

RADIATION TEST REPORT

PRODUCT: AD524SDQMLR

MASK:

FILE:

DATE CODE:

GAMMA: 0, 100K

GAMMA SOURCE: Co60

DOSE RATE: 44.15 rad/sec

FACILITIES: National Semiconductor
Sunnyvale, Ca.

TESTED: February 12,2004

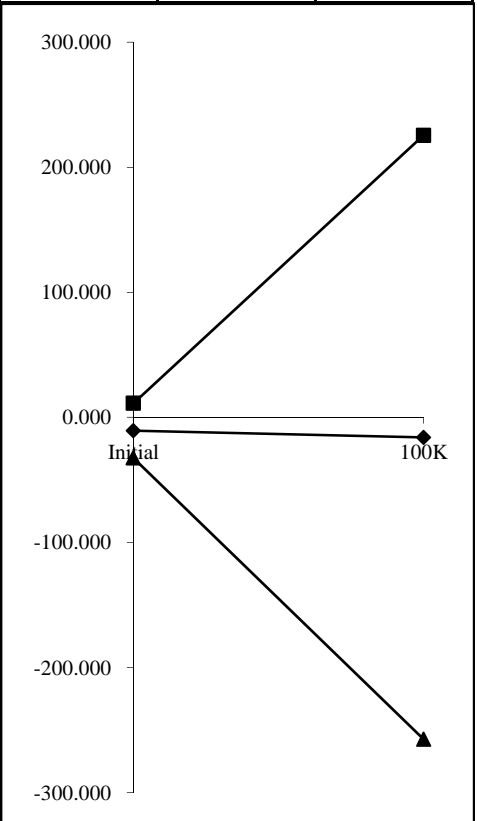
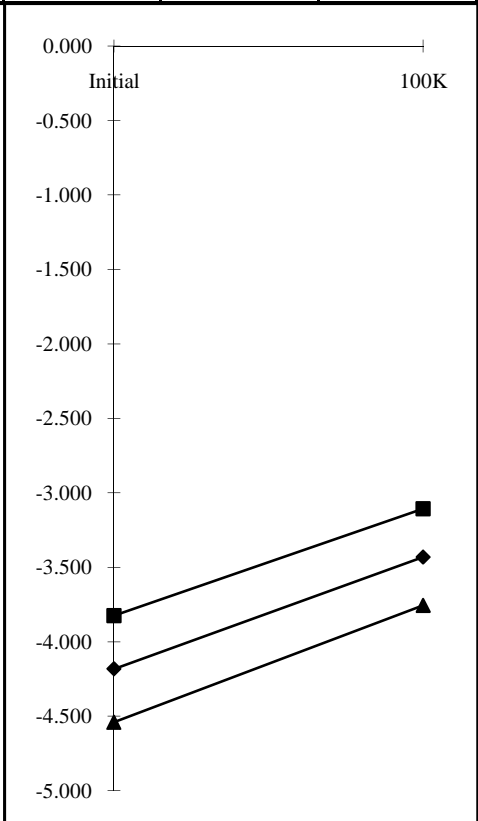
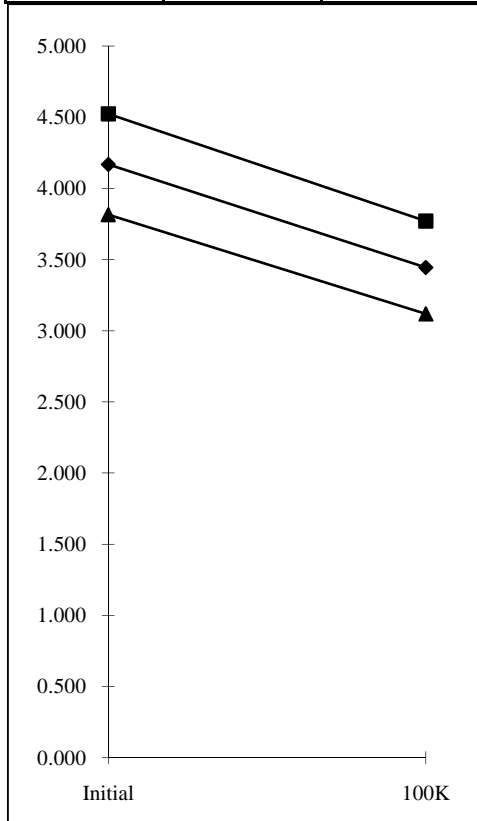
The RADTESTSM DATA SERVICE is a compilation of radiation test results on Analog Devices' Space grade products. It is designed to assist customers in selecting the right product for applications where radiation is a consideration. Many products manufactured by Analog Devices, Inc. have been shown to be radiation tolerant to most tactical radiation environments, Analog Devices, Inc. does not make any claim to maintain or guarantee these levels of radiation tolerance without lot qualification test.

