0.127	0.128



601.1 IQ 5.0 2.50 12.00 P	
Test Site	Dallas Junkins
Tester	ETS06
Test Number	EB128801
Max Limit	2.4
Min Limit	1.3

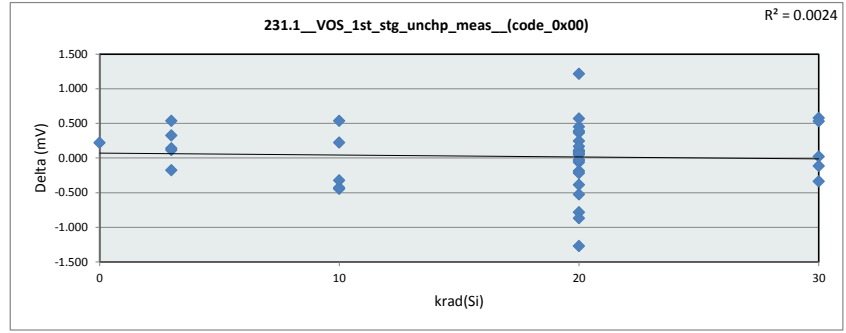
krad(Si)	0	3	10	20	30
LL	1.300	1.300	1.300	1.300	1.300
Min	1.805	1.776	1.756	1.850	2.109
Average	1.805	1.796	1.782	1.908	2.192
Max	1.805	1.815	1.805	1.957	2.300
UL	2.400	2.400	2.400	2.400	2.400



TID Report  
Device Name

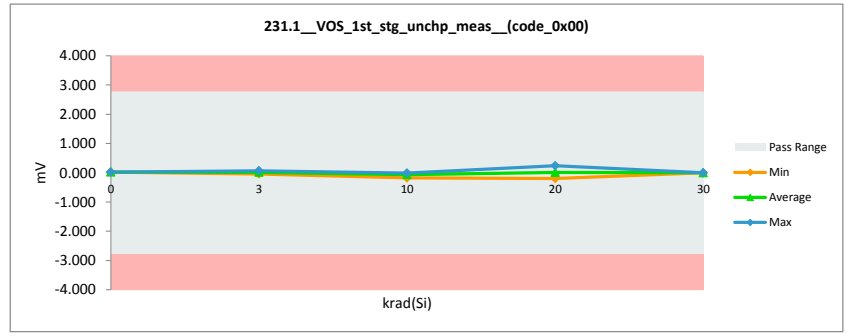
231.1_VOS_1st_stg_unchp_meas_(code_0x00)		
Test Site	Dallas Junkins	
Tester	ETS06	
Test Number	EB128801	
Unit	mV	
Max Limit	2.76	2.76
Min Limit	-2.76	-2.76

krad(Si)	Serial #	PRE DATA.txt	POST DATA.txt	Delta
0		0.243	0.023	0.220
3	1	-0.168	0.009	-0.177
3	2	0.381	0.055	0.326
3	3	0.184	0.069	0.115
3	4	0.129	-0.011	0.140
3	5	0.495	-0.039	0.534
10	6	-0.482	-0.036	-0.446
10	7	-0.492	-0.064	-0.429
10	8	-0.350	-0.025	-0.324
10	9	0.216	-0.008	0.224
10	10	0.356	-0.180	0.535
20	11	-0.389	-0.200	-0.189
20	12	0.069	-0.025	0.095
20	13	0.085	-0.002	0.087
20	14	-0.297	-0.079	-0.219
20	15	0.522	0.158	0.364
20	16	-0.711	0.073	-0.783
20	17	0.188	0.078	0.110
20	18	0.448	-0.002	0.450
20	19	0.243	-0.003	0.246
20	20	0.174	0.128	0.047
20	21	0.325	0.157	0.168
20	22	-0.529	-0.002	-0.527
20	23	0.541	-0.028	0.569
20	24	0.386	-0.003	0.389
20	25	-0.116	-0.174	0.058
20	26	-0.063	0.000	-0.064
20	27	-1.026	0.245	-1.272
20	28	-0.027	-0.001	-0.026
20	29	1.066	-0.147	1.213
20	30	-0.037	-0.001	-0.036
20	31	-0.309	0.077	-0.387
20	32	-0.872	-0.002	-0.869
30	33	0.572	-0.003	0.576
30	34	-0.116	-0.001	-0.115
30	35	-0.342	-0.004	-0.338
30	36	0.018	-0.001	0.020
30	37	0.528	-0.003	0.530
	Max	1.066	0.245	1.213
	Average	0.022	0.001	0.021
	Min	-1.026	-0.200	-1.272
	Std Dev	0.443	0.089	0.464



231.1_VOS_1st_stg_unchp_r		
Test Site	Dallas Junkins	
Tester	ETS06	
Test Number	EB128801	
Max Limit	2.76 mV	
Min Limit	-2.76 mV	

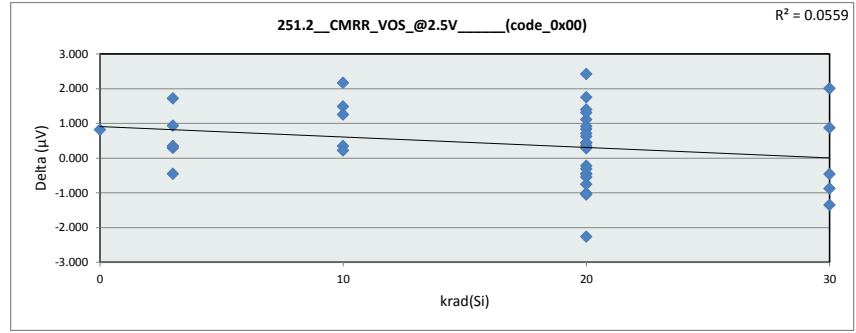
krad(Si)	0	3	10	20	30
LL	-2.760	-2.760	-2.760	-2.760	-2.760
Min	0.023	-0.039	-0.180	-0.200	-0.004
Average	0.023	0.016	-0.063	0.011	-0.002
Max	0.023	0.069	-0.008	0.246	-0.001
UL	2.760	2.760	2.760	2.760	2.760



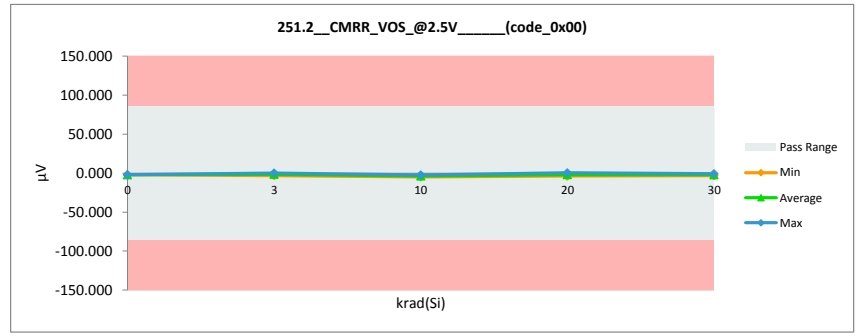
TID Report  
Device Name

251.2_CMRR_VOS_@2.5V_(code_0x00)		
Test Site	Dallas Junkins	
Tester	ETS06	
Test Number	EB128801	
Unit	µV	µV
Max Limit	85	85
Min Limit	-85	-85

krad(Si)	Serial #	PRE DATA.txt	POST DATA.txt	Delta
0		-1.354	-2.176	0.822
3	1	-0.421	-2.141	1.720
3	2	-0.999	-1.293	0.295
3	3	-0.998	-1.349	0.351
3	4	-0.379	0.076	-0.454
3	5	-2.131	-3.069	0.939
10	6	-0.881	-2.372	1.492
10	7	-0.445	-2.615	2.170
10	8	-4.512	-4.863	0.351
10	9	-3.742	-3.964	0.222
10	10	-2.896	-4.153	1.257
20	11	-4.215	-1.955	-2.260
20	12	-3.677	-3.457	-0.220
20	13	-1.809	-0.795	-1.013
20	14	-1.402	-3.826	2.425
20	15	-1.379	-3.134	1.755
20	16	-2.183	-1.737	-0.446
20	17	-1.454	-2.080	0.626
20	18	-0.728	-1.170	0.442
20	19	-2.544	-3.378	0.834
20	20	-1.783	-2.499	0.716
20	21	-3.356	-3.714	0.358
20	22	-3.333	-2.283	-1.051
20	23	1.658	0.256	1.402
20	24	-3.878	-3.129	-0.749
20	25	-0.716	-1.827	1.112
20	26	0.311	-1.003	1.314
20	27	-1.529	-1.069	-0.460
20	28	-2.049	-1.500	-0.548
20	29	0.590	0.306	0.285
20	30	-0.831	-1.274	0.443
20	31	-2.820	-2.513	-0.307
20	32	-1.943	-2.862	0.920
30	33	-1.913	-2.791	0.878
30	34	-1.759	-0.887	-0.872
30	35	-1.162	-3.168	2.007
30	36	-2.767	-1.418	-1.349
30	37	-2.865	-2.408	-0.457
Max		1.658	0.306	2.425
Average		-1.797	-2.190	0.393
Min		-4.512	-4.863	-2.260
Std Dev		1.368	1.224	1.052



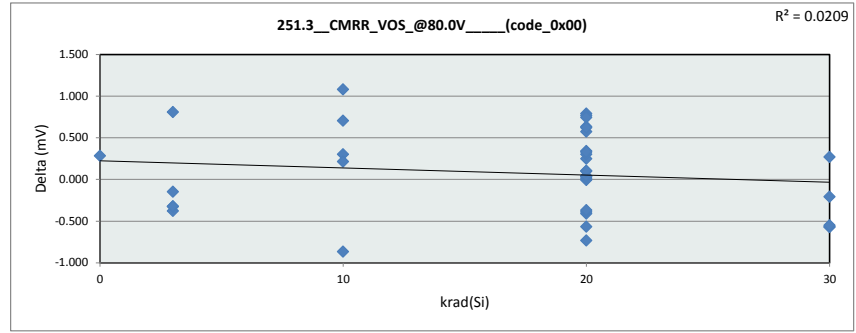
251.2_CMRR_VOS_@2.5V_(code_0x00)					
Test Site	Dallas Junkins				
Tester	ETS06				
Test Number	EB128801				
Max Limit	85	µV			
Min Limit	-85	µV			
krad(Si)	0	3	10	20	30
LL	-85.000	-85.000	-85.000	-85.000	-85.000
Min	-2.176	-3.070	-4.863	-3.827	-3.168
Average	-2.176	-1.555	-3.593	-2.029	-2.134
Max	-2.176	0.076	-2.372	0.306	-0.887
UL	85.000	85.000	85.000	85.000	85.000



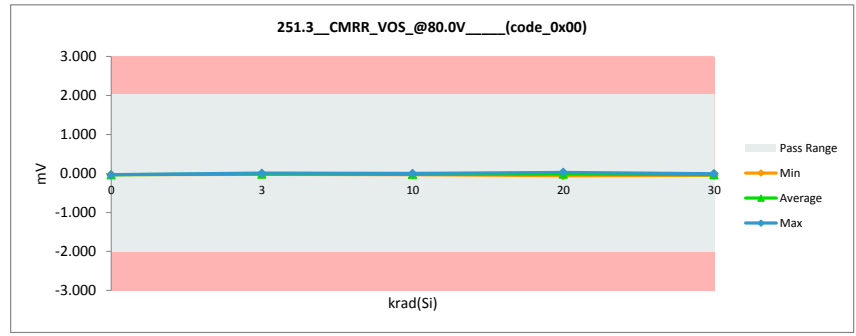
TID Report  
Device Name

251.3_CMRR_VOS_@80.0V_(code_0x00)		
Test Site	Dallas Junkins	
Tester	ETS06	
Test Number	EB128801	
Unit	mV	
Max Limit	2.02	2.02
Min Limit	-2.02	-2.02

krad(Si)	Serial #	PRE DATA.txt	POST DATA.txt	Delta
0		0.248	-0.034	0.282
3	1	-0.400	-0.022	-0.378
3	2	-0.339	-0.014	-0.325
3	3	-0.331	-0.009	-0.322
3	4	-0.142	0.007	-0.149
3	5	0.782	-0.025	0.807
10	6	0.691	-0.014	0.705
10	7	1.052	-0.029	1.081
10	8	0.301	-0.001	0.302
10	9	0.187	-0.026	0.213
10	10	-0.901	-0.034	-0.867
20	11	0.012	0.019	-0.007
20	12	0.563	-0.010	0.572
20	13	0.326	-0.014	0.340
20	14	0.730	-0.058	0.789
20	15	0.583	-0.051	0.634
20	16	0.000	-0.007	0.008
20	17	0.027	-0.011	0.038
20	18	-0.419	-0.008	-0.411
20	19	-0.410	-0.020	-0.390
20	20	-0.593	-0.024	-0.569
20	21	-0.751	-0.018	-0.734
20	22	0.247	-0.001	0.248
20	23	0.748	-0.019	0.767
20	24	0.331	0.029	0.302
20	25	0.741	-0.002	0.743
20	26	0.586	-0.036	0.622
20	27	0.044	0.013	0.030
20	28	0.043	0.003	0.040
20	29	-0.392	-0.023	-0.369
20	30	0.076	-0.021	0.098
20	31	0.289	-0.040	0.329
20	32	0.075	-0.027	0.103
30	33	-0.251	-0.043	-0.208
30	34	-0.577	-0.006	-0.571
30	35	-0.603	-0.030	-0.573
30	36	0.257	-0.012	0.269
30	37	-0.598	-0.048	-0.551
Max		1.052	0.029	1.081
Average		0.059	-0.018	0.076
Min		-0.901	-0.058	-0.867
Std Dev		0.495	0.019	0.496

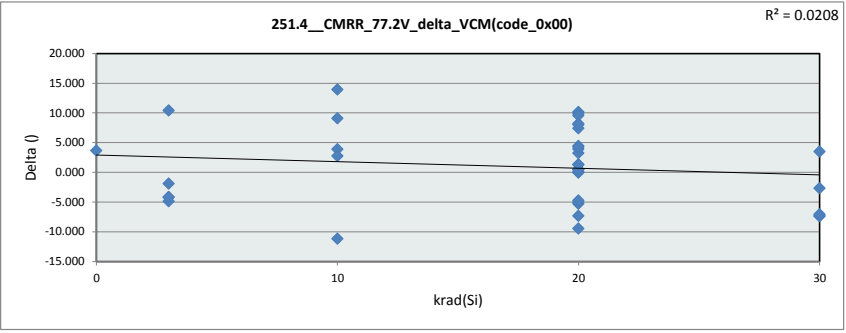


251.3_CMRR_VOS_@80.0V_(code_0x00)					
Test Site	Dallas Junkins				
Tester	ETS06				
Test Number	EB128801				
Unit	mV				
Max Limit	2.02				
Min Limit	-2.02				
krad(Si)	0	3	10	20	30
LL	-2.020	-2.020	-2.020	-2.020	-2.020
Min	-0.034	-0.025	-0.034	-0.058	-0.048
Average	-0.034	-0.012	-0.021	-0.015	-0.028
Max	-0.034	0.007	-0.001	0.029	-0.006
UL	2.020	2.020	2.020	2.020	2.020



