RO	TOTAL DOSE RADIATION TEST REPORT No. RO-TLG-RR-0007	Issue: 1 Rev.: Date: 06/10/99 Page: 1/6

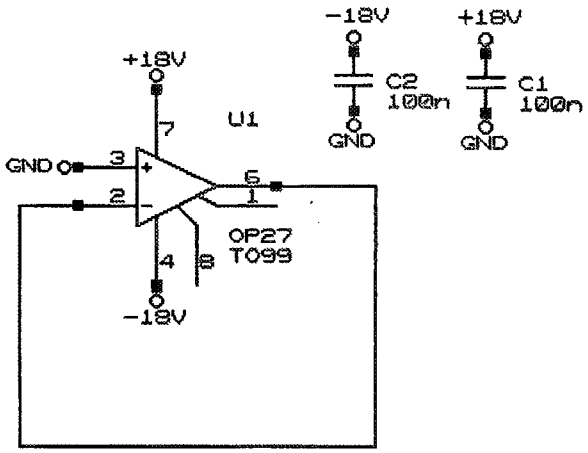
SCC Component No N.A.	Component Designation: OP27A	Irradiation Spec. No.: SCC22900 Iss.4
Gen. Spec.: MIL-PRF-38535 Det. Spec.: MIL-M-38510/135 Amend.: N.A.	Evaluation: - Acceptance Diffusion: - Acceptance Lot: X	Project/Programme: RO
Family/Group: 08/09 / Techology: BIPOLAR	Functional Assignment: LOW NOISE PRECISION OP. AMP.	Package: TO-99
Manuf.Name: ANALOG DEVICES Address: USA	Test House: TECNOLOGICA Address: MADRID (SPAIN)	Orig.house: TECNOLOGICA Address: SEVILLA (SPAIN)
Radiation Test Plan No.: RO-TLG-RP-0007	Sample Size: 6 Irradiation Devices: 5 Control Devices: 1	Date Code: 9826A Diffusion LOT: -- Wafer No.: --
Radiation Source: Cobalt-60 Facility Name: CIEMAT Address: MADRID (SPAIN)	Energy: 1.33/1.17 MeV Dose Rate: 10,64 K rad(Si)/h	Date of Test: 01/10/99
Irradiation Conditions: Biased: X Unbiased: - Test Circuit: Figure 1	Irradiation Measurements Interval: Remote test: - In situ Test: X	Annealing Tests: 24h/25°C 168h/100°C Biased: X Unbiased: - Test Circuit: Figure 1

Electrical Measurements. Parameters Tested:

I_{CC}, V_{IO}, I_{IO}, $I_{IB\pm}$, $A_{VS\pm}$, CMRR, PSRR±, PSRR, SR±, $V_{OP\pm}$, $I_{OS\pm}$

Prepared by.: EUGENIO MUÑOZ PLAZA Date: 6/10/99 Signature:	Approved by : JOSE Mª. VALVERDE PORRAS Date: 6/10/99 Signature:

FIGURE 1.-TEST CIRCUIT



SUMMARY

Total dose steady-state irradiation test has been carried out on a LOW NOISE PRECISION OPERATIONAL AMPLIFIER from ANALOG DEVICES with date code 9826A. The irradiated parts were labelled as follows: R1,S/N 672 as control device, R2 s/n 674, R3 s/n 375, R4 s/n 376 , R5 s/n 377 and R6 s/n 379.

RESULTS

The next table shows a results resume of the irradiation test:

	0 KRAD	5 KRAD	10 KRAD	20 KRAD	30 KRAD	ANN 24	ANN 168
ICC	PASS	PASS	PASS	PASS	PASS	PASS	PASS
VIO	PASS	PASS	PASS	FAIL 1	FAIL 1	FAIL 1	PASS
IIO	PASS	PASS	PASS	PASS	PASS	PASS	PASS
IIB+	PASS	PASS	PASS	FAIL3	FAIL5	FAIL 4	PASS
IIB-	PASS	PASS	PASS	FAIL3	FAIL5	FAIL 4	PASS
AVS+	PASS	PASS	PASS	PASS	PASS	PASS	PASS
AVS-	PASS	PASS	PASS	PASS	PASS	PASS	PASS
CMRR	PASS	PASS	PASS	PASS	PASS	PASS	PASS
PSRR	PASS	PASS	PASS	PASS	PASS	PASS	PASS
PSRR+	PASS	PASS	PASS	PASS	PASS	PASS	PASS
PSRR-	PASS	PASS	PASS	PASS	PASS	PASS	PASS
SR+	PASS	PASS	PASS	PASS	PASS	PASS	PASS
SR-	PASS	PASS	PASS	PASS	PASS	PASS	PASS
VOP+	PASS	PASS	PASS	PASS	PASS	PASS	PASS
VOP-	PASS	PASS	PASS	PASS	PASS	PASS	PASS
IOS+	PASS	PASS	PASS	PASS	PASS	PASS	PASS
IOS-	PASS	PASS	PASS	PASS	PASS	PASS	PASS

CONCLUSION

The results indicate that:

- The VIO parameter fail at 20 and 30 Krad in one device. The IIB+ and IIB- fail at 20 Krad in three device, and at 30Krad in four device, but trend to recover during the annealing steps
- The rest of parameters pass according to radiation plan during the irradiation test.
- In the PSRR+,PSRR-,PSRR and CMRR parameters some measures are 140 dB due to the equipment maximum limit for this parameters (140 dB).