It is the responsibility of the Procuring Activity to screen products from Analog Devices, Inc. for compliance to Nuclear Hardness Critical Items (HCI) specifications.

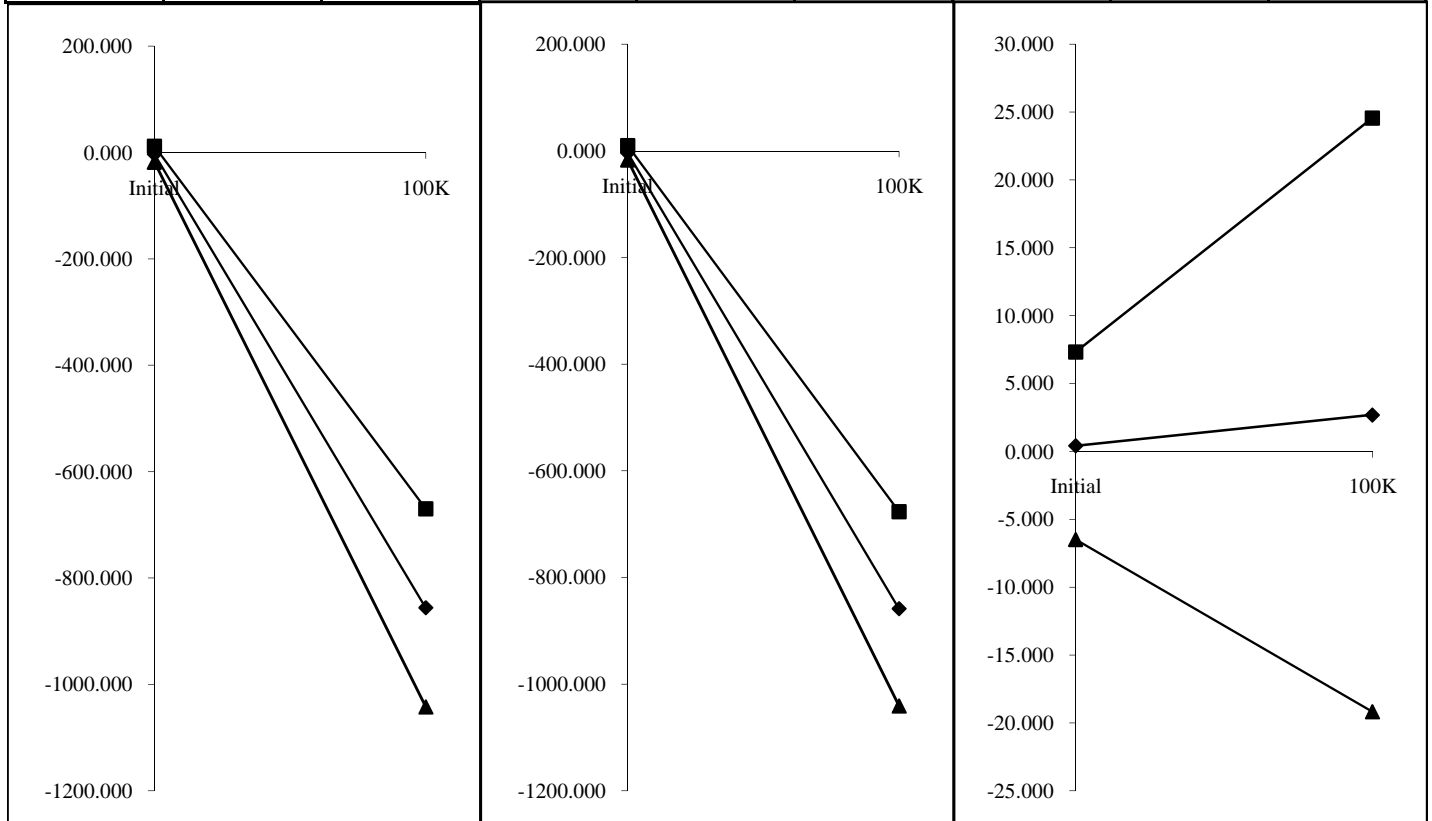
WARNING:

Analog Devices, Inc. does not recommend use of this data to qualify other product grades or process levels. Analog Devices, Inc. is not responsible and has no liability for any consequences, and all applicable Warranties are null and void, if any Analog product is modified in any way or used outside of normal environmental and operating conditions, including the parameters specified in the corresponding data sheet. Analog Devices does not guarantee that wafer manufacturing is the same for all process levels.