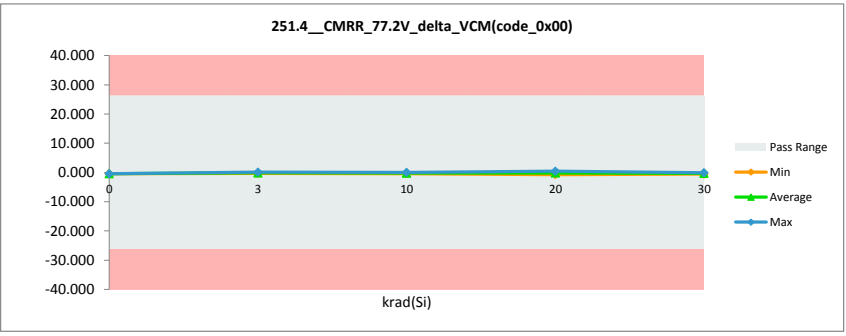
TID Report  
Device Name

251.4_CMRR_77.2V_delta_VCM(code_0x00)		
Test Site	Dallas Junkins	
Tester	ETS06	
Test Number	EB128801	
Unit		
Max Limit	26.2	26.2
Min Limit	-26.2	-26.2



251.4_CMRR_77.2V_delta_VCM		
Test Site	Dallas Junkins	
Tester	ETS06	
Test Number	EB128801	
Max Limit	26.2	
Min Limit	-26.2	

krad(Si)	0	3	10	20	30
LL	-26.200	-26.200	-26.200	-26.200	-26.200
Min	-0.415	-0.283	-0.383	-0.703	-0.585
Average	-0.415	-0.140	-0.221	-0.165	-0.330
Max	-0.415	0.095	0.050	0.415	-0.072
UL	26.200	26.200	26.200	26.200	26.200

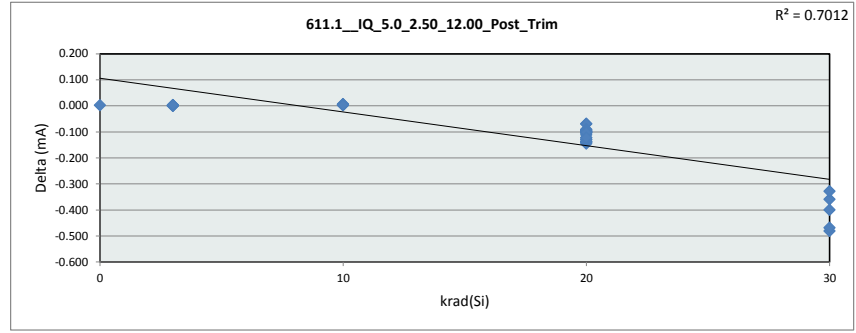


krad(Si)	Serial #	PRE DATA.txt	POST DATA.txt	Delta
0		3.218	-0.415	3.633
3	1	-5.155	-0.255	-4.900
3	2	-4.361	-0.158	-4.202
3	3	-4.260	-0.098	-4.162
3	4	-1.826	0.094	-1.920
3	5	10.121	-0.283	10.403
10	6	8.929	-0.143	9.072
10	7	13.580	-0.342	13.922
10	8	3.936	0.050	3.886
10	9	2.459	-0.289	2.748
10	10	-11.586	-0.383	-11.203
20	11	0.208	0.274	-0.066
20	12	7.305	-0.080	7.385
20	13	4.234	-0.170	4.405
20	14	9.444	-0.703	10.146
20	15	7.542	-0.614	8.156
20	16	0.031	-0.075	0.105
20	17	0.365	-0.114	0.479
20	18	-5.396	-0.090	-5.306
20	19	-5.258	-0.213	-5.045
20	20	-7.626	-0.280	-7.345
20	21	-9.651	-0.179	-9.472
20	22	3.235	0.016	3.219
20	23	9.637	-0.247	9.883
20	24	4.325	0.415	3.911
20	25	9.566	-0.004	9.570
20	26	7.560	-0.454	8.015
20	27	0.585	0.186	0.399
20	28	0.580	0.055	0.525
20	29	-5.063	-0.304	-4.759
20	30	0.997	-0.257	1.255
20	31	3.761	-0.484	4.245
20	32	0.996	-0.318	1.314
30	33	-3.214	-0.512	-2.701
30	34	-7.421	-0.072	-7.349
30	35	-7.765	-0.343	-7.422
30	36	3.347	-0.139	3.486
30	37	-7.685	-0.585	-7.100
	Max	13.580	0.415	13.922
	Average	0.781	-0.198	0.979
	Min	-11.586	-0.703	-11.203
	Std Dev	6.391	0.240	6.400

TID Report  
Device Name

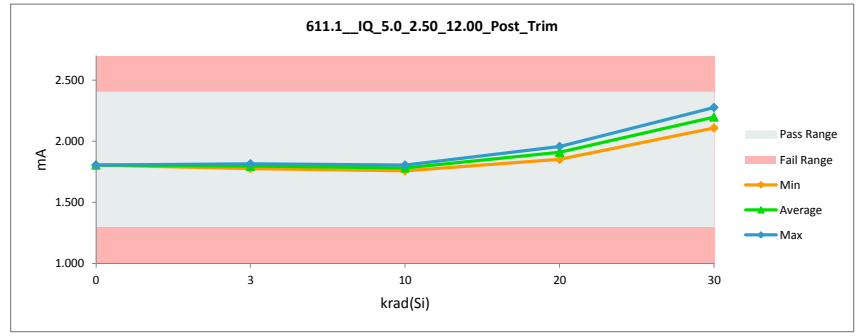
611.1 IQ 5.0 2.50 12.00 Post Trim	
Test Site	Dallas Junkins
Tester	ETS06
Test Number	EB128801
Unit	mA
Max Limit	2.4
Min Limit	1.3

krad(Si)	Serial #	PRE DATA.txt	POST DATA.txt	Delta
0		1.807	1.805	0.002
3	1	1.806	1.804	0.002
3	2	1.798	1.798	0.000
3	3	1.776	1.777	-0.001
3	4	1.789	1.787	0.002
3	5	1.818	1.816	0.003
10	6	1.808	1.806	0.003
10	7	1.788	1.784	0.005
10	8	1.764	1.758	0.006
10	9	1.799	1.795	0.005
10	10	1.772	1.769	0.003
20	11	1.789	1.858	-0.070
20	12	1.813	1.882	-0.069
20	13	1.802	1.899	-0.096
20	14	1.834	1.956	-0.122
20	15	1.796	1.898	-0.102
20	16	1.780	1.871	-0.091
20	17	1.791	1.887	-0.096
20	18	1.800	1.912	-0.112
20	19	1.773	1.909	-0.136
20	20	1.828	1.920	-0.092
20	21	1.797	1.898	-0.101
20	22	1.792	1.931	-0.139
20	23	1.816	1.957	-0.141
20	24	1.800	1.945	-0.145
20	25	1.804	1.943	-0.139
20	26	1.824	1.925	-0.101
20	27	1.795	1.894	-0.099
20	28	1.796	1.902	-0.106
20	29	1.805	1.934	-0.129
20	30	1.789	1.919	-0.130
20	31	1.748	1.851	-0.103
20	32	1.781	1.903	-0.123
30	33	1.795	2.276	-0.481
30	34	1.797	2.266	-0.469
30	35	1.776	2.136	-0.359
30	36	1.780	2.108	-0.328
30	37	1.801	2.201	-0.400
	Max	1.834	2.276	0.006
	Average	1.795	1.913	-0.117
	Min	1.748	1.758	-0.481
	Std Dev	0.017	0.129	0.128



611.1 IQ 5.0 2.50 12.00 P	
Test Site	Dallas Junkins
Tester	ETS06
Test Number	EB128801
Max Limit	2.4
Min Limit	1.3

krad(Si)	0	3	10	20	30
LL	1.300	1.300	1.300	1.300	1.300
Min	1.805	1.777	1.758	1.851	2.108
Average	1.805	1.796	1.782	1.909	2.197
Max	1.805	1.816	1.806	1.957	2.276
UL	2.400	2.400	2.400	2.400	2.400

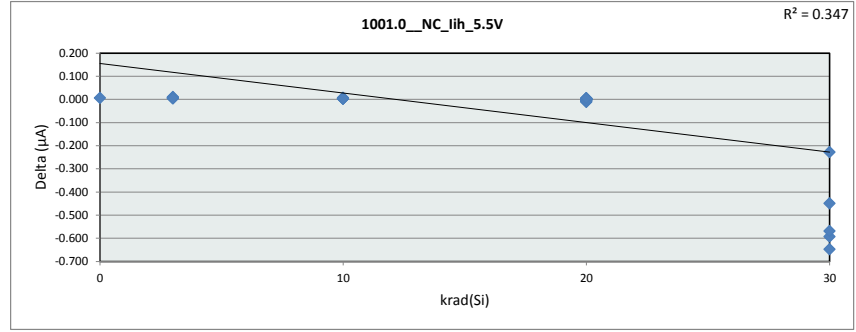




TID Report  
Device Name

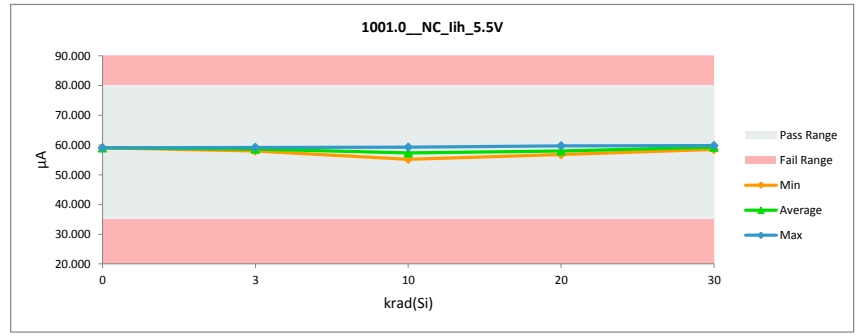
1001.0_NC_Iih_5.5V	
Test Site	Dallas Junkins
Tester	ETS06
Test Number	EB128801
Unit	µA
Max Limit	80
Min Limit	35

krad(Si)	Serial #	PRE DATA.txt	POST DATA.txt	Delta
0		59.056	59.051	0.006
3	1	58.024	58.014	0.010
3	2	58.361	58.357	0.005
3	3	58.974	58.968	0.006
3	4	58.782	58.775	0.007
3	5	59.212	59.208	0.004
10	6	59.311	59.308	0.003
10	7	57.344	57.340	0.004
10	8	59.332	59.326	0.006
10	9	55.762	55.759	0.003
10	10	55.238	55.235	0.003
20	11	56.770	56.769	0.001
20	12	59.476	59.481	-0.005
20	13	58.142	58.142	0.000
20	14	59.742	59.753	-0.011
20	15	58.953	58.952	0.001
20	16	58.390	58.390	0.000
20	17	58.602	58.603	-0.001
20	18	58.397	58.397	0.000
20	19	56.986	56.984	0.002
20	20	56.898	56.895	0.003
20	21	57.123	57.125	-0.002
20	22	56.926	56.931	-0.005
20	23	57.905	57.906	-0.001
20	24	57.770	57.769	0.001
20	25	58.747	58.743	0.004
20	26	58.136	58.134	0.002
20	27	57.750	57.750	0.000
20	28	57.901	57.902	-0.001
20	29	57.993	57.993	0.000
20	30	57.768	57.776	-0.008
20	31	58.350	58.358	-0.007
20	32	57.305	57.300	0.005
30	33	58.599	59.192	-0.593
30	34	59.175	59.823	-0.648
30	35	58.722	59.291	-0.569
30	36	58.314	58.542	-0.228
30	37	59.125	59.575	-0.450
Max		59.742	59.823	0.010
Average		58.141	58.206	-0.065
Min		55.238	55.235	-0.648
Std Dev		1.008	1.069	0.180



1001.0_NC_Iih_5.5V	
Test Site	Dallas Junkins
Tester	ETS06
Test Number	EB128801
Max Limit	80 µA
Min Limit	35 µA

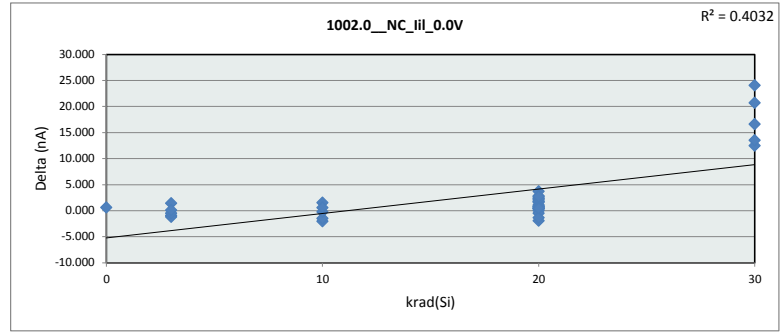
krad(Si)	0	3	10	20	30
LL	35.000	35.000	35.000	35.000	35.000
Min	59.051	58.014	55.235	56.769	58.542
Average	59.051	58.665	57.394	58.002	59.284
Max	59.051	59.208	59.326	59.753	59.823
UL	80.000	80.000	80.000	80.000	80.000



