

RADIATION TEST REPORT

PRODUCT: OP15AZQMLR

MASK:

FILE:

DATE CODE:

GAMMA: 0, 100K

GAMMA SOURCE: Co60

DOSE RATE: 37.20 rad/sec

FACILITIES: National Semiconductor
Sunnyvale, Ca.

TESTED: June 01, 2005

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.

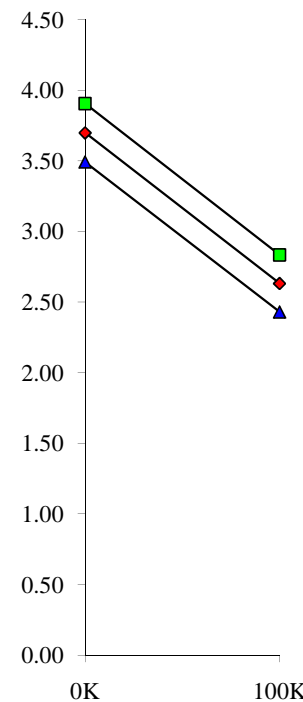
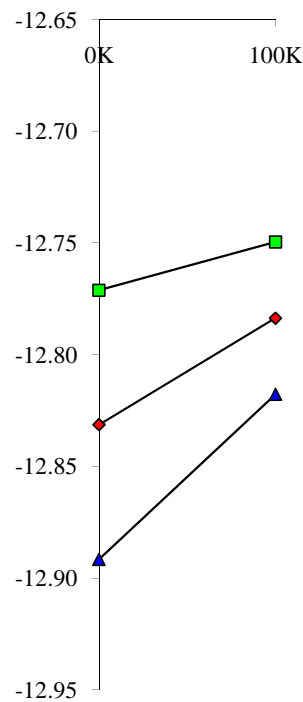
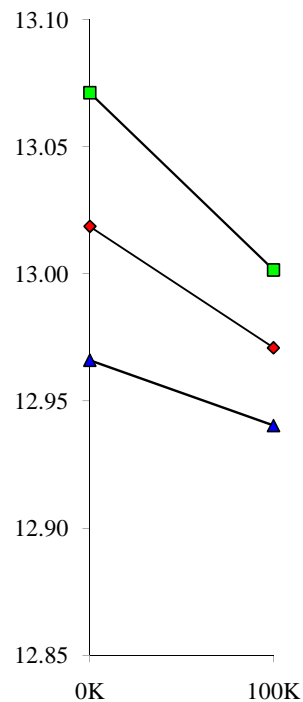
It is the responsibility of the Procuring Activity to screen products from Analog Devices, Inc. for compliance to Nuclear Hardness Critical Items (HC) specifications.

WARNING:

