



**ABSTRACT**

LMK04832-SP, 5962R1723701VXC, wafer #21 from wafer lot V009FOGX was put through radiation lot acceptance testing (RLAT) and passed at 100 krad(Si) for application environments with dose rates of 0.57 rad(Si)/s or less. The wafer fab process used by this product was previously shown not to exhibit Enhanced Low Dose Rate Sensitivity (ELDRS) and is ELDRS-free.

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## 1 Overview

The LMK04832-SP, 5962R1723701VXC<sup>(1)</sup>, uses the BiCMOS8B+ process which has been shown not to exhibit Enhanced Low Dose Rate Sensitivity (ELDRS)<sup>(2)</sup>. Per MIL-STD-883 Test Method 1019<sup>(3)</sup>, if an analog product is on a process that has been shown to be ELDRS-free, Total Ionizing Dose (TID) Radiation Lot Acceptance Testing (RLAT) may be done at high dose rate (HDR). In the case of BiCMOS8B+, HDR testing is the worst case condition and covers low dose rate (LDR) applications.

For RLAT of a single wafer, the sample size is 2 units for products with over 4,000 transistors per MIL-PRF-38535<sup>(4)</sup>.

When tested at HDR, it is possible that one parameter might drift outside the electrical test limit at 100 krad(Si). Per TM1019, if this occurs, the units that have readings outside a test limit are put on a room temperature anneal (RTA). If after the RTA all tests recover and all readings are within the test limits, the lot is qualified for 100 krad but only for lower dose rates. The maximum dose rate is calculated by dividing the TID rating by how long the DUT was on RTA before it recovered. For more details and validation of the RTA test method on TI processes, see [SNAA156](#).

## 2 Test Method

The devices under test (DUTs) were put through a 240-hour burn-in with the units biased and operational at 125°C ambient prior to the radiation testing.

Irradiation and electrical testing were done at Texas Instruments Radiation Test Facility in Santa Clara, California.

The DUTs were placed in socketed bias boards, powered up and programmed using Texas Instruments USB2ANY module and TICS Pro software prior to irradiation<sup>(5)</sup>. The supply voltage was set to 3.4 V as measured on the DUT boards. The DUTs were configured so that the PLL2 loop was active and the signal to the Divider and Delay blocks was at 3.2 GHz. Different delays and frequency dividers were used on the different outputs to exercise the different components of the control circuits. The outputs were configured so that at all of the output configurations options, CML, LVPECL, LCPECL, HSDS, LVDS, and 2xLVCMOS were exercised on at least one output each.

DUT #3 went through 48-hour RTA with the DUT in the bias board and powered and configured to the same conditions as during the irradiation.

The DUTs were electrically tested at 0, 50 and 100 krad(Si) and DUT #3 was tested after the 48-hour RTA. All specified data sheet and SMD parameters were tested. In addition to the specified parameters, the test program tests many other parameters to ensure the proper operation of the device. Limits are set using a six sigma baseline. Tests are performed with the supply voltage at 3.135, 3.3 and 3.465 V. There are over 7000 parameters tested.

**Table 2-1. RLAT Conditions**

Wafer lot	V009FOGX
Wafer number	21
DUT serial numbers	3, 4
Test Location	Texas Instruments, Santa Clara, CA
Bias board schematic	291CR17
Bias board edge number	6609056A
Supply voltage	3.4 V
Supply current	570 mA
TICS Pro program	Single Loop-CLKin1=1MHz-8_Outputs_VCO1=3200MHz_rev2.txt
VCO and PLL frequency	3.2 GHz
Test programs	GCR4832HB, GQR4832HB
Electrical test supply voltage	3.135 V, 3.3 V, 3.465 V
Dose Rate	61.5 rad(Si)/s
Test points	0, 50, 100 krad(Si)
RTA	48 hours
Test dates	October 28 and 30, 2020

### 3 Results

DUT #4 passed all tests at 100 krad(Si). On DUT #3, one test, VTUNE reset pin voltage, was outside the test limit at 100 krad(Si). This is not a datasheet or SMD test but an internal functional test to ensure optimum calibration of the VCO over temperature. DUT #3 was put through a 48-hour RTA and retested. After the 48-hour RTA, DUT #3 recovered, all tests passed and the VTUNE reset pin voltage returned to a value close to the pre irradiation value. Per TM1019, this wafer is qualified for 100 krad(Si) for application dose rates of 0.57 rad(Si)/s or less.

Over 7000 parameters were tested. Appendix A shows the results, statistics and plots for select representative tests. The first test shown is the VTUNE reset voltage test in which DUT #3 was outside the limit after 100 krad(Si) but recovered after RTA.

### 4 References

1. Texas Instruments , Dallas, TX, "LMK04832-SP Space Grade Ultra-Low-Noise JESD204B Dual-Loop Clock Jitter Cleaner," Nov. 2020, <https://www.ti.com/lit/ds/symlink/lmk04832-sp.pdf>
2. Texas Instruments , Dallas, TX, "LMK04832-SP ELDRS Characterization Report," Nov. 2020 <https://www.ti.com/seclit/rr/slvk054/slvk054.pdf>
3. Test Method Standard, Microcircuits, MIL-STD-883, Dept. Defense, DLA Land and Maritime, Columbus, OH, <https://landandmaritimeapps.dla.mil/Downloads/MilSpec/Docs/MIL-STD-883/std883-1.pdf>
4. Performance Specification, Integrated Circuits (Microcircuits) Manufacturing, MIL-PRF-38535, Depart. Defence DLA Land and Maritime, Columbus OH, <https://landandmaritimeapps.dla.mil/Downloads/MilSpec/Docs/MIL-PRF-38535/prf38535.pdf>
5. Texas Instruments , Dallas, TX, "LMK04832-SP Space Grade Ultra-Low-Noise JESD204B Dual-Loop Clock Jitter Cleaner," Nov. 2020, <https://www.ti.com/lit/ds/symlink/lmk04832-sp.pdf>

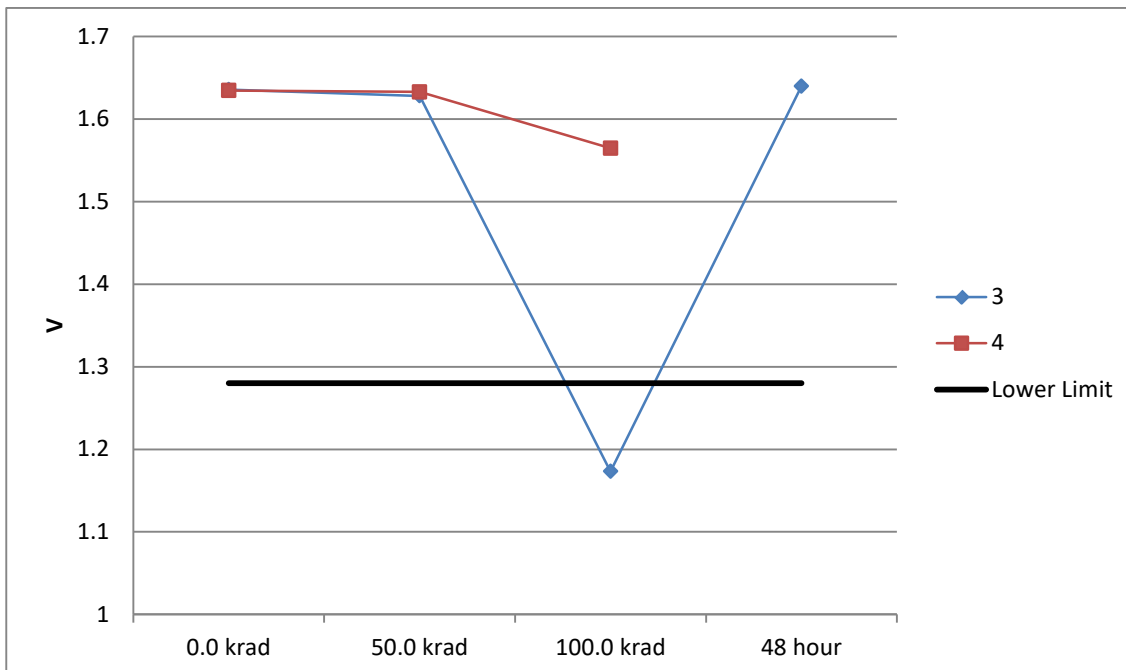
## A RLAT Data and Plots

10081 VTUNE\_ATP/RESET/3.465/

Limit\_Min 1.58 Limit\_Max 2.1 V

Device ID	0.0 krad	50.0 krad	100.0 krad	48 hour
3	1.63567567	1.62804008	1.17311442	1.63979876
4	1.6346066	1.63277412	1.56466508	
<b>Average</b>	1.63514113	1.6304071	1.36888975	
<b>MAX</b>	1.63567567	1.63277412	1.56466508	
<b>MIN</b>	1.6346066	1.62804008	1.17311442	
<b>STD_dev</b>	0.00075595	0.00334747	0.27686813	

Delta				
Device ID	0.0 krad	50.0 krad	100.0 krad	48 hour
3		-0.0076356	-0.4625613	0.00412309
4		-0.0018325	-0.0699415	
<b>Average</b>		-0.004734	-0.2662514	
<b>MAX</b>		-0.0018325	-0.0699415	
<b>MIN</b>		-0.0076356	-0.4625613	
<b>STD_dev</b>		0.00410342	0.27762407	

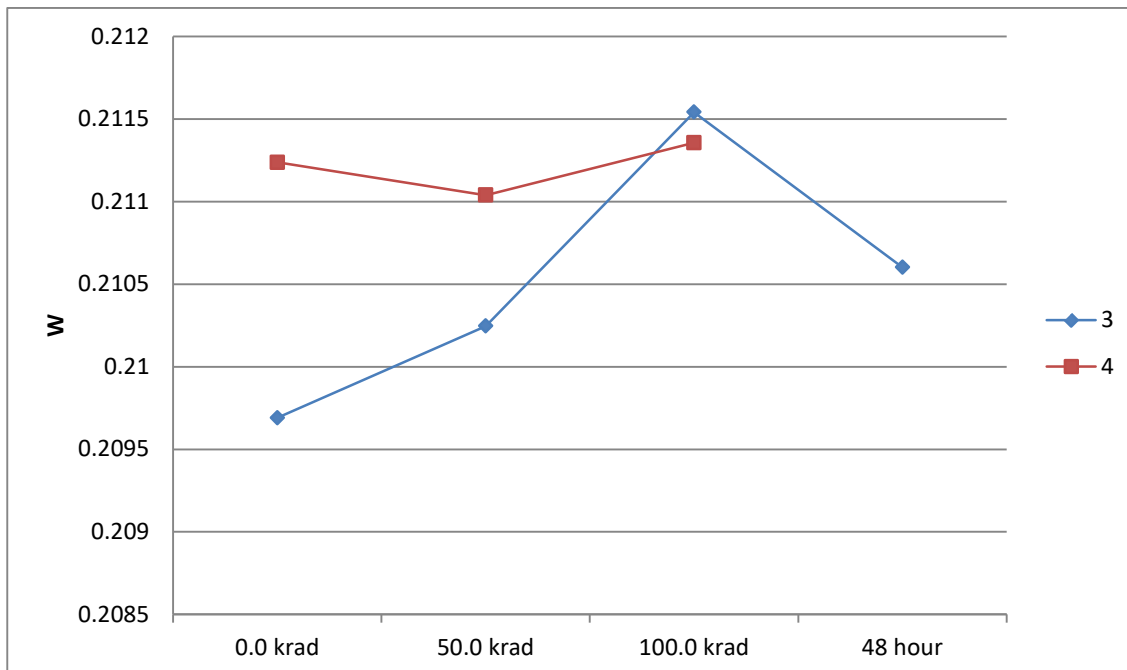


10013 POWER/RESET/3.465

Limit\_Min 0.17325001 Limit\_Max 0.24255 W

Device ID	0.0 krad	50.0 krad	100.0 krad	48 hour
3	0.20969078	0.21024594	0.2115413	0.21060282
4	0.21123728	0.21103902	0.21135625	
<b>Average</b>	0.21046403	0.21064248	0.21144877	
<b>MAX</b>	0.21123728	0.21103902	0.2115413	
<b>MIN</b>	0.20969078	0.21024594	0.21135625	
<b>STD_dev</b>	0.00109354	0.0005608	0.00013085	

Delta				
Device ID	0.0 krad	50.0 krad	100.0 krad	48 hour
3		0.00055516	0.00185052	0.00091204
4		-0.0001983	0.00011897	
<b>Average</b>		0.00017845	0.00098474	
<b>MAX</b>		0.00055516	0.00185052	
<b>MIN</b>		-0.0001983	0.00011897	
<b>STD_dev</b>		0.00053275	0.00122439	

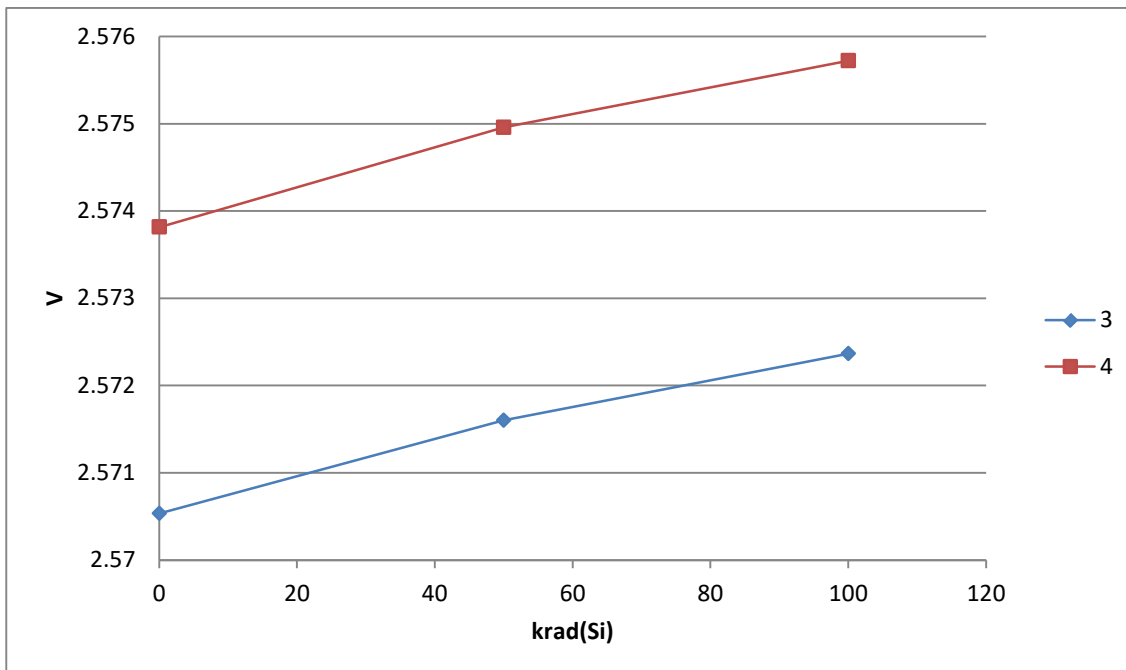


10090 VCOVREG/LDO\_BY1/3.465

Limit\_Min 2.45000005 Limit\_Max 2.6500001 V

Device ID	0.0 krad	50.0 krad	100.0 krad
3	2.57053423	2.57160235	2.57236528
4	2.57381487	2.57495928	2.57572222
<b>Average</b>	2.57217455	2.57328081	2.57404375
<b>MAX</b>	2.57381487	2.57495928	2.57572222
<b>MIN</b>	2.57053423	2.57160235	2.57236528
<b>STD_dev</b>	0.00231976	0.00237371	0.00237371

Delta			
Device ID	0.0 krad	50.0 krad	100.0 krad
3		0.00106812	0.00183105
4		0.00114441	0.00190735
<b>Average</b>		0.00110626	0.0018692
<b>MAX</b>		0.00114441	0.00190735
<b>MIN</b>		0.00106812	0.00183105
<b>STD_dev</b>		5.3947E-05	5.3948E-05

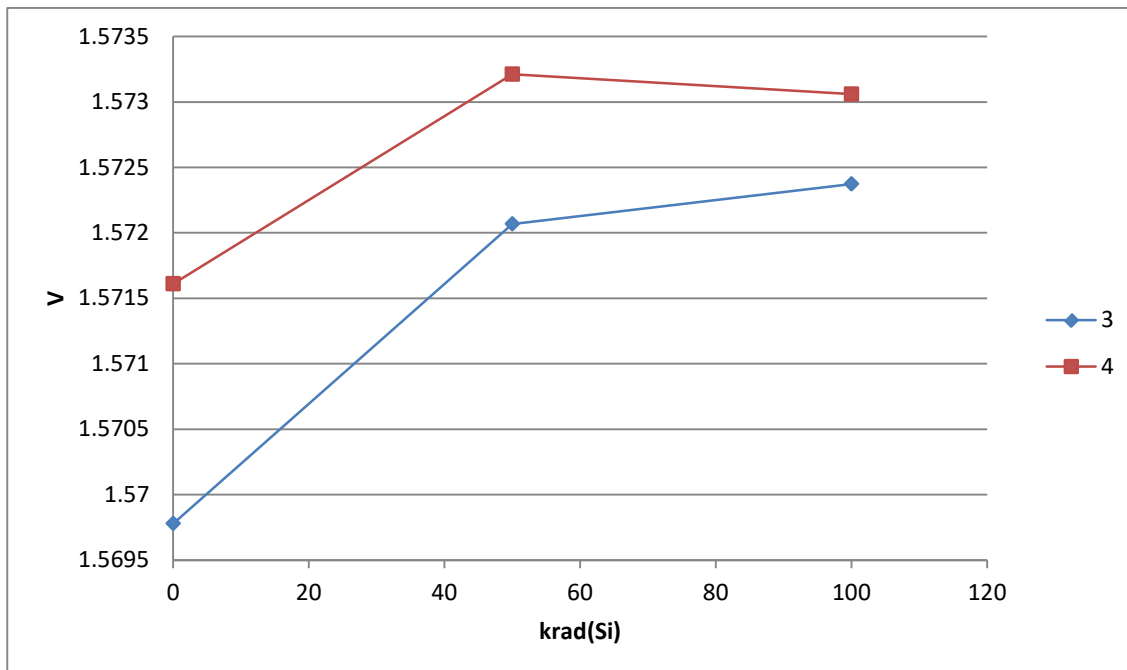


10091 VCOVREF/LDO\_BY2/3.465

Limit\_Min 1.35000002 Limit\_Max 1.66999996 V

Device ID	0.0 krad	50.0 krad	100.0 krad
3	1.56977892	1.57206786	1.57237303
4	1.57161009	1.57321227	1.57305968
<b>Average</b>	1.57069451	1.57264006	1.57271636
<b>MAX</b>	1.57161009	1.57321227	1.57305968
<b>MIN</b>	1.56977892	1.57206786	1.57237303
<b>STD_dev</b>	0.00129484	0.00080922	0.00048553

Delta			
Device ID	0.0 krad	50.0 krad	100.0 krad
3		0.00228894	0.00259411
4		0.00160217	0.00144958
<b>Average</b>		0.00194556	0.00202185
<b>MAX</b>		0.00228894	0.00259411
<b>MIN</b>		0.00160217	0.00144958
<b>STD_dev</b>		0.00048562	0.0008093



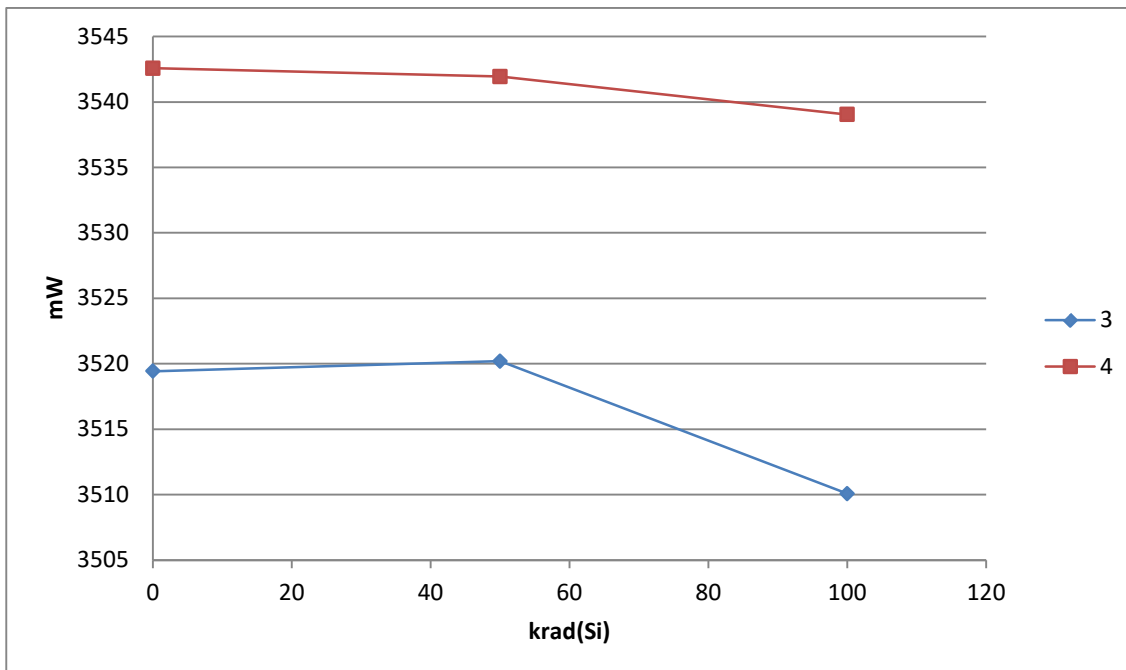


10106 POWER/HSDS8M/3.465

Limit\_Min 2910.65001 Limit\_Max 3846.19999 mW

Device ID	0.0 krad	50.0 krad	100.0 krad
3	3519.42505	3520.19189	3510.06665
4	3542.56982	3541.93555	3539.04077
<b>Average</b>	3530.99744	3531.06372	3524.55371
<b>MAX</b>	3542.56982	3541.93555	3539.04077
<b>MIN</b>	3519.42505	3520.19189	3510.06665
<b>STD_dev</b>	16.3658276	15.375084	20.4877975

Delta			
Device ID	0.0 krad	50.0 krad	100.0 krad
3		0.7668457	-9.3583984
4		-0.6342773	-3.5290527
<b>Average</b>		0.06628418	-6.4437256
<b>MAX</b>		0.7668457	-3.5290527
<b>MIN</b>		-0.6342773	-9.3583984
<b>STD_dev</b>		0.99074361	4.12196988

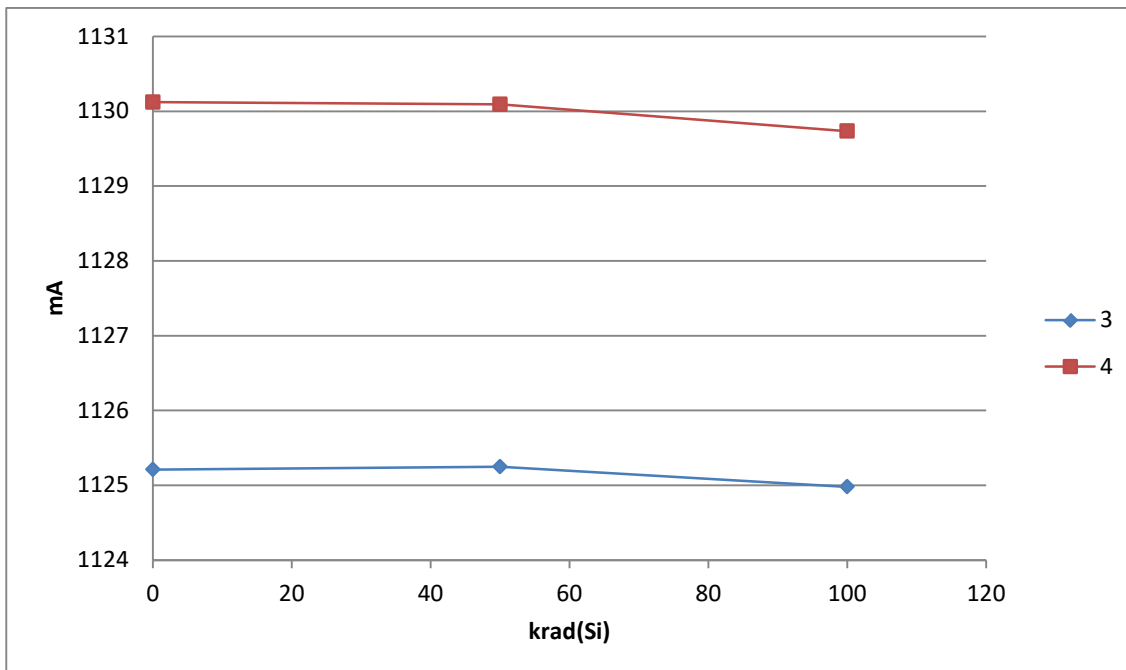


10120 ICCTOTAL/JESD204B\_WORST/JESD204B\_WORST\_CASE\_/3.465

Limit\_Min 939.999998 Limit\_Max 1210.00004 mA

Device ID	0.0 krad	50.0 krad	100.0 krad
3	1125.20886	1125.24695	1124.97998
4	1130.12219	1130.09167	1129.73303
<b>Average</b>	1127.66553	1127.66931	1127.35651
<b>MAX</b>	1130.12219	1130.09167	1129.73303
<b>MIN</b>	1125.20886	1125.24695	1124.97998
<b>STD_dev</b>	3.47424902	3.42573901	3.36091513

Delta			
Device ID	0.0 krad	50.0 krad	100.0 krad
3		0.03808594	-0.2288818
4		-0.0305176	-0.3891602
<b>Average</b>		0.00378418	-0.309021
<b>MAX</b>		0.03808594	-0.2288818
<b>MIN</b>		-0.0305176	-0.3891602
<b>STD_dev</b>		0.04851001	0.11333389

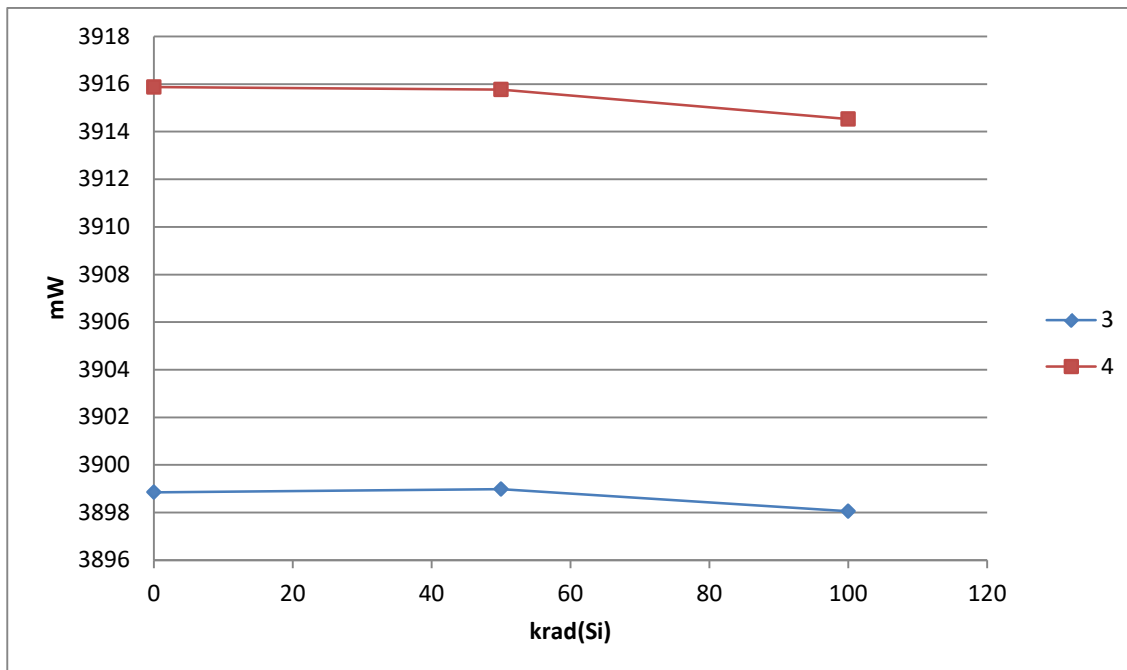


10121 POWER/JESD204B\_WORST/JESD204B\_WORST\_CASE\_/3.465

Limit\_Min 3257.14993 Limit\_Max 4192.69991 mW

Device ID	0.0 krad	50.0 krad	100.0 krad
3	3898.84888	3898.98096	3898.05566
4	3915.87354	3915.76758	3914.52539
<b>Average</b>	3907.36121	3907.37427	3906.29053
<b>MAX</b>	3915.87354	3915.76758	3914.52539
<b>MIN</b>	3898.84888	3898.98096	3898.05566
<b>STD_dev</b>	12.0382513	11.8699336	11.6458553

Delta			
Device ID	0.0 krad	50.0 krad	100.0 krad
3		0.13208008	-0.7932129
4		-0.105957	-1.3481445
<b>Average</b>		0.01306152	-1.0706787
<b>MAX</b>		0.13208008	-0.7932129
<b>MIN</b>		-0.105957	-1.3481445
<b>STD_dev</b>		0.16831765	0.39239593

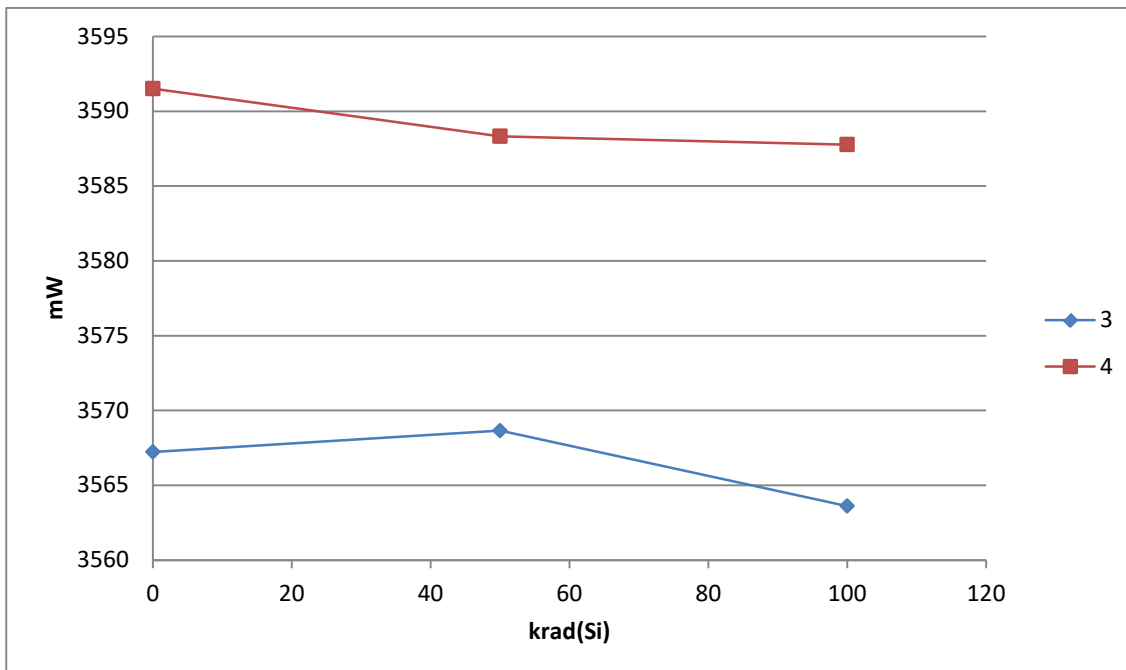


10149 POWER/SCK\_DIS\_MODE1/JESD204B\_STEADY\_OUTPUT\_LOW\_/3.465

Limit\_Min 2910.65001 Limit\_Max 3846.19999 mW

Device ID	0.0 krad	50.0 krad	100.0 krad
3	3567.23486	3568.64917	3563.59985
4	3591.51636	3588.33081	3587.77563
<b>Average</b>	3579.37561	3578.48999	3575.68774
<b>MAX</b>	3591.51636	3588.33081	3587.77563
<b>MIN</b>	3567.23486	3568.64917	3563.59985
<b>STD_dev</b>	17.1696092	13.9170216	17.0948589

Delta			
Device ID	0.0 krad	50.0 krad	100.0 krad
3		1.41430664	-3.6350098
4		-3.1855469	-3.7407227
<b>Average</b>		-0.8856201	-3.6878662
<b>MAX</b>		1.41430664	-3.6350098
<b>MIN</b>		-3.1855469	-3.7407227
<b>STD_dev</b>		3.25258761	0.0747503

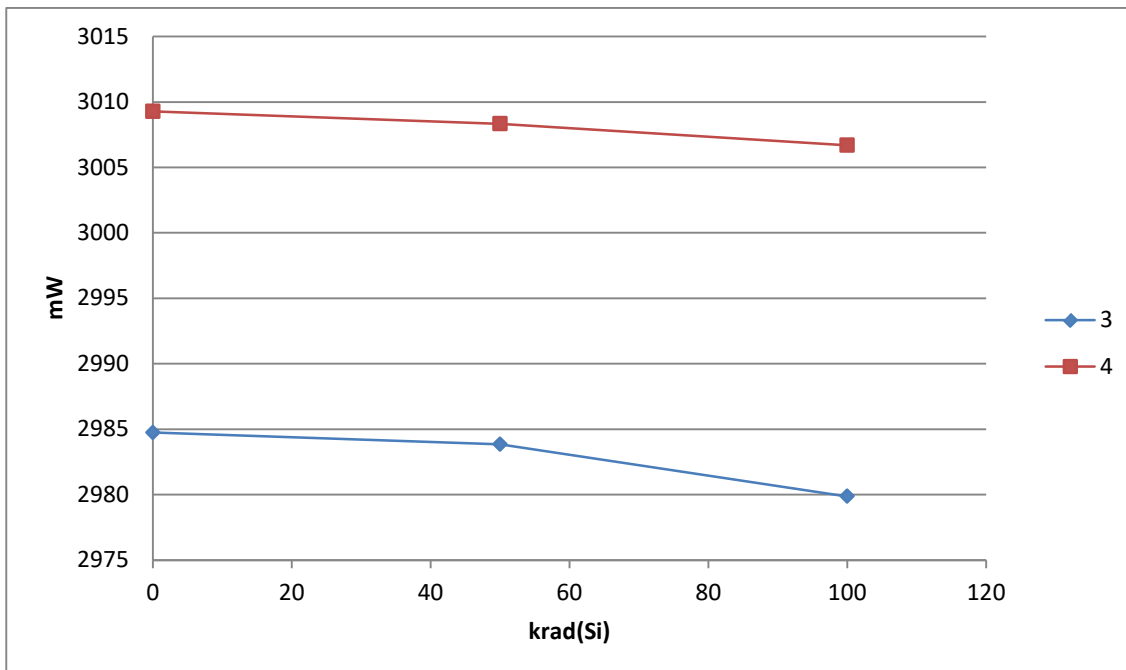


10177 POWER/SCK\_DIS\_MODE2/JESD204B\_STEADY\_OUTPUT\_NOMINAL\_VCM\_/3.465

Limit\_Min 2737.40005 Limit\_Max 3257.14993 mW

Device ID	0.0 krad	50.0 krad	100.0 krad
3	2984.74292	2983.84399	2979.86523
4	3009.27539	3008.33691	3006.698
<b>Average</b>	2997.00916	2996.09045	2993.28162
<b>MAX</b>	3009.27539	3008.33691	3006.698
<b>MIN</b>	2984.74292	2983.84399	2979.86523
<b>STD_dev</b>	17.3470764	17.3191098	18.9736292

Delta			
Device ID	0.0 krad	50.0 krad	100.0 krad
3		-0.8989258	-4.8776855
4		-0.9384766	-2.5773926
<b>Average</b>		-0.9187012	-3.7275391
<b>MAX</b>		-0.8989258	-2.5773926
<b>MIN</b>		-0.9384766	-4.8776855
<b>STD_dev</b>		0.02796663	1.62655276

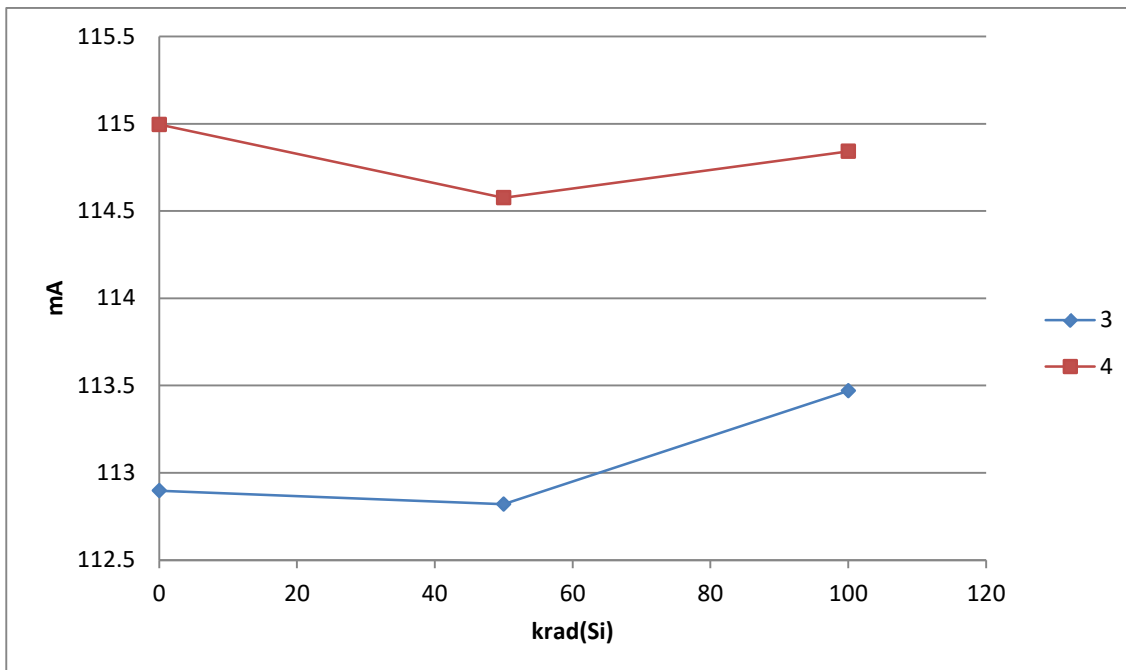


10194 ICCVCO/LVDS/3.465

Limit\_Min 94.9999988 Limit\_Max 129.999995 mA

Device ID	0.0 krad	50.0 krad	100.0 krad
3	112.896828	112.820534	113.469032
4	114.994926	114.575302	114.842339
<b>Average</b>	113.945877	113.697918	114.155685
<b>MAX</b>	114.994926	114.575302	114.842339
<b>MIN</b>	112.896828	112.820534	113.469032
<b>STD_dev</b>	1.48357986	1.24080862	0.97107418