TID Report  
Device Name

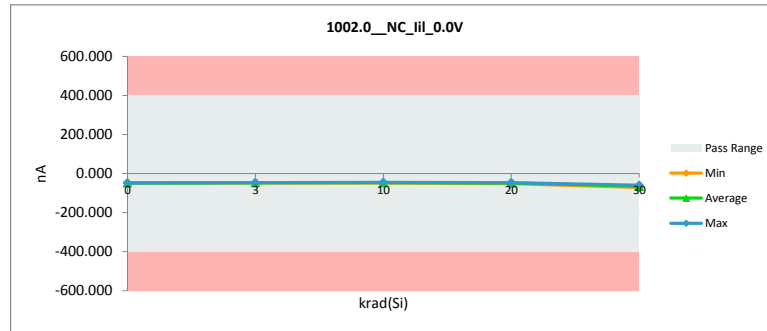
1002.0_NC_Iil_0.0V	
Test Site	Dallas Junkins
Tester	ETS06
Test Number	EB128801
Unit	nA
Max Limit	400
Min Limit	-400

krad(Si)	Serial #	PRE DATA.txt	POST DATA.txt	Delta
0		-47.618	-48.226	0.608
3	1	-48.708	-47.765	-0.944
3	2	-48.436	-47.241	-1.195
3	3	-47.597	-47.094	-0.503
3	4	-45.186	-46.591	1.405
3	5	-48.205	-48.310	0.105
10	6	-49.212	-47.178	-2.034
10	7	-48.163	-46.654	-1.510
10	8	-49.128	-48.897	-0.231
10	9	-45.941	-47.471	1.531
10	10	-44.641	-45.207	0.566
20	11	-45.060	-48.750	3.690
20	12	-47.388	-47.723	0.335
20	13	-45.165	-47.975	2.810
20	14	-51.141	-51.476	0.335
20	15	-48.121	-49.191	1.069
20	16	-48.939	-46.989	-1.950
20	17	-48.646	-51.078	2.432
20	18	-46.549	-48.792	2.244
20	19	-45.962	-47.555	1.594
20	20	-46.675	-48.499	1.824
20	21	-45.962	-45.962	0.000
20	22	-46.591	-48.373	1.782
20	23	-47.283	-48.184	0.902
20	24	-46.549	-47.178	0.629
20	25	-49.149	-49.568	0.419
20	26	-48.205	-48.960	0.755
20	27	-47.241	-47.975	0.734
20	28	-46.402	-48.625	2.223
20	29	-47.912	-50.617	2.705
20	30	-46.905	-46.423	-0.482
20	31	-47.346	-46.004	-1.342
20	32	-47.052	-47.492	0.440
30	33	-47.744	-60.220	12.476
30	34	-47.786	-68.481	20.695
30	35	-47.199	-63.805	16.607
30	36	-47.681	-71.731	24.050
30	37	-49.380	-62.904	13.524
Max		-44.641	-45.207	24.050
Average		-47.444	-50.294	2.850
Min		-51.141	-71.731	-2.034
Std Dev		1.378	6.297	6.129



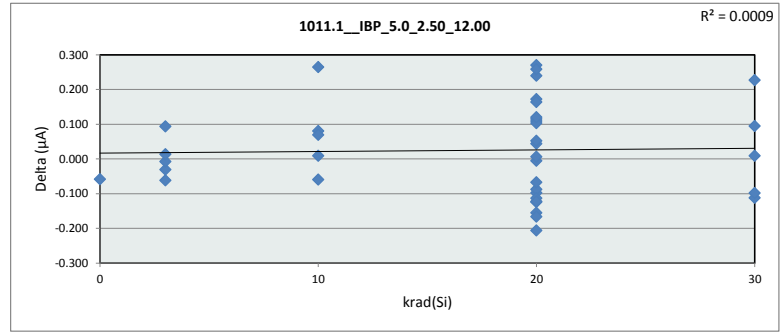
1002.0_NC_Iil_0.0V	
Test Site	Dallas Junkins
Tester	ETS06
Test Number	EB128801
Max Limit	400 nA
Min Limit	-400 nA

krad(Si)	0	3	10	20	30
LL	-400.000	-400.000	-400.000	-400.000	-400.000
Min	-48.226	-48.310	-48.897	-51.476	-71.731
Average	-48.226	-47.400	-47.081	-48.336	-65.428
Max	-48.226	-46.591	-45.207	-45.962	-60.220
UL	400.000	400.000	400.000	400.000	400.000



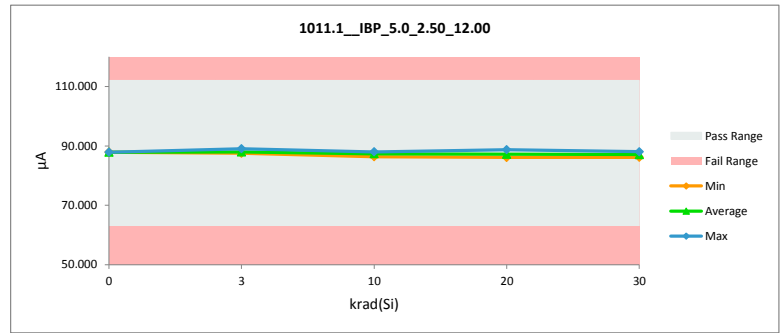
TID Report  
Device Name

1011.1 IBP 5.0 2.50 12.00		
Test Site	Dallas Junkins	
Tester	ETS06	
Test Number	EB128801	
Unit	µA	µA
Max Limit	112	112
Min Limit	63	63



krad(Si)	Serial #	PRE DATA.txt	POST DATA.txt	Delta
0		87.821	87.879	-0.058
3	1	87.499	87.561	-0.062
3	2	87.461	87.492	-0.031
3	3	87.637	87.644	-0.008
3	4	88.033	88.019	0.013
3	5	89.127	89.034	0.094
10	6	87.710	87.770	-0.060
10	7	88.068	87.988	0.080
10	8	87.296	87.031	0.265
10	9	87.611	87.602	0.009
10	10	86.402	86.333	0.069
20	11	87.670	87.794	-0.124
20	12	88.657	88.613	0.044
20	13	87.794	87.678	0.115
20	14	88.551	88.706	-0.155
20	15	88.222	88.320	-0.098
20	16	88.193	88.359	-0.166
20	17	88.080	87.908	0.172
20	18	88.010	87.901	0.109
20	19	86.673	86.509	0.164
20	20	87.202	87.099	0.103
20	21	87.187	86.947	0.240
20	22	86.070	86.076	-0.006
20	23	86.707	86.795	-0.088
20	24	86.869	86.936	-0.068
20	25	86.291	86.285	0.006
20	26	86.373	86.103	0.270
20	27	86.712	86.454	0.258
20	28	87.038	87.152	-0.113
20	29	86.974	87.097	-0.123
20	30	86.968	86.848	0.120
20	31	86.188	86.135	0.052
20	32	86.366	86.572	-0.206
30	33	86.336	86.109	0.227
30	34	87.417	87.322	0.095
30	35	86.602	86.714	-0.112
30	36	87.925	88.024	-0.098
30	37	87.109	87.100	0.009
	Max	89.127	89.034	0.270
	Average	87.338	87.313	0.025
	Min	86.070	86.076	-0.206
	Std Dev	0.761	0.792	0.131

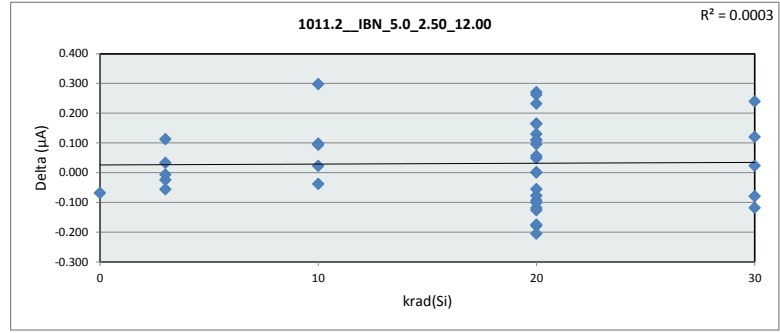
1011.1 IBP 5.0 2.50 12.00					
Test Site	Dallas Junkins				
Tester	ETS06				
Test Number	EB128801				
Max Limit	112 µA				
Min Limit	63 µA				
krad(Si)	0	3	10	20	30
LL	63.000	63.000	63.000	63.000	63.000
Min	87.879	87.492	86.333	86.076	86.109
Average	87.879	87.950	87.345	87.195	87.054
Max	87.879	89.034	87.988	88.707	88.024
UL	112.000	112.000	112.000	112.000	112.000



TID Report  
Device Name

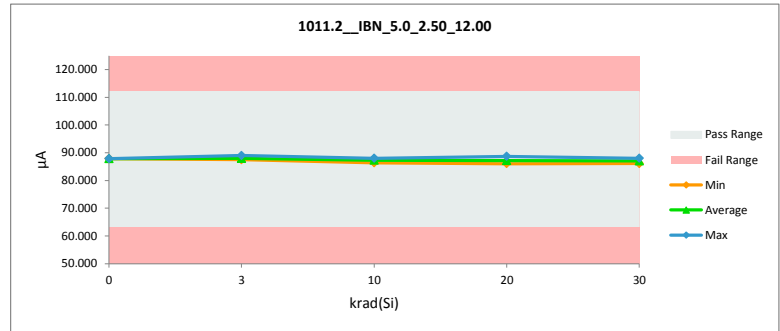
1011.2_IBN_5.0_2.50_12.00		
Test Site	Dallas Junkins	
Tester	ETS06	
Test Number	EB128801	
Unit	µA	µA
Max Limit	112	112
Min Limit	63	63

krad(Si)	Serial #	PRE DATA.txt	POST DATA.txt	Delta
0		87.819	87.887	-0.068
3	1	87.505	87.562	-0.056
3	2	87.464	87.489	-0.024
3	3	87.636	87.643	-0.007
3	4	88.049	88.016	0.033
3	5	89.123	89.011	0.113
10	6	87.711	87.748	-0.038
10	7	88.078	87.981	0.098
10	8	87.309	87.011	0.298
10	9	87.623	87.600	0.023
10	10	86.420	86.326	0.094
20	11	87.692	87.785	-0.093
20	12	88.662	88.614	0.049
20	13	87.796	87.665	0.130
20	14	88.525	88.704	-0.179
20	15	88.207	88.325	-0.119
20	16	88.184	88.359	-0.175
20	17	88.064	87.899	0.165
20	18	88.000	87.891	0.109
20	19	86.666	86.501	0.164
20	20	87.190	87.094	0.096
20	21	87.178	86.946	0.232
20	22	86.073	86.072	0.001
20	23	86.701	86.778	-0.077
20	24	86.880	86.935	-0.055
20	25	86.279	86.278	0.001
20	26	86.369	86.098	0.271
20	27	86.707	86.445	0.263
20	28	87.039	87.140	-0.101
20	29	86.972	87.099	-0.126
20	30	86.950	86.840	0.110
20	31	86.173	86.117	0.056
20	32	86.357	86.562	-0.205
30	33	86.340	86.101	0.240
30	34	87.424	87.304	0.121
30	35	86.596	86.715	-0.118
30	36	87.921	88.001	-0.079
30	37	87.103	87.080	0.023
	Max	89.123	89.011	0.298
	Average	87.337	87.306	0.031
	Min	86.073	86.072	-0.205
	Std Dev	0.761	0.792	0.133



1011.2_IBN_5.0_2.50_12.00		
Test Site	Dallas Junkins	
Tester	ETS06	
Test Number	EB128801	
Max Limit	112	µA
Min Limit	63	µA

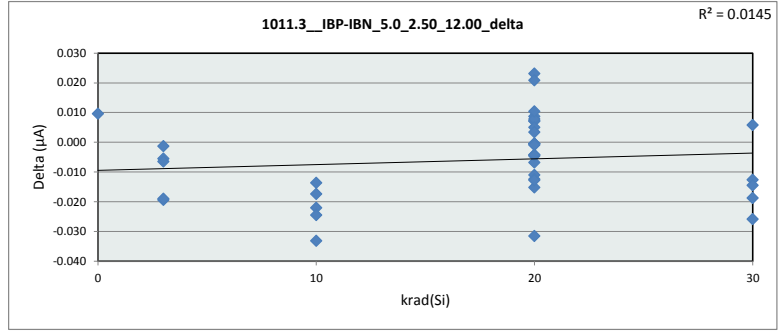
krad(Si)	0	3	10	20	30
LL	63.000	63.000	63.000	63.000	63.000
Min	87.887	87.489	86.326	86.072	86.101
Average	87.887	87.944	87.333	87.188	87.040
Max	87.887	89.011	87.981	88.704	88.001
UL	112.000	112.000	112.000	112.000	112.000



TID Report  
Device Name

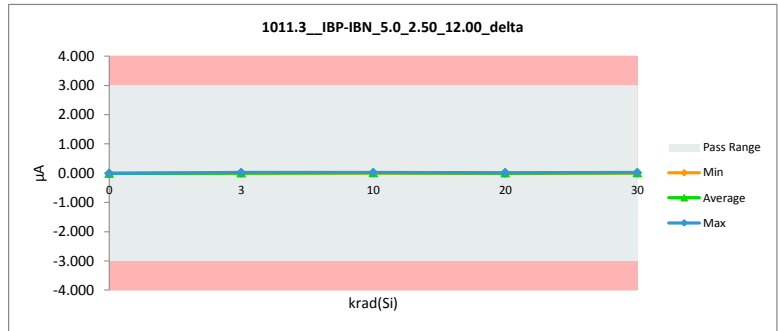
1011.3 IBP-IBN_5.0_2.50_12.00_delta	
Test Site	Dallas Junkins
Tester	ETS06
Test Number	EB128801
Unit	µA
Max Limit	3
Min Limit	-3

krad(Si)	Serial #	PRE DATA.txt	POST DATA.txt	Delta
0		0.002	-0.007	0.010
3	1	-0.006	-0.001	-0.006
3	2	-0.004	0.003	-0.007
3	3	0.001	0.002	-0.001
3	4	-0.016	0.003	-0.019
3	5	0.004	0.023	-0.019
10	6	0.000	0.022	-0.022
10	7	-0.010	0.007	-0.017
10	8	-0.013	0.021	-0.033
10	9	-0.012	0.002	-0.014
10	10	-0.018	0.007	-0.024
20	11	-0.023	0.009	-0.032
20	12	-0.006	-0.001	-0.005
20	13	-0.002	0.013	-0.015
20	14	0.026	0.003	0.023
20	15	0.015	-0.005	0.021
20	16	0.009	0.000	0.009
20	17	0.017	0.009	0.007
20	18	0.010	0.010	0.000
20	19	0.008	0.008	-0.001
20	20	0.013	0.005	0.007
20	21	0.009	0.001	0.008
20	22	-0.003	0.004	-0.007
20	23	0.006	0.017	-0.011
20	24	-0.011	0.002	-0.012
20	25	0.012	0.007	0.005
20	26	0.005	0.005	0.000
20	27	0.005	0.009	-0.004
20	28	0.000	0.012	-0.013
20	29	0.002	-0.002	0.003
20	30	0.018	0.007	0.010
20	31	0.015	0.019	-0.004
20	32	0.009	0.010	-0.001
30	33	-0.005	0.008	-0.013
30	34	-0.007	0.019	-0.026
30	35	0.005	0.000	0.006
30	36	0.004	0.023	-0.019
30	37	0.005	0.020	-0.014
Max		0.026	0.023	0.023
Average		0.002	0.008	-0.006
Min		-0.023	-0.007	-0.033
Std Dev		0.011	0.008	0.013



