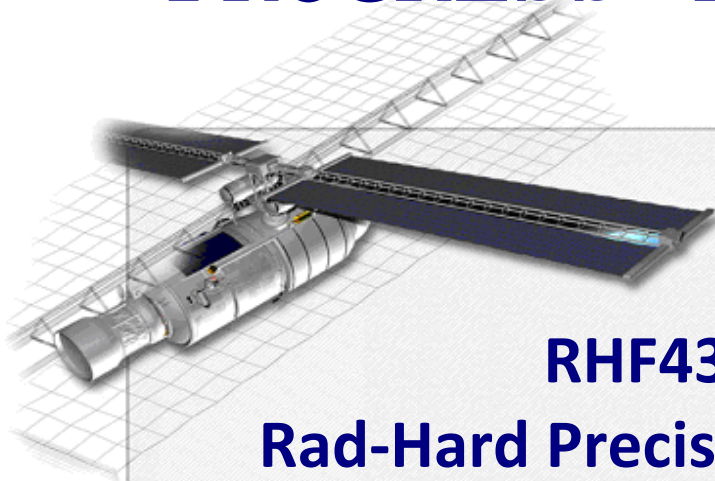




TOTAL IONIZING DOSE PROGRESS TEST REPORT



RHF43BK-01V Rad-Hard Precision Single Opamp DC1348A From STMicroelectronics

TRAD/TE/RHF43BK-01V/1348A/ESA/MV/1410		Labège, May 22 nd , 2015
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Revision: 0	Creation of the document	
Revision: 1	Addition of table of test parameters	
To: ESA Mr Christian POIVEY	Project/Program: Ref:	

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1. INTRODUCTION

This progress report describes the testing and characterization of the **RHF43BK-01V** manufactured by **STMicroelectronics**. Testing began on February 09th, 2015 and is expected to end on March 31th, 2015.

2. PART INFORMATION

Identification

Part designation	RHF43-01V
Manufacturer	STMicroelectronics
Part function	Rad-Hard Precision Single Opamp

Procurement information

Package	FP-8
Date Code	1348A
LOT ID No	33339001ZR / 3333900101
Number of tested parts	22 irradiated samples (Biased OFF) + 1 reference sample from an other lot

3. COMMENTS

The irradiation test on **22 RHF43BK-01V**, a **Rad-Hard Precision Single Opamp** from **STMicroelectronics** 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).

4. TEST PARAMETERS

Parameters	Symbols	Test conditions
Ta=25°C, load to Vcc/2 unless otherwise specified		
Input Offset Voltage	Vio1	Vcc=+16V; Vicm=Vcc/2
	Vio2	Vcc=+3V; Vicm=Vcc/2
Positive Input Bias Current	Iib+1	Vcc=+16V; Vicm=Vcc/2
	Iib+2	Vcc=+4V; Vicm=Vcc/2
Negative Input Bias Current	Iib-1	Vcc=+16V; Vicm=Vcc/2
	Iib-2	Vcc=+4V; Vicm=Vcc/2
Input Offset Current	Iio1	Vcc=+16V; Vicm=Vcc/2
	Iio2	Vcc=+4V; Vicm=Vcc/2
Voltage Gain	AVD1	Vcc=+16V; RL=1kΩ; 0.5V<Vout<15.5V; Vicm=Vcc/2
	AVD2	Vcc=+3V; RL=1kΩ; 0.5V<Vout<2.5V; Vicm=Vcc/2
Power Supply Current	Icc1	Vcc=+16V; no load
	Icc2	Vcc=+3V; no load
Common Mode Rejection Ratio	CMR1	Vcc=+16V; 0V<Vicm<16V
	CMR2	Vcc=+3V; 0V<Vicm<3V
High Level Output Voltage	VOH1	Vcc=+16V; RL=1kΩ
	VOH2	Vcc=+16V; RL=10kΩ
	VOH3	Vcc=+3V; RL=1kΩ
	VOH4	Vcc=+3V; RL=10kΩ
Low Level Output Voltage	VOL1	Vcc=+16V; RL=1kΩ
	VOL2	Vcc=+16V; RL=10kΩ
	VOL3	Vcc=+3V; RL=1kΩ
	VOL4	Vcc=+3V; RL=10kΩ
Slew Rate	SR+1	Vcc=+16V; RL=1kΩ
	SR-1	Vcc=+16V; RL=1kΩ
	SR+2	Vcc=+3V; RL=1kΩ
	SR-2	Vcc=+3V; RL=1kΩ

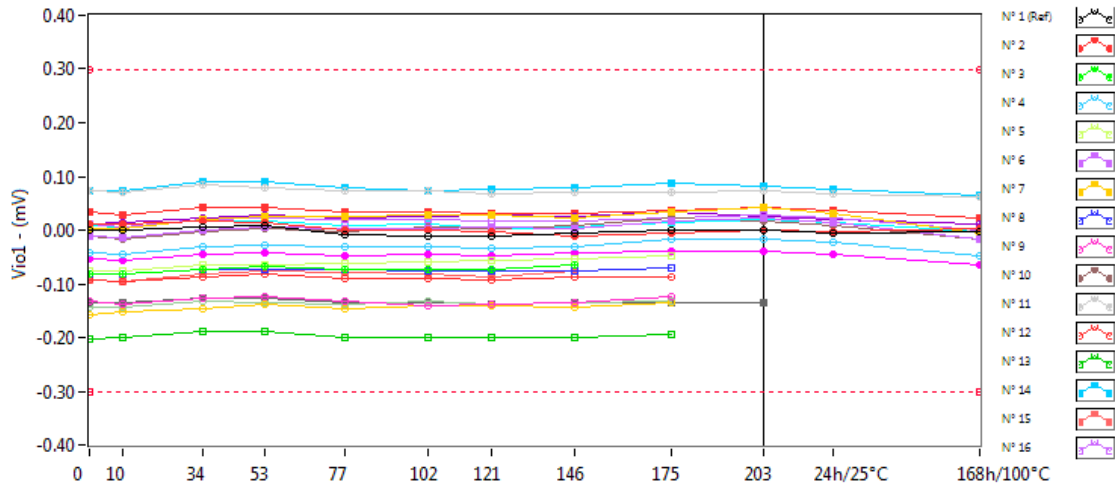
5. APPENDIX 1 MEASURED PARAMETERS

Contents :

1 Vio1	.....	A-2
2 Vio2	.....	A-3
3 lb+1	.....	A-4
4 lb+2	.....	A-5
5 lb-1	.....	A-6
6 lb-2	.....	A-7
7 lio1	.....	A-8
8 lio2	.....	A-9
9 AVD1	.....	A-10
10 AVD2	.....	A-11
11 lcc1	.....	A-12
12 lcc2	.....	A-13
13 CMR1	.....	A-14
14 CMR2	.....	A-15
15 VOH1	.....	A-16
16 VOH2	.....	A-17
17 VOH3	.....	A-18
18 VOH4	.....	A-19
19 VOL1	.....	A-20
20 VOL2	.....	A-21
21 VOL3	.....	A-22
22 VOL4	.....	A-23
23 SR+1	.....	A-24
24 SR-1	.....	A-25
25 SR+2	.....	A-26
26 SR-2	.....	A-27

1. Vio1

Ta=25°C; load to Vcc/2; Vcc=+16V; Vicm=Vcc/2

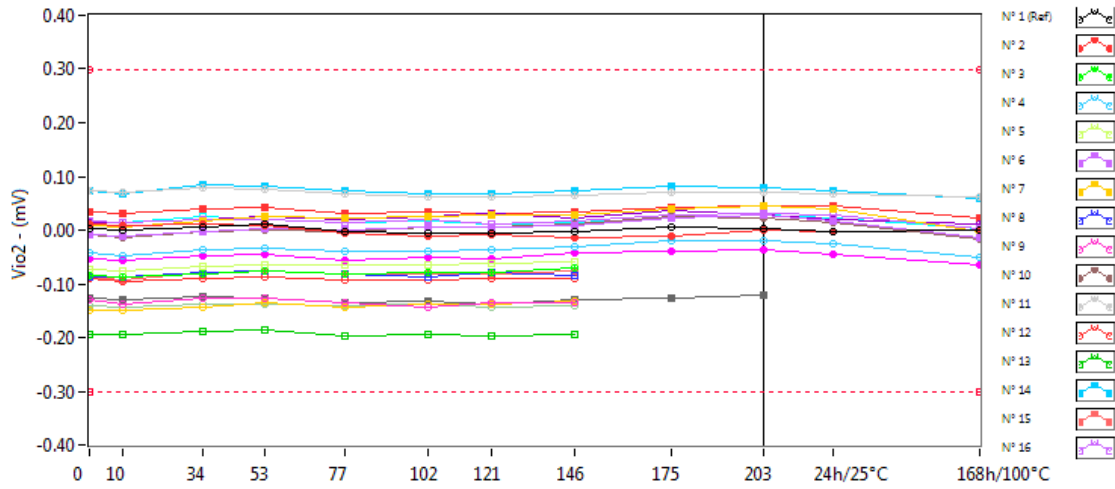


Vio1 . (mV) Min = -0.3 Max = 0.3

	0krad(Si)	10krad(Si)	34krad(Si)	53krad(Si)	77krad(Si)	102krad(Si)	121krad(Si)	146krad(Si)	175krad(Si)	203krad(Si)	24h/25°C	168h/100°C
N° 1 (Ref)	0.001	-0.001	0.005	0.008	-0.009	-0.012	-0.010	-0.007	0.001	-0.001	-0.007	-0.004
N° 2	0.011	0.010	0.018	0.013	0.001	-0.001	-0.002	-0.010	-0.007	0.001	-0.003	0.002
N° 3	-0.081	-0.082	-0.074	-0.068	-0.072	-0.072	-0.072	-0.066	Not Measurable	Not Measurable	Not Measurable	Not Measurable
N° 4	-0.043	-0.045	-0.032	-0.027	-0.032	-0.032	-0.034	-0.030	-0.016	-0.018	-0.023	-0.049
N° 5	-0.077	-0.075	-0.066	-0.064	-0.062	-0.060	-0.056	-0.054	-0.047	Not Measurable	Not Measurable	Not Measurable
N° 6	-0.012	-0.013	-0.001	0.006	0.003	0.003	0.006	0.003	0.018	0.022	0.013	-0.017
N° 7	0.004	0.004	0.019	0.080	0.073	0.072	0.067	0.070	0.035	0.041	0.032	-0.005
N° 8	-0.082	-0.082	-0.072	-0.073	-0.074	-0.077	-0.075	-0.075	-0.071	Not Measurable	Not Measurable	Not Measurable
N° 9	-0.132	-0.137	-0.126	-0.124	-0.133	-0.141	-0.138	-0.135	-0.125	Not Measurable	Not Measurable	Not Measurable
N° 10	-0.011	-0.017	-0.004	0.002	-0.003	0.006	0.003	0.008	0.022	0.017	0.008	-0.018
N° 11	0.073	0.070	0.084	0.080	0.073	0.072	0.067	0.070	0.070	0.072	0.067	0.062
N° 12	-0.093	-0.096	-0.086	-0.083	-0.091	-0.091	-0.094	-0.088	-0.087	Not Measurable	Not Measurable	Not Measurable
N° 13	-0.204	-0.200	-0.190	-0.189	-0.200	-0.200	-0.200	-0.199	-0.195	Not Measurable	Not Measurable	Not Measurable
N° 14	0.074	0.073	0.089	0.090	0.079	0.073	0.075	0.078	0.086	0.081	0.075	0.064
N° 15	-0.094	-0.095	-0.082	-0.075	-0.080	-0.081	-0.086	-0.077	Not Measurable	Not Measurable	Not Measurable	Not Measurable
N° 16	0.010	0.007	0.020	0.023	0.019	0.021	0.016	0.017	0.023	0.027	0.023	-0.001
N° 17	-0.157	-0.153	-0.147	-0.138	-0.146	-0.140	-0.142	-0.143	-0.134	Not Measurable	Not Measurable	Not Measurable
N° 18	-0.053	-0.055	-0.045	-0.041	-0.049	-0.045	-0.049	-0.043	-0.039	-0.040	-0.045	-0.064
N° 19	0.012	0.014	0.022	0.027	0.023	0.025	0.029	0.024	0.035	0.026	0.020	0.011
N° 20	-0.143	-0.143	-0.133	-0.134	-0.137	-0.131	-0.139	-0.135	-0.131	Not Measurable	Not Measurable	Not Measurable
N° 21	0.008	0.007	0.019	0.017	0.009	0.011	0.004	0.007	0.014	0.019	0.014	-0.004
N° 22	0.033	0.029	0.043	0.042	0.033	0.034	0.030	0.031	0.037	0.041	0.038	0.022
N° 23	-0.134	-0.135	-0.127	-0.128	-0.135	-0.135	-0.139	-0.135	-0.134	-0.136	Not Measurable	Not Measurable

2. Vio2

Ta=25°C; load to Vcc/2; Vcc=+3V; Vicm=Vcc/2

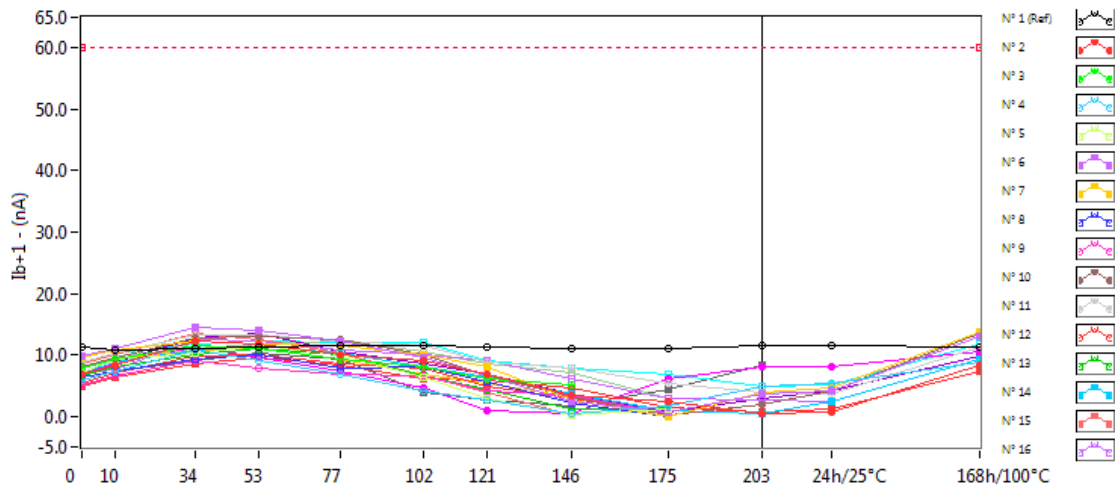


Vio2 . (mV) Min = -0.3 Max = 0.3

	0krad(Si)	10krad(Si)	34krad(Si)	53krad(Si)	77krad(Si)	102krad(Si)	121krad(Si)	146krad(Si)	175krad(Si)	203krad(Si)	24h/25°C	168h/100°C
N° 1 (Ref)	0.002	0.000	0.007	0.010	-0.004	-0.007	-0.006	-0.003	0.006	0.004	-0.002	0.001
N° 2	0.011	0.008	0.010	0.008	-0.007	-0.010	-0.009	-0.013	-0.011	-0.001	-0.003	-0.001
N° 3	-0.084	-0.086	-0.083	-0.075	-0.083	-0.079	-0.080	-0.070	Not Measurable	Not Measurable	Not Measurable	Not Measurable
N° 4	-0.043	-0.049	-0.037	-0.034	-0.039	-0.039	-0.038	-0.031	-0.020	-0.020	-0.025	-0.051
N° 5	-0.074	-0.075	-0.069	-0.065	-0.066	-0.065	-0.061	-0.058	Not Measurable	Not Measurable	Not Measurable	Not Measurable
N° 6	-0.008	-0.011	-0.002	0.004	0.000	0.006	0.006	0.008	0.023	0.027	0.018	-0.014
N° 7	0.008	0.006	0.018	0.076	0.023	0.025	0.027	0.027	0.039	0.046	0.040	-0.003
N° 8	-0.086	-0.087	-0.080	-0.075	-0.083	-0.086	-0.080	-0.084	Not Measurable	Not Measurable	Not Measurable	Not Measurable
N° 9	-0.130	-0.137	-0.127	-0.126	-0.136	-0.143	-0.136	-0.134	Not Measurable	Not Measurable	Not Measurable	Not Measurable
N° 10	-0.008	-0.014	-0.002	-0.001	-0.002	0.005	0.005	0.010	0.026	0.023	0.013	-0.016
N° 11	0.074	0.070	0.078	0.076	0.068	0.063	0.061	0.064	0.071	0.070	0.067	0.063
N° 12	-0.091	-0.096	-0.089	-0.087	-0.092	-0.093	-0.090	-0.091	Not Measurable	Not Measurable	Not Measurable	Not Measurable
N° 13	-0.193	-0.193	-0.188	-0.187	-0.197	-0.194	-0.196	-0.194	Not Measurable	Not Measurable	Not Measurable	Not Measurable
N° 14	0.073	0.069	0.084	0.083	0.072	0.068	0.069	0.073	0.083	0.078	0.074	0.060
N° 15	-0.088	-0.092	-0.079	-0.075	-0.081	-0.081	-0.083	-0.076	Not Measurable	Not Measurable	Not Measurable	Not Measurable
N° 16	0.016	0.013	0.020	0.021	0.014	0.019	0.012	0.016	0.027	0.032	0.027	0.003
N° 17	-0.149	-0.148	-0.145	-0.136	-0.144	-0.138	-0.138	-0.133	Not Measurable	Not Measurable	Not Measurable	Not Measurable
N° 18	-0.053	-0.055	-0.049	-0.044	-0.056	-0.050	-0.053	-0.042	-0.040	-0.037	-0.044	-0.064
N° 19	0.015	0.014	0.019	0.026	0.019	0.026	0.030	0.023	0.037	0.027	0.021	0.010
N° 20	-0.142	-0.145	-0.137	-0.137	-0.140	-0.139	-0.145	-0.140	Not Measurable	Not Measurable	Not Measurable	Not Measurable
N° 21	0.018	0.014	0.026	0.020	0.015	0.017	0.011	0.015	0.023	0.028	0.023	0.004
N° 22	0.035	0.031	0.039	0.041	0.032	0.035	0.031	0.033	0.041	0.045	0.046	0.023
N° 23	-0.128	-0.130	-0.123	-0.126	-0.134	-0.131	-0.137	-0.130	-0.127	-0.122	Not Measurable	Not Measurable

