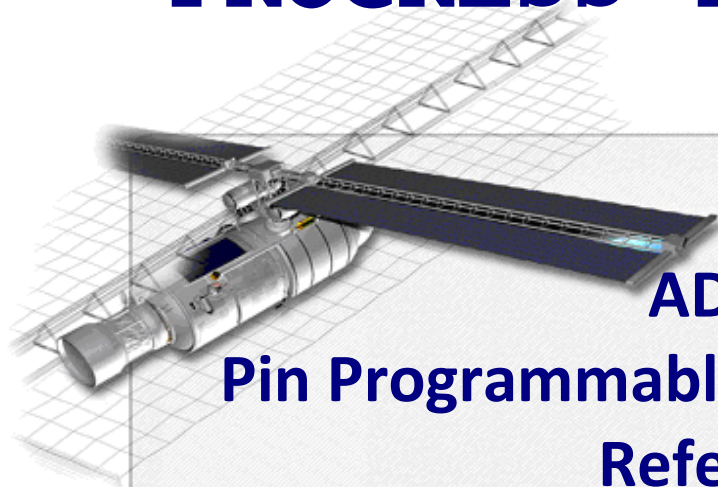




TOTAL IONIZING DOSE PROGRESS TEST REPORT



AD584 Pin Programmable Precision Voltage Reference DC0226A From Analog Devices

TRAD/TE/AD584SH/0226A/ESA/MV/1410		Labège, May 22 nd , 2015
 		TRAD, Bât Gallium 907, Voie l'Occitane - 31670 LABEGE France ☎: 05 61 00 95 60 Fax: 05 61 00 95 61 Email: trad@trad.fr Web Site: www.trad.fr SIRET 397 862 038 00056 - TVA FR59397862038
Written by	Verified by / Quality control	Approved by
M. VAILLÉ 22/05/2015	P. GARCIA 12/06/2015	N. SUKHASEUM 12/06/2015
Revision: 0	Creation of the document	
Revision: 1	Addition of table of test parameters	
To: ESA Mr Christian POIVEY	Project/Program: Ref:	

CONTENTS

1. Introduction.....	3
2. Part information	3
2.1. Identification.....	3
2.2. Procurement information.....	3
3. COMMENTS.....	3
4. Test Parameters	4
5. Appendix 1 measured parameters.....	4
1. Icc.....	5
2. Vout1	6
3. Vout2	7
4. Vout3	8
5. Vout4	9
6. VRline1.....	10
7. VRline2.....	11
8. VRload1	12
9. VRload2	13
10. VRload3	14
11. VRload4	15
12. Ios	16

1. INTRODUCTION

This progress report describes the testing and characterization of the **AD584SH** manufactured by **Analog Devices**. Testing began on January 05th, 2015 and ended on February 24th, 2015.

2. PART INFORMATION

2.1. Identification

Part designation	AD584SH
Manufacturer	Analog Devices
Part function	Pin Programmable Precision Voltage Reference

2.2. Procurement information

Package	TO-99
Date Code	0226A
Charge No	94580
Number of tested parts	30 irradiated samples (Biased OFF) + 1 reference sample

3. COMMENTS

The irradiation test on **30 AD584SH**, a **Pin Programmable Precision Voltage Reference** from **Analog Devices** is using gamma rays from Cobalt 60 source, at low dose rate (210 rad(Si)/h).

For an easier result visualisation, measurements and graphs have been separated per lot.

The black curve with no drift is the DUT reference (not irradiated).

Part 5 and 15 are atypical for most of parameters

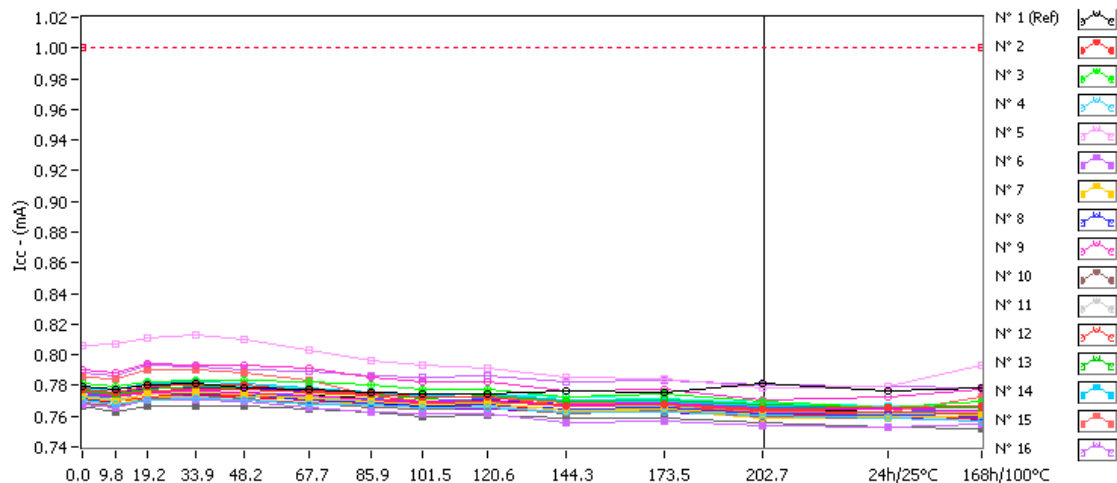
4. TEST PARAMETERS

Parameters	Symbols	Test conditions
Ta=25°C, Vin=15V, IL=0, unless otherwise specified		
Quiescent Current	ICC	Vin=38V; VO=10V
Output VOltage	VOUT1	VO=10V
	VOUT2	VO=7.5V
	VOUT3	VO=5.0V
	VOUT4	VO=2.5V
Line Regulation	VRLINE1	12.5V<Vin<15V; VO=10V
	VRLINE2	15V<Vin<30V; VO=10V
Load Regulation	VRLOAD1	0mA<IL<5mA; VO=10V
	VRLOAD2	0mA<IL<5mA; VO=7.5V
	VRLOAD3	0mA<IL<5mA; VO=5.0V
	VRLOAD4	0mA<IL<5mA; VO=2.5V
Output Short Circuit Current	IOS	VO=10V

5. APPENDIX 1 MEASURED PARAMETERS

1. Icc

Ta=25°C; Vin=38V; IL=0mA; VO=10V



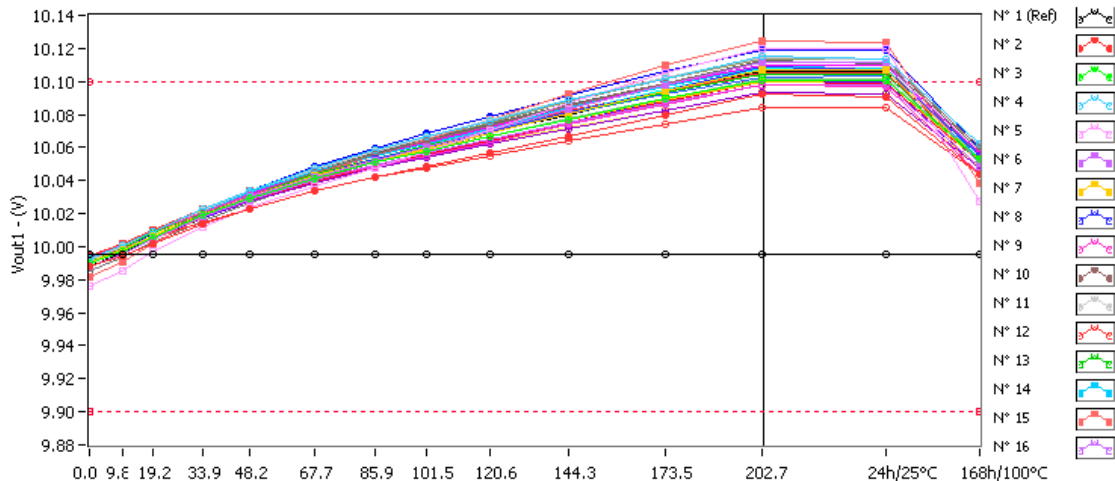
Icc. (mA)

Max = 1.0

	0.0 krad(Si)	9.8 krad(Si)	19.2 krad(Si)	33.9 krad(Si)	48.2 krad(Si)	67.7 krad(Si)	85.9 krad(Si)	101.5 krad(Si)	120.6 krad(Si)	144.3 krad(Si)	173.5 krad(Si)	202.7 krad(Si)	24h/25°C	168h/100°C
N° 1 (Ref)	0.7793	0.7778	0.7800	0.7817	0.7780	0.7775	0.7754	0.7742	0.7745	0.7763	0.7752	0.7814	0.7766	0.7785
N° 2	0.7776	0.7755	0.7792	0.7801	0.7801	0.7763	0.7745	0.7722	0.7721	0.7667	0.7678	0.7645	0.7652	0.7665
N° 3	0.7811	0.7790	0.7828	0.7839	0.7835	0.7821	0.7802	0.7774	0.7771	0.7724	0.7742	0.7695	0.7657	0.7698
N° 4	0.7706	0.7674	0.7704	0.7714	0.7710	0.7679	0.7676	0.7659	0.7657	0.7626	0.7628	0.7602	0.7589	0.7570
N° 5	0.8063	0.8070	0.8112	0.8131	0.8096	0.8031	0.7967	0.7930	0.7909	0.7851	0.7848	0.7785	0.7798	0.7931
N° 6	0.7672	0.7655	0.7709	0.7703	0.7694	0.7660	0.7625	0.7616	0.7616	0.7559	0.7569	0.7537	0.7526	0.7551
N° 7	0.7722	0.7700	0.7745	0.7752	0.7741	0.7719	0.7697	0.7674	0.7681	0.7635	0.7645	0.7608	0.7584	0.7608
N° 8	0.7714	0.7695	0.7745	0.7747	0.7741	0.7708	0.7687	0.7679	0.7674	0.7645	0.7657	0.7619	0.7610	0.7596
N° 9	0.7903	0.7880	0.7943	0.7936	0.7934	0.7909	0.7855	0.7826	0.7827	0.7766	0.7777	0.7701	0.7726	0.7773
N° 10	0.7688	0.7666	0.7713	0.7720	0.7706	0.7683	0.7659	0.7645	0.7654	0.7621	0.7635	0.7601	0.7588	0.7564
N° 11	0.7699	0.7667	0.7717	0.7721	0.7710	0.7692	0.7669	0.7650	0.7665	0.7631	0.7654	0.7612	0.7604	0.7570
N° 12	0.7714	0.7700	0.7727	0.7742	0.7735	0.7711	0.7696	0.7685	0.7695	0.7661	0.7673	0.7640	0.7630	0.7617
N° 13	0.7766	0.7748	0.7779	0.7794	0.7786	0.7774	0.7745	0.7720	0.7730	0.7692	0.7705	0.7680	0.7655	0.7654
N° 14	0.7783	0.7779	0.7810	0.7822	0.7813	0.7781	0.7740	0.7735	0.7750	0.7701	0.7697	0.7664	0.7653	0.7669
N° 15	0.7851	0.7848	0.7908	0.7901	0.7881	0.7838	0.7740	0.7728	0.7724	0.7685	0.7671	0.7629	0.7628	0.7722
N° 16	0.7887	0.7867	0.7935	0.7919	0.7905	0.7893	0.7862	0.7854	0.7859	0.7827	0.7836	0.7809	0.7791	0.7784
N° 17	0.7699	0.7674	0.7725	0.7719	0.7710	0.7713	0.7663	0.7652	0.7654	0.7622	0.7633	0.7583	0.7595	0.7593
N° 18	0.7753	0.7720	0.7756	0.7769	0.7758	0.7735	0.7706	0.7696	0.7700	0.7675	0.7682	0.7650	0.7644	0.7633
N° 19	0.7699	0.7667	0.7703	0.7714	0.7705	0.7695	0.7659	0.7644	0.7651	0.7628	0.7631	0.7596	0.7584	0.7582
N° 20	0.7735	0.7709	0.7746	0.7754	0.7721	0.7730	0.7705	0.7685	0.7693	0.7666	0.7667	0.7633	0.7618	0.7630
N° 21	0.7779	0.7772	0.7815	0.7803	0.7798	0.7785	0.7750	0.7739	0.7742	0.7723	0.7719	0.7682	0.7671	0.7671
N° 22	0.7755	0.7732	0.7766	0.7779	0.7777	0.7754	0.7730	0.7699	0.7698	0.7667	0.7664	0.7628	0.7606	0.7628
N° 23	0.7666	0.7628	0.7662	0.7669	0.7666	0.7647	0.7631	0.7600	0.7609	0.7583	0.7585	0.7556	0.7531	0.7522
N° 24	0.7734	0.7726	0.7761	0.7763	0.7752	0.7726	0.7714	0.7697	0.7711	0.7698	0.7697	0.7657	0.7649	0.7628
N° 25	0.7707	0.7691	0.7724	0.7733	0.7724	0.7706	0.7680	0.7652	0.7663	0.7642	0.7650	0.7603	0.7593	0.7588
N° 26	0.7714	0.7692	0.7730	0.7745	0.7733	0.7705	0.7688	0.7668	0.7673	0.7645	0.7649	0.7611	0.7599	0.7598
N° 27	0.7729	0.7708	0.7746	0.7753	0.7745	0.7731	0.7699	0.7683	0.7687	0.7672	0.7680	0.7640	0.7627	0.7606
N° 28	0.7691	0.7676	0.7716	0.7725	0.7713	0.7687	0.7673	0.7656	0.7668	0.7643	0.7648	0.7618	0.7592	0.7578
N° 29	0.7753	0.7746	0.7782	0.7781	0.7773	0.7765	0.7740	0.7701	0.7706	0.7674	0.7679	0.7650	0.7609	0.7640
N° 30	0.7740	0.7715	0.7763	0.7769	0.7758	0.7746	0.7723	0.7702	0.7705	0.7672	0.7681	0.7651	0.7621	0.7620
N° 31	0.7725	0.7705	0.7742	0.7747	0.7737	0.7734	0.7720	0.7684	0.7695	0.7671	0.7679	0.7650	0.7625	0.7608