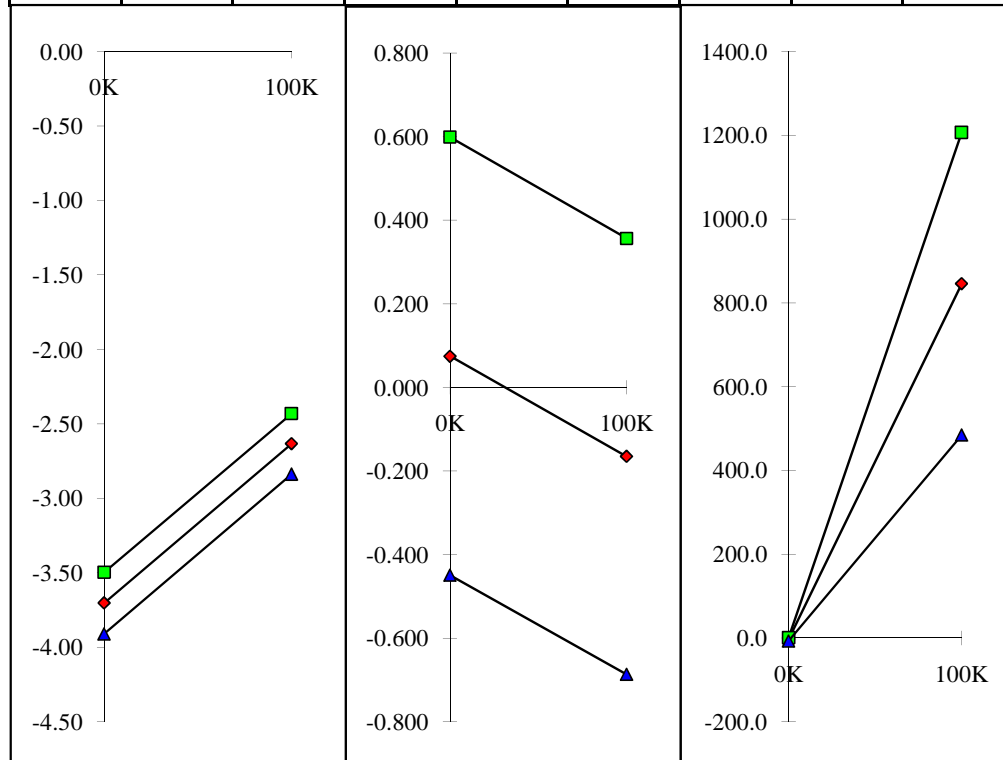
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T# 1	VO+	V	T# 2	VO-	V	T# 3	ICC+	mA
SN	0K	100K	SN	0K	100K	SN	0K	100K
1	13.01	13.00	1	-12.82	-12.80	1	3.61	3.58
2	13.01	12.97	2	-12.81	-12.77	2	3.60	2.53
3	13.00	12.96	3	-12.81	-12.77	3	3.53	2.52
5	13.00	12.96	5	-12.80	-12.76	5	3.56	2.54
17	13.01	12.97	17	-12.83	-12.79	17	3.81	2.82
18	13.00	12.96	18	-12.82	-12.78	18	3.67	2.66
19	13.00	12.97	19	-12.81	-12.78	19	3.64	2.66
33	13.00	12.98	33	-12.82	-12.80	33	3.76	2.68
34	13.01	12.98	34	-12.83	-12.79	34	3.78	2.68
45	13.00	12.97	45	-12.81	-12.78	45	3.73	2.64
46	13.00	12.97	46	-12.81	-12.78	46	3.70	2.61
60	13.00	12.97	60	-12.81	-12.78	60	3.78	2.73
62	13.03	12.97	62	-12.84	-12.78	62	3.70	2.62
76	13.04	12.99	76	-12.86	-12.80	76	3.74	2.62
77	13.04	12.98	77	-12.84	-12.78	77	3.66	2.59
93	13.04	12.98	93	-12.86	-12.80	93	3.71	2.61
94	13.04	12.98	94	-12.86	-12.80	94	3.70	2.61
110	13.04	12.97	110	-12.84	-12.78	110	3.70	2.60
111	13.03	12.97	111	-12.84	-12.78	111	3.71	2.62
122	13.04	12.98	122	-12.86	-12.80	122	3.72	2.61
123	13.04	12.98	123	-12.86	-12.79	123	3.75	2.67
142	13.02	12.95	142	-12.84	-12.77	142	3.67	2.58
143	13.02	12.95	143	-12.83	-12.78	143	3.73	2.69
min	13.00	12.95	min	-12.86	-12.80	min	3.53	2.52
max	13.04	12.99	max	-12.80	-12.76	max	3.81	2.82
stdev	0.02	0.01	stdev	0.02	0.01	stdev	0.07	0.07
average	13.02	12.97	average	-12.83	-12.78	average	3.70	2.63
+3S	13.07	13.00	+3S	-12.77	-12.75	+3S	3.91	2.83
-3S	12.97	12.94	-3S	-12.89	-12.82	-3S	3.49	2.43