3. Ib+1

Ta=25°C; load to Vcc/2; Vcc=+16V; Vicm=Vcc/2

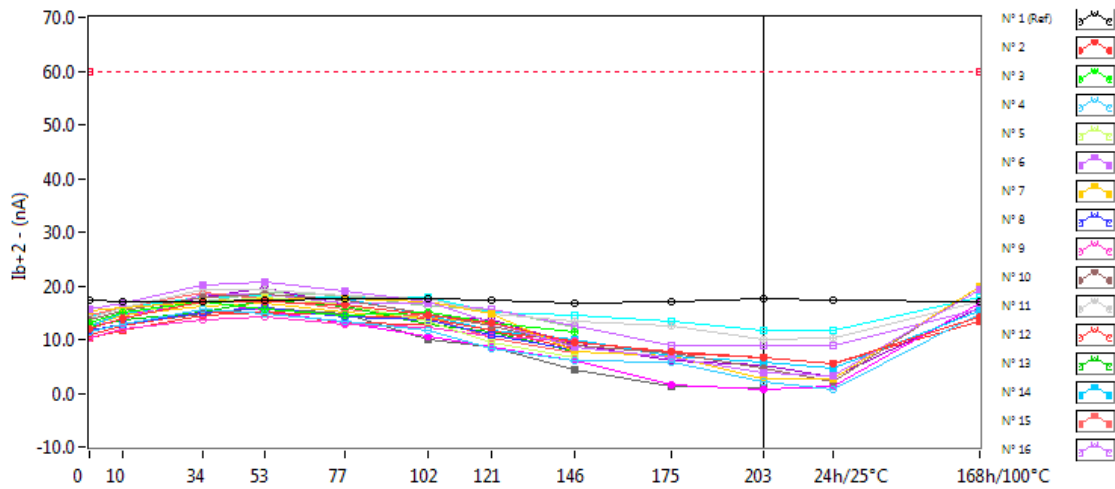


Ib+1 . (nA) Max = 60.0

	0krad(Si)	10krad(Si)	34krad(Si)	53krad(Si)	77krad(Si)	102krad(Si)	121krad(Si)	146krad(Si)	175krad(Si)	203krad(Si)	24h/25°C	168h/100°C
N° 1 (Ref)	11.190	10.846	11.090	11.205	11.503	11.456	11.206	10.899	10.989	11.544	11.396	11.251
N° 2	6.870	8.317	12.268	11.832	10.157	9.133	6.861	3.357	2.404	0.496	0.649	8.427
N° 3	7.697	9.305	11.632	11.044	9.291	8.181	6.001	5.101	Not Measurable	Not Measurable	Not Measurable	Not Measurable
N° 4	5.838	7.236	10.829	8.977	6.819	4.140	2.749	0.383	1.757	4.842	5.466	8.681
N° 5	7.196	9.255	10.311	11.503	10.139	6.270	2.962	0.093	1.166	Not Measurable	Not Measurable	Not Measurable
N° 6	9.823	11.102	14.544	14.056	12.197	9.597	6.667	2.311	0.546	3.506	4.079	12.884
N° 7	9.436	10.675	12.261	11.683	11.476	9.931	8.107	2.660	0.042	3.982	4.616	13.651
N° 8	6.339	7.272	9.276	9.970	7.715	7.972	5.481	2.224	0.001	Not Measurable	Not Measurable	Not Measurable
N° 9	5.039	6.603	9.099	7.738	6.948	6.632	4.130	3.442	0.527	Not Measurable	Not Measurable	Not Measurable
N° 10	7.992	9.509	12.848	12.951	12.380	10.156	6.608	3.221	0.107	2.011	4.239	13.410
N° 11	8.724	10.391	13.219	13.308	12.233	11.452	8.825	7.720	5.454	3.846	3.745	11.181
N° 12	5.271	7.141	9.829	10.033	8.621	7.849	4.740	2.905	0.428	Not Measurable	Not Measurable	Not Measurable
N° 13	6.636	8.120	9.922	11.118	10.087	6.664	4.349	1.267	1.497	Not Measurable	Not Measurable	Not Measurable
N° 14	6.960	8.788	10.663	11.604	10.382	8.148	6.275	3.699	0.906	0.416	2.299	9.304
N° 15	8.660	10.063	13.481	12.515	10.299	6.693	3.774	0.180	Not Measurable	Not Measurable	Not Measurable	Not Measurable
N° 16	6.964	7.659	12.394	12.361	10.771	10.051	9.109	6.108	2.888	2.613	2.351	9.408
N° 17	7.027	9.185	10.708	10.916	9.183	6.945	5.319	3.029	0.405	Not Measurable	Not Measurable	Not Measurable
N° 18	6.952	8.455	11.189	9.517	7.381	4.598	0.920	0.482	6.193	8.051	8.163	10.494
N° 19	6.881	8.877	12.646	13.540	10.420	8.466	6.951	3.578	0.603	2.796	4.131	9.677
N° 20	6.877	9.885	11.134	11.704	12.181	10.444	8.473	7.018	2.905	Not Measurable	Not Measurable	Not Measurable
N° 21	8.522	10.237	11.725	12.293	12.038	11.983	8.934	7.915	6.925	4.884	5.141	11.736
N° 22	4.966	6.329	8.477	9.486	8.195	6.179	5.726	4.520	1.439	0.550	1.161	7.382
N° 23	5.850	7.380	9.002	10.167	9.219	3.771	2.573	1.538	4.447	8.229	Not Measurable	Not Measurable

4. Ib+2

Ta=25°C; load to Vcc/2; Vcc=+4V; Vicm=Vcc/2

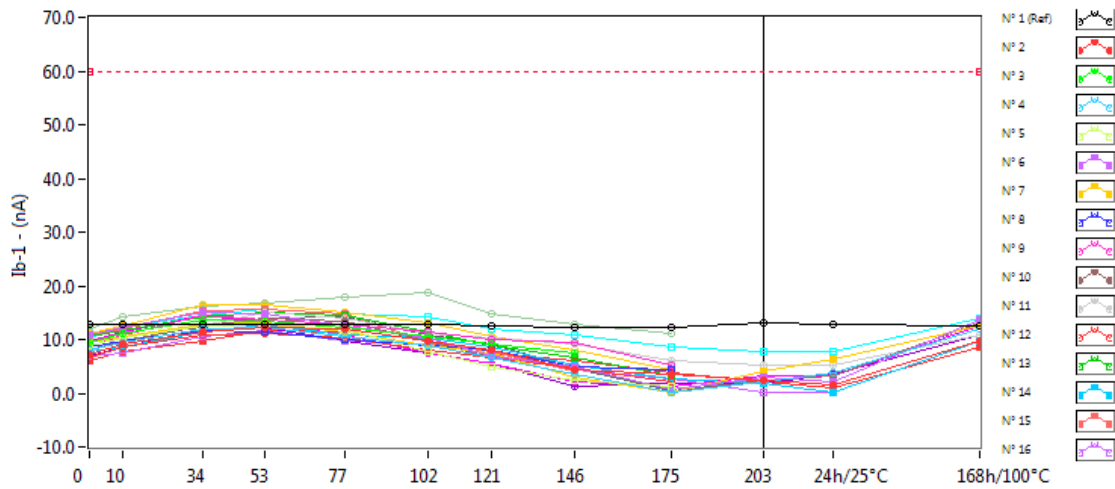


Ib+2 . (nA) Max = 60.0

	0krad(Si)	10krad(Si)	34krad(Si)	53krad(Si)	77krad(Si)	102krad(Si)	121krad(Si)	146krad(Si)	175krad(Si)	203krad(Si)	24h/25°C	168h/100°C
N° 1 (Ref)	17.389	17.034	17.125	17.315	17.524	17.508	17.252	16.807	16.937	17.569	17.360	17.123
N° 2	12.092	13.904	17.130	17.090	16.471	14.509	13.072	9.378	7.885	6.483	5.517	14.197
N° 3	13.231	15.096	17.142	15.521	14.589	15.130	12.965	11.471	Not Measurable	Not Measurable	Not Measurable	Not Measurable
N° 4	11.485	12.836	15.748	14.917	13.382	11.685	8.377	6.060	5.799	2.220	0.746	14.829
N° 5	13.032	15.144	16.820	17.813	16.504	13.325	9.407	6.572	Not Measurable	Not Measurable	Not Measurable	Not Measurable
N° 6	15.609	16.843	20.207	20.804	19.033	17.153	13.005	8.458	6.753	3.687	3.277	19.315
N° 7	15.267	16.022	16.906	17.616	17.597	17.083	14.811	7.736	6.815	2.788	2.550	19.965
N° 8	11.823	12.933	15.104	15.963	14.120	13.559	10.724	7.918	Not Measurable	Not Measurable	Not Measurable	Not Measurable
N° 9	10.344	11.900	13.765	14.127	12.801	12.327	10.432	9.842	Not Measurable	Not Measurable	Not Measurable	Not Measurable
N° 10	13.677	15.224	17.929	18.392	17.423	14.778	12.398	8.830	7.554	4.532	2.156	19.898
N° 11	14.025	15.794	19.225	19.265	18.138	17.502	14.674	13.296	12.428	10.036	10.158	17.143
N° 12	10.746	12.456	15.007	15.076	14.494	13.931	11.616	8.425	Not Measurable	Not Measurable	Not Measurable	Not Measurable
N° 13	12.203	13.609	15.189	17.268	16.131	12.711	11.399	7.767	Not Measurable	Not Measurable	Not Measurable	Not Measurable
N° 14	12.448	14.782	17.051	17.736	17.567	14.564	11.771	9.976	6.931	5.782	4.512	15.386
N° 15	14.440	15.805	18.701	17.699	15.669	14.103	10.199	7.349	Not Measurable	Not Measurable	Not Measurable	Not Measurable
N° 16	12.520	13.597	18.551	18.453	16.874	16.752	15.539	12.400	8.829	8.879	8.962	15.586
N° 17	12.645	14.572	16.304	16.827	15.193	13.809	13.013	8.801	Not Measurable	Not Measurable	Not Measurable	Not Measurable
N° 18	12.605	14.571	16.925	15.303	13.079	10.524	8.463	6.032	1.461	0.584	1.224	16.846
N° 19	12.544	14.378	17.763	19.533	16.353	14.415	13.703	9.145	5.973	5.269	2.920	15.941
N° 20	12.512	15.197	17.080	18.631	18.271	16.219	15.771	12.267	Not Measurable	Not Measurable	Not Measurable	Not Measurable
N° 21	14.111	16.029	17.769	18.066	17.970	17.864	15.176	14.528	13.333	11.595	11.771	18.003
N° 22	10.318	11.824	14.472	15.128	13.149	12.808	11.546	9.818	7.340	6.535	5.470	13.315
N° 23	11.348	12.825	14.729	15.985	14.815	9.889	8.713	4.237	1.265	0.887	Not Measurable	Not Measurable

5. Ib-1

Ta=25°C; load to Vcc/2; Vcc=+16V; Vicm=Vcc/2



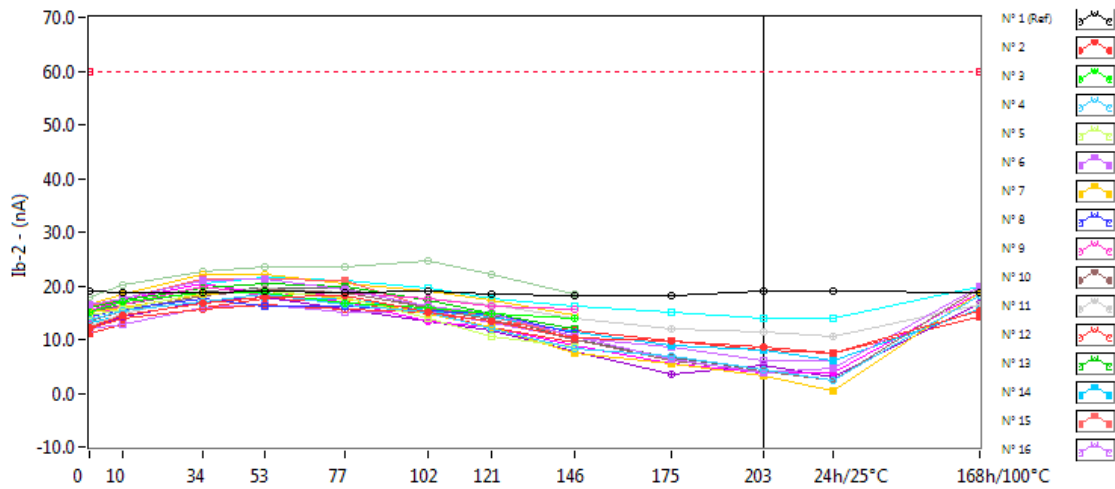
Ib-1 . (nA)

Max = 60.0

	0krad(Si)	10krad(Si)	34krad(Si)	53krad(Si)	77krad(Si)	102krad(Si)	121krad(Si)	146krad(Si)	175krad(Si)	203krad(Si)	24h/25°C	168h/100°C
N° 1 (Ref)	12.923	12.769	12.726	12.764	12.702	12.687	12.527	12.177	12.238	13.030	12.784	12.668
N° 2	7.147	9.131	11.354	12.394	11.852	9.712	7.920	4.458	3.576	2.474	1.536	9.739
N° 3	9.549	11.237	13.703	13.259	12.245	10.652	9.092	7.602	Not Measurable	Not Measurable	Not Measurable	Not Measurable
N° 4	7.951	9.483	11.892	12.326	10.524	8.854	6.502	3.582	0.005	2.111	3.724	11.923
N° 5	8.888	10.400	12.603	12.768	12.024	7.827	4.952	2.427	1.240	Not Measurable	Not Measurable	Not Measurable
N° 6	10.731	12.175	15.199	14.700	12.609	10.412	6.785	4.958	0.737	2.857	2.123	13.758
N° 7	9.433	10.445	12.929	13.174	11.378	8.970	7.393	3.067	0.100	4.104	6.310	12.397
N° 8	8.599	9.849	11.623	11.493	9.871	8.902	7.890	4.879	4.429	Not Measurable	Not Measurable	Not Measurable
N° 9	8.665	10.838	14.410	13.570	12.800	11.413	10.107	9.329	5.137	Not Measurable	Not Measurable	Not Measurable
N° 10	7.979	9.836	12.583	13.962	13.325	9.855	6.736	3.489	0.015	2.398	3.118	13.076
N° 11	7.571	10.557	12.556	15.180	13.958	11.246	10.311	9.068	5.975	5.099	5.153	10.832
N° 12	6.711	8.626	10.950	10.997	10.141	7.998	6.615	4.722	2.102	Not Measurable	Not Measurable	Not Measurable
N° 13	10.514	11.751	14.229	14.978	14.585	11.276	8.949	6.564	3.210	Not Measurable	Not Measurable	Not Measurable
N° 14	7.697	8.601	11.383	12.787	10.915	10.170	8.670	5.113	2.742	1.925	0.089	9.716
N° 15	10.533	11.975	15.460	15.718	14.782	9.310	7.670	3.944	Not Measurable	Not Measurable	Not Measurable	Not Measurable
N° 16	6.857	7.402	10.595	11.640	9.661	9.267	7.130	4.426	2.738	0.092	0.076	9.815
N° 17	11.136	12.402	16.340	16.362	14.976	13.112	10.483	7.919	4.310	Not Measurable	Not Measurable	Not Measurable
N° 18	9.636	11.350	14.506	12.986	10.792	7.457	5.567	2.233	1.363	3.325	3.103	12.663
N° 19	6.977	8.542	11.741	12.161	9.815	7.464	5.612	1.203	1.814	1.830	3.467	10.847
N° 20	12.095	14.198	16.073	16.699	17.954	18.766	14.783	12.925	11.134	Not Measurable	Not Measurable	Not Measurable
N° 21	10.170	12.356	14.553	15.572	14.849	14.341	12.074	10.743	8.534	7.744	7.659	13.856
N° 22	5.931	7.610	9.852	11.660	11.525	8.855	7.469	5.999	3.736	2.129	1.041	8.539
N° 23	9.584	10.558	12.334	13.867	14.266	10.881	9.056	4.646	0.469	2.502	Not Measurable	Not Measurable

6. Ib-2

Ta=25°C; load to Vcc/2; Vcc=+4V; Vicm=Vcc/2



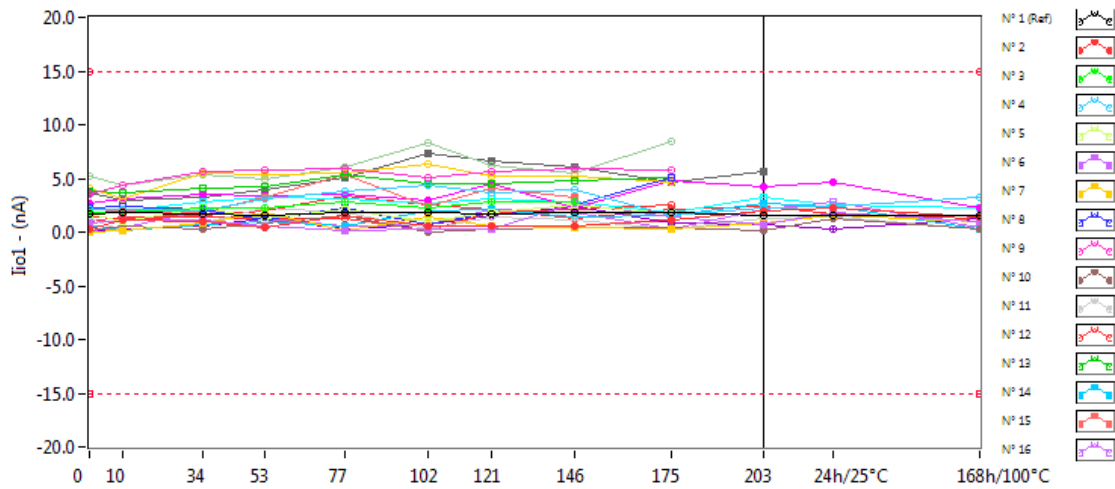
Ib-2 . (nA)