2. Vout1

Ta=25°C; Vin=15V; IL=0mA; VO=10V



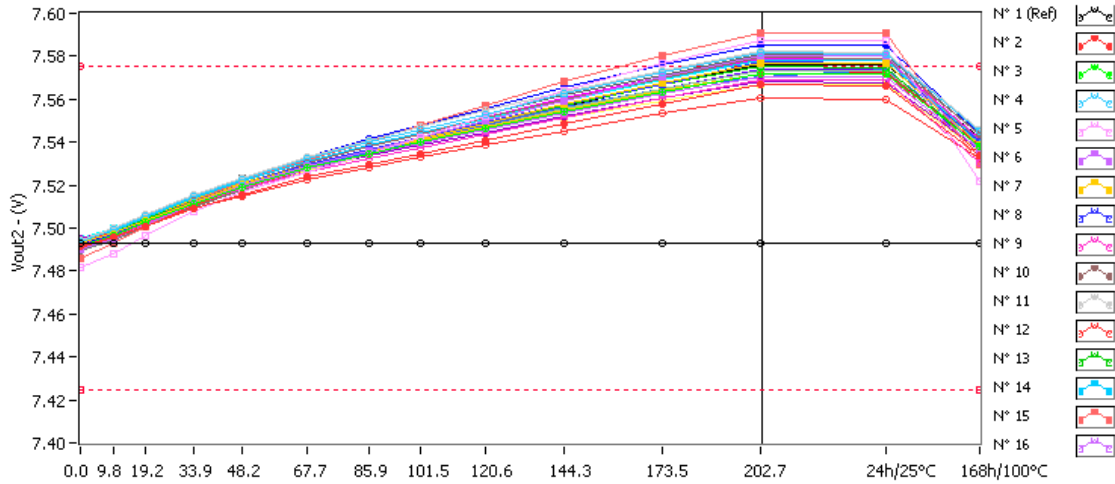
Vout1 . (V)

Min = 9.9 Max = 10.1

	0.0 krad(Si)	9.8 krad(Si)	19.2 krad(Si)	33.9 krad(Si)	48.2 krad(Si)	67.7 krad(Si)	85.9 krad(Si)	101.5 krad(Si)	120.6 krad(Si)	144.3 krad(Si)	173.5 krad(Si)	202.7 krad(Si)	24h/25°C	168h/100°C
N° 1 (Ref)	9.99518	9.99526	9.99517	9.99511	9.99512	9.99524	9.99532	9.99529	9.99520	9.99524	9.99521	9.99513	9.99517	9.99524
N° 2	9.98833	9.99438	10.00166	10.01332	10.02311	10.03377	10.04198	10.04829	10.05643	10.06701	10.07925	10.09197	10.09099	10.04401
N° 3	9.99002	9.99754	10.00565	10.01871	10.02965	10.04158	10.05082	10.05771	10.06639	10.07709	10.08933	10.10062	10.10049	10.05267
N° 4	9.99246	10.00065	10.00946	10.02263	10.03418	10.04748	10.05825	10.06659	10.07617	10.08886	10.10193	10.11539	10.11379	10.06233
N° 5	9.97635	9.98552	9.99702	10.01228	10.02399	10.03638	10.04741	10.05733	10.07046	10.08688	10.10484	10.11969	10.11996	10.02766
N° 6	9.98767	9.99517	10.00422	10.01813	10.02975	10.04238	10.05239	10.06021	10.07060	10.08334	10.09826	10.11163	10.11187	10.05050
N° 7	9.99101	9.99810	10.00635	10.01909	10.03021	10.04254	10.05224	10.05963	10.06894	10.08088	10.09437	10.10717	10.10675	10.05251
N° 8	9.98944	9.99695	10.00542	10.01859	10.02998	10.04286	10.05278	10.06026	10.06953	10.08120	10.09417	10.10865	10.10690	10.05487
N° 9	9.99394	10.00044	10.00865	10.02128	10.03117	10.04100	10.04859	10.05481	10.06288	10.07388	10.08603	10.09743	10.09721	10.04362
N° 10	9.98969	9.99789	10.00660	10.01980	10.03140	10.04463	10.05540	10.06358	10.07341	10.08543	10.09881	10.11173	10.11130	10.06047
N° 11	9.99141	9.99985	10.00866	10.02190	10.03340	10.04688	10.05782	10.06622	10.07652	10.08868	10.10215	10.11447	10.11374	10.06180
N° 12	9.99356	9.99912	10.00528	10.01479	10.02324	10.03357	10.04178	10.04774	10.05529	10.06415	10.07453	10.08421	10.08370	10.04395
N° 13	9.99200	9.99936	10.00784	10.02059	10.03144	10.04371	10.05336	10.06081	10.06992	10.08084	10.09318	10.10473	10.10431	10.05121
N° 14	9.99151	9.99915	10.00800	10.02123	10.03264	10.04537	10.05518	10.06257	10.07177	10.08387	10.09697	10.10849	10.10822	10.05301
N° 15	9.98130	9.99064	10.00210	10.01832	10.03099	10.04399	10.05513	10.06462	10.07699	10.09257	10.11010	10.12421	10.12391	10.03801
N° 16	9.99214	9.99888	10.00634	10.01812	10.02836	10.04003	10.04930	10.05651	10.06457	10.07535	10.08681	10.09802	10.09833	10.04872
N° 17	9.99221	9.99980	10.00805	10.02044	10.03092	10.04257	10.05177	10.05851	10.06683	10.07697	10.08868	10.09976	10.10036	10.05141
N° 18	9.99267	10.00008	10.00843	10.02108	10.03210	10.04475	10.05502	10.06284	10.07246	10.08448	10.09766	10.10993	10.10969	10.05632
N° 19	9.99272	9.99944	10.00676	10.01783	10.02746	10.03845	10.04738	10.05394	10.06184	10.07167	10.08268	10.09307	10.09258	10.04756
N° 20	9.99306	10.00007	10.00794	10.02007	10.03053	10.04224	10.05141	10.05825	10.06682	10.07755	10.09006	10.10142	10.10110	10.05277
N° 21	9.99262	9.99971	10.00790	10.02062	10.03147	10.04369	10.05342	10.06083	10.07012	10.08137	10.09515	10.10762	10.10745	10.05283
N° 22	9.99407	10.00145	10.01015	10.02311	10.03398	10.04588	10.05495	10.06198	10.07068	10.08211	10.09420	10.10540	10.10532	10.05268
N° 23	9.99055	9.99896	10.00797	10.02145	10.03291	10.04624	10.05667	10.06451	10.07417	10.08589	10.09872	10.11213	10.11112	10.05859
N° 24	9.98986	9.99744	10.00546	10.01783	10.02862	10.04128	10.05148	10.05948	10.06881	10.08011	10.09210	10.10221	10.10362	10.05646
N° 25	9.99151	9.99811	10.00581	10.01781	10.02819	10.03951	10.04867	10.05559	10.06411	10.07516	10.08786	10.09984	10.09924	10.05130
N° 26	9.99033	9.99849	10.00784	10.02204	10.03410	10.04831	10.05949	10.06818	10.07879	10.09158	10.10596	10.11911	10.11861	10.05909
N° 27	9.99303	10.00029	10.00848	10.02095	10.03194	10.04564	10.05673	10.06509	10.07520	10.08737	10.10125	10.11382	10.11329	10.05976
N° 28	9.98566	9.99360	10.00232	10.01549	10.02683	10.04019	10.05080	10.05878	10.06873	10.08076	10.09458	10.10720	10.10768	10.05550
N° 29	9.99080	9.99720	10.00504	10.01709	10.02738	10.03880	10.04782	10.05485	10.06381	10.07532	10.08835	10.10041	10.10012	10.04686
N° 30	9.99448	10.00083	10.00771	10.01894	10.02856	10.03980	10.04857	10.05511	10.06276	10.07209	10.08258	10.09296	10.09261	10.04815
N° 31	9.98838	9.99642	10.00487	10.01763	10.02865	10.04159	10.05208	10.05965	10.06990	10.07977	10.09472	10.10626	10.10606	10.05711