SCHEDULE

Test Step	Description	Result or Actual Test Condition	Time In	Time Out	Exposure
1	Samples serialization	CONTROL R1 IRR. DEVICES R2,.., R6.			
2	Initial Electrical Measurements	See 0 krad(Si) values in respective Parameter Data Tables	10:15 23/09	10:45 23/09	30 min.
3	Set-up of Test	Bias circuit verified according to Fig. 1			
4	Irradiation Exposure	Total Dose: 4.96 Krad(Si) Cumulative Dose: 4.96 Krad(Si) Dose Rate: 10.64 KRad(Si)/h Temperature: 23.6 °C (average)	11:06 23/09	11:34 23/09	28 min
5	Intermediate Electrical Measurements	See 5 Krad(Si) values in respective Parameter Data Tables	11:40 23/09	12:00 23/09	20 min.
6	Set-up of Test	Bias circuit verified according to Fig. 1			
7	Irradiation Exposure	Total Dose: 4.61 Krad(Si) Cumulative Dose: 9.57 Krad(Si) Dose Rate: 10.64Krad(Si)/h Temperature: 24.6°C (average)	12:06 23/09	12:32 23/09	26 min
8	Intermediate Electrical Measurements	See 10 krad(Si) values in respective Parameter Data Tables	12:40 23/09	12:55 23/09	15 min.
9	Set-up of Test	Bias circuit verified according to Fig. 1			
10	Irradiation Exposure	Total Dose: 9.93 krad(Si) Cumulative Dose: 19.5 Krad(Si) Dose Rate: 10.64 Krad(Si)/h Temperature: 25.7°C (average)	13:02 23/09	13:59 23/06	56 min.
11	Intermediate Electrical Measurements	See 20 krad(Si) values in respective Parameter Data Tables	14:05 23/09	14:20 23/09	20 min
12	Set-up of Test	Bias circuit verified according to Fig. 1			

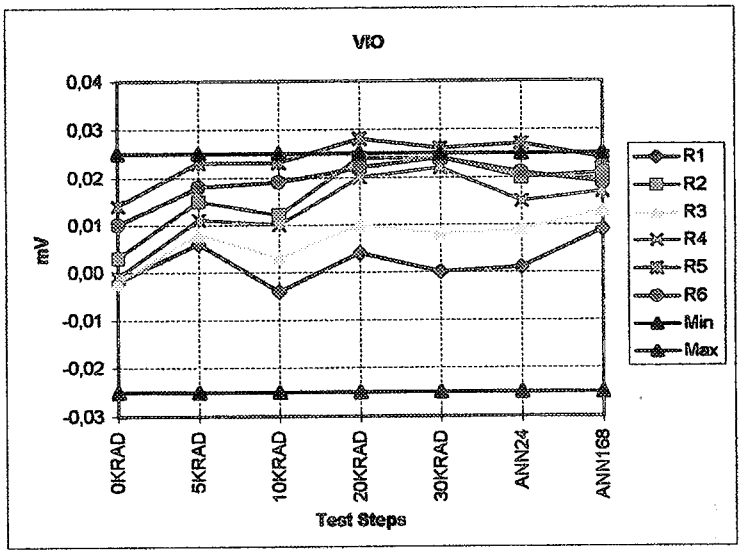
Test Step	Description	Result or Actual Test Condition	Time In	Time Out	Exposure
13	Irradiation Exposure	Total Dose: 9.93 Krad(Si) Cumulative Dose: 29.4 Krad(Si) Dose Rate: 10.64 Krad(Si)/h Temperature: 26.7°C (average)	14:26 23/09	15:22 23/09	56 min
14	Intermediate Electrical Measurements	See 30 krad(Si) values in respective Parameter Data Tables	15:30 23/09	15:50 23/09	40 min.
15	Annealing 24h	Bias circuit verified according to Fig. 1 Temperature: 25 °C (average)	16:00 23/09	16:00 24/09	24 H
16	Electrical Measurements	See ANN24h values in respective parameter Data Tables	16:10 24/09	16:30 24/09	20 min.
17	Annealing 168h	Bias circuit verified according to Fig. 1 Temperature: 100°C	16:45 24/09	16:45 01/10	168 H
18	Final Electrical Measurements	See ANN168h values in respective parameter Data Tables	16:50 01/10	17:20 01/10	30 min.

ELECTRICAL MEASUREMENT CONDITIONS

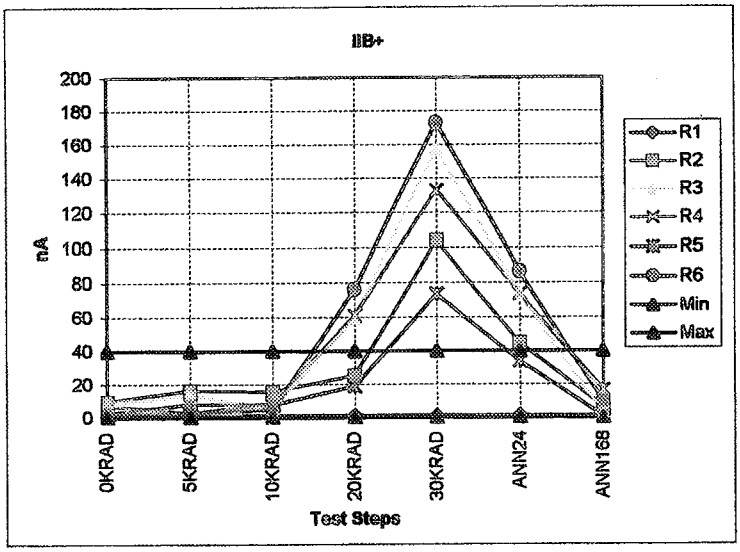
TABLE 1 - ELECTRICAL MEASUREMENTS AT ROOM TEMPERATURE AT INTERMEDIATE POINTS AND ON COMPLETION OF IRRADIATION AT 25°C

No	CHARACTERISTICS	SYMBOL	TEST CONDITION	LIMITS		UNIT
				MIN	MAX	
1	Supply Current	I_{CC}	V_{CC}=15V, $-V_{CC}$=-15V	-	5	mA
2	Input Offset Voltage	V_{IO}	V_{CC}=15V, $-V_{CC}$=-15V Vcm=0V	-25	25	µV
3	Input Offset Current	I_{IO}	V_{CC}=15V, $-V_{CC}$=-15V Vcm=0V	-35	35	nA
4	Input (Plus) Bias Current	$+I_{IB}$	V_{CC}=15V, $-V_{CC}$=-15V V_{cm}=0V	-40	40	nA
5	Input (Minus) Bias Current	$-I_{IB}$	V_{CC}=15V, $-V_{CC}$=-15V V_{cm}=0V	-40	40	nA
7	Open Loop Voltage Gain (plus)	A_{VS+}	V_{CC}=15V, $-V_{CC}$=-15V V_{IN}=+10V,R_L=2KΩ	1000	-	V/mV
6	Open Loop Voltage Gain (minus)	A_{VS-}	V_{CC}=15V, $-V_{CC}$=-15V V_{IN}=-10V,R_L=2KΩ	1000	-	V/mV
7	Common Mode Rejection Ratio	CMRR	V_{CC}=15V, $-V_{CC}$=-15V, V_{CM}=11V	114	-	dB
9	Power Supply Rejection Ratio	PSRR	$\pm V_{CC}$=±4.5V TO ±18V	-10	10	µV/V
8	Power Supply Rejection Ratio (plus)	PSRR+	$+V_{CC}$=5V TO 18V $-V_{CC}$=-15V	-10	10	µV/V
9	Power Supply Rejection Ratio (minus)	PSRR-	$+V_{CC}$= 15V $-V_{CC}$=-5V to -18V	-10	10	µV/V
10	Slew Rate (plus)	SR+	$+V_{CC}$=15V, $-V_{CC}$=-15V. Open loop AV	1.7	-	V/µs
11	Slew Rate (minus)	SR-	$+V_{CC}$=15V, $-V_{CC}$=-15V. Open loop AV	-	-1.7	V/µs
12	Output Voltage Swing (plus)	Vop+	$+V_{CC}$=15v, $-V_{CC}$=-15V R_L=2kΩ	11.5	-	V
13	Output Voltage Swing (minus)	Vop-	$+V_{CC}$=15v, $-V_{CC}$=-15V R_L=2kΩ	-	-11.5	V
14	Output Short-Circuit Current (plus)	I_{os+}	$+V_{CC}$=15V, $-V_{CC}$=-15V	-	70	mA
15	Output Short-Circuit Current (minus)	I_{os-}	$+V_{CC}$=15V, $-V_{CC}$=-15V	-70	-	mA