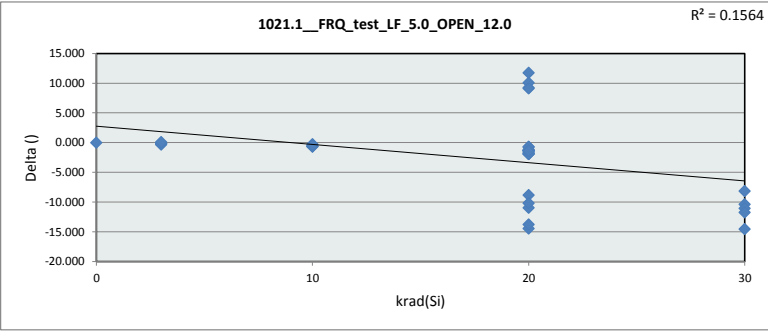
1011.3 IBP-IBN_5.0_2.50_12.00_delta	
Test Site	Dallas Junkins
Tester	ETS06
Test Number	EB128801
Max Limit	3
Min Limit	-3

krad(Si)	0	3	10	20	30
LL	-3.000	-3.000	-3.000	-3.000	-3.000
Min	-0.007	-0.001	0.002	-0.005	0.000
Average	-0.007	0.006	0.011	0.007	0.014
Max	-0.007	0.023	0.022	0.019	0.023
UL	3.000	3.000	3.000	3.000	3.000



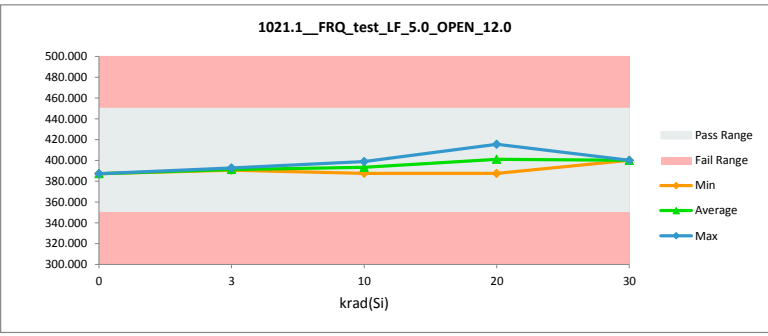
TID Report  
Device Name

1021.1_FRQ_test_LF_5.0_OPEN_12.0		
Test Site	Dallas Junkins	
Tester	ETS06	
Test Number	EB128801	
Unit		
Max Limit	450	450
Min Limit	350	350



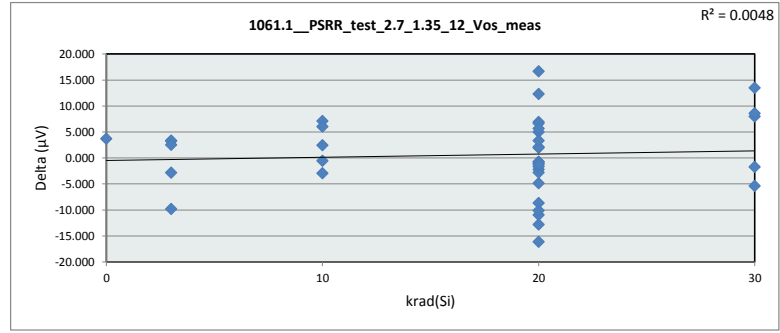
krad(Si)	Serial #	PRE DATA.txt	POST DATA.txt	Delta
0		387.191	387.201	-0.010
3	1	392.474	392.636	-0.162
3	2	390.307	390.461	-0.153
3	3	390.712	391.028	-0.316
3	4	391.261	391.366	-0.106
3	5	391.067	390.973	0.093
6	6	390.329	390.607	-0.278
10	7	390.833	391.420	-0.588
10	8	386.941	387.589	-0.648
10	9	398.141	398.798	-0.657
10	10	397.532	397.952	-0.420
20	11	393.779	395.356	-1.577
20	12	388.704	390.631	-1.927
20	13	391.197	400.000	-8.803
20	14	391.349	393.229	-1.881
20	15	389.139	390.901	-1.762
20	16	389.374	390.688	-1.314
20	17	390.675	391.848	-1.172
20	18	389.048	400.000	-10.952
20	19	385.572	400.000	-14.428
20	20	414.738	415.439	-0.700
20	21	410.954	412.305	-1.350
20	22	409.211	400.000	9.211
20	23	412.492	414.402	-1.910
20	24	410.047	400.000	10.047
20	25	412.994	414.301	-1.306
20	26	409.138	400.000	9.138
20	27	413.336	414.078	-0.742
20	28	411.739	400.000	11.739
20	29	410.962	412.293	-1.331
20	30	386.245	400.000	-13.755
20	31	386.051	387.447	-1.396
20	32	389.826	400.000	-10.174
30	33	385.466	400.000	-14.534
30	34	389.630	400.000	-10.370
30	35	391.869	400.000	-8.131
30	36	388.968	400.000	-11.032
30	37	388.293	400.000	-11.707
	Max	414.738	415.439	11.739
	Average	395.726	398.235	-2.510
	Min	385.466	387.201	-14.534
	Std Dev	9.977	8.135	6.450

1021.1_FRQ_test_LF_5.0_OP					
Test Site	Dallas Junkins				
Tester	ETS06				
Test Number	EB128801				
Max Limit	450				
Min Limit	350				
krad(Si)	0	3	10	20	30
LL	350.000	350.000	350.000	350.000	350.000
Min	387.201	390.461	387.589	387.447	400.000
Average	387.201	391.293	393.273	401.042	400.000
Max	387.201	392.636	398.798	415.439	400.000
UL	450.000	450.000	450.000	450.000	450.000

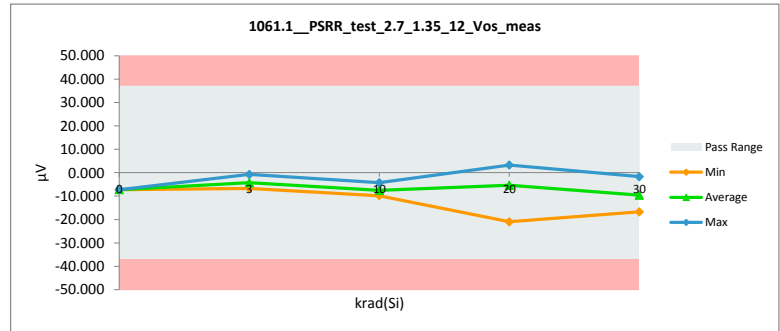


TID Report  
Device Name

1061.1 PSRR test 2.7_1.35_12 Vos_meas				
Test Site	Dallas Junkins			
Tester	ETS06			
Test Number	EB128801			
Unit	µV		µV	
Max Limit	37		37	
Min Limit	-37		-37	
krad(Si)	Serial #	PRE DATA.txt	POST DATA.txt	Delta
0		-3.528	-7.245	3.717
3	1	-2.718	-5.985	3.267
3	2	-3.356	-6.678	3.322
3	3	-5.209	-2.363	-2.846
3	4	-10.555	-0.736	-9.819
3	5	-3.010	-5.529	2.519
10	6	-4.845	-4.312	-0.533
10	7	-2.715	-9.804	7.088
10	8	-7.819	-4.859	-2.960
10	9	-3.340	-9.372	6.032
10	10	-6.862	-9.325	2.463
20	11	-13.332	-0.512	-12.820
20	12	-6.538	-4.328	-2.210
20	13	-6.472	-5.431	-1.041
20	14	-4.302	-20.984	16.682
20	15	-3.912	-16.223	12.311
20	16	-4.999	-2.186	-2.814
20	17	-4.825	-3.169	-1.656
20	18	-6.018	-5.262	-0.756
20	19	-6.163	-5.426	-0.737
20	20	-4.191	-9.179	4.988
20	21	-6.983	-5.689	-1.293
20	22	-9.542	-0.852	-8.689
20	23	-0.891	-2.872	1.980
20	24	-12.910	3.240	-16.150
20	25	-5.784	-0.907	-4.877
20	26	-3.226	-10.139	6.912
20	27	-9.394	1.588	-10.981
20	28	-12.919	-2.818	-10.101
20	29	-1.576	-3.708	2.132
20	30	-2.309	-5.640	3.330
20	31	-3.659	-10.327	6.668
20	32	-1.728	-7.394	5.666
30	33	-3.232	-16.741	13.509
30	34	-7.077	-1.703	-5.374
30	35	-2.503	-10.507	8.004
30	36	-7.125	-5.412	-1.713
30	37	-5.137	-13.707	8.571
Max		-0.891	3.240	16.682
Average		-5.545	-6.118	0.573
Min		-13.332	-20.984	-16.150
Std Dev		3.168	5.072	7.265



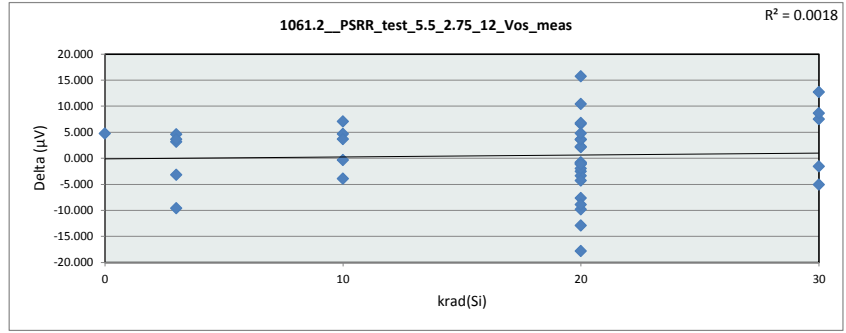
1061.1 PSRR test 2.7_1.35					
Test Site	Dallas Junkins				
Tester	ETS06				
Test Number	EB128801				
Max Limit	37 µV				
Min Limit	-37 µV				
krad(Si)	0	3	10	20	30
LL	-37.000	-37.000	-37.000	-37.000	-37.000
Min	-7.245	-6.678	-9.804	-20.984	-16.741
Average	-7.245	-4.258	-7.534	-5.374	-9.614
Max	-7.245	-0.736	-4.312	3.240	-1.703
UL	37.000	37.000	37.000	37.000	37.000



TID Report  
Device Name

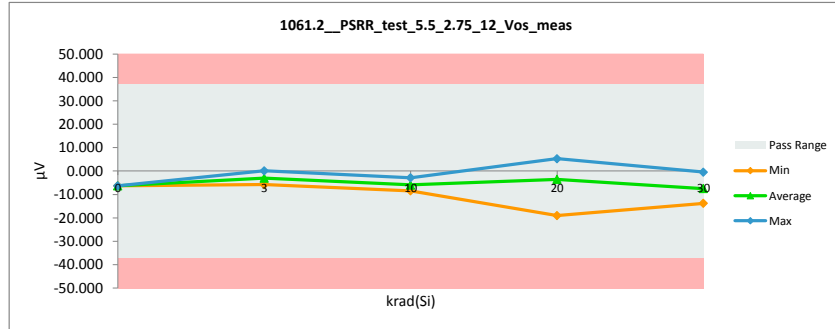
1061.2 PSRR_test_5.5_2.75_12_Vos_meas		
Test Site	Dallas Junkins	
Tester	ETS06	
Test Number	EB128801	
Unit	µV	µV
Max Limit	37	37
Min Limit	-37	-37

krad(Si)	Serial #	PRE DATA.txt	POST DATA.txt	Delta
0		-1.587	-6.332	4.745
3	1	-1.309	-4.435	3.126
3	2	-1.232	-5.815	4.583
3	3	-3.759	-0.575	-3.184
3	4	-9.498	0.107	-9.605
3	5	-0.838	-4.461	3.623
10	6	-3.833	-3.459	-0.375
10	7	-0.700	-7.769	7.070
10	8	-6.745	-2.823	-3.922
10	9	-2.586	-7.240	4.653
10	10	-4.813	-8.457	3.644
20	11	-12.117	0.826	-12.943
20	12	-4.737	-2.211	-2.525
20	13	-4.656	-3.865	-0.792
20	14	-3.318	-19.035	15.717
20	15	-3.557	-13.959	10.402
20	16	-3.457	-0.088	-3.369
20	17	-2.159	-1.244	-0.915
20	18	-4.320	-3.265	-1.055
20	19	-3.596	-1.626	-1.970
20	20	-3.014	-6.569	3.554
20	21	-4.734	-3.562	-1.172
20	22	-8.517	-0.842	-7.675
20	23	1.074	-1.043	2.117
20	24	-12.544	5.299	-17.843
20	25	-4.007	0.305	-4.312
20	26	-2.365	-8.941	6.576
20	27	-6.956	2.875	-9.831
20	28	-10.206	-1.295	-8.912
20	29	0.645	-1.590	2.236
20	30	-0.261	-3.883	3.622
20	31	-2.148	-8.899	6.751
20	32	-0.236	-5.005	4.768
30	33	-1.130	-13.815	12.685
30	34	-5.543	-0.449	-5.094
30	35	-0.588	-8.098	7.510
30	36	-5.219	-3.661	-1.559
30	37	-2.669	-11.291	8.622
	Max	1.074	5.299	15.717
	Average	-3.875	-4.373	0.499
	Min	-12.544	-19.035	-17.843
	Std Dev	3.297	4.874	7.065



1061.2 PSRR_test_5.5_2.75		
Test Site	Dallas Junkins	
Tester	ETS06	
Test Number	EB128801	
Max Limit	37	µV
Min Limit	-37	µV

krad(Si)	0	3	10	20	30
LL	-37.000	-37.000	-37.000	-37.000	-37.000
Min	-6.332	-5.815	-8.457	-19.035	-13.815
Average	-6.332	-3.036	-5.950	-3.528	-7.463
Max	-6.332	0.107	-2.823	5.299	-0.449
UL	37.000	37.000	37.000	37.000	37.000