Delta			
Device ID	0.0 krad	50.0 krad	100.0 krad
3		-0.0762939	0.57220459
4		-0.4196243	-0.1525879
<b>Average</b>		-0.2479591	0.20980835
<b>MAX</b>		-0.0762939	0.57220459
<b>MIN</b>		-0.4196243	-0.1525879
<b>STD_dev</b>		0.24277124	0.51250568

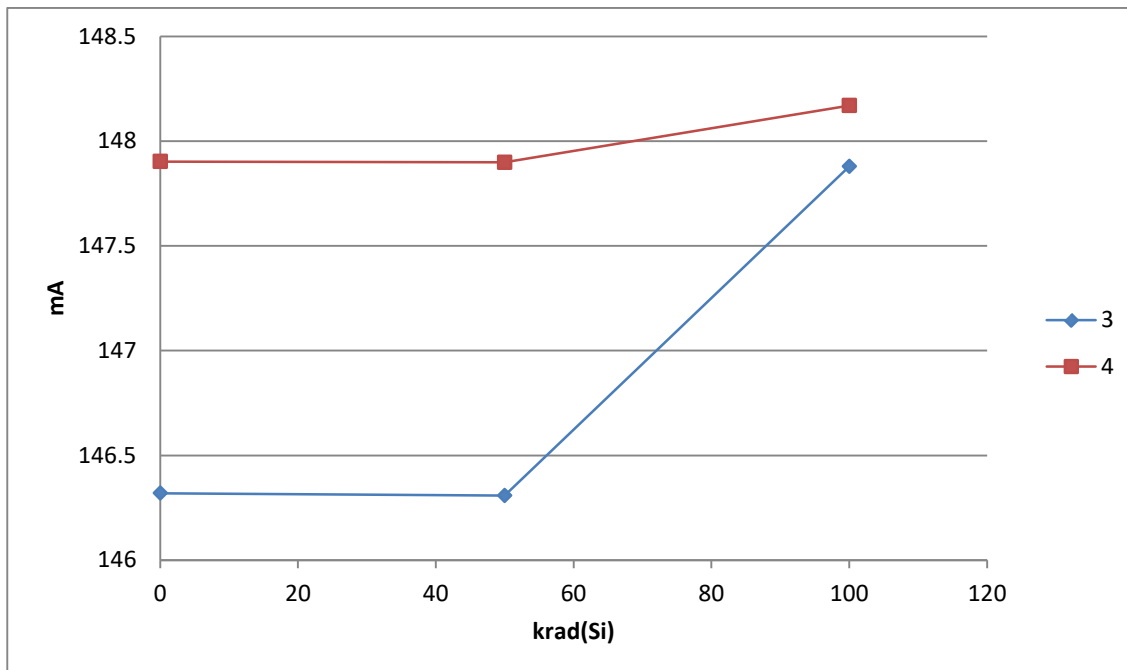


10195 ICCCG0/LVDS/3.465

Limit\_Min 129.999995 Limit\_Max 170.000002 mA

Device ID	0.0 krad	50.0 krad	100.0 krad
3	146.31955	146.308105	147.879776
4	147.902664	147.898849	148.169693
<b>Average</b>	147.111107	147.103477	148.024734
<b>MAX</b>	147.902664	147.898849	148.169693
<b>MIN</b>	146.31955	146.308105	147.879776
<b>STD_dev</b>	1.11943109	1.12482588	0.20500227

Delta			
Device ID	0.0 krad	50.0 krad	100.0 krad
3		-0.0114441	1.56022644
4		-0.0038147	0.26702881
<b>Average</b>		-0.0076294	0.91362762
<b>MAX</b>		-0.0038147	1.56022644
<b>MIN</b>		-0.0114441	0.26702881
<b>STD_dev</b>		0.0053948	0.91442882

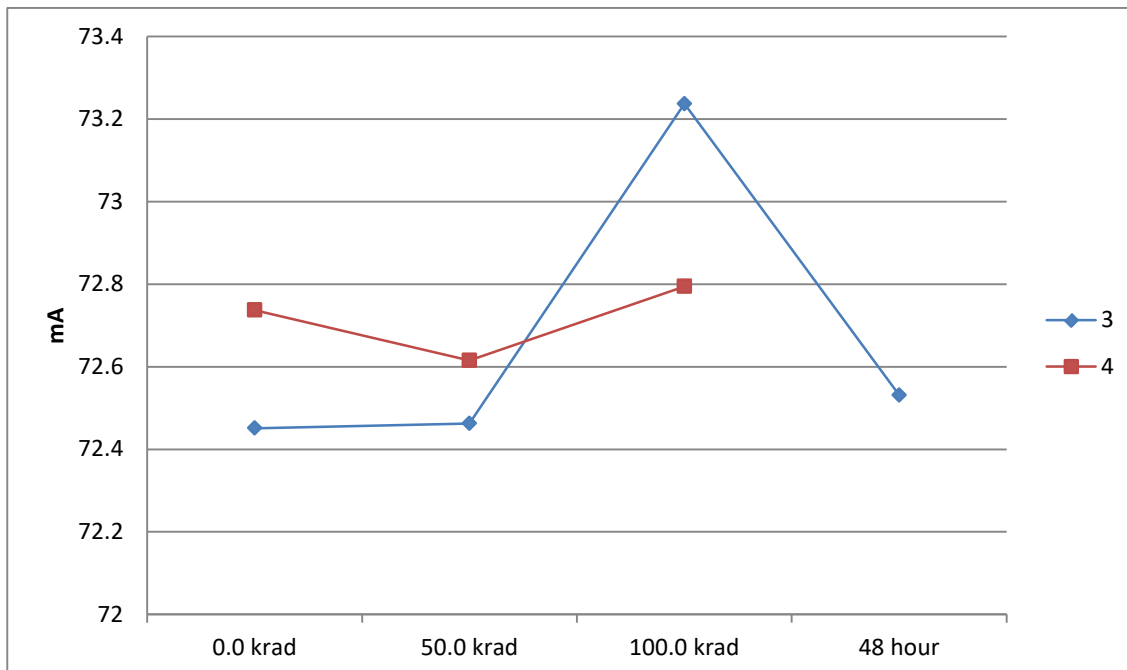


10196 ICCCG1/LVDS/3.465

Limit\_Min 59.9999987 Limit\_Max 90.0000036 mA

Device ID	0.0 krad	50.0 krad	100.0 krad	48 hour
3	72.4511871	72.4626312	73.2370224	72.5312958
4	72.7372894	72.6152191	72.7945175	
<b>Average</b>	72.5942383	72.5389252	73.01577	
<b>MAX</b>	72.7372894	72.6152191	73.2370224	
<b>MIN</b>	72.4511871	72.4626312	72.7945175	
<b>STD_dev</b>	0.20230487	0.10789593	0.3128982	

Delta				
Device ID	0.0 krad	50.0 krad	100.0 krad	48 hour
3		0.01144409	0.78583527	0.08010867
4		-0.1220703	0.05722809	
<b>Average</b>		-0.0553131	0.42153168	
<b>MAX</b>		0.01144409	0.78583527	
<b>MIN</b>		-0.1220703	0.05722809	
<b>STD_dev</b>		0.09440894	0.51520308	



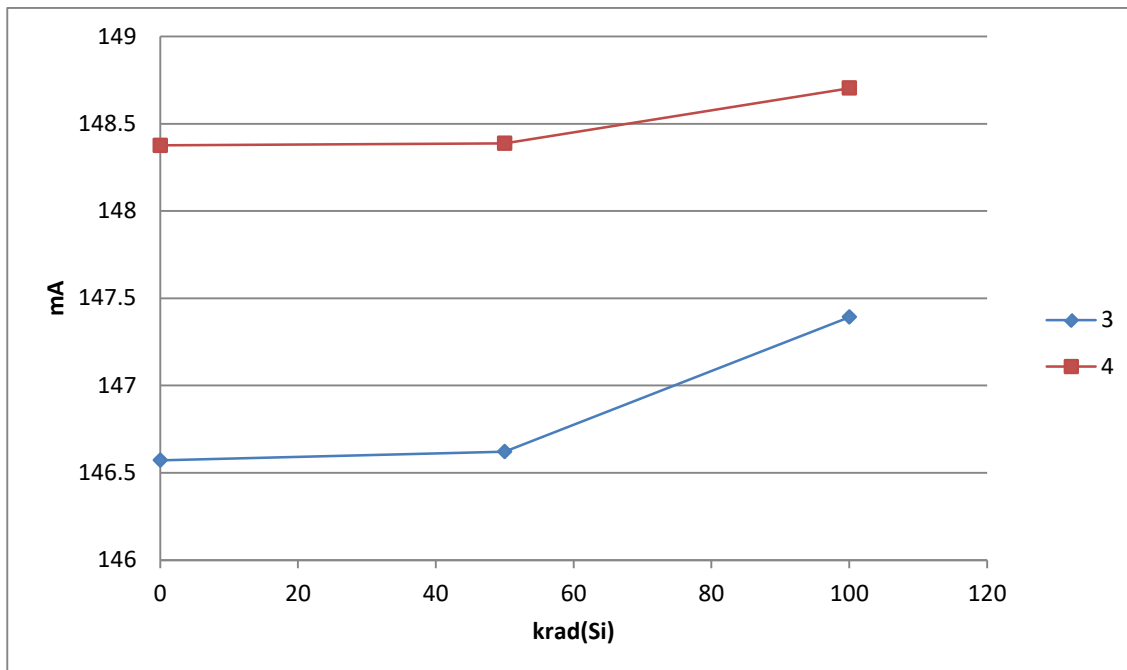


10197 ICCCG2/LVDS/3.465

Limit\_Min 129.999995 Limit\_Max 170.000002 mA

Device ID	0.0 krad	50.0 krad	100.0 krad
3	146.57132	146.620911	147.391479
4	148.375687	148.387131	148.703751
<b>Average</b>	147.473503	147.504021	148.047615
<b>MAX</b>	148.375687	148.387131	148.703751
<b>MIN</b>	146.57132	146.620911	147.391479
<b>STD_dev</b>	1.27588019	1.2489062	0.92791581

Delta			
Device ID	0.0 krad	50.0 krad	100.0 krad
3		0.04959107	0.82015991
4		0.01144409	0.32806396
<b>Average</b>		0.03051758	0.57411194
<b>MAX</b>		0.04959107	0.82015991
<b>MIN</b>		0.01144409	0.32806396
<b>STD_dev</b>		0.02697398	0.34796438

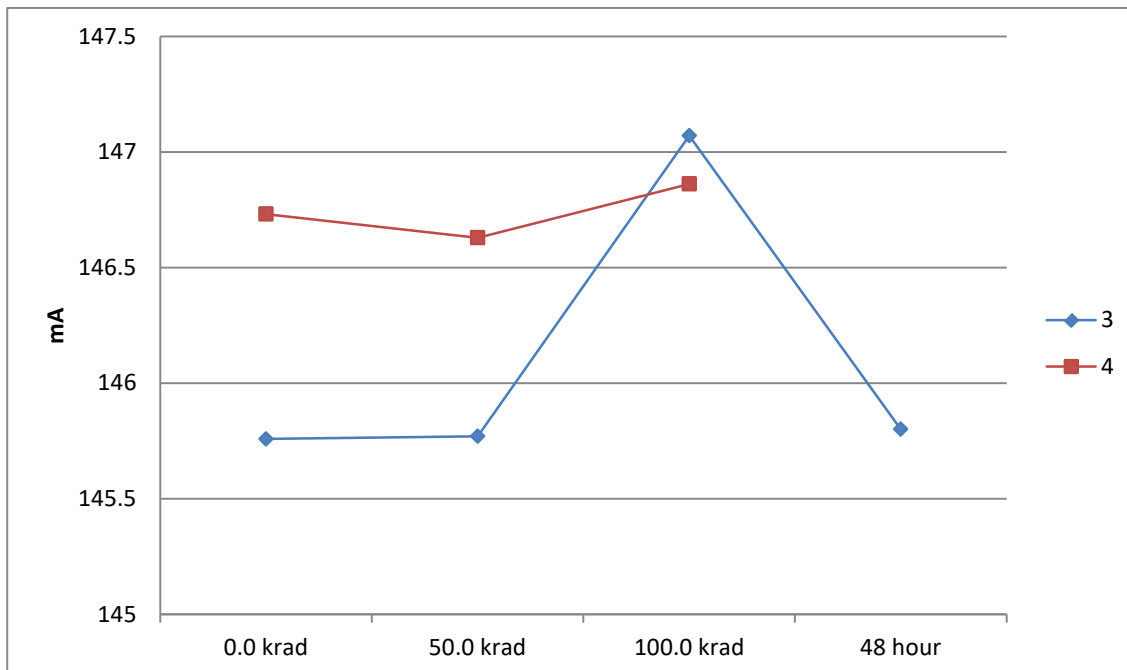


10198 ICCG3/LVDS/3.465

Limit\_Min 129.999995 Limit\_Max 170.000002 mA

Device ID	0.0 krad	50.0 krad	100.0 krad	48 hour
3	145.758789	145.770233	147.071045	145.800751
4	146.731537	146.62854	146.861237	
<b>Average</b>	146.245163	146.199387	146.966141	
<b>MAX</b>	146.731537	146.62854	147.071045	
<b>MIN</b>	145.758789	145.770233	146.861237	
<b>STD_dev</b>	0.68783657	0.60691462	0.14835691	

Delta				
Device ID	0.0 krad	50.0 krad	100.0 krad	48 hour
3		0.01144409	1.31225586	0.04196194
4		-0.1029968	0.12969971	
<b>Average</b>		-0.0457764	0.72097778	
<b>MAX</b>		0.01144409	1.31225586	
<b>MIN</b>		-0.1029968	0.12969971	
<b>STD_dev</b>		0.08092195	0.83619347	

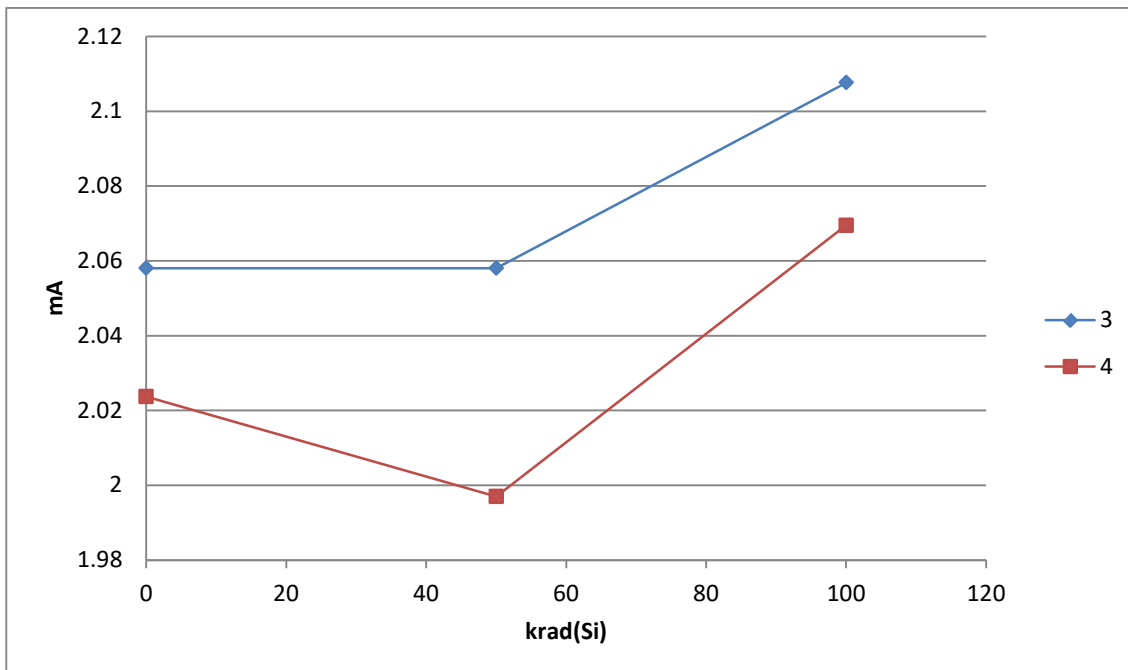


10199 ICC\_DIG/LVDS/3.465

Limit\_Min 0.50000002 Limit\_Max 3.00000003 mA

Device ID	0.0 krad	50.0 krad	100.0 krad
3	2.05804467	2.05804467	2.10763621
4	2.02371216	1.99700916	2.069489
<b>Average</b>	2.04087842	2.02752692	2.08856261
<b>MAX</b>	2.05804467	2.05804467	2.10763621
<b>MIN</b>	2.02371216	1.99700916	2.069489
<b>STD_dev</b>	0.02427675	0.04315863	0.02697415

Delta			
Device ID	0.0 krad	50.0 krad	100.0 krad
3		0	0.04959154
4		-0.026703	0.04577684
<b>Average</b>		-0.0133515	0.04768419
<b>MAX</b>		0	0.04959154
<b>MIN</b>		-0.026703	0.04577684
<b>STD_dev</b>		0.01888187	0.0026974

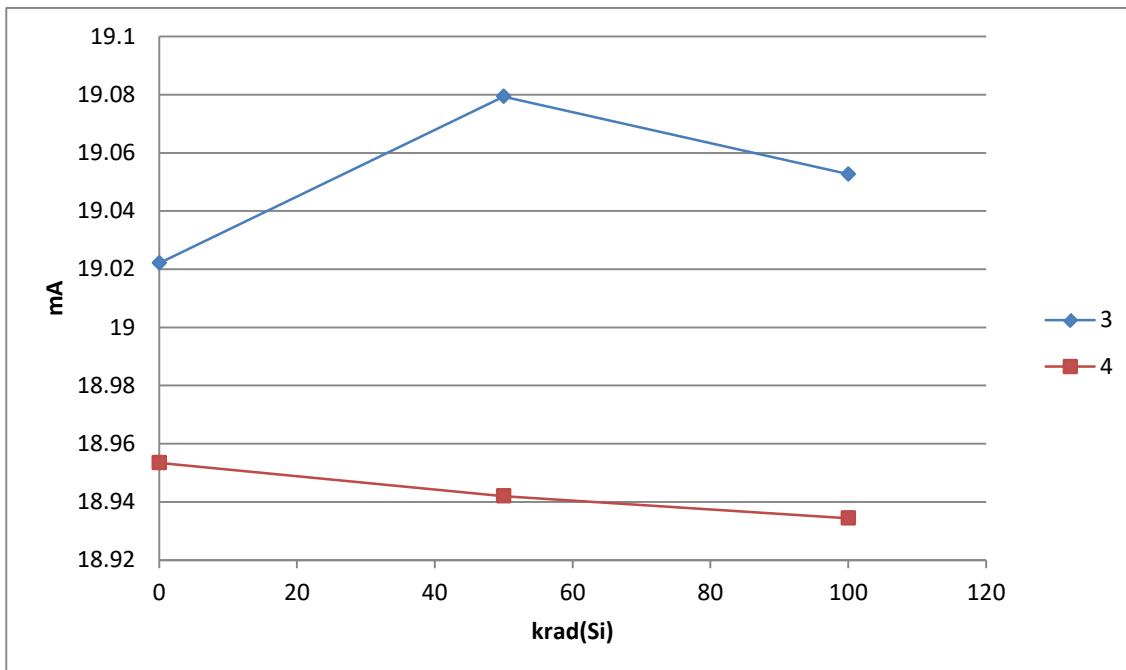


10200 ICC\_CP2/LVDS/3.465

Limit\_Min 12.0000001 Limit\_Max 23 mA

Device ID	0.0 krad	50.0 krad	100.0 krad
3	19.0221329	19.0793533	19.0526505
4	18.9534683	18.9420242	18.9343948
<b>Average</b>	18.9878006	19.0106888	18.9935226
<b>MAX</b>	19.0221329	19.0793533	19.0526505
<b>MIN</b>	18.9534683	18.9420242	18.9343948
<b>STD_dev</b>	0.04855317	0.09710634	0.08361935

Delta			
Device ID	0.0 krad	50.0 krad	100.0 krad
3		0.05722046	0.03051758
4		-0.0114441	-0.0190735
<b>Average</b>		0.02288818	0.00572205
<b>MAX</b>		0.05722046	0.03051758
<b>MIN</b>		-0.0114441	-0.0190735
<b>STD_dev</b>		0.04855317	0.03506618

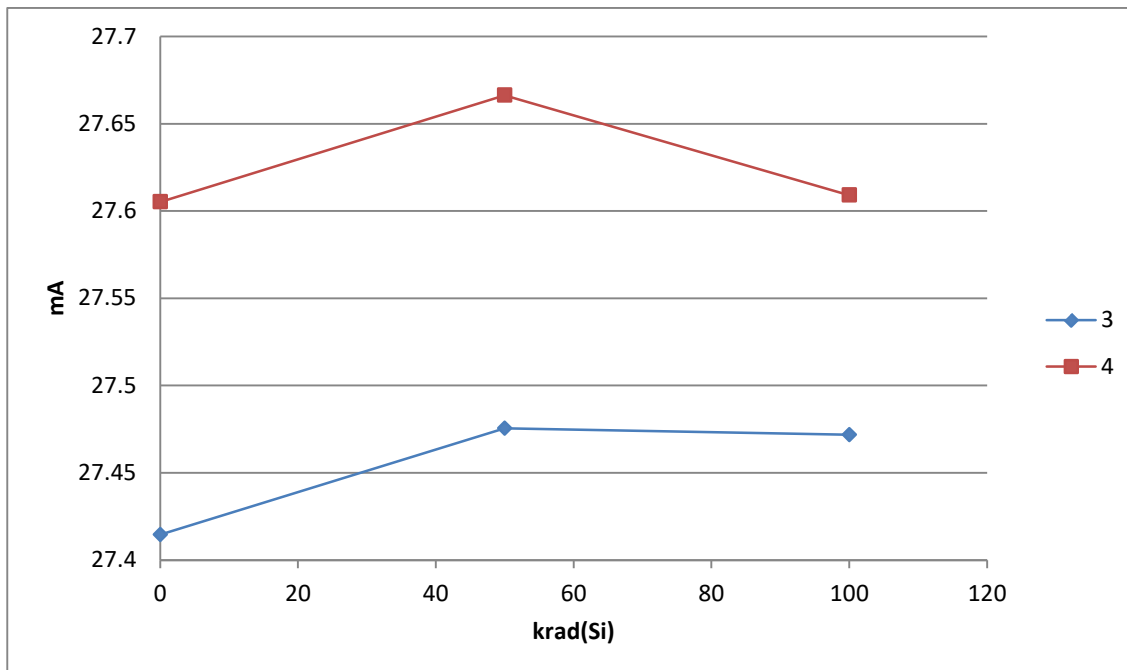


10201 ICC\_CLKIN/LVDS/3.465

Limit\_Min 17.9999992 Limit\_Max 35.0000001 mA

Device ID	0.0 krad	50.0 krad	100.0 krad
3	27.4145298	27.4755669	27.4717522
4	27.6052666	27.6663017	27.6090813
<b>Average</b>	27.5098982	27.5709343	27.5404167
<b>MAX</b>	27.6052666	27.6663017	27.6090813
<b>MIN</b>	27.4145298	27.4755669	27.4717522
<b>STD_dev</b>	0.13487126	0.13486992	0.09710634

Delta			
Device ID	0.0 krad	50.0 krad	100.0 krad
3		0.06103706	0.05722237
4		0.06103516	0.0038147
<b>Average</b>		0.06103611	0.03051853
<b>MAX</b>		0.06103706	0.05722237
<b>MIN</b>		0.06103516	0.0038147
<b>STD_dev</b>		1.3492E-06	0.03776493

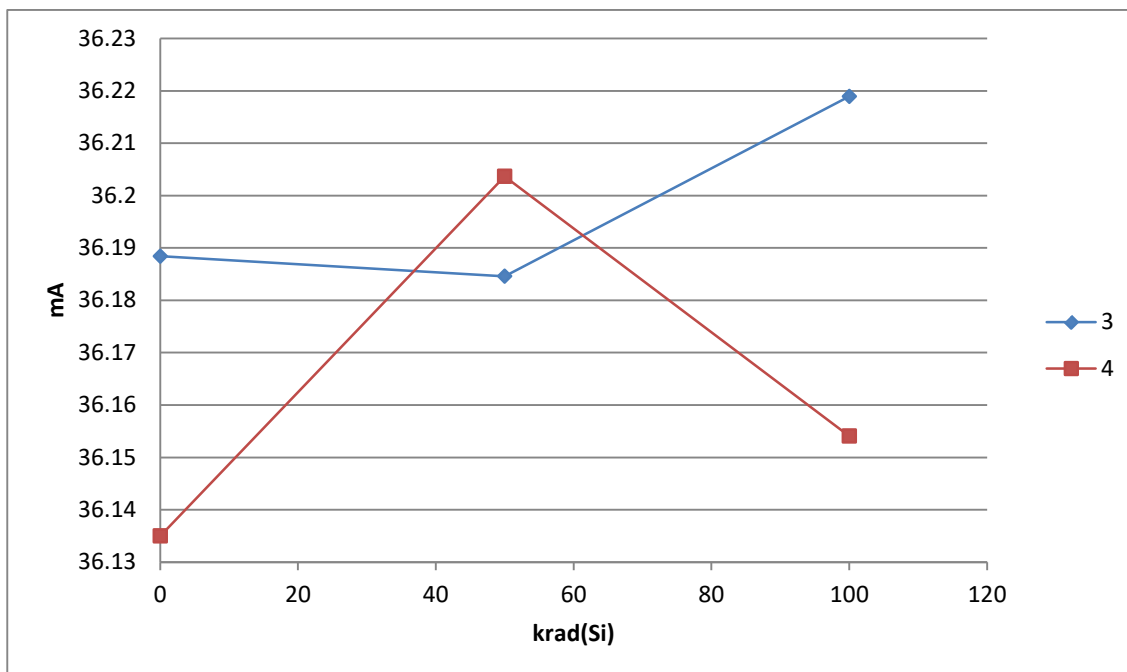


10202 ICC\_OSCIN/LVDS/3.465

Limit\_Min 25.0000004 Limit\_Max 45.0000018 mA

Device ID	0.0 krad	50.0 krad	100.0 krad
3	36.1884003	36.1845856	36.2189178
4	36.1349945	36.2036591	36.154068
<b>Average</b>	36.1616974	36.1941223	36.1864929
<b>MAX</b>	36.1884003	36.2036591	36.2189178
<b>MIN</b>	36.1349945	36.1845856	36.154068
<b>STD_dev</b>	0.03776358	0.01348699	0.04585577

Delta			
Device ID	0.0 krad	50.0 krad	100.0 krad
3		-0.0038147	0.03051758
4		0.06866455	0.01907349
<b>Average</b>		0.03242493	0.02479553
<b>MAX</b>		0.06866455	0.03051758
<b>MIN</b>		-0.0038147	0.01907349
<b>STD_dev</b>		0.05125057	0.0080922

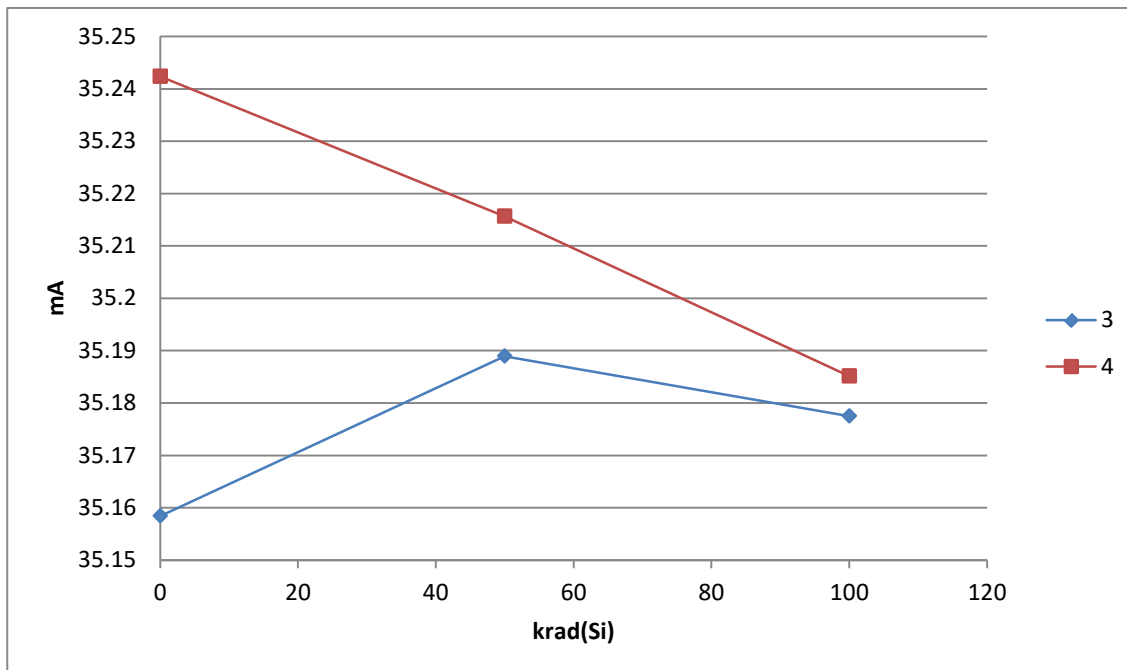


10203 ICC\_OSCOUT/LVDS/3.465

Limit\_Min 25.0000004 Limit\_Max 45.0000018 mA

Device ID	0.0 krad	50.0 krad	100.0 krad
3	35.1584244	35.188942	35.1774979
4	35.2423477	35.2156448	35.1851273
<b>Average</b>	35.200386	35.2022934	35.1813126
<b>MAX</b>	35.2423477	35.2156448	35.1851273
<b>MIN</b>	35.1584244	35.188942	35.1774979
<b>STD_dev</b>	0.05934276	0.01888179	0.0053948

Delta			
Device ID	0.0 krad	50.0 krad	100.0 krad
3		0.03051758	0.01907349
4		-0.0267029	-0.0572205
<b>Average</b>		0.00190735	-0.0190735
<b>MAX</b>		0.03051758	0.01907349
<b>MIN</b>		-0.0267029	-0.0572205
<b>STD_dev</b>		0.04046098	0.05394797

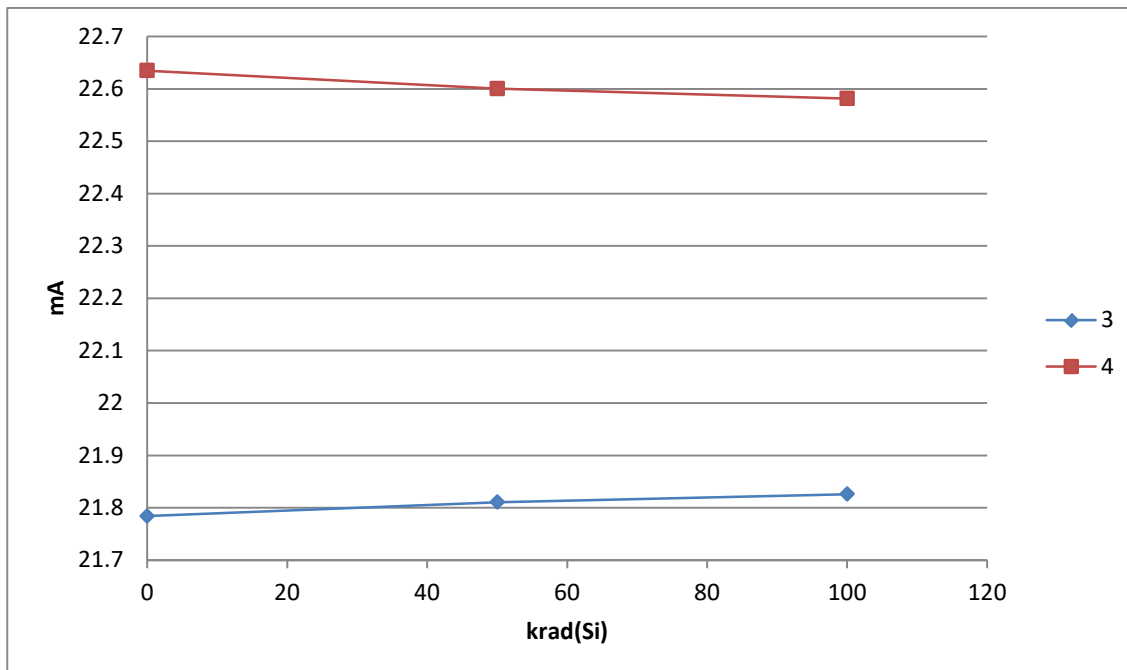


10204 ICC\_PLL2N/LVDS/3.465

Limit\_Min 14.9999997 Limit\_Max 32.0000015 mA

Device ID	0.0 krad	50.0 krad	100.0 krad
3	21.7839947	21.8106976	21.8259563
4	22.6346798	22.6003475	22.5812721
<b>Average</b>	22.2093372	22.2055225	22.2036142
<b>MAX</b>	22.6346798	22.6003475	22.5812721
<b>MIN</b>	21.7839947	21.8106976	21.8259563
<b>STD_dev</b>	0.60152522	0.55836684	0.53408891

Delta			
Device ID	0.0 krad	50.0 krad	100.0 krad
3		0.02670288	0.04196167
4		-0.0343323	-0.0534077
<b>Average</b>		-0.0038147	-0.005723
<b>MAX</b>		0.02670288	0.04196167
<b>MIN</b>		-0.0343323	-0.0534077
<b>STD_dev</b>		0.04315837	0.06743631



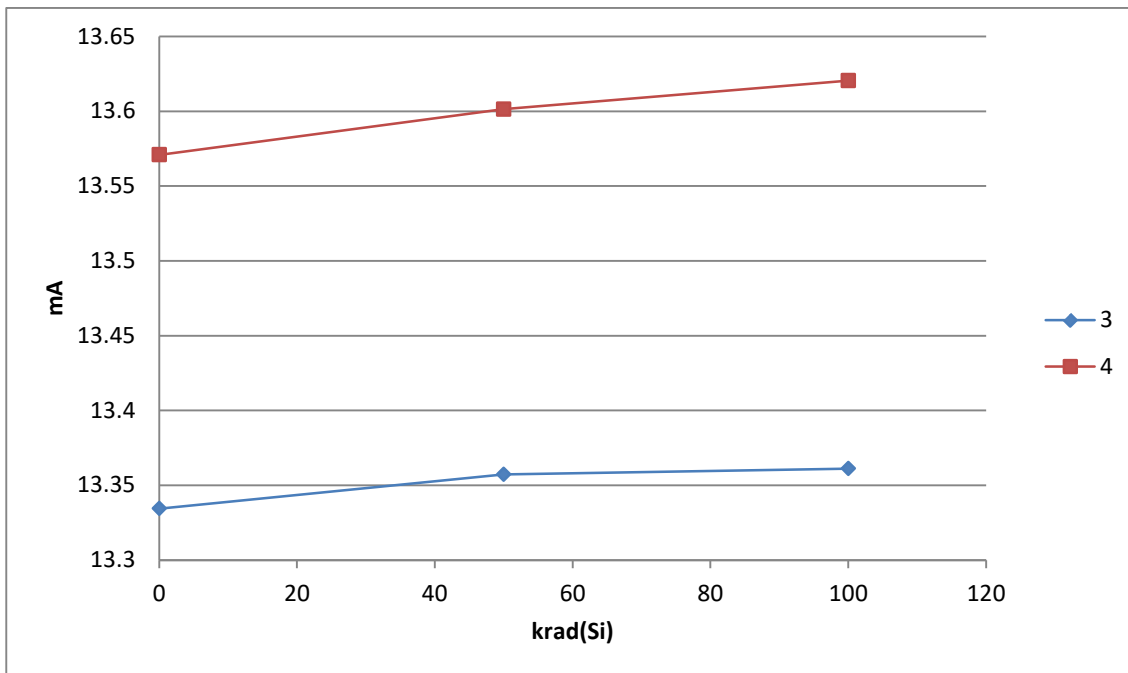


10205 ICC\_DIV/LVDS/3.465

Limit\_Min 9.9999978 Limit\_Max 17.0000009 mA

Device ID	0.0 krad	50.0 krad	100.0 krad
3	13.3343754	13.3572636	13.3610783
4	13.5708885	13.6014061	13.6204805
<b>Average</b>	13.452632	13.4793348	13.4907794
<b>MAX</b>	13.5708885	13.6014061	13.6204805
<b>MIN</b>	13.3343754	13.3572636	13.3610783
<b>STD_dev</b>	0.16724004	0.17263484	0.18342511

Delta			
Device ID	0.0 krad	50.0 krad	100.0 krad
3		0.02288818	0.02670288
4		0.03051758	0.04959202
<b>Average</b>		0.02670288	0.03814745
<b>MAX</b>		0.03051758	0.04959202
<b>MIN</b>		0.02288818	0.02670288
<b>STD_dev</b>		0.0053948	0.01618506

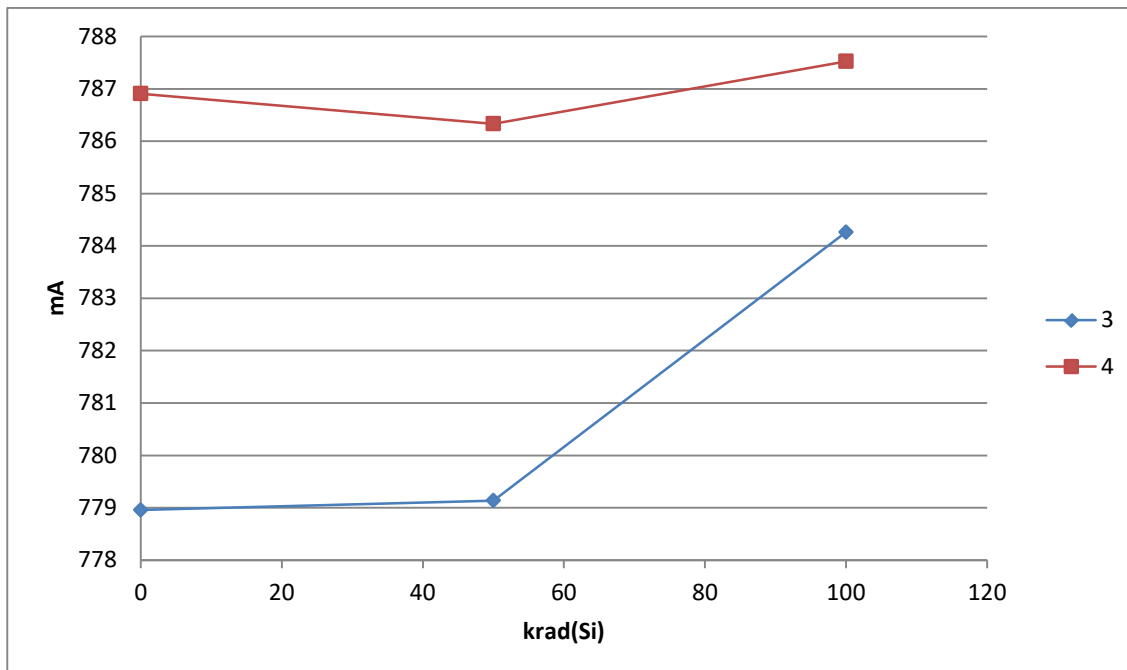


10206 ICCTOTAL/LVDS/3.465

Limit\_Min 720.000029 Limit\_Max 839.999974 mA

Device ID	0.0 krad	50.0 krad	100.0 krad
3	778.957581	779.136902	784.263855
4	786.907471	786.331482	787.525452
<b>Average</b>	782.932526	782.734192	785.894653
<b>MAX</b>	786.907471	786.331482	787.525452
<b>MIN</b>	778.957581	779.136902	784.263855
<b>STD_dev</b>	5.62142123	5.08733636	2.30629713