T# 4	ICC-	mA	T# 5	VOS	mV	T# 6	IIB+	pA
SN	0K	100K	SN	0K	100K	SN	0K	100K
1	-3.61	-3.58	1	0.265	0.241	1	-1.7	-2.2
2	-3.60	-2.54	2	-0.015	-0.254	2	-2.3	825.1
3	-3.53	-2.51	3	0.279	-0.006	3	-2.0	762.2
5	-3.57	-2.54	5	0.260	-0.018	5	-0.5	742.8
17	-3.82	-2.82	17	0.048	-0.179	17	-2.3	703.0
18	-3.68	-2.66	18	-0.024	-0.343	18	-2.6	738.6
19	-3.65	-2.67	19	0.142	-0.049	19	-1.0	655.5
33	-3.76	-2.68	33	0.371	0.131	33	-1.2	718.9
34	-3.78	-2.69	34	0.075	-0.153	34	-3.2	803.4
45	-3.73	-2.64	45	-0.146	-0.382	45	-5.6	897.4
46	-3.71	-2.61	46	0.058	-0.193	46	-3.7	990.9
60	-3.78	-2.73	60	0.165	-0.030	60	-3.1	868.0
62	-3.71	-2.63	62	0.256	-0.075	62	-4.7	944.7
76	-3.74	-2.63	76	-0.135	-0.437	76	-2.9	1106.2
77	-3.67	-2.59	77	-0.287	-0.485	77	-3.1	820.2
93	-3.71	-2.60	93	0.085	-0.145	93	-3.6	914.1
94	-3.70	-2.61	94	0.390	0.155	94	-3.9	832.9
110	-3.71	-2.60	110	0.053	-0.092	110	-3.1	880.5
111	-3.72	-2.62	111	-0.026	-0.269	111	-1.4	847.2
122	-3.72	-2.62	122	-0.172	-0.377	122	-3.3	1029.0
123	-3.76	-2.67	123	0.088	-0.189	123	-5.1	1020.7
142	-3.67	-2.59	142	-0.001	-0.236	142	-4.7	829.4
143	-3.73	-2.69	143	0.185	-0.002	143	-2.5	679.6
min	-3.82	-2.82	min	-0.287	-0.485	min	-5.6	655.5
max	-3.53	-2.51	max	0.390	0.155	max	-0.5	1106.2
stdev	0.07	0.07	stdev	0.175	0.174	stdev	1.3	120.4
average	-3.70	-2.63	average	0.075	-0.165	average	-3.0	845.9
+3S	-3.50	-2.43	+3S	0.599	0.357	+3S	1.0	1207.2
-3S	-3.91	-2.84	-3S	-0.449	-0.686	-3S	-7.0	484.6



T# 7	IIB-	pA	T# 8	IOS	pA	T# 9	AVO	V/mV
SN	0K	100K	SN	0K	100K	SN	0K	100K
1	2.3	0.2	1	4.1	5.3	1	325	344
2	1.2	891.8	2	3.6	67.1	2	341	253
3	0.8	794.1	3	3.0	33.6	3	334	264
5	1.6	793.3	5	3.1	50.6	5	329	261
17	1.3	732.6	17	4.0	28.7	17	311	238
18	-0.2	720.7	18	3.1	15.7	18	295	241
19	1.0	730.2	19	3.5	75.0	19	324	262
33	1.1	751.5	33	3.5	34.6	33	290	238
34	0.4	842.3	34	3.6	40.4	34	306	235
45	-1.6	971.1	45	5.2	74.9	45	298	241
46	-0.7	1022.8	46	4.1	30.3	46	306	225
60	1.2	826.2	60	4.5	43.1	60	309	223
62	0.9	919.7	62	5.4	24.9	62	305	228
76	2.0	1108.3	76	5.1	1.0	76	274	222
77	0.3	900.6	77	3.5	82.3	77	309	248
93	1.2	999.9	93	4.9	85.5	93	285	225
94	0.0	911.1	94	4.5	77.4	94	305	240
110	0.1	974.5	110	4.0	93.0	110	297	231
111	1.8	918.8	111	3.8	72.9	111	305	250
122	0.6	1034.4	122	4.4	3.9	122	303	228
123	-0.9	1020.5	123	4.9	1.6	123	313	239
142	-1.5	861.4	142	3.7	34.0	142	290	247
143	0.0	740.2	143	3.0	59.3	143	295	230
min	-1.6	720.7	min	3.0	1.0	min	274	222
max	2.0	1108.3	max	5.4	93.0	max	341	264
stdev	1.0	114.8	stdev	0.7	28.7	stdev	16	13
average	0.5	884.8	average	4.0	46.8	average	306	240
+3S	3.5	1229.3	+3S	6.3	132.8	+3S	353	278
-3S	-2.5	540.3	-3S	1.8	-39.2	-3S	258	201