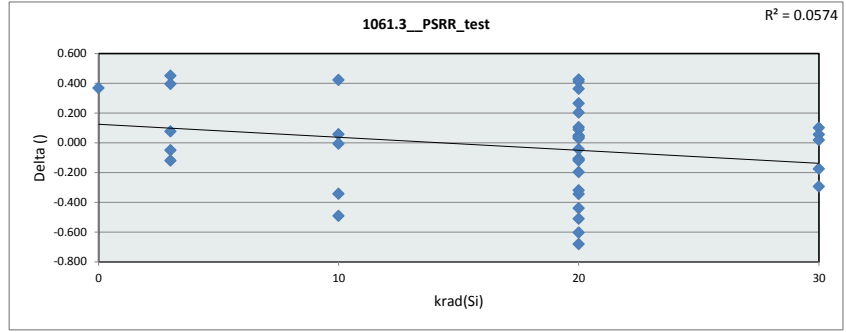




TID Report  
Device Name

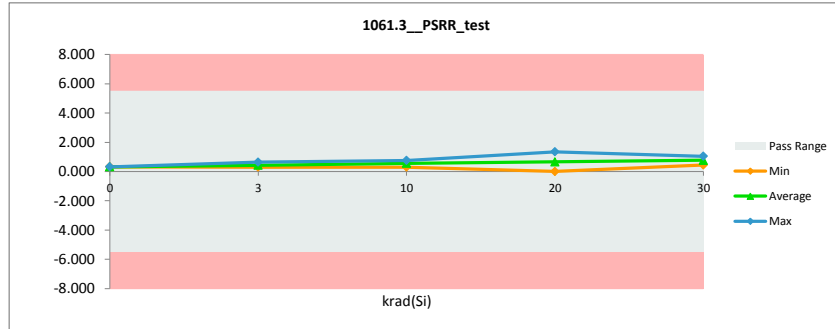
1061.3 PSRR_test	
Test Site	Dallas Junkins
Tester	ETS06
Test Number	EB128801
Unit	
Max Limit	5.5
Min Limit	-5.5

krad(Si)	Serial #	PRE DATA.txt	POST DATA.txt	Delta
0		0.693	0.326	0.367
3	1	0.503	0.554	-0.051
3	2	0.758	0.308	0.450
3	3	0.518	0.639	-0.121
3	4	0.377	0.301	0.076
3	5	0.776	0.382	0.394
10	6	0.361	0.305	0.057
10	7	0.720	0.726	-0.006
10	8	0.383	0.727	-0.344
10	9	0.269	0.762	-0.492
10	10	0.732	0.310	0.422
20	11	0.434	0.478	-0.044
20	12	0.643	0.756	-0.113
20	13	0.648	0.559	0.089
20	14	0.352	0.696	-0.345
20	15	0.127	0.808	-0.682
20	16	0.551	0.749	-0.198
20	17	0.952	0.688	0.264
20	18	0.606	0.713	-0.107
20	19	0.917	1.357	-0.441
20	20	0.420	0.932	-0.512
20	21	0.803	0.760	0.043
20	22	0.366	0.004	0.362
20	23	0.702	0.653	0.049
20	24	0.131	0.735	-0.604
20	25	0.635	0.433	0.202
20	26	0.308	0.428	-0.120
20	27	0.871	0.460	0.411
20	28	0.969	0.544	0.425
20	29	0.794	0.756	0.037
20	30	0.732	0.627	0.104
20	31	0.540	0.510	0.030
20	32	0.533	0.854	-0.321
30	33	0.751	1.045	-0.294
30	34	0.548	0.448	0.100
30	35	0.684	0.860	-0.176
30	36	0.681	0.626	0.055
30	37	0.882	0.863	0.018
Max		0.969	1.357	0.450
Average		0.597	0.623	-0.027
Min		0.127	0.004	-0.682
Std Dev		0.218	0.248	0.302



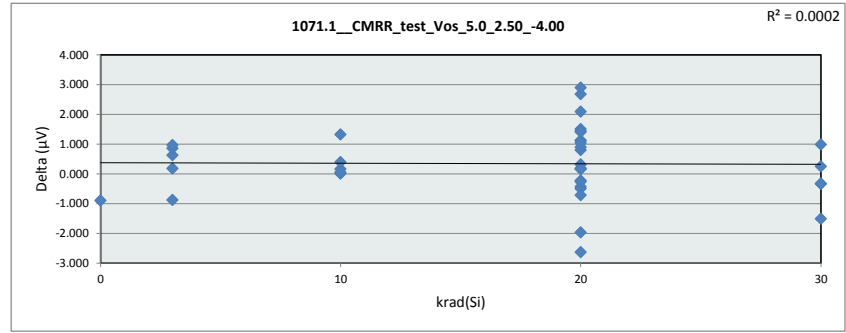
1061.3 PSRR_test	
Test Site	Dallas Junkins
Tester	ETS06
Test Number	EB128801
Max Limit	5.5
Min Limit	-5.5

krad(Si)	0	3	10	20	30
LL	-5.500	-5.500	-5.500	-5.500	-5.500
Min	0.326	0.301	0.305	0.004	0.448
Average	0.326	0.437	0.566	0.659	0.768
Max	0.326	0.639	0.762	1.357	1.045
UL	5.500	5.500	5.500	5.500	5.500



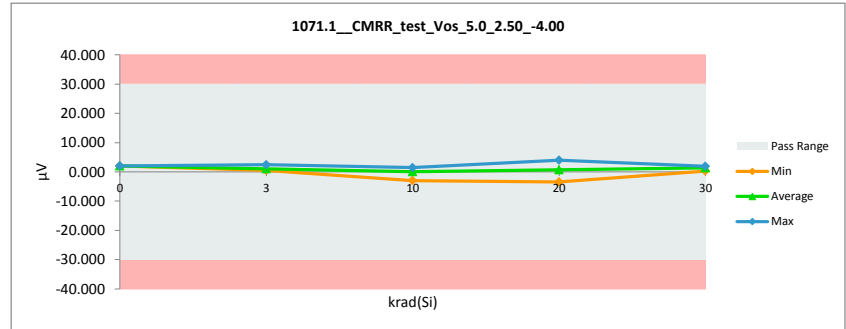
TID Report  
Device Name

1071.1_CMRR_test_Vos_5.0_2.50_-4.00		
Test Site	Dallas Junkins	
Tester	ETS06	
Test Number	EB128801	
Unit	µV	µV
Max Limit	30	30
Min Limit	-30	-30



krad(Si)	Serial #	PRE DATA.txt	POST DATA.txt	Delta
0		1.111	2.009	-0.898
3	1	1.549	2.431	-0.882
3	2	1.676	1.051	0.625
3	3	1.485	0.628	0.856
3	4	1.671	0.704	0.968
3	5	0.686	0.510	0.176
10	6	1.269	1.106	0.163
10	7	1.863	1.474	0.389
10	8	-1.643	-2.963	1.320
10	9	-0.338	-0.340	0.002
10	10	1.034	0.985	0.049
20	11	-0.812	-1.610	0.798
20	12	-1.028	-1.343	0.315
20	13	0.959	1.392	-0.433
20	14	1.039	3.671	-2.632
20	15	0.908	2.879	-1.971
20	16	1.331	0.227	1.104
20	17	1.422	-0.078	1.500
20	18	1.563	1.377	0.186
20	19	1.053	-0.075	1.128
20	20	1.460	1.959	-0.499
20	21	0.340	-0.558	0.898
20	22	0.439	-1.652	2.091
20	23	3.932	2.896	1.036
20	24	-0.750	-3.427	2.677
20	25	1.951	0.520	1.431
20	26	3.792	4.019	-0.227
20	27	1.340	-1.558	2.898
20	28	1.222	-0.185	1.407
20	29	3.127	3.848	-0.720
20	30	1.571	1.411	0.160
20	31	1.261	1.526	-0.265
20	32	0.800	0.641	0.159
30	33	1.371	1.707	-0.337
30	34	1.311	0.326	0.985
30	35	1.524	1.276	0.247
30	36	1.206	1.535	-0.329
30	37	0.425	1.940	-1.515
Max		3.932	4.019	2.898
Average		1.135	0.796	0.338
Min		-1.643	-3.427	-2.632
Std Dev		1.113	1.706	1.140

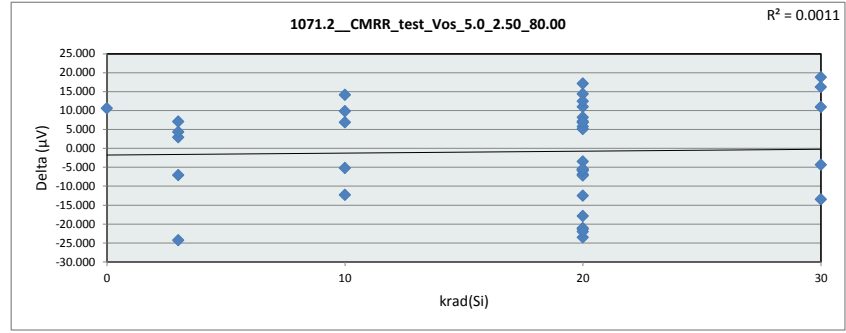
1071.1_CMRR_test_Vos_5.0					
Test Site	Dallas Junkins				
Tester	ETS06				
Test Number	EB128801				
Max Limit	30 µV				
Min Limit	-30 µV				
krad(Si)	0	3	10	20	30
LL	-30.000	-30.000	-30.000	-30.000	-30.000
Min	2.009	0.510	-2.963	-3.427	0.326
Average	2.009	1.065	0.053	0.722	1.357
Max	2.009	2.431	1.474	4.019	1.940
UL	30.000	30.000	30.000	30.000	30.000



TID Report  
Device Name

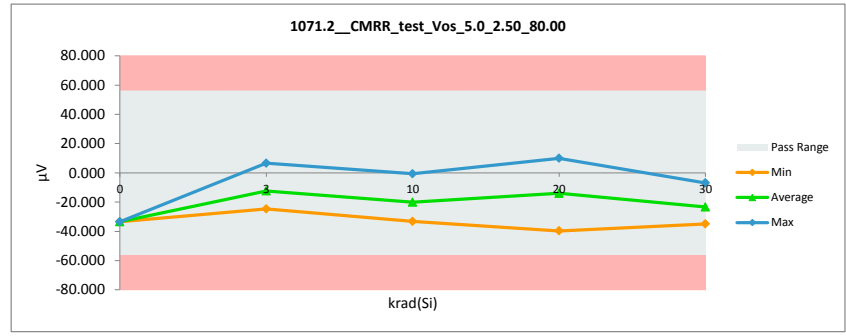
1071.2_CMRR_test_Vos_5.0_2.50_80.00		
Test Site	Dallas Junkins	
Tester	ETS06	
Test Number	EB128801	
Unit	µV	µV
Max Limit	56	56
Min Limit	-56	-56

krad(Si)	Serial #	PRE DATA.txt	POST DATA.txt	Delta
0		-22.849	-33.442	10.593
3	1	-14.156	-21.249	7.092
3	2	-10.539	-13.439	2.900
3	3	-15.960	-8.872	-7.088
3	4	-17.750	6.542	-24.292
3	5	-20.371	-24.710	4.339
10	6	-17.608	-12.433	-5.174
10	7	-13.994	-28.132	14.138
10	8	-12.910	-0.614	-12.297
10	9	-16.009	-25.820	9.811
10	10	-26.394	-33.285	6.891
20	11	-11.441	9.907	-21.347
20	12	-14.840	-9.216	-5.623
20	13	-17.040	-13.571	-3.469
20	14	-18.884	-27.086	8.203
20	15	-23.350	-29.138	5.788
20	16	-14.484	-7.634	-6.850
20	17	-18.985	-11.789	-7.196
20	18	-14.432	-8.540	-5.892
20	19	-25.793	-20.219	-5.574
20	20	-13.072	-24.052	10.980
20	21	-23.034	-17.587	-5.446
20	22	-20.949	0.121	-21.069
20	23	-14.857	-19.965	5.107
20	24	-13.867	9.662	-23.528
20	25	-13.728	-1.215	-12.513
20	26	-20.581	-34.965	14.385
20	27	-14.387	3.482	-17.868
20	28	-18.541	3.457	-21.998
20	29	-15.747	-22.892	7.145
20	30	-14.413	-21.252	6.838
20	31	-22.535	-39.683	17.149
20	32	-14.325	-26.808	12.483
30	33	-13.843	-32.641	18.799
30	34	-20.334	-6.893	-13.441
30	35	-13.773	-30.010	16.237
30	36	-16.820	-12.498	-4.322
30	37	-23.968	-34.923	10.956
	Max	-10.539	9.907	18.799
	Average	-17.278	-16.353	-0.925
	Min	-26.394	-39.683	-24.292
	Std Dev	4.106	13.712	12.637



1071.2_CMRR_test_Vos_5.0		
Test Site	Dallas Junkins	
Tester	ETS06	
Test Number	EB128801	
Max Limit	56	µV
Min Limit	-56	µV

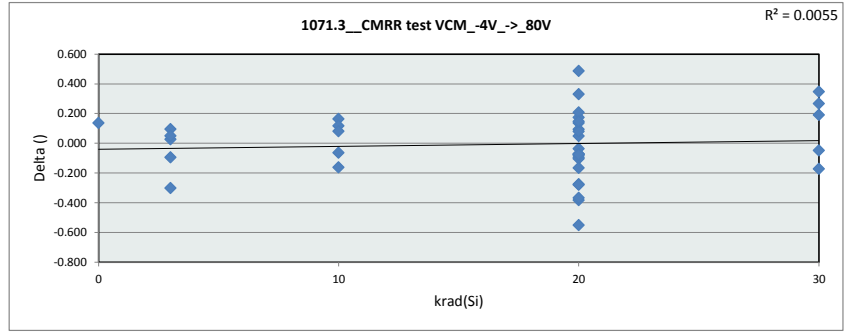
krad(Si)	0	3	10	20	30
LL	-56.000	-56.000	-56.000	-56.000	-56.000
Min	-33.442	-24.710	-33.285	-39.683	-34.923
Average	-33.442	-12.346	-20.057	-14.045	-23.393
Max	-33.442	6.542	-0.614	9.907	-6.893
UL	56.000	56.000	56.000	56.000	56.000