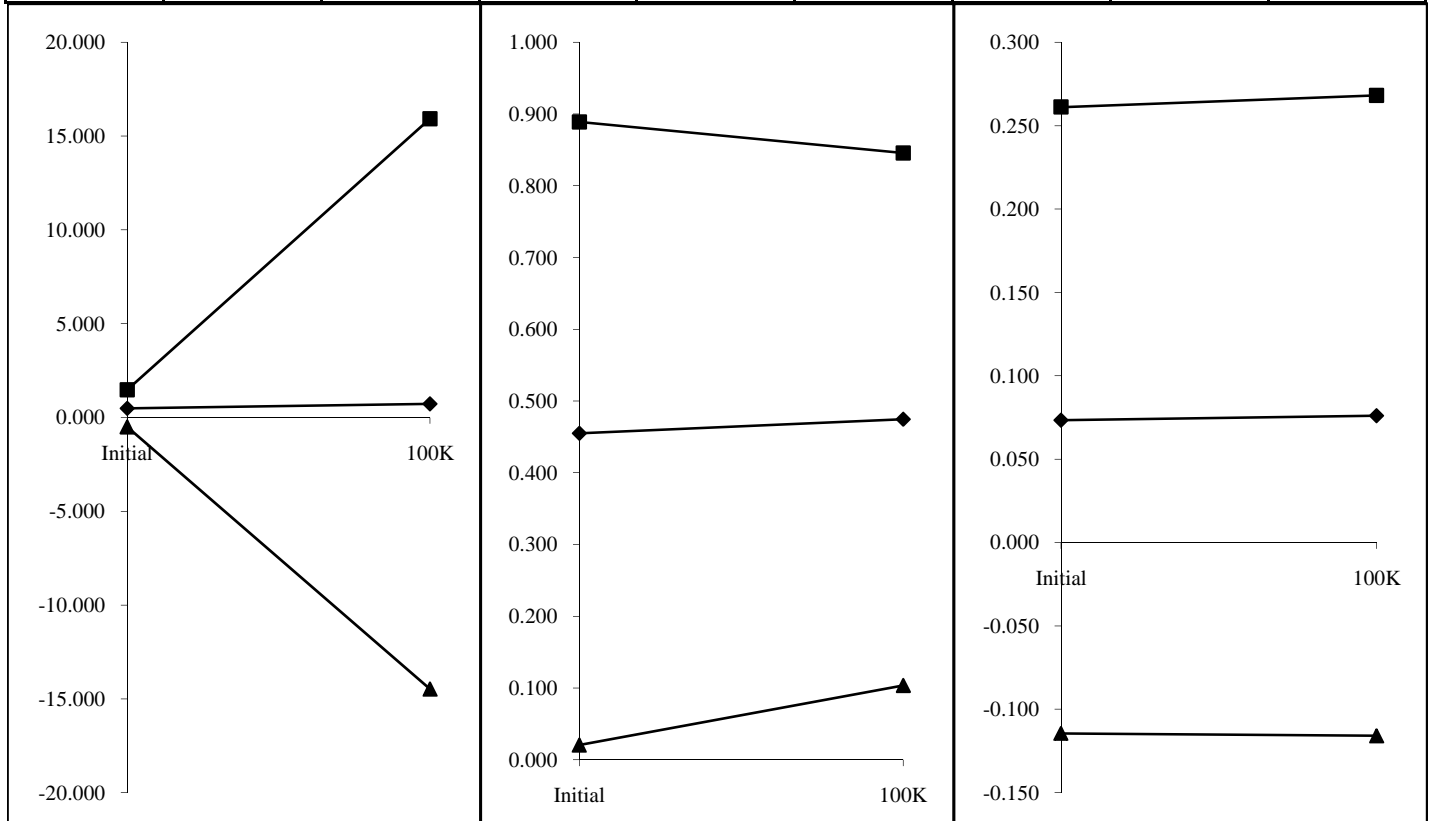
T# 1.0	ICC+	mA	T# 2.0	ICC-	mA	T# 3.0	VOSI	uV
SN	Initial	100K	SN	Initial	100K	SN	Initial	100K
1	4.208	4.213	1	-4.222	-4.208	1	-18.381	-19.130
2	4.188	3.388	2	-4.201	-3.371	2	-8.734	-9.276
3	4.162	3.417	3	-4.178	-3.408	3	0.464	-16.749
28	4.223	3.488	28	-4.235	-3.471	28	-7.908	-47.971
29	4.112	3.377	29	-4.124	-3.367	29	-7.678	15.949
50	4.152	3.499	50	-4.165	-3.489	50	-27.017	-22.226
52	4.012	3.370	52	-4.024	-3.359	52	-14.871	-12.166
75	4.321	3.690	75	-4.335	-3.675	75	-16.793	-64.439
76	4.222	3.427	76	-4.237	-3.415	76	-7.683	129.218
99	4.243	3.441	99	-4.254	-3.429	99	-22.319	-36.674
100	4.207	3.418	100	-4.219	-3.407	100	-9.059	-16.340
123	4.271	3.526	123	-4.290	-3.514	123	-9.642	-65.779
125	4.273	3.592	125	-4.288	-3.577	125	-17.685	-30.924
148	4.041	3.396	148	-4.053	-3.385	148	-16.563	-121.475
149	3.952	3.349	149	-3.965	-3.338	149	-3.763	-38.023
175	4.172	3.456	175	-4.181	-3.449	175	3.539	-41.016
176	4.249	3.510	176	-4.269	-3.492	176	-11.173	-28.202
198	4.226	3.506	198	-4.238	-3.493	198	-16.000	-46.226
199	4.121	3.429	199	-4.132	-3.414	199	-6.092	-91.165
223	4.228	3.435	223	-4.244	-3.418	223	-15.849	163.346
224	4.281	3.476	224	-4.296	-3.466	224	-5.642	-103.242
248	4.236	3.482	248	-4.247	-3.469	248	-3.323	198.681
249	3.835	3.101	249	-3.847	-3.088	249	-8.553	-66.148
min	3.835	3.101	min	-4.335	-3.675	min	-27.017	-121.475
max	4.321	3.690	max	-3.847	-3.088	max	3.539	198.681
stdev	0.118	0.109	stdev	0.119	0.108	stdev	7.265	80.484
average	4.169	3.444	average	-4.183	-3.432	average	-10.561	-15.948
+3S	4.524	3.771	+3S	-3.826	-3.107	+3S	11.234	225.505
-3S	3.815	3.118	-3S	-4.540	-3.756	-3S	-32.356	-257.400