3. Vout2

Ta=25°C; Vin=15V; IL=0mA; VO=7.5V

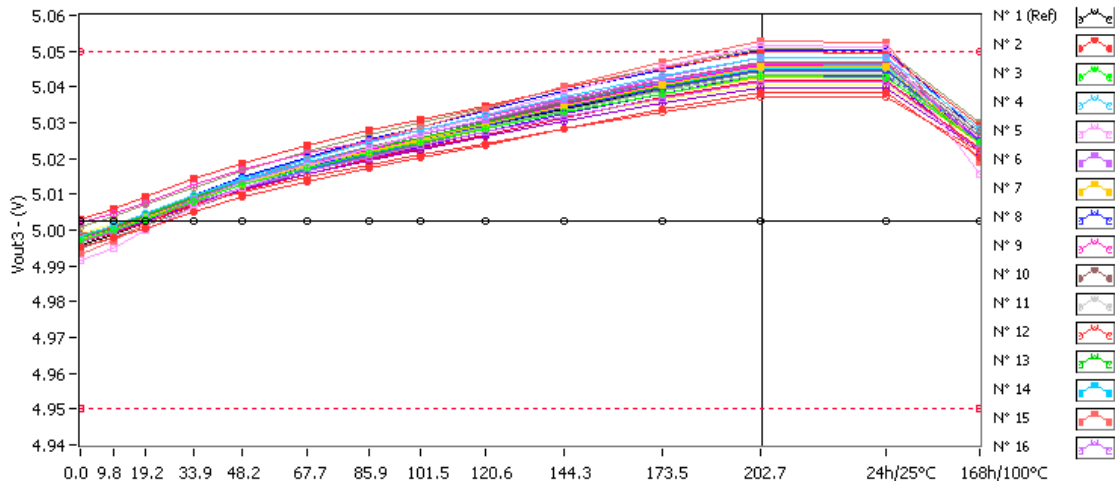


Vout2 . (V) Min = 7.425 Max = 7.575

	0.0 krad(Si)	9.8 krad(Si)	19.2 krad(Si)	33.9 krad(Si)	48.2 krad(Si)	67.7 krad(Si)	85.9 krad(Si)	101.5 krad(Si)	120.6 krad(Si)	144.3 krad(Si)	173.5 krad(Si)	202.7 krad(Si)	24h/25°C	168h/100°C
N° 1 (Ref)	7.49306	7.49312	7.49306	7.49303	7.49304	7.49311	7.49315	7.49311	7.49308	7.49310	7.49309	7.49305	7.49307	7.49312
N° 2	7.49136	7.49558	7.50066	7.50885	7.51581	7.52362	7.52977	7.53462	7.54082	7.54878	7.55806	7.56692	7.56646	7.53347
N° 3	7.49157	7.49676	7.50247	7.51159	7.51931	7.52793	7.53472	7.53988	7.54639	7.55440	7.56363	7.57191	7.57182	7.53830
N° 4	7.49349	7.49913	7.50529	7.51453	7.52267	7.53211	7.53991	7.54605	7.55294	7.56254	7.57224	7.58188	7.58100	7.54531
N° 5	7.48183	7.48820	7.49633	7.50765	7.51656	7.52632	7.53477	7.54221	7.55195	7.56378	7.57668	7.58704	7.58739	7.52163
N° 6	7.48986	7.49507	7.50140	7.51117	7.51946	7.52868	7.53614	7.54201	7.54984	7.55929	7.57039	7.58017	7.58003	7.53693
N° 7	7.49265	7.49754	7.50331	7.51227	7.52016	7.52909	7.53625	7.54173	7.54881	7.55768	7.56765	7.57710	7.57680	7.53870
N° 8	7.49177	7.49697	7.50289	7.51211	7.52017	7.52941	7.53668	7.54222	7.54918	7.55779	7.56722	7.57772	7.57670	7.54040
N° 9	7.49217	7.49668	7.50245	7.51138	7.51861	7.52607	7.53209	7.53701	7.54333	7.55159	7.56077	7.56906	7.56891	7.53045
N° 10	7.49148	7.49715	7.50323	7.51248	7.52064	7.53006	7.53786	7.54380	7.55109	7.55996	7.56982	7.57935	7.57899	7.54363
N° 11	7.49405	7.49988	7.50607	7.51533	7.52341	7.53300	7.54089	7.54702	7.55458	7.56356	7.57358	7.58263	7.58201	7.54598
N° 12	7.49415	7.49801	7.50231	7.50899	7.51499	7.52240	7.52839	7.53281	7.53853	7.54533	7.55326	7.56058	7.56015	7.53252
N° 13	7.49305	7.49812	7.50406	7.51301	7.52071	7.52959	7.53671	7.54229	7.54916	7.55735	7.56661	7.57513	7.57477	7.53749
N° 14	7.49334	7.49862	7.50479	7.51408	7.52215	7.53134	7.53858	7.54417	7.55115	7.56003	7.56941	7.57831	7.57816	7.53930
N° 15	7.48620	7.49268	7.50078	7.51290	7.52182	7.53190	7.54041	7.54754	7.55680	7.56813	7.58024	7.59078	7.59057	7.52950
N° 16	7.49383	7.49850	7.50371	7.51198	7.51919	7.52759	7.53430	7.53965	7.54554	7.55378	7.56243	7.57045	7.57066	7.53627
N° 17	7.49363	7.49888	7.50466	7.51333	7.52078	7.52915	7.53598	7.54100	7.54731	7.55496	7.56375	7.57199	7.57213	7.53813
N° 18	7.49436	7.49949	7.50533	7.51419	7.52196	7.53102	7.53850	7.54432	7.55143	7.56042	7.57029	7.57922	7.57913	7.54178
N° 19	7.49481	7.49947	7.50460	7.51238	7.51896	7.52713	7.53372	7.53866	7.54469	7.55217	7.56055	7.56836	7.56795	7.53650
N° 20	7.49432	7.49917	7.50466	7.51320	7.52060	7.52908	7.53587	7.54101	7.54752	7.55567	7.56506	7.57343	7.57315	7.53909
N° 21	7.49476	7.49967	7.50542	7.51434	7.52204	7.53082	7.53798	7.54351	7.55047	7.55883	7.56920	7.57831	7.57818	7.53988
N° 22	7.49050	7.49562	7.50169	7.51080	7.51857	7.52722	7.53401	7.53942	7.54604	7.55449	7.56374	7.57193	7.57189	7.53475
N° 23	7.49333	7.49915	7.50541	7.51486	7.52299	7.53249	7.54007	7.54582	7.55303	7.56178	7.57117	7.58091	7.58042	7.54376
N° 24	7.49175	7.49698	7.50258	7.51122	7.51884	7.52783	7.53519	7.54102	7.54795	7.55631	7.56498	7.57069	7.57364	7.54089
N° 25	7.49424	7.49878	7.50417	7.51261	7.51996	7.52815	7.53491	7.54013	7.54658	7.55492	7.56446	7.57328	7.57274	7.53906
N° 26	7.49241	7.49806	7.50458	7.51452	7.52306	7.53323	7.54137	7.54779	7.55569	7.56520	7.57583	7.58546	7.58505	7.54335
N° 27	7.49146	7.49648	7.50218	7.51093	7.51866	7.52842	7.53644	7.54258	7.55009	7.55911	7.56946	7.57867	7.57827	7.54095
N° 28	7.48916	7.49465	7.50072	7.50992	7.51795	7.52749	7.53515	7.54103	7.54841	7.55730	7.56759	7.57677	7.57689	7.54070
N° 29	7.49343	7.49788	7.50338	7.51185	7.51922	7.52756	7.53431	7.53964	7.54650	7.55520	7.56496	7.57388	7.57365	7.53590
N° 30	7.49494	7.49935	7.50419	7.51205	7.51889	7.52700	7.53346	7.53841	7.54426	7.55137	7.55941	7.56716	7.56680	7.53566
N° 31	7.49123	7.49676	7.50269	7.51159	7.51938	7.52861	7.53621	7.54166	7.54937	7.55633	7.56790	7.57638	7.57620	7.54211

4. Vout3

Ta=25°C; Vin=15V; IL=0mA; VO=5.0V

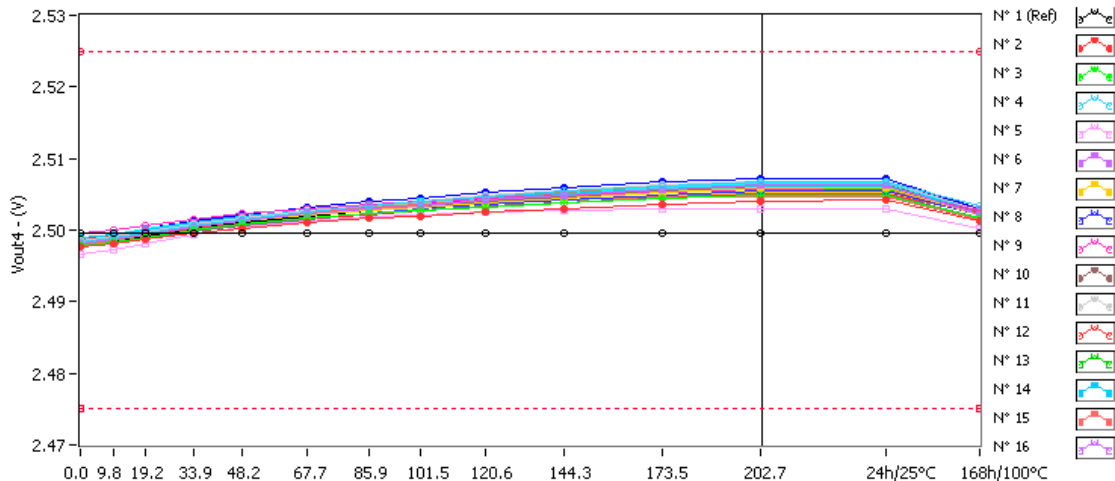


Vout3 . (V) Min = 4.95 Max = 5.05

	0.0 krad(Si)	9.8 krad(Si)	19.2 krad(Si)	33.9 krad(Si)	48.2 krad(Si)	67.7 krad(Si)	85.9 krad(Si)	101.5 krad(Si)	120.6 krad(Si)	144.3 krad(Si)	173.5 krad(Si)	202.7 krad(Si)	24h/25°C	168h/100°C
N° 1 (Ref)	5.00237	5.00240	5.00238	5.00237	5.00237	5.00240	5.00242	5.00243	5.00241	5.00241	5.00239	5.00239	5.00239	5.00241
N° 2	4.99539	4.99772	5.00059	5.00518	5.00914	5.01363	5.01724	5.02009	5.02379	5.02835	5.03366	5.03837	5.03831	5.02030
N° 3	4.99701	4.99988	5.00310	5.00823	5.01259	5.01750	5.02140	5.02437	5.02814	5.03278	5.03810	5.04289	5.04278	5.02437
N° 4	4.99811	5.00123	5.00470	5.00991	5.01449	5.01989	5.02440	5.02787	5.03221	5.03738	5.04307	5.04818	5.04799	5.02851
N° 5	4.99159	4.99512	4.99991	5.00634	5.01173	5.01763	5.02272	5.02685	5.03219	5.03865	5.04562	5.05155	5.05132	5.01549
N° 6	4.99666	4.99955	5.00313	5.00863	5.01333	5.01863	5.02296	5.02648	5.03098	5.03652	5.04284	5.04828	5.04811	5.02424
N° 7	4.99742	5.00012	5.00339	5.00842	5.01287	5.01797	5.02209	5.02530	5.02947	5.03460	5.04054	5.04574	5.04556	5.02429
N° 8	4.99671	4.99959	5.00292	5.00811	5.01263	5.01787	5.02201	5.02519	5.02918	5.03420	5.03988	5.04496	5.04485	5.02494
N° 9	5.00200	5.00451	5.00777	5.01286	5.01702	5.02147	5.02506	5.02802	5.03178	5.03655	5.04178	5.04647	5.04635	5.02487
N° 10	4.99713	5.00027	5.00368	5.00890	5.01347	5.01880	5.02325	5.02666	5.03083	5.03598	5.04169	5.04695	5.04673	5.02732
N° 11	4.99664	4.99986	5.00333	5.00854	5.01309	5.01851	5.02300	5.02655	5.03088	5.03600	5.04179	5.04688	5.04666	5.02666
N° 12	4.99883	5.00097	5.00340	5.00718	5.01057	5.01480	5.01827	5.02096	5.02421	5.02822	5.03290	5.03718	5.03702	5.02180
N° 13	4.99790	5.00071	5.00406	5.00909	5.01348	5.01855	5.02270	5.02594	5.02996	5.03470	5.04006	5.04492	5.04473	5.02401
N° 14	4.99778	5.00070	5.00415	5.00938	5.01393	5.01917	5.02334	5.02659	5.03067	5.03576	5.04131	5.04629	5.04610	5.02476
N° 15	4.99342	4.99703	5.00160	5.00846	5.01373	5.01972	5.02473	5.02887	5.03401	5.04029	5.04700	5.05264	5.05242	5.01901
N° 16	4.99747	5.00006	5.00301	5.00765	5.01173	5.01650	5.02040	5.02352	5.02726	5.03175	5.03683	5.04127	5.04136	5.02248
N° 17	4.99793	5.00084	5.00410	5.00899	5.01320	5.01798	5.02191	5.02481	5.02848	5.03291	5.03804	5.04268	5.04269	5.02404
N° 18	4.99765	5.00047	5.00375	5.00872	5.01313	5.01824	5.02255	5.02588	5.03012	5.03517	5.04089	5.04602	5.04587	5.02527
N° 19	4.99756	5.00016	5.00303	5.00742	5.01128	5.01581	5.01964	5.02254	5.02611	5.03052	5.03542	5.03991	5.03971	5.02239
N° 20	4.99836	5.00104	5.00412	5.00893	5.01312	5.01798	5.02190	5.02494	5.02876	5.03350	5.03892	5.04371	5.04355	5.02464
N° 21	4.99746	5.00020	5.00343	5.00844	5.01280	5.01779	5.02192	5.02517	5.02921	5.03414	5.04001	5.04520	5.04506	5.02387
N° 22	5.00291	5.00575	5.00917	5.01433	5.01876	5.02375	5.02776	5.03090	5.03480	5.03966	5.04504	5.04978	5.04964	5.02912
N° 23	4.99678	4.99998	5.00350	5.00879	5.01337	5.01875	5.02308	5.02644	5.03054	5.03555	5.04122	5.04625	5.04612	5.02605
N° 24	4.99672	4.99962	5.00276	5.00762	5.01191	5.01699	5.02121	5.02458	5.02859	5.03342	5.03887	5.04352	5.04352	5.02545
N° 25	4.99662	4.99913	5.00216	5.00690	5.01106	5.01575	5.01968	5.02275	5.02659	5.03142	5.03697	5.04193	5.04176	5.02297
N° 26	4.99747	5.00061	5.00428	5.00986	5.01468	5.02045	5.02515	5.02883	5.03340	5.03882	5.04496	5.05034	5.05013	5.02700
N° 27	5.00104	5.00383	5.00703	5.01194	5.01631	5.02185	5.02643	5.02998	5.03432	5.03952	5.04548	5.05067	5.05045	5.02979
N° 28	4.99484	4.99789	5.00130	5.00644	5.01097	5.01636	5.02071	5.02411	5.02832	5.03345	5.03928	5.04451	5.04428	5.02472
N° 29	4.99689	4.99936	5.00246	5.00727	5.01146	5.01628	5.02023	5.02339	5.02744	5.03254	5.03823	5.04338	5.04322	5.02211
N° 30	4.99912	5.00156	5.00431	5.00872	5.01261	5.01726	5.02104	5.02394	5.02738	5.03155	5.03631	5.04077	5.04061	5.02342
N° 31	4.99577	4.99883	5.00215	5.00716	5.01157	5.01681	5.02120	5.02464	5.02879	5.03382	5.03947	5.04444	5.04424	5.02541