Delta			
Device ID	0.0 krad	50.0 krad	100.0 krad
3		0.17932129	5.30627441
4		-0.5759888	0.61798096
<b>Average</b>		-0.1983337	2.96212769
<b>MAX</b>		0.17932129	5.30627441
<b>MIN</b>		-0.5759888	0.61798096
<b>STD_dev</b>		0.53408486	3.3151241

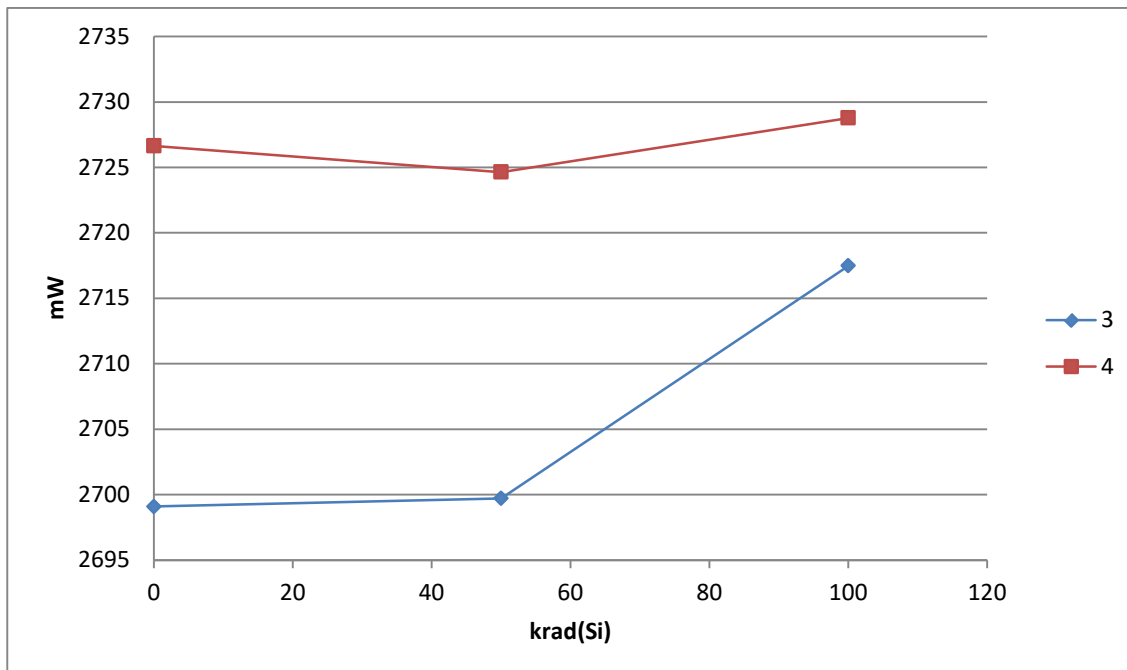


10207 POWER/LVDS/3.465

Limit\_Min 2494.84992 Limit\_Max 2910.65001 mW

Device ID	0.0 krad	50.0 krad	100.0 krad
3	2699.08813	2699.70923	2717.47412
4	2726.63452	2724.63843	2728.77563
<b>Average</b>	2712.86133	2712.17383	2723.12488
<b>MAX</b>	2726.63452	2724.63843	2728.77563
<b>MIN</b>	2699.08813	2699.70923	2717.47412
<b>STD_dev</b>	19.4782368	17.6276058	7.99137696

Delta			
Device ID	0.0 krad	50.0 krad	100.0 krad
3		0.62109375	18.3859863
4		-1.9960938	2.14111328
<b>Average</b>		-0.6875	10.2635498
<b>MAX</b>		0.62109375	18.3859863
<b>MIN</b>		-1.9960938	2.14111328
<b>STD_dev</b>		1.85063103	11.4868599

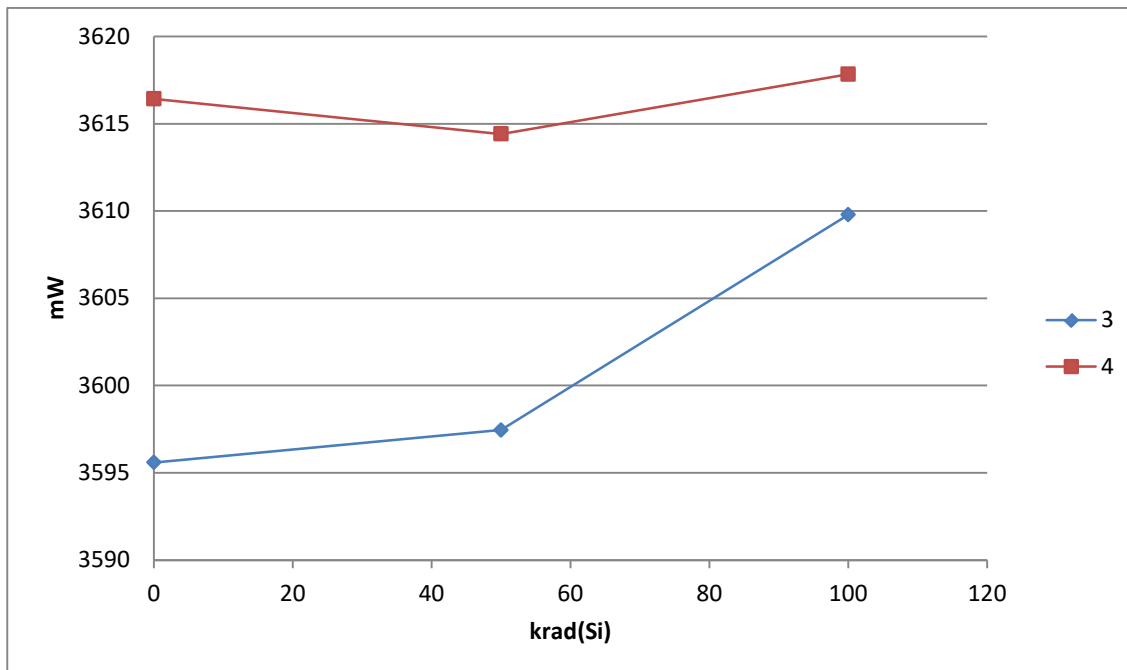


10222 POWER/LVPECL16/3.465

Limit\_Min 3257.14993 Limit\_Max 4192.69991 mW

Device ID	0.0 krad	50.0 krad	100.0 krad
3	3595.5874	3597.45117	3609.78369
4	3616.41919	3614.40991	3617.8335
<b>Average</b>	3606.0033	3605.93054	3613.80859
<b>MAX</b>	3616.41919	3614.40991	3617.8335
<b>MIN</b>	3595.5874	3597.45117	3609.78369
<b>STD_dev</b>	14.7302979	11.9916402	5.69207148

Delta			
Device ID	0.0 krad	50.0 krad	100.0 krad
3		1.86376953	14.1962891
4		-2.0092773	1.41430664
<b>Average</b>		-0.0727539	7.80529785
<b>MAX</b>		1.86376953	14.1962891
<b>MIN</b>		-2.0092773	1.41430664
<b>STD_dev</b>		2.73865771	9.03822645

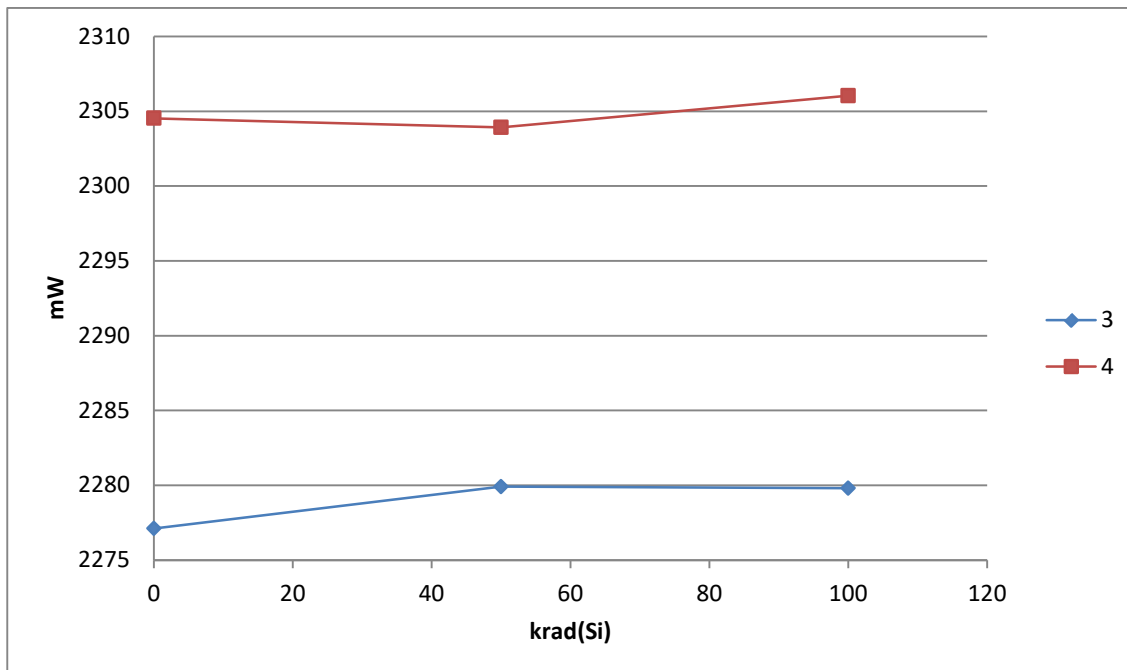


10267 POWER/CML24/3.465

Limit\_Min 2044.39998 Limit\_Max 2529.50001 mW

Device ID	0.0 krad	50.0 krad	100.0 krad
3	2277.11572	2279.90479	2279.79907
4	2304.52979	2303.92188	2306.03662
<b>Average</b>	2290.82275	2291.91333	2292.91785
<b>MAX</b>	2304.52979	2303.92188	2306.03662
<b>MIN</b>	2277.11572	2279.90479	2279.79907
<b>STD_dev</b>	19.3846695	16.9826471	18.5527487

Delta			
Device ID	0.0 krad	50.0 krad	100.0 krad
3		2.7890625	2.68334961
4		-0.6079102	1.50683594
<b>Average</b>		1.09057617	2.09509277
<b>MAX</b>		2.7890625	2.68334961
<b>MIN</b>		-0.6079102	1.50683594
<b>STD_dev</b>		2.4020224	0.8319208

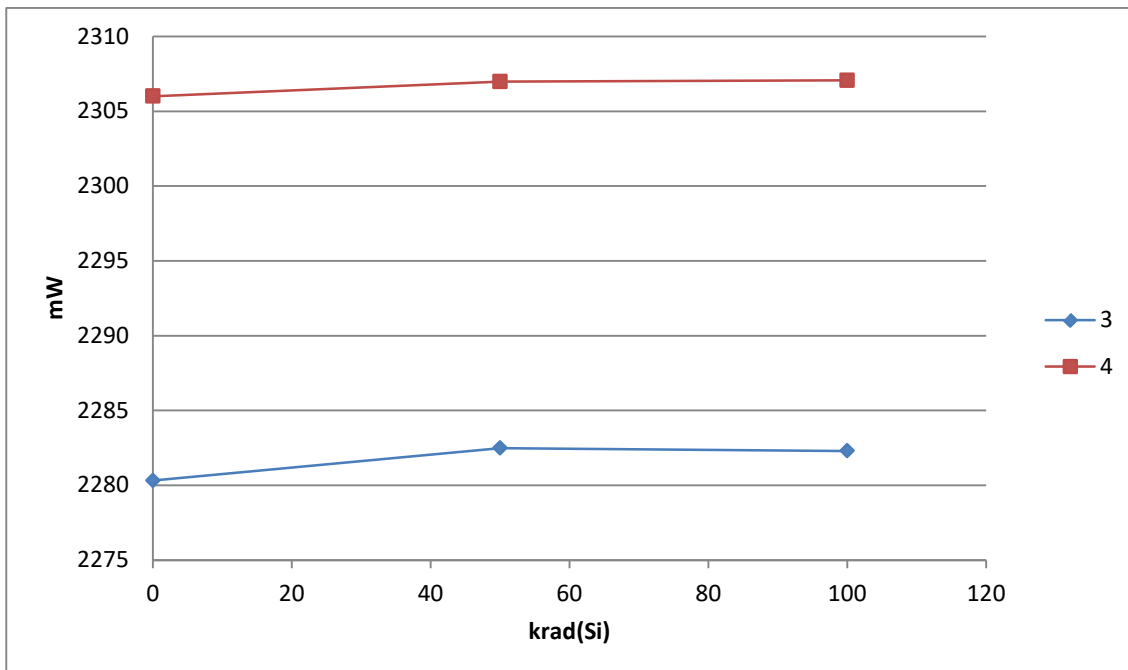


10282 POWER/CML32/3.465

Limit\_Min 2044.39998 Limit\_Max 2529.50001 mW

Device ID	0.0 krad	50.0 krad	100.0 krad
3	2280.31445	2282.48242	2282.29712
4	2306.01025	2306.98853	2307.06787
<b>Average</b>	2293.16235	2294.73547	2294.6825
<b>MAX</b>	2306.01025	2306.98853	2307.06787
<b>MIN</b>	2280.31445	2282.48242	2282.29712
<b>STD_dev</b>	18.169675	17.328432	17.5155667

Delta			
Device ID	0.0 krad	50.0 krad	100.0 krad
3		2.16796875	1.98266602
4		0.97827148	1.05761719
<b>Average</b>		1.57312012	1.5201416
<b>MAX</b>		2.16796875	1.98266602
<b>MIN</b>		0.97827148	1.05761719
<b>STD_dev</b>		0.841243	0.6541083

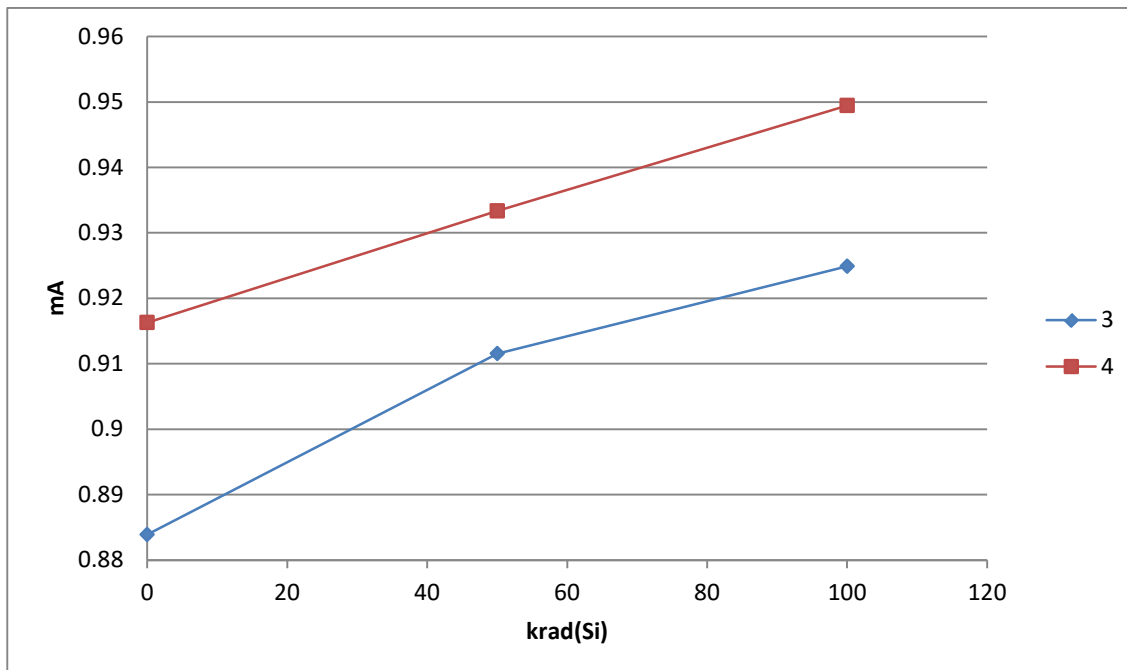


10289 ICCVCO/PWRDN/3.465

Limit\_Min 0.05 Limit\_Max 3.15 mA

Device ID	0.0 krad	50.0 krad	100.0 krad
3	0.88389117	0.9115479	0.92489946
4	0.91627824	0.93333006	0.9494282
<b>Average</b>	0.9000847	0.92243898	0.93716383
<b>MAX</b>	0.91627824	0.93333006	0.9494282
<b>MIN</b>	0.88389117	0.9115479	0.92489946
<b>STD_dev</b>	0.02290112	0.01540231	0.01734444

Delta			
Device ID	0.0 krad	50.0 krad	100.0 krad
3		0.02765673	0.04100829
4		0.01705182	0.03314996
<b>Average</b>		0.02235428	0.03707913
<b>MAX</b>		0.02765673	0.04100829
<b>MIN</b>		0.01705182	0.03314996
<b>STD_dev</b>		0.00749881	0.00555668

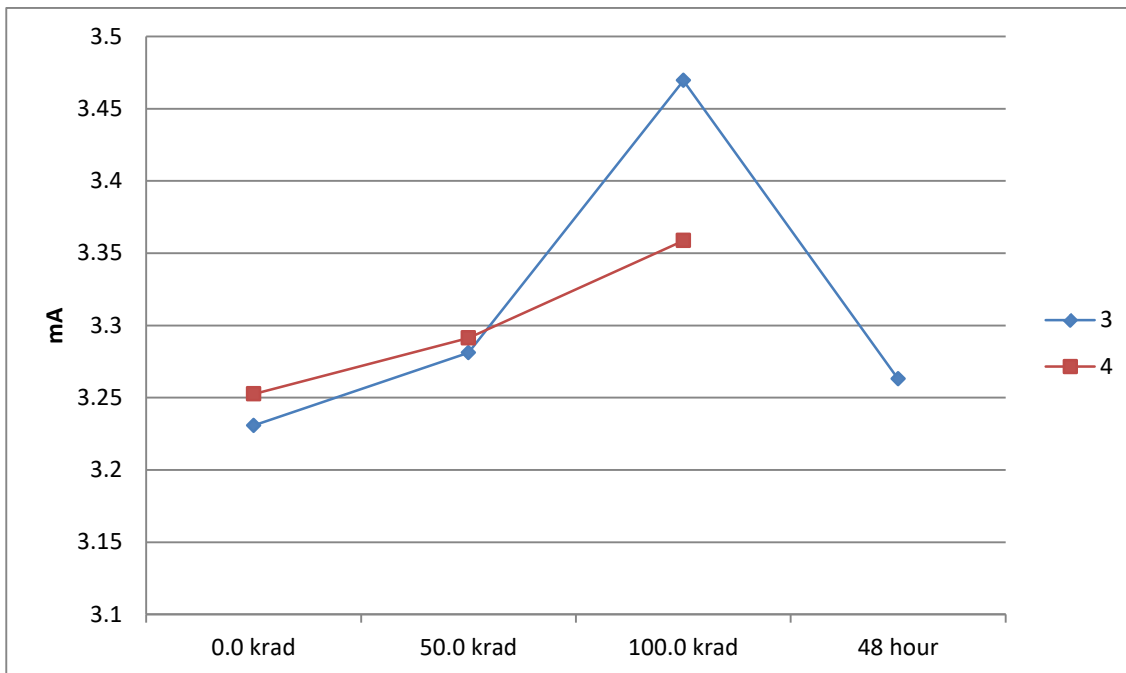


10301 ICCTOTAL/PWRDN/3.465

Limit\_Min 2.00000009 Limit\_Max 4.39999998 mA

Device ID	0.0 krad	50.0 krad	100.0 krad	48 hour
3	3.23076797	3.28112245	3.46949363	3.2630024
4	3.25258827	3.29126954	3.3587141	
<b>Average</b>	3.24167812	3.28619599	3.41410387	
<b>MAX</b>	3.25258827	3.29126954	3.46949363	
<b>MIN</b>	3.23076797	3.28112245	3.3587141	
<b>STD_dev</b>	0.01542929	0.00717508	0.07833295	

Delta				
Device ID	0.0 krad	50.0 krad	100.0 krad	48 hour
3		0.05035448	0.23872566	0.03223443
4		0.03868127	0.10612583	
<b>Average</b>		0.04451787	0.17242575	
<b>MAX</b>		0.05035448	0.23872566	
<b>MIN</b>		0.03868127	0.10612583	
<b>STD_dev</b>		0.00825421	0.09376224	



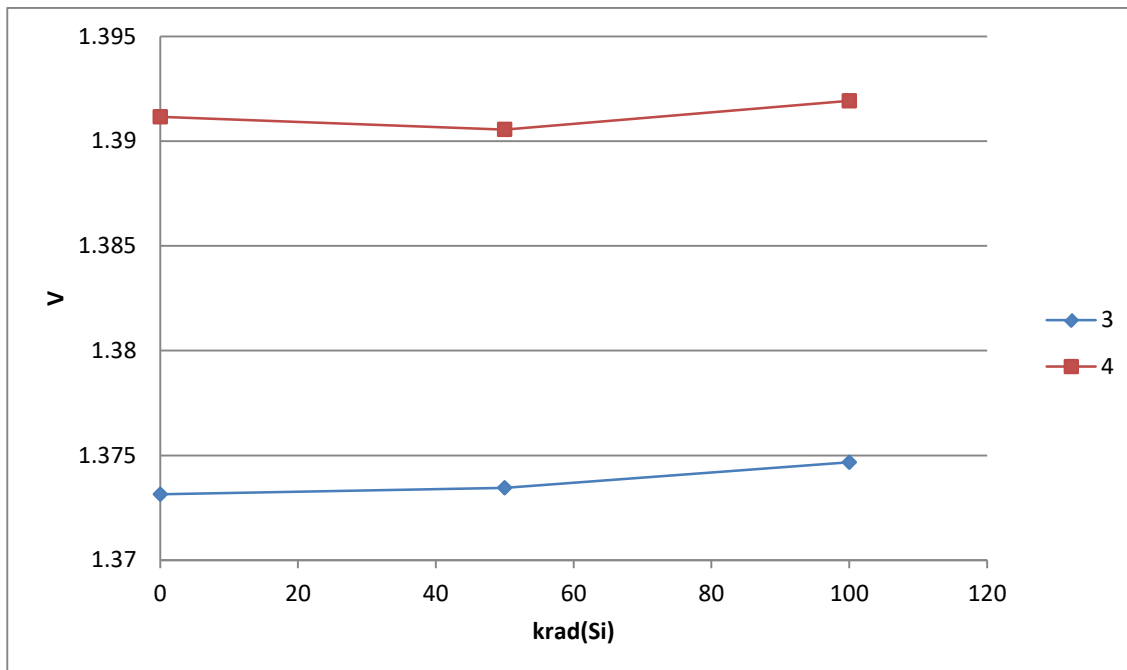


10960 VICM/CMOS/CLKIN0P/3.465

Limit\_Min 0.94999999 Limit\_Max 1.70000005 V

Device ID	0.0 krad	50.0 krad	100.0 krad
3	1.37314069	1.37344611	1.37466788
4	1.39116144	1.39055061	1.3919251
<b>Average</b>	1.38215107	1.38199836	1.38329649
<b>MAX</b>	1.39116144	1.39055061	1.3919251
<b>MIN</b>	1.37314069	1.37344611	1.37466788
<b>STD_dev</b>	0.01274259	0.01209471	0.01220269

Delta			
Device ID	0.0 krad	50.0 krad	100.0 krad
3		0.00030541	0.00152719
4		-0.0006108	0.00076365
<b>Average</b>		-0.0001527	0.00114542
<b>MAX</b>		0.00030541	0.00152719
<b>MIN</b>		-0.0006108	0.00076365
<b>STD_dev</b>		0.00064788	0.0005399

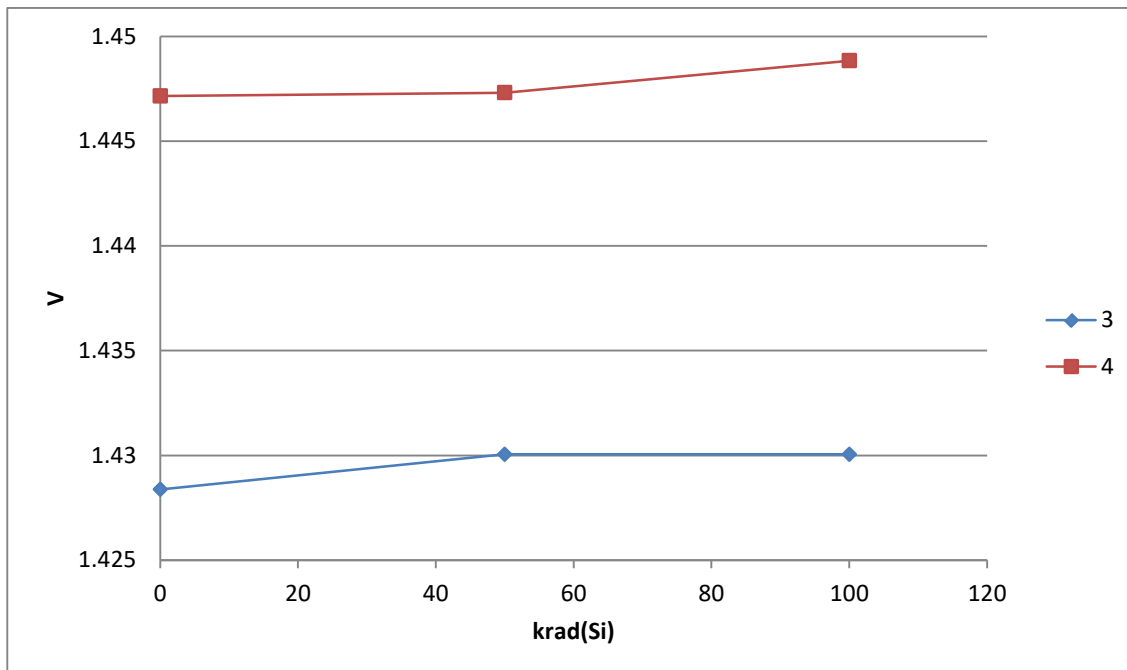


10961 VICM/CMOS/CLKIN0B/3.465

Limit\_Min 0.94999999 Limit\_Max 1.70000005 V

Device ID	0.0 krad	50.0 krad	100.0 krad
3	1.42837	1.4300499	1.4300499
4	1.447155	1.44730771	1.44883502
<b>Average</b>	1.4377625	1.4386788	1.43944246
<b>MAX</b>	1.447155	1.44730771	1.44883502
<b>MIN</b>	1.42837	1.4300499	1.4300499
<b>STD_dev</b>	0.013283	0.01220311	0.01328309

Delta			
Device ID	0.0 krad	50.0 krad	100.0 krad
3		0.0016799	0.0016799
4		0.00015271	0.00168002
<b>Average</b>		0.0009163	0.00167996
<b>MAX</b>		0.0016799	0.00168002
<b>MIN</b>		0.00015271	0.0016799
<b>STD_dev</b>		0.00107989	8.4146E-08

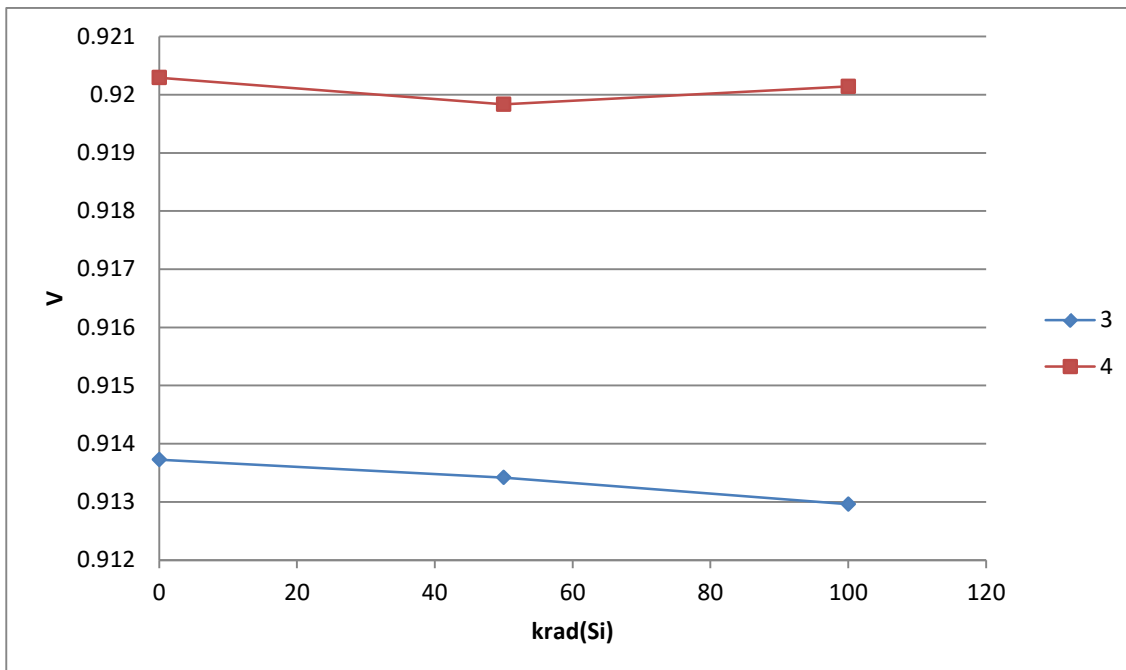


10962 VICM/CMOS/CLKIN1P/3.465

Limit\_Min 0.80000001 Limit\_Max 1.70000005 V

Device ID	0.0 krad	50.0 krad	100.0 krad
3	0.91372538	0.9134199	0.91296172
4	0.92029238	0.91983426	0.92013967
<b>Average</b>	0.91700888	0.91662708	0.9165507
<b>MAX</b>	0.92029238	0.91983426	0.92013967
<b>MIN</b>	0.91372538	0.9134199	0.91296172
<b>STD_dev</b>	0.00464357	0.00453563	0.00507558

Delta			
Device ID	0.0 krad	50.0 krad	100.0 krad
3		-0.0003055	-0.0007637
4		-0.0004581	-0.0001527
<b>Average</b>		-0.0003818	-0.0004582
<b>MAX</b>		-0.0003055	-0.0001527
<b>MIN</b>		-0.0004581	-0.0007637
<b>STD_dev</b>		0.00010794	0.00043201

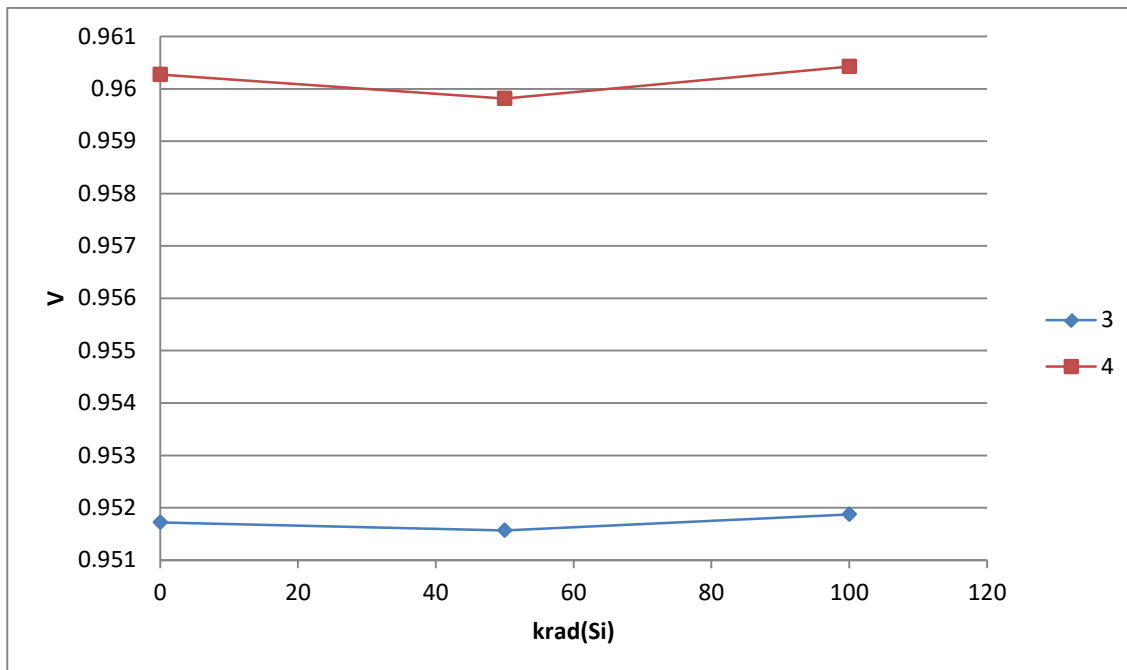


10963 VICM/CMOS/CLKIN1B/3.465

Limit\_Min 0.80000001 Limit\_Max 1.70000005 V

Device ID	0.0 krad	50.0 krad	100.0 krad
3	0.9517203	0.95156759	0.951873
4	0.96027255	0.95981443	0.96042526
<b>Average</b>	0.95599642	0.95569101	0.95614913
<b>MAX</b>	0.96027255	0.95981443	0.96042526
<b>MIN</b>	0.9517203	0.95156759	0.951873
<b>STD_dev</b>	0.00604736	0.0058314	0.00604736

Delta			
Device ID	0.0 krad	50.0 krad	100.0 krad
3		-0.0001527	0.00015271
4		-0.0004581	0.00015271
<b>Average</b>		-0.0003054	0.00015271
<b>MAX</b>		-0.0001527	0.00015271
<b>MIN</b>		-0.0004581	0.00015271
<b>STD_dev</b>		0.00021596	7.8505E-17

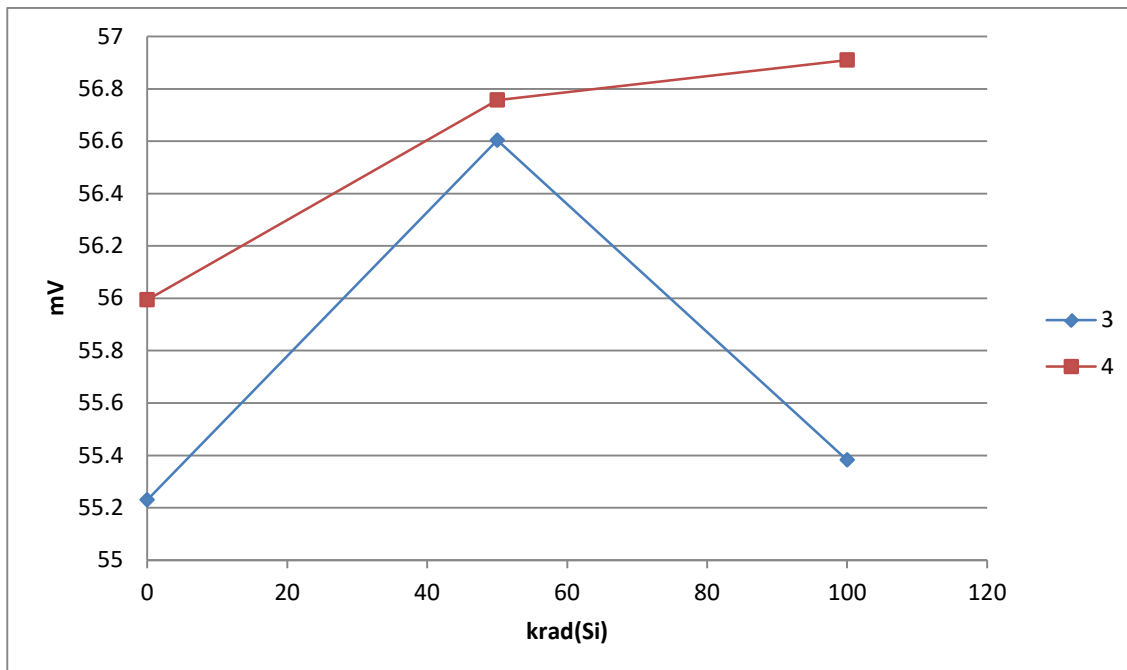


10966 OFFSET/CMOS/CLKIN0/3.465

Limit\_Min 37.2800007 Limit\_Max 75.4500031 mV

Device ID	0.0 krad	50.0 krad	100.0 krad
3	55.2293053	56.6037903	55.3820114
4	55.993557	56.7570915	56.9099197
<b>Average</b>	55.6114311	56.6804409	56.1459656
<b>MAX</b>	55.993557	56.7570915	56.9099197
<b>MIN</b>	55.2293053	56.6037903	55.3820114
<b>STD_dev</b>	0.54040757	0.10840035	1.08039434

Delta			
Device ID	0.0 krad	50.0 krad	100.0 krad
3		1.37448502	0.15270615
4		0.76353455	0.91636276
<b>Average</b>		1.06900978	0.53453445
<b>MAX</b>		1.37448502	0.91636276
<b>MIN</b>		0.76353455	0.15270615
<b>STD_dev</b>		0.43200722	0.53998677