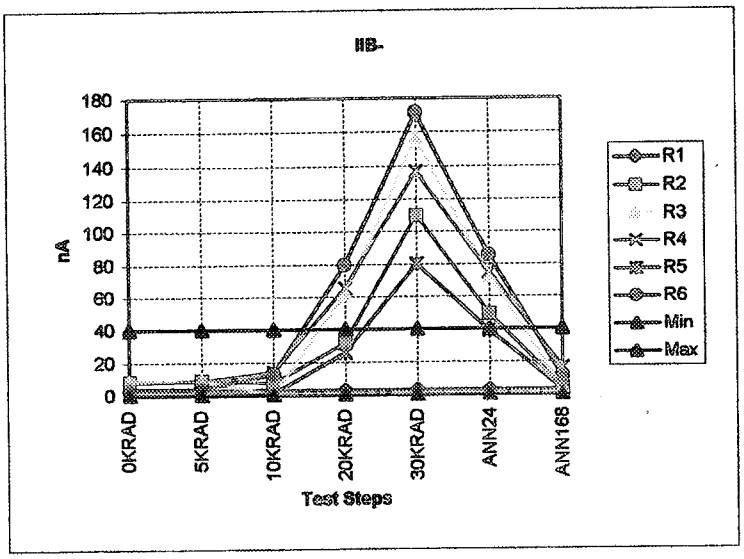
ELECTRICAL MEASUREMENT RESULTS



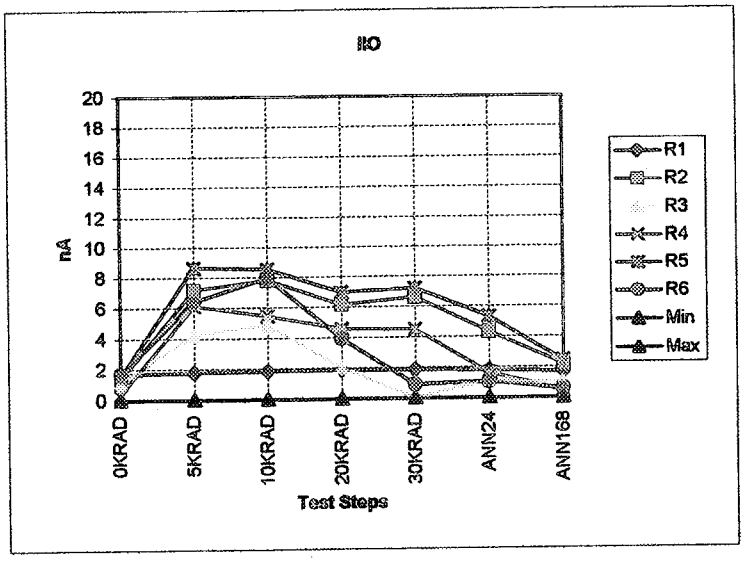
VIO	0KRAD	5KRAD	10KRAD	20KRAD	30KRAD	ANN24	ANN168
R1	-0,002	0,006	-0,004	0,004	0,000	0,001	0,009
R2	0,003	0,015	0,012	0,024	0,024	0,020	0,021
R3	-0,002	0,008	0,003	0,010	0,008	0,009	0,013
R4	-0,001	0,011	0,010	0,020	0,022	0,015	0,017
R5	0,014	0,023	0,023	0,028	0,026	0,027	0,024
R6	0,010	0,018	0,019	0,022	0,024	0,021	0,019
Min	-0,025	-0,025	-0,025	-0,025	-0,025	-0,025	-0,025
Max	0,025	0,025	0,025	0,025	0,025	0,025	0,025
Unit	mV	mV	mV	mV	mV	mV	mV



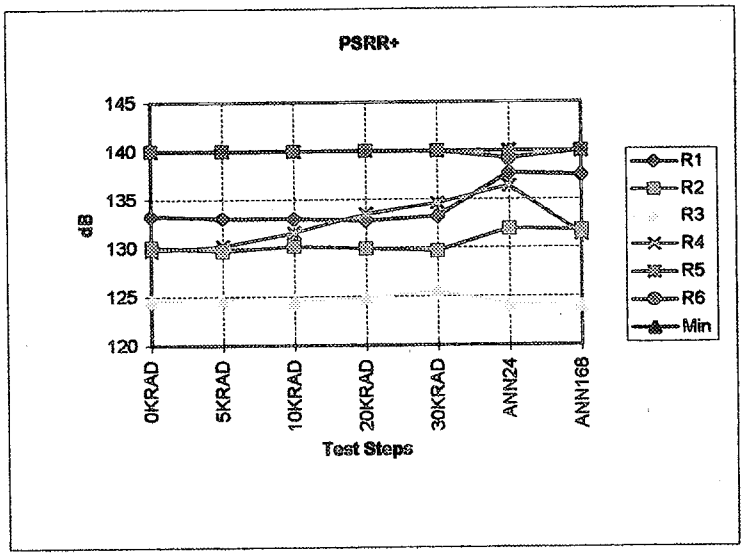
IIB+	0KRAD	5KRAD	10KRAD	20KRAD	30KRAD	ANN24	ANN168
R1	1,31	1,31	1,12	1,22	1,01	1,20	1,30
R2	9,70	16,17	15,28	25,44	103,95	44,86	6,12
R3	7,38	13,30	5,31	59,37	157,01	73,93	2,32
R4	7,33	2,53	8,77	61,08	132,67	73,52	16,52
R5	2,08	8,22	7,51	18,75	73,57	33,80	0,58
R6	1,92	2,55	4,90	75,94	172,64	86,51	9,65
Min	0	0	0	0	0	0	0
Max	40	40	40	40	40	40	40
Unit	nA	nA	nA	nA	nA	nA	nA