T# 4.0	IB, -IN	nA	T# 5.0	IB, +IN	nA	T# 6.0	IOS	nA
SN	Initial	100K	SN	Initial	100K	SN	Initial	100K
1	2.839	3.106	1	3.337	3.312	1	-0.405	-0.061
2	7.762	-891.579	2	9.275	-889.351	2	-1.528	-1.937
3	-5.551	-900.104	3	-4.900	-909.974	3	-0.717	10.021
28	-6.833	-918.177	28	-5.770	-917.773	28	-1.162	-0.457
29	-12.144	-939.851	29	-12.806	-944.195	29	0.565	4.350
50	-2.566	-765.483	50	-3.022	-768.269	50	0.442	2.694
52	-2.277	-765.612	52	-2.129	-764.561	52	-0.252	-1.015
75	-5.077	-866.080	75	-8.761	-877.354	75	3.633	10.990
76	-9.588	-903.296	76	-5.128	-892.358	76	-4.520	-10.830
99	2.312	-882.397	99	-4.396	-895.053	99	6.716	12.524
100	-2.086	-908.544	100	-1.046	-907.188	100	-1.345	-1.496
123	2.259	-809.008	123	2.689	-827.158	123	-0.420	18.141
125	3.076	-812.198	125	-0.374	-817.961	125	3.472	5.945
148	-2.383	-822.700	148	-3.358	-832.524	148	1.030	9.883
149	-0.733	-737.605	149	-1.511	-738.903	149	0.610	1.397
175	-2.124	-832.622	175	-3.183	-834.363	175	0.733	1.534
176	-3.429	-841.589	176	-4.816	-834.867	176	1.389	-7.241
198	-8.771	-878.078	198	-8.723	-879.361	198	-0.191	1.091
199	3.228	-857.258	199	0.076	-867.990	199	3.137	10.815
223	-4.589	-926.809	223	-3.328	-919.817	223	-1.475	-7.060
224	-9.985	-951.345	224	-9.135	-950.064	224	-1.010	-1.550
248	-7.268	-869.692	248	-6.708	-865.088	248	-0.496	-4.603
249	-1.773	-756.454	249	-2.198	-762.645	249	0.366	6.045
min	-12.144	-951.345	min	-12.806	-950.064	min	-4.520	-10.830
max	7.762	-737.605	max	9.275	-738.903	max	6.716	18.141
stdev	4.938	62.092	stdev	4.544	60.661	stdev	2.302	7.291
average	-3.115	-856.204	average	-3.602	-858.946	average	0.408	2.693
+3S	11.698	-669.927	+3S	10.031	-676.964	+3S	7.313	24.565
-3S	-17.928	-1042.480	-3S	-17.235	-1040.928	-3S	-6.497	-19.179