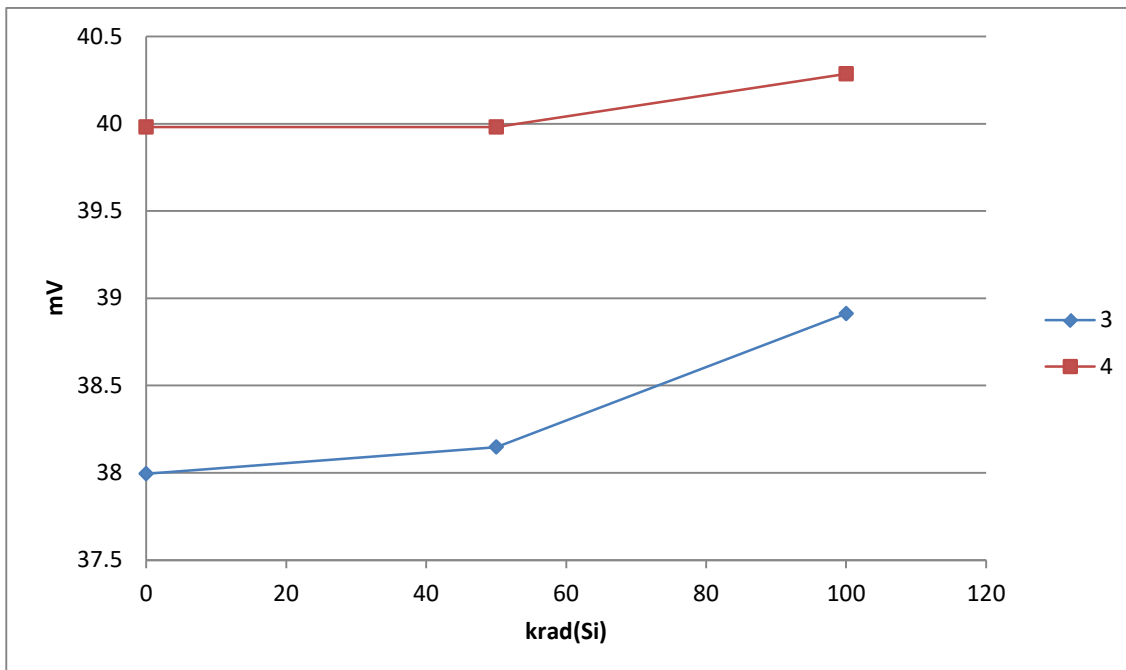


10967 OFFSET/CMOS/CLKIN1/3.465

Limit\_Min -160 Limit\_Max 159.999996 mV

Device ID	0.0 krad	50.0 krad	100.0 krad
3	37.9949226	38.1476898	38.9112816
4	39.9801712	39.9801712	40.2855873
<b>Average</b>	38.9875469	39.0639305	39.5984344
<b>MAX</b>	39.9801712	39.9801712	40.2855873
<b>MIN</b>	37.9949226	38.1476898	38.9112816
<b>STD_dev</b>	1.40378272	1.29576001	0.9717809

Delta			
Device ID	0.0 krad	50.0 krad	100.0 krad
3		0.15276718	0.91635895
4		0	0.30541611
<b>Average</b>		0.07638359	0.61088753
<b>MAX</b>		0.15276718	0.91635895
<b>MIN</b>		0	0.30541611
<b>STD_dev</b>		0.10802271	0.43200183

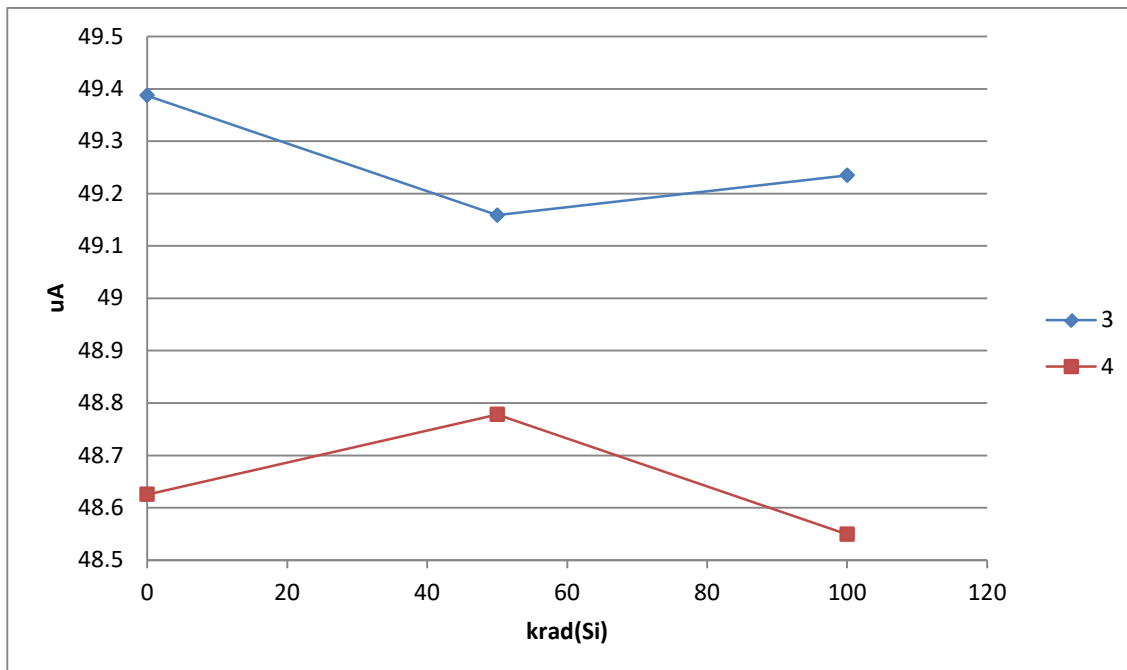


10969 IIH/CMOS/CLKIN0P/2.4/3.465

Limit\_Min 24.9999994 Limit\_Max 75.0000036 uA

Device ID	0.0 krad	50.0 krad	100.0 krad
3	49.387207	49.1586685	49.234848
4	48.6254158	48.777771	48.5492363
<b>Average</b>	49.0063114	48.9682198	48.8920422
<b>MAX</b>	49.387207	49.1586685	49.234848
<b>MIN</b>	48.6254158	48.777771	48.5492363
<b>STD_dev</b>	0.53866774	0.26933522	0.4848007

Delta			
Device ID	0.0 krad	50.0 krad	100.0 krad
3		-0.2285385	-0.152359
4		0.15235519	-0.0761795
<b>Average</b>		-0.0380917	-0.1142693
<b>MAX</b>		0.15235519	-0.0761795
<b>MIN</b>		-0.2285385	-0.152359
<b>STD_dev</b>		0.26933252	0.05386704

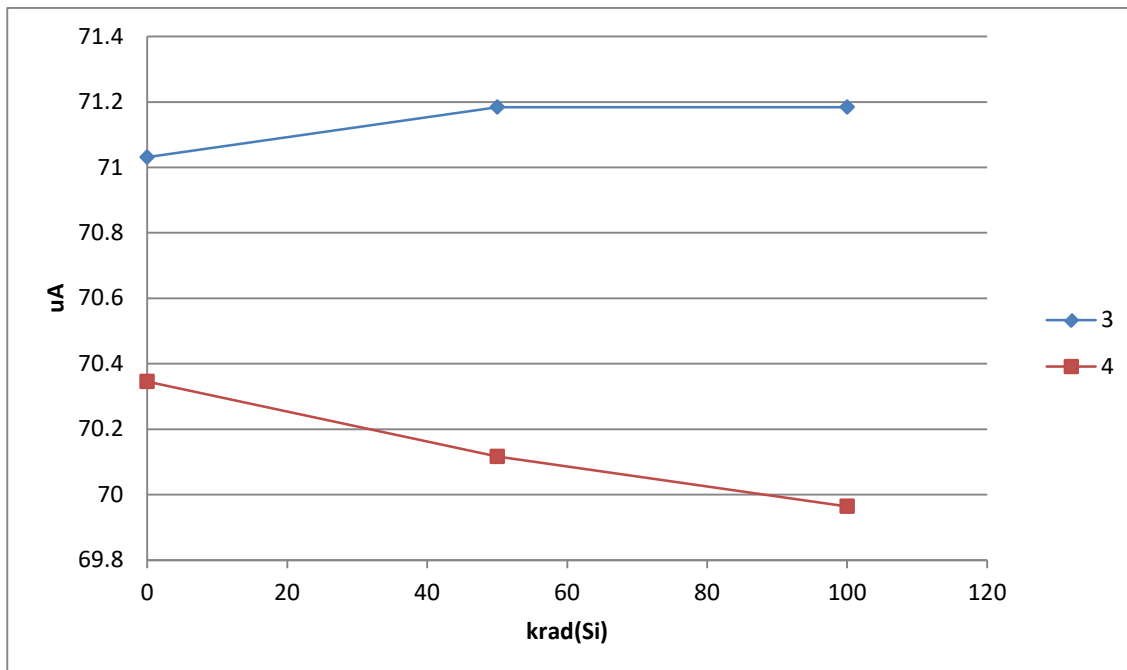


10970 IIH/CMOS/CLKIN1P/2.4/3.465

Limit\_Min 35.0000009 Limit\_Max 82.999999 uA

Device ID	0.0 krad	50.0 krad	100.0 krad
3	71.0312271	71.1836548	71.1836548
4	70.3453064	70.1166611	69.9642334
<b>Average</b>	70.6882668	70.6501579	70.5739441
<b>MAX</b>	71.0312271	71.1836548	71.1836548
<b>MIN</b>	70.3453064	70.1166611	69.9642334
<b>STD_dev</b>	0.48501919	0.75447849	0.86226113

Delta			
Device ID	0.0 krad	50.0 krad	100.0 krad
3		0.15242767	0.15242767
4		-0.2286453	-0.381073
<b>Average</b>		-0.0381088	-0.1143227
<b>MAX</b>		0.15242767	0.15242767
<b>MIN</b>		-0.2286453	-0.381073
<b>STD_dev</b>		0.2694593	0.37724194



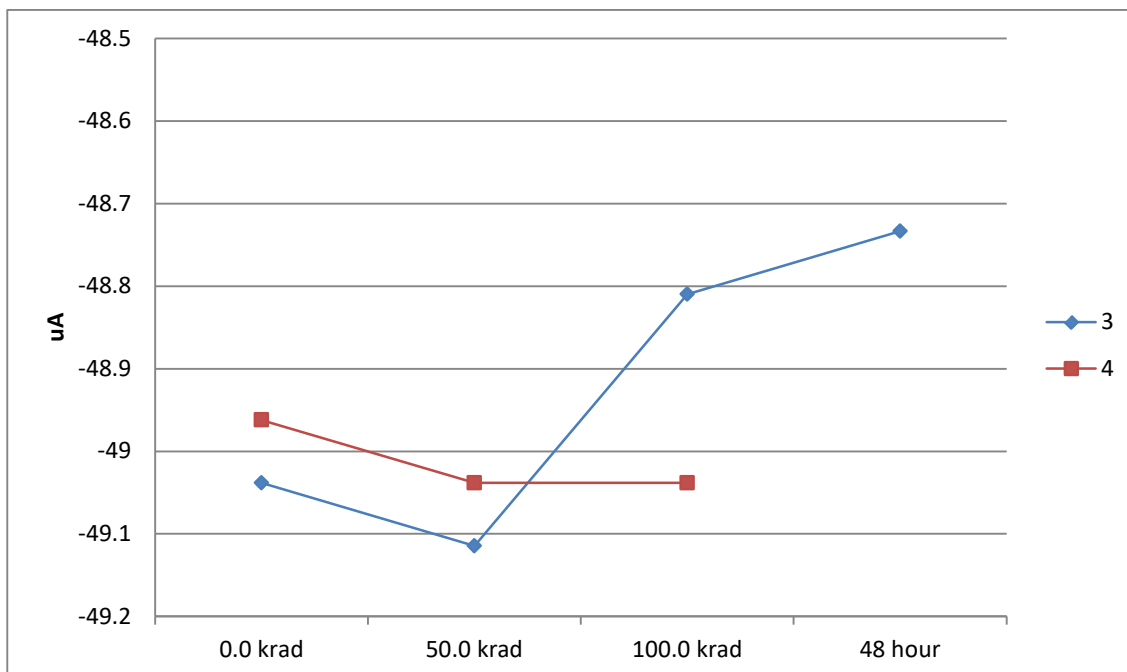


10972 IIL/CMOS/CLKIN0B/0.4/3.465

Limit\_Min -85 Limit\_Max -4.9999999 uA

Device ID	0.0 krad	50.0 krad	100.0 krad	48 hour
3	-49.038315	-49.114544	-48.809628	-48.733395
4	-48.962086	-49.038315	-49.038315	
<b>Average</b>	-49.0002	-49.076429	-48.923971	
<b>MAX</b>	-48.962086	-49.038315	-48.809628	
<b>MIN</b>	-49.038315	-49.114544	-49.038315	
<b>STD_dev</b>	0.05390211	0.05390211	0.16170633	

Delta				
Device ID	0.0 krad	50.0 krad	100.0 krad	48 hour
3		-0.0762291	0.22868729	0.30492022
4		-0.0762291	-0.0762291	
<b>Average</b>		-0.0762291	0.0762291	
<b>MAX</b>		-0.0762291	0.22868729	
<b>MIN</b>		-0.0762291	-0.0762291	
<b>STD_dev</b>		2.8284E-10	0.21560844	

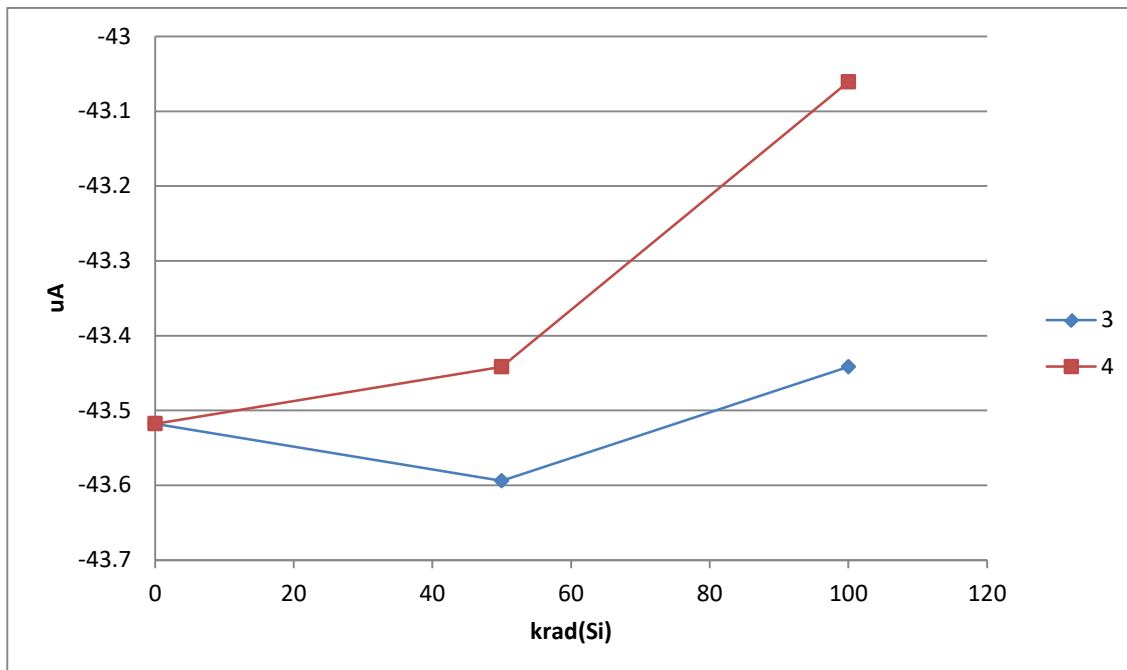


10973 IIL/CMOS/CLKIN1B/0.4/3.465

Limit\_Min -85 Limit\_Max -4.9999999 uA

Device ID	0.0 krad	50.0 krad	100.0 krad
3	-43.517864	-43.594063	-43.441662
4	-43.517864	-43.441662	-43.060661
<b>Average</b>	-43.517864	-43.517862	-43.251162
<b>MAX</b>	-43.517864	-43.441662	-43.060661
<b>MIN</b>	-43.517864	-43.594063	-43.441662
<b>STD_dev</b>	0	0.10776376	0.26940805

Delta			
Device ID	0.0 krad	50.0 krad	100.0 krad
3		-0.0761986	0.07620239
4		0.07620239	0.45720291
<b>Average</b>		1.907E-06	0.26670265
<b>MAX</b>		0.07620239	0.45720291
<b>MIN</b>		-0.0761986	0.07620239
<b>STD_dev</b>		0.10776376	0.26940805

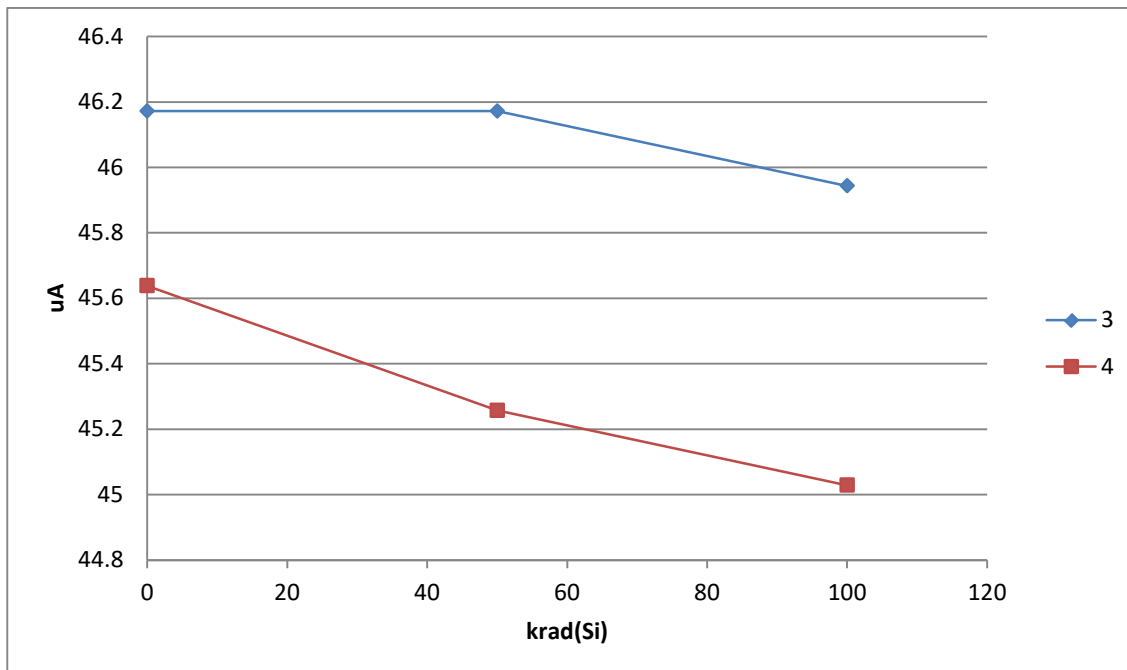


10975 IIH/CMOS/CLKIN0B/2.4/3.465

Limit\_Min 24.9999994 Limit\_Max 75.0000036 uA

Device ID	0.0 krad	50.0 krad	100.0 krad
3	46.1720963	46.1720963	45.943409
4	45.6384926	45.2573433	45.0286522
<b>Average</b>	45.9052944	45.7147198	45.4860306
<b>MAX</b>	46.1720963	46.1720963	45.943409
<b>MIN</b>	45.6384926	45.2573433	45.0286522
<b>STD_dev</b>	0.37731477	0.64682802	0.64683072

Delta			
Device ID	0.0 krad	50.0 krad	100.0 krad
3		0	-0.2286873
4		-0.3811493	-0.6098404
<b>Average</b>		-0.1905746	-0.4192638
<b>MAX</b>		0	-0.2286873
<b>MIN</b>		-0.3811493	-0.6098404
<b>STD_dev</b>		0.26951325	0.26951595

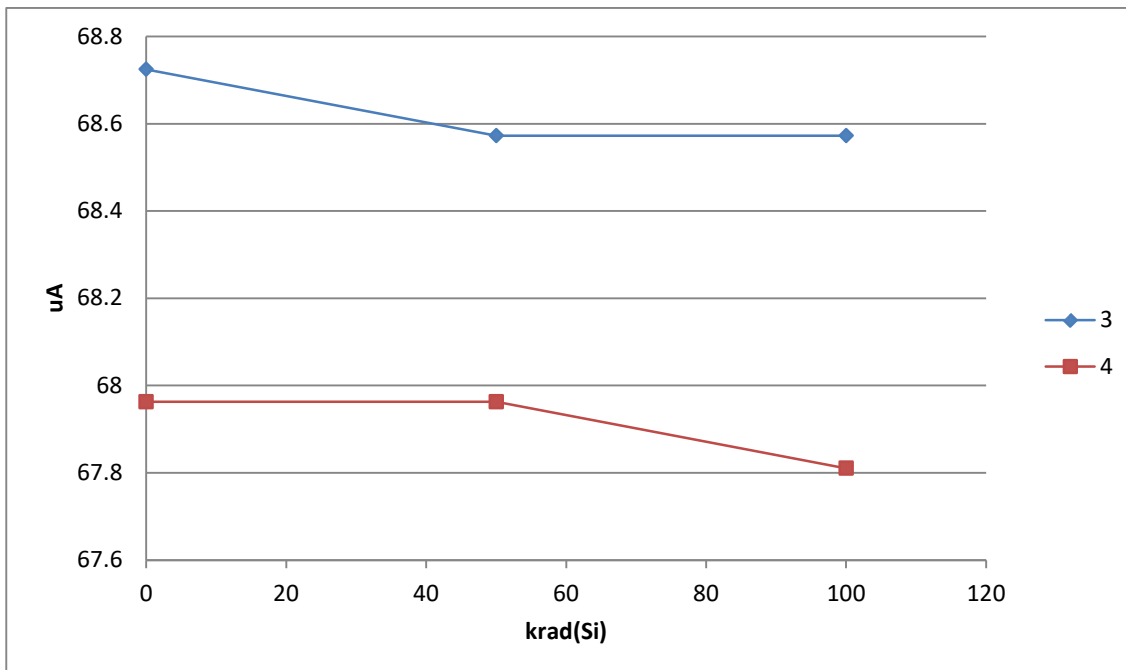


10976 IH/CMOS/CLKIN1B/2.4/3.465

Limit\_Min 35.0000009 Limit\_Max 82.999999 uA

Device ID	0.0 krad	50.0 krad	100.0 krad
3	68.7248459	68.5724411	68.5724411
4	67.9628448	67.9628448	67.8104401
<b>Average</b>	68.3438454	68.267643	68.1914406
<b>MAX</b>	68.7248459	68.5724411	68.5724411
<b>MIN</b>	67.9628448	67.9628448	67.8104401
<b>STD_dev</b>	0.5388161	0.43104964	0.5388161

Delta			
Device ID	0.0 krad	50.0 krad	100.0 krad
3		-0.1524048	-0.1524048
4		0	-0.1524048
<b>Average</b>		-0.0762024	-0.1524048
<b>MAX</b>		0	-0.1524048
<b>MIN</b>		-0.1524048	-0.1524048
<b>STD_dev</b>		0.10776646	7.0711E-10

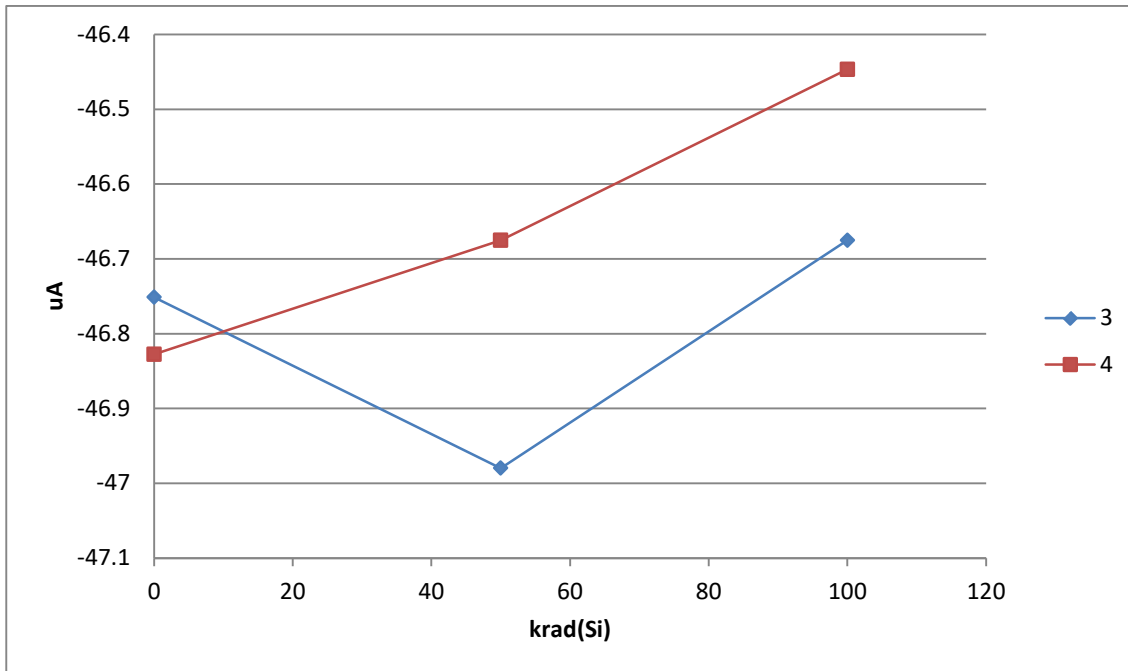


10978 IIL/CMOS/CLKIN0P/0.4/3.465

Limit\_Min -85 Limit\_Max -4.9999999 uA

Device ID	0.0 krad	50.0 krad	100.0 krad
3	-46.751396	-46.979939	-46.67522
4	-46.827579	-46.67522	-46.446678
<b>Average</b>	-46.789488	-46.827579	-46.560949
<b>MAX</b>	-46.751396	-46.67522	-46.446678
<b>MIN</b>	-46.827579	-46.979939	-46.67522
<b>STD_dev</b>	0.05386974	0.21546818	0.16160383

Delta			
Device ID	0.0 krad	50.0 krad	100.0 krad
3		-0.2285423	0.07617569
4		0.15235901	0.38090134
<b>Average</b>		-0.0380917	0.22853851
<b>MAX</b>		0.15235901	0.38090134
<b>MIN</b>		-0.2285423	0.07617569
<b>STD_dev</b>		0.26933792	0.21547357

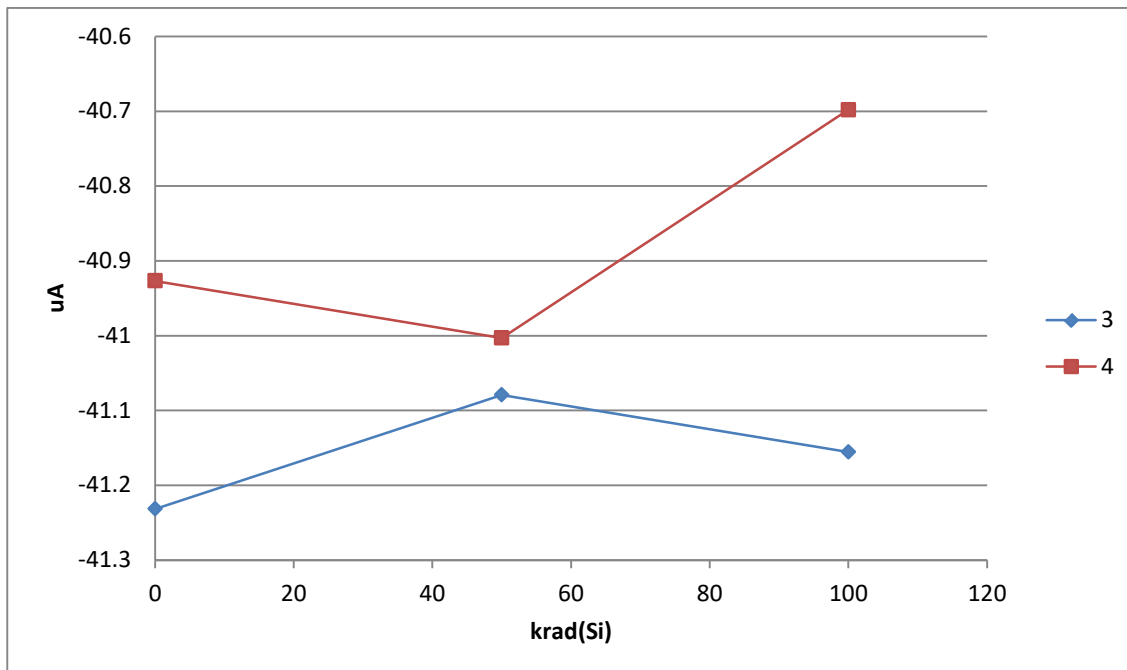


10979 IIL/CMOS/CLKIN1P/0.4/3.465

Limit\_Min -85 Limit\_Max -4.9999999 uA

Device ID	0.0 krad	50.0 krad	100.0 krad
3	-41.231647	-41.07922	-41.155434
4	-40.926792	-41.003006	-40.698151
<b>Average</b>	-41.07922	-41.041113	-40.926792
<b>MAX</b>	-40.926792	-41.003006	-40.698151
<b>MIN</b>	-41.231647	-41.07922	-41.155434
<b>STD_dev</b>	0.21556528	0.05389132	0.32334792

Delta			
Device ID	0.0 krad	50.0 krad	100.0 krad
3		0.15242767	0.07621384
4		-0.0762138	0.22864151
<b>Average</b>		0.03810692	0.15242767
<b>MAX</b>		0.15242767	0.22864151
<b>MIN</b>		-0.0762138	0.07621384
<b>STD_dev</b>		0.16167396	0.10778264

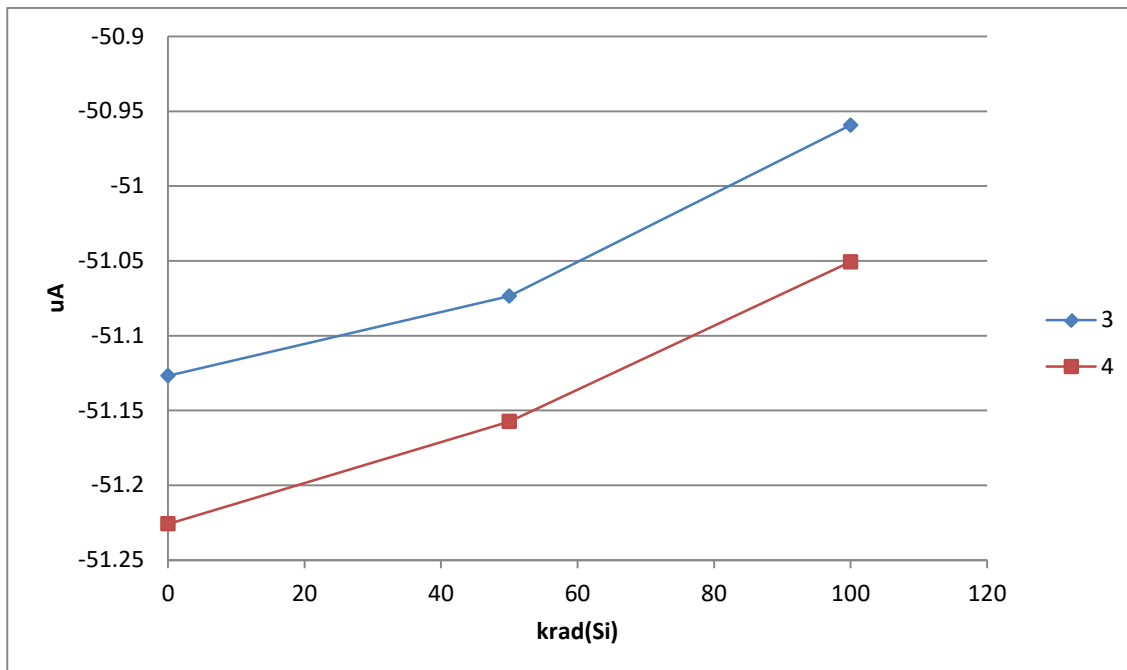


12017 ICP1\_SINK\_X0/3.465

Limit\_Min -72.000003 Limit\_Max -32 uA

Device ID	0.0 krad	50.0 krad	100.0 krad
3	-51.126869	-51.07354	-50.959267
4	-51.22591	-51.157345	-51.050686
<b>Average</b>	-51.17639	-51.115442	-51.004976
<b>MAX</b>	-51.126869	-51.07354	-50.959267
<b>MIN</b>	-51.22591	-51.157345	-51.050686
<b>STD_dev</b>	0.07003255	0.05925914	0.06464315

Delta			
Device ID	0.0 krad	50.0 krad	100.0 krad
3		0.05332947	0.16760254
4		0.06856537	0.1752243
<b>Average</b>		0.06094742	0.17141342
<b>MAX</b>		0.06856537	0.1752243
<b>MIN</b>		0.05332947	0.16760254
<b>STD_dev</b>		0.01077341	0.0053894

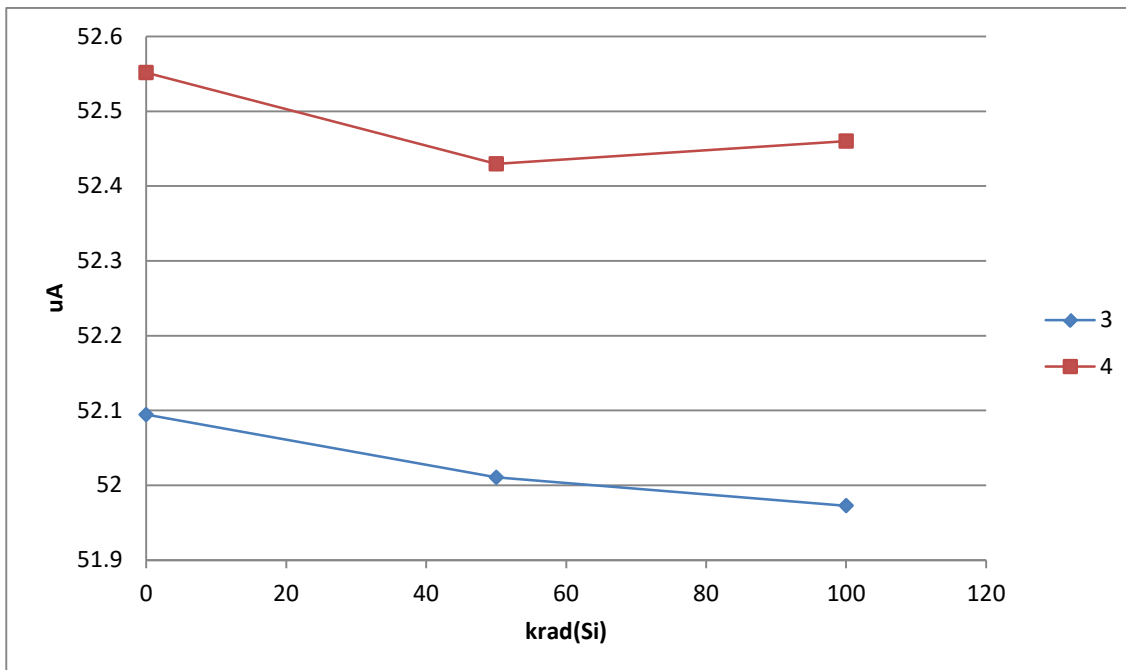


12018 ICP1\_SRC\_X0/3.465

Limit\_Min 26.3000002 Limit\_Max 80.1999995 uA

Device ID	0.0 krad	50.0 krad	100.0 krad
3	52.0944061	52.0106049	51.9725113
4	52.5515099	52.4296112	52.4600868
<b>Average</b>	52.322958	52.220108	52.2162991
<b>MAX</b>	52.5515099	52.4296112	52.4600868
<b>MIN</b>	52.0944061	52.0106049	51.9725113
<b>STD_dev</b>	0.32322115	0.29628223	0.34476796

Delta			
Device ID	0.0 krad	50.0 krad	100.0 krad
3		-0.0838013	-0.1218948
4		-0.1218987	-0.091423
<b>Average</b>		-0.10285	-0.1066589
<b>MAX</b>		-0.0838013	-0.091423
<b>MIN</b>		-0.1218987	-0.1218948
<b>STD_dev</b>		0.02693892	0.02154682





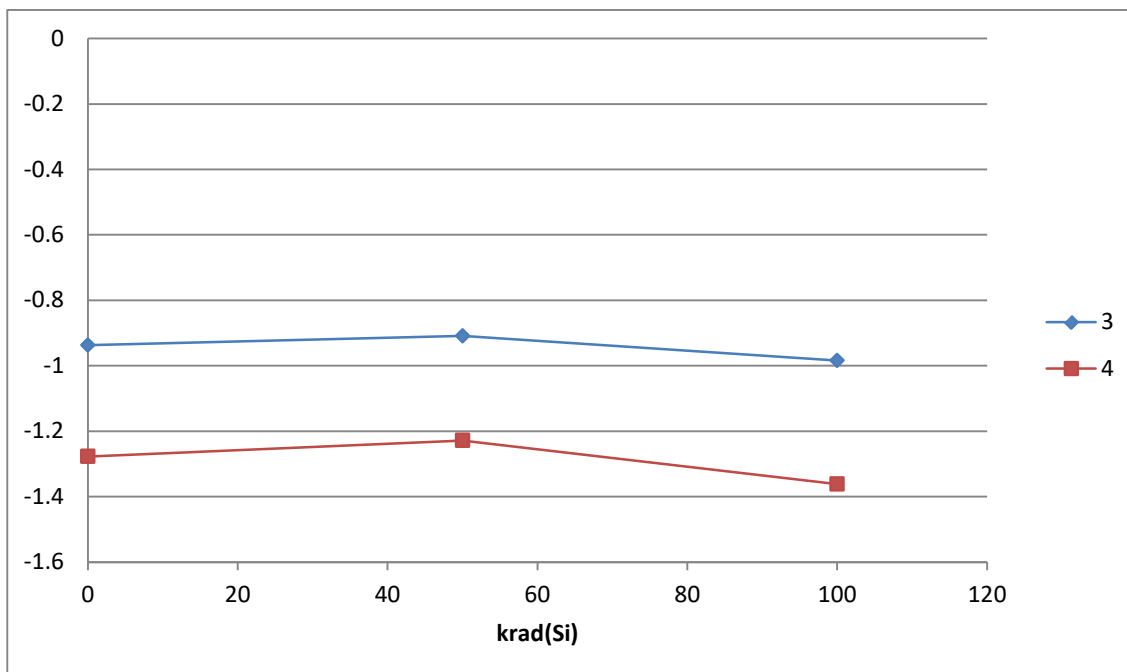
12019 ICP1\_MISMATCH\_X0/3.465

uA

Limit\_Min -10 Limit\_Max 10

Device ID	0.0 krad	50.0 krad	100.0 krad
3	-0.9373407	-0.9090276	-0.9843826
4	-1.2773486	-1.2282113	-1.3615977
<b>Average</b>	-1.1073447	-1.0686194	-1.1729901
<b>MAX</b>	-0.9373407	-0.9090276	-0.9843826
<b>MIN</b>	-1.2773486	-1.2282113	-1.3615977
<b>STD_dev</b>	0.24042193	0.22569696	0.2667313