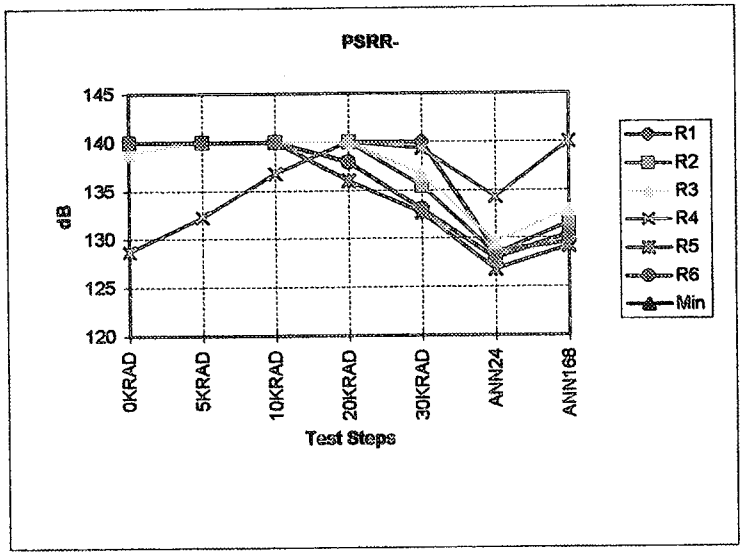
IIB-	0KRAD	5KRAD	10KRAD	20KRAD	30KRAD	ANN24	ANN168
R1	2,95	3,06	2,94	3,02	2,81	3,00	3,01
R2	8,39	9,02	7,54	31,35	109,92	48,96	3,94
R3	8,57	9,25	0,47	61,21	156,91	72,44	3,41
R4	7,65	8,51	14,22	65,33	136,78	74,85	16,11
R5	0,62	0,40	0,90	25,55	80,36	38,96	2,89
R6	3,52	3,78	12,82	79,62	171,33	85,23	10,12
Min	0	0	0	0	0	0	0
Max	40	40	40	40	40	40	40
Unit	nA	nA	nA	nA	nA	nA	nA



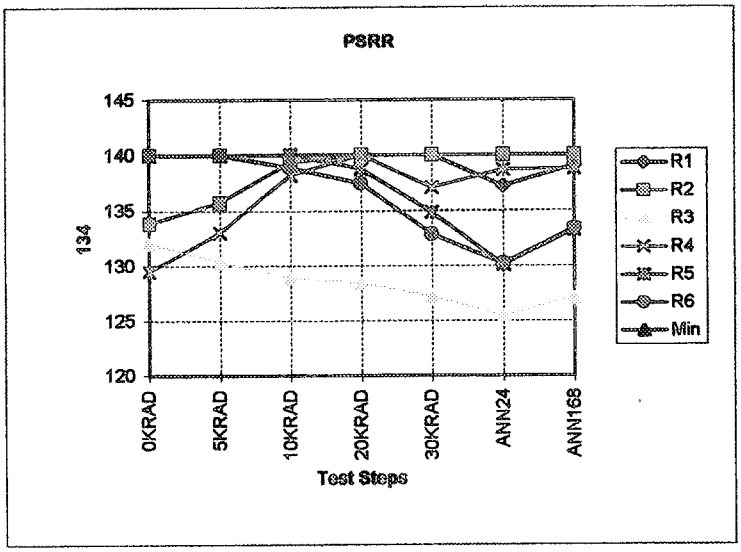
IIO	0KRAD	5KRAD	10KRAD	20KRAD	30KRAD	ANN24	ANN168
R1	1,64	1,77	1,83	1,86	1,85	1,80	1,68
R2	1,30	7,16	7,79	6,13	6,60	4,30	2,19
R3	1,14	4,21	4,84	2,02	0,02	1,12	1,03
R4	0,33	6,09	5,43	4,56	4,51	1,62	0,41
R5	1,49	8,63	8,52	6,94	7,20	5,29	2,43
R6	1,63	6,38	7,92	3,92	0,88	1,06	0,58
Min	0	0	0	0	0	0	0
Max	35	35	35	35	35	35	35
Unit	nA	nA	nA	nA	nA	nA	nA



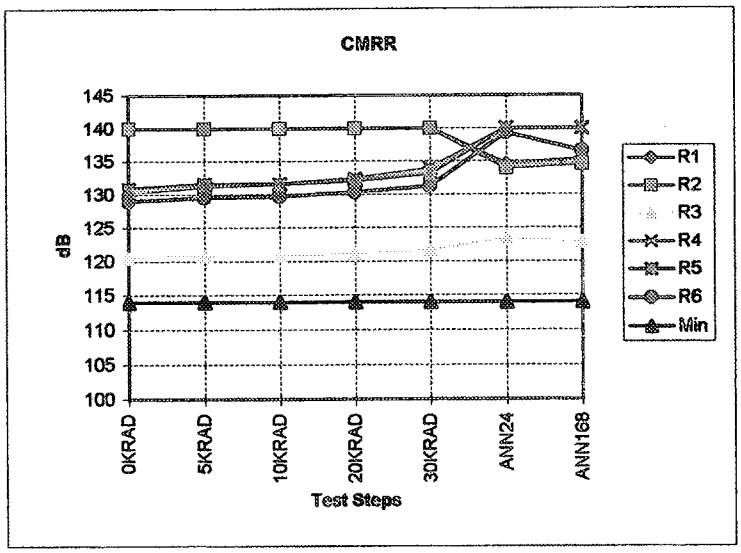
PSRR+	0KRAD	5KRAD	10KRAD	20KRAD	30KRAD	ANN24	ANN168
R1	133,2	133,0	132,9	132,7	133,2	137,7	137,5
R2	130,1	129,6	130,1	129,9	129,6	131,9	131,7
R3	124,5	124,6	124,5	124,9	125,5	124,1	124,0
R4	129,7	130,2	131,5	133,5	134,6	136,4	131,3
R5	140,0	140,0	140,0	140,0	140,0	140,0	140,0
R6	140,0	140,0	140,0	140,0	140,0	139,2	140,0
Min	100	100	100	100	100	100	100
Max	–	–	–	–	–	–	–
Unit	dB	dB	dB	dB	dB	dB	dB