Max = 60.0

	0krad(Si)	10krad(Si)	34krad(Si)	53krad(Si)	77krad(Si)	102krad(Si)	121krad(Si)	146krad(Si)	175krad(Si)	203krad(Si)	24h/25°C	168h/100°C
N° 1 (Ref)	19.049	18.822	18.764	19.001	18.773	18.897	18.563	18.143	18.255	19.091	18.969	18.688
N° 2	12.223	14.459	16.714	17.762	18.078	15.019	13.305	10.222	9.695	8.685	7.355	15.337
N° 3	15.110	17.085	18.755	18.842	16.884	15.925	14.898	13.824	Not Measurable	Not Measurable	Not Measurable	Not Measurable
N° 4	13.527	15.323	17.146	18.460	16.566	15.020	12.112	8.249	6.924	4.353	2.444	18.177
N° 5	14.408	15.676	18.827	18.984	17.978	13.817	10.500	8.581	Not Measurable	Not Measurable	Not Measurable	Not Measurable
N° 6	16.344	17.503	20.940	21.151	19.178	16.282	14.716	10.553	6.321	3.677	4.589	19.968
N° 7	14.981	15.979	18.446	19.073	17.572	14.791	12.360	7.399	5.502	3.274	0.405	18.633
N° 8	14.185	15.633	17.466	16.193	16.159	15.376	14.654	11.199	Not Measurable	Not Measurable	Not Measurable	Not Measurable
N° 9	13.947	16.347	19.753	18.199	18.835	17.578	16.083	15.668	Not Measurable	Not Measurable	Not Measurable	Not Measurable
N° 10	13.432	15.342	18.083	19.339	18.621	15.782	13.592	9.972	6.194	4.006	2.462	19.538
N° 11	12.627	14.778	18.239	19.629	18.787	17.663	16.373	13.917	12.034	11.290	10.692	16.586
N° 12	11.998	14.020	15.571	16.578	15.539	15.210	12.140	9.430	Not Measurable	Not Measurable	Not Measurable	Not Measurable
N° 13	15.855	17.213	19.597	20.377	19.866	17.307	14.750	11.997	Not Measurable	Not Measurable	Not Measurable	Not Measurable
N° 14	13.068	14.487	16.821	17.786	17.682	15.457	14.132	11.404	8.923	7.978	6.189	15.595
N° 15	16.132	17.514	21.365	21.337	20.863	15.848	14.324	10.600	Not Measurable	Not Measurable	Not Measurable	Not Measurable
N° 16	12.045	12.783	15.926	16.576	15.208	15.413	13.106	10.332	8.527	6.168	6.031	15.641
N° 17	16.608	18.323	22.216	22.066	20.522	18.935	17.384	14.383	Not Measurable	Not Measurable	Not Measurable	Not Measurable
N° 18	15.297	17.275	20.536	18.510	17.097	13.496	12.393	8.777	5.497	3.798	3.727	18.799
N° 19	12.370	14.205	17.068	17.934	15.555	13.451	11.615	7.698	3.574	5.182	2.986	16.824
N° 20	17.858	20.097	22.583	23.525	23.628	24.689	22.053	18.501	Not Measurable	Not Measurable	Not Measurable	Not Measurable
N° 21	15.412	17.305	20.462	21.487	21.017	19.505	17.659	16.317	15.063	14.077	13.919	19.946
N° 22	11.101	12.800	15.856	17.567	17.167	14.762	13.310	11.584	9.762	8.028	7.427	14.155
N° 23	15.063	16.443	19.098	19.471	19.441	15.975	14.433	10.009	6.707	4.244	Not Measurable	Not Measurable

7. Iio1

Ta=25°C; load to Vcc/2; Vcc=+16V; Vicm=Vcc/2

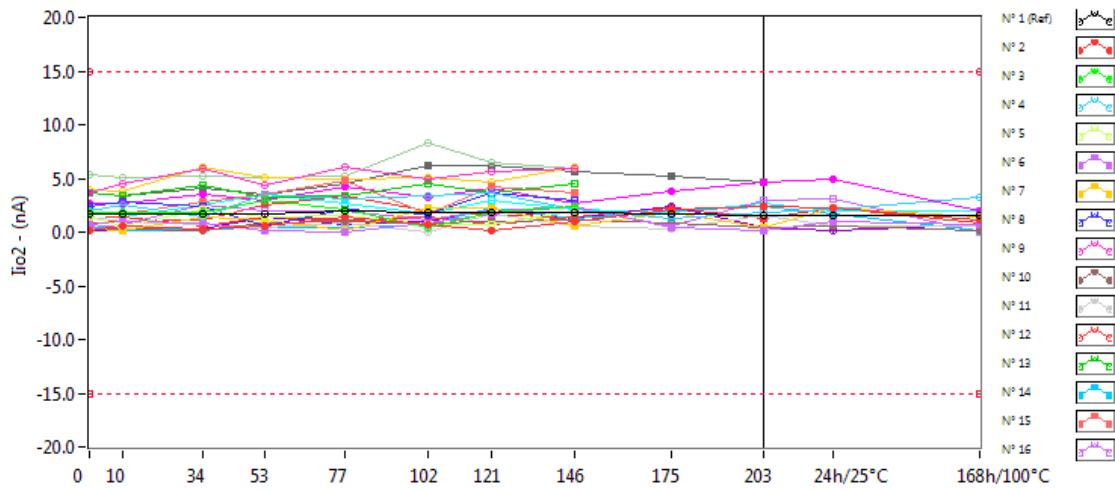


Iio1 . (nA) Min = -15.0 Max = 15.0

	0krad(Si)	10krad(Si)	34krad(Si)	53krad(Si)	77krad(Si)	102krad(Si)	121krad(Si)	146krad(Si)	175krad(Si)	203krad(Si)	24h/25°C	168h/100°C
N° 1 (Ref)	1.698	1.879	1.713	1.610	1.878	1.816	1.752	1.832	1.827	1.526	1.532	1.615
N° 2	0.238	1.083	0.922	0.486	1.581	0.570	0.581	0.534	1.132	1.914	2.298	1.354
N° 3	1.826	1.771	2.277	2.273	2.827	2.209	2.757	2.754	Not Measurable	Not Measurable	Not Measurable	Not Measurable
N° 4	2.069	2.147	1.907	3.105	3.745	4.352	3.677	3.915	1.615	2.261	2.349	3.250
N° 5	1.630	0.993	2.316	1.315	2.061	0.947	1.825	2.520	1.738	Not Measurable	Not Measurable	Not Measurable
N° 6	0.881	1.086	1.113	0.613	0.144	0.311	0.342	2.658	1.363	0.704	1.891	0.978
N° 7	0.028	0.200	0.842	1.790	0.158	1.443	0.567	0.437	0.292	0.795	1.532	0.987
N° 8	2.234	2.425	2.152	1.156	2.303	0.709	1.790	2.602	5.018	Not Measurable	Not Measurable	Not Measurable
N° 9	3.591	4.320	5.631	5.780	5.870	5.065	5.584	5.885	5.786	Not Measurable	Not Measurable	Not Measurable
N° 10	0.077	0.531	0.220	0.815	1.531	0.026	0.281	0.436	0.419	0.133	1.286	0.295
N° 11	1.200	0.132	0.883	2.242	1.761	0.343	1.455	1.093	0.240	1.296	1.369	0.291
N° 12	1.406	1.318	1.438	1.261	1.327	0.088	1.836	2.172	2.489	Not Measurable	Not Measurable	Not Measurable
N° 13	3.845	3.724	4.123	4.192	5.342	4.460	4.480	4.740	5.033	Not Measurable	Not Measurable	Not Measurable
N° 14	0.685	0.146	0.705	1.045	0.511	1.984	2.088	1.452	1.615	2.664	2.406	0.326
N° 15	1.829	1.918	1.809	3.295	5.328	2.437	4.067	3.284	Not Measurable	Not Measurable	Not Measurable	Not Measurable
N° 16	0.148	0.483	2.038	1.259	0.627	0.693	2.098	1.840	0.247	2.043	2.787	0.409
N° 17	4.052	3.147	5.526	5.341	5.538	6.384	5.246	5.205	4.694	Not Measurable	Not Measurable	Not Measurable
N° 18	2.655	3.052	3.484	3.377	3.480	2.978	4.519	2.235	4.803	4.293	4.663	2.189
N° 19	0.077	0.316	0.562	1.243	0.218	0.769	1.520	2.379	0.850	0.748	0.233	1.251
N° 20	5.182	4.371	5.409	4.920	6.011	8.288	6.255	5.460	8.452	Not Measurable	Not Measurable	Not Measurable
N° 21	1.618	1.956	2.766	3.293	3.126	2.662	3.057	2.815	1.850	3.303	2.483	2.189
N° 22	0.934	1.370	1.488	1.972	3.352	2.581	2.045	1.283	2.076	2.363	1.748	1.216
N° 23	3.695	3.008	3.206	3.985	5.090	7.280	6.615	6.006	4.647	5.624	Not Measurable	Not Measurable

8. Iio2

Ta=25°C; load to Vcc/2; Vcc=+4V; Vicm=Vcc/2

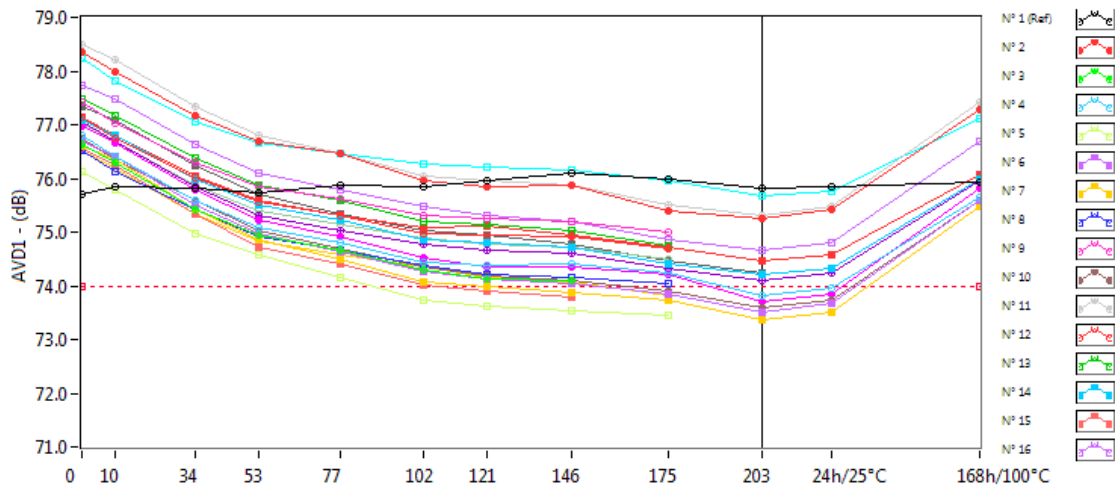


Iio2 . (nA) Min = -15.0 Max = 15.0

	0krad(Si)	10krad(Si)	34krad(Si)	53krad(Si)	77krad(Si)	102krad(Si)	121krad(Si)	146krad(Si)	175krad(Si)	203krad(Si)	24h/25°C	168h/100°C
N° 1 (Ref)	1.674	1.743	1.627	1.663	1.906	1.798	1.812	1.818	1.740	1.546	1.501	1.528
N° 2	0.111	0.584	0.348	0.574	1.448	0.671	0.129	1.002	2.163	2.329	2.204	1.120
N° 3	1.878	1.812	1.901	2.995	2.141	0.465	1.896	2.431	Not Measurable	Not Measurable	Not Measurable	Not Measurable
N° 4	2.042	2.479	1.447	3.553	3.150	3.334	3.622	2.125	1.199	1.868	2.043	3.267
N° 5	1.388	0.583	2.098	1.460	1.615	0.735	0.673	1.945	Not Measurable	Not Measurable	Not Measurable	Not Measurable
N° 6	0.730	0.929	0.865	0.141	0.009	0.777	1.724	2.386	0.485	0.193	0.958	0.719
N° 7	0.300	0.100	1.435	1.118	0.136	2.274	2.291	0.613	1.889	0.404	2.246	1.370
N° 8	2.364	2.770	2.447	0.630	2.066	1.684	3.655	3.022	Not Measurable	Not Measurable	Not Measurable	Not Measurable
N° 9	3.609	4.535	5.852	4.419	6.064	4.876	5.698	5.934	Not Measurable	Not Measurable	Not Measurable	Not Measurable
N° 10	0.254	0.234	0.203	0.775	0.993	0.816	1.049	1.119	0.811	0.371	0.573	0.147
N° 11	1.406	0.976	0.695	0.439	0.780	0.032	1.735	0.631	0.312	1.545	0.594	0.546
N° 12	1.241	1.451	0.620	1.433	1.196	1.447	0.668	1.342	Not Measurable	Not Measurable	Not Measurable	Not Measurable
N° 13	3.661	3.402	4.426	3.305	3.413	4.501	3.624	4.566	Not Measurable	Not Measurable	Not Measurable	Not Measurable
N° 14	0.603	0.133	0.326	0.385	0.354	0.640	2.305	1.298	1.947	2.326	1.713	0.170
N° 15	1.681	1.698	2.789	3.534	4.785	1.673	4.265	3.592	Not Measurable	Not Measurable	Not Measurable	Not Measurable
N° 16	0.485	0.677	2.594	1.911	1.961	1.143	2.173	2.317	0.495	2.911	3.138	0.035
N° 17	3.939	3.792	6.034	5.050	4.903	5.018	4.666	6.027	Not Measurable	Not Measurable	Not Measurable	Not Measurable
N° 18	2.693	2.653	3.500	3.019	4.204	3.183	4.064	2.662	3.766	4.633	4.883	1.921
N° 19	0.174	0.147	0.277	1.477	0.710	0.998	2.107	1.324	2.412	0.433	0.185	0.746
N° 20	5.336	5.025	5.215	5.069	5.201	8.249	6.515	5.944	Not Measurable	Not Measurable	Not Measurable	Not Measurable
N° 21	1.275	1.362	2.531	3.491	2.744	1.632	2.908	2.057	1.853	2.671	2.035	1.919
N° 22	0.785	0.920	1.147	2.548	3.443	1.940	1.500	1.459	2.234	1.208	2.189	0.861
N° 23	3.720	3.440	4.106	3.566	4.557	6.166	6.193	5.684	5.223	4.675	Not Measurable	Not Measurable

9. AVD1

Ta=25°C; load to Vcc/2; Vcc=+16V; Vicm=Vcc/2; RI=1kOhms; 0.5V<Vout<15.5V

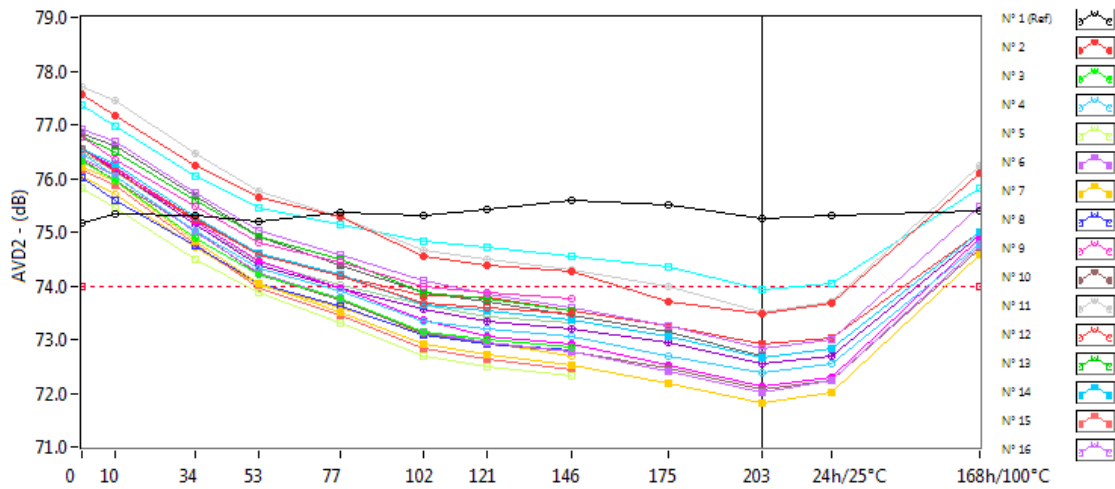


AVD1 . (dB) Min = 74.0

	0krad(Si)	10krad(Si)	34krad(Si)	53krad(Si)	77krad(Si)	102krad(Si)	121krad(Si)	146krad(Si)	175krad(Si)	203krad(Si)	24h/25°C	168h/100°C
N° 1 (Ref)	75.718	75.855	75.819	75.737	75.887	75.835	75.948	76.098	75.992	75.810	75.846	75.923
N° 2	78.356	77.984	77.161	76.700	76.472	75.965	75.859	75.865	75.390	75.260	75.416	77.289
N° 3	76.630	76.290	75.434	74.936	74.651	74.285	74.125	74.108	Not Measurable	Not Measurable	Not Measurable	Not Measurable
N° 4	76.795	76.395	75.586	75.074	74.809	74.442	74.376	74.403	74.229	73.826	73.966	75.641
N° 5	76.120	75.780	74.972	74.587	74.148	73.733	73.628	73.538	73.442	Not Measurable	Not Measurable	Not Measurable
N° 6	76.703	76.400	75.515	74.967	74.647	74.266	74.133	74.052	73.840	73.514	73.680	75.597
N° 7	76.609	76.342	75.416	74.846	74.506	74.084	73.976	73.883	73.746	73.371	73.520	75.477
N° 8	76.528	76.133	75.433	74.924	74.654	74.370	74.207	74.162	74.044	Not Measurable	Not Measurable	Not Measurable
N° 9	77.421	77.019	76.306	75.831	75.624	75.304	75.260	75.211	74.998	Not Measurable	Not Measurable	Not Measurable
N° 10	76.735	76.357	75.594	75.020	74.686	74.351	74.182	74.100	73.909	73.589	73.725	75.587
N° 11	78.501	78.218	77.345	76.795	76.473	76.054	75.968	75.862	75.497	75.318	75.475	77.425
N° 12	77.143	76.748	76.022	75.561	75.305	74.976	74.954	74.911	74.703	Not Measurable	Not Measurable	Not Measurable
N° 13	77.482	77.176	76.392	75.886	75.582	75.184	75.133	75.021	74.740	Not Measurable	Not Measurable	Not Measurable
N° 14	77.074	76.794	75.977	75.494	75.223	74.852	74.801	74.712	74.416	74.207	74.336	75.997
N° 15	76.543	76.248	75.327	74.728	74.411	74.001	73.899	73.800	Not Measurable	Not Measurable	Not Measurable	Not Measurable
N° 16	77.741	77.492	76.630	76.110	75.801	75.470	75.312	75.186	74.871	74.653	74.810	76.692
N° 17	76.517	76.183	75.348	74.839	74.588	74.339	74.168	74.061	73.828	Not Measurable	Not Measurable	Not Measurable
N° 18	76.975	76.648	75.780	75.237	74.910	74.529	74.340	74.358	74.213	73.698	73.842	75.823
N° 19	77.054	76.681	75.845	75.300	75.035	74.784	74.674	74.603	74.338	74.110	74.228	75.953
N° 20	77.039	76.694	75.884	75.404	75.143	74.881	74.771	74.723	74.495	Not Measurable	Not Measurable	Not Measurable
N° 21	78.229	77.829	77.067	76.666	76.474	76.268	76.215	76.142	75.948	75.682	75.765	77.107
N° 22	77.137	76.792	76.035	75.578	75.322	75.087	75.123	74.934	74.719	74.467	74.571	76.078
N° 23	77.337	77.089	76.245	75.702	75.339	75.026	74.936	74.765	74.459	74.240	Not Measurable	Not Measurable