Delta			
Device ID	0.0 krad	50.0 krad	100.0 krad
3		0.0283131	-0.047042
4		0.04913735	-0.084249
<b>Average</b>		0.03872523	-0.0656455
<b>MAX</b>		0.04913735	-0.047042
<b>MIN</b>		0.0283131	-0.084249
<b>STD_dev</b>		0.01472497	0.02630937

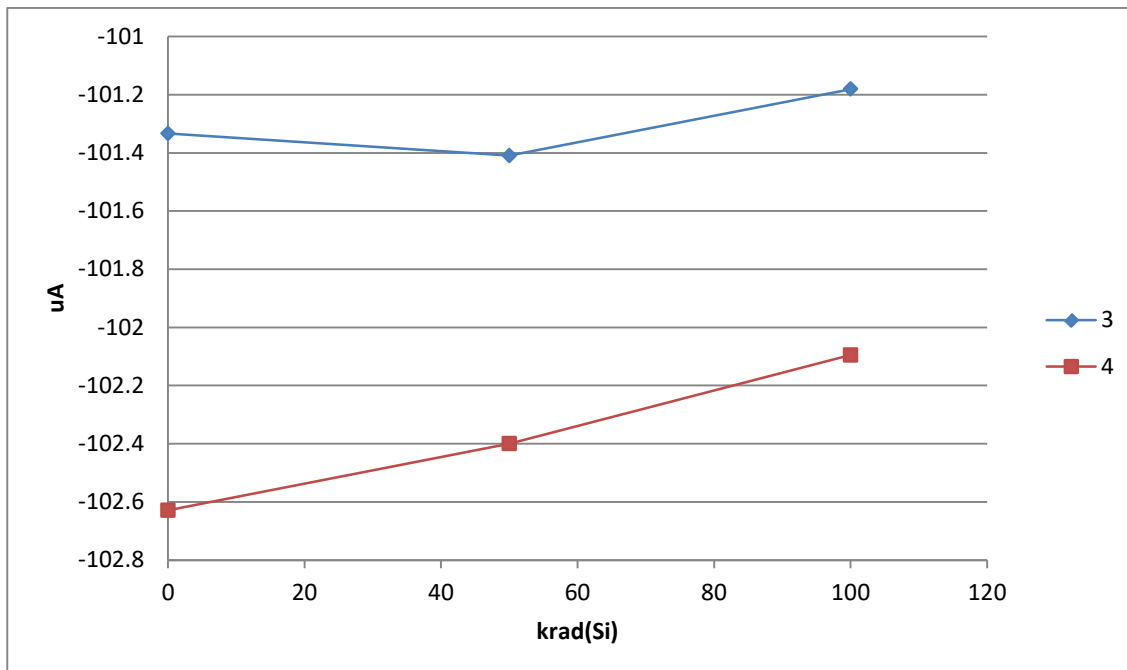


12037 ICP2\_SINK\_X0/3.465

Limit\_Min -125.00001 Limit\_Max -75.000004 uA

Device ID	0.0 krad	50.0 krad	100.0 krad
3	-101.33356	-101.40975	-101.18117
4	-102.6288	-102.40023	-102.09547
<b>Average</b>	-101.98118	-101.90499	-101.63832
<b>MAX</b>	-101.33356	-101.40975	-101.18117
<b>MIN</b>	-102.6288	-102.40023	-102.09547
<b>STD_dev</b>	0.91587462	0.70037408	0.64650703

Delta			
Device ID	0.0 krad	50.0 krad	100.0 krad
3		-0.0761948	0.15238953
4		0.22856903	0.53333282
<b>Average</b>		0.07618713	0.34286118
<b>MAX</b>		0.22856903	0.53333282
<b>MIN</b>		-0.0761948	0.15238953
<b>STD_dev</b>		0.21550054	0.26936759

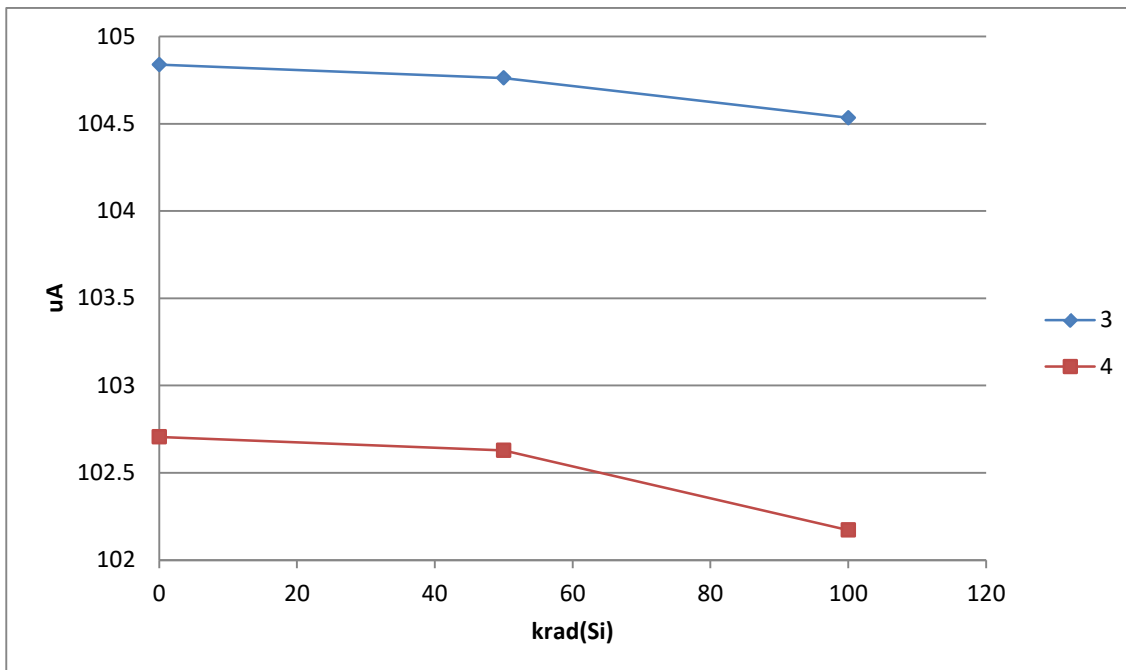


12038 ICP2\_SRC\_X0/3.465

Limit\_Min 75.0000036 Limit\_Max 134.999995 uA

Device ID	0.0 krad	50.0 krad	100.0 krad
3	104.838326	104.762131	104.533569
4	102.704994	102.628799	102.171654
<b>Average</b>	103.77166	103.695465	103.352612
<b>MAX</b>	104.838326	104.762131	104.533569
<b>MIN</b>	102.704994	102.628799	102.171654
<b>STD_dev</b>	1.50849303	1.50849303	1.67012653

Delta			
Device ID	0.0 krad	50.0 krad	100.0 krad
3		-0.0761948	-0.3047562
4		-0.0761948	-0.5333405
<b>Average</b>		-0.0761948	-0.4190483
<b>MAX</b>		-0.0761948	-0.3047562
<b>MIN</b>		-0.0761948	-0.5333405
<b>STD_dev</b>		7.0711E-10	0.1616335



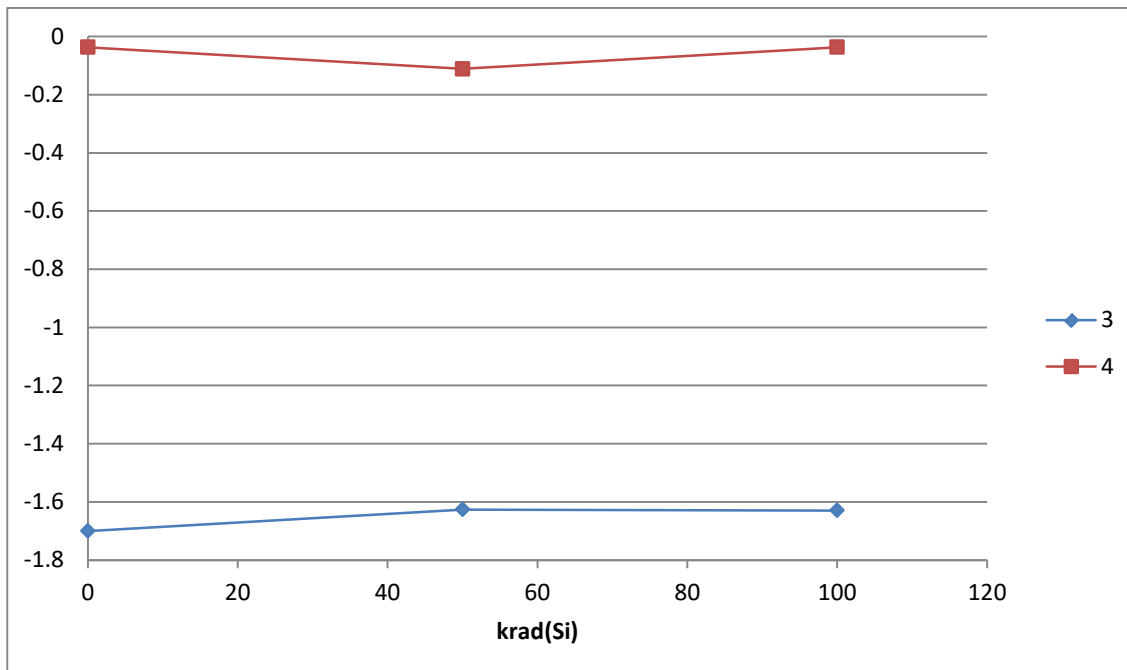
12039 ICP2\_MISMATCH\_X0/3.465

uA

Limit\_Min            -7    Limit\_Max            7

Device ID	0.0 krad	50.0 krad	100.0 krad
3	-1.6999265	-1.6260136	-1.6296341
4	-0.0371073	-0.1114838	-0.0372975
<b>Average</b>	-0.8685169	-0.8687487	-0.8334658
<b>MAX</b>	-0.0371073	-0.1114838	-0.0372975
<b>MIN</b>	-1.6999265	-1.6260136	-1.6296341
<b>STD_dev</b>	1.17579073	1.0709343	1.12595203

Delta			
Device ID	0.0 krad	50.0 krad	100.0 krad
3		0.07391286	0.07029235
4		-0.0743765	-0.0001902
<b>Average</b>		-0.0002318	0.03505107
<b>MAX</b>		0.07391286	0.07029235
<b>MIN</b>		-0.0743765	-0.0001902
<b>STD_dev</b>		0.10485643	0.0498387

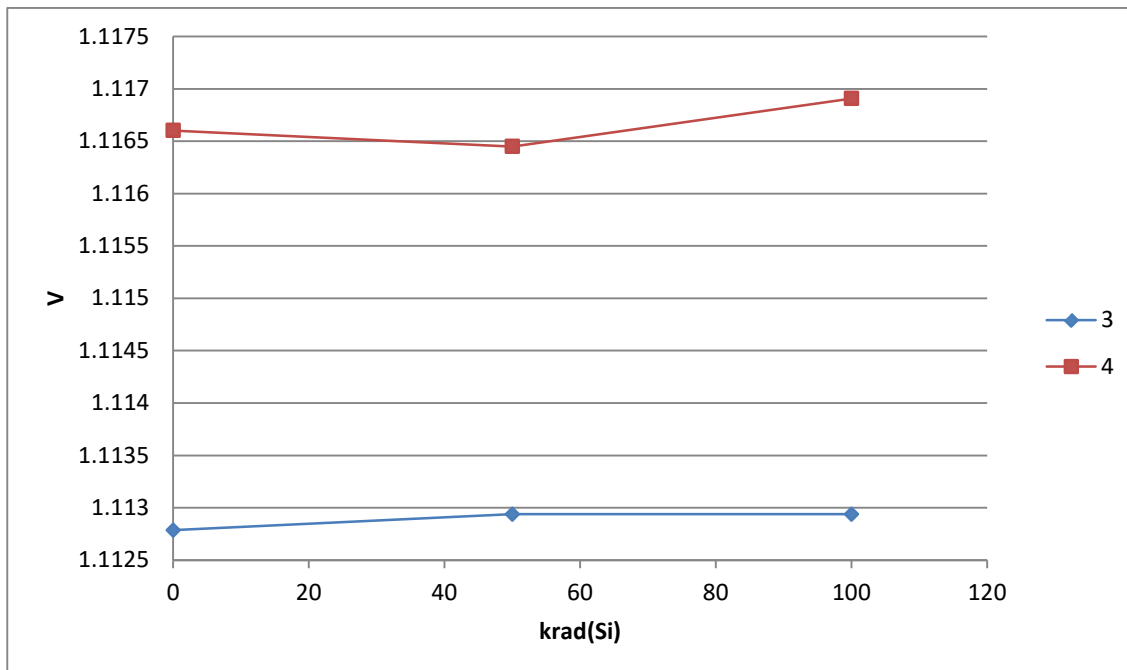


12055 VBG/SEL1/3.465

Limit\_Min 0.85000002 Limit\_Max 1.29999995 V

Device ID	0.0 krad	50.0 krad	100.0 krad
3	1.11278486	1.11293757	1.11293757
4	1.11660266	1.11644995	1.11690807
<b>Average</b>	1.11469376	1.11469376	1.11492282
<b>MAX</b>	1.11660266	1.11644995	1.11690807
<b>MIN</b>	1.11278486	1.11293757	1.11293757
<b>STD_dev</b>	0.00269959	0.00248363	0.00280757

Delta			
Device ID	0.0 krad	50.0 krad	100.0 krad
3		0.00015271	0.00015271
4		-0.0001527	0.00030541
<b>Average</b>		0	0.00022906
<b>MAX</b>		0.00015271	0.00030541
<b>MIN</b>		-0.0001527	0.00015271
<b>STD_dev</b>		0.00021596	0.00010798

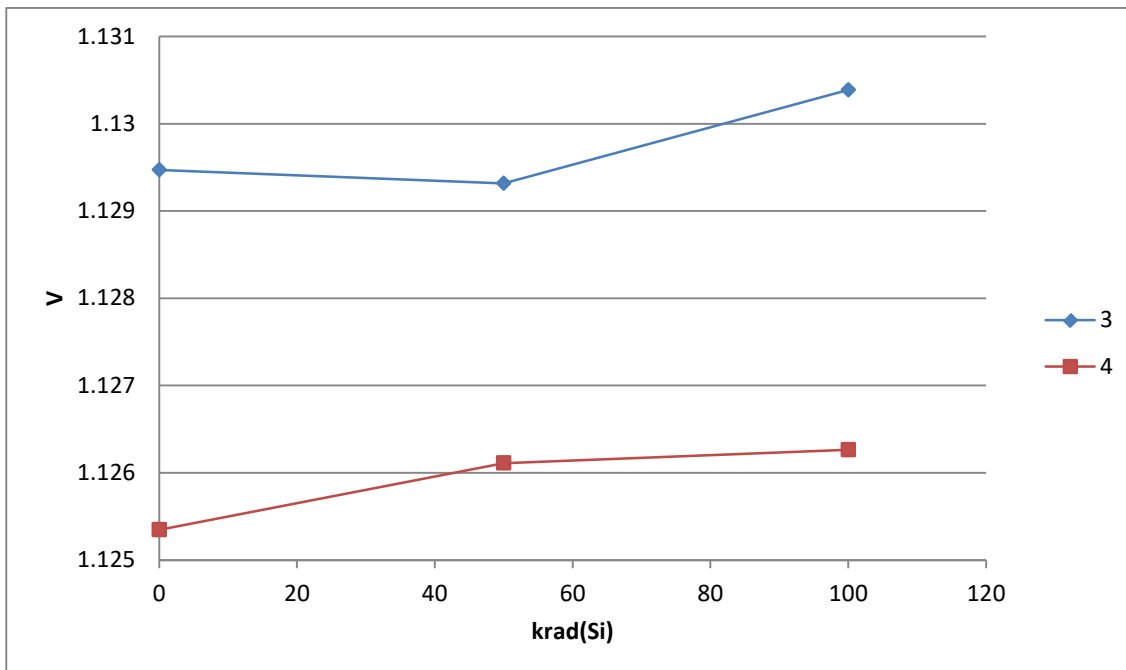


12058 PLL1\_R\_BIAS\_VBG/LD2/3.465

Limit\_Min 0.80000001 Limit\_Max 1.29999995 V

Device ID	0.0 krad	50.0 krad	100.0 krad
3	1.12946999	1.12931728	1.13038623
4	1.12534666	1.1261102	1.1262629
<b>Average</b>	1.12740833	1.12771374	1.12832457
<b>MAX</b>	1.12946999	1.12931728	1.13038623
<b>MIN</b>	1.12534666	1.1261102	1.1262629
<b>STD_dev</b>	0.00291563	0.00226775	0.00291563

Delta			
Device ID	0.0 krad	50.0 krad	100.0 krad
3		-0.0001527	0.00091624
4		0.00076353	0.00091624
<b>Average</b>		0.00030541	0.00091624
<b>MAX</b>		0.00076353	0.00091624
<b>MIN</b>		-0.0001527	0.00091624
<b>STD_dev</b>		0.00064788	1.5701E-16

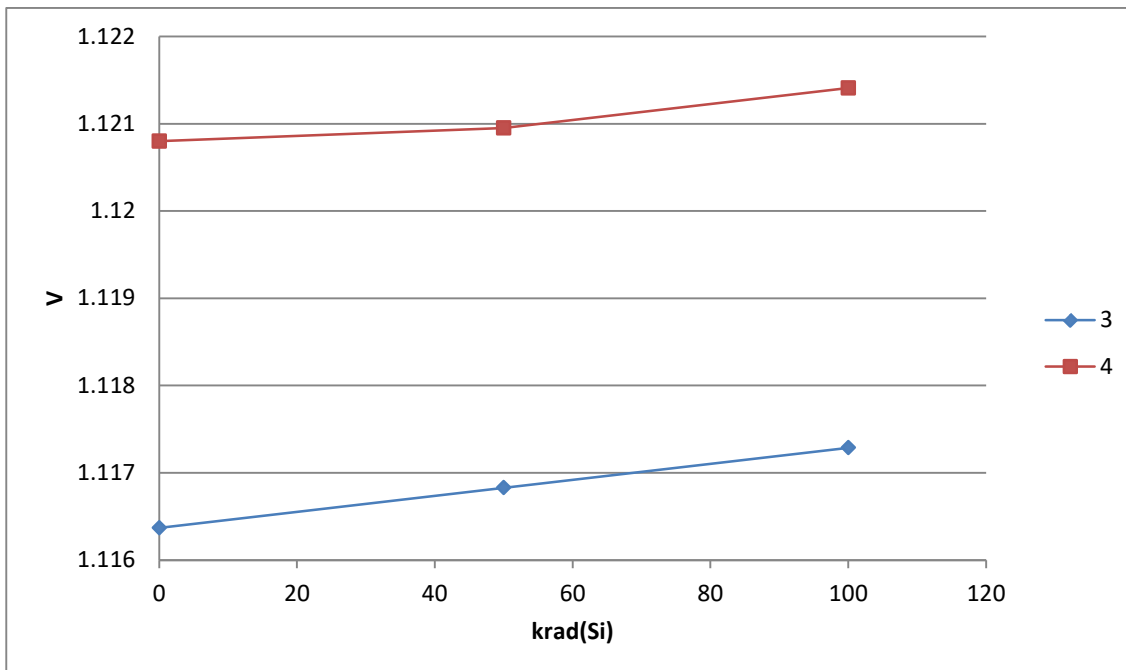


12059 PLL2\_N\_BIAS\_VBG/LD1/3.465

Limit\_Min 0.80000001 Limit\_Max 1.29999995 V

Device ID	0.0 krad	50.0 krad	100.0 krad
3	1.11637044	1.11682856	1.1172868
4	1.12079918	1.12095189	1.12141013
<b>Average</b>	1.11858481	1.11889023	1.11934847
<b>MAX</b>	1.12079918	1.12095189	1.12141013
<b>MIN</b>	1.11637044	1.11682856	1.1172868
<b>STD_dev</b>	0.00313159	0.00291563	0.00291563

Delta			
Device ID	0.0 krad	50.0 krad	100.0 krad
3		0.00045812	0.00091636
4		0.00015271	0.00061095
<b>Average</b>		0.00030541	0.00076365
<b>MAX</b>		0.00045812	0.00091636
<b>MIN</b>		0.00015271	0.00061095
<b>STD_dev</b>		0.00021596	0.00021596

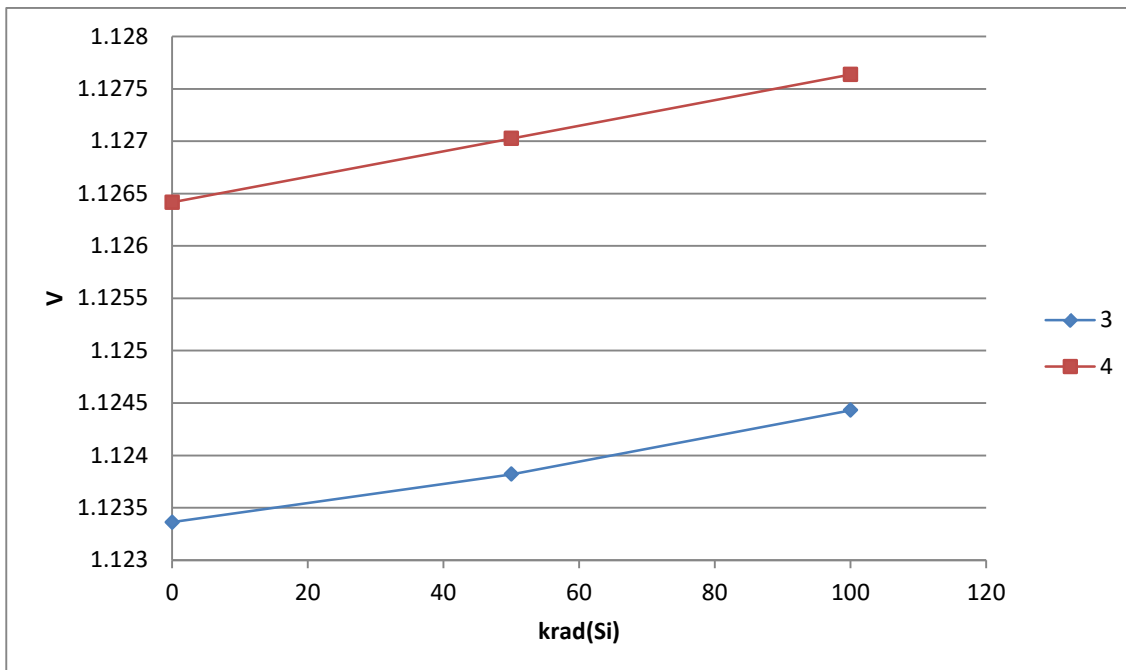


12060 PLL2\_R\_BIAS\_VBG/LD2/3.465

Limit\_Min 0.80000001 Limit\_Max 1.35000002 V

Device ID	0.0 krad	50.0 krad	100.0 krad
3	1.12336135	1.12381947	1.12443042
4	1.12641561	1.12702656	1.12763739
<b>Average</b>	1.12488848	1.12542301	1.1260339
<b>MAX</b>	1.12641561	1.12702656	1.12763739
<b>MIN</b>	1.12336135	1.12381947	1.12443042
<b>STD_dev</b>	0.00215969	0.00226775	0.00226767

Delta			
Device ID	0.0 krad	50.0 krad	100.0 krad
3		0.00045812	0.00106907
4		0.00061095	0.00122178
<b>Average</b>		0.00053453	0.00114542
<b>MAX</b>		0.00061095	0.00122178
<b>MIN</b>		0.00045812	0.00106907
<b>STD_dev</b>		0.00010807	0.00010798



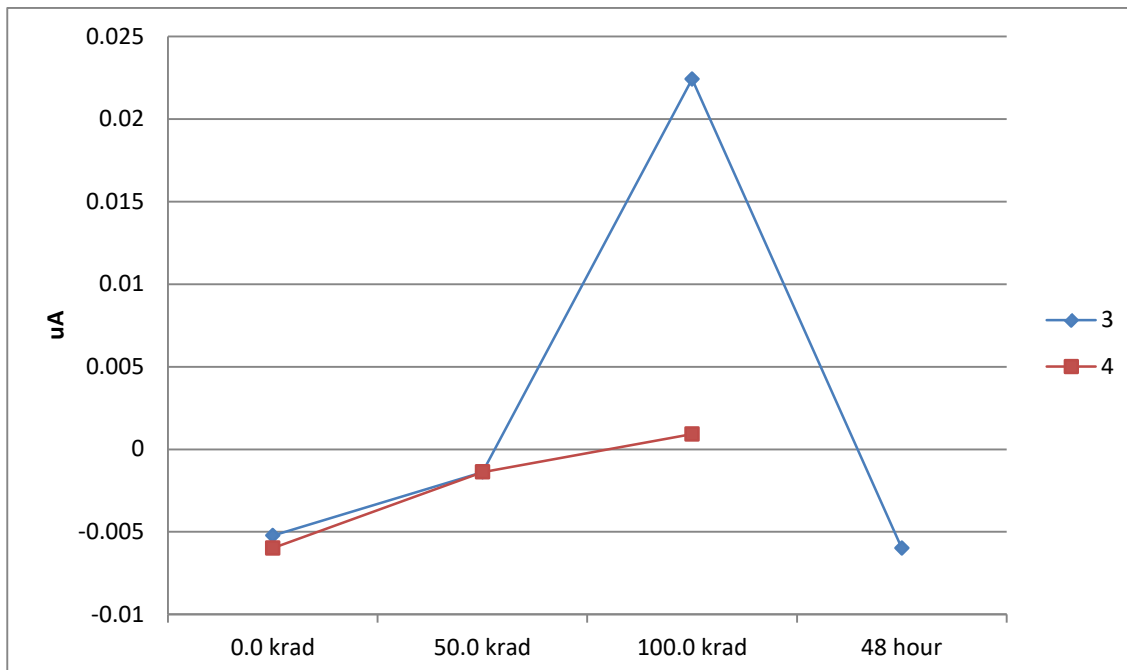


12092 IIH/SELO/HIZ/3.465

Limit\_Min -6.0000002 Limit\_Max 6.00000021 uA

Device ID	0.0 krad	50.0 krad	100.0 krad	48 hour
3	-0.0052212	-0.0013821	0.02242031	-0.005989
4	-0.005989	-0.0013821	0.00092138	
<b>Average</b>	-0.0056051	-0.0013821	0.01167085	
<b>MAX</b>	-0.0052212	-0.0013821	0.02242031	
<b>MIN</b>	-0.005989	-0.0013821	0.00092138	
<b>STD_dev</b>	0.00054293	0	0.01520204	

Delta				
Device ID	0.0 krad	50.0 krad	100.0 krad	48 hour
3		0.0038391	0.02764148	-0.0007678
4		0.00460691	0.00691037	
<b>Average</b>		0.004223	0.01727593	
<b>MAX</b>		0.00460691	0.02764148	
<b>MIN</b>		0.0038391	0.00691037	
<b>STD_dev</b>		0.00054293	0.01465911	

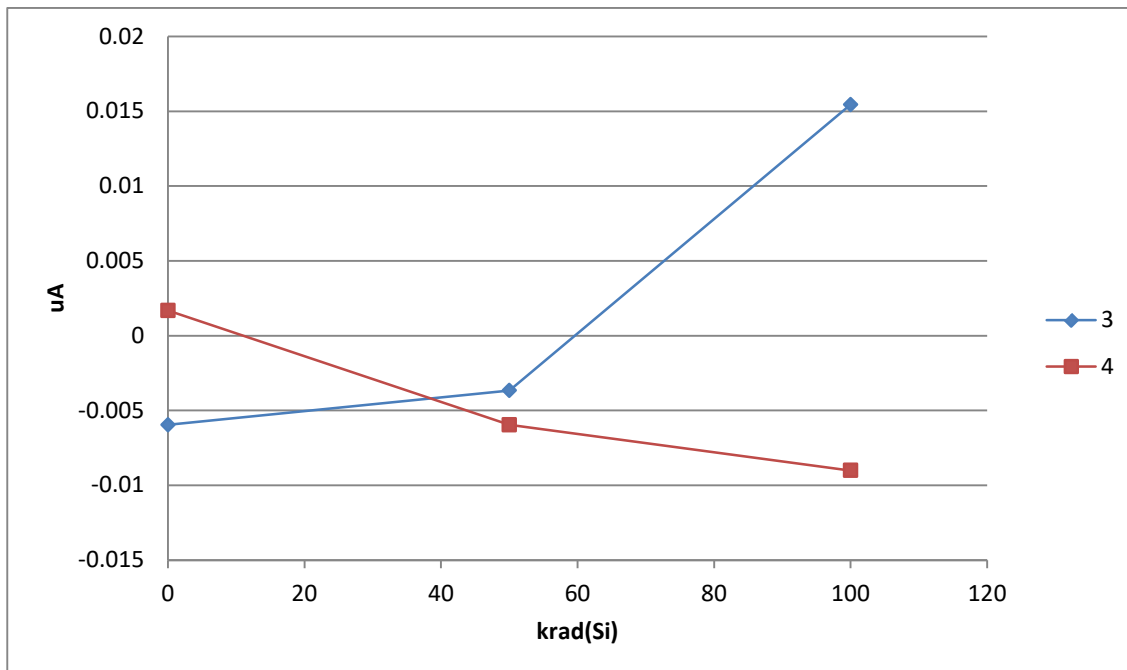


12093 IIH/SEL1/HIZ/3.465

Limit\_Min -6.0000002 Limit\_Max 6.00000021 uA

Device ID	0.0 krad	50.0 krad	100.0 krad
3	-0.0059603	-0.0036678	0.01543553
4	0.0016811	-0.0059603	-0.0090168
<b>Average</b>	-0.0021396	-0.0048141	0.00320937
<b>MAX</b>	0.0016811	-0.0036678	0.01543553
<b>MIN</b>	-0.0059603	-0.0059603	-0.0090168
<b>STD_dev</b>	0.00540325	0.00162097	0.0172904

Delta			
Device ID	0.0 krad	50.0 krad	100.0 krad
3		0.0022924	0.02139578
4		-0.0076413	-0.0106979
<b>Average</b>		-0.0026745	0.00534894
<b>MAX</b>		0.0022924	0.02139578
<b>MIN</b>		-0.0076413	-0.0106979
<b>STD_dev</b>		0.00702422	0.02269365

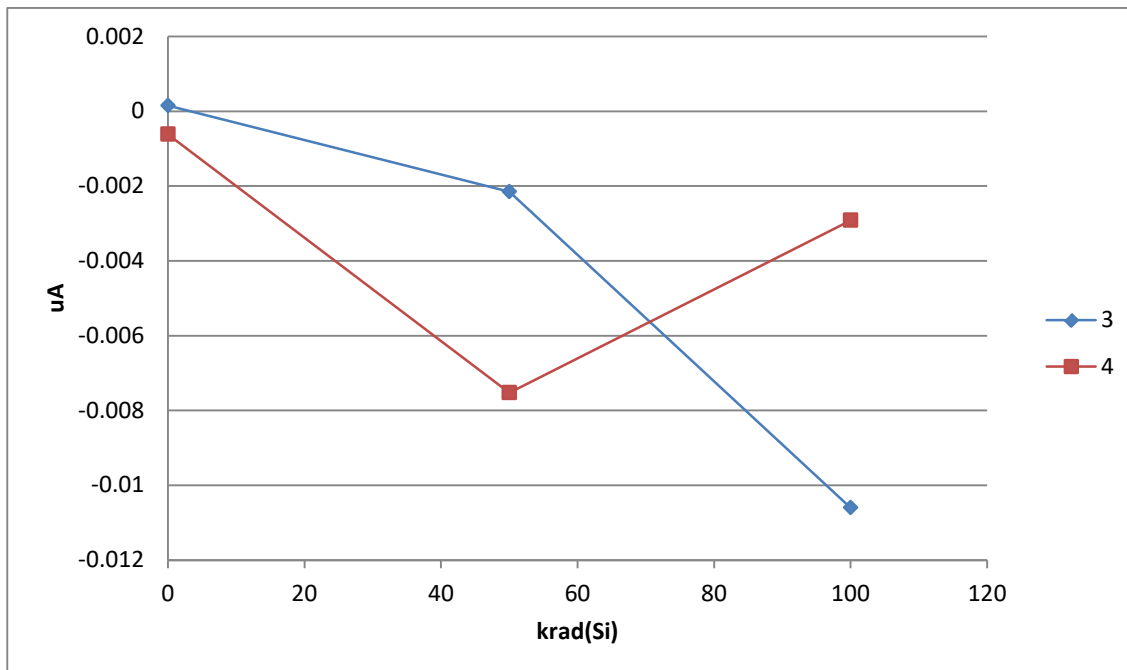


12094 IIL/SELO/HIZ/3.465

Limit\_Min -6.0000002 Limit\_Max 6.00000021 uA

Device ID	0.0 krad	50.0 krad	100.0 krad
3	0.00015356	-0.0021499	-0.0105959
4	-0.0006143	-0.0075246	-0.0029177
<b>Average</b>	-0.0002303	-0.0048373	-0.0067568
<b>MAX</b>	0.00015356	-0.0021499	-0.0029177
<b>MIN</b>	-0.0006143	-0.0075246	-0.0105959
<b>STD_dev</b>	0.00054293	0.00380051	0.0054293

Delta			
Device ID	0.0 krad	50.0 krad	100.0 krad
3		-0.0023035	-0.0107495
4		-0.0069104	-0.0023035
<b>Average</b>		-0.0046069	-0.0065265
<b>MAX</b>		-0.0023035	-0.0023035
<b>MIN</b>		-0.0069104	-0.0107495
<b>STD_dev</b>		0.00325758	0.00597223

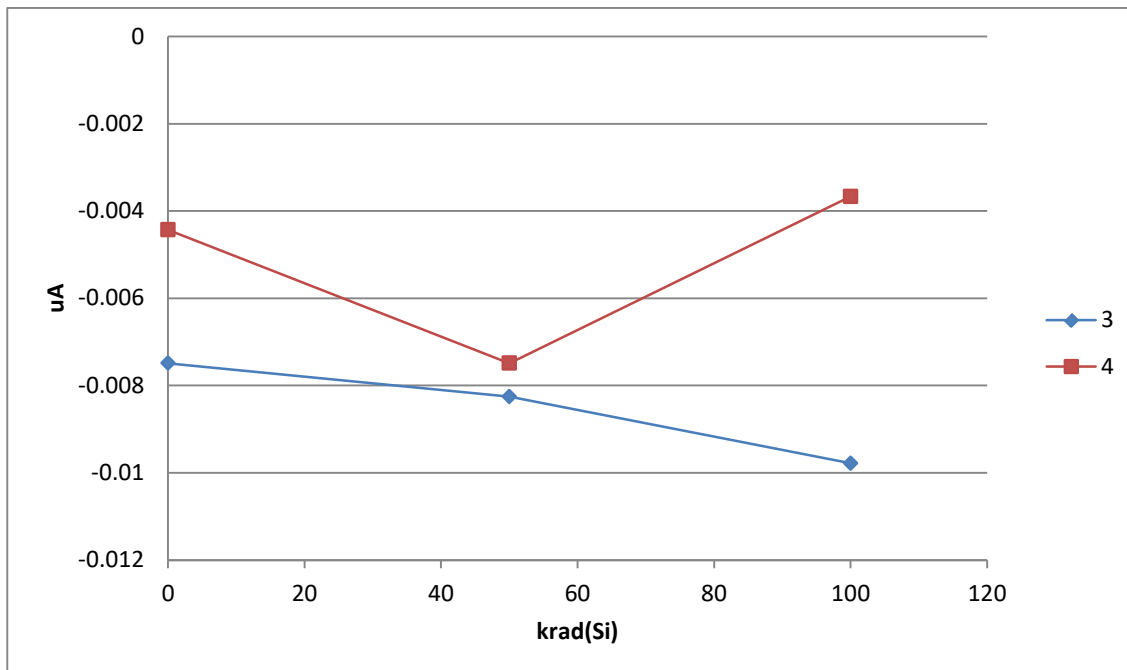


12095 IIL/SEL1/HIZ/3.465

Limit\_Min -6.0000002 Limit\_Max 6.00000021 uA

Device ID	0.0 krad	50.0 krad	100.0 krad
3	-0.0074885	-0.0082527	-0.0097809
4	-0.004432	-0.0074885	-0.0036678
<b>Average</b>	-0.0059603	-0.0078706	-0.0067244
<b>MAX</b>	-0.004432	-0.0074885	-0.0036678
<b>MIN</b>	-0.0074885	-0.0082527	-0.0097809
<b>STD_dev</b>	0.0021613	0.00054032	0.0043226

Delta			
Device ID	0.0 krad	50.0 krad	100.0 krad
3		-0.0007641	-0.0022924
4		-0.0030565	0.00076413
<b>Average</b>		-0.0019103	-0.0007641
<b>MAX</b>		-0.0007641	0.00076413
<b>MIN</b>		-0.0030565	-0.0022924
<b>STD_dev</b>		0.00162098	0.0021613