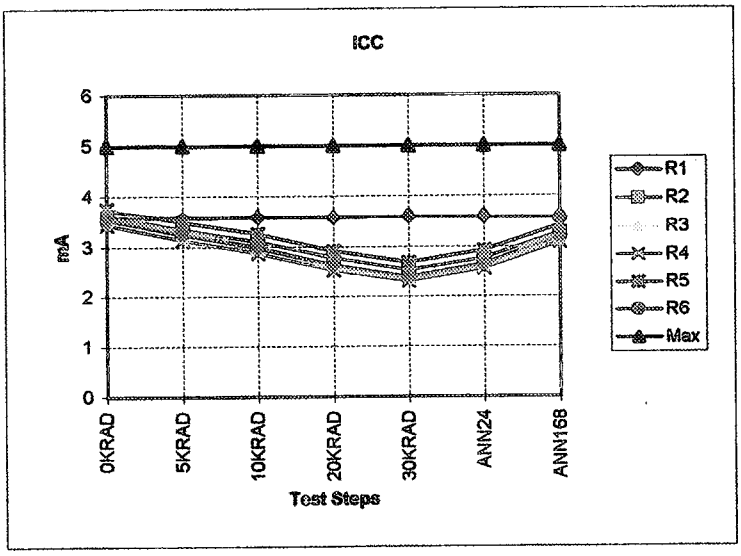
PSRR-	0KRAD	5KRAD	10KRAD	20KRAD	30KRAD	ANN24	ANN168
R1	140,0	140,0	140,0	140,0	140,0	128,6	129,6
R2	140,0	140,0	140,0	140,0	135,4	128,4	131,6
R3	138,9	140,0	140,0	140,0	136,6	129,6	132,9
R4	128,7	132,3	136,8	140,0	139,3	134,2	140,0
R5	140,0	140,0	140,0	136,0	132,6	126,8	129,2
R6	140,0	140,0	140,0	137,9	133,0	127,9	130,4
Min	100	100	100	100	100	100	100
Max	–	–	–	–	–	–	–
Unit	dB	dB	dB	dB	dB	dB	dB



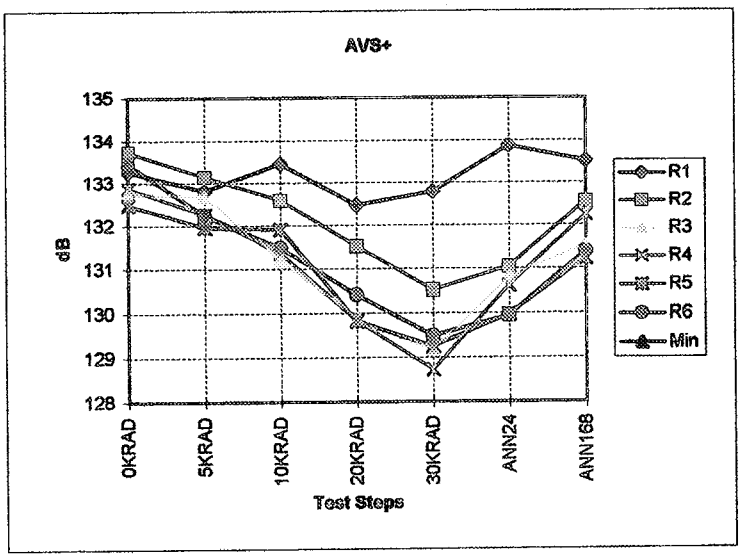
PSRR	0KRAD	5KRAD	10KRAD	20KRAD	30KRAD	ANN24	ANN168
R1	140,0	140,0	140,0	140,0	140,0	137,2	139,1
R2	133,8	135,7	139,4	140,0	140,0	140,0	140,0
R3	132,1	130,3	128,9	128,4	127,2	125,4	127,1
R4	129,5	133,0	138,2	140,0	137,1	138,7	138,8
R5	140,0	140,0	140,0	138,8	134,8	130,1	133,2
R6	140,0	140,0	138,8	137,4	132,8	130,2	133,3
Min	100	100	100	100	100	100	100
Max	--	--	--	--	--	--	--
Unit	dB	dB	dB	dB	dB	dB	dB



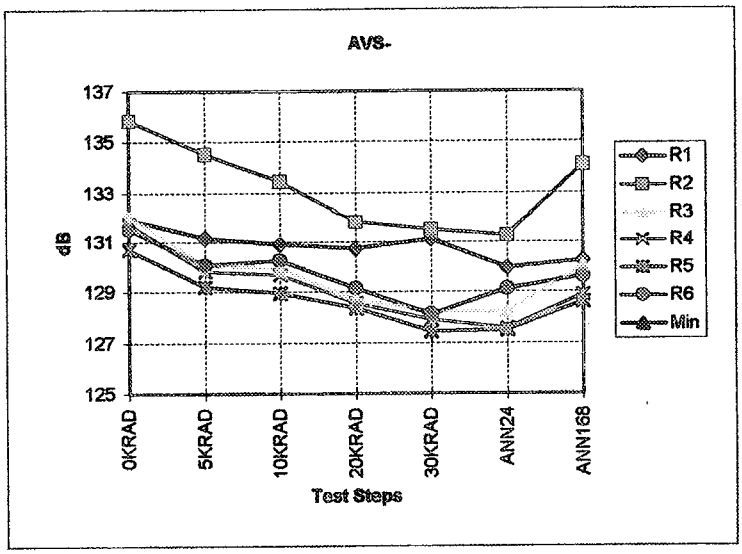
CMRR	0KRAD	5KRAD	10KRAD	20KRAD	30KRAD	ANN24	ANN168
R1	140,0	140,0	140,0	140,0	140,0	134,5	135,2
R2	140,0	140,0	140,0	140,0	140,0	133,9	134,5
R3	120,5	120,8	120,9	121,1	121,5	123,5	122,9
R4	130,2	131,2	131,6	132,3	133,8	140,0	140,0
R5	130,8	131,5	131,6	132,0	133,1	140,0	140,0
R6	128,9	129,5	129,6	130,3	131,1	139,2	136,5
Min	114	114	114	114	114	114	114
Max	--	--	--	--	--	--	--
Unit	dB	dB	dB	dB	dB	dB	dB