5. Vout4

Ta=25°C; Vin=15V; IL=0mA; VO=2.5V

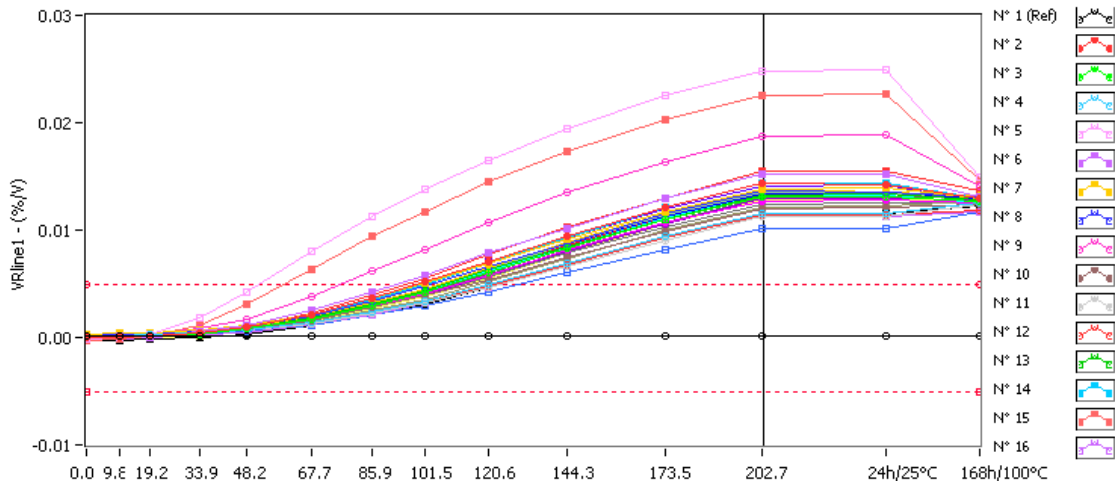


Vout4 . (V) Min = 2.475 Max = 2.525

	0.0 krad(Si)	9.8 krad(Si)	19.2 krad(Si)	33.9 krad(Si)	48.2 krad(Si)	67.7 krad(Si)	85.9 krad(Si)	101.5 krad(Si)	120.6 krad(Si)	144.3 krad(Si)	173.5 krad(Si)	202.7 krad(Si)	24h/25°C	168h/100°C
N° 1 (Ref)	2.49950	2.49950	2.49951	2.49951	2.49951	2.49950	2.49949	2.49950	2.49950	2.49949	2.49950	2.49952	2.49951	2.49951
N° 2	2.49775	2.49814	2.49871	2.49957	2.50030	2.50104	2.50159	2.50198	2.50251	2.50305	2.50366	2.50412	2.50418	2.50136
N° 3	2.49789	2.49839	2.49904	2.50002	2.50083	2.50168	2.50228	2.50269	2.50319	2.50374	2.50438	2.50489	2.50488	2.50178
N° 4	2.49841	2.49894	2.49965	2.50068	2.50157	2.50256	2.50339	2.50398	2.50468	2.50543	2.50620	2.50680	2.50678	2.50332
N° 5	2.49655	2.49717	2.49809	2.49940	2.50043	2.50131	2.50184	2.50213	2.50247	2.50271	2.50285	2.50290	2.50286	2.50014
N° 6	2.49816	2.49868	2.49942	2.50047	2.50133	2.50224	2.50289	2.50345	2.50413	2.50487	2.50569	2.50625	2.50624	2.50211
N° 7	2.49826	2.49872	2.49938	2.50034	2.50118	2.50205	2.50271	2.50318	2.50381	2.50452	2.50532	2.50591	2.50587	2.50207
N° 8	2.49831	2.49882	2.49949	2.50051	2.50134	2.50221	2.50280	2.50322	2.50369	2.50429	2.50493	2.50545	2.50548	2.50220
N° 9	2.49951	2.49995	2.50061	2.50158	2.50234	2.50305	2.50357	2.50394	2.50441	2.50488	2.50530	2.50561	2.50557	2.50273
N° 10	2.49814	2.49869	2.49939	2.50041	2.50127	2.50219	2.50292	2.50344	2.50400	2.50466	2.50539	2.50600	2.50594	2.50245
N° 11	2.49856	2.49912	2.49985	2.50088	2.50175	2.50273	2.50349	2.50407	2.50476	2.50545	2.50624	2.50682	2.50677	2.50279
N° 12	2.49858	2.49895	2.49944	2.50019	2.50082	2.50159	2.50221	2.50266	2.50320	2.50376	2.50445	2.50502	2.50498	2.50239
N° 13	2.49823	2.49871	2.49940	2.50040	2.50123	2.50214	2.50286	2.50338	2.50399	2.50461	2.50532	2.50585	2.50579	2.50202
N° 14	2.49892	2.49943	2.50009	2.50109	2.50191	2.50280	2.50346	2.50392	2.50447	2.50511	2.50571	2.50619	2.50615	2.50276
N° 15	2.49787	2.49852	2.49939	2.50067	2.50160	2.50252	2.50310	2.50352	2.50392	2.50430	2.50454	2.50460	2.50455	2.50142
N° 16	2.49851	2.49897	2.49958	2.50047	2.50124	2.50211	2.50279	2.50333	2.50393	2.50456	2.50524	2.50570	2.50577	2.50226
N° 17	2.49860	2.49911	2.49980	2.50074	2.50152	2.50235	2.50294	2.50332	2.50380	2.50428	2.50486	2.50532	2.50534	2.50225
N° 18	2.49859	2.49907	2.49972	2.50067	2.50149	2.50238	2.50308	2.50358	2.50422	2.50489	2.50564	2.50623	2.50620	2.50255
N° 19	2.49888	2.49935	2.49993	2.50076	2.50149	2.50231	2.50296	2.50344	2.50398	2.50463	2.50528	2.50582	2.50577	2.50291
N° 20	2.49892	2.49938	2.49999	2.50094	2.50173	2.50259	2.50325	2.50371	2.50429	2.50495	2.50566	2.50620	2.50617	2.50277
N° 21	2.49895	2.49945	2.50012	2.50109	2.50190	2.50277	2.50341	2.50391	2.50449	2.50514	2.50592	2.50652	2.50649	2.50277
N° 22	2.49867	2.49917	2.49987	2.50087	2.50170	2.50254	2.50317	2.50361	2.50414	2.50472	2.50531	2.50570	2.50568	2.50241
N° 23	2.49876	2.49931	2.50002	2.50103	2.50188	2.50283	2.50351	2.50399	2.50454	2.50517	2.50582	2.50634	2.50631	2.50274
N° 24	2.49787	2.49837	2.49899	2.49993	2.50074	2.50166	2.50242	2.50302	2.50370	2.50444	2.50526	2.50579	2.50584	2.50212
N° 25	2.49860	2.49902	2.49962	2.50054	2.50132	2.50215	2.50281	2.50330	2.50391	2.50460	2.50538	2.50597	2.50592	2.50258
N° 26	2.49885	2.49941	2.50016	2.50126	2.50216	2.50318	2.50396	2.50453	2.50521	2.50590	2.50667	2.50723	2.50719	2.50299
N° 27	2.49873	2.49921	2.49987	2.50082	2.50165	2.50266	2.50344	2.50399	2.50465	2.50535	2.50613	2.50670	2.50664	2.50276
N° 28	2.49758	2.49811	2.49880	2.49978	2.50062	2.50154	2.50222	2.50269	2.50327	2.50390	2.50465	2.50522	2.50514	2.50175
N° 29	2.49888	2.49933	2.49999	2.50093	2.50174	2.50261	2.50327	2.50377	2.50446	2.50524	2.50608	2.50676	2.50674	2.50290
N° 30	2.49891	2.49933	2.49989	2.50074	2.50149	2.50236	2.50302	2.50348	2.50398	2.50452	2.50508	2.50559	2.50555	2.50264
N° 31	2.49797	2.49849	2.49915	2.50014	2.50099	2.50196	2.50272	2.50328	2.50395	2.50467	2.50544	2.50602	2.50596	2.50233

6. VRline1

Ta=25°C; 12.5V<Vin<15V; VO=10V



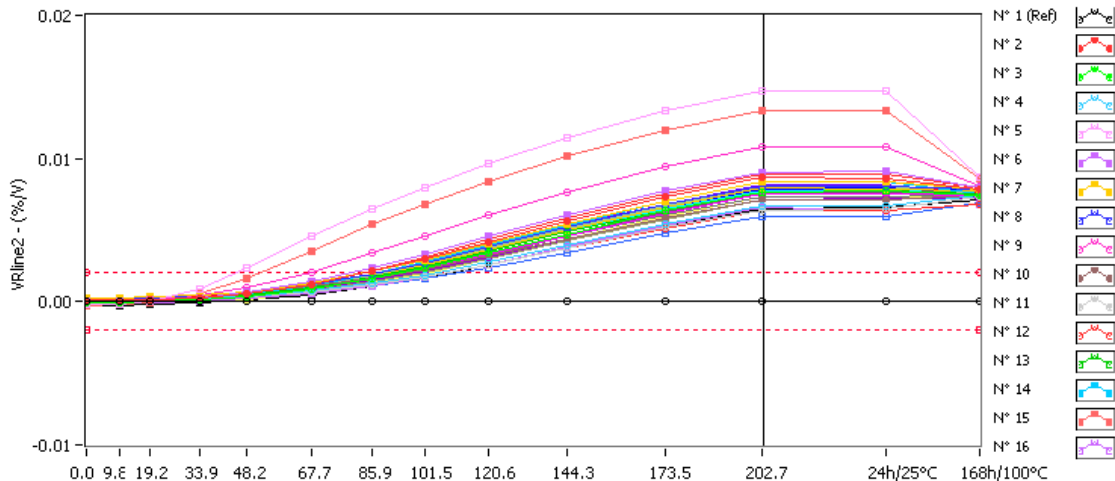
VRline1 . (%/V)