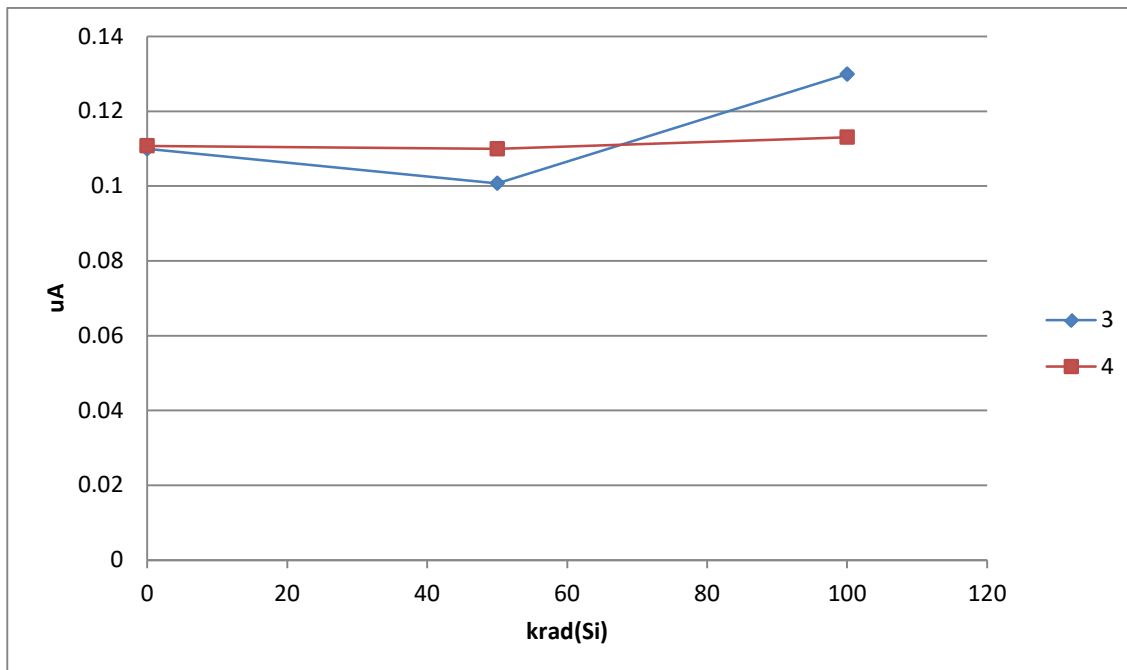


12096 IIH/SELO/PULLUP/3.465

Limit\_Min -6.0000002 Limit\_Max 6.00000021 uA

Device ID	0.0 krad	50.0 krad	100.0 krad
3	0.10995168	0.10073785	0.12991497
4	0.1107195	0.10995168	0.11302295
<b>Average</b>	0.11033559	0.10534476	0.12146896
<b>MAX</b>	0.1107195	0.10995168	0.12991497
<b>MIN</b>	0.10995168	0.10073785	0.11302295
<b>STD_dev</b>	0.00054293	0.00651516	0.01194446

Delta			
Device ID	0.0 krad	50.0 krad	100.0 krad
3		-0.0092138	0.01996329
4		-0.0007678	0.00230345
<b>Average</b>		-0.0049908	0.01113337
<b>MAX</b>		-0.0007678	0.01996329
<b>MIN</b>		-0.0092138	0.00230345
<b>STD_dev</b>		0.00597223	0.01248739

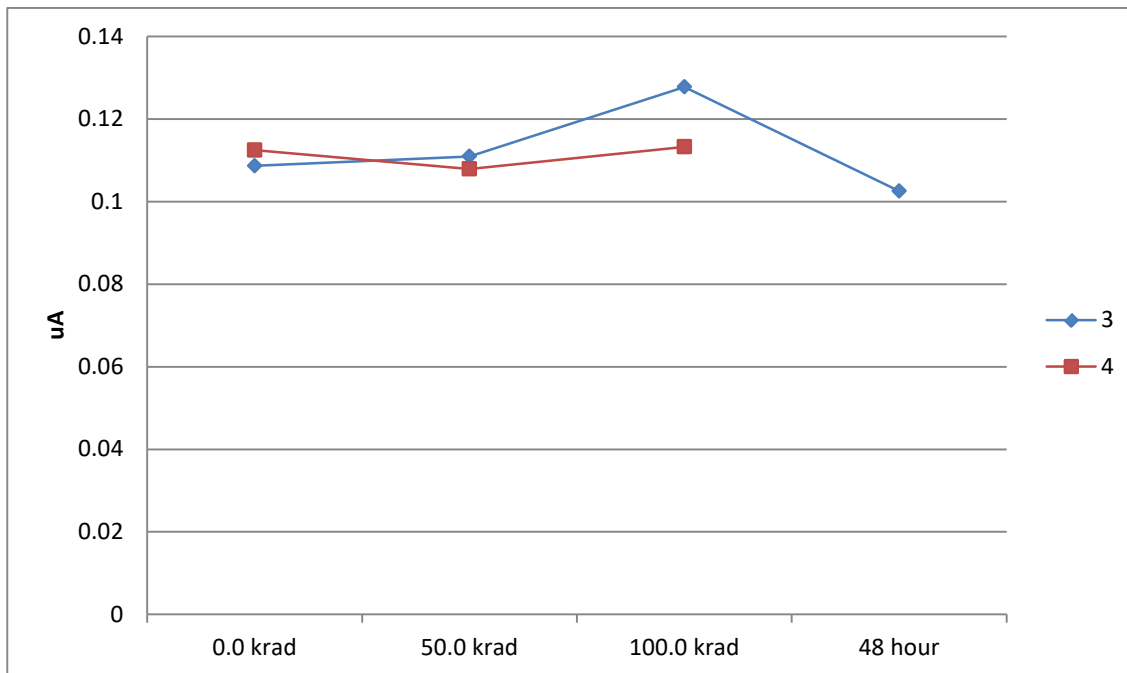


12097 IHH/SEL1/PULLUP/3.465

Limit\_Min -6.0000002 Limit\_Max 6.00000021 uA

Device ID	0.0 krad	50.0 krad	100.0 krad	48 hour
3	0.10865999	0.1109524	0.12776338	0.10254691
4	0.11248066	0.10789584	0.11324479	
<b>Average</b>	0.11057033	0.10942412	0.12050409	
<b>MAX</b>	0.11248066	0.1109524	0.12776338	
<b>MIN</b>	0.10865999	0.10789584	0.11324479	
<b>STD_dev</b>	0.00270162	0.00216131	0.01026619	

Delta				
Device ID	0.0 krad	50.0 krad	100.0 krad	48 hour
3		0.00229241	0.01910339	-0.0061131
4		-0.0045848	0.00076413	
<b>Average</b>		-0.0011462	0.00993376	
<b>MAX</b>		0.00229241	0.01910339	
<b>MIN</b>		-0.0045848	0.00076413	
<b>STD_dev</b>		0.00486294	0.01296781	

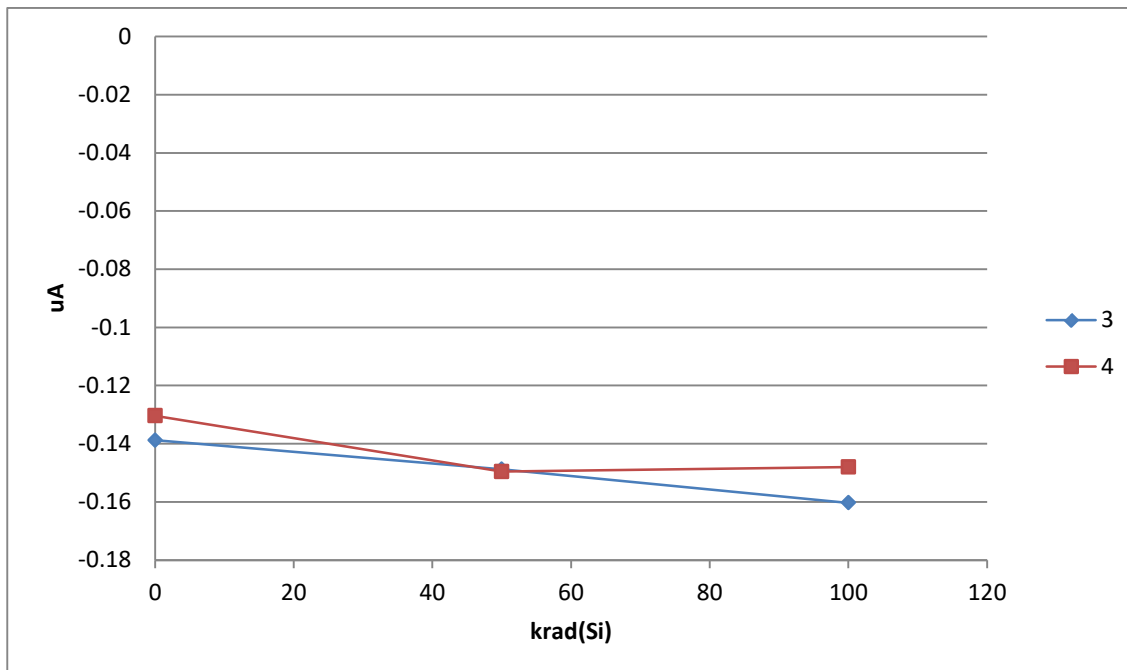


12104 IIL/SELO/PULLDOWN/3.465

Limit\_Min -6.0000002 Limit\_Max 6.00000021 uA

Device ID	0.0 krad	50.0 krad	100.0 krad
3	-0.1388217	-0.1488033	-0.1603206
4	-0.1303757	-0.1495711	-0.1480355
<b>Average</b>	-0.1345987	-0.1491872	-0.1541781
<b>MAX</b>	-0.1303757	-0.1488033	-0.1480355
<b>MIN</b>	-0.1388217	-0.1495711	-0.1603206
<b>STD_dev</b>	0.00597223	0.00054294	0.00868689

Delta			
Device ID	0.0 krad	50.0 krad	100.0 krad
3		-0.0099816	-0.0214989
4		-0.0191955	-0.0176598
<b>Average</b>		-0.0145886	-0.0195794
<b>MAX</b>		-0.0099816	-0.0176598
<b>MIN</b>		-0.0191955	-0.0214989
<b>STD_dev</b>		0.00651516	0.00271466

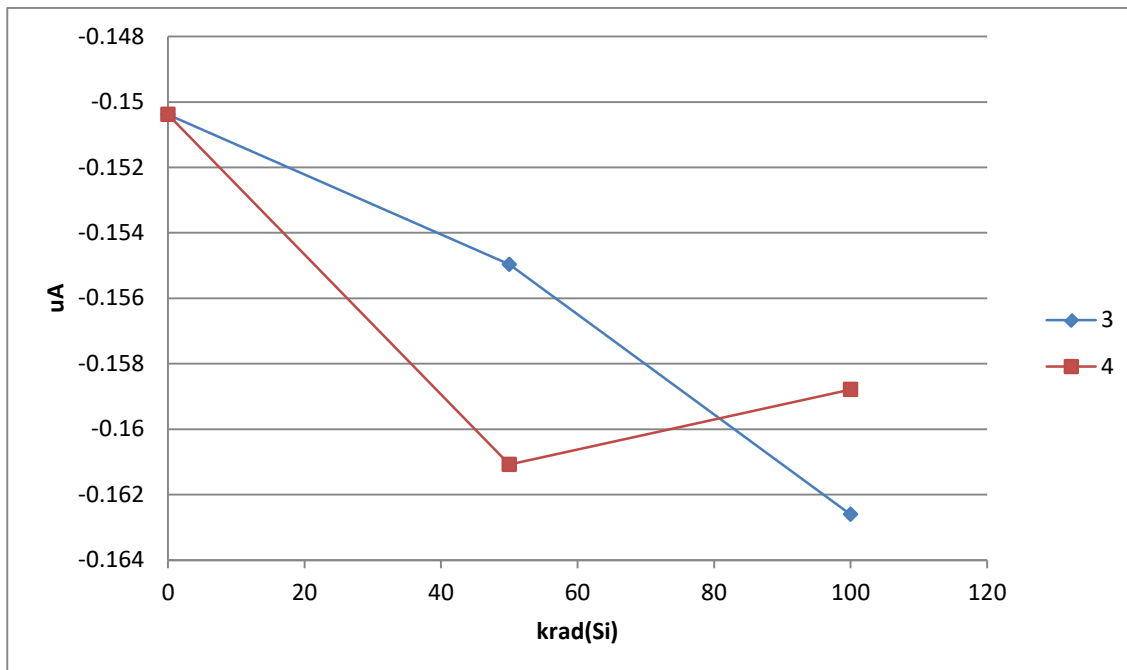


12105 IIL/SEL1/PULLDOWN/3.465

Limit\_Min -6.0000002 Limit\_Max 6.00000021 uA

Device ID	0.0 krad	50.0 krad	100.0 krad
3	-0.1503818	-0.1549666	-0.1626079
4	-0.1503818	-0.1610797	-0.1587873
<b>Average</b>	-0.1503818	-0.1580231	-0.1606976
<b>MAX</b>	-0.1503818	-0.1549666	-0.1587873
<b>MIN</b>	-0.1503818	-0.1610797	-0.1626079
<b>STD_dev</b>	0	0.00432259	0.00270162

Delta			
Device ID	0.0 krad	50.0 krad	100.0 krad
3		-0.0045848	-0.0122262
4		-0.0106979	-0.0084055
<b>Average</b>		-0.0076414	-0.0103158
<b>MAX</b>		-0.0045848	-0.0084055
<b>MIN</b>		-0.0106979	-0.0122262
<b>STD_dev</b>		0.00432259	0.00270162



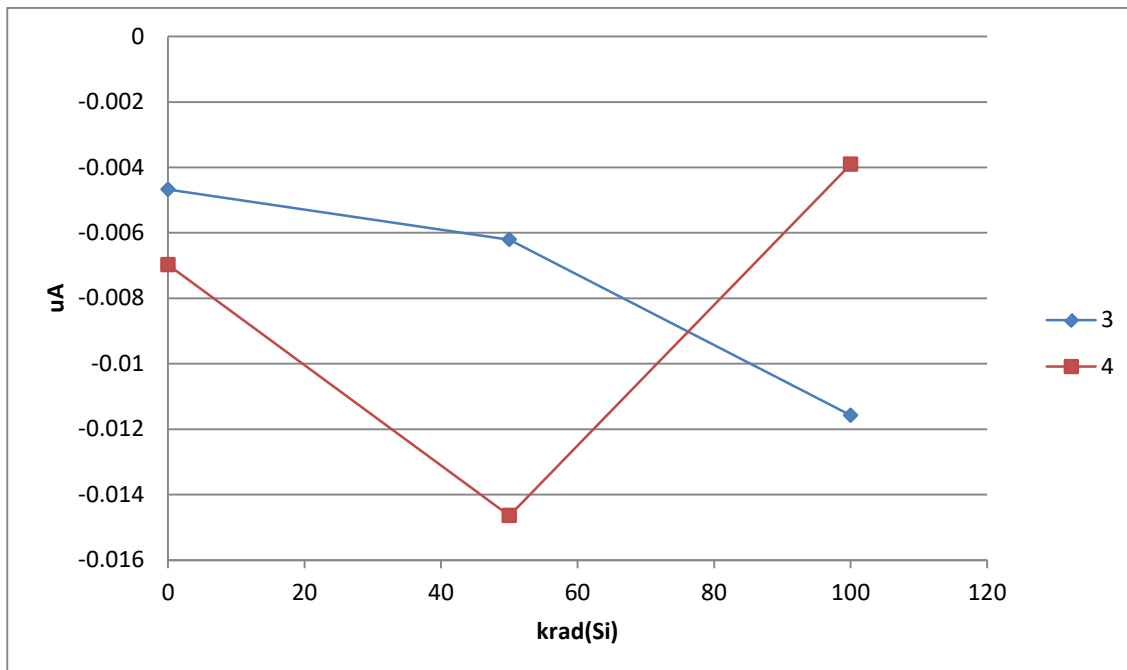


12106 IIL/SYNC/PULLDOWN/3.465

Limit\_Min -6.0000002 Limit\_Max 6.00000021 uA

Device ID	0.0 krad	50.0 krad	100.0 krad
3	-0.0046761	-0.0062092	-0.0115752
4	-0.0069758	-0.0146415	-0.0039095
<b>Average</b>	-0.0058259	-0.0104254	-0.0077424
<b>MAX</b>	-0.0046761	-0.0062092	-0.0039095
<b>MIN</b>	-0.0069758	-0.0146415	-0.0115752
<b>STD_dev</b>	0.00162614	0.00596252	0.00542047

Delta			
Device ID	0.0 krad	50.0 krad	100.0 krad
3		-0.0015331	-0.0068991
4		-0.0076657	0.00306628
<b>Average</b>		-0.0045994	-0.0019164
<b>MAX</b>		-0.0015331	0.00306628
<b>MIN</b>		-0.0076657	-0.0068991
<b>STD_dev</b>		0.00433638	0.00704661

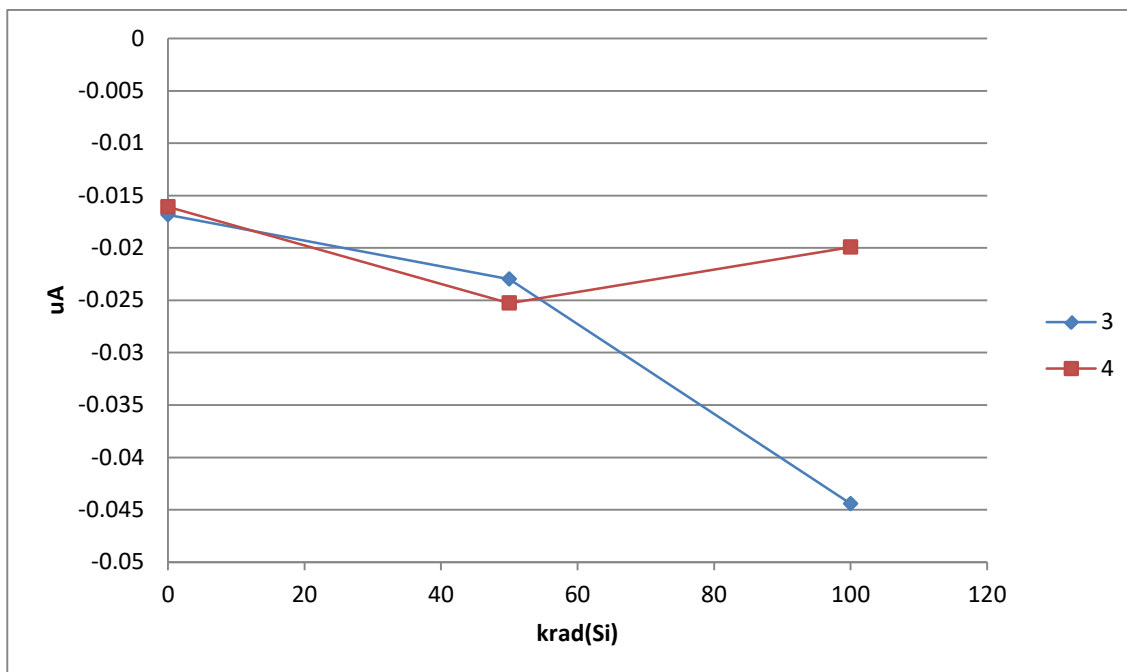


12107 IIL/RESET/PULLDOWN/3.465

Limit\_Min -6.0000002 Limit\_Max 6.00000021 uA

Device ID	0.0 krad	50.0 krad	100.0 krad
3	-0.0168515	-0.0229793	-0.0444266
4	-0.0160855	-0.0252772	-0.0199154
<b>Average</b>	-0.0164685	-0.0241283	-0.032171
<b>MAX</b>	-0.0160855	-0.0229793	-0.0199154
<b>MIN</b>	-0.0168515	-0.0252772	-0.0444266
<b>STD_dev</b>	0.00054163	0.00162488	0.01733207

Delta			
Device ID	0.0 krad	50.0 krad	100.0 krad
3		-0.0061278	-0.0275751
4		-0.0091917	-0.0038299
<b>Average</b>		-0.0076598	-0.0157025
<b>MAX</b>		-0.0061278	-0.0038299
<b>MIN</b>		-0.0091917	-0.0275751
<b>STD_dev</b>		0.00216651	0.01679044

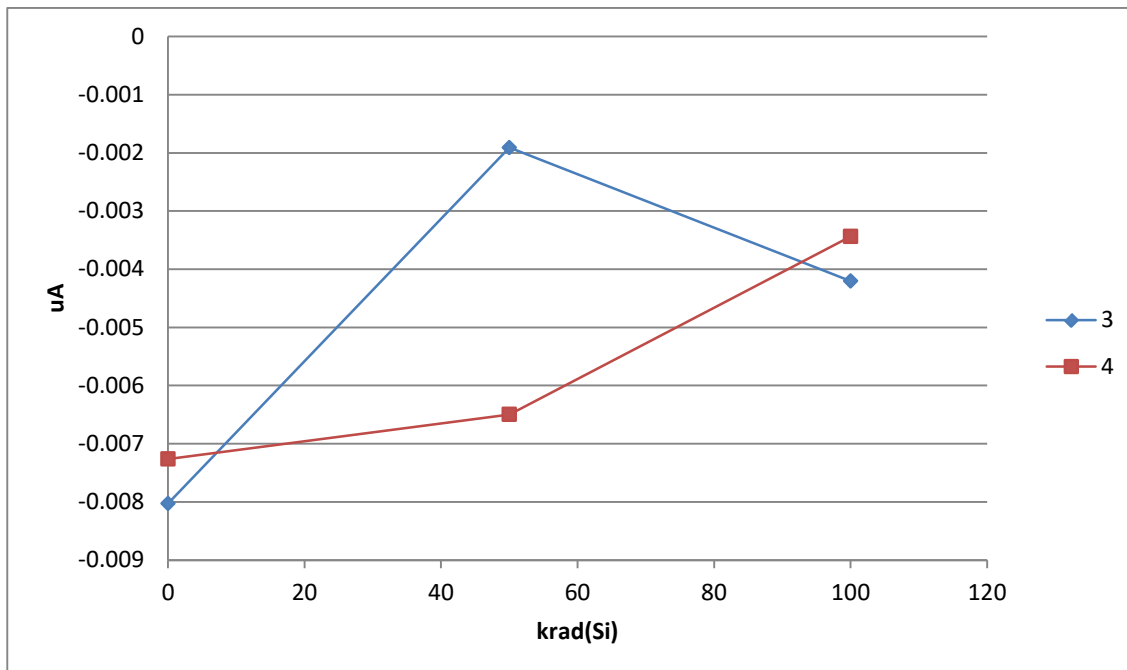


12108 IH/SCK/3.465

Limit\_Min -6.0000002 Limit\_Max 6.00000021 uA

Device ID	0.0 krad	50.0 krad	100.0 krad
3	-0.008028	-0.0019114	-0.0042051
4	-0.0072634	-0.0064989	-0.0034406
<b>Average</b>	-0.0076457	-0.0042051	-0.0038229
<b>MAX</b>	-0.0072634	-0.0019114	-0.0034406
<b>MIN</b>	-0.008028	-0.0064989	-0.0042051
<b>STD_dev</b>	0.00054063	0.00324381	0.00054063

Delta			
Device ID	0.0 krad	50.0 krad	100.0 krad
3		0.00611658	0.00382286
4		0.00076457	0.00382286
<b>Average</b>		0.00344057	0.00382286
<b>MAX</b>		0.00611658	0.00382286
<b>MIN</b>		0.00076457	0.00382286
<b>STD_dev</b>		0.00378444	5.0205E-10

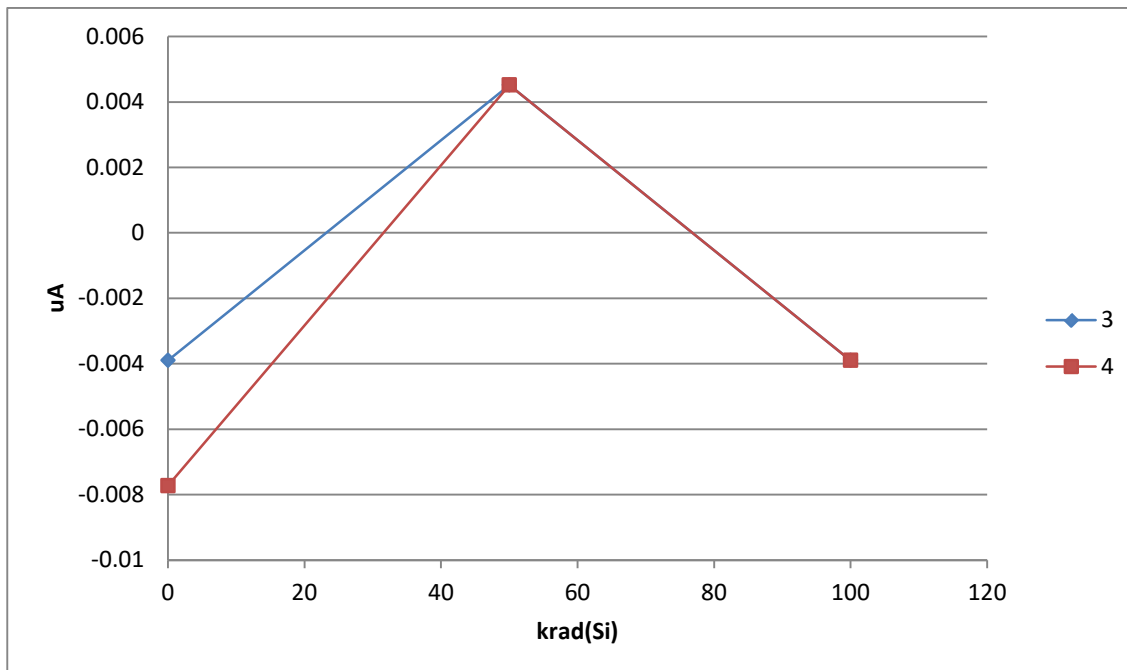


12109 IH/CS/3.465

Limit\_Min -6.0000002 Limit\_Max 6.00000021 uA

Device ID	0.0 krad	50.0 krad	100.0 krad
3	-0.0039016	0.00451359	-0.0039016
4	-0.0077267	0.00451359	-0.0039016
<b>Average</b>	-0.0058141	0.00451359	-0.0039016
<b>MAX</b>	-0.0039016	0.00451359	-0.0039016
<b>MIN</b>	-0.0077267	0.00451359	-0.0039016
<b>STD_dev</b>	0.00270474	0	0

Delta			
Device ID	0.0 krad	50.0 krad	100.0 krad
3		0.00841517	0
4		0.01224025	0.00382508
<b>Average</b>		0.01032771	0.00191254
<b>MAX</b>		0.01224025	0.00382508
<b>MIN</b>		0.00841517	0
<b>STD_dev</b>		0.00270474	0.00270474

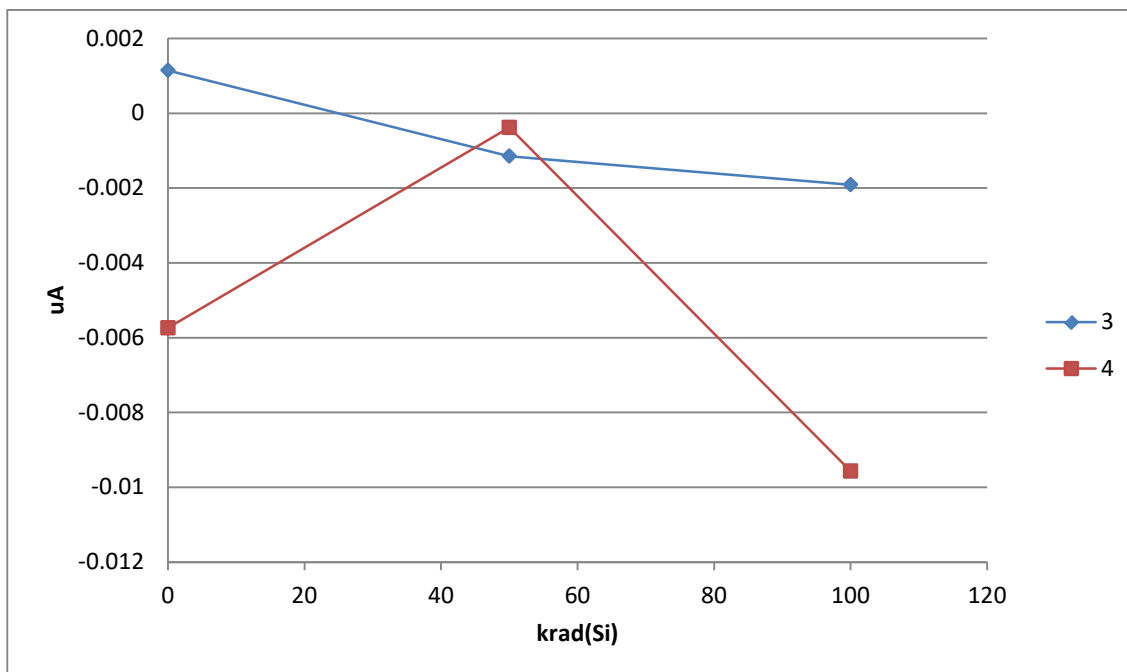


12110 IH/SDIO/3.465

Limit\_Min -6.0000002 Limit\_Max 6.00000021 uA

Device ID	0.0 krad	50.0 krad	100.0 krad
3	0.00114813	-0.0011481	-0.0019136
4	-0.0057407	-0.0003827	-0.0095678
<b>Average</b>	-0.0022963	-0.0007654	-0.0057407
<b>MAX</b>	0.00114813	-0.0003827	-0.0019136
<b>MIN</b>	-0.0057407	-0.0011481	-0.0095678
<b>STD_dev</b>	0.00487111	0.00054124	0.00541235

Delta			
Device ID	0.0 krad	50.0 krad	100.0 krad
3		-0.0022963	-0.0030617
4		0.00535795	-0.0038271
<b>Average</b>		0.00153084	-0.0034444
<b>MAX</b>		0.00535795	-0.0030617
<b>MIN</b>		-0.0022963	-0.0038271
<b>STD_dev</b>		0.00541235	0.00054123

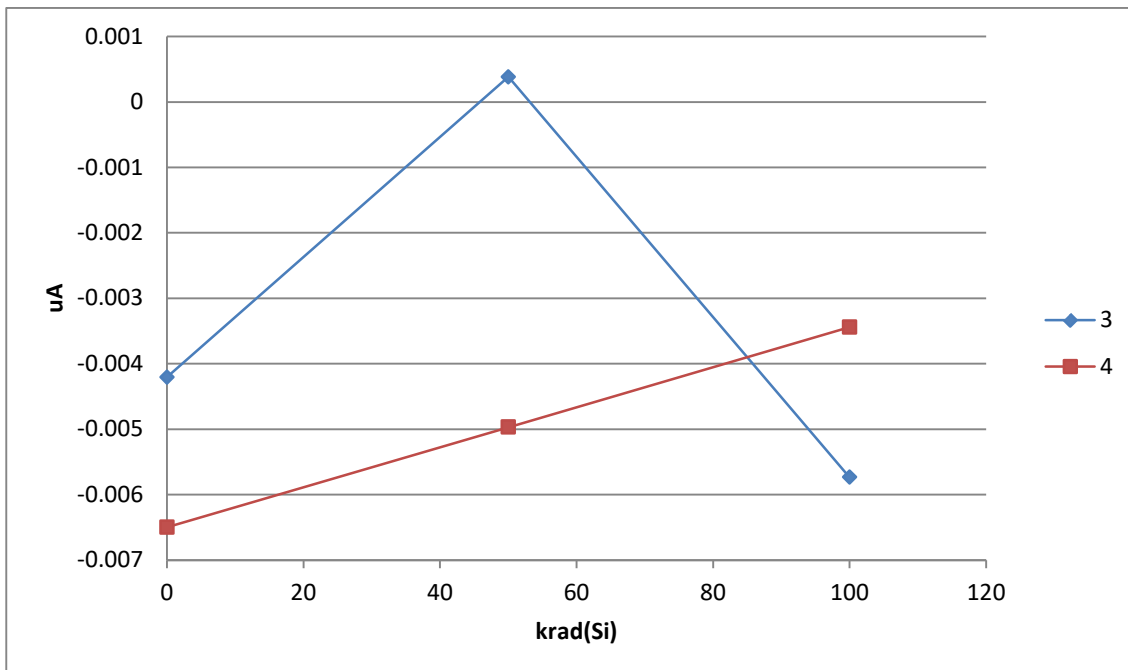


12111 IIL/SCK/3.465

Limit\_Min -6.0000002 Limit\_Max 6.00000021 uA

Device ID	0.0 krad	50.0 krad	100.0 krad
3	-0.0042051	0.00038229	-0.0057343
4	-0.0064989	-0.0049697	-0.0034406
<b>Average</b>	-0.005352	-0.0022937	-0.0045874
<b>MAX</b>	-0.0042051	0.00038229	-0.0034406
<b>MIN</b>	-0.0064989	-0.0049697	-0.0057343
<b>STD_dev</b>	0.0016219	0.00378444	0.0016219

Delta			
Device ID	0.0 krad	50.0 krad	100.0 krad
3		0.00458743	-0.0015291
4		0.00152914	0.00305829
<b>Average</b>		0.00305829	0.00076457
<b>MAX</b>		0.00458743	0.00305829
<b>MIN</b>		0.00152914	-0.0015291
<b>STD_dev</b>		0.00216254	0.00324381

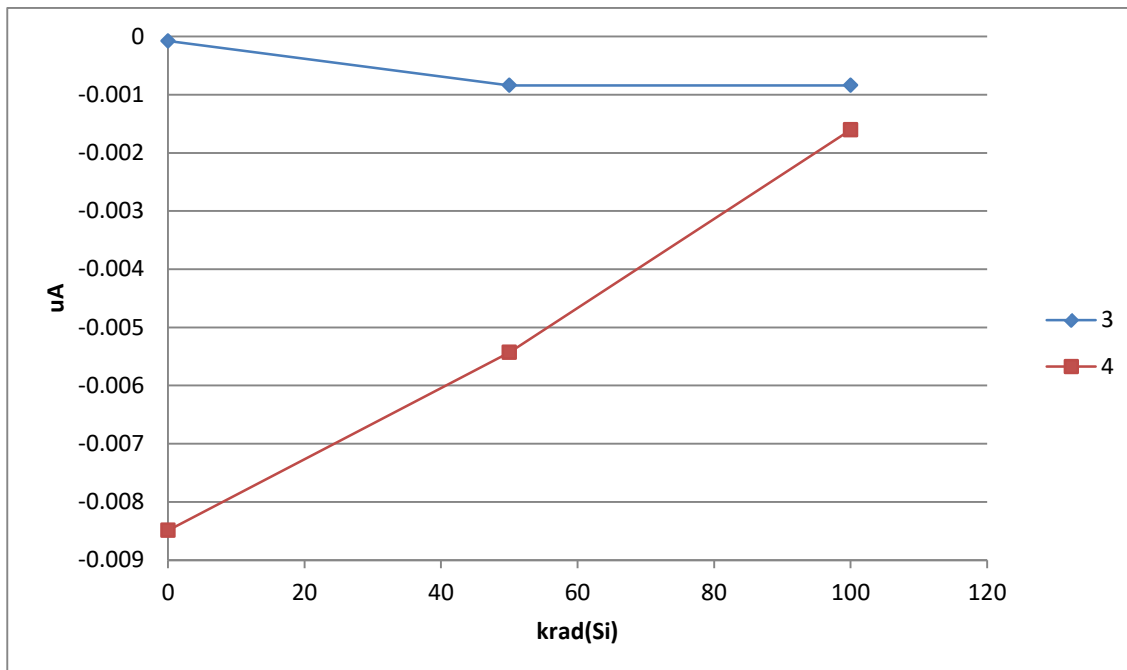


12112 IIL/CS/3.465

Limit\_Min -6.0000002 Limit\_Max 6.00000021 uA

Device ID	0.0 krad	50.0 krad	100.0 krad
3	-7.65E-05	-0.0008415	-0.0008415
4	-0.0084917	-0.0054316	-0.0016065
<b>Average</b>	-0.0042841	-0.0031366	-0.001224
<b>MAX</b>	-7.65E-05	-0.0008415	-0.0008415
<b>MIN</b>	-0.0084917	-0.0054316	-0.0016065
<b>STD_dev</b>	0.00595042	0.00324569	0.00054095

Delta			
Device ID	0.0 krad	50.0 krad	100.0 krad
3		-0.000765	-0.000765
4		0.00306006	0.00688514
<b>Average</b>		0.00114752	0.00306006
<b>MAX</b>		0.00306006	0.00688514
<b>MIN</b>		-0.000765	-0.000765
<b>STD_dev</b>		0.00270474	0.00540947

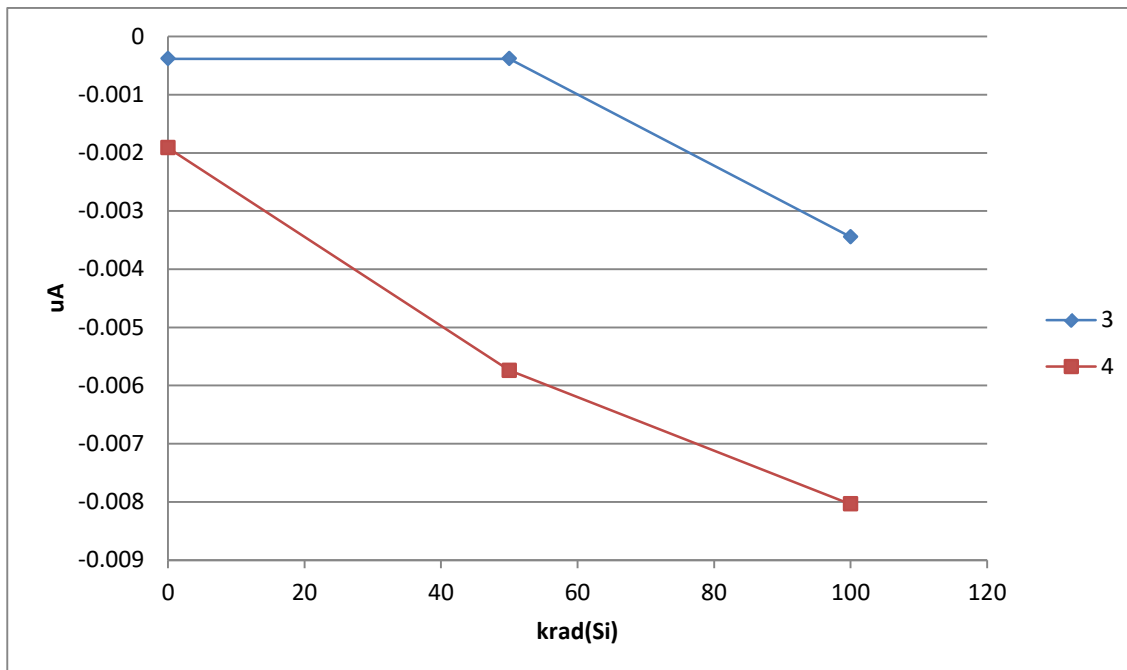


12113 IIL/SDIO/3.465

Limit\_Min -6.0000002 Limit\_Max 6.00000021 uA

Device ID	0.0 krad	50.0 krad	100.0 krad
3	-0.0003827	-0.0003827	-0.0034444
4	-0.0019136	-0.0057407	-0.0080369
<b>Average</b>	-0.0011481	-0.0030617	-0.0057407
<b>MAX</b>	-0.0003827	-0.0003827	-0.0034444
<b>MIN</b>	-0.0019136	-0.0057407	-0.0080369
<b>STD_dev</b>	0.00108247	0.00378864	0.00324741