10. AVD2

Ta=25°C; load to Vcc/2; Vcc=+3V; Vicm=Vcc/2; RI=1kOhms; 0.5V<Vout<2.5V

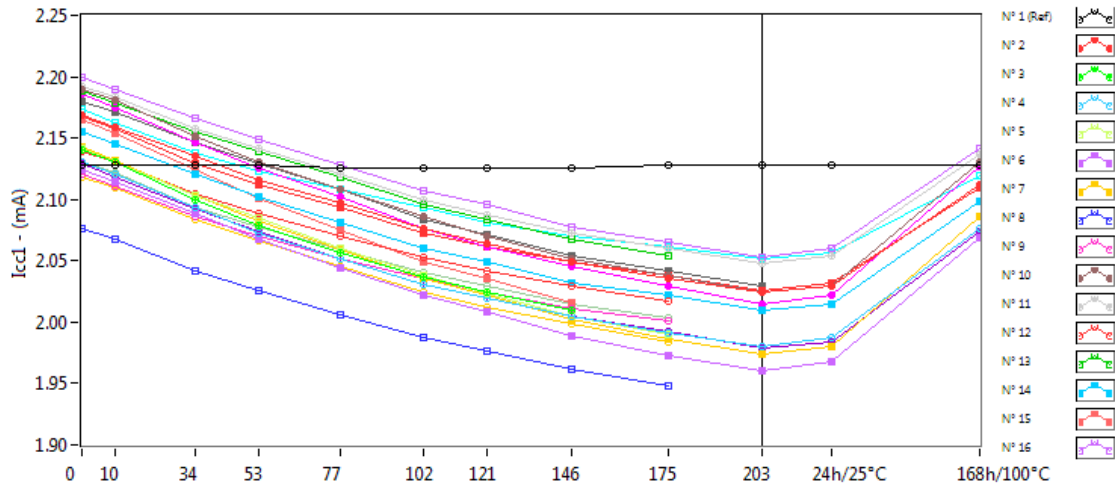


AVD2 . (dB) Min = 74.0

	0krad(Si)	10krad(Si)	34krad(Si)	53krad(Si)	77krad(Si)	102krad(Si)	121krad(Si)	146krad(Si)	175krad(Si)	203krad(Si)	24h/25°C	168h/100°C
N° 1 (Ref)	75.173	75.343	75.296	75.191	75.356	75.298	75.414	75.589	75.507	75.265	75.302	75.405
N° 2	77.563	77.182	76.241	75.650	75.272	74.558	74.367	74.273	73.715	73.474	73.672	76.099
N° 3	76.323	75.963	74.899	74.204	73.767	73.147	72.989	72.862	Not Measurable	Not Measurable	Not Measurable	Not Measurable
N° 4	76.456	76.031	75.034	74.317	73.894	73.336	73.195	73.067	72.687	72.391	72.558	74.786
N° 5	75.817	75.459	74.488	73.879	73.304	72.701	72.491	72.324	Not Measurable	Not Measurable	Not Measurable	Not Measurable
N° 6	76.368	76.045	74.999	74.237	73.754	73.149	72.941	72.784	72.404	72.011	72.238	74.760
N° 7	76.224	75.947	74.844	74.052	73.516	72.910	72.711	72.514	72.193	71.813	72.004	74.569
N° 8	76.014	75.592	74.751	74.038	73.608	73.073	72.922	72.791	Not Measurable	Not Measurable	Not Measurable	Not Measurable
N° 9	76.771	76.343	75.470	74.795	74.448	73.993	73.862	73.748	Not Measurable	Not Measurable	Not Measurable	Not Measurable
N° 10	76.345	75.944	75.027	74.217	73.720	73.116	72.928	72.766	72.457	72.059	72.236	74.680
N° 11	77.703	77.453	76.462	75.748	75.280	74.671	74.491	74.296	73.979	73.505	73.706	76.246
N° 12	76.538	76.118	75.237	74.578	74.176	73.674	73.595	73.476	Not Measurable	Not Measurable	Not Measurable	Not Measurable
N° 13	76.782	76.484	75.603	74.918	74.481	73.876	73.762	73.546	Not Measurable	Not Measurable	Not Measurable	Not Measurable
N° 14	76.539	76.258	75.285	74.618	74.199	73.661	73.545	73.365	73.065	72.657	72.830	75.014
N° 15	76.163	75.864	74.775	73.952	73.437	72.838	72.641	72.438	Not Measurable	Not Measurable	Not Measurable	Not Measurable
N° 16	76.925	76.677	75.719	75.031	74.583	74.095	73.833	73.603	73.265	72.829	73.008	75.492
N° 17	76.033	75.693	74.720	74.012	73.599	73.100	72.933	72.695	Not Measurable	Not Measurable	Not Measurable	Not Measurable
N° 18	76.539	76.208	75.203	74.467	73.953	73.373	73.063	72.909	72.516	72.130	72.291	74.899
N° 19	76.555	76.149	75.143	74.378	73.969	73.558	73.334	73.202	72.936	72.539	72.695	74.947
N° 20	76.489	76.122	75.144	74.437	74.022	73.635	73.410	73.311	Not Measurable	Not Measurable	Not Measurable	Not Measurable
N° 21	77.379	76.964	76.039	75.458	75.132	74.828	74.706	74.551	74.348	73.922	74.043	75.808
N° 22	76.543	76.191	75.258	74.616	74.181	73.823	73.794	73.535	73.266	72.906	73.020	74.999
N° 23	76.843	76.613	75.665	74.925	74.387	73.887	73.712	73.447	73.152	72.694	Not Measurable	Not Measurable

11. Icc1

Ta=25°C; load to Vcc/2; Vcc=+16V; no load

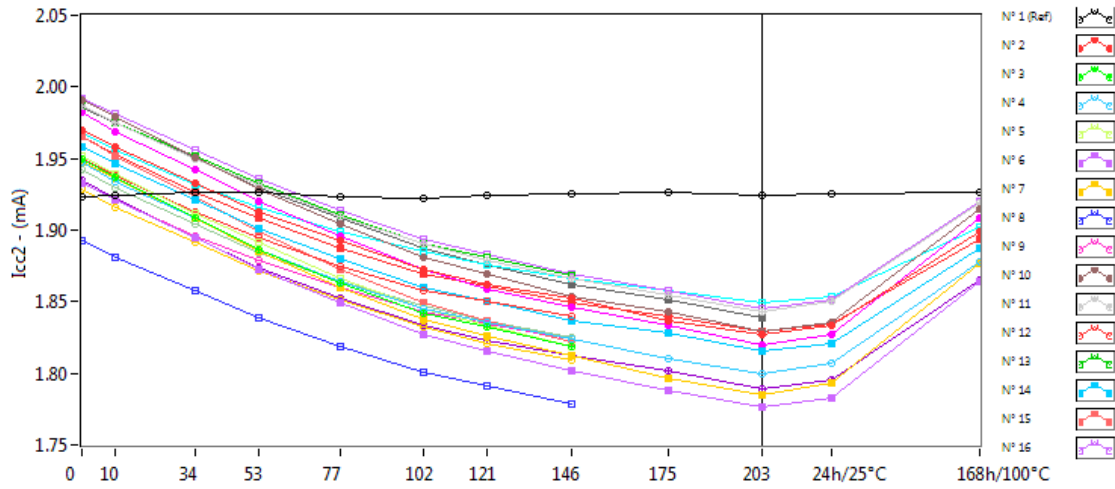


Icc1 . (mA) Max = 2.9

	0krad(Si)	10krad(Si)	34krad(Si)	53krad(Si)	77krad(Si)	102krad(Si)	121krad(Si)	146krad(Si)	175krad(Si)	203krad(Si)	24h/25°C	168h/100°C
N° 1 (Ref)	2.128	2.128	2.128	2.128	2.126	2.126	2.126	2.126	2.128	2.128	2.128	2.128
N° 2	2.169	2.159	2.135	2.116	2.097	2.076	2.064	2.049	2.035	2.024	2.029	2.112
N° 3	2.140	2.130	2.100	2.079	2.057	2.037	2.024	2.010	Not Measurable	Not Measurable	Not Measurable	Not Measurable
N° 4	2.131	2.120	2.094	2.073	2.051	2.031	2.020	2.005	1.991	1.980	1.987	2.076
N° 5	2.141	2.131	2.103	2.085	2.060	2.038	2.023	2.005	1.990	Not Measurable	Not Measurable	Not Measurable
N° 6	2.124	2.115	2.089	2.067	2.044	2.022	2.008	1.989	1.973	1.961	1.968	2.069
N° 7	2.143	2.132	2.103	2.082	2.059	2.035	2.022	2.002	1.986	1.974	1.980	2.086
N° 8	2.076	2.067	2.042	2.026	2.006	1.988	1.976	1.962	1.948	Not Measurable	Not Measurable	Not Measurable
N° 9	2.121	2.111	2.086	2.070	2.051	2.035	2.024	2.011	2.001	Not Measurable	Not Measurable	Not Measurable
N° 10	2.190	2.181	2.152	2.131	2.108	2.086	2.070	2.051	2.038	2.024	2.030	2.130
N° 11	2.192	2.183	2.157	2.141	2.120	2.100	2.087	2.072	2.060	2.048	2.054	2.137
N° 12	2.139	2.131	2.105	2.088	2.070	2.053	2.042	2.029	2.017	Not Measurable	Not Measurable	Not Measurable
N° 13	2.188	2.179	2.155	2.139	2.118	2.096	2.084	2.067	2.054	Not Measurable	Not Measurable	Not Measurable
N° 14	2.155	2.145	2.120	2.102	2.081	2.060	2.049	2.032	2.022	2.010	2.014	2.098
N° 15	2.165	2.154	2.124	2.101	2.075	2.049	2.035	2.016	Not Measurable	Not Measurable	Not Measurable	Not Measurable
N° 16	2.200	2.189	2.166	2.149	2.128	2.107	2.096	2.077	2.065	2.053	2.060	2.142
N° 17	2.118	2.109	2.084	2.066	2.046	2.025	2.012	1.998	1.984	Not Measurable	Not Measurable	Not Measurable
N° 18	2.186	2.175	2.147	2.126	2.102	2.076	2.061	2.045	2.029	2.015	2.022	2.127
N° 19	2.129	2.118	2.092	2.074	2.051	2.031	2.020	2.005	1.992	1.979	1.984	2.074
N° 20	2.130	2.122	2.094	2.077	2.059	2.041	2.029	2.015	2.004	Not Measurable	Not Measurable	Not Measurable
N° 21	2.173	2.163	2.138	2.123	2.108	2.093	2.081	2.070	2.061	2.051	2.057	2.119
N° 22	2.167	2.157	2.129	2.112	2.093	2.073	2.062	2.049	2.038	2.026	2.032	2.109
N° 23	2.180	2.171	2.147	2.129	2.108	2.084	2.071	2.054	2.042	2.029	Not Measurable	Not Measurable

12. Icc2

Ta=25°C; load to Vcc/2; Vcc=+3V; no load

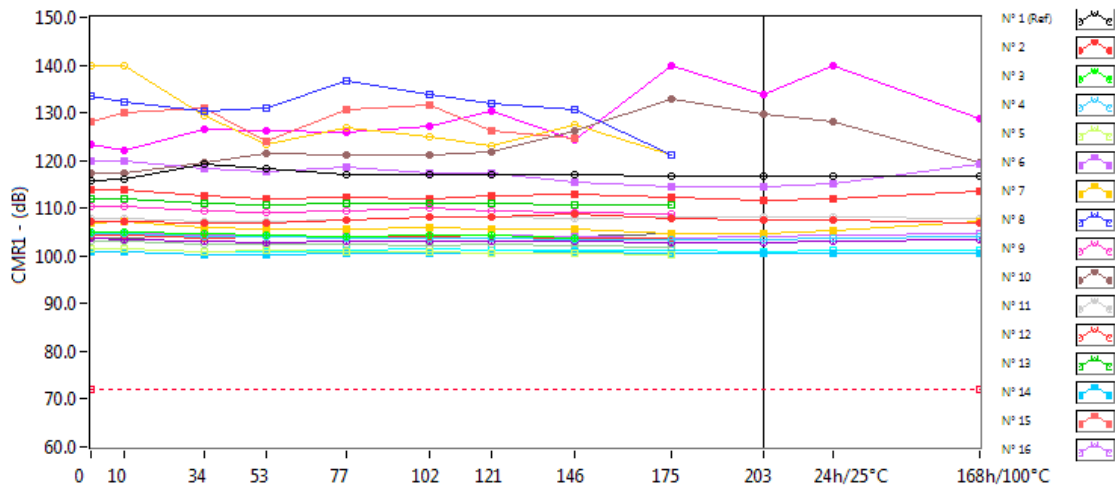


Icc2 . (mA) Max = 2.6

	0krad(Si)	10krad(Si)	34krad(Si)	53krad(Si)	77krad(Si)	102krad(Si)	121krad(Si)	146krad(Si)	175krad(Si)	203krad(Si)	24h/25°C	168h/100°C
N° 1 (Ref)	1.923	1.924	1.926	1.926	1.923	1.922	1.924	1.925	1.926	1.924	1.925	1.926
N° 2	1.970	1.958	1.933	1.913	1.893	1.873	1.862	1.852	1.837	1.827	1.833	1.899
N° 3	1.950	1.937	1.908	1.886	1.863	1.842	1.832	1.819	Not Measurable	Not Measurable	Not Measurable	Not Measurable
N° 4	1.948	1.934	1.908	1.886	1.864	1.845	1.836	1.824	1.810	1.800	1.807	1.878
N° 5	1.952	1.939	1.912	1.892	1.866	1.845	1.833	1.819	Not Measurable	Not Measurable	Not Measurable	Not Measurable
N° 6	1.933	1.921	1.895	1.873	1.849	1.827	1.815	1.802	1.788	1.776	1.783	1.864
N° 7	1.948	1.936	1.908	1.885	1.860	1.838	1.826	1.812	1.797	1.785	1.793	1.877
N° 8	1.893	1.881	1.858	1.839	1.819	1.801	1.791	1.779	Not Measurable	Not Measurable	Not Measurable	Not Measurable
N° 9	1.933	1.921	1.896	1.879	1.860	1.843	1.835	1.824	Not Measurable	Not Measurable	Not Measurable	Not Measurable
N° 10	1.991	1.979	1.951	1.928	1.904	1.881	1.869	1.854	1.843	1.829	1.836	1.915
N° 11	1.987	1.975	1.950	1.932	1.909	1.890	1.879	1.866	1.855	1.843	1.850	1.919
N° 12	1.950	1.938	1.913	1.895	1.875	1.858	1.850	1.840	Not Measurable	Not Measurable	Not Measurable	Not Measurable
N° 13	1.987	1.975	1.952	1.933	1.911	1.891	1.881	1.868	Not Measurable	Not Measurable	Not Measurable	Not Measurable
N° 14	1.958	1.946	1.921	1.901	1.880	1.860	1.850	1.837	1.828	1.815	1.821	1.887
N° 15	1.965	1.952	1.923	1.899	1.873	1.849	1.837	1.822	Not Measurable	Not Measurable	Not Measurable	Not Measurable
N° 16	1.992	1.981	1.956	1.936	1.914	1.894	1.883	1.869	1.858	1.845	1.851	1.920
N° 17	1.928	1.916	1.892	1.872	1.851	1.832	1.821	1.809	Not Measurable	Not Measurable	Not Measurable	Not Measurable
N° 18	1.982	1.969	1.942	1.920	1.896	1.873	1.859	1.846	1.833	1.820	1.827	1.908
N° 19	1.935	1.922	1.895	1.874	1.852	1.833	1.823	1.812	1.802	1.789	1.795	1.865
N° 20	1.942	1.930	1.904	1.884	1.864	1.847	1.837	1.825	Not Measurable	Not Measurable	Not Measurable	Not Measurable
N° 21	1.968	1.956	1.932	1.916	1.899	1.885	1.876	1.866	1.858	1.849	1.854	1.902
N° 22	1.966	1.953	1.926	1.908	1.887	1.869	1.861	1.849	1.840	1.829	1.835	1.894
N° 23	1.986	1.975	1.951	1.930	1.908	1.887	1.876	1.862	1.851	1.839	Not Measurable	Not Measurable