Min = -0.005 Max = 0.005

	0.0 krad(Si)	9.8 krad(Si)	19.2 krad(Si)	33.9 krad(Si)	48.2 krad(Si)	67.7 krad(Si)	85.9 krad(Si)	101.5 krad(Si)	120.6 krad(Si)	144.3 krad(Si)	173.5 krad(Si)	202.7 krad(Si)	24h/25°C	168h/100°C
N° 1 (Ref)	1.79E-4	1.59E-4	1.35E-4	1.74E-4	1.59E-4	1.65E-4	1.48E-4	1.46E-4	1.62E-4	1.65E-4	1.36E-4	1.56E-4	1.48E-4	1.49E-4
N° 2	-2.51E-5	1.95E-5	1.11E-4	3.71E-4	9.53E-4	2.06E-3	3.61E-3	5.15E-3	7.06E-3	9.43E-3	1.21E-2	1.43E-2	1.43E-2	1.29E-2
N° 3	-4.45E-5	3.20E-6	1.07E-4	3.27E-4	8.27E-4	1.70E-3	2.97E-3	4.21E-3	6.08E-3	8.35E-3	1.10E-2	1.31E-2	1.31E-2	1.27E-2
N° 4	1.70E-4	1.80E-4	2.67E-4	4.64E-4	7.43E-4	1.43E-3	2.33E-3	3.37E-3	4.96E-3	6.91E-3	9.39E-3	1.16E-2	1.16E-2	1.25E-2
N° 5	-1.70E-4	-6.82E-5	3.24E-4	1.79E-3	4.27E-3	8.07E-3	1.13E-2	1.38E-2	1.65E-2	1.94E-2	2.25E-2	2.48E-2	2.49E-2	1.49E-2
N° 6	-8.17E-6	7.83E-5	1.67E-4	5.14E-4	1.12E-3	2.53E-3	4.18E-3	5.79E-3	7.86E-3	1.02E-2	1.29E-2	1.52E-2	1.52E-2	1.32E-2
N° 7	2.45E-4	3.64E-4	4.20E-4	6.92E-4	1.16E-3	2.17E-3	3.63E-3	5.02E-3	6.86E-3	9.09E-3	1.17E-2	1.38E-2	1.39E-2	1.30E-2
N° 8	2.69E-4	2.86E-4	4.07E-4	5.93E-4	1.08E-3	1.98E-3	3.39E-3	4.74E-3	6.57E-3	8.80E-3	1.15E-2	1.37E-2	1.35E-2	1.30E-2
N° 9	1.05E-4	1.73E-4	3.32E-4	7.80E-4	1.75E-3	3.86E-3	6.21E-3	8.20E-3	1.07E-2	1.35E-2	1.64E-2	1.87E-2	1.88E-2	1.40E-2
N° 10	2.84E-4	2.99E-4	3.74E-4	5.57E-4	9.30E-4	1.59E-3	2.76E-3	3.88E-3	5.41E-3	7.43E-3	9.90E-3	1.19E-2	1.21E-2	1.24E-2
N° 11	5.89E-5	1.09E-4	2.15E-4	4.01E-4	6.63E-4	1.30E-3	2.22E-3	3.17E-3	4.63E-3	6.61E-3	9.06E-3	1.12E-2	1.12E-2	1.24E-2
N° 12	1.34E-4	1.66E-4	2.50E-4	4.54E-4	7.11E-4	1.37E-3	2.22E-3	3.22E-3	4.74E-3	6.72E-3	9.25E-3	1.14E-2	1.15E-2	1.19E-2
N° 13	2.08E-5	6.52E-5	1.63E-4	3.90E-4	8.71E-4	1.80E-3	3.16E-3	4.43E-3	6.28E-3	8.51E-3	1.10E-2	1.32E-2	1.34E-2	1.28E-2
N° 14	5.15E-5	8.66E-5	2.43E-4	4.38E-4	9.16E-4	2.07E-3	3.54E-3	4.96E-3	6.94E-3	9.32E-3	1.21E-2	1.43E-2	1.44E-2	1.29E-2
N° 15	-2.64E-4	-1.63E-4	1.55E-4	1.19E-3	3.16E-3	6.34E-3	9.41E-3	1.18E-2	1.45E-2	1.73E-2	2.03E-2	2.26E-2	2.27E-2	1.46E-2
N° 16	-1.28E-4	-9.27E-5	0.00E+0	2.19E-4	4.91E-4	1.24E-3	2.16E-3	3.20E-3	4.71E-3	6.82E-3	9.38E-3	1.15E-2	1.13E-2	1.17E-2
N° 17	1.32E-4	1.77E-4	2.20E-4	5.23E-4	9.31E-4	2.01E-3	3.18E-3	4.56E-3	6.44E-3	8.82E-3	1.16E-2	1.37E-2	1.36E-2	1.33E-2
N° 18	1.73E-4	2.02E-4	2.74E-4	5.21E-4	9.07E-4	1.77E-3	2.89E-3	4.07E-3	5.80E-3	8.10E-3	1.06E-2	1.27E-2	1.29E-2	1.25E-2
N° 19	1.57E-4	1.86E-4	2.59E-4	5.29E-4	8.86E-4	1.65E-3	2.81E-3	3.99E-3	5.72E-3	7.98E-3	1.06E-2	1.29E-2	1.30E-2	1.29E-2
N° 20	8.29E-5	1.52E-4	2.37E-4	4.91E-4	8.92E-4	1.79E-3	3.21E-3	4.50E-3	6.36E-3	8.69E-3	1.13E-2	1.35E-2	1.35E-2	1.26E-2
N° 21	-2.24E-5	4.32E-6	9.33E-5	3.75E-4	7.93E-4	1.80E-3	3.10E-3	4.38E-3	6.17E-3	8.50E-3	1.11E-2	1.32E-2	1.33E-2	1.25E-2
N° 22	-5.83E-5	2.88E-6	1.85E-4	4.22E-4	9.45E-4	2.23E-3	3.98E-3	5.50E-3	7.68E-3	1.02E-2	1.30E-2	1.54E-2	1.54E-2	1.37E-2
N° 23	1.52E-4	2.34E-4	3.28E-4	4.82E-4	8.34E-4	1.68E-3	2.97E-3	4.17E-3	5.90E-3	8.10E-3	1.08E-2	1.29E-2	1.31E-2	1.33E-2
N° 24	3.20E-6	4.74E-5	7.73E-5	2.49E-4	6.08E-4	1.16E-3	2.06E-3	2.92E-3	4.25E-3	6.03E-3	8.17E-3	1.02E-2	1.01E-2	1.17E-2
N° 25	1.90E-4	2.58E-4	3.37E-4	4.69E-4	9.52E-4	1.92E-3	3.21E-3	4.50E-3	6.31E-3	8.60E-3	1.11E-2	1.33E-2	1.33E-2	1.25E-2
N° 26	1.89E-4	1.89E-4	2.83E-4	5.57E-4	9.59E-4	1.85E-3	3.15E-3	4.44E-3	6.20E-3	8.60E-3	1.12E-2	1.34E-2	1.34E-2	1.30E-2
N° 27	5.03E-5	1.07E-4	1.89E-4	3.55E-4	6.49E-4	1.42E-3	2.49E-3	3.58E-3	5.21E-3	7.39E-3	9.96E-3	1.22E-2	1.22E-2	1.27E-2
N° 28	7.29E-5	9.40E-5	1.84E-4	4.46E-4	8.07E-4	1.59E-3	2.80E-3	3.97E-3	5.66E-3	7.83E-3	1.03E-2	1.24E-2	1.25E-2	1.26E-2
N° 29	1.60E-7	5.23E-5	9.54E-5	3.82E-4	9.51E-4	2.08E-3	3.66E-3	5.11E-3	7.07E-3	9.36E-3	1.20E-2	1.42E-2	1.42E-2	1.26E-2
N° 30	-1.38E-4	-9.52E-5	8.48E-6	1.76E-4	5.61E-4	1.40E-3	2.66E-3	3.77E-3	5.56E-3	7.91E-3	1.05E-2	1.28E-2	1.29E-2	1.25E-2
N° 31	-2.68E-4	-2.68E-4	-1.68E-4	1.17E-5	3.30E-4	1.12E-3	2.12E-3	3.09E-3	4.72E-3	6.86E-3	9.35E-3	1.15E-2	1.16E-2	1.22E-2

7. VRline2

Ta=25°C; 15V<Vin<30V; VO=10V



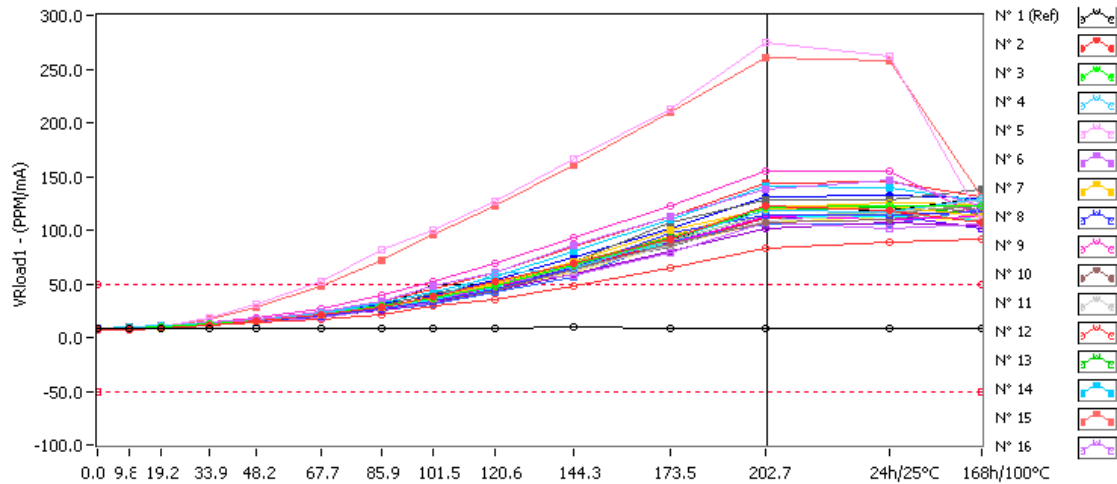
VRline2 . (%/V)