Delta			
Device ID	0.0 krad	50.0 krad	100.0 krad
3		0	-0.0030617
4		-0.0038271	-0.0061234
<b>Average</b>		-0.0019136	-0.0045925
<b>MAX</b>		0	-0.0030617
<b>MIN</b>		-0.0038271	-0.0061234
<b>STD_dev</b>		0.00270617	0.00216494



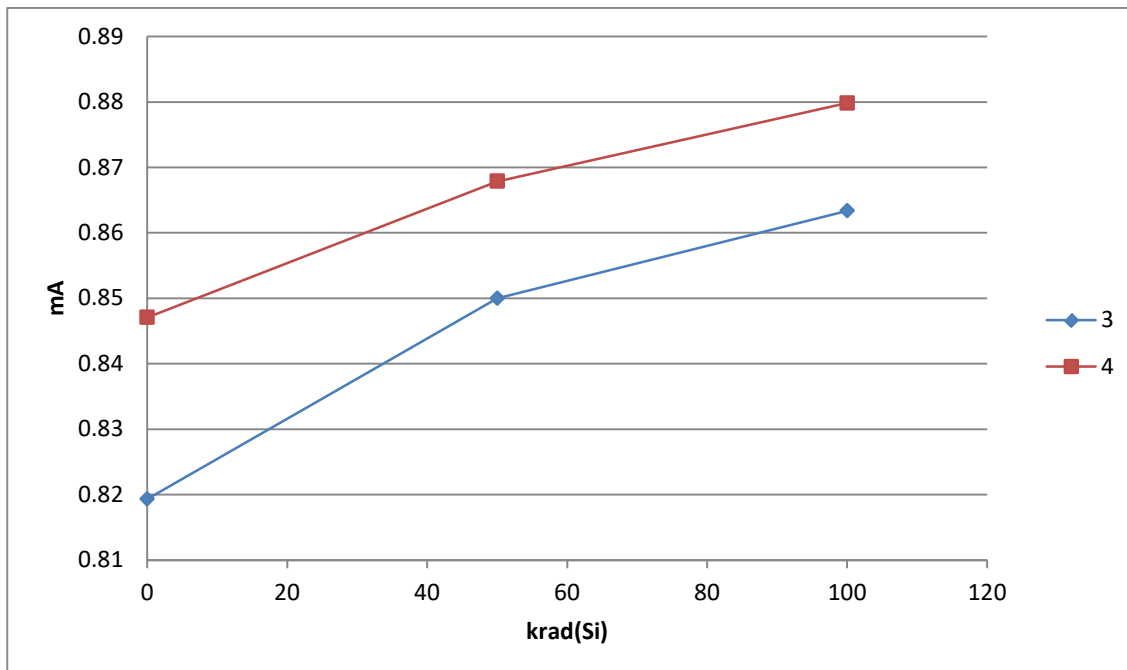


12114 ICCVCO/PWRDN/3.465

Limit\_Min 0.05 Limit\_Max 3.04999994 mA

Device ID	0.0 krad	50.0 krad	100.0 krad
3	0.81934601	0.85001642	0.86336792
4	0.8470791	0.86786932	0.87980944
<b>Average</b>	0.83321255	0.85894287	0.87158868
<b>MAX</b>	0.8470791	0.86786932	0.87980944
<b>MIN</b>	0.81934601	0.85001642	0.86336792
<b>STD_dev</b>	0.01961025	0.01262391	0.01162591

Delta			
Device ID	0.0 krad	50.0 krad	100.0 krad
3		0.0306704	0.0440219
4		0.02079022	0.03273034
<b>Average</b>		0.02573031	0.03837612
<b>MAX</b>		0.0306704	0.0440219
<b>MIN</b>		0.02079022	0.03273034
<b>STD_dev</b>		0.00698635	0.00798434

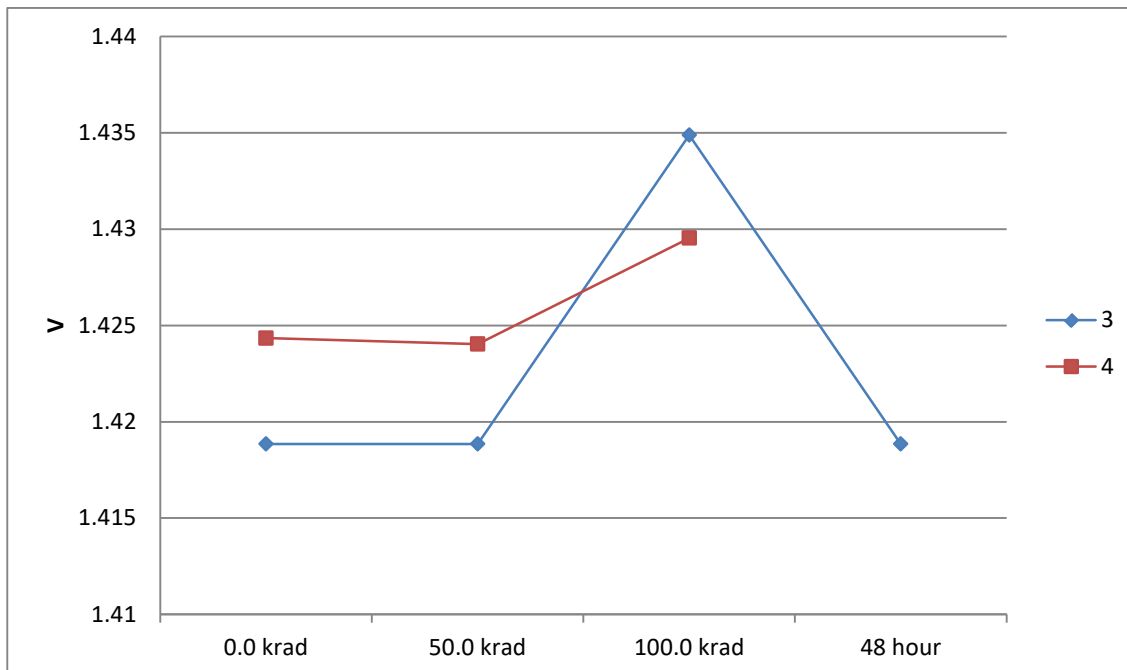


17028 VOH/LVDS/CLKOUT6/3.465

Limit\_Min 1.35000002 Limit\_Max NA V

Device ID	0.0 krad	50.0 krad	100.0 krad	48 hour
3	1.4188416	1.4188416	1.43487597	1.4188416
4	1.42433906	1.42403364	1.42953122	
<b>Average</b>	1.42159033	1.42143762	1.43220359	
<b>MAX</b>	1.42433906	1.42403364	1.43487597	
<b>MIN</b>	1.4188416	1.4188416	1.42953122	
<b>STD_dev</b>	0.00388729	0.00367133	0.00377931	

Delta				
Device ID	0.0 krad	50.0 krad	100.0 krad	48 hour
3		0	0.01603437	0
4		-0.0003054	0.00519216	
<b>Average</b>		-0.0001527	0.01061326	
<b>MAX</b>		0	0.01603437	
<b>MIN</b>		-0.0003054	0.00519216	
<b>STD_dev</b>		0.00021596	0.0076666	

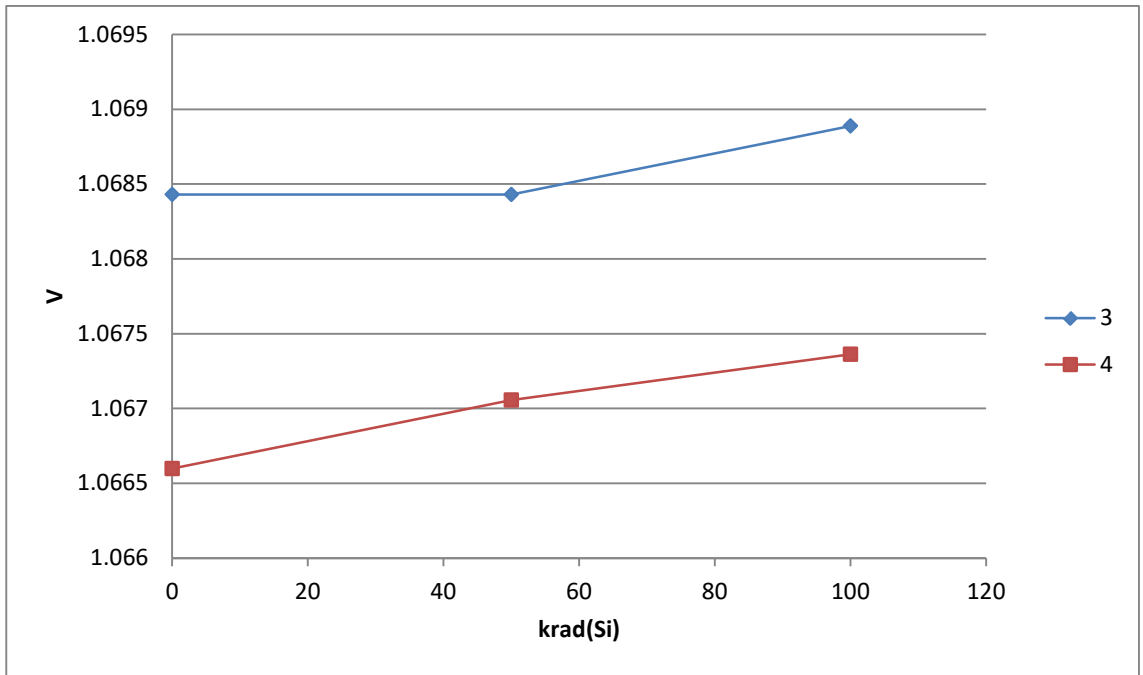


17042 VOL/LVDS/CLKOUT5B/3.465

Limit\_Min NA      Limit\_Max 1.35000002 V

Device ID	0.0 krad	50.0 krad	100.0 krad
3	1.06843054	1.06843054	1.06888866
4	1.06659794	1.06705606	1.06736147
<b>Average</b>	1.06751424	1.0677433	1.06812507
<b>MAX</b>	1.06843054	1.06843054	1.06888866
<b>MIN</b>	1.06659794	1.06705606	1.06736147
<b>STD_dev</b>	0.00129585	0.00097191	0.00107989

Delta			
Device ID	0.0 krad	50.0 krad	100.0 krad
3		0	0.00045812
4		0.00045812	0.00076354
<b>Average</b>		0.00022906	0.00061083
<b>MAX</b>		0.00045812	0.00076354
<b>MIN</b>		0	0.00045812
<b>STD_dev</b>		0.00032394	0.00021596

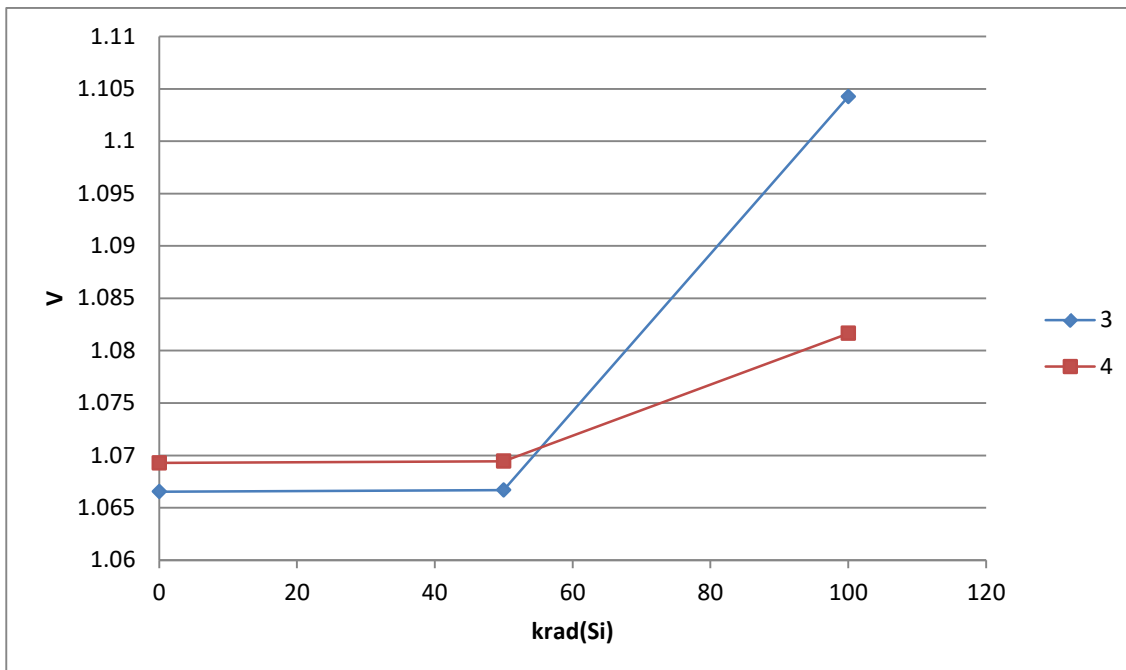


17043 VOL/LVDS/CLKOUT6B/3.465

Limit\_Min NA      Limit\_Max 1.35000002 V

Device ID	0.0 krad	50.0 krad	100.0 krad
3	1.06652892	1.06668162	1.1042496
4	1.06927776	1.06943047	1.08164775
<b>Average</b>	1.06790334	1.06805605	1.09294868
<b>MAX</b>	1.06927776	1.06943047	1.1042496
<b>MIN</b>	1.06652892	1.06668162	1.08164775
<b>STD_dev</b>	0.00194373	0.00194373	0.01598192

Delta			
Device ID	0.0 krad	50.0 krad	100.0 krad
3		0.00015271	0.03772068
4		0.00015271	0.01236999
<b>Average</b>		0.00015271	0.02504534
<b>MAX</b>		0.00015271	0.03772068
<b>MIN</b>		0.00015271	0.01236999
<b>STD_dev</b>		0	0.01792565

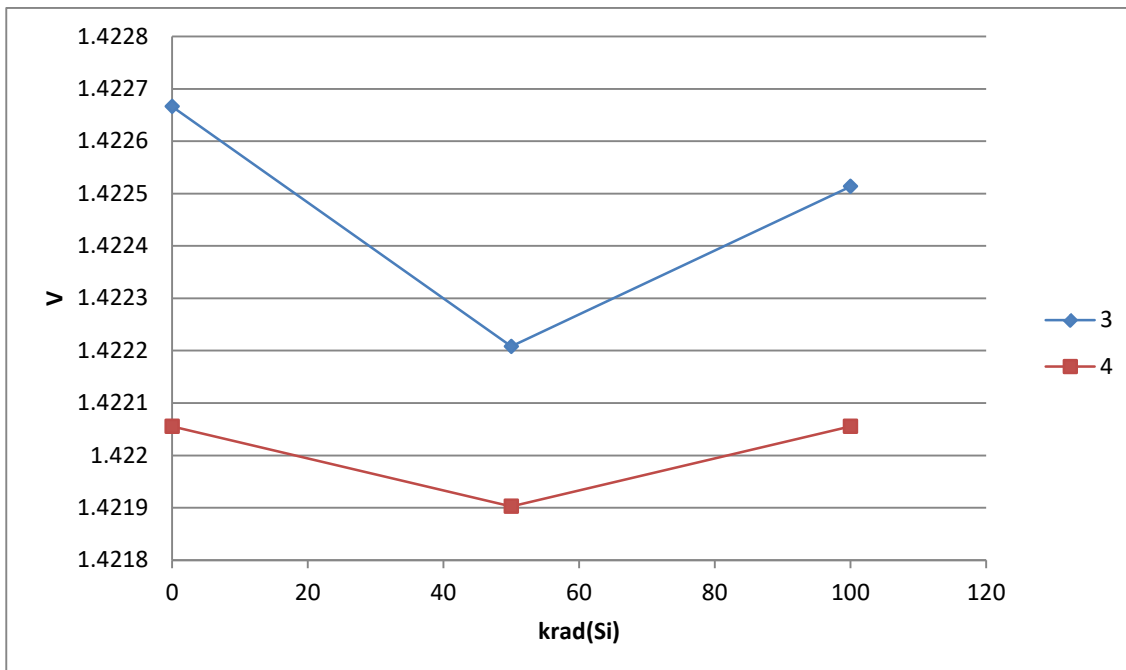


17057 VOH/LVDS/CLKOUT5B/3.465

Limit\_Min 1.35000002 Limit\_Max NA V

Device ID	0.0 krad	50.0 krad	100.0 krad
3	1.42266607	1.42220795	1.42251337
4	1.42205524	1.42190254	1.42205524
<b>Average</b>	1.42236066	1.42205524	1.42228431
<b>MAX</b>	1.42266607	1.42220795	1.42251337
<b>MIN</b>	1.42205524	1.42190254	1.42205524
<b>STD_dev</b>	0.00043192	0.00021596	0.00032394

Delta			
Device ID	0.0 krad	50.0 krad	100.0 krad
3		-0.0004581	-0.0001527
4		-0.0001527	0
<b>Average</b>		-0.0003054	-7.635E-05
<b>MAX</b>		-0.0001527	0
<b>MIN</b>		-0.0004581	-0.0001527
<b>STD_dev</b>		0.00021596	0.00010798

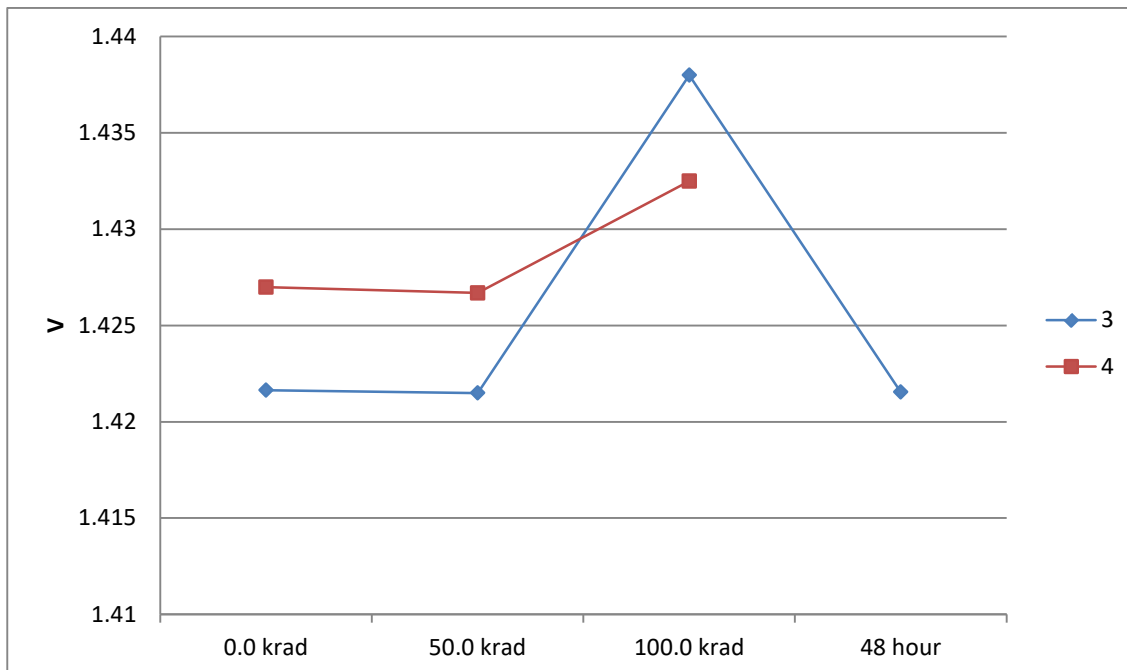


17058 VOH/LVDS/CLKOUT6B/3.465

Limit\_Min 1.3500002 Limit\_Max NA V

Device ID	0.0 krad	50.0 krad	100.0 krad	48 hour
3	1.42164421	1.4214915	1.43798471	1.42154421
4	1.4269892	1.42668378	1.43248701	
<b>Average</b>	1.4243167	1.42408764	1.43523586	
<b>MAX</b>	1.4269892	1.42668378	1.43798471	
<b>MIN</b>	1.42164421	1.4214915	1.43248701	
<b>STD_dev</b>	0.00377948	0.0036715	0.00388746	

Delta				
Device ID	0.0 krad	50.0 krad	100.0 krad	48 hour
3		-0.0001527	0.01634049	-0.0001
4		-0.0003054	0.00549781	
<b>Average</b>		-0.0002291	0.01091915	
<b>MAX</b>		-0.0001527	0.01634049	
<b>MIN</b>		-0.0003054	0.00549781	
<b>STD_dev</b>		0.00010798	0.00766693	

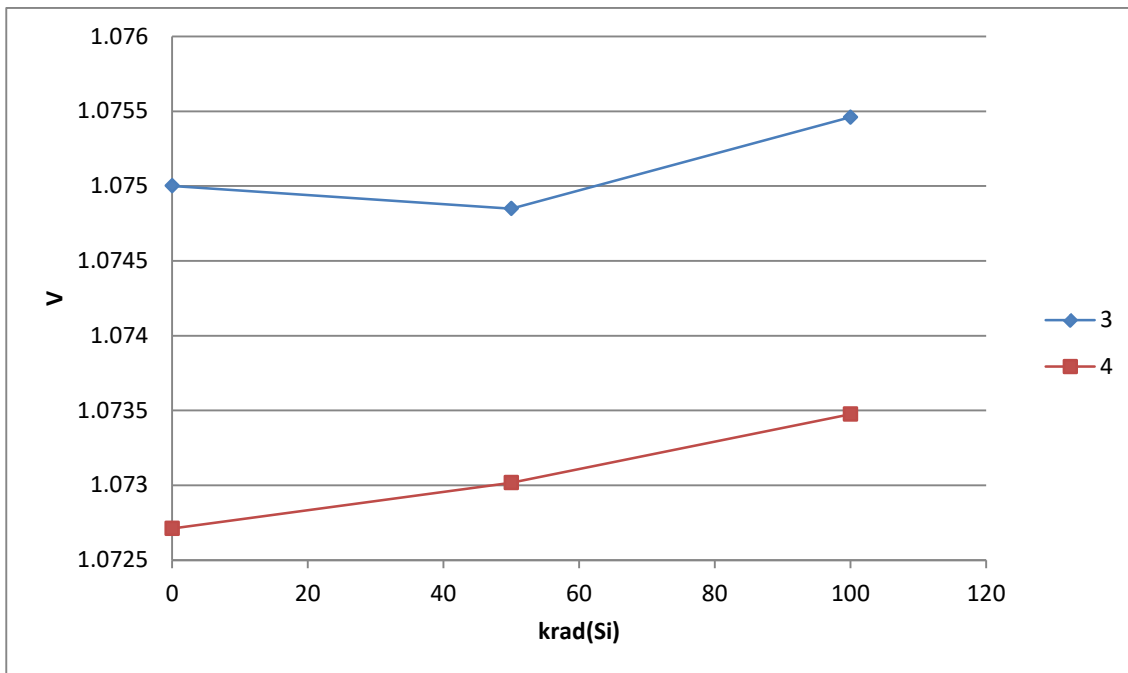


17072 VOL/LVDS/CLKOUT5/3.465

Limit\_Min NA      Limit\_Max 1.35000002 V

Device ID	0.0 krad	50.0 krad	100.0 krad
3	1.07500184	1.07484901	1.07545996
4	1.07271111	1.07301652	1.07347465
<b>Average</b>	1.07385647	1.07393277	1.0744673
<b>MAX</b>	1.07500184	1.07484901	1.07545996
<b>MIN</b>	1.07271111	1.07301652	1.07347465
<b>STD_dev</b>	0.00161979	0.00129576	0.00140383

Delta			
Device ID	0.0 krad	50.0 krad	100.0 krad
3		-0.0001528	0.00045812
4		0.00030541	0.00076354
<b>Average</b>		7.6294E-05	0.00061083
<b>MAX</b>		0.00030541	0.00076354
<b>MIN</b>		-0.0001528	0.00045812
<b>STD_dev</b>		0.00032402	0.00021596

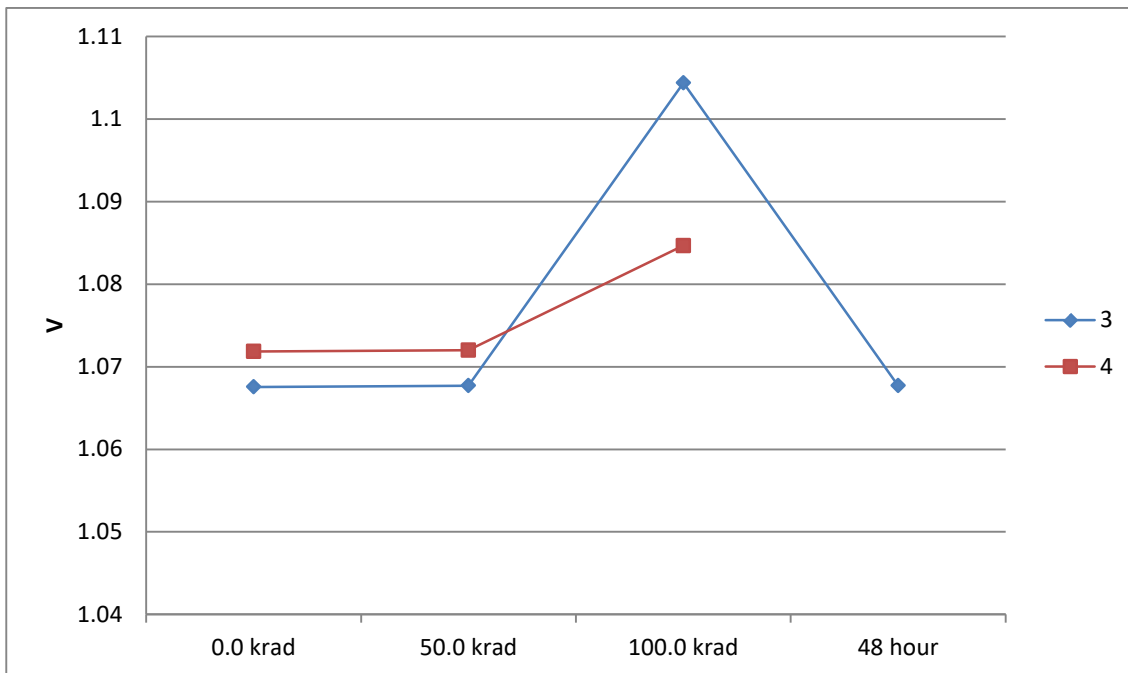


17073 VOL/LVDS/CLKOUT6/3.465

Limit\_Min NA      Limit\_Max 1.3500002 V

Device ID	0.0 krad	50.0 krad	100.0 krad	48 hour
3	1.06756067	1.06771338	1.10436332	1.06771338
4	1.07183659	1.0719893	1.08466399	
<b>Average</b>	1.06969863	1.06985134	1.09451365	
<b>MAX</b>	1.07183659	1.0719893	1.10436332	
<b>MIN</b>	1.06756067	1.06771338	1.08466399	
<b>STD_dev</b>	0.00302353	0.00302353	0.01392953	

Delta				
Device ID	0.0 krad	50.0 krad	100.0 krad	48 hour
3		0.00015271	0.03680265	0.00015271
4		0.00015271	0.0128274	
<b>Average</b>		0.00015271	0.02481502	
<b>MAX</b>		0.00015271	0.03680265	
<b>MIN</b>		0.00015271	0.0128274	
<b>STD_dev</b>		0	0.01695306	



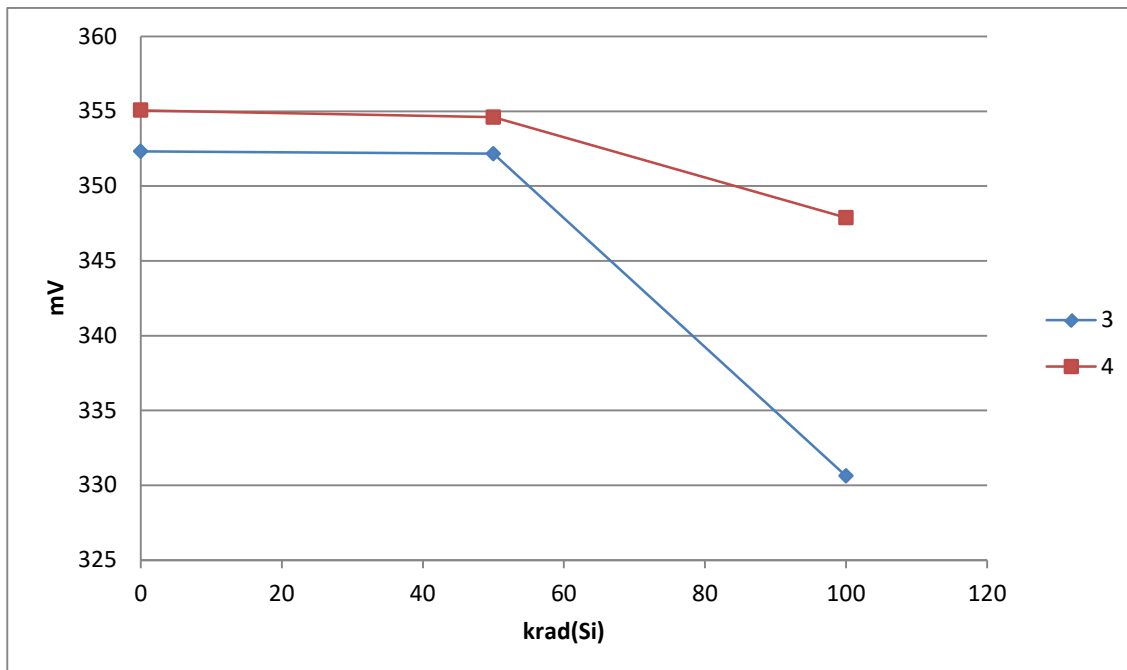


17088 VOD/LVDS/CLKOUT6/3.465

Limit\_Min 300.000012 Limit\_Max 500 mV

Device ID	0.0 krad	50.0 krad	100.0 krad
3	352.312744	352.160034	330.626434
4	355.06134	354.603241	347.883514
<b>Average</b>	353.687042	353.381638	339.254974
<b>MAX</b>	355.06134	354.603241	347.883514
<b>MIN</b>	352.312744	352.160034	330.626434
<b>STD_dev</b>	1.94355101	1.72760809	12.2025983

Delta			
Device ID	0.0 krad	50.0 krad	100.0 krad
3		-0.15271	-21.68631
4		-0.4580994	-7.1778259
<b>Average</b>		-0.3054047	-14.432068
<b>MAX</b>		-0.15271	-7.1778259
<b>MIN</b>		-0.4580994	-21.68631
<b>STD_dev</b>		0.21594292	10.2590473

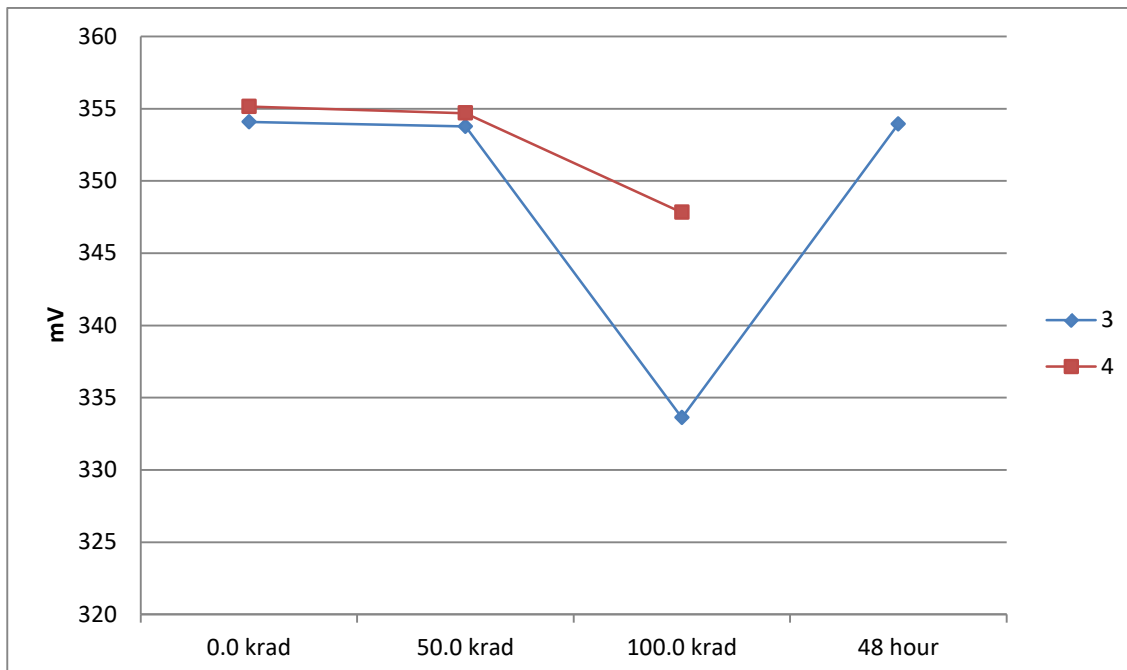


17103 VOD/LVDS/CLKOUT6B/3.465

Limit\_Min 300.000012 Limit\_Max 500 mV

Device ID	0.0 krad	50.0 krad	100.0 krad	48 hour
3	354.083588	353.778198	333.621429	353.930878
4	355.152679	354.69455	347.82309	
<b>Average</b>	354.618134	354.236374	340.72226	
<b>MAX</b>	355.152679	354.69455	347.82309	
<b>MIN</b>	354.083588	353.778198	333.621429	
<b>STD_dev</b>	0.75596206	0.64795823	10.0420902	

Delta				
Device ID	0.0 krad	50.0 krad	100.0 krad	48 hour
3		-0.3053894	-20.462158	-0.1527096
4		-0.4581299	-7.3295898	
<b>Average</b>		-0.3817596	-13.895874	
<b>MAX</b>		-0.3053894	-7.3295898	
<b>MIN</b>		-0.4581299	-20.462158	
<b>STD_dev</b>		0.10800383	9.28612814	

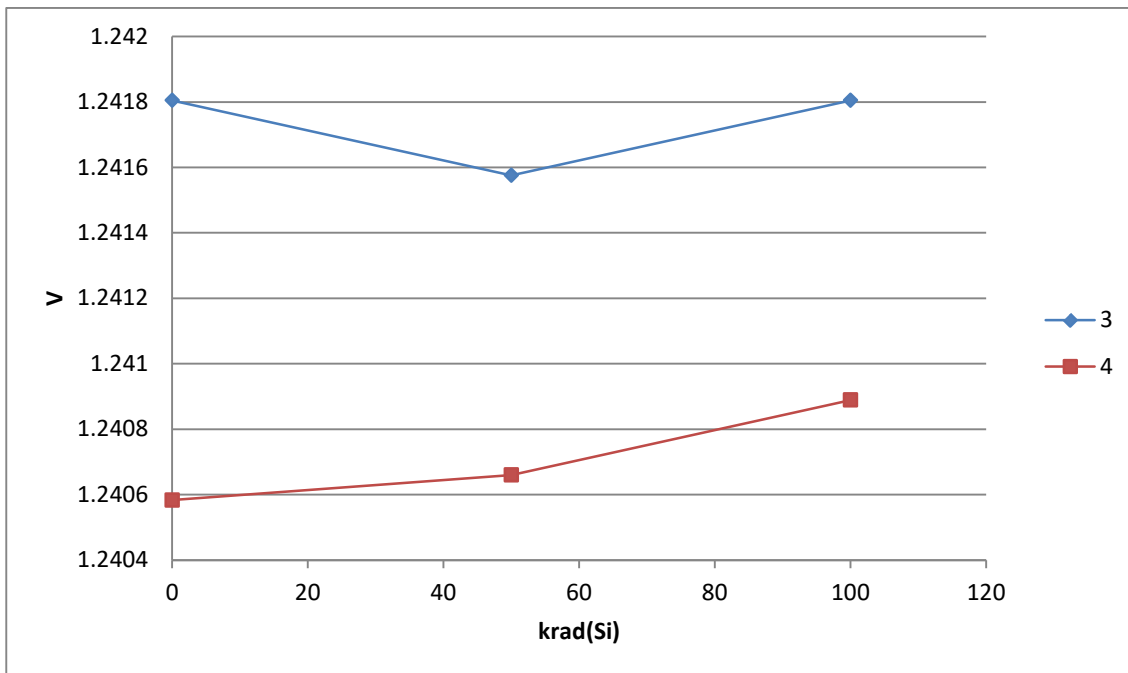


17117 VOS/LVDS/CLKOUT5/3.465

Limit\_Min 1.125 Limit\_Max 1.375 V

Device ID	0.0 krad	50.0 krad	100.0 krad
3	1.24180484	1.24157584	1.24180484
4	1.24058318	1.24065948	1.2408886
<b>Average</b>	1.24119401	1.24111766	1.24134672
<b>MAX</b>	1.24180484	1.24157584	1.24180484
<b>MIN</b>	1.24058318	1.24065948	1.2408886
<b>STD_dev</b>	0.00086384	0.00064797	0.00064788

Delta			
Device ID	0.0 krad	50.0 krad	100.0 krad
3		-0.000229	0
4		7.6294E-05	0.00030541
<b>Average</b>		-7.635E-05	0.00015271
<b>MAX</b>		7.6294E-05	0.00030541
<b>MIN</b>		-0.000229	0
<b>STD_dev</b>		0.00021588	0.00021596

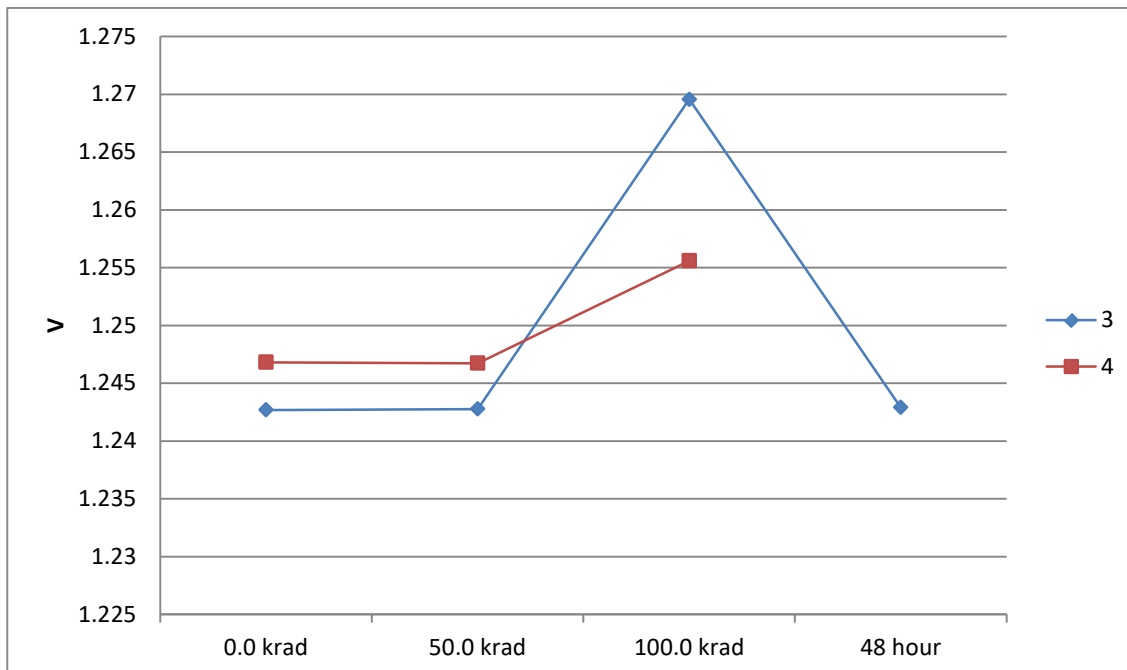


17118 VOS/LVDS/CLKOUT6/3.465

Limit\_Min 1.125 Limit\_Max 1.375 V

Device ID	0.0 krad	50.0 krad	100.0 krad	48 hour
3	1.24268532	1.24276161	1.26956272	1.24291432
4	1.24680841	1.246732	1.25558949	
<b>Average</b>	1.24474686	1.2447468	1.2625761	
<b>MAX</b>	1.24680841	1.246732	1.26956272	
<b>MIN</b>	1.24268532	1.24276161	1.25558949	
<b>STD_dev</b>	0.00291547	0.00280749	0.00988057	