13. CMR1

Ta=25°C; load to Vcc/2; Vcc=+16V; 0V<Vicm<16V

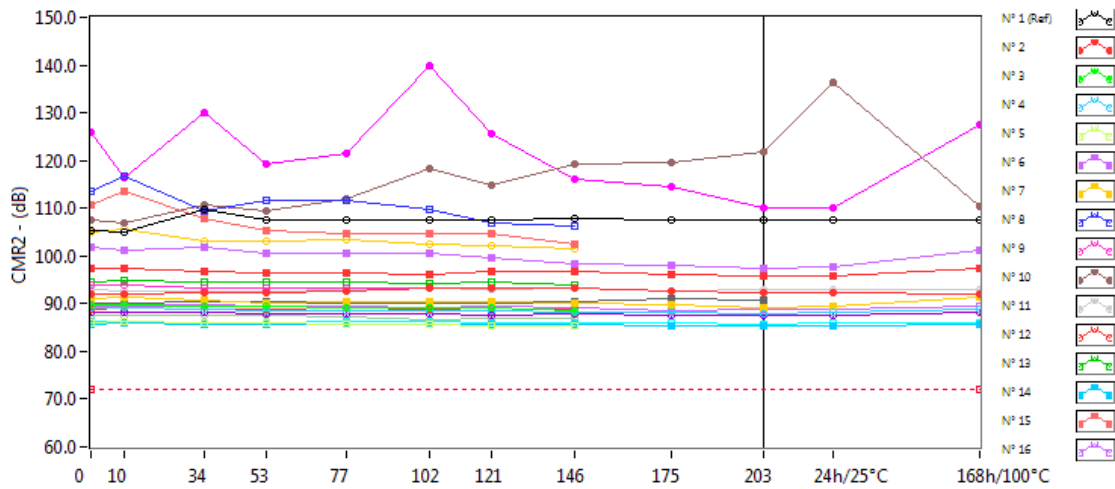


CMR1 . (dB) Min = 72.0

	0krad(Si)	10krad(Si)	34krad(Si)	53krad(Si)	77krad(Si)	102krad(Si)	121krad(Si)	146krad(Si)	175krad(Si)	203krad(Si)	24h/25°C	168h/100°C
N° 1 (Ref)	115.72	116.20	119.27	118.27	116.97	116.96	116.99	117.03	116.82	116.72	116.79	116.83
N° 2	107.18	107.21	107.02	107.04	107.61	108.02	108.27	108.82	108.00	107.58	107.57	106.89
N° 3	105.14	105.15	104.59	104.51	104.17	104.29	104.34	103.76	Not Measurable	Not Measurable	Not Measurable	Not Measurable
N° 4	104.66	104.63	104.03	104.02	103.65	103.87	103.88	103.46	103.55	103.34	103.69	104.08
N° 5	101.49	101.50	101.03	101.06	100.84	100.93	100.61	100.45	100.24	Not Measurable	Not Measurable	Not Measurable
N° 6	120.00	120.05	118.28	117.73	118.47	117.23	117.36	115.49	114.62	114.49	115.08	119.14
N° 7	107.03	107.11	106.08	105.58	105.66	105.86	105.57	105.53	104.79	104.83	105.24	107.08
N° 8	133.61	132.37	130.34	130.92	136.62	133.78	131.99	130.62	121.10	Not Measurable	Not Measurable	Not Measurable
N° 9	110.50	110.51	109.49	109.23	109.42	110.07	109.58	109.25	108.82	Not Measurable	Not Measurable	Not Measurable
N° 10	117.29	117.31	119.65	121.36	121.30	121.30	121.86	126.19	132.73	129.64	128.24	119.72
N° 11	107.88	107.71	107.13	107.35	107.48	108.16	108.10	108.01	108.09	108.07	108.09	107.87
N° 12	104.41	104.42	103.78	103.97	103.95	103.98	103.88	103.71	103.79	Not Measurable	Not Measurable	Not Measurable
N° 13	112.04	112.03	111.04	110.86	111.01	111.06	111.08	110.61	110.86	Not Measurable	Not Measurable	Not Measurable
N° 14	100.78	100.81	100.39	100.32	100.57	100.54	100.67	100.81	100.47	100.43	100.48	100.58
N° 15	128.13	129.98	130.92	123.99	130.62	131.51	126.30	124.64	Not Measurable	Not Measurable	Not Measurable	Not Measurable
N° 16	104.71	104.74	104.46	104.30	104.18	104.07	104.33	104.07	103.72	104.00	104.21	104.54
N° 17	140.00	140.00	129.49	123.53	126.74	124.81	123.12	127.57	121.04	Not Measurable	Not Measurable	Not Measurable
N° 18	123.47	122.23	126.52	126.21	125.90	127.09	130.34	124.46	140.00	133.70	140.00	128.64
N° 19	103.61	103.52	103.13	102.84	103.05	102.99	103.03	103.12	102.94	102.92	103.17	103.52
N° 20	103.06	103.09	102.53	102.57	102.43	102.27	102.32	102.18	101.89	Not Measurable	Not Measurable	Not Measurable
N° 21	101.58	101.52	101.03	100.97	101.27	101.36	101.28	101.26	101.24	101.00	101.17	101.31
N° 22	113.99	113.76	112.50	111.87	112.35	112.09	112.65	112.92	112.24	111.71	111.98	113.48
N° 23	103.71	103.64	104.36	104.44	103.89	104.15	103.86	104.12	104.53	104.53	Not Measurable	Not Measurable

14. CMR2

Ta=25°C; load to Vcc/2; Vcc=+3V; 0V<Vicm<3V

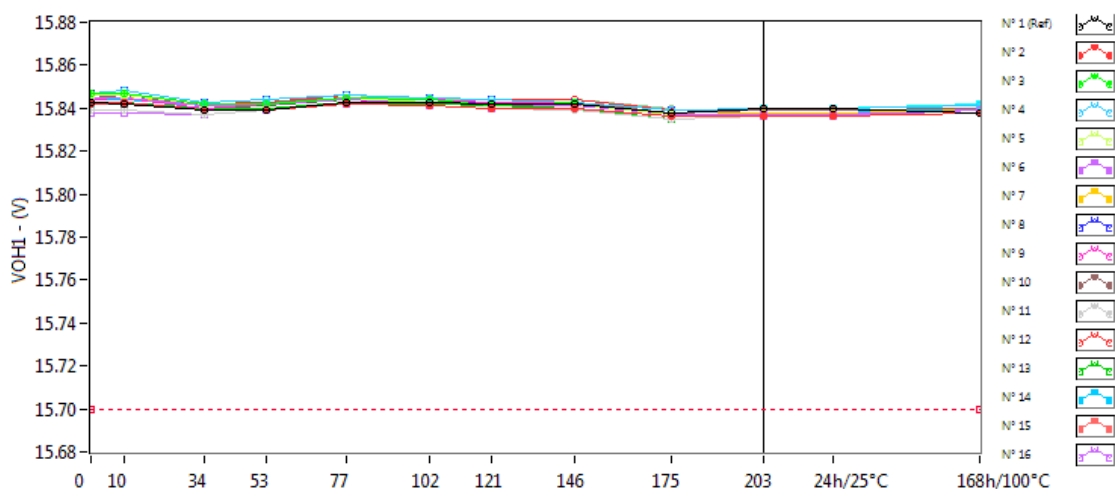


CMR2 . (dB) Min = 72.0

	0krad(Si)	10krad(Si)	34krad(Si)	53krad(Si)	77krad(Si)	102krad(Si)	121krad(Si)	146krad(Si)	175krad(Si)	203krad(Si)	24h/25°C	168h/100°C
N° 1 (Ref)	105.36	104.85	109.60	107.44	107.64	107.61	107.68	107.73	107.52	107.51	107.53	107.55
N° 2	92.09	92.08	92.38	92.31	92.66	93.12	93.31	93.20	92.64	92.31	92.41	91.90
N° 3	89.73	89.77	89.43	89.32	89.10	89.11	89.03	88.58	Not Measurable	Not Measurable	Not Measurable	Not Measurable
N° 4	89.14	89.17	88.76	88.65	88.61	88.65	88.45	88.34	88.10	87.95	88.15	88.70
N° 5	86.14	86.16	85.94	85.86	85.70	85.65	85.41	85.27	Not Measurable	Not Measurable	Not Measurable	Not Measurable
N° 6	101.70	101.21	101.67	100.51	100.44	100.45	99.58	98.50	98.03	97.44	97.84	101.15
N° 7	91.19	91.29	90.73	90.15	90.43	90.33	90.29	90.04	89.73	89.26	89.50	91.30
N° 8	113.57	116.86	109.44	111.77	111.61	109.78	106.81	106.31	Not Measurable	Not Measurable	Not Measurable	Not Measurable
N° 9	93.83	93.93	93.32	93.25	93.31	93.41	93.41	93.19	Not Measurable	Not Measurable	Not Measurable	Not Measurable
N° 10	107.40	106.94	110.86	109.59	112.09	118.45	114.71	119.36	119.60	121.69	136.30	110.51
N° 11	92.82	92.68	92.56	92.72	92.95	93.40	93.05	93.13	92.61	92.90	92.83	92.81
N° 12	88.96	89.10	88.77	88.85	88.65	88.80	88.58	88.82	Not Measurable	Not Measurable	Not Measurable	Not Measurable
N° 13	94.66	94.82	94.51	94.49	94.42	94.08	94.43	94.02	Not Measurable	Not Measurable	Not Measurable	Not Measurable
N° 14	85.82	85.86	85.65	85.58	85.68	85.62	85.64	85.73	85.34	85.44	85.50	85.64
N° 15	110.78	113.58	107.78	105.37	104.72	104.66	104.80	102.58	Not Measurable	Not Measurable	Not Measurable	Not Measurable
N° 16	89.50	89.59	89.66	89.46	89.44	89.20	89.35	89.07	88.59	88.72	88.86	89.38
N° 17	105.01	105.77	102.98	103.10	103.28	102.37	102.07	101.60	Not Measurable	Not Measurable	Not Measurable	Not Measurable
N° 18	125.85	116.26	130.09	119.13	121.44	140.00	125.45	116.10	114.45	110.09	110.00	127.64
N° 19	88.30	88.33	88.10	87.85	87.99	87.74	87.68	87.78	87.62	87.63	87.65	88.19
N° 20	87.58	87.70	87.45	87.43	87.17	86.74	86.89	86.79	Not Measurable	Not Measurable	Not Measurable	Not Measurable
N° 21	86.32	86.33	85.95	86.04	86.15	86.15	86.04	86.14	85.89	85.71	85.88	86.09
N° 22	97.54	97.42	96.68	96.40	96.43	96.22	96.83	96.77	96.25	95.80	95.65	97.40
N° 23	90.10	89.99	90.37	90.42	90.05	90.19	90.00	90.27	90.92	90.89	Not Measurable	Not Measurable

15. VOH1

Ta=25°C; load to Vcc/2; Vcc=+16V; RL=1kOhms



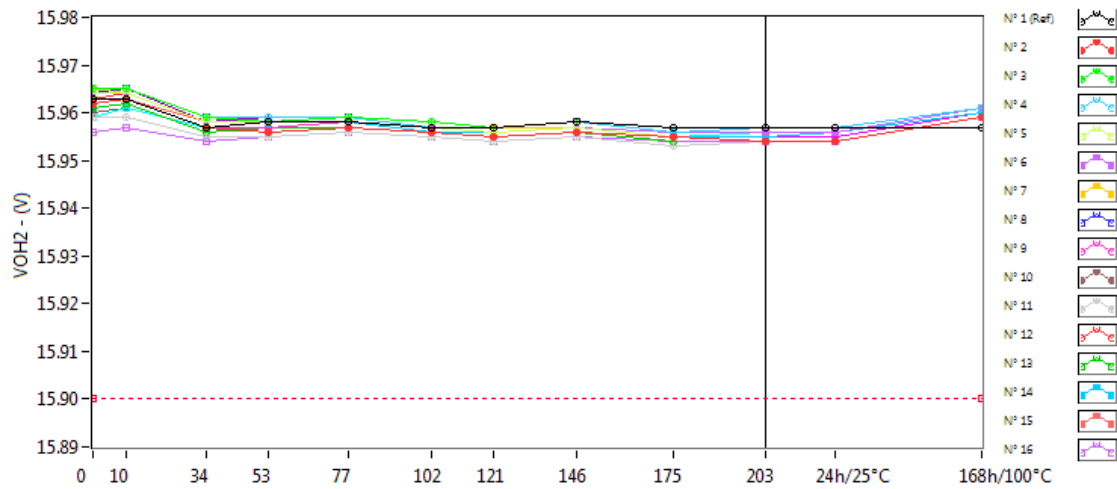
VOH1 . (V)

Min = 15.7

	0krad(Si)	10krad(Si)	34krad(Si)	53krad(Si)	77krad(Si)	102krad(Si)	121krad(Si)	146krad(Si)	175krad(Si)	203krad(Si)	24h/25°C	168h/100°C
N° 1 (Ref)	15.843	15.842	15.839	15.839	15.843	15.843	15.842	15.842	15.838	15.840	15.840	15.838
N° 2	15.842	15.843	15.839	15.839	15.842	15.841	15.840	15.840	15.836	15.836	15.836	15.838
N° 3	15.847	15.847	15.842	15.842	15.845	15.844	15.841	15.843	Not Measurable	Not Measurable	Not Measurable	Not Measurable
N° 4	15.847	15.848	15.843	15.844	15.846	15.845	15.844	15.843	15.839	15.840	15.840	15.841
N° 5	15.846	15.846	15.842	15.842	15.845	15.843	15.842	15.842	15.837	Not Measurable	Not Measurable	Not Measurable
N° 6	15.845	15.845	15.841	15.842	15.844	15.843	15.842	15.841	15.837	15.837	15.837	15.839
N° 7	15.846	15.846	15.842	15.842	15.845	15.843	15.842	15.842	15.837	15.838	15.838	15.839
N° 8	15.847	15.848	15.843	15.844	15.846	15.845	15.844	15.843	15.839	Not Measurable	Not Measurable	Not Measurable
N° 9	15.844	15.845	15.840	15.842	15.845	15.844	15.843	15.843	15.839	Not Measurable	Not Measurable	Not Measurable
N° 10	15.845	15.846	15.841	15.843	15.845	15.844	15.843	15.843	15.838	15.839	15.839	15.840
N° 11	15.839	15.839	15.837	15.839	15.842	15.841	15.840	15.839	15.835	15.836	15.836	15.838
N° 12	15.845	15.846	15.842	15.843	15.846	15.845	15.844	15.844	15.839	Not Measurable	Not Measurable	Not Measurable
N° 13	15.843	15.843	15.840	15.840	15.843	15.842	15.841	15.840	15.835	Not Measurable	Not Measurable	Not Measurable
N° 14	15.844	15.844	15.841	15.842	15.844	15.843	15.842	15.842	15.837	15.838	15.838	15.840
N° 15	15.845	15.845	15.841	15.842	15.845	15.843	15.842	15.842	Not Measurable	Not Measurable	Not Measurable	Not Measurable
N° 16	15.838	15.838	15.837	15.839	15.842	15.841	15.840	15.840	15.836	15.836	15.836	15.839
N° 17	15.845	15.845	15.842	15.843	15.845	15.843	15.842	15.842	15.838	Not Measurable	Not Measurable	Not Measurable
N° 18	15.844	15.845	15.841	15.842	15.844	15.842	15.842	15.841	15.837	15.838	15.838	15.840
N° 19	15.846	15.846	15.842	15.843	15.845	15.843	15.843	15.843	15.839	15.839	15.839	15.840
N° 20	15.846	15.847	15.842	15.843	15.846	15.844	15.844	15.844	15.840	Not Measurable	Not Measurable	Not Measurable
N° 21	15.842	15.843	15.840	15.842	15.845	15.844	15.843	15.843	15.839	15.840	15.840	15.842
N° 22	15.844	15.845	15.841	15.842	15.845	15.844	15.842	15.843	15.839	15.840	15.840	15.841
N° 23	15.842	15.842	15.840	15.841	15.844	15.842	15.841	15.841	15.837	15.838	Not Measurable	Not Measurable