Min = -0.002 Max = 0.002

	0.0 krad(Si)	9.8 krad(Si)	19.2 krad(Si)	33.9 krad(Si)	48.2 krad(Si)	67.7 krad(Si)	85.9 krad(Si)	101.5 krad(Si)	120.6 krad(Si)	144.3 krad(Si)	173.5 krad(Si)	202.7 krad(Si)	24h/25°C	168h/100°C
N° 1 (Ref)	6.63E-5	6.49E-5	6.51E-5	6.54E-5	6.45E-5	6.85E-5	6.27E-5	6.22E-5	6.34E-5	6.23E-5	6.74E-5	6.26E-5	6.37E-5	6.57E-5
N° 2	1.90E-5	3.99E-5	9.36E-5	2.62E-4	5.54E-4	1.23E-3	2.12E-3	3.03E-3	4.19E-3	5.65E-3	7.31E-3	8.66E-3	8.64E-3	7.87E-3
N° 3	-4.86E-5	-2.73E-5	3.38E-5	1.68E-4	3.98E-4	9.20E-4	1.63E-3	2.37E-3	3.41E-3	4.73E-3	6.33E-3	7.66E-3	7.70E-3	7.47E-3
N° 4	5.89E-5	8.08E-5	1.21E-4	2.27E-4	3.98E-4	7.56E-4	1.28E-3	1.86E-3	2.73E-3	3.93E-3	5.40E-3	6.68E-3	6.72E-3	7.40E-3
N° 5	-2.04E-4	-1.34E-4	8.58E-5	9.06E-4	2.34E-3	4.57E-3	6.51E-3	7.99E-3	9.64E-3	1.14E-2	1.33E-2	1.47E-2	1.47E-2	8.72E-3
N° 6	3.71E-5	6.03E-5	1.25E-4	2.92E-4	6.39E-4	1.41E-3	2.41E-3	3.35E-3	4.58E-3	6.05E-3	7.70E-3	9.02E-3	9.07E-3	7.91E-3
N° 7	2.29E-4	2.53E-4	3.09E-4	4.54E-4	7.12E-4	1.32E-3	2.12E-3	2.94E-3	4.05E-3	5.44E-3	7.04E-3	8.34E-3	8.40E-3	7.90E-3
N° 8	2.10E-4	2.35E-4	2.85E-4	4.15E-4	6.56E-4	1.18E-3	1.93E-3	2.72E-3	3.80E-3	5.18E-3	6.76E-3	8.07E-3	8.06E-3	7.84E-3
N° 9	4.66E-5	8.20E-5	1.63E-4	4.33E-4	9.61E-4	2.09E-3	3.44E-3	4.60E-3	6.05E-3	7.66E-3	9.45E-3	1.08E-2	1.08E-2	8.10E-3
N° 10	2.67E-4	2.85E-4	3.37E-4	4.49E-4	6.27E-4	1.05E-3	1.62E-3	2.25E-3	3.16E-3	4.38E-3	5.85E-3	7.11E-3	7.15E-3	7.48E-3
N° 11	1.20E-5	3.24E-5	8.04E-5	1.92E-4	3.52E-4	7.04E-4	1.20E-3	1.74E-3	2.57E-3	3.72E-3	5.17E-3	6.42E-3	6.49E-3	7.28E-3
N° 12	9.98E-5	1.14E-4	1.57E-4	2.46E-4	3.95E-4	7.27E-4	1.21E-3	1.74E-3	2.55E-3	3.70E-3	5.14E-3	6.37E-3	6.43E-3	6.75E-3
N° 13	-9.53E-6	1.49E-5	6.96E-5	2.14E-4	4.54E-4	9.88E-4	1.73E-3	2.49E-3	3.54E-3	4.86E-3	6.39E-3	7.68E-3	7.75E-3	7.51E-3
N° 14	-1.68E-5	2.93E-5	6.06E-5	2.13E-4	4.87E-4	1.10E-3	1.92E-3	2.74E-3	3.92E-3	5.33E-3	6.97E-3	8.34E-3	8.38E-3	7.58E-3
N° 15	-2.58E-4	-1.96E-4	-3.21E-5	5.46E-4	1.65E-3	3.56E-3	5.38E-3	6.77E-3	8.39E-3	1.01E-2	1.20E-2	1.34E-2	1.34E-2	8.58E-3
N° 16	-1.56E-4	-1.38E-4	-8.97E-5	2.91E-4	2.12E-4	5.90E-4	1.13E-3	1.70E-3	2.58E-3	3.79E-3	5.26E-3	6.57E-3	6.41E-3	6.82E-3
N° 17	5.85E-5	8.49E-5	1.38E-4	2.62E-4	5.11E-4	1.04E-3	1.77E-3	2.54E-3	3.62E-3	5.01E-3	6.60E-3	7.96E-3	7.90E-3	7.79E-3
N° 18	7.32E-5	9.16E-5	1.38E-4	2.62E-4	4.64E-4	9.39E-4	1.60E-3	2.29E-3	3.30E-3	4.63E-3	6.17E-3	7.50E-3	7.55E-3	7.44E-3
N° 19	5.89E-5	8.46E-5	1.30E-4	2.47E-4	4.37E-4	8.59E-4	1.48E-3	2.13E-3	3.08E-3	4.33E-3	5.90E-3	7.15E-3	7.21E-3	7.24E-3
N° 20	7.00E-5	9.32E-5	1.47E-4	2.78E-4	5.24E-4	1.06E-3	1.82E-3	2.62E-3	3.71E-3	5.11E-3	6.72E-3	8.05E-3	8.10E-3	7.59E-3
N° 21	-6.25E-5	-4.29E-5	1.65E-5	1.47E-4	3.85E-4	9.28E-4	1.67E-3	2.44E-3	3.50E-3	4.87E-3	6.43E-3	7.74E-3	7.82E-3	7.44E-3
N° 22	-6.19E-5	-3.17E-5	2.69E-5	1.97E-4	5.17E-4	1.24E-3	2.17E-3	3.10E-3	4.32E-3	5.84E-3	7.53E-3	8.92E-3	8.93E-3	7.98E-3
N° 23	9.21E-5	1.18E-4	1.72E-4	2.94E-4	5.13E-4	9.81E-4	1.64E-3	2.33E-3	3.35E-3	4.68E-3	6.24E-3	7.59E-3	7.62E-3	7.83E-3
N° 24	-1.55E-5	3.71E-6	5.10E-5	1.57E-4	3.18E-4	6.53E-4	1.12E-3	1.60E-3	2.38E-3	3.44E-3	4.76E-3	5.96E-3	5.94E-3	6.95E-3
N° 25	1.28E-4	1.62E-4	2.04E-4	3.46E-4	5.87E-4	1.11E-3	1.85E-3	2.64E-3	3.71E-3	5.10E-3	6.68E-3	8.00E-3	8.05E-3	7.61E-3
N° 26	9.04E-5	1.24E-4	1.67E-4	3.06E-4	5.29E-4	1.05E-3	1.75E-3	2.51E-3	3.57E-3	4.95E-3	6.54E-3	7.89E-3	7.93E-3	7.74E-3
N° 27	4.34E-5	7.11E-5	1.16E-4	2.23E-4	3.94E-4	7.91E-4	1.37E-3	2.01E-3	2.95E-3	4.23E-3	5.79E-3	7.10E-3	7.16E-3	7.49E-3
N° 28	7.61E-5	8.97E-5	1.42E-4	2.64E-4	4.65E-4	9.21E-4	1.57E-3	2.25E-3	3.24E-3	4.53E-3	6.04E-3	7.32E-3	7.36E-3	7.49E-3
N° 29	-2.98E-5	1.09E-6	5.02E-5	2.00E-4	4.74E-4	1.10E-3	1.95E-3	2.78E-3	3.90E-3	5.29E-3	6.83E-3	8.12E-3	8.18E-3	7.27E-3
N° 30	-1.81E-4	-1.57E-4	-1.10E-4	1.12E-5	1.93E-4	6.53E-4	1.30E-3	1.98E-3	3.01E-3	4.36E-3	5.97E-3	7.29E-3	7.34E-3	7.23E-3
N° 31	-2.58E-4	-2.36E-4	-1.82E-4	-7.10E-5	9.97E-5	5.05E-4	1.06E-3	1.65E-3	2.54E-3	3.77E-3	5.24E-3	6.50E-3	6.57E-3	7.07E-3

8. VRload1

Ta=25°C; Vin=15V; 0mA<IL<5mA; VO=10V



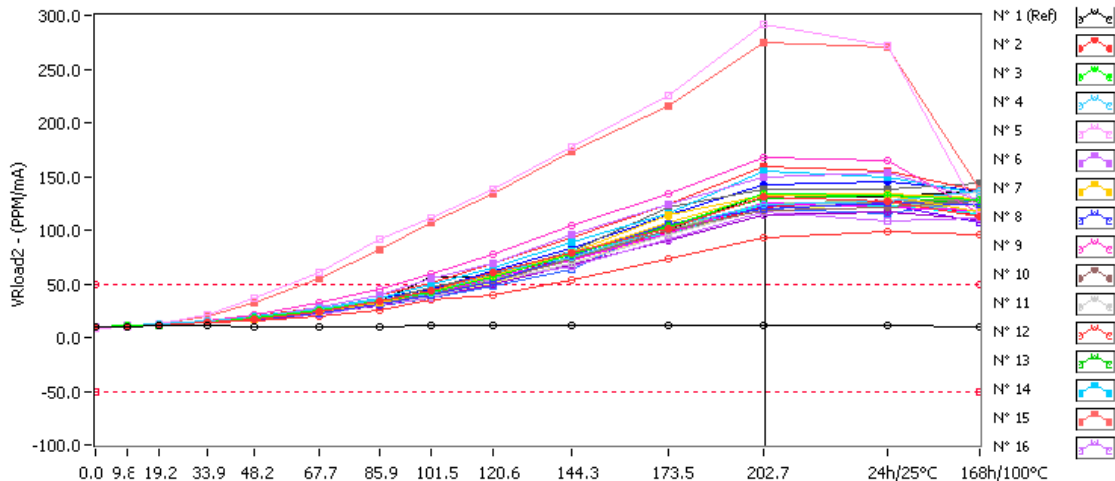
VRload1 . (PPM/mA)

Min = -50.0 Max = 50.0

	0.0 krad(Si)	9.8 krad(Si)	19.2 krad(Si)	33.9 krad(Si)	48.2 krad(Si)	67.7 krad(Si)	85.9 krad(Si)	101.5 krad(Si)	120.6 krad(Si)	144.3 krad(Si)	173.5 krad(Si)	202.7 krad(Si)	24h/25°C	168h/100°C
N° 1 (Ref)	7.780	8.061	8.199	8.442	8.280	8.329	7.825	8.426	8.739	9.219	8.032	8.452	8.110	8.328
N° 2	7.187	7.457	8.807	11.850	15.364	20.860	28.570	37.348	51.676	69.059	90.955	122.579	118.056	106.838
N° 3	7.572	8.447	9.175	13.131	16.046	20.794	29.124	36.400	48.506	68.026	92.159	121.305	122.024	122.039
N° 4	8.029	9.233	10.972	13.168	15.886	22.644	30.282	36.012	58.883	64.929	91.854	117.769	116.827	129.105
N° 5	6.570	8.096	10.400	17.680	31.327	51.847	81.068	99.305	127.071	165.901	212.560	274.702	261.645	109.852
N° 6	7.617	9.151	11.021	13.502	16.351	23.439	33.274	47.319	60.338	85.831	112.093	138.688	146.183	122.030
N° 7	7.583	8.818	10.479	13.408	15.384	20.590	27.866	36.793	51.022	70.077	99.871	119.513	122.326	111.986
N° 8	8.058	9.108	10.466	12.998	15.338	20.046	27.326	33.840	45.424	64.935	97.617	113.950	114.660	117.139
N° 9	7.487	8.330	10.101	13.507	18.066	26.740	39.052	51.699	69.175	92.749	122.500	155.164	154.532	110.576
N° 10	8.198	9.477	10.901	13.976	15.111	20.041	26.561	33.964	44.017	62.958	87.828	107.376	109.788	120.644
N° 11	7.792	8.818	10.337	12.964	15.048	20.327	26.485	34.492	45.653	61.620	85.275	108.559	115.202	128.689
N° 12	7.835	8.613	9.607	11.403	13.495	16.774	21.100	29.688	34.883	47.402	64.287	83.548	88.485	90.970
N° 13	7.328	8.316	9.425	12.013	15.073	20.122	28.410	37.484	50.417	69.010	92.744	117.971	121.220	116.127
N° 14	8.003	9.141	10.745	13.501	16.953	22.560	32.793	42.114	56.900	80.898	110.275	140.840	139.411	127.148
N° 15	6.817	8.467	10.108	16.470	27.537	47.772	72.272	95.588	122.396	160.766	209.857	261.144	258.420	131.604
N° 16	7.721	8.755	10.537	12.823	15.079	18.886	26.267	32.027	52.728	57.157	79.419	106.968	101.229	105.321
N° 17	8.228	9.282	10.753	13.433	16.419	21.550	29.619	36.773	49.400	68.685	94.633	120.726	125.350	123.644
N° 18	8.024	9.220	10.567	12.418	15.554	19.897	26.687	33.426	48.415	61.774	87.603	112.284	110.207	113.324
N° 19	7.631	8.581	10.041	12.025	13.990	19.206	25.529	32.914	43.312	58.957	80.024	102.062	107.257	104.421
N° 20	8.028	8.872	10.168	12.247	14.906	20.292	27.853	35.961	48.089	66.486	89.522	113.733	116.165	110.109
N° 21	7.474	8.504	9.932	12.121	15.098	19.977	26.807	34.965	46.949	69.834	87.680	112.887	112.883	109.856
N° 22	7.637	8.881	10.306	13.812	17.170	23.986	33.953	44.492	60.077	85.050	112.516	144.355	144.775	130.556
N° 23	8.178	9.412	11.105	13.513	16.392	22.020	29.338	40.554	51.218	70.978	106.554	128.341	128.314	137.427
N° 24	7.991	8.763	10.524	12.598	13.948	19.513	25.318	31.363	41.838	57.011	89.573	106.076	105.683	119.324
N° 25	7.660	8.790	10.054	12.366	14.916	20.744	27.552	36.052	50.351	66.298	87.479	110.881	117.557	108.438
N° 26	7.516	8.786	11.033	13.498	16.292	21.665	30.793	39.600	53.298	73.949	102.070	130.652	132.548	129.712
N° 27	7.532	8.842	10.277	12.751	14.976	19.853	26.213	33.325	45.637	63.184	87.585	113.051	115.173	123.832
N° 28	7.431	8.928	10.228	12.143	14.667	19.862	26.085	35.042	44.796	64.926	84.980	111.736	115.035	122.717
N° 29	7.389	8.734	9.373	12.149	14.526	20.235	26.955	35.551	47.845	65.431	88.478	111.526	113.811	101.526
N° 30	7.320	8.683	8.883	11.536	15.157	19.116	26.147	33.448	43.940	60.534	85.581	107.239	112.294	108.573
N° 31	7.817	8.736	10.777	13.129	16.696	21.285	28.623	48.624	48.644	70.138	90.245	120.452	118.877	129.761