Delta				
Device ID	0.0 krad	50.0 krad	100.0 krad	48 hour
3		7.6294E-05	0.0268774	0.000229
4		-7.641E-05	0.00878107	
<b>Average</b>		-5.95E-08	0.01782924	
<b>MAX</b>		7.6294E-05	0.0268774	
<b>MIN</b>		-7.641E-05	0.00878107	
<b>STD_dev</b>		0.00010798	0.01279604	

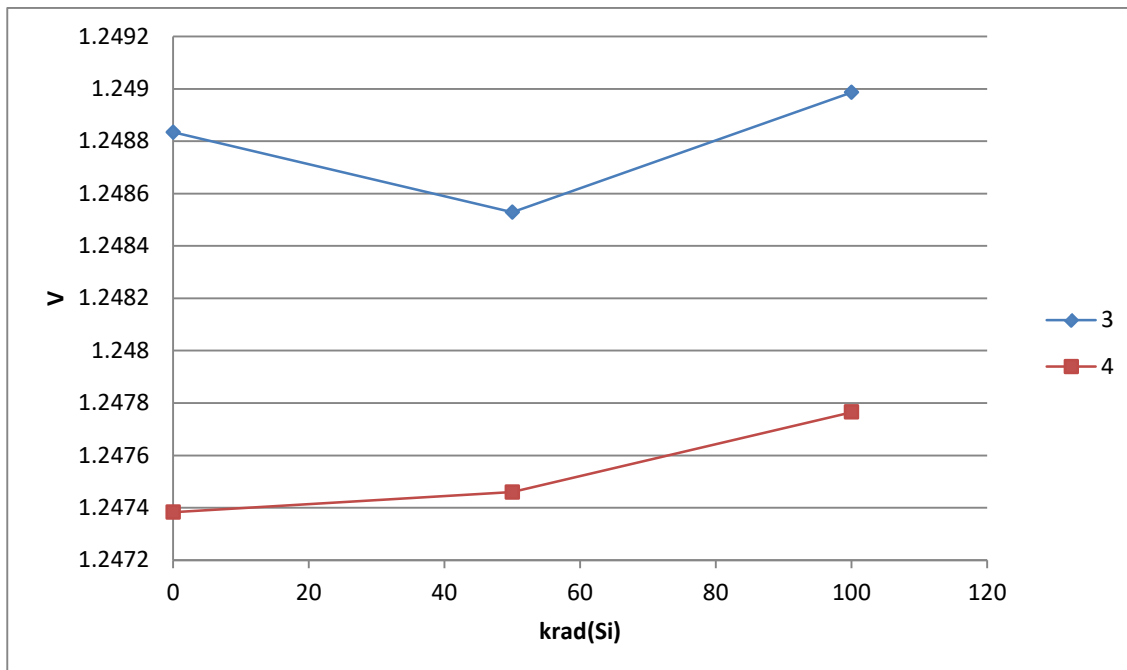


17132 VOS/LVDS/CLKOUT5B/3.465

Limit\_Min 1.125 Limit\_Max 1.375 V

Device ID	0.0 krad	50.0 krad	100.0 krad
3	1.2488339	1.24852848	1.24898672
4	1.24738312	1.24745953	1.24776495
<b>Average</b>	1.24810851	1.24799401	1.24837583
<b>MAX</b>	1.2488339	1.24852848	1.24898672
<b>MIN</b>	1.24738312	1.24745953	1.24776495
<b>STD_dev</b>	0.00102585	0.00075586	0.00086393

Delta			
Device ID	0.0 krad	50.0 krad	100.0 krad
3		-0.0003054	0.00015283
4		7.6413E-05	0.00038183
<b>Average</b>		-0.0001145	0.00026733
<b>MAX</b>		7.6413E-05	0.00038183
<b>MIN</b>		-0.0003054	0.00015283
<b>STD_dev</b>		0.00026999	0.00016193

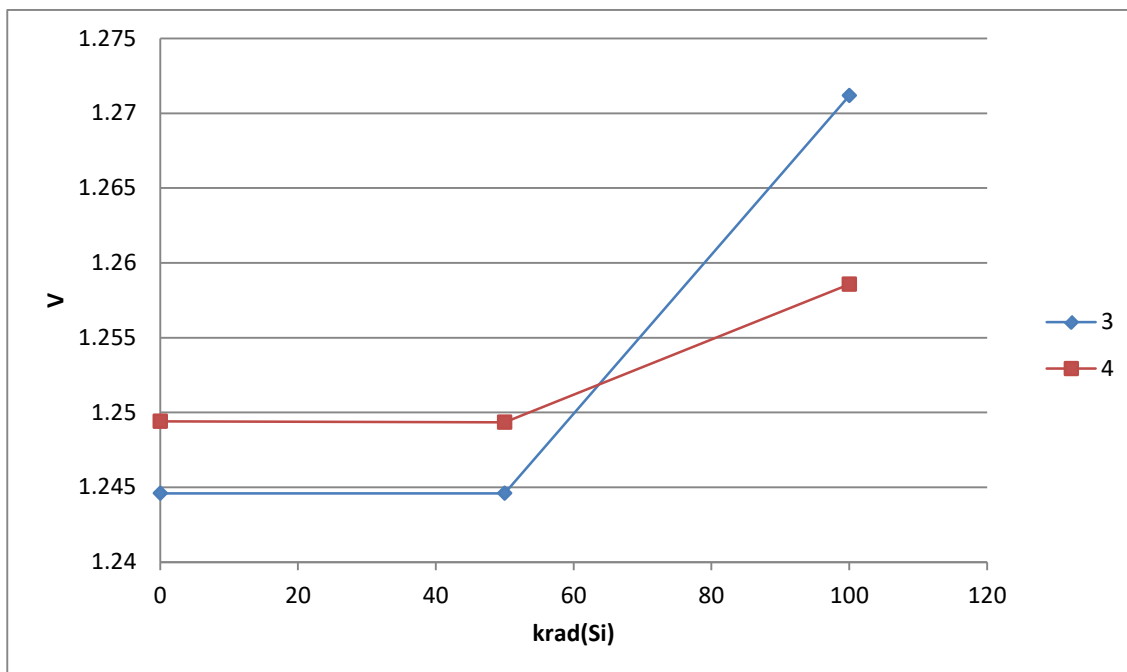


17133 VOS/LVDS/CLKOUT6B/3.465

Limit\_Min 1.125 Limit\_Max 1.375 V

Device ID	0.0 krad	50.0 krad	100.0 krad
3	1.24460244	1.24460244	1.27117395
4	1.24941289	1.24933648	1.25857544
<b>Average</b>	1.24700767	1.24696946	1.2648747
<b>MAX</b>	1.24941289	1.24933648	1.27117395
<b>MIN</b>	1.24460244	1.24460244	1.25857544
<b>STD_dev</b>	0.0034015	0.00334747	0.0089085

Delta			
Device ID	0.0 krad	50.0 krad	100.0 krad
3		0	0.02657151
4		-7.641E-05	0.00916254
<b>Average</b>		-3.821E-05	0.01786703
<b>MAX</b>		0	0.02657151
<b>MIN</b>		-7.641E-05	0.00916254
<b>STD_dev</b>		5.4032E-05	0.01231

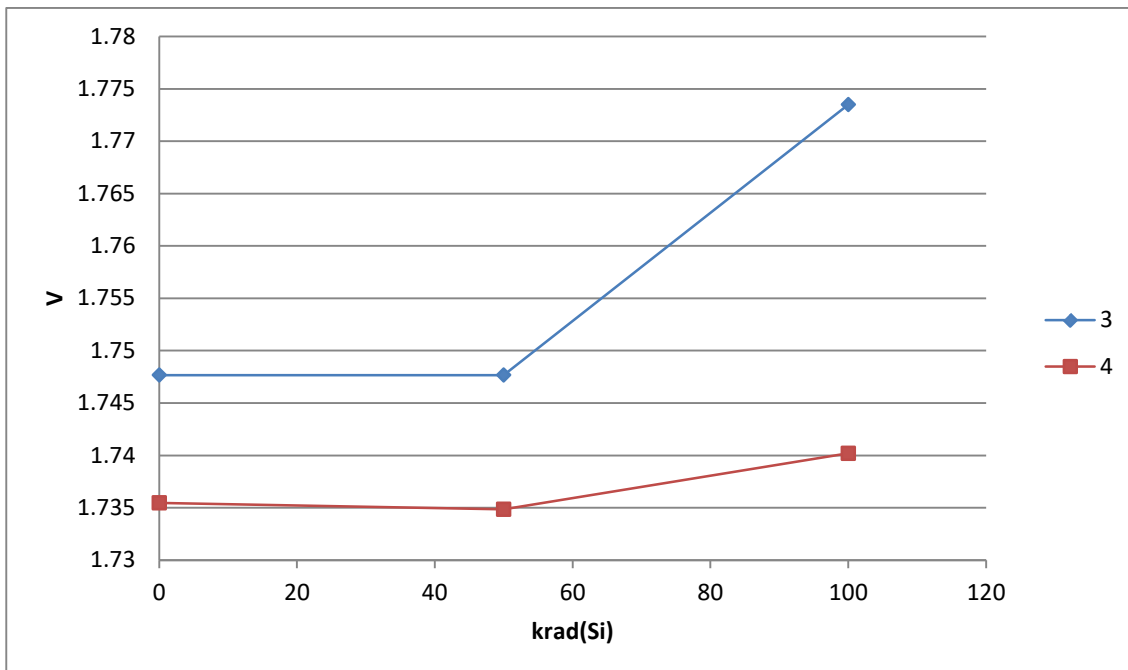


17405 VOL/HSDS8M/CLKOUT1B/3.465

Limit\_Min NA      Limit\_Max 2.03999996 V

Device ID	0.0 krad	50.0 krad	100.0 krad
3	1.74767113	1.74767113	1.77348006
4	1.73545384	1.73484302	1.740188
<b>Average</b>	1.74156249	1.74125707	1.75683403
<b>MAX</b>	1.74767113	1.74767113	1.77348006
<b>MIN</b>	1.73545384	1.73484302	1.740188
<b>STD_dev</b>	0.00863892	0.00907084	0.02354104

Delta			
Device ID	0.0 krad	50.0 krad	100.0 krad
3		0	0.02580893
4		-0.0006108	0.00473416
<b>Average</b>		-0.0003054	0.01527155
<b>MAX</b>		0	0.02580893
<b>MIN</b>		-0.0006108	0.00473416
<b>STD_dev</b>		0.00043192	0.01490211

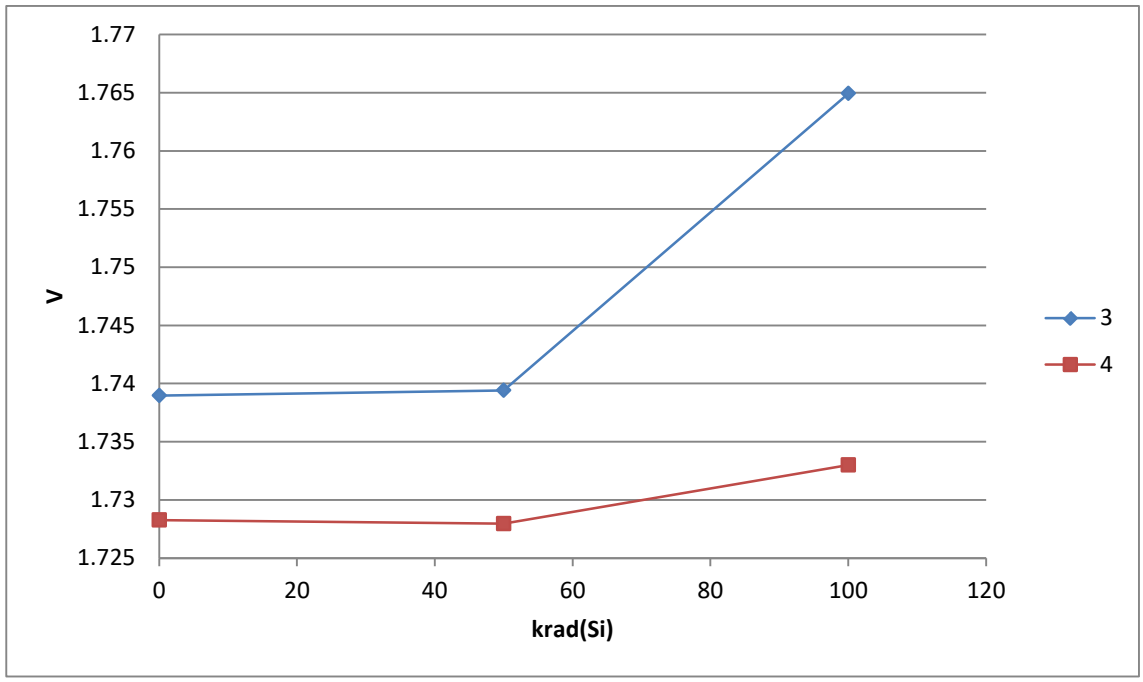


17433 VOL/HSDS8M/CLKOUT1/3.465

Limit\_Min NA      Limit\_Max 2.03999996 V

Device ID	0.0 krad	50.0 krad	100.0 krad
3	1.73895574	1.73941386	1.76491725
4	1.72826564	1.72796023	1.7329998
<b>Average</b>	1.73361069	1.73368704	1.74895853
<b>MAX</b>	1.73895574	1.73941386	1.76491725
<b>MIN</b>	1.72826564	1.72796023	1.7329998
<b>STD_dev</b>	0.00755904	0.00809894	0.02256905

Delta			
Device ID	0.0 krad	50.0 krad	100.0 krad
3		0.00045812	0.02596152
4		-0.0003054	0.00473416
<b>Average</b>		7.6353E-05	0.01534784
<b>MAX</b>		0.00045812	0.02596152
<b>MIN</b>		-0.0003054	0.00473416
<b>STD_dev</b>		0.0005399	0.01501001



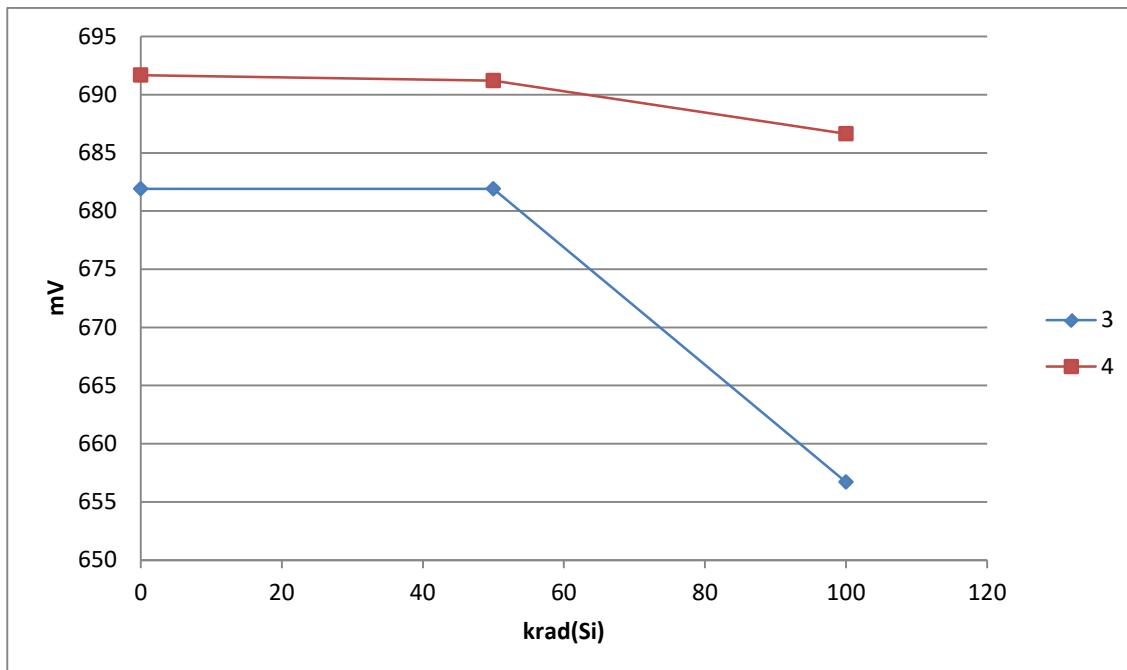


17447 VOD/HSDS8M/CLKOUT1/3.465

Limit\_Min 519.999981 Limit\_Max 944.999993 mV

Device ID	0.0 krad	50.0 krad	100.0 krad
3	681.893066	681.893066	656.694946
4	691.666809	691.208801	686.627197
<b>Average</b>	686.779938	686.550934	671.661072
<b>MAX</b>	691.666809	691.208801	686.627197
<b>MIN</b>	681.893066	681.893066	656.694946
<b>STD_dev</b>	6.91107972	6.58721929	21.1652976

Delta			
Device ID	0.0 krad	50.0 krad	100.0 krad
3		0	-25.19812
4		-0.4580078	-5.0396118
<b>Average</b>		-0.2290039	-15.118866
<b>MAX</b>		0	-5.0396118
<b>MIN</b>		-0.4580078	-25.19812
<b>STD_dev</b>		0.32386043	14.2542179

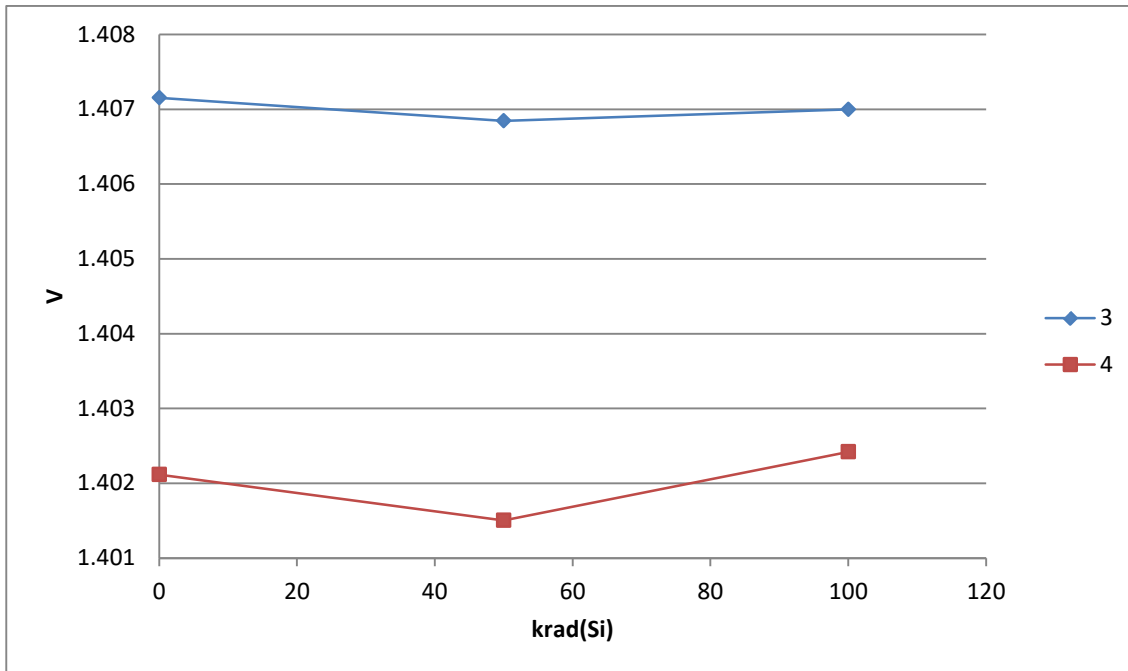


17605 VOL/PECLV20/CLKOUT12B/3.465

Limit\_Min NA      Limit\_Max 1.74000001 V

Device ID	0.0 krad	50.0 krad	100.0 krad
3	1.4071517	1.4068464	1.40699911
4	1.40211582	1.40150535	1.402421
<b>Average</b>	1.40463376	1.40417588	1.40471005
<b>MAX</b>	1.4071517	1.4068464	1.40699911
<b>MIN</b>	1.40211582	1.40150535	1.402421
<b>STD_dev</b>	0.0035609	0.00377669	0.00323721

Delta			
Device ID	0.0 krad	50.0 krad	100.0 krad
3		-0.0003053	-0.0001526
4		-0.0006105	0.00030518
<b>Average</b>		-0.0004579	7.6294E-05
<b>MAX</b>		-0.0003053	0.00030518
<b>MIN</b>		-0.0006105	-0.0001526
<b>STD_dev</b>		0.00021579	0.00032369

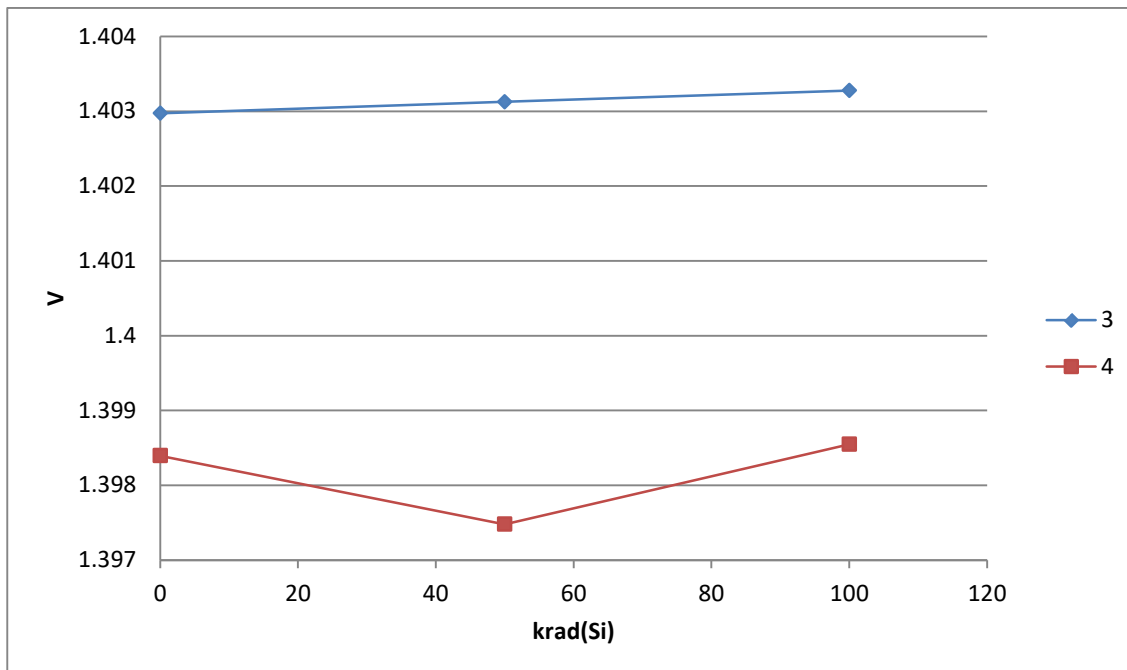


17635 VOL/PECLV20/CLKOUT12/3.465

Limit\_Min NA      Limit\_Max 1.74000001 V

Device ID	0.0 krad	50.0 krad	100.0 krad
3	1.4029727	1.40312529	1.40327787
4	1.39839459	1.39747906	1.39854717
<b>Average</b>	1.40068364	1.40030217	1.40091252
<b>MAX</b>	1.4029727	1.40312529	1.40327787
<b>MIN</b>	1.39839459	1.39747906	1.39854717
<b>STD_dev</b>	0.00323721	0.00399249	0.00334511

Delta			
Device ID	0.0 krad	50.0 krad	100.0 krad
3		0.00015259	0.00030518
4		-0.0009155	0.00015259
<b>Average</b>		-0.0003815	0.00022888
<b>MAX</b>		0.00015259	0.00030518
<b>MIN</b>		-0.0009155	0.00015259
<b>STD_dev</b>		0.00075527	0.0001079

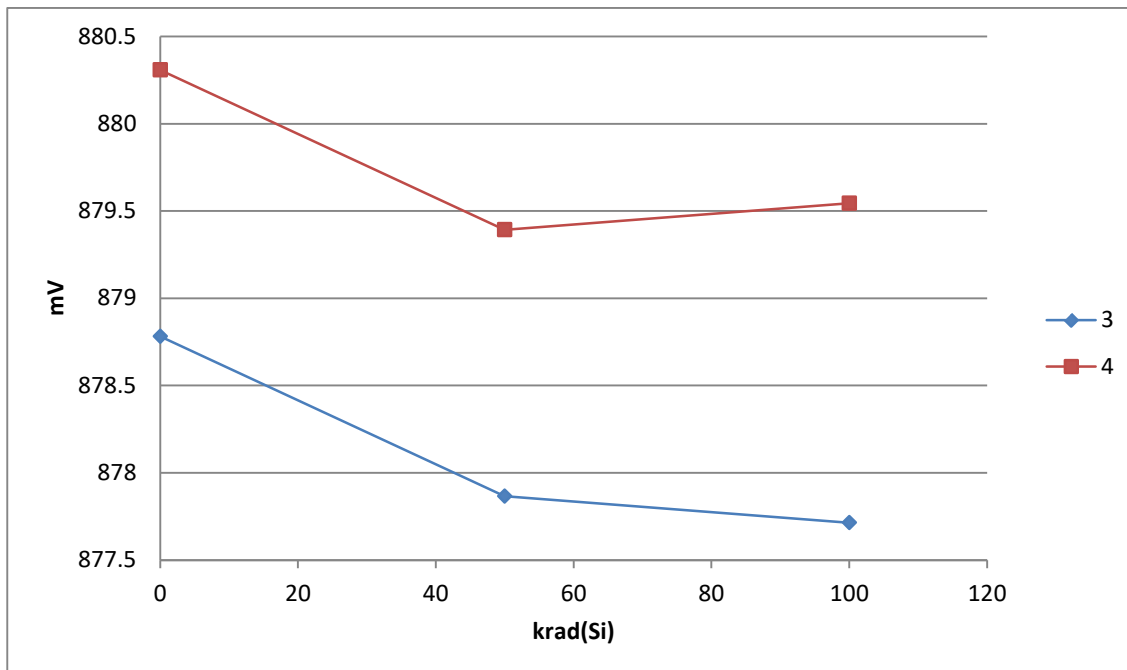


17665 VOD/PECLV20/CLKOUT12B/3.465

Limit\_Min 680.000007 Limit\_Max 1090.00003 mV

Device ID	0.0 krad	50.0 krad	100.0 krad
3	878.781616	877.866089	877.713501
4	880.307739	879.391968	879.544556
<b>Average</b>	879.544678	878.629028	878.629028
<b>MAX</b>	880.307739	879.391968	879.544556
<b>MIN</b>	878.781616	877.866089	877.713501
<b>STD_dev</b>	1.07913196	1.07895932	1.29475119

Delta			
Device ID	0.0 krad	50.0 krad	100.0 krad
3		-0.9155273	-1.0681152
4		-0.9157715	-0.7631836
<b>Average</b>		-0.9156494	-0.9156494
<b>MAX</b>		-0.9155273	-0.7631836
<b>MIN</b>		-0.9157715	-1.0681152
<b>STD_dev</b>		0.00017263	0.21561923

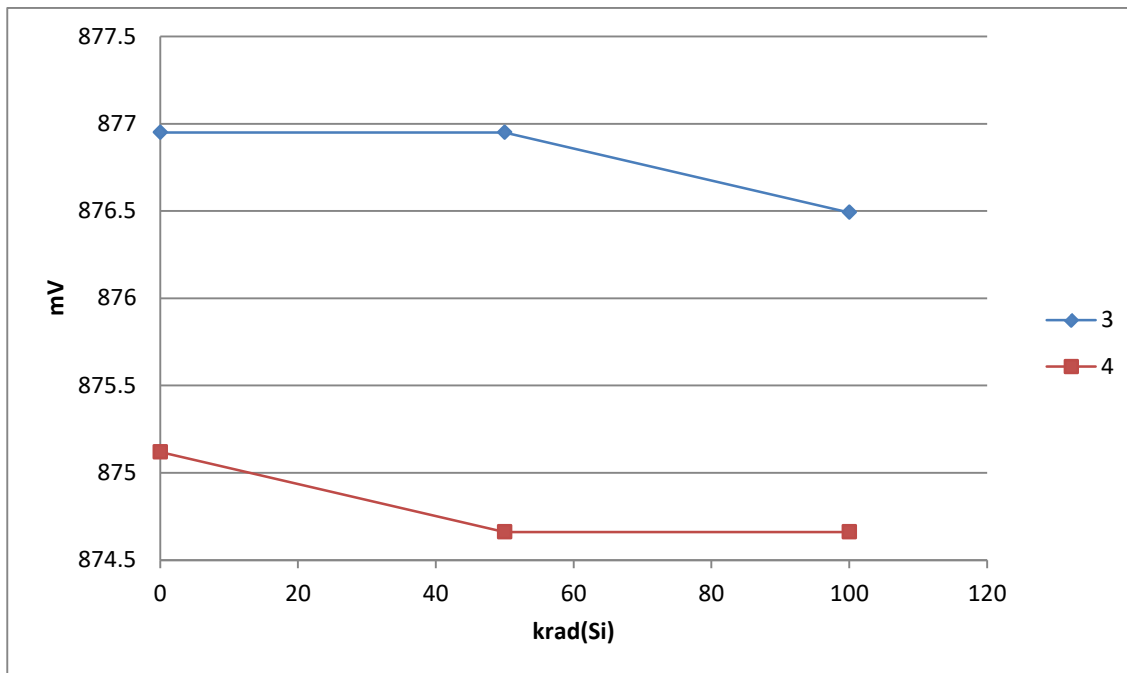


17751 VOD/LCPECL/CLKOUT13B/3.465

Limit\_Min 754.999995 Limit\_Max 1120 mV

Device ID	0.0 krad	50.0 krad	100.0 krad
3	876.950073	876.949951	876.492249
4	875.118835	874.660889	874.66095
<b>Average</b>	876.034454	875.80542	875.576599
<b>MAX</b>	876.950073	876.949951	876.492249
<b>MIN</b>	875.118835	874.660889	874.66095
<b>STD_dev</b>	1.29488066	1.61861162	1.29492382

Delta			
Device ID	0.0 krad	50.0 krad	100.0 krad
3		-0.0001221	-0.4578247
4		-0.4579468	-0.4578857
<b>Average</b>		-0.2290344	-0.4578552
<b>MAX</b>		-0.0001221	-0.4578247
<b>MIN</b>		-0.4579468	-0.4578857
<b>STD_dev</b>		0.32373095	4.3158E-05

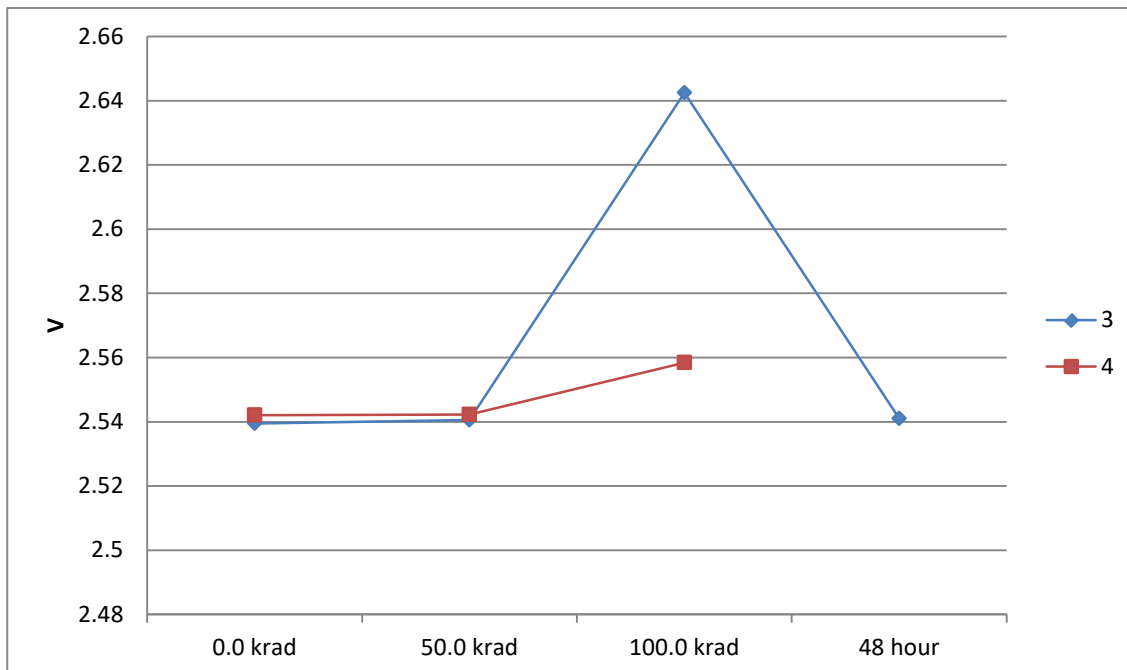


17885 VOL/CML16/CLKOUT0B/3.465

Limit\_Min NA      Limit\_Max 2.8199993 V

Device ID	0.0 krad	50.0 krad	100.0 krad	48 hour
3	2.53949094	2.54055905	2.64250064	2.54101706
4	2.54208517	2.54223776	2.55841422	
<b>Average</b>	2.54078805	2.54139841	2.60045743	
<b>MAX</b>	2.54208517	2.54223776	2.64250064	
<b>MIN</b>	2.53949094	2.54055905	2.55841422	
<b>STD_dev</b>	0.0018344	0.00118702	0.05945808	

Delta				
Device ID	0.0 krad	50.0 krad	100.0 krad	48 hour
3		0.00106811	0.1030097	0.00152612
4		0.00015259	0.01632905	
<b>Average</b>		0.00061035	0.05966938	
<b>MAX</b>		0.00106811	0.1030097	
<b>MIN</b>		0.00015259	0.01632905	
<b>STD_dev</b>		0.00064738	0.06129248	

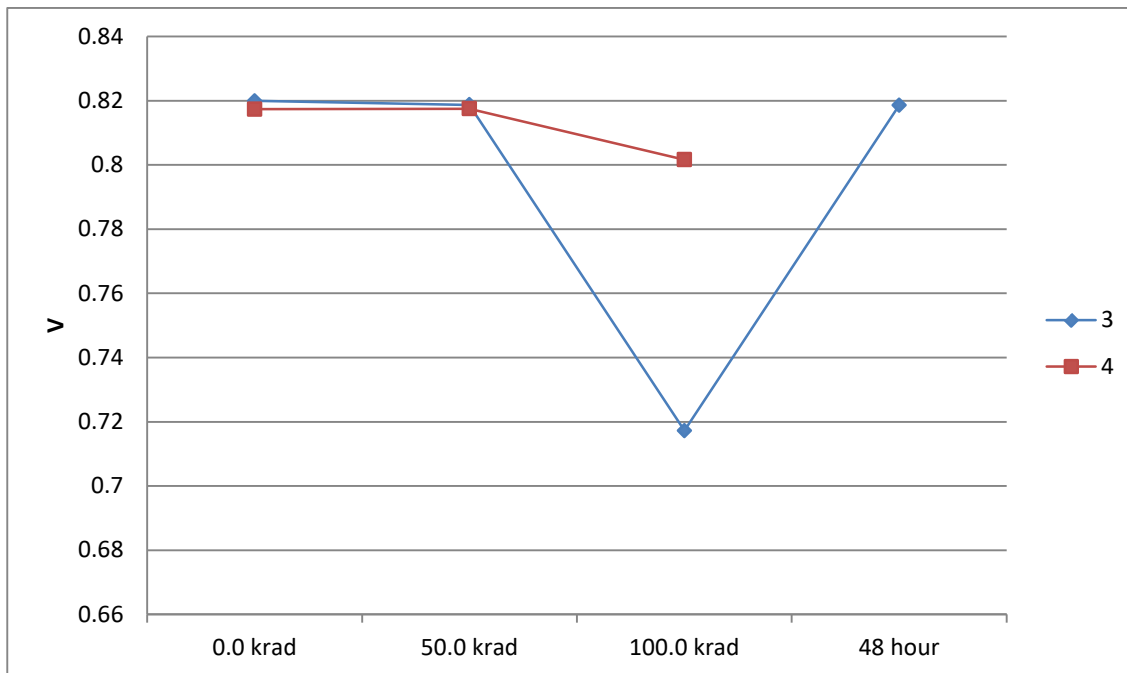


17906 VOD/CML16/CLKOUT0/3.465

Limit\_Min 0.63 Limit\_Max 0.9700003 V

Device ID	0.0 krad	50.0 krad	100.0 krad	48 hour
3	0.81993175	0.81871104	0.71722746	0.81855846
4	0.81733751	0.81749034	0.80161905	
<b>Average</b>	0.81863463	0.81810069	0.75942326	
<b>MAX</b>	0.81993175	0.81871104	0.80161905	
<b>MIN</b>	0.81733751	0.81749034	0.71722746	
<b>STD_dev</b>	0.0018344	0.00086317	0.05967387	

Delta				
Device ID	0.0 krad	50.0 krad	100.0 krad	48 hour
3		-0.0012207	-0.1027043	-0.0013733
4		0.00015283	-0.0157185	
<b>Average</b>		-0.0005339	-0.0592114	
<b>MAX</b>		0.00015283	-0.0157185	
<b>MIN</b>		-0.0012207	-0.1027043	
<b>STD_dev</b>		0.00097123	0.06150827	



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