16. VOH2

Ta=25°C; load to Vcc/2; Vcc=+16V; RL=10kOhms

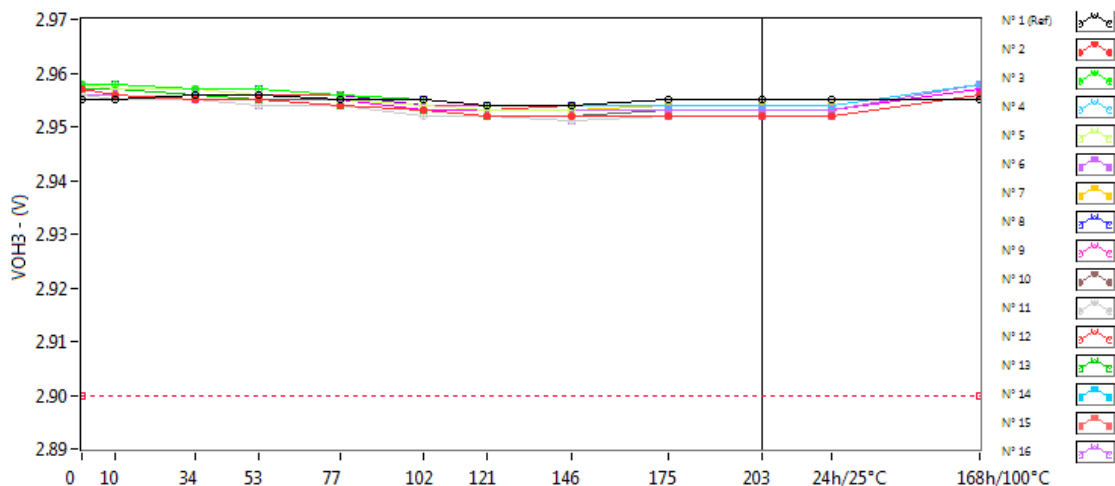


VOH2 . (V) Min = 15.9

	0krad(Si)	10krad(Si)	34krad(Si)	53krad(Si)	77krad(Si)	102krad(Si)	121krad(Si)	146krad(Si)	175krad(Si)	203krad(Si)	24h/25°C	168h/100°C
N° 1 (Ref)	15.963	15.963	15.957	15.958	15.958	15.957	15.957	15.958	15.957	15.957	15.957	15.957
N° 2	15.962	15.963	15.957	15.956	15.957	15.956	15.955	15.956	15.955	15.954	15.954	15.959
N° 3	15.965	15.965	15.959	15.958	15.959	15.958	15.957	15.958	Not Measurable	Not Measurable	Not Measurable	Not Measurable
N° 4	15.965	15.965	15.959	15.959	15.959	15.957	15.957	15.958	15.956	15.957	15.957	15.961
N° 5	15.964	15.964	15.958	15.958	15.958	15.957	15.956	15.957	15.955	Not Measurable	Not Measurable	Not Measurable
N° 6	15.964	15.964	15.958	15.958	15.958	15.957	15.956	15.957	15.956	15.956	15.956	15.961
N° 7	15.965	15.964	15.958	15.958	15.958	15.957	15.957	15.957	15.956	15.956	15.956	15.961
N° 8	15.964	15.965	15.959	15.958	15.959	15.957	15.957	15.958	15.956	Not Measurable	Not Measurable	Not Measurable
N° 9	15.962	15.963	15.957	15.957	15.958	15.957	15.957	15.957	15.956	Not Measurable	Not Measurable	Not Measurable
N° 10	15.963	15.963	15.957	15.958	15.958	15.957	15.956	15.957	15.956	15.956	15.956	15.961
N° 11	15.959	15.959	15.955	15.955	15.956	15.955	15.954	15.955	15.953	15.954	15.954	15.959
N° 12	15.963	15.964	15.958	15.958	15.958	15.957	15.957	15.958	15.956	Not Measurable	Not Measurable	Not Measurable
N° 13	15.961	15.962	15.956	15.957	15.957	15.956	15.955	15.956	15.954	Not Measurable	Not Measurable	Not Measurable
N° 14	15.962	15.963	15.957	15.957	15.958	15.956	15.956	15.957	15.955	15.955	15.956	15.960
N° 15	15.963	15.963	15.958	15.958	15.958	15.957	15.956	15.957	Not Measurable	Not Measurable	Not Measurable	Not Measurable
N° 16	15.956	15.957	15.954	15.955	15.956	15.955	15.954	15.955	15.954	15.954	15.954	15.959
N° 17	15.962	15.963	15.958	15.958	15.958	15.957	15.956	15.957	15.955	Not Measurable	Not Measurable	Not Measurable
N° 18	15.962	15.963	15.957	15.957	15.958	15.956	15.956	15.957	15.955	15.955	15.955	15.960
N° 19	15.964	15.965	15.958	15.959	15.959	15.957	15.957	15.958	15.956	15.956	15.956	15.961
N° 20	15.964	15.964	15.958	15.958	15.959	15.957	15.957	15.958	15.956	Not Measurable	Not Measurable	Not Measurable
N° 21	15.959	15.961	15.957	15.957	15.958	15.956	15.956	15.957	15.955	15.956	15.956	15.960
N° 22	15.962	15.963	15.957	15.958	15.958	15.957	15.956	15.957	15.956	15.956	15.956	15.961
N° 23	15.960	15.961	15.957	15.957	15.957	15.956	15.955	15.956	15.955	15.955	Not Measurable	Not Measurable

17. VOH3

Ta=25°C; load to Vcc/2; Vcc=+3V; RL=1kOhms



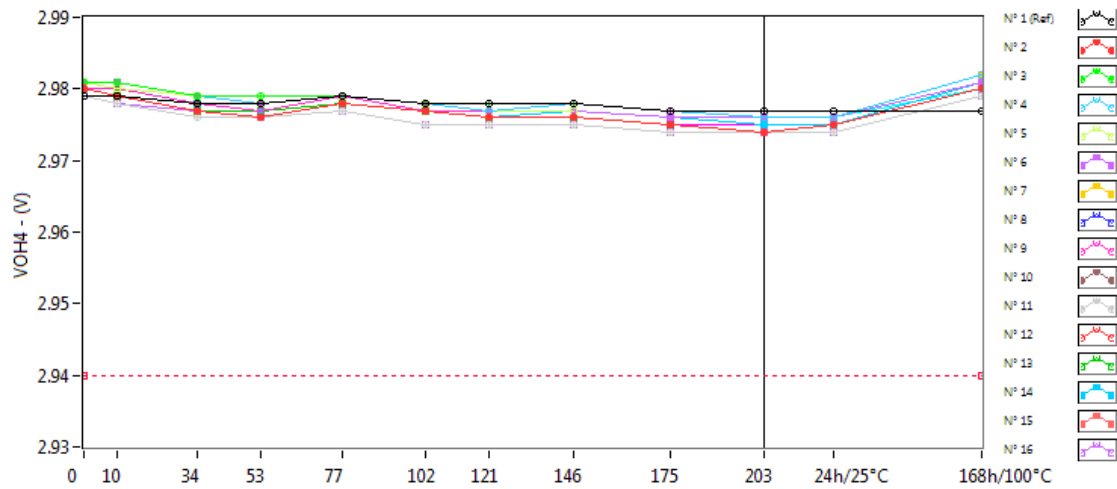
VOH3 . (V)

Min = 2.9

	0krad(Si)	10krad(Si)	34krad(Si)	53krad(Si)	77krad(Si)	102krad(Si)	121krad(Si)	146krad(Si)	175krad(Si)	203krad(Si)	24h/25°C	168h/100°C
N° 1 (Ref)	2.955	2.955	2.956	2.956	2.955	2.955	2.954	2.954	2.955	2.955	2.955	2.955
N° 2	2.957	2.956	2.955	2.955	2.954	2.953	2.952	2.952	2.952	2.952	2.952	2.956
N° 3	2.958	2.958	2.957	2.957	2.956	2.955	2.954	2.954	Not Measurable	Not Measurable	Not Measurable	Not Measurable
N° 4	2.958	2.958	2.957	2.957	2.956	2.955	2.954	2.954	2.954	2.954	2.954	2.958
N° 5	2.958	2.957	2.957	2.956	2.955	2.954	2.953	2.953	Not Measurable	Not Measurable	Not Measurable	Not Measurable
N° 6	2.958	2.957	2.957	2.956	2.955	2.954	2.953	2.953	2.953	2.953	2.953	2.958
N° 7	2.958	2.957	2.957	2.956	2.955	2.954	2.953	2.953	2.954	2.954	2.954	2.958
N° 8	2.958	2.958	2.957	2.957	2.956	2.955	2.954	2.954	Not Measurable	Not Measurable	Not Measurable	Not Measurable
N° 9	2.958	2.957	2.957	2.956	2.955	2.954	2.954	2.954	Not Measurable	Not Measurable	Not Measurable	Not Measurable
N° 10	2.958	2.957	2.957	2.956	2.955	2.954	2.953	2.953	2.954	2.954	2.954	2.958
N° 11	2.956	2.955	2.955	2.954	2.954	2.952	2.952	2.951	2.952	2.952	2.952	2.956
N° 12	2.958	2.958	2.957	2.956	2.956	2.955	2.954	2.954	Not Measurable	Not Measurable	Not Measurable	Not Measurable
N° 13	2.957	2.957	2.956	2.955	2.954	2.953	2.952	2.952	Not Measurable	Not Measurable	Not Measurable	Not Measurable
N° 14	2.957	2.957	2.956	2.956	2.955	2.954	2.953	2.953	2.953	2.953	2.953	2.958
N° 15	2.958	2.957	2.957	2.956	2.955	2.954	2.953	2.953	Not Measurable	Not Measurable	Not Measurable	Not Measurable
N° 16	2.956	2.956	2.955	2.954	2.954	2.953	2.952	2.951	2.952	2.952	2.952	2.956
N° 17	2.958	2.957	2.957	2.956	2.955	2.954	2.953	2.953	Not Measurable	Not Measurable	Not Measurable	Not Measurable
N° 18	2.958	2.957	2.956	2.956	2.955	2.953	2.953	2.953	2.953	2.953	2.953	2.957
N° 19	2.958	2.958	2.957	2.957	2.956	2.954	2.954	2.954	2.954	2.954	2.954	2.958
N° 20	2.958	2.958	2.957	2.957	2.956	2.955	2.954	2.954	Not Measurable	Not Measurable	Not Measurable	Not Measurable
N° 21	2.957	2.957	2.957	2.956	2.955	2.954	2.953	2.953	2.954	2.954	2.954	2.958
N° 22	2.958	2.957	2.957	2.956	2.956	2.954	2.953	2.954	2.954	2.954	2.954	2.958
N° 23	2.957	2.957	2.956	2.955	2.955	2.953	2.952	2.952	2.953	2.953	Not Measurable	Not Measurable

18. VOH4

Ta=25°C; load to Vcc/2; Vcc=+3V; RL=10kOhms

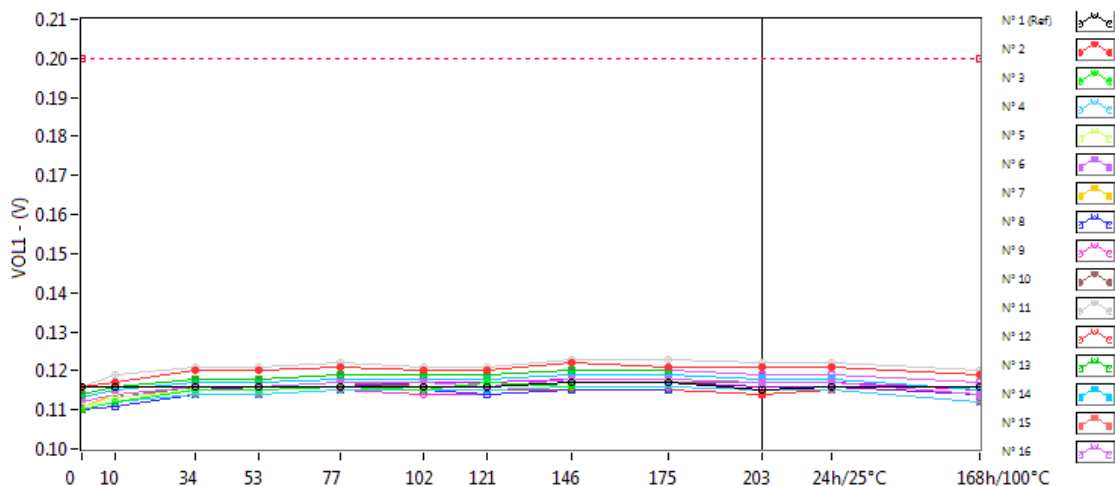


VOH4 . (V) Min = 2.94

	0krad(Si)	10krad(Si)	34krad(Si)	53krad(Si)	77krad(Si)	102krad(Si)	121krad(Si)	146krad(Si)	175krad(Si)	203krad(Si)	24h/25°C	168h/100°C
N° 1 (Ref)	2.979	2.979	2.978	2.978	2.979	2.978	2.978	2.978	2.977	2.977	2.977	2.977
N° 2	2.980	2.979	2.977	2.976	2.978	2.977	2.976	2.976	2.975	2.974	2.975	2.980
N° 3	2.981	2.981	2.979	2.979	2.979	2.978	2.978	2.978	Not Measurable	Not Measurable	Not Measurable	Not Measurable
N° 4	2.981	2.981	2.979	2.978	2.979	2.978	2.977	2.978	2.977	2.976	2.976	2.982
N° 5	2.981	2.980	2.979	2.978	2.979	2.978	2.977	2.977	Not Measurable	Not Measurable	Not Measurable	Not Measurable
N° 6	2.981	2.981	2.979	2.978	2.979	2.978	2.977	2.977	2.976	2.976	2.976	2.981
N° 7	2.981	2.981	2.979	2.978	2.979	2.978	2.977	2.977	2.976	2.976	2.976	2.982
N° 8	2.981	2.981	2.979	2.978	2.979	2.978	2.977	2.977	Not Measurable	Not Measurable	Not Measurable	Not Measurable
N° 9	2.980	2.980	2.978	2.977	2.979	2.977	2.977	2.977	Not Measurable	Not Measurable	Not Measurable	Not Measurable
N° 10	2.981	2.980	2.978	2.978	2.979	2.977	2.977	2.977	2.976	2.976	2.976	2.981
N° 11	2.979	2.978	2.976	2.976	2.977	2.975	2.975	2.975	2.974	2.974	2.974	2.979
N° 12	2.981	2.980	2.979	2.978	2.979	2.978	2.977	2.977	Not Measurable	Not Measurable	Not Measurable	Not Measurable
N° 13	2.980	2.979	2.977	2.977	2.978	2.977	2.976	2.976	Not Measurable	Not Measurable	Not Measurable	Not Measurable
N° 14	2.980	2.980	2.978	2.977	2.978	2.977	2.976	2.977	2.976	2.975	2.975	2.981
N° 15	2.981	2.980	2.979	2.978	2.979	2.977	2.977	2.977	Not Measurable	Not Measurable	Not Measurable	Not Measurable
N° 16	2.979	2.978	2.977	2.976	2.977	2.975	2.975	2.975	2.974	2.974	2.974	2.979
N° 17	2.981	2.980	2.978	2.978	2.979	2.977	2.977	2.977	Not Measurable	Not Measurable	Not Measurable	Not Measurable
N° 18	2.980	2.980	2.978	2.977	2.978	2.977	2.976	2.976	2.975	2.975	2.975	2.981
N° 19	2.981	2.981	2.979	2.978	2.979	2.978	2.977	2.978	2.977	2.976	2.976	2.982
N° 20	2.981	2.981	2.979	2.978	2.979	2.978	2.977	2.978	Not Measurable	Not Measurable	Not Measurable	Not Measurable
N° 21	2.980	2.979	2.978	2.977	2.978	2.977	2.976	2.977	2.976	2.976	2.976	2.980
N° 22	2.980	2.980	2.978	2.978	2.979	2.977	2.977	2.977	2.976	2.976	2.976	2.981
N° 23	2.980	2.979	2.978	2.977	2.978	2.977	2.976	2.976	2.975	2.975	Not Measurable	Not Measurable

19. VOL1

Ta=25°C; load to Vcc/2; Vcc=+16V; RL=1kOhms



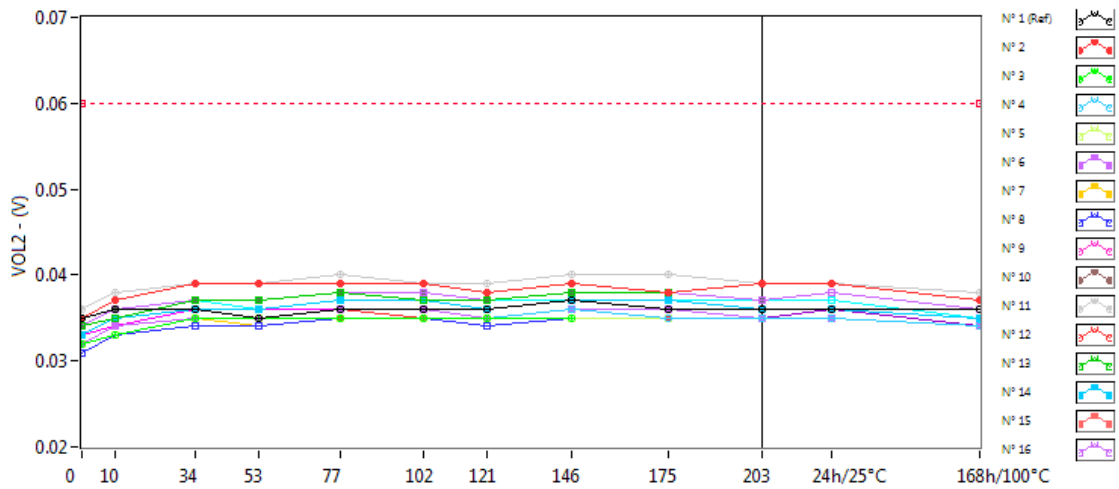
VOL1 . (V)

Max = 0.2

	0krad(Si)	10krad(Si)	34krad(Si)	53krad(Si)	77krad(Si)	102krad(Si)	121krad(Si)	146krad(Si)	175krad(Si)	203krad(Si)	24h/25°C	168h/100°C
N° 1 (Ref)	0.116	0.116	0.116	0.116	0.116	0.116	0.116	0.117	0.117	0.115	0.116	0.116
N° 2	0.116	0.117	0.120	0.120	0.121	0.120	0.120	0.122	0.121	0.121	0.121	0.119
N° 3	0.110	0.112	0.115	0.115	0.116	0.115	0.117	0.116	Not Measurable	Not Measurable	Not Measurable	Not Measurable
N° 4	0.110	0.112	0.114	0.114	0.115	0.115	0.115	0.116	0.116	0.115	0.115	0.112
N° 5	0.111	0.113	0.115	0.115	0.116	0.116	0.116	0.117	0.117	Not Measurable	Not Measurable	Not Measurable
N° 6	0.112	0.114	0.116	0.116	0.117	0.117	0.116	0.118	0.118	0.117	0.117	0.114
N° 7	0.111	0.114	0.116	0.116	0.117	0.117	0.116	0.118	0.118	0.117	0.117	0.114
N° 8	0.110	0.111	0.114	0.114	0.115	0.115	0.114	0.115	0.115	Not Measurable	Not Measurable	Not Measurable
N° 9	0.110	0.111	0.114	0.114	0.115	0.114	0.114	0.115	0.115	Not Measurable	Not Measurable	Not Measurable
N° 10	0.111	0.113	0.116	0.116	0.117	0.116	0.116	0.117	0.117	0.117	0.117	0.114
N° 11	0.116	0.119	0.121	0.121	0.122	0.121	0.121	0.123	0.123	0.122	0.122	0.120
N° 12	0.110	0.112	0.114	0.114	0.115	0.115	0.115	0.116	0.116	Not Measurable	Not Measurable	Not Measurable
N° 13	0.114	0.116	0.118	0.118	0.119	0.119	0.119	0.120	0.120	Not Measurable	Not Measurable	Not Measurable
N° 14	0.113	0.115	0.117	0.117	0.118	0.118	0.118	0.119	0.119	0.118	0.118	0.115
N° 15	0.111	0.113	0.116	0.116	0.117	0.116	0.116	0.117	0.117	Not Measurable	Not Measurable	Not Measurable
N° 16	0.114	0.116	0.118	0.118	0.119	0.119	0.119	0.120	0.120	0.119	0.119	0.117
N° 17	0.111	0.113	0.115	0.115	0.116	0.116	0.116	0.117	0.117	Not Measurable	Not Measurable	Not Measurable
N° 18	0.112	0.114	0.116	0.116	0.117	0.117	0.117	0.118	0.118	0.117	0.117	0.115
N° 19	0.111	0.113	0.116	0.115	0.116	0.117	0.116	0.117	0.117	0.116	0.116	0.114
N° 20	0.110	0.112	0.114	0.114	0.115	0.115	0.114	0.115	0.115	Not Measurable	Not Measurable	Not Measurable
N° 21	0.112	0.114	0.116	0.115	0.116	0.116	0.116	0.117	0.117	0.116	0.116	0.114
N° 22	0.110	0.112	0.114	0.114	0.115	0.115	0.115	0.115	0.115	0.114	0.115	0.112
N° 23	0.114	0.116	0.118	0.118	0.119	0.119	0.119	0.120	0.120	0.119	Not Measurable	Not Measurable