9. VRload2

Ta=25°C; Vin=15V; 0mA<IL<5mA; VO=7.5V

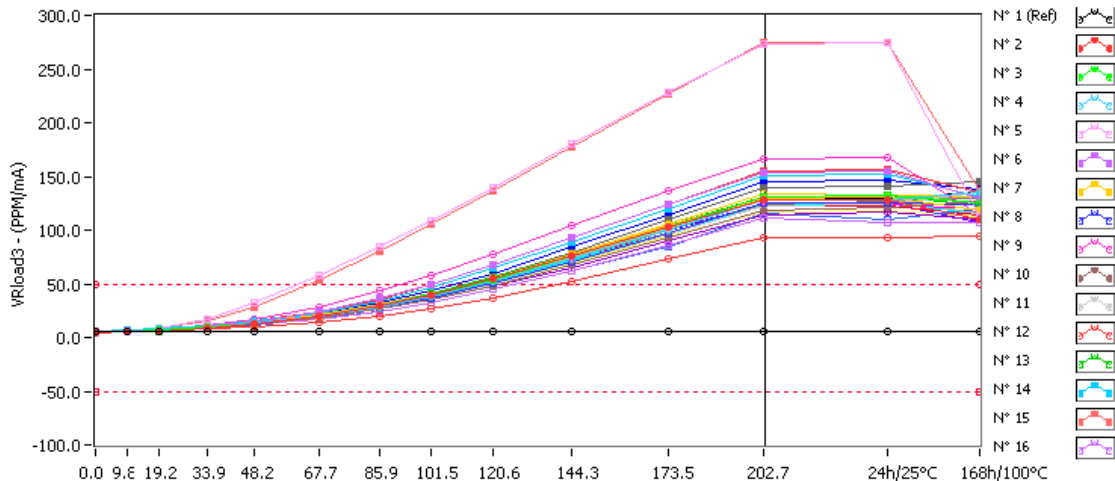


VRload2 . (PPM/mA) Min = -50.0 Max = 50.0

	0.0 krad(Si)	9.8 krad(Si)	19.2 krad(Si)	33.9 krad(Si)	48.2 krad(Si)	67.7 krad(Si)	85.9 krad(Si)	101.5 krad(Si)	120.6 krad(Si)	144.3 krad(Si)	173.5 krad(Si)	202.7 krad(Si)	24h/25°C	168h/100°C
N° 1 (Ref)	10.343	10.447	10.695	10.683	10.216	10.535	10.317	11.357	11.459	11.869	10.598	10.778	10.791	10.462
N° 2	9.441	9.914	11.377	13.659	17.309	24.495	34.060	43.266	60.726	79.071	101.344	130.567	127.196	111.993
N° 3	9.577	10.647	11.760	14.736	18.566	24.704	33.206	41.607	56.012	76.794	103.254	133.144	132.148	128.852
N° 4	10.360	11.594	13.030	14.981	18.223	26.072	35.417	41.387	60.672	73.976	102.514	124.204	127.460	136.147
N° 5	9.019	10.308	12.823	20.870	35.981	60.041	92.055	111.178	137.508	177.184	225.704	290.912	271.788	114.274
N° 6	10.104	10.705	12.758	15.368	19.014	27.607	38.999	54.262	69.067	96.069	123.325	149.588	154.141	128.303
N° 7	9.651	10.478	12.541	14.470	17.401	23.850	32.933	42.433	58.133	79.105	113.700	131.735	132.674	117.480
N° 8	10.126	10.871	12.175	14.114	17.409	23.222	31.061	39.177	52.486	75.471	105.187	120.242	125.015	123.575
N° 9	9.890	10.953	12.683	15.753	20.510	32.116	45.279	59.028	77.621	103.687	133.937	167.486	164.859	115.718
N° 10	10.307	11.443	12.689	15.775	17.769	23.199	30.648	40.338	51.532	73.155	100.205	118.781	121.014	127.209
N° 11	9.540	10.469	11.916	14.287	17.446	22.571	30.436	38.510	52.600	69.147	95.077	120.098	127.942	135.690
N° 12	10.265	10.614	11.907	13.833	15.205	19.214	24.708	35.344	40.010	53.546	73.262	92.296	98.347	95.591
N° 13	9.101	9.894	11.094	13.708	17.226	23.644	33.142	42.440	57.467	77.982	103.552	129.531	131.904	122.000
N° 14	10.080	11.060	12.751	15.377	19.334	26.540	36.873	48.693	65.078	88.626	115.359	154.262	149.910	133.785
N° 15	9.002	10.776	12.844	20.363	32.331	54.788	81.539	106.415	133.901	173.905	214.829	275.248	270.650	137.605
N° 16	10.090	11.129	12.212	14.686	17.914	21.722	31.350	36.966	53.909	66.024	91.494	116.420	108.597	111.806
N° 17	10.423	11.542	12.897	15.608	18.445	25.162	33.985	42.975	57.137	78.110	107.355	132.844	133.327	129.478
N° 18	10.108	11.277	12.533	14.672	18.378	22.919	31.887	39.117	56.879	71.574	97.145	125.356	121.161	118.448
N° 19	9.831	10.698	12.161	13.512	16.012	21.899	29.058	37.757	49.736	67.209	90.362	113.723	116.656	109.412
N° 20	10.304	10.949	12.542	14.233	17.692	24.136	32.601	41.900	55.596	75.044	99.980	125.716	126.811	116.356
N° 21	9.368	10.585	11.707	13.648	16.552	22.496	31.245	41.221	54.376	79.719	97.581	124.476	122.235	114.987
N° 22	9.879	10.902	12.536	15.512	19.560	28.162	39.760	50.714	68.417	92.930	123.310	158.525	155.112	136.807
N° 23	10.202	11.161	13.063	15.195	18.061	24.806	34.118	46.408	59.465	79.704	121.448	138.124	138.088	144.014
N° 24	10.018	10.938	12.676	14.491	17.040	22.028	29.490	36.366	47.669	63.978	105.360	119.079	116.023	127.551
N° 25	9.719	10.881	11.840	14.048	17.331	24.178	32.319	41.592	58.224	74.940	98.361	120.865	128.861	113.519
N° 26	9.651	10.964	12.629	15.002	18.786	24.838	36.849	45.464	61.484	82.744	113.738	141.585	144.734	136.240
N° 27	9.905	10.971	12.315	13.910	16.926	22.404	30.399	39.613	53.279	72.066	98.208	124.499	125.830	129.954
N° 28	9.691	10.709	11.799	14.659	16.972	22.023	30.056	40.452	52.341	74.108	95.869	124.291	121.887	128.610
N° 29	9.899	10.615	11.964	13.854	16.789	22.873	32.104	41.992	54.860	74.203	98.521	122.982	123.403	107.173
N° 30	9.973	10.549	11.799	14.401	17.011	22.331	31.362	38.678	51.150	69.135	96.586	119.197	123.464	113.808
N° 31	9.777	10.747	11.928	14.851	17.644	23.920	33.839	56.237	55.751	72.171	100.224	134.053	131.353	136.389

10. VRload3

Ta=25°C; Vin=15V; 0mA<IL<5mA; VO=5.0V

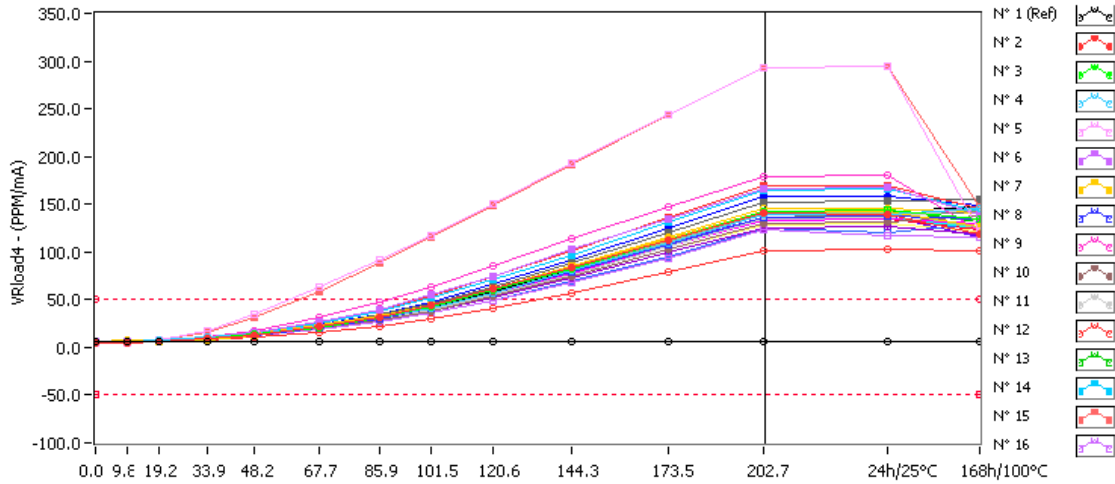


VRload3 . (PPM/mA) Min = -50.0 Max = 50.0

	0.0 krad(Si)	9.8 krad(Si)	19.2 krad(Si)	33.9 krad(Si)	48.2 krad(Si)	67.7 krad(Si)	85.9 krad(Si)	101.5 krad(Si)	120.6 krad(Si)	144.3 krad(Si)	173.5 krad(Si)	202.7 krad(Si)	24h/25°C	168h/100°C
N° 1 (Ref)	5.574	5.683	5.539	5.419	5.694	5.533	5.365	5.419	5.542	5.595	5.675	5.504	5.531	5.634
N° 2	4.643	5.188	6.080	8.736	12.016	19.545	29.663	39.699	54.987	76.471	102.290	128.736	128.600	110.022
N° 3	4.802	5.858	6.737	9.440	12.815	19.817	28.961	38.790	53.919	75.383	103.333	130.623	132.190	124.833
N° 4	6.067	6.744	8.022	10.015	13.845	20.198	28.423	38.016	52.144	72.746	99.965	127.666	128.385	135.575
N° 5	4.115	5.640	8.529	16.655	32.000	57.784	84.636	108.168	139.389	180.148	228.091	273.673	274.657	112.357
N° 6	5.502	6.482	7.698	10.633	14.645	23.991	36.440	49.434	68.058	92.738	123.431	153.050	154.538	128.968
N° 7	4.929	5.600	6.870	9.586	12.465	19.597	30.265	40.031	55.105	76.974	103.615	129.468	130.544	117.650
N° 8	5.253	6.000	7.274	9.487	12.920	19.403	27.867	36.951	50.830	70.836	97.543	124.823	125.756	124.245
N° 9	5.294	6.272	7.639	10.754	16.491	28.146	44.026	57.857	77.701	104.176	136.000	165.856	167.133	113.771
N° 10	5.650	6.393	7.836	10.088	12.734	18.471	26.140	35.263	48.138	67.222	93.109	118.918	120.693	127.305
N° 11	5.139	5.954	7.808	9.837	12.712	18.836	27.646	35.271	49.719	69.775	95.723	122.120	123.897	134.964
N° 12	5.400	6.029	6.820	8.700	10.181	14.577	20.325	26.499	36.575	51.821	72.601	92.344	93.614	94.365
N° 13	4.442	5.285	6.321	9.314	12.523	20.172	30.071	41.017	56.536	77.958	104.047	130.868	131.899	121.912
N° 14	5.799	6.498	8.014	10.624	15.077	23.074	33.912	46.706	64.328	88.770	120.403	150.867	152.513	131.587
N° 15	4.631	5.711	7.784	15.729	28.726	53.776	80.822	105.337	136.683	177.504	227.431	274.126	274.605	136.524
N° 16	5.453	6.144	7.063	9.276	12.023	17.535	24.563	32.414	44.816	62.135	85.475	111.423	107.282	106.434
N° 17	6.145	7.063	8.740	11.121	14.364	21.100	30.464	40.573	55.494	77.424	105.032	133.480	132.901	130.541
N° 18	5.250	6.033	7.223	9.390	12.019	18.311	26.794	36.221	50.031	70.057	96.298	122.713	123.372	119.417
N° 19	5.321	5.977	7.083	8.998	12.048	18.018	26.057	34.698	47.328	64.808	90.592	114.739	116.381	109.447
N° 20	5.493	6.084	7.316	9.560	12.958	19.609	29.167	38.792	53.765	74.910	100.998	127.530	128.080	115.872
N° 21	4.687	5.453	6.729	9.264	12.181	18.875	27.483	36.747	51.237	71.902	97.310	122.317	124.705	115.632
N° 22	5.249	6.181	7.515	10.446	14.824	24.206	35.740	49.359	67.421	92.958	124.330	155.172	156.792	135.395
N° 23	5.801	6.525	7.801	10.887	14.567	21.518	31.165	41.370	56.962	79.497	109.188	140.003	141.077	144.551
N° 24	5.496	5.962	7.188	9.194	11.880	17.683	24.613	32.415	45.058	62.453	85.014	115.502	109.974	120.325
N° 25	5.239	5.974	6.949	9.457	12.458	19.005	27.812	37.960	52.065	72.725	96.867	122.035	122.922	113.639
N° 26	5.393	6.458	7.649	10.514	14.213	21.656	32.012	43.600	59.755	84.301	114.775	144.490	146.081	137.421
N° 27	5.464	6.091	7.196	9.392	12.179	18.370	27.451	36.628	51.106	72.274	99.407	127.649	128.604	131.330
N° 28	5.134	5.689	7.097	9.529	12.447	18.728	27.238	36.309	50.495	71.177	96.834	124.374	126.584	129.721
N° 29	5.430	6.270	7.445	9.567	12.595	19.649	29.475	39.340	54.010	74.489	100.049	124.073	125.474	107.047
N° 30	5.498	5.995	7.064	9.707	12.438	18.580	27.125	35.482	49.240	68.552	93.881	117.525	118.887	112.613
N° 31	5.464	6.137	7.586	9.834	12.828	20.028	28.587	37.956	52.278	74.162	101.129	128.542	129.969	135.801