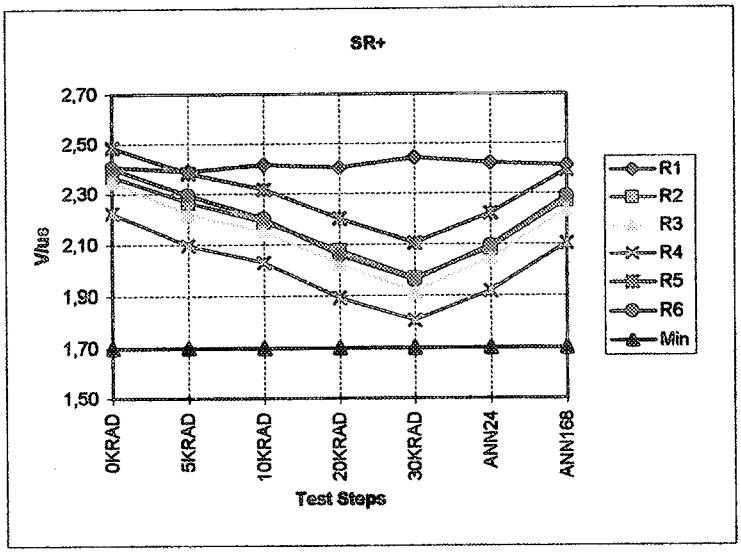
ICC	0KRAD	5KRAD	10KRAD	20KRAD	30KRAD	ANN24	ANN168
R1	3,58	3,57	3,59	3,58	3,60	3,59	3,59
R2	3,61	3,34	3,10	2,78	2,52	2,77	3,27
R3	3,55	3,24	2,97	2,63	2,39	2,65	3,18
R4	3,44	3,13	2,87	2,53	2,30	2,56	3,08
R5	3,75	3,48	3,26	2,92	2,68	2,92	3,42
R6	3,54	3,26	2,98	2,61	2,38	2,64	3,20
Min	0	0	0	0	0	0	0
Max	5	5	5	5	5	5	5
Unit	mA	mA	mA	mA	mA	mA	mA



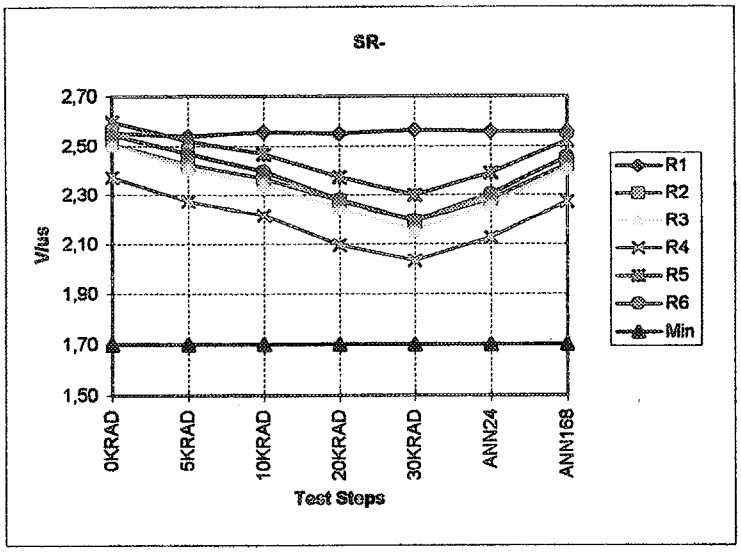
AVS+	0KRAD	5KRAD	10KRAD	20KRAD	30KRAD	ANN24	ANN168
R1	133,26	132,81	133,44	132,47	132,79	133,87	133,51
R2	133,73	133,14	132,59	131,52	130,51	131,03	132,55
R3	132,72	132,69	131,20	129,85	129,18	130,79	131,54
R4	132,87	132,26	131,35	129,83	128,72	130,61	132,23
R5	132,47	131,95	131,90	129,82	129,25	129,95	131,22
R6	133,45	132,23	131,47	130,40	129,48	129,94	131,38
Min	120	120	120	120	120	120	120
Max	–	–	–	–	–	–	–
Unit	dB	dB	dB	dB	dB	dB	dB



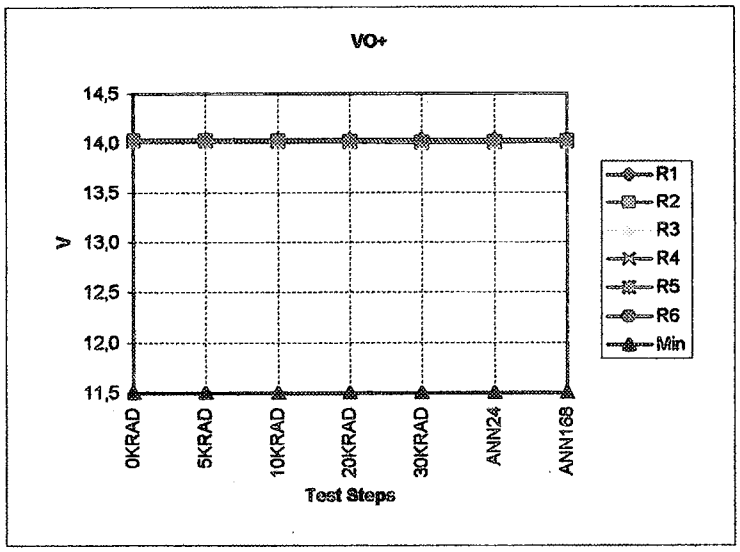
AVS-	0KRAD	5KRAD	10KRAD	20KRAD	30KRAD	ANN24	ANN168
R1	131,89	131,14	130,89	130,72	131,10	129,96	130,26
R2	135,82	134,51	133,46	131,80	131,48	131,26	134,11
R3	132,05	130,07	129,94	128,69	128,20	128,21	130,03
R4	131,71	129,80	129,67	128,56	127,89	127,57	128,88
R5	130,69	129,19	128,94	128,35	127,44	127,50	128,61
R6	131,51	130,07	130,24	129,14	128,11	129,10	129,61
Min	120	120	120	120	120	120	120
Max	–	–	–	–	–	–	–
Unit	dB	dB	dB	dB	dB	dB	dB