20. VOL2

Ta=25°C; load to Vcc/2; Vcc=+16V; RL=10kOhms



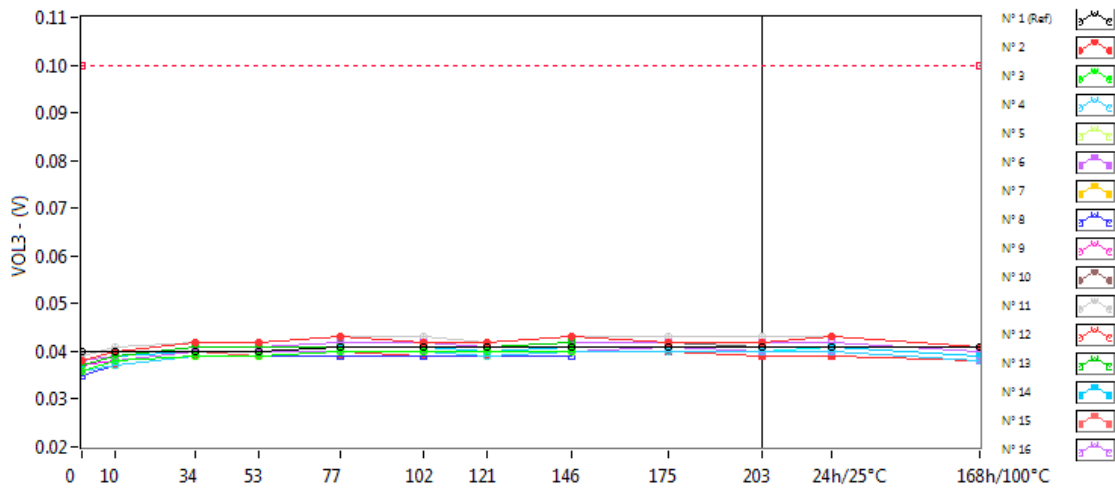
VOL2 . (V)

Max = 0.06

	0krad(Si)	10krad(Si)	34krad(Si)	53krad(Si)	77krad(Si)	102krad(Si)	121krad(Si)	146krad(Si)	175krad(Si)	203krad(Si)	24h/25°C	168h/100°C
N° 1 (Ref)	0.035	0.036	0.036	0.035	0.036	0.036	0.036	0.037	0.036	0.036	0.036	0.036
N° 2	0.035	0.037	0.039	0.039	0.039	0.039	0.038	0.039	0.038	0.039	0.039	0.037
N° 3	0.032	0.033	0.035	0.035	0.035	0.035	0.035	0.035	0.035	Not Measurable	Not Measurable	Not Measurable
N° 4	0.032	0.033	0.035	0.035	0.035	0.035	0.035	0.036	0.035	0.035	0.035	0.034
N° 5	0.032	0.033	0.035	0.035	0.035	0.035	0.035	0.035	0.035	Not Measurable	Not Measurable	Not Measurable
N° 6	0.032	0.034	0.035	0.035	0.036	0.036	0.035	0.036	0.036	0.035	0.035	0.034
N° 7	0.032	0.034	0.035	0.035	0.036	0.036	0.035	0.036	0.036	0.035	0.035	0.034
N° 8	0.031	0.033	0.034	0.034	0.035	0.035	0.034	0.035	0.035	Not Measurable	Not Measurable	Not Measurable
N° 9	0.032	0.034	0.035	0.035	0.036	0.036	0.035	0.036	0.036	Not Measurable	Not Measurable	Not Measurable
N° 10	0.032	0.034	0.035	0.035	0.036	0.036	0.035	0.036	0.036	0.035	0.035	0.034
N° 11	0.036	0.038	0.039	0.039	0.040	0.039	0.039	0.040	0.040	0.039	0.039	0.038
N° 12	0.032	0.034	0.035	0.035	0.036	0.035	0.035	0.036	0.036	Not Measurable	Not Measurable	Not Measurable
N° 13	0.034	0.035	0.037	0.037	0.038	0.037	0.037	0.038	0.038	Not Measurable	Not Measurable	Not Measurable
N° 14	0.033	0.035	0.036	0.036	0.037	0.037	0.036	0.037	0.037	0.036	0.036	0.035
N° 15	0.032	0.034	0.035	0.035	0.036	0.035	0.035	0.036	Not Measurable	Not Measurable	Not Measurable	Not Measurable
N° 16	0.034	0.036	0.037	0.037	0.038	0.038	0.037	0.038	0.038	0.037	0.038	0.036
N° 17	0.032	0.033	0.035	0.034	0.035	0.035	0.035	0.036	0.035	Not Measurable	Not Measurable	Not Measurable
N° 18	0.033	0.034	0.036	0.036	0.036	0.036	0.036	0.037	0.036	0.036	0.036	0.035
N° 19	0.033	0.034	0.036	0.035	0.036	0.036	0.035	0.036	0.036	0.035	0.036	0.034
N° 20	0.032	0.034	0.035	0.035	0.036	0.035	0.035	0.036	0.035	Not Measurable	Not Measurable	Not Measurable
N° 21	0.034	0.035	0.037	0.036	0.037	0.037	0.037	0.037	0.037	0.037	0.037	0.035
N° 22	0.032	0.034	0.035	0.035	0.035	0.035	0.035	0.036	0.035	0.035	0.035	0.034
N° 23	0.034	0.036	0.037	0.037	0.038	0.038	0.037	0.038	0.038	0.037	Not Measurable	Not Measurable

21. VOL3

Ta=25°C; load to Vcc/2; Vcc=+3V; RL=1kOhms



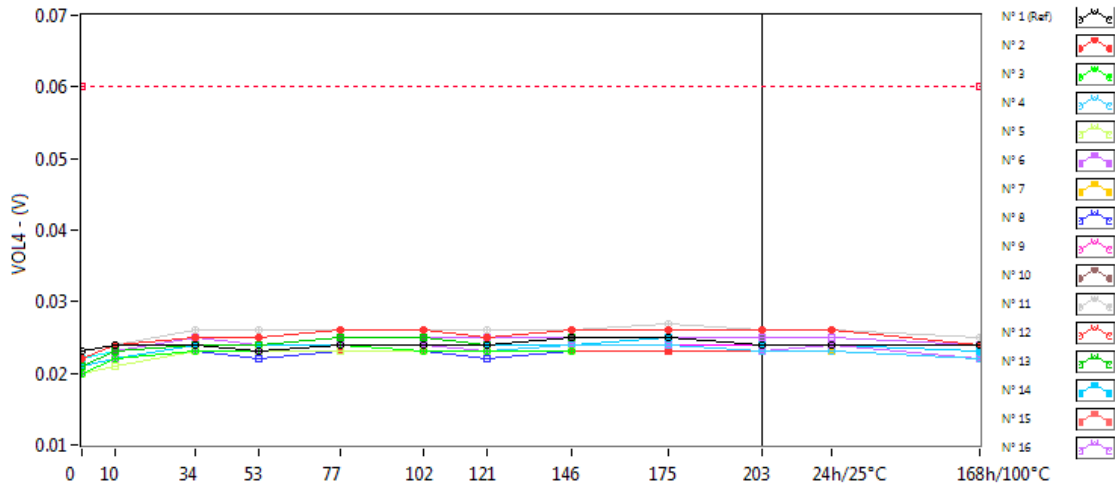
VOL3 . (V)

Max = 0.1

	0krad(Si)	10krad(Si)	34krad(Si)	53krad(Si)	77krad(Si)	102krad(Si)	121krad(Si)	146krad(Si)	175krad(Si)	203krad(Si)	24h/25°C	168h/100°C
N° 1 (Ref)	0.040	0.040	0.040	0.040	0.041	0.041	0.041	0.041	0.041	0.041	0.041	0.041
N° 2	0.038	0.040	0.042	0.042	0.043	0.042	0.042	0.043	0.042	0.042	0.043	0.041
N° 3	0.036	0.038	0.039	0.039	0.040	0.040	0.040	0.040	Not Measurable	Not Measurable	Not Measurable	Not Measurable
N° 4	0.036	0.037	0.039	0.039	0.040	0.040	0.039	0.040	0.040	0.040	0.040	0.038
N° 5	0.036	0.037	0.039	0.039	0.040	0.040	0.039	0.040	Not Measurable	Not Measurable	Not Measurable	Not Measurable
N° 6	0.036	0.038	0.040	0.040	0.040	0.040	0.040	0.040	0.041	0.040	0.040	0.038
N° 7	0.036	0.038	0.040	0.040	0.040	0.040	0.040	0.040	0.041	0.040	0.040	0.038
N° 8	0.035	0.037	0.039	0.039	0.039	0.039	0.039	0.039	Not Measurable	Not Measurable	Not Measurable	Not Measurable
N° 9	0.036	0.037	0.039	0.039	0.040	0.040	0.039	0.040	Not Measurable	Not Measurable	Not Measurable	Not Measurable
N° 10	0.036	0.038	0.040	0.040	0.040	0.040	0.040	0.040	0.040	0.040	0.040	0.038
N° 11	0.039	0.041	0.042	0.042	0.043	0.043	0.042	0.043	0.043	0.043	0.043	0.041
N° 12	0.036	0.037	0.039	0.039	0.040	0.039	0.039	0.040	Not Measurable	Not Measurable	Not Measurable	Not Measurable
N° 13	0.037	0.039	0.041	0.041	0.041	0.041	0.041	0.042	Not Measurable	Not Measurable	Not Measurable	Not Measurable
N° 14	0.037	0.039	0.040	0.040	0.041	0.041	0.040	0.041	0.041	0.041	0.041	0.039
N° 15	0.036	0.038	0.040	0.039	0.040	0.040	0.040	0.040	Not Measurable	Not Measurable	Not Measurable	Not Measurable
N° 16	0.038	0.039	0.041	0.041	0.042	0.042	0.041	0.042	0.042	0.042	0.042	0.040
N° 17	0.036	0.037	0.039	0.039	0.040	0.040	0.039	0.040	Not Measurable	Not Measurable	Not Measurable	Not Measurable
N° 18	0.037	0.038	0.040	0.040	0.041	0.041	0.040	0.041	0.041	0.041	0.041	0.039
N° 19	0.037	0.038	0.040	0.040	0.040	0.040	0.040	0.040	0.040	0.040	0.040	0.038
N° 20	0.036	0.037	0.039	0.039	0.040	0.040	0.039	0.040	Not Measurable	Not Measurable	Not Measurable	Not Measurable
N° 21	0.037	0.039	0.040	0.040	0.041	0.041	0.040	0.041	0.041	0.040	0.041	0.039
N° 22	0.036	0.037	0.039	0.039	0.039	0.039	0.039	0.040	0.040	0.039	0.039	0.038
N° 23	0.038	0.039	0.041	0.041	0.042	0.042	0.041	0.042	0.042	0.041	Not Measurable	Not Measurable

22. VOL4

Ta=25°C; load to Vcc/2; Vcc=+3V; RL=10kOhms

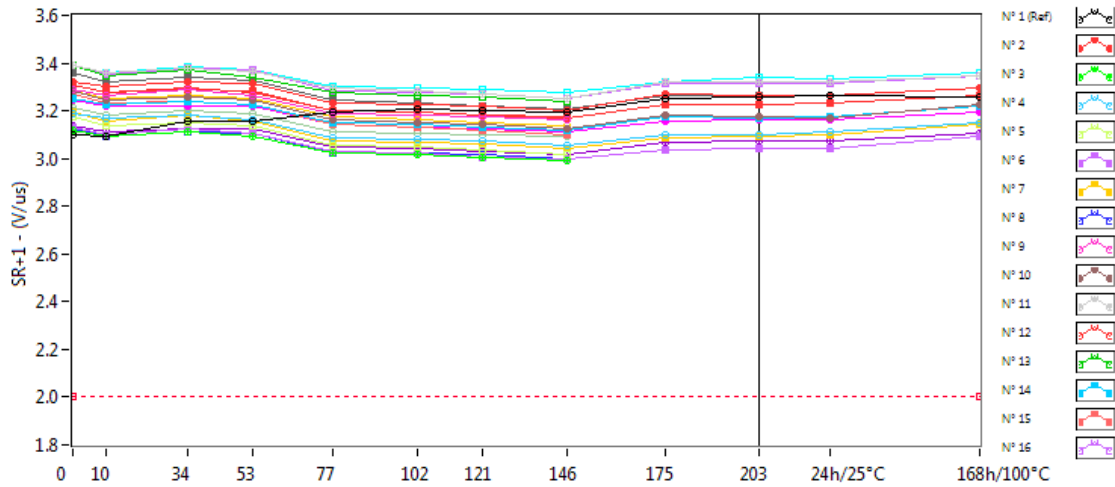


VOL4 . (V) Max = 0.06

	0krad(Si)	10krad(Si)	34krad(Si)	53krad(Si)	77krad(Si)	102krad(Si)	121krad(Si)	146krad(Si)	175krad(Si)	203krad(Si)	24h/25°C	168h/100°C
N° 1 (Ref)	0.023	0.024	0.024	0.023	0.024	0.024	0.024	0.025	0.025	0.024	0.024	0.024
N° 2	0.022	0.024	0.025	0.025	0.026	0.026	0.025	0.026	0.026	0.026	0.026	0.024
N° 3	0.020	0.022	0.023	0.023	0.024	0.023	0.023	0.023	Not Measurable	Not Measurable	Not Measurable	Not Measurable
N° 4	0.020	0.022	0.023	0.023	0.024	0.023	0.023	0.024	0.024	0.023	0.023	0.022
N° 5	0.020	0.021	0.023	0.023	0.023	0.023	0.023	0.023	Not Measurable	Not Measurable	Not Measurable	Not Measurable
N° 6	0.020	0.022	0.023	0.023	0.024	0.024	0.023	0.024	0.024	0.023	0.024	0.022
N° 7	0.020	0.022	0.023	0.023	0.024	0.024	0.023	0.024	0.024	0.023	0.023	0.022
N° 8	0.020	0.021	0.023	0.022	0.023	0.023	0.022	0.023	Not Measurable	Not Measurable	Not Measurable	Not Measurable
N° 9	0.020	0.022	0.023	0.023	0.024	0.023	0.023	0.024	Not Measurable	Not Measurable	Not Measurable	Not Measurable
N° 10	0.020	0.022	0.023	0.023	0.024	0.024	0.023	0.024	0.024	0.023	0.023	0.022
N° 11	0.023	0.024	0.026	0.026	0.026	0.026	0.026	0.026	0.027	0.026	0.026	0.025
N° 12	0.020	0.021	0.023	0.023	0.023	0.023	0.023	0.024	Not Measurable	Not Measurable	Not Measurable	Not Measurable
N° 13	0.021	0.023	0.024	0.024	0.025	0.025	0.024	0.025	Not Measurable	Not Measurable	Not Measurable	Not Measurable
N° 14	0.021	0.022	0.024	0.024	0.024	0.024	0.024	0.024	0.025	0.024	0.024	0.023
N° 15	0.020	0.022	0.023	0.023	0.024	0.023	0.023	0.024	Not Measurable	Not Measurable	Not Measurable	Not Measurable
N° 16	0.021	0.023	0.025	0.024	0.025	0.025	0.025	0.025	0.025	0.025	0.025	0.024
N° 17	0.020	0.021	0.023	0.023	0.023	0.023	0.023	0.024	Not Measurable	Not Measurable	Not Measurable	Not Measurable
N° 18	0.021	0.022	0.024	0.024	0.024	0.024	0.024	0.024	0.024	0.024	0.024	0.023
N° 19	0.021	0.022	0.024	0.023	0.024	0.024	0.023	0.024	0.024	0.023	0.024	0.022
N° 20	0.020	0.022	0.023	0.023	0.023	0.023	0.023	0.024	Not Measurable	Not Measurable	Not Measurable	Not Measurable
N° 21	0.022	0.023	0.024	0.024	0.024	0.024	0.024	0.025	0.025	0.024	0.024	0.023
N° 22	0.020	0.022	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.023	0.022
N° 23	0.021	0.023	0.025	0.024	0.025	0.025	0.025	0.025	0.025	0.025	Not Measurable	Not Measurable

23. SR+1

Ta=25°C; load to Vcc/2; Vcc=+16V; RL=1kOhms



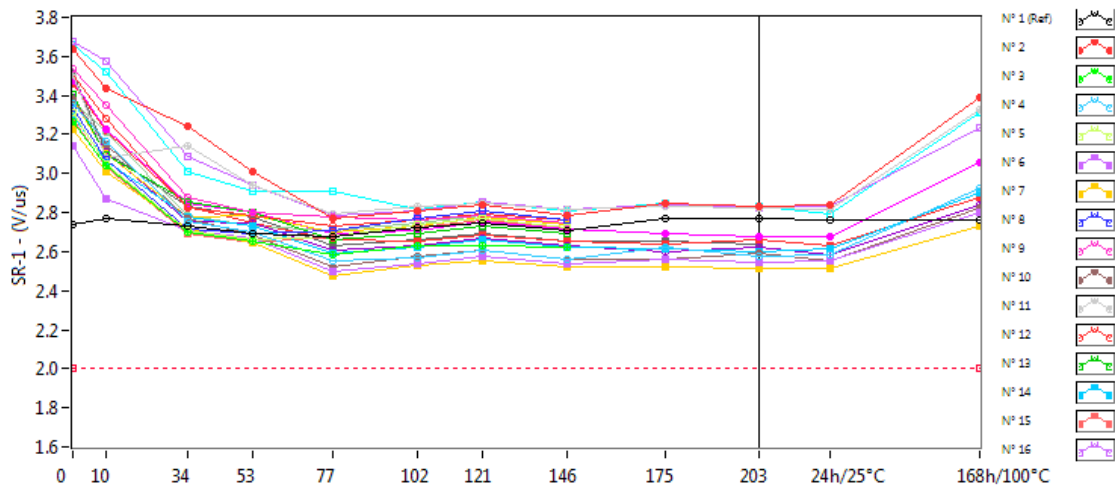
SR+1 . (V/us)