TID Report  
Device Name

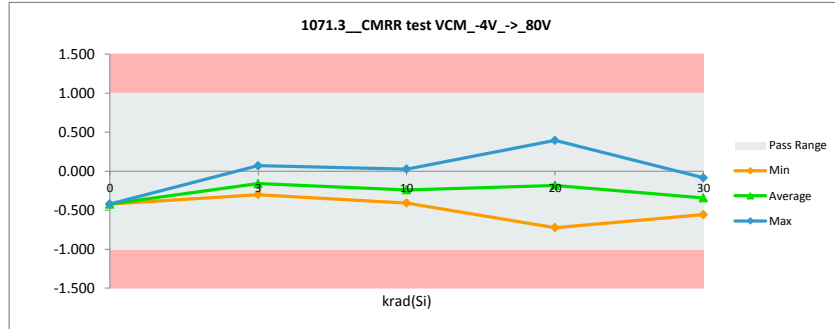
1071.3_CMRR test VCM_-4V_->_80V		
Test Site	Dallas Junkins	
Tester	ETS06	
Test Number	EB128801	
Unit		
Max Limit	1	1
Min Limit	-1	-1

krad(Si)	Serial #	PRE DATA.txt	POST DATA.txt	Delta
0		-0.285	-0.422	0.137
3	1	-0.187	-0.282	0.095
3	2	-0.145	-0.172	0.027
3	3	-0.208	-0.113	-0.095
3	4	-0.231	0.069	-0.301
3	5	-0.251	-0.300	0.049
10	6	-0.225	-0.161	-0.064
10	7	-0.189	-0.352	0.164
10	8	-0.134	0.028	-0.162
10	9	-0.187	-0.303	0.117
10	10	-0.326	-0.408	0.081
20	11	-0.126	0.256	-0.383
20	12	-0.164	-0.094	-0.071
20	13	-0.214	-0.178	-0.036
20	14	-0.237	-0.723	0.486
20	15	-0.289	-0.619	0.331
20	16	-0.188	-0.094	-0.095
20	17	-0.243	-0.139	-0.103
20	18	-0.190	-0.118	-0.072
20	19	-0.320	-0.240	-0.080
20	20	-0.173	-0.310	0.137
20	21	-0.278	-0.203	-0.076
20	22	-0.255	0.021	-0.276
20	23	-0.224	-0.272	0.048
20	24	-0.156	0.394	-0.550
20	25	-0.187	-0.021	-0.166
20	26	-0.290	-0.464	0.174
20	27	-0.187	0.179	-0.366
20	28	-0.235	0.043	-0.279
20	29	-0.225	-0.318	0.094
20	30	-0.190	-0.270	0.080
20	31	-0.283	-0.491	0.207
20	32	-0.180	-0.327	0.147
30	33	-0.181	-0.528	0.347
30	34	-0.258	-0.086	-0.172
30	35	-0.182	-0.373	0.190
30	36	-0.215	-0.167	-0.047
30	37	-0.290	-0.558	0.268
	Max	-0.126	0.394	0.486
	Average	-0.219	-0.214	-0.006
	Min	-0.326	-0.723	-0.550
	Std Dev	0.051	0.237	0.218



1071.3_CMRR test VCM_-4V_->_80V		
Test Site	Dallas Junkins	
Tester	ETS06	
Test Number	EB128801	
Max Limit	1	
Min Limit	-1	

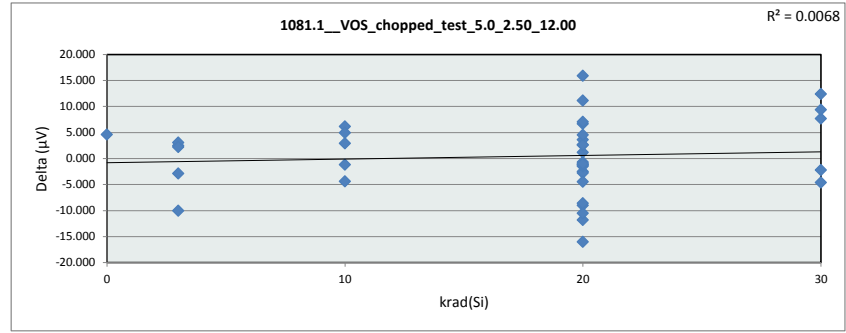
krad(Si)	0	3	10	20	30
LL	-1.000	-1.000	-1.000	-1.000	-1.000
Min	-0.422	-0.300	-0.408	-0.723	-0.558
Average	-0.422	-0.160	-0.239	-0.181	-0.342
Max	-0.422	0.070	0.028	0.394	-0.086
UL	1.000	1.000	1.000	1.000	1.000



TID Report  
Device Name

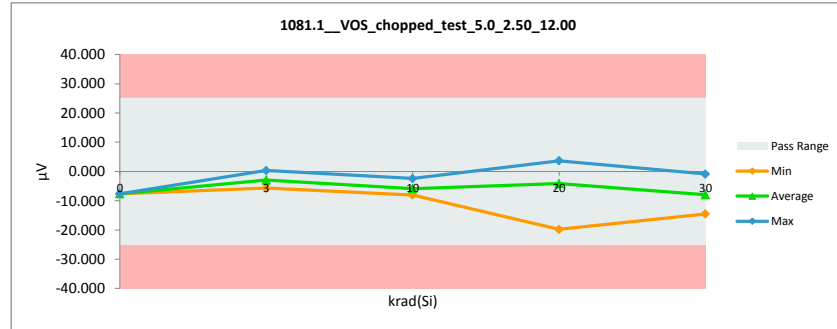
1081.1_VOS_chopped_test_5.0_2.50_12.00		
Test Site	Dallas Junkins	
Tester	ETS06	
Test Number	EB128801	
Unit	µV	µV
Max Limit	25	25
Min Limit	-25	-25

krad(Si)	Serial #	PRE DATA.txt	POST DATA.txt	Delta
0		-2.989	-7.617	4.628
3	1	-1.389	-3.885	2.495
3	2	-2.537	-5.608	3.072
3	3	-3.869	-0.996	-2.873
3	4	-9.706	0.328	-10.034
3	5	-2.450	-4.682	2.232
10	6	-4.736	-3.551	-1.185
10	7	-1.854	-8.006	6.153
10	8	-6.773	-2.408	-4.365
10	9	-2.471	-7.438	4.966
10	10	-4.879	-7.814	2.936
20	11	-11.672	0.125	-11.797
20	12	-4.891	-2.396	-2.495
20	13	-5.634	-4.412	-1.222
20	14	-3.916	-19.811	15.896
20	15	-3.393	-14.556	11.163
20	16	-3.769	-1.010	-2.759
20	17	-3.563	-2.089	-1.474
20	18	-4.380	-3.686	-0.694
20	19	-3.572	-2.362	-1.210
20	20	-3.891	-7.524	3.634
20	21	-4.972	-3.968	-1.004
20	22	-9.584	-0.603	-8.982
20	23	0.351	-0.827	1.177
20	24	-12.314	3.679	-15.994
20	25	-4.813	-0.375	-4.438
20	26	-2.457	-9.130	6.673
20	27	-7.843	2.652	-10.495
20	28	-10.642	-2.049	-8.593
20	29	-0.600	-3.184	2.583
20	30	-1.802	-4.448	2.646
20	31	-2.315	-9.349	7.034
20	32	-0.777	-5.328	4.551
30	33	-2.095	-14.482	12.387
30	34	-5.493	-0.883	-4.610
30	35	-0.637	-8.301	7.664
30	36	-6.295	-4.096	-2.198
30	37	-2.570	-11.958	9.389
Max		0.351	3.679	15.896
Average		-4.400	-4.791	0.391
Min		-12.314	-19.811	-15.994
Std Dev		3.095	4.863	6.942



1081.1_VOS_chopped_test_5.0_2.50_12.00		
Test Site	Dallas Junkins	
Tester	ETS06	
Test Number	EB128801	
Max Limit	25	µV
Min Limit	-25	µV

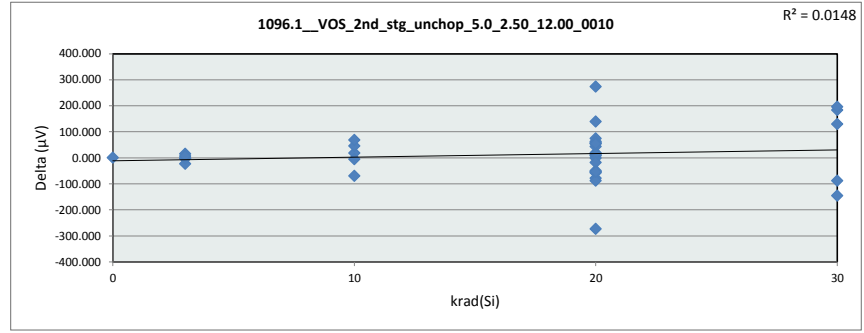
krad(Si)	0	3	10	20	30
LL	-25.000	-25.000	-25.000	-25.000	-25.000
Min	-7.617	-5.608	-8.006	-19.811	-14.482
Average	-7.617	-2.969	-5.844	-4.120	-7.944
Max	-7.617	0.328	-2.408	3.679	-0.884
UL	25.000	25.000	25.000	25.000	25.000



TID Report  
Device Name

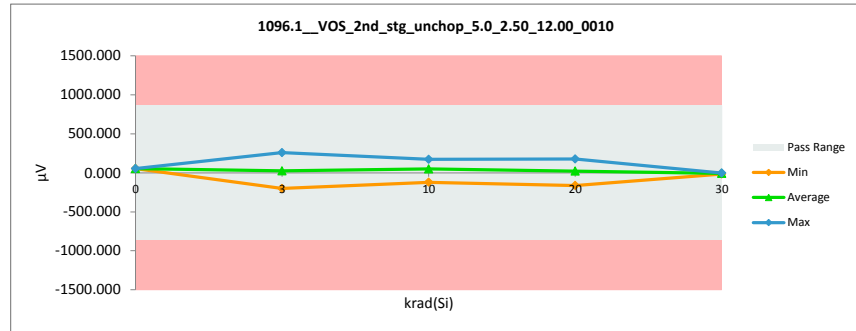
1096.1_VOS_2nd_stg_unchop_5.0_2.50_12.00_0010	
Test Site	Dallas Junkins
Tester	ETS06
Test Number	EB128801
Unit	µV
Max Limit	860
Min Limit	-860

krad(Si)	Serial #	PRE DATA.txt	POST DATA.txt	Delta
0		53.710	52.899	0.811
3	1	256.251	257.993	-1.743
3	2	-38.309	-53.476	15.167
3	3	-65.415	-42.660	-22.754
3	4	162.130	164.921	-2.791
3	5	-193.992	-200.874	6.881
10	6	-62.085	-80.776	18.691
10	7	181.302	135.883	45.419
10	8	167.005	171.986	-4.981
10	9	-51.674	-120.278	68.604
10	10	68.760	138.493	-69.733
20	11	74.618	75.251	-0.633
20	12	98.172	176.099	-77.927
20	13	70.273	-4.323	74.596
20	14	72.974	14.139	58.835
20	15	8.649	-6.585	15.235
20	16	-16.962	37.289	-54.252
20	17	160.998	142.027	18.971
20	18	-276.841	-3.873	-272.967
20	19	-59.965	-2.595	-57.370
20	20	-110.086	-153.500	43.414
20	21	131.992	124.230	7.761
20	22	273.175	-0.766	273.942
20	23	51.542	41.614	9.928
20	24	-45.075	4.312	-49.387
20	25	-107.649	-162.074	54.425
20	26	-98.322	-10.226	-88.096
20	27	-11.691	-27.150	15.459
20	28	60.825	-2.030	62.855
20	29	100.564	118.539	-17.975
20	30	134.543	-4.602	139.145
20	31	61.472	115.398	-53.926
20	32	48.519	-6.051	54.570
30	33	115.173	-14.606	129.778
30	34	181.551	-1.877	183.427
30	35	188.298	-7.875	196.173
30	36	-149.942	-4.406	-145.537
30	37	-99.399	-11.407	-87.992
	Max	273.175	257.993	273.942
	Average	35.134	22.344	12.790
	Min	-276.841	-200.874	-272.967
	Std Dev	124.948	99.331	95.992



1096.1_VOS_2nd_stg_unchop_5.0_2.50_12.00_0010	
Test Site	Dallas Junkins
Tester	ETS06
Test Number	EB128801
Max Limit	860 µV
Min Limit	-860 µV

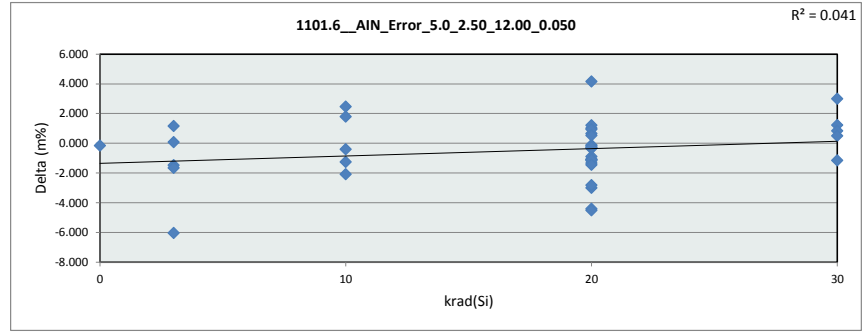
krad(Si)	0	3	10	20	30
LL	-860.000	-860.000	-860.000	-860.000	-860.000
Min	52.899	-200.874	-120.278	-162.074	-14.606
Average	52.899	25.181	49.061	21.142	-8.034
Max	52.899	257.993	171.986	176.099	-1.877
UL	860.000	860.000	860.000	860.000	860.000