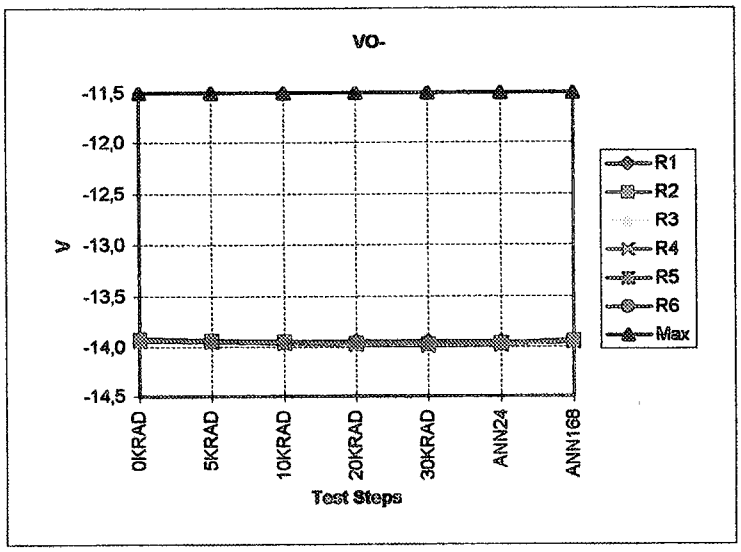
SR+	0KRAD	5KRAD	10KRAD	20KRAD	30KRAD	ANN24	ANN168
R1	2,41	2,39	2,42	2,40	2,44	2,42	2,41
R2	2,37	2,27	2,19	2,08	1,97	2,08	2,27
R3	2,35	2,22	2,15	2,02	1,91	2,04	2,23
R4	2,22	2,09	2,03	1,89	1,81	1,92	2,10
R5	2,49	2,38	2,32	2,20	2,10	2,22	2,39
R6	2,40	2,30	2,20	2,06	1,96	2,09	2,29
Min	1,7	1,7	1,7	1,7	1,7	1,7	1,7
Max	–	–	–	–	–	–	–
Unit	V/us	V/us	V/us	V/us	V/us	V/us	V/us



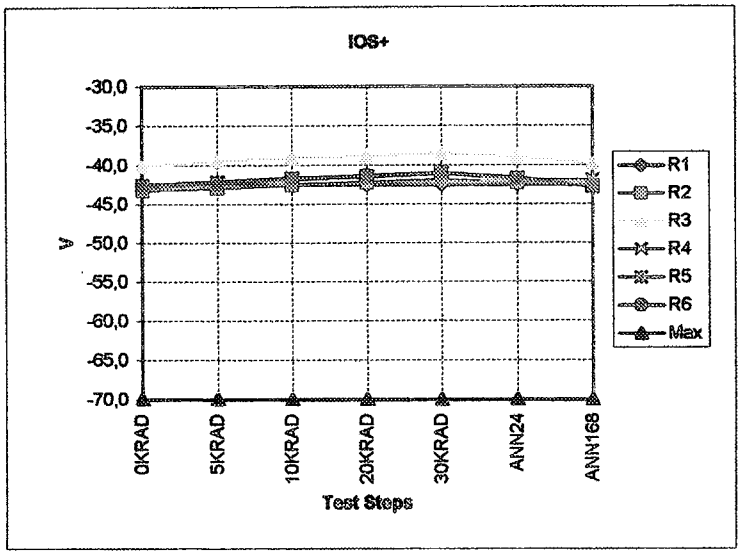
SR-	0KRAD	5KRAD	10KRAD	20KRAD	30KRAD	ANN24	ANN168
R1	2,55	2,54	2,56	2,55	2,57	2,56	2,56
R2	2,51	2,42	2,37	2,27	2,19	2,28	2,42
R3	2,51	2,41	2,34	2,25	2,16	2,26	2,41
R4	2,37	2,27	2,22	2,10	2,03	2,13	2,27
R5	2,60	2,52	2,47	2,37	2,30	2,39	2,52
R6	2,55	2,47	2,40	2,28	2,20	2,30	2,45
Min	1,7	1,7	1,7	1,7	1,7	1,7	1,7
Max	–	–	–	–	–	–	–
Unit	V/us	V/us	V/us	V/us	V/us	V/us	V/us



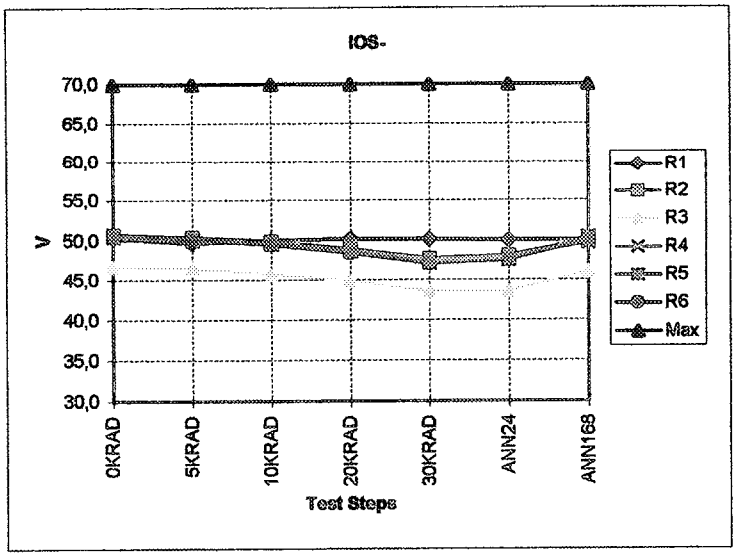
VO+	0KRAD	5KRAD	10KRAD	20KRAD	30KRAD	ANN24	ANN168
R1	14,03	14,03	14,03	14,03	14,03	14,03	14,03
R2	14,03	14,03	14,02	14,02	14,01	14,01	14,02
R3	14,02	14,02	14,01	14,01	14,00	14,00	14,01
R4	14,02	14,02	14,02	14,01	14,00	14,00	14,01
R5	14,03	14,03	14,03	14,02	14,01	14,01	14,02
R6	14,03	14,03	14,03	14,02	14,01	14,01	14,02
Min	11,5	11,5	11,5	11,5	11,5	11,5	11,5
Max	–	–	–	–	–	–	–
Unit	V	V	V	V	V	V	V