Min = 2.0

	0krad(Si)	10krad(Si)	34krad(Si)	53krad(Si)	77krad(Si)	102krad(Si)	121krad(Si)	146krad(Si)	175krad(Si)	203krad(Si)	24h/25°C	168h/100°C
N° 1 (Ref)	3.100	3.093	3.155	3.155	3.194	3.206	3.202	3.196	3.251	3.258	3.261	3.257
N° 2	3.324	3.303	3.324	3.312	3.232	3.229	3.220	3.199	3.272	3.261	3.263	3.293
N° 3	3.120	3.093	3.111	3.094	3.022	3.017	3.004	2.990	Not Measurable	Not Measurable	Not Measurable	Not Measurable
N° 4	3.191	3.166	3.179	3.160	3.085	3.079	3.072	3.055	3.101	3.099	3.109	3.148
N° 5	3.174	3.138	3.152	3.137	3.055	3.049	3.034	3.014	Not Measurable	Not Measurable	Not Measurable	Not Measurable
N° 6	3.134	3.101	3.123	3.104	3.030	3.022	3.006	2.998	3.037	3.045	3.045	3.094
N° 7	3.192	3.157	3.182	3.155	3.077	3.067	3.060	3.043	3.085	3.093	3.098	3.146
N° 8	3.122	3.095	3.109	3.106	3.022	3.024	3.016	2.998	Not Measurable	Not Measurable	Not Measurable	Not Measurable
N° 9	3.289	3.265	3.288	3.263	3.187	3.183	3.173	3.161	Not Measurable	Not Measurable	Not Measurable	Not Measurable
N° 10	3.280	3.246	3.258	3.248	3.160	3.152	3.141	3.122	3.183	3.174	3.167	3.225
N° 11	3.391	3.361	3.376	3.367	3.294	3.286	3.272	3.254	3.323	3.319	3.321	3.347
N° 12	3.308	3.277	3.293	3.274	3.199	3.194	3.184	3.177	Not Measurable	Not Measurable	Not Measurable	Not Measurable
N° 13	3.391	3.348	3.370	3.340	3.274	3.263	3.257	3.236	Not Measurable	Not Measurable	Not Measurable	Not Measurable
N° 14	3.252	3.228	3.241	3.223	3.153	3.142	3.133	3.120	3.173	3.169	3.175	3.218
N° 15	3.269	3.231	3.240	3.225	3.141	3.130	3.121	3.101	Not Measurable	Not Measurable	Not Measurable	Not Measurable
N° 16	3.389	3.352	3.379	3.371	3.286	3.277	3.272	3.251	3.312	3.314	3.312	3.345
N° 17	3.282	3.254	3.263	3.253	3.177	3.165	3.150	3.139	Not Measurable	Not Measurable	Not Measurable	Not Measurable
N° 18	3.247	3.221	3.222	3.221	3.143	3.131	3.122	3.111	3.157	3.164	3.164	3.196
N° 19	3.140	3.109	3.124	3.123	3.051	3.041	3.027	3.018	3.066	3.076	3.076	3.107
N° 20	3.216	3.183	3.199	3.189	3.112	3.108	3.101	3.091	Not Measurable	Not Measurable	Not Measurable	Not Measurable
N° 21	3.391	3.357	3.382	3.372	3.303	3.295	3.288	3.277	3.323	3.339	3.333	3.361
N° 22	3.308	3.274	3.289	3.283	3.202	3.197	3.181	3.171	3.227	3.229	3.232	3.266
N° 23	3.357	3.321	3.339	3.329	3.247	3.233	3.218	3.208	3.261	3.266	Not Measurable	Not Measurable

24. SR-1

Ta=25°C; load to Vcc/2; Vcc=+16V; RL=1kOhms

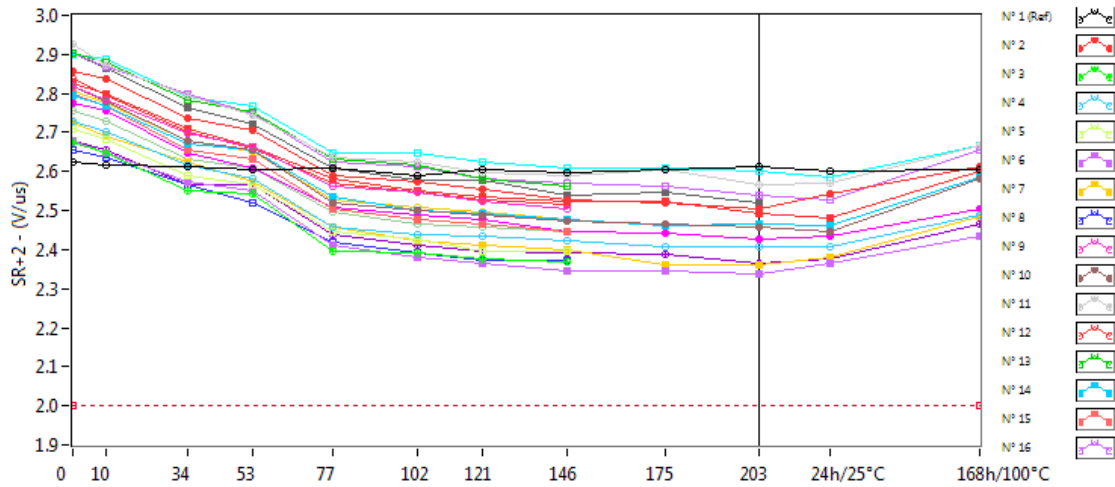


SR-1 . (V/us) Min = 2.0

	0krad(Si)	10krad(Si)	34krad(Si)	53krad(Si)	77krad(Si)	102krad(Si)	121krad(Si)	146krad(Si)	175krad(Si)	203krad(Si)	24h/25°C	168h/100°C
N° 1 (Ref)	2.742	2.773	2.734	2.692	2.679	2.721	2.748	2.707	2.770	2.767	2.763	2.764
N° 2	3.639	3.434	3.244	3.012	2.772	2.806	2.839	2.788	2.847	2.833	2.836	3.391
N° 3	3.267	3.041	2.699	2.655	2.583	2.630	2.630	2.621	Not Measurable	Not Measurable	Not Measurable	Not Measurable
N° 4	3.361	3.162	2.753	2.700	2.550	2.569	2.606	2.564	2.622	2.575	2.582	2.926
N° 5	3.315	3.045	2.708	2.664	2.679	2.738	2.771	2.726	Not Measurable	Not Measurable	Not Measurable	Not Measurable
N° 6	3.141	2.871	2.710	2.668	2.496	2.539	2.578	2.538	2.560	2.548	2.553	2.798
N° 7	3.226	3.011	2.718	2.644	2.474	2.531	2.551	2.523	2.525	2.512	2.516	2.730
N° 8	3.339	3.070	2.718	2.690	2.705	2.772	2.808	2.763	Not Measurable	Not Measurable	Not Measurable	Not Measurable
N° 9	3.536	3.353	2.882	2.801	2.778	2.761	2.784	2.749	Not Measurable	Not Measurable	Not Measurable	Not Measurable
N° 10	3.380	3.149	2.770	2.686	2.525	2.578	2.608	2.563	2.563	2.590	2.554	2.824
N° 11	3.508	3.080	3.139	2.938	2.794	2.828	2.846	2.818	2.832	2.821	2.820	3.324
N° 12	3.504	3.282	2.825	2.784	2.734	2.762	2.796	2.759	Not Measurable	Not Measurable	Not Measurable	Not Measurable
N° 13	3.403	3.092	2.853	2.802	2.662	2.696	2.728	2.692	Not Measurable	Not Measurable	Not Measurable	Not Measurable
N° 14	3.294	3.066	2.775	2.728	2.593	2.626	2.661	2.622	2.618	2.603	2.612	2.900
N° 15	3.280	3.031	2.694	2.649	2.679	2.722	2.761	2.723	Not Measurable	Not Measurable	Not Measurable	Not Measurable
N° 16	3.676	3.572	3.084	2.943	2.785	2.810	2.857	2.817	2.840	2.826	2.832	3.231
N° 17	3.385	3.103	2.776	2.782	2.703	2.729	2.780	2.740	Not Measurable	Not Measurable	Not Measurable	Not Measurable
N° 18	3.474	3.228	2.850	2.799	2.690	2.710	2.756	2.715	2.689	2.676	2.680	3.060
N° 19	3.393	3.113	2.754	2.744	2.609	2.628	2.672	2.631	2.596	2.620	2.587	2.840
N° 20	3.373	3.212	2.783	2.729	2.705	2.746	2.788	2.750	Not Measurable	Not Measurable	Not Measurable	Not Measurable
N° 21	3.661	3.520	3.006	2.911	2.912	2.813	2.857	2.809	2.845	2.832	2.792	3.313
N° 22	3.459	3.220	2.830	2.750	2.659	2.653	2.682	2.650	2.638	2.664	2.627	2.876
N° 23	3.517	3.108	2.829	2.775	2.633	2.658	2.691	2.650	2.654	2.637	Not Measurable	Not Measurable

25. SR+2

Ta=25°C; load to Vcc/2; Vcc=+3V; RL=1kOhms



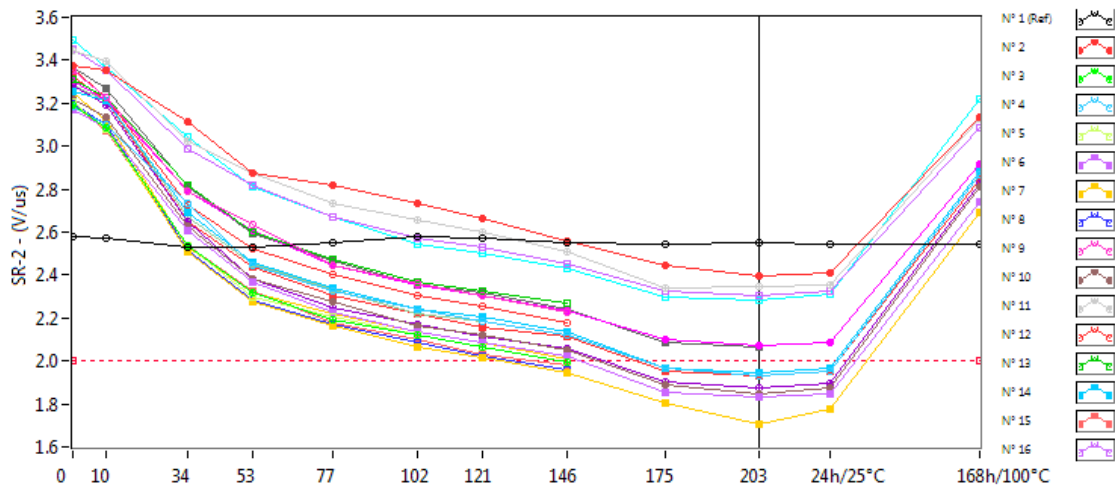
SR+2 . (V/us)

Min = 2.0

	0krad(Si)	10krad(Si)	34krad(Si)	53krad(Si)	77krad(Si)	102krad(Si)	121krad(Si)	146krad(Si)	175krad(Si)	203krad(Si)	24h/25°C	168h/100°C
N° 1 (Ref)	2.624	2.615	2.612	2.605	2.609	2.591	2.605	2.598	2.604	2.612	2.600	2.604
N° 2	2.856	2.837	2.737	2.706	2.588	2.574	2.554	2.528	2.518	2.504	2.543	2.612
N° 3	2.674	2.647	2.551	2.544	2.397	2.391	2.377	2.368	Not Measurable	Not Measurable	Not Measurable	Not Measurable
N° 4	2.730	2.702	2.616	2.581	2.457	2.439	2.436	2.421	2.406	2.406	2.406	2.487
N° 5	2.709	2.681	2.588	2.567	2.445	2.427	2.397	2.394	Not Measurable	Not Measurable	Not Measurable	Not Measurable
N° 6	2.678	2.647	2.574	2.551	2.412	2.382	2.365	2.345	2.347	2.338	2.365	2.435
N° 7	2.726	2.691	2.626	2.574	2.457	2.421	2.412	2.400	2.359	2.362	2.381	2.484
N° 8	2.657	2.634	2.567	2.521	2.418	2.391	2.374	2.371	Not Measurable	Not Measurable	Not Measurable	Not Measurable
N° 9	2.818	2.784	2.699	2.662	2.561	2.547	2.524	2.505	Not Measurable	Not Measurable	Not Measurable	Not Measurable
N° 10	2.818	2.780	2.677	2.655	2.521	2.502	2.489	2.473	2.464	2.457	2.448	2.582
N° 11	2.928	2.872	2.796	2.745	2.637	2.626	2.598	2.588	2.604	2.568	2.571	2.668
N° 12	2.837	2.795	2.703	2.658	2.571	2.547	2.528	2.515	Not Measurable	Not Measurable	Not Measurable	Not Measurable
N° 13	2.904	2.880	2.784	2.752	2.633	2.616	2.581	2.561	Not Measurable	Not Measurable	Not Measurable	Not Measurable
N° 14	2.795	2.766	2.669	2.655	2.537	2.502	2.492	2.476	2.461	2.464	2.461	2.586
N° 15	2.799	2.769	2.655	2.633	2.505	2.479	2.464	2.445	Not Measurable	Not Measurable	Not Measurable	Not Measurable
N° 16	2.904	2.868	2.800	2.748	2.623	2.612	2.581	2.571	2.564	2.539	2.529	2.657
N° 17	2.806	2.777	2.680	2.651	2.528	2.508	2.498	2.476	Not Measurable	Not Measurable	Not Measurable	Not Measurable
N° 18	2.777	2.755	2.648	2.609	2.508	2.489	2.476	2.448	2.441	2.428	2.435	2.504
N° 19	2.678	2.654	2.567	2.567	2.439	2.412	2.394	2.391	2.387	2.365	2.377	2.467
N° 20	2.755	2.730	2.633	2.609	2.495	2.464	2.457	2.445	Not Measurable	Not Measurable	Not Measurable	Not Measurable
N° 21	2.900	2.888	2.792	2.768	2.648	2.648	2.623	2.609	2.608	2.600	2.586	2.665
N° 22	2.825	2.799	2.710	2.662	2.581	2.551	2.537	2.524	2.522	2.491	2.481	2.600
N° 23	2.904	2.864	2.764	2.722	2.609	2.578	2.578	2.541	2.546	2.518	Not Measurable	Not Measurable

26. SR-2

Ta=25°C; load to Vcc/2; Vcc=+3V; RL=1kOhms



SR-2 . (V/us) Min = 2.0

	0krad(Si)	10krad(Si)	34krad(Si)	53krad(Si)	77krad(Si)	102krad(Si)	121krad(Si)	146krad(Si)	175krad(Si)	203krad(Si)	24h/25°C	168h/100°C
N° 1 (Ref)	2.578	2.571	2.528	2.531	2.548	2.577	2.569	2.551	2.547	2.554	2.547	2.541
N° 2	3.377	3.353	3.113	2.878	2.820	2.737	2.666	2.561	2.442	2.397	2.409	3.133
N° 3	3.189	3.088	2.537	2.320	2.195	2.118	2.067	1.997	Not Measurable	Not Measurable	Not Measurable	Not Measurable
N° 4	3.184	3.103	2.733	2.445	2.328	2.238	2.187	2.121	1.965	1.932	1.951	2.866
N° 5	3.205	3.078	2.537	2.298	2.205	2.121	2.067	1.997	Not Measurable	Not Measurable	Not Measurable	Not Measurable
N° 6	3.173	3.083	2.605	2.365	2.225	2.132	2.087	2.024	1.854	1.835	1.846	2.741
N° 7	3.168	3.083	2.505	2.277	2.163	2.062	2.018	1.945	1.803	1.704	1.777	2.695
N° 8	3.199	3.098	2.515	2.282	2.170	2.087	2.024	1.961	Not Measurable	Not Measurable	Not Measurable	Not Measurable
N° 9	3.353	3.226	2.792	2.637	2.442	2.362	2.304	2.225	Not Measurable	Not Measurable	Not Measurable	Not Measurable
N° 10	3.220	3.133	2.626	2.382	2.277	2.165	2.121	2.049	1.889	1.844	1.874	2.808
N° 11	3.448	3.394	3.026	2.874	2.733	2.658	2.598	2.511	2.337	2.345	2.351	3.128
N° 12	3.359	3.226	2.729	2.521	2.400	2.301	2.256	2.175	Not Measurable	Not Measurable	Not Measurable	Not Measurable
N° 13	3.314	3.226	2.820	2.602	2.473	2.365	2.326	2.269	Not Measurable	Not Measurable	Not Measurable	Not Measurable
N° 14	3.258	3.215	2.695	2.461	2.340	2.243	2.207	2.132	1.967	1.947	1.967	2.882
N° 15	3.199	3.073	2.534	2.326	2.178	2.100	2.030	1.977	Not Measurable	Not Measurable	Not Measurable	Not Measurable
N° 16	3.454	3.353	2.984	2.820	2.669	2.571	2.531	2.454	2.326	2.301	2.323	3.083
N° 17	3.247	3.122	2.531	2.317	2.222	2.135	2.089	2.007	Not Measurable	Not Measurable	Not Measurable	Not Measurable
N° 18	3.302	3.210	2.792	2.609	2.445	2.354	2.304	2.235	2.102	2.073	2.084	2.917
N° 19	3.286	3.189	2.648	2.385	2.245	2.168	2.116	2.058	1.902	1.878	1.894	2.824
N° 20	3.280	3.210	2.669	2.451	2.334	2.222	2.185	2.123	Not Measurable	Not Measurable	Not Measurable	Not Measurable
N° 21	3.491	3.365	3.044	2.808	2.673	2.547	2.502	2.433	2.298	2.282	2.312	3.220
N° 22	3.325	3.210	2.648	2.439	2.306	2.217	2.158	2.116	1.951	1.928	1.953	2.845
N° 23	3.365	3.269	2.812	2.591	2.464	2.354	2.317	2.243	2.087	2.062	Not Measurable	Not Measurable