TID Report  
Device Name

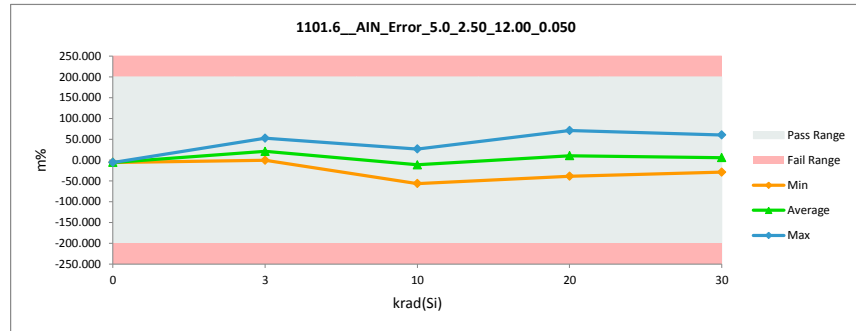
1101.6_GAIN_Error_5.0_2.50_12.00_0.050		
Test Site	Dallas Junkins	
Tester	ETS06	
Test Number	EB128801	
Unit	m%	m%
Max Limit	200	200
Min Limit	-200	-200

krad(Si)	Serial #	PRE DATA.txt	POST DATA.txt	Delta
0		-5.989	-5.832	-0.157
3	1	51.056	52.528	-1.472
3	2	15.346	15.266	0.080
3	3	-2.322	-0.668	-1.653
3	4	4.557	10.582	-6.025
3	5	26.998	25.840	1.158
10	6	-4.102	-2.018	-2.084
10	7	-6.459	-8.251	1.793
10	8	29.115	26.649	2.467
10	9	-19.026	-17.768	-1.258
10	10	-56.898	-56.489	-0.409
20	11	-8.922	-4.517	-4.405
20	12	22.290	25.282	-2.992
20	13	-40.137	-39.018	-1.119
20	14	20.381	16.229	4.151
20	15	28.438	27.781	0.658
20	16	9.604	10.680	-1.077
20	17	11.446	10.430	1.015
20	18	25.669	28.486	-2.817
20	19	38.319	39.208	-0.890
20	20	70.487	70.651	-0.165
20	21	-24.432	-24.148	-0.284
20	22	3.266	4.603	-1.338
20	23	42.783	43.942	-1.160
20	24	-12.936	-11.846	-1.089
20	25	24.677	25.034	-0.358
20	26	17.517	16.312	1.205
20	27	-5.037	-3.591	-1.447
20	28	1.732	6.236	-4.505
20	29	32.269	32.387	-0.118
20	30	-4.827	-4.563	-0.265
20	31	-34.397	-35.342	0.944
20	32	-6.117	-6.638	0.522
30	33	17.116	14.123	2.993
30	34	59.060	60.217	-1.157
30	35	-19.423	-20.651	1.229
30	36	6.138	5.298	0.840
30	37	-28.849	-29.353	0.504
Max		70.487	70.651	4.151
Average		7.326	7.818	-0.492
Min		-56.898	-56.489	-6.025
Std Dev		27.358	27.351	2.009



1101.6_GAIN_Error_5.0_2.50		
Test Site	Dallas Junkins	
Tester	ETS06	
Test Number	EB128801	
Max Limit	200	m%
Min Limit	-200	m%

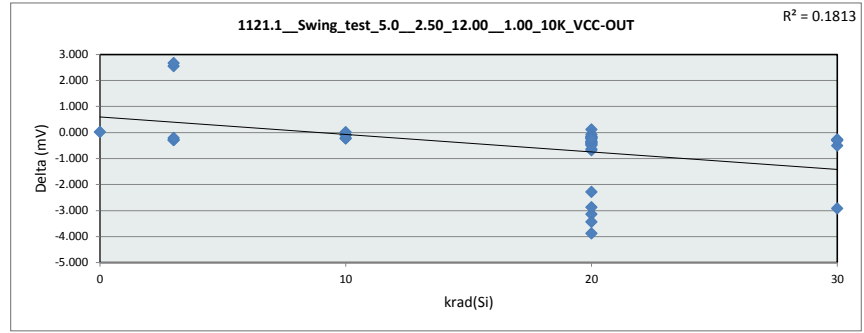
krad(Si)	0	3	10	20	30
LL	-200.000	-200.000	-200.000	-200.000	-200.000
Min	-5.832	-0.668	-56.489	-39.018	-29.353
Average	-5.832	20.709	-11.576	10.345	5.927
Max	-5.832	52.528	26.649	70.651	60.217
UL	200.000	200.000	200.000	200.000	200.000



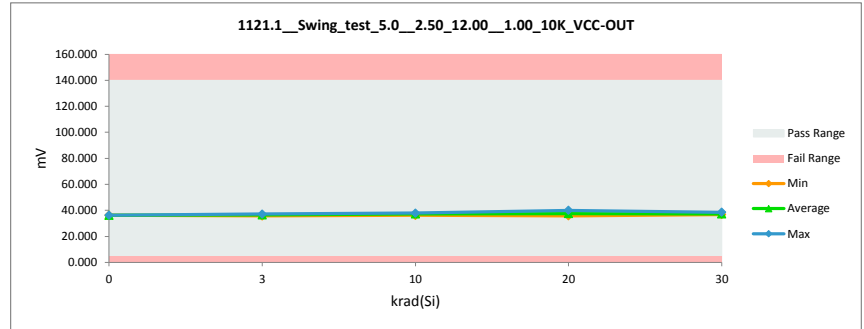
TID Report  
Device Name

1121.1_Swing_test_5.0_2.50_12.00_1.00_10K_VCC-OUT		
Test Site	Dallas Junkins	
Tester	ETS06	
Test Number	EB128801	
Unit	mV	mV
Max Limit	140	140
Min Limit	5	5

krad(Si)	Serial #	PRE DATA.txt	POST DATA.txt	Delta
0		36.233	36.214	0.019
3	1	35.349	35.637	-0.288
3	2	35.997	36.284	-0.287
3	3	39.293	36.744	2.549
3	4	39.825	37.157	2.668
3	5	36.241	36.450	-0.208
10	6	36.046	36.137	-0.092
10	7	37.580	37.677	-0.097
10	8	37.635	37.863	-0.228
10	9	37.473	37.460	0.013
10	10	37.134	37.353	-0.219
20	11	38.110	37.996	0.114
20	12	37.060	37.212	-0.152
20	13	35.841	35.919	-0.078
20	14	36.242	36.627	-0.385
20	15	36.855	37.540	-0.685
20	16	36.466	36.623	-0.157
20	17	36.896	37.073	-0.177
20	18	36.407	38.690	-2.283
20	19	37.155	37.625	-0.470
20	20	37.451	37.671	-0.219
20	21	36.443	37.082	-0.639
20	22	36.762	39.899	-3.137
20	23	36.766	39.637	-2.871
20	24	36.368	36.772	-0.405
20	25	36.618	36.968	-0.350
20	26	37.526	37.955	-0.429
20	27	36.151	40.022	-3.871
20	28	36.404	36.894	-0.490
20	29	35.804	36.140	-0.336
20	30	35.821	36.040	-0.219
20	31	36.123	39.556	-3.432
20	32	35.523	35.770	-0.246
30	33	35.645	38.558	-2.913
30	34	36.522	36.798	-0.276
30	35	36.628	37.135	-0.507
30	36	37.076	37.349	-0.273
30	37	36.498	36.802	-0.304
Max		39.825	40.022	2.668
Average		36.736	37.298	-0.562
Min		35.349	35.637	-3.871
Std Dev		0.930	1.122	1.308



1121.1_Swing_test_5.0_2.5					
Test Site	Dallas Junkins				
Tester	ETS06				
Test Number	EB128801				
Max Limit	140 mV				
Min Limit	5 mV				
krad(Si)	0	3	10	20	30
LL	5.000	5.000	5.000	5.000	5.000
Min	36.214	35.637	36.137	35.770	36.798
Average	36.214	36.454	37.298	37.532	37.328
Max	36.214	37.157	37.863	40.022	38.558
UL	140.000	140.000	140.000	140.000	140.000

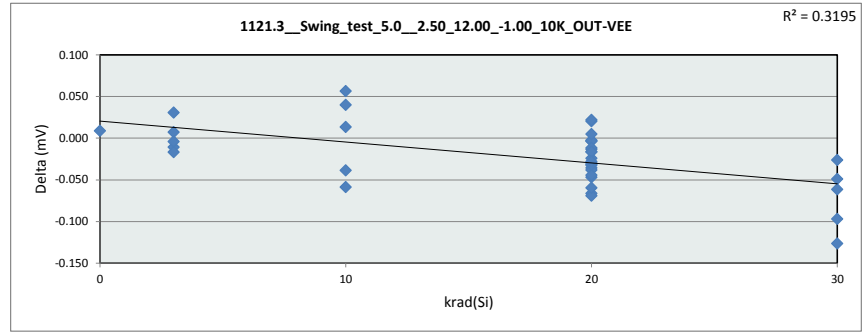




TID Report  
Device Name

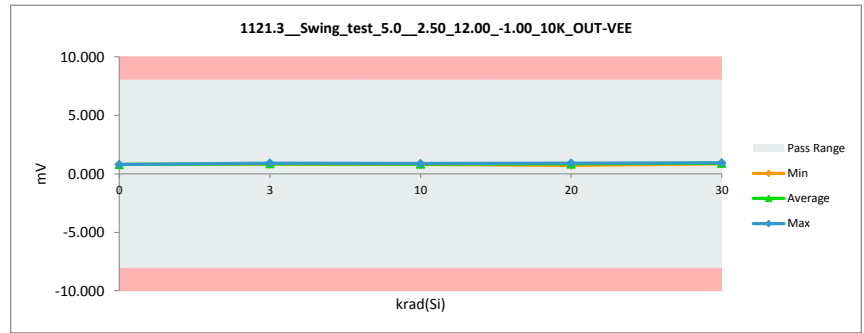
1121.3_Swing_test_5.0_2.50_12.00_-1.00_10K_OUT-VEE	
Test Site	Dallas Junkins
Tester	ETS06
Test Number	EB128801
Unit	mV
Max Limit	8
Min Limit	-8

krad(Si)	Serial #	PRE DATA.txt	POST DATA.txt	Delta
0		0.803	0.794	0.009
3	1	0.845	0.838	0.007
3	2	0.853	0.864	-0.011
3	3	0.893	0.897	-0.004
3	4	0.905	0.922	-0.017
3	5	0.847	0.817	0.030
10	6	0.881	0.841	0.040
10	7	0.759	0.798	-0.039
10	8	0.868	0.812	0.056
10	9	0.782	0.841	-0.059
10	10	0.888	0.875	0.013
20	11	0.807	0.809	-0.002
20	12	0.709	0.733	-0.024
20	13	0.846	0.913	-0.067
20	14	0.845	0.825	0.020
20	15	0.869	0.873	-0.004
20	16	0.896	0.875	0.022
20	17	0.829	0.898	-0.069
20	18	0.848	0.865	-0.017
20	19	0.805	0.853	-0.047
20	20	0.743	0.776	-0.032
20	21	0.825	0.839	-0.013
20	22	0.788	0.791	-0.004
20	23	0.799	0.829	-0.030
20	24	0.889	0.925	-0.036
20	25	0.870	0.882	-0.012
20	26	0.790	0.829	-0.038
20	27	0.850	0.882	-0.032
20	28	0.834	0.878	-0.044
20	29	0.781	0.798	-0.016
20	30	0.798	0.793	0.005
20	31	0.822	0.882	-0.060
20	32	0.819	0.847	-0.028
30	33	0.785	0.882	-0.097
30	34	0.813	0.939	-0.127
30	35	0.877	0.927	-0.049
30	36	0.840	0.867	-0.026
30	37	0.851	0.913	-0.062
Max		0.905	0.939	0.056
Average		0.830	0.853	-0.023
Min		0.709	0.733	-0.127
Std Dev		0.045	0.048	0.037



1121.3_Swing_test_5.0_2.5	
Test Site	Dallas Junkins
Tester	ETS06
Test Number	EB128801
Unit	mV
Max Limit	8
Min Limit	-8

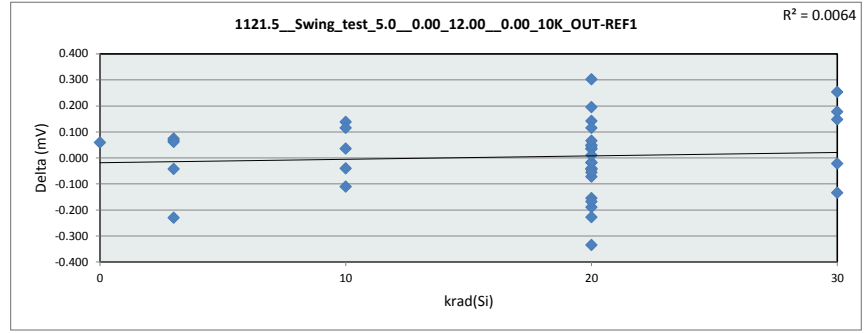
krad(Si)	0	3	10	20	30
LL	-8.000	-8.000	-8.000	-8.000	-8.000
Min	0.794	0.817	0.798	0.733	0.867
Average	0.794	0.868	0.833	0.845	0.906
Max	0.794	0.922	0.875	0.925	0.939
UL	8.000	8.000	8.000	8.000	8.000



TID Report  
Device Name

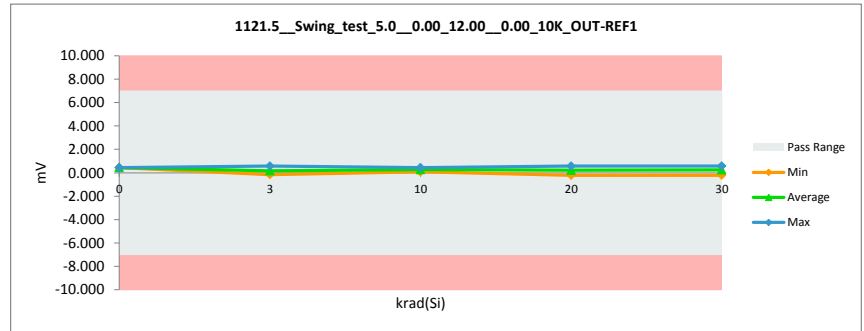
1121.5_Swing_test_5.0_0.00_12.00_0.00_10K_OUT-REF1	
Test Site	Dallas Junkins
Tester	ETS06
Test Number	EB128801
Unit	mV
Max Limit	7
Min Limit	-7

krad(Si)	Serial #	PRE DATA.txt	POST DATA.txt	Delta
0		0.502	0.444	0.059
3	1	-0.082	-0.155	0.073
3	2	0.046	-0.021	0.067
3	3	0.525	0.568	-0.043
3	4	-0.011	0.220	-0.230
3	5	0.287	0.226	0.061
10	6	0.399	0.440	-0.041
10	7	0.343	0.205	0.138
10	8	-0.026	0.086	-0.111
10	9	0.293	0.178	0.115
10	10	0.440	0.405	0.035
20	11	0.078	0.306	-0.228
20	12	-0.042	-0.001	-0.041
20	13	0.562	0.580	-0.018
20	14	0.388	0.086	0.302
20	15	0.357	0.163	0.195
20	16	0.080	0.125	-0.044
20	17	0.317	0.389	-0.072
20	18	-0.134	-0.170	0.036
20	19	-0.180	-0.213	0.034
20	20	-0.229	-0.187	-0.043
20	21	0.483	0.501	-0.018
20	22	0.170	0.325	-0.155
20	23	0.169	0.158	0.010
20	24	0.227	0.562	-0.335
20	25	0.261	0.317	-0.056
20	26	0.416	0.275	0.141
20	27	0.067	0.257	-0.190
20	28	0.234	0.402	-0.168
20	29	-0.062	-0.111	0.049
20	30	0.472	0.426	0.046
20	31	0.327	0.212	0.115
20	32	0.496	0.430	0.065
30	33	0.048	-0.205	0.253
30	34	-0.203	-0.068	-0.134
30	35	0.713	0.566	0.147
30	36	0.378	0.400	-0.022
30	37	0.685	0.507	0.177
Max		0.713	0.580	0.302
Average		0.231	0.227	0.004
Min		-0.229	-0.213	-0.335
Std Dev		0.251	0.242	0.137