VO-	0KRAD	5KRAD	10KRAD	20KRAD	30KRAD	ANN24	ANN168
R1	-13,95	-13,94	-13,94	-13,94	-13,95	-13,95	-13,95
R2	-13,92	-13,94	-13,95	-13,96	-13,97	-13,96	-13,94
R3	-13,93	-13,94	-13,96	-13,97	-13,98	-13,97	-13,94
R4	-13,95	-13,96	-13,97	-13,98	-14,00	-13,96	-13,96
R5	-13,92	-13,93	-13,94	-13,96	-13,97	-13,96	-13,94
R6	-13,93	-13,94	-13,95	-13,97	-13,98	-13,97	-13,94
Min	–	–	–	–	–	–	–
Max	-11,5	-11,5	-11,5	-11,5	-11,5	-11,5	-11,5
Unit	V	V	V	V	V	V	V



IOS+	0KRAD	5KRAD	10KRAD	20KRAD	30KRAD	ANN24	ANN168
R1	-42,52	-42,47	-42,57	-42,51	-42,50	-42,51	-42,55
R2	-43,28	-42,97	-42,56	-42,33	-41,97	-42,31	-42,75
R3	-40,15	-39,50	-39,14	-38,87	-38,51	-39,01	-39,83
R4	-42,56	-42,15	-41,87	-41,57	-41,02	-41,97	-42,00
R5	-42,75	-42,19	-41,74	-41,51	-41,12	-41,68	-42,76
R6	-42,95	-42,42	-41,85	-41,45	-41,10	-41,81	-42,76
Min	–	–	–	–	–	–	–
Max	-70	-70	-70	-70	-70	-70	-70
Unit	mA	mA	mA	mA	mA	mA	mA



IOS-	0KRAD	5KRAD	10KRAD	20KRAD	30KRAD	ANN24	ANN168
R1	50,27	49,65	49,97	50,16	50,09	49,96	50,01
R2	50,73	50,35	49,82	48,91	47,66	48,06	49,95
R3	46,73	46,42	45,65	44,84	43,49	43,49	46,03
R4	50,45	49,97	49,53	48,71	47,57	47,99	49,61
R5	50,68	50,23	49,77	48,55	47,10	47,53	50,34
R6	50,64	50,18	49,42	48,39	47,04	47,52	49,94
Min	–	–	–	–	–	–	–
Max	70	70	70	70	70	70	70
Unit	mA	mA	mA	mA	mA	mA	mA

DOSIMETRY

RO	TOTAL DOSE RADIATION TEST REPORT No. RO-TLG-RR-0007	Issue: 1 Rev.: Date: 06/10/99 ANNEX

User:Tecnológica S.A.
Ref.: Tecnológica 3.3.99
Date: 21/09/99

REQUIREMENTS

Krad(Si)/h	Rad(Si)/min	R/min
10.00	166.67	192.68

CORRECTIONS

Presion (mm)	703
Temperature (ºC)	25.1
Final Equip. reading (R/min)	173.20

FRICKE DOSIMETRY

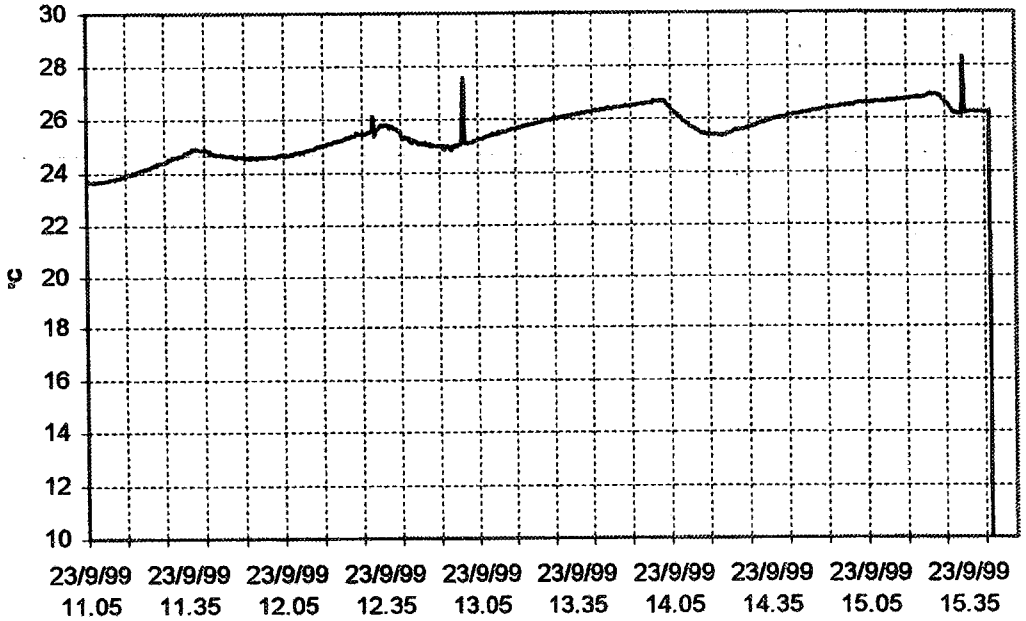
Irradiation time (h)	1.25
Spectrometer temp.(ºC)	24.7
Coeficiente de ex. molar	2181
Factor de conversión	27613.24

Dosimeter	Fricke Reading	Rad (Fricke)	Rad (Fricke)/min	R/min	Rad(Si)/ min	Krad(Si)/h
D-1	0.472	13033.45	173.78	179.15	154.96	9.30
D-2	0.511	14110.37	188.14	193.96	167.78	10.07
D-3	0.544	15021.60	200.29	206.48	178.61	10.72
PROBE				200.53	173.46	10.41
D-4	0.563	15546.25	207.28	213.69	184.84	11.09
D-5	0.553	15270.12	203.60	209.90	181.56	10.89
D-6	0.524	14469.34	192.92	198.89	172.04	10.32

DOSE RATE (AVERAGE): D2-D5

Rad(Si)/min	177.25
Krad(Si)/h	10.64
Non Uniformity (%)	9.62

TEMPERATURE °C



IRRADIATION DATA