11. VRload4

Ta=25°C; Vin=15V; 0mA<IL<5mA; VO=2.5V



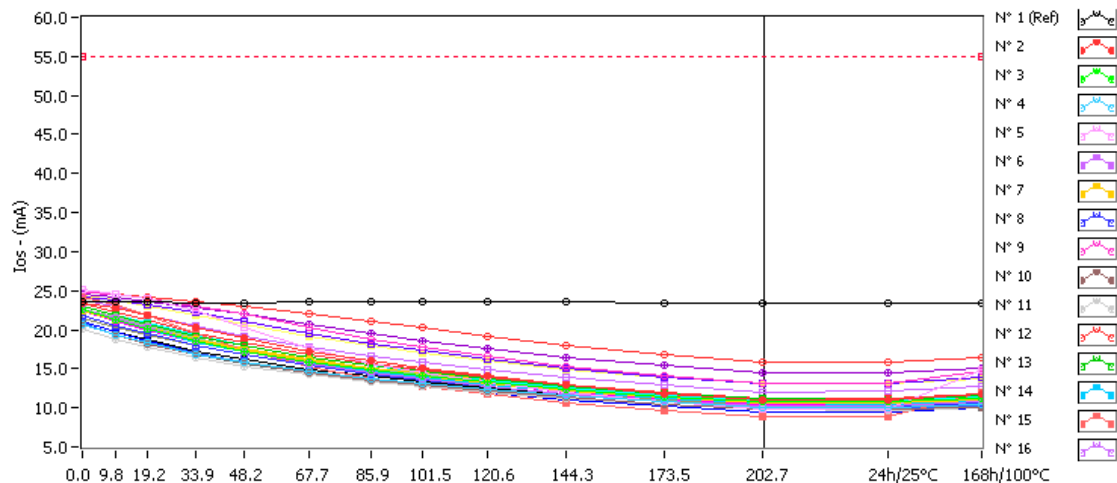
VRload4 . (PPM/mA)

Min = -50.0 Max = 50.0

	0.0 krad(Si)	9.8 krad(Si)	19.2 krad(Si)	33.9 krad(Si)	48.2 krad(Si)	67.7 krad(Si)	85.9 krad(Si)	101.5 krad(Si)	120.6 krad(Si)	144.3 krad(Si)	173.5 krad(Si)	202.7 krad(Si)	24h/25°C	168h/100°C
N° 1 (Ref)	5.545	5.605	5.692	5.688	5.738	5.483	5.537	5.443	5.544	5.583	5.714	5.710	5.680	5.486
N° 2	4.596	5.051	6.083	8.602	12.716	21.221	32.295	44.295	60.954	83.838	112.283	140.135	139.357	118.905
N° 3	4.892	5.299	6.756	9.369	13.354	21.072	32.005	42.536	59.356	82.773	112.881	142.560	143.820	134.822
N° 4	5.884	6.271	7.755	10.495	13.973	21.558	31.595	41.782	57.243	80.458	109.721	139.067	139.955	146.298
N° 5	4.392	5.301	7.921	17.892	35.264	63.505	92.169	117.560	150.287	193.838	244.595	292.878	294.140	121.317
N° 6	5.686	6.182	7.695	10.466	15.590	26.001	40.149	54.490	74.603	102.359	135.245	166.986	168.382	139.551
N° 7	4.667	5.167	6.526	8.151	12.612	21.279	32.550	44.159	61.471	84.891	113.809	141.738	142.737	127.063
N° 8	5.153	5.575	7.022	9.412	12.885	20.540	30.123	40.704	56.578	78.834	107.340	135.632	136.971	134.184
N° 9	5.614	6.135	7.586	11.041	17.368	30.790	47.332	63.994	85.584	113.948	146.957	179.189	180.814	122.600
N° 10	5.517	6.028	7.354	9.797	13.141	19.656	28.411	38.343	52.965	74.826	102.109	130.339	131.874	137.865
N° 11	5.049	5.648	6.738	9.320	13.154	19.982	29.385	39.521	54.573	76.356	105.552	134.548	135.534	145.584
N° 12	5.588	6.113	6.865	8.384	10.592	15.521	22.160	29.457	40.336	57.172	79.199	101.628	102.374	101.577
N° 13	4.282	4.781	6.038	8.794	12.886	21.438	33.196	44.827	61.924	85.560	114.308	142.760	144.202	131.759
N° 14	5.541	6.175	7.820	10.669	15.098	25.183	38.249	51.632	70.736	97.012	131.480	164.400	165.425	142.033
N° 15	4.376	5.361	7.744	15.985	31.418	59.071	88.393	114.778	148.730	192.220	244.110	293.326	294.298	147.592
N° 16	5.507	6.103	7.374	9.304	12.646	18.989	26.869	35.788	49.192	68.687	93.897	122.915	116.861	114.958
N° 17	6.348	6.971	8.318	11.082	15.060	23.148	33.562	44.573	61.495	85.432	115.587	145.363	145.033	140.485
N° 18	5.166	5.608	6.902	9.500	12.979	20.023	29.481	40.254	55.399	77.713	105.575	133.175	134.928	129.015
N° 19	5.585	5.894	7.089	9.153	12.445	18.902	28.313	37.687	52.398	71.963	99.249	125.068	126.423	117.938
N° 20	5.458	5.972	7.070	9.720	13.220	21.195	31.777	42.570	59.488	82.253	110.300	138.864	140.333	125.171
N° 21	4.483	5.164	6.341	8.547	12.524	20.063	30.076	40.737	56.224	78.926	107.162	135.008	135.711	124.838
N° 22	5.168	5.774	7.229	10.448	15.207	25.833	39.785	54.195	74.294	101.090	135.885	168.787	169.968	145.680
N° 23	5.688	6.271	7.742	10.682	14.551	22.777	34.158	45.264	62.515	87.798	119.862	151.590	153.707	155.499
N° 24	5.163	5.737	6.987	9.403	12.686	18.914	27.127	36.315	49.408	69.460	94.279	125.452	120.822	130.156
N° 25	5.066	5.844	6.884	9.192	12.944	20.406	31.096	41.528	57.219	79.502	107.062	133.133	134.679	122.626
N° 26	5.233	5.815	7.120	10.001	14.301	23.163	35.296	47.645	65.825	92.451	125.578	157.930	159.061	148.316
N° 27	5.258	5.879	7.013	9.281	12.465	19.848	29.666	40.303	56.332	79.650	109.351	139.161	140.879	142.007
N° 28	4.706	5.479	6.614	9.182	12.726	20.031	29.441	40.186	55.223	77.955	107.040	136.261	138.526	140.295
N° 29	5.541	5.967	6.997	9.623	13.299	21.087	32.187	43.774	59.746	82.094	109.703	136.051	136.925	115.514
N° 30	5.814	6.260	7.349	9.776	12.813	20.002	29.524	39.104	53.714	75.053	102.519	128.550	129.996	121.321
N° 31	5.370	5.743	7.321	9.985	13.647	21.040	30.928	41.496	58.242	81.559	111.159	141.266	143.165	146.733

12. Ios

Ta=25°C; Vin=15V; IL=0mA; VO=10V



Ios . (mA)

Max = 55.0

	0.0 krad(Si)	9.8 krad(Si)	19.2 krad(Si)	33.9 krad(Si)	48.2 krad(Si)	67.7 krad(Si)	85.9 krad(Si)	101.5 krad(Si)	120.6 krad(Si)	144.3 krad(Si)	173.5 krad(Si)	202.7 krad(Si)	24h/25°C	168h/100°C
N° 1 (Ref)	23.495	23.564	23.501	23.454	23.443	23.546	23.575	23.583	23.511	23.573	23.401	23.362	23.411	23.442
N° 2	23.491	22.810	21.857	20.315	18.865	17.261	15.973	15.047	14.036	12.968	11.872	11.001	11.044	11.735
N° 3	22.538	21.240	20.102	18.497	17.275	15.895	14.876	14.135	13.300	12.402	11.453	10.776	10.738	11.234
N° 4	20.764	19.338	18.273	16.839	15.804	14.650	13.721	13.083	12.362	11.548	10.739	10.050	10.068	10.344
N° 5	25.145	24.563	23.900	22.396	20.253	17.579	15.706	14.515	13.236	11.965	10.742	9.827	9.814	14.953
N° 6	22.559	21.384	20.248	18.603	17.269	15.744	14.560	13.725	12.814	11.875	10.885	10.195	10.157	10.794
N° 7	22.499	21.360	20.247	18.669	17.399	15.971	14.855	14.081	13.213	12.248	11.316	10.602	10.586	11.080
N° 8	21.928	20.589	19.465	17.942	16.734	15.381	14.293	13.544	12.717	11.793	10.877	10.179	10.176	10.558
N° 9	24.845	24.523	23.884	23.055	21.950	20.269	18.785	17.739	16.551	15.342	14.107	13.191	13.172	14.657
N° 10	20.657	19.254	18.203	16.811	15.757	14.539	13.582	12.911	12.151	11.310	10.470	9.831	9.816	10.100
N° 11	20.161	18.755	17.712	16.388	15.338	14.204	13.285	12.662	11.945	11.164	10.340	9.757	9.708	9.989
N° 12	24.846	24.609	24.185	23.588	23.051	22.120	21.064	20.218	19.135	18.047	16.789	15.875	15.889	16.359
N° 13	22.950	21.855	20.741	19.182	17.931	16.499	15.385	14.590	13.714	12.756	11.841	11.102	11.076	11.568
N° 14	22.530	21.214	20.050	18.450	17.171	15.777	14.698	13.903	13.023	12.091	11.220	10.521	10.476	11.065
N° 15	24.155	23.180	21.859	19.459	17.418	15.225	13.732	12.727	11.688	10.617	9.576	8.893	8.812	11.927
N° 16	23.780	22.965	21.945	20.486	19.185	17.759	16.640	15.839	14.933	13.921	12.927	12.014	12.117	12.726
N° 17	22.593	21.317	20.190	18.696	17.500	16.177	15.154	14.418	13.623	12.657	11.784	11.090	11.071	11.500
N° 18	22.339	21.066	19.933	18.371	17.157	15.759	14.668	13.889	13.046	12.063	11.156	10.449	10.378	10.898
N° 19	24.501	24.186	23.632	22.841	21.959	20.678	19.527	18.647	17.640	16.498	15.376	14.546	14.540	14.993
N° 20	22.653	21.616	20.506	18.956	17.641	16.191	15.036	14.206	13.309	12.285	11.315	10.592	10.540	11.120
N° 21	22.947	21.923	20.855	19.278	17.974	16.517	15.370	14.516	13.612	12.592	11.618	10.866	10.841	11.364
N° 22	23.304	22.283	21.174	19.608	18.280	16.809	15.649	14.828	13.978	12.952	12.005	11.271	11.275	11.815
N° 23	20.691	19.249	18.159	16.798	15.694	14.467	13.521	12.841	12.116	11.299	10.471	9.831	9.807	10.104
N° 24	20.818	19.408	18.345	16.968	15.887	14.682	13.757	13.083	12.358	11.507	10.718	9.942	10.071	10.274
N° 25	22.498	21.358	20.215	18.621	17.342	15.892	14.763	13.945	13.075	12.073	11.123	10.404	10.365	10.914
N° 26	21.070	19.668	18.550	17.065	15.888	14.538	13.481	12.741	11.924	11.008	10.161	9.490	9.463	9.967
N° 27	21.547	20.323	19.275	17.902	16.800	15.446	14.374	13.623	12.800	11.851	11.001	10.295	10.268	10.550
N° 28	20.731	19.320	18.253	16.859	15.772	14.519	13.549	12.876	12.134	11.258	10.469	9.815	9.764	10.099
N° 29	24.261	23.793	23.188	22.212	21.098	19.563	18.240	17.302	16.235	15.061	13.968	13.108	13.087	13.834
N° 30	24.316	23.728	22.968	21.764	20.593	19.080	17.904	17.018	16.034	14.948	13.880	13.064	13.092	13.667
N° 31	21.158	19.776	18.677	17.261	16.212	14.963	14.021	13.342	12.601	11.705	10.921	10.265	10.259	10.588