1121.5_Swing_test_5.0_0.0	
Test Site	Dallas Junkins
Tester	ETS06
Test Number	EB128801
Max Limit	7 mV
Min Limit	-7 mV

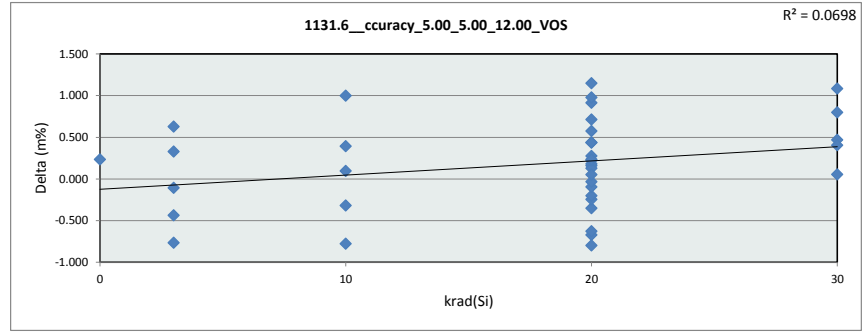
krad(Si)	0	3	10	20	30
LL	-7.000	-7.000	-7.000	-7.000	-7.000
Min	0.444	-0.155	0.086	-0.213	-0.205
Average	0.444	0.168	0.263	0.220	0.240
Max	0.444	0.568	0.440	0.580	0.566
UL	7.000	7.000	7.000	7.000	7.000



TID Report  
Device Name

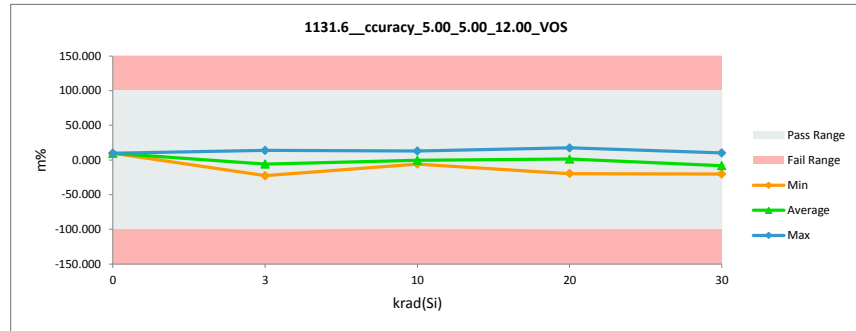
1131.6 Accuracy 5.00 5.00 12.00 VOS		
Test Site	Dallas Junkins	
Tester	ETS06	
Test Number	EB128801	
Unit	m%	
Max Limit	100	m%
Min Limit	-100	-100

krad(Si)	Serial #	PRE DATA.txt	POST DATA.txt	Delta
0		9.874	9.640	0.234
3	1	-23.259	-22.823	-0.436
3	2	-21.184	-21.078	-0.106
3	3	13.045	13.811	-0.766
3	4	3.660	3.032	0.628
3	5	-2.937	-3.267	0.330
10	6	-5.405	-5.799	0.394
10	7	-3.415	-4.416	1.000
10	8	-2.830	-2.926	0.096
10	9	12.215	12.991	-0.776
10	10	-2.394	-2.075	-0.319
20	11	13.491	13.331	0.160
20	12	-2.256	-1.585	-0.670
20	13	11.460	10.311	1.149
20	14	-2.979	-3.160	0.181
20	15	-3.916	-3.565	-0.351
20	16	4.767	3.852	0.915
20	17	18.311	17.333	0.979
20	18	-19.844	-19.599	-0.245
20	19	-18.577	-18.705	0.128
20	20	-19.417	-19.215	-0.202
20	21	-2.873	-3.149	0.277
20	22	13.023	12.587	0.436
20	23	-1.617	-1.841	0.224
20	24	11.810	12.608	-0.798
20	25	-1.734	-2.309	0.575
20	26	-3.511	-2.883	-0.628
20	27	2.873	2.968	-0.096
20	28	17.236	16.523	0.713
20	29	-19.226	-19.194	-0.032
20	30	15.959	15.725	0.234
20	31	3.756	3.320	0.436
20	32	15.449	15.395	0.053
30	33	-16.885	-17.354	0.469
30	34	-20.258	-20.312	0.054
30	35	-5.831	-6.629	0.798
30	36	11.076	9.991	1.085
30	37	-6.437	-6.842	0.405
Max		18.311	17.333	1.149
Average		-0.757	-0.929	0.172
Min		-23.259	-22.823	-0.798
Std Dev		12.400	12.294	0.535



1131.6 Accuracy 5.00 5.00		
Test Site	Dallas Junkins	
Tester	ETS06	
Test Number	EB128801	
Max Limit	100	m%
Min Limit	-100	m%

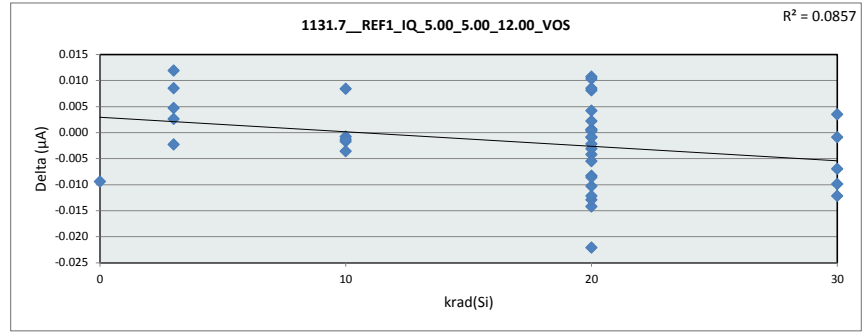
krad(Si)	0	3	10	20	30
LL	-100.000	-100.000	-100.000	-100.000	-100.000
Min	9.640	-22.823	-5.799	-19.599	-20.312
Average	9.640	-6.065	-0.445	1.307	-8.229
Max	9.640	13.811	12.991	17.333	9.991
UL	100.000	100.000	100.000	100.000	100.000



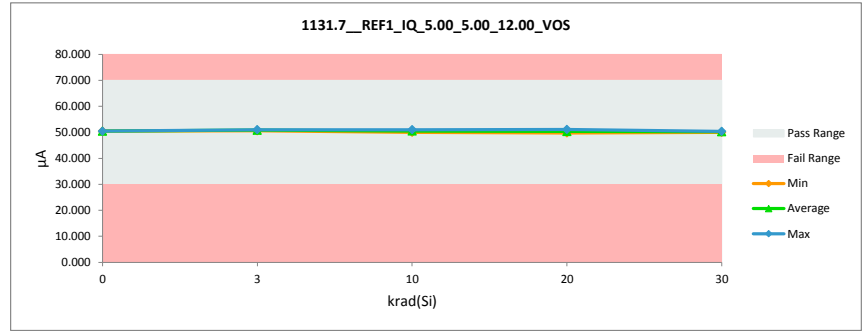
TID Report  
Device Name

1131.7_REF1_IQ_5.00_5.00_12.00_VOS		
Test Site	Dallas Junkins	
Tester	ETS06	
Test Number	EB128801	
Unit	µA	µA
Max Limit	70	70
Min Limit	30	30

krad(Si)	Serial #	PRE DATA.txt	POST DATA.txt	Delta
0		50.465	50.475	-0.009
3	1	50.638	50.626	0.012
3	2	50.753	50.756	-0.002
3	3	50.784	50.776	0.008
3	4	50.902	50.897	0.005
3	5	51.012	51.009	0.003
10	6	50.953	50.954	-0.002
10	7	51.007	51.011	-0.004
10	8	50.448	50.440	0.008
10	9	50.107	50.108	-0.001
10	10	50.003	50.005	-0.001
20	11	50.031	50.020	0.011
20	12	50.750	50.750	0.000
20	13	51.043	51.047	-0.004
20	14	51.134	51.124	0.010
20	15	51.043	51.053	-0.010
20	16	50.804	50.803	0.001
20	17	50.718	50.721	-0.003
20	18	50.738	50.752	-0.014
20	19	49.932	49.924	0.008
20	20	49.756	49.764	-0.008
20	21	49.885	49.886	-0.001
20	22	49.972	49.985	-0.013
20	23	50.033	50.055	-0.022
20	24	50.118	50.113	0.004
20	25	50.151	50.151	0.000
20	26	50.110	50.101	0.008
20	27	50.045	50.043	0.002
20	28	50.010	50.013	-0.002
20	29	50.040	50.052	-0.012
20	30	50.111	50.120	-0.009
20	31	50.109	50.110	-0.001
20	32	49.994	49.999	-0.005
30	33	49.993	50.000	-0.007
30	34	50.147	50.157	-0.010
30	35	50.251	50.252	-0.001
30	36	50.289	50.286	0.004
30	37	50.369	50.382	-0.012
Max		51.134	51.124	0.012
Average		50.385	50.387	-0.002
Min		49.756	49.764	-0.022
Std Dev		0.413	0.412	0.008



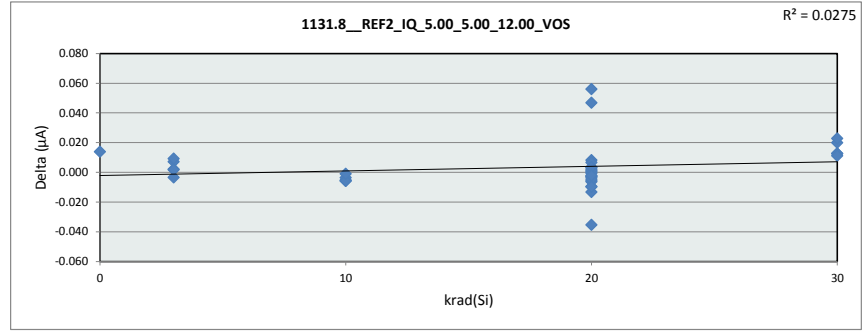
1131.7_REF1_IQ_5.00_5.00					
Test Site	Dallas Junkins				
Tester	ETS06				
Test Number	EB128801				
Max Limit	70	µA			
Min Limit	30	µA			
krad(Si)	0	3	10	20	30
LL	30.000	30.000	30.000	30.000	30.000
Min	50.475	50.626	50.005	49.764	50.000
Average	50.475	50.813	50.503	50.299	50.215
Max	50.475	51.009	51.011	51.124	50.382
UL	70.000	70.000	70.000	70.000	70.000



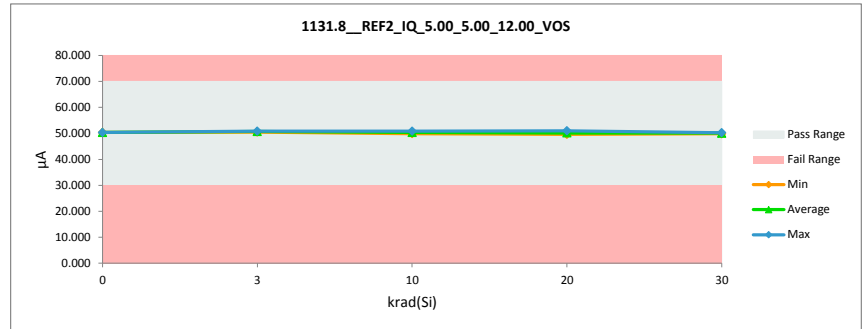
TID Report  
Device Name

1131.8_REF2_IQ_5.00_5.00_12.00_VOS		
Test Site	Dallas Junkins	
Tester	ETS06	
Test Number	EB128801	
Unit	µA	µA
Max Limit	70	70
Min Limit	30	30

krad(Si)	Serial #	PRE DATA.txt	POST DATA.txt	Delta
0		50.362	50.349	0.014
3	1	50.517	50.510	0.007
3	2	50.622	50.626	-0.004
3	3	50.652	50.650	0.002
3	4	50.770	50.761	0.009
3	5	50.881	50.880	0.002
6	6	50.820	50.825	-0.005
10	7	50.884	50.889	-0.006
10	8	50.317	50.321	-0.004
10	9	49.972	49.978	-0.006
10	10	49.874	49.875	-0.001
20	11	49.899	49.891	0.008
20	12	50.612	50.606	0.007
20	13	50.925	50.921	0.003
20	14	51.000	51.007	-0.006
20	15	50.915	50.915	-0.001
20	16	50.672	50.670	0.002
20	17	50.588	50.590	-0.003
20	18	50.613	50.649	-0.036
20	19	49.855	49.799	0.056
20	20	49.627	49.626	0.001
20	21	49.744	49.753	-0.010
20	22	49.850	49.863	-0.013
20	23	49.911	49.915	-0.004
20	24	50.025	49.979	0.047
20	25	50.019	50.021	-0.003
20	26	49.970	49.976	-0.006
20	27	49.911	49.911	0.000
20	28	49.879	49.878	0.001
20	29	49.912	49.917	-0.005
20	30	49.986	49.983	0.003
20	31	49.975	49.985	-0.010
20	32	49.862	49.865	-0.002
30	33	49.869	49.849	0.020
30	34	50.016	49.993	0.023
30	35	50.112	50.099	0.013
30	36	50.158	50.145	0.013
30	37	50.249	50.238	0.011
Max		51.000	51.007	0.056
Average		50.259	50.255	0.003
Min		49.627	49.626	-0.036
Std Dev		0.412	0.415	0.015



1131.8_REF2_IQ_5.00_5.00					
Test Site	Dallas Junkins				
Tester	ETS06				
Test Number	EB128801				
Max Limit	70	µA			
Min Limit	30	µA			
krad(Si)	0	3	10	20	30
LL	30.000	30.000	30.000	30.000	30.000
Min	50.349	50.510	49.875	49.627	49.849
Average	50.349	50.685	50.378	50.169	50.065
Max	50.349	50.880	50.889	51.007	50.238
UL	70.000	70.000	70.000	70.000	70.000



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