T# 7.0	VOSO	mV	T# 8.0	GE@ G=1000	%	T# 9.0	GE@ G=100	%
SN	Initial	100K	SN	Initial	100K	SN	Initial	100K
1	0.238	0.463	1	0.658	0.715	1	0.052	0.058
2	0.591	3.054	2	0.497	0.551	2	0.039	0.033
3	0.612	0.711	3	0.490	0.404	3	0.080	0.101
28	0.349	3.059	28	0.511	0.463	28	0.086	0.092
29	0.170	6.348	29	0.538	0.602	29	0.152	0.141
50	0.739	3.052	50	0.569	0.566	50	0.049	0.007
52	0.195	-3.687	52	0.655	0.360	52	0.083	0.068
75	0.397	-0.450	75	0.596	0.596	75	0.040	0.053
76	0.415	4.732	76	0.592	0.591	76	0.172	0.210
99	1.063	7.373	99	0.633	0.633	99	0.023	0.036
100	-0.181	-0.663	100	0.368	0.363	100	0.010	0.028
123	0.029	-7.981	123	0.430	0.427	123	0.162	0.167
125	0.810	-3.990	125	0.437	0.420	125	0.006	0.026
148	1.035	-0.908	148	0.529	0.522	148	0.009	0.001
149	0.150	0.868	149	0.513	0.577	149	0.071	0.055
175	0.517	0.545	175	0.427	0.372	175	0.109	0.105
176	0.374	0.034	176	0.490	0.600	176	0.008	0.010
198	0.435	-3.391	198	0.279	0.131	198	0.002	0.005
199	1.097	-5.160	199	0.273	0.428	199	0.087	0.094
223	0.671	13.070	223	0.377	0.467	223	0.045	0.069
224	0.266	-6.893	224	0.256	0.353	224	0.017	0.021
248	0.447	7.198	248	0.505	0.620	248	0.211	0.201
249	0.450	-0.989	249	0.040	0.394	249	0.153	0.152
min	-0.181	-7.981	min	0.040	0.131	min	0.002	0.001
max	1.097	13.070	max	0.655	0.633	max	0.211	0.210
stdev	0.330	5.066	stdev	0.145	0.124	stdev	0.063	0.064
average	0.483	0.724	average	0.455	0.475	average	0.073	0.076
+3S	1.473	15.923	+3S	0.889	0.846	+3S	0.261	0.268
-3S	-0.507	-14.474	-3S	0.020	0.103	-3S	-0.114	-0.116



T# 10.0	GE@ G=10	%	T# 11.0	GE@ G=1	%
SN	Initial	100K	SN	Initial	100K
1	0.176	0.159	1	0.036	0.037
2	0.168	0.170	2	0.042	0.047
3	0.164	0.165	3	0.034	0.037
28	0.170	0.171	28	0.036	0.037
29	0.161	0.161	29	0.033	0.039
50	0.156	0.154	50	0.037	0.038
52	0.161	0.148	52	0.037	0.032
75	0.066	0.064	75	0.039	0.043
76	0.194	0.196	76	0.039	0.046
99	0.152	0.153	99	0.040	0.044
100	0.175	0.175	100	0.035	0.040
123	0.155	0.153	123	0.030	0.033
125	0.150	0.150	125	0.032	0.035
148	0.163	0.160	148	0.034	0.037
149	0.172	0.168	149	0.039	0.042
175	0.166	0.159	175	0.039	0.039
176	0.128	0.127	176	0.034	0.038
198	0.170	0.170	198	0.038	0.043
199	0.152	0.150	199	0.037	0.041
223	0.161	0.160	223	0.032	0.038
224	0.185	0.183	224	0.038	0.042
248	0.178	0.176	248	0.042	0.045
249	0.179	0.177	249	0.043	0.048
min	0.066	0.064	min	0.030	0.032
max	0.194	0.196	max	0.043	0.048
stdev	0.025	0.026	stdev	0.004	0.004
average	0.160	0.159	average	0.037	0.040
+3S	0.236	0.235	+3S	0.047	0.053
-3S	0.085	0.082	-3S	0.026	0.027

