



**OP270 QMLV & QMLR Fab Transfer**  
**from Santa Clara 100 mm to Wilmington 150 mm Qual Data**

**WAFER LOT ACCEPTANCE TEST DATA – Ref. MIL-STD-883, TM5007**

TEST	SPECIFICATION	RESULTS (ALL PASS)	COMPLETION DATE
Wafer Thickness	25 to 28 mils	26-27 mils	2-17-2011
Metal Thickness	10,000 to 12, 000 Å	10462 to 10663 Å	
CV/Thermal Stability	-0.4 to 0.1 V	0.05 to 0.01 V	
Step Coverage	50% min	84% minimum	
Glassivation Thickness	9000 to 11,000 Å	9859 Å min/ 9930 Å max	

**5962-8872101VPA (OP270AZ/QMLV)**

**Release Number E188285.1**

**Datecode 1118A**

TEST	CONDITIONS	COMPLETION DATE (ALL PASS)
<b>GROUP A TESTS</b>		
Ambient Tests – Subgroup 1,4,7	+25C	7-15-2011 ↓ V
Temp Tests – Subgroup 2 & 5	+125C	
Temp Tests – Subgroups 3 & 6	-55C	
Average input offset voltage drift (TCVOS)	-55C, +125C, -55C	
Input noise voltage $E_{n_t}$	+25C	



## RADIATION TEST REPORT

PRODUCT: OP270AZQMLR  
TEST FOR 150 mm WAFERS

GAMMA/TM: 100k/TM1019 Condition A

GAMMA SOURCE: Co60

DOSE RATE: 118 Rad(si)/s

FACILITIES: University of Massachusetts @ Lowell

TESTED: 10/27/2011

The RADTEST<sup>SM</sup> 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.

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SN	+ ISY VS=15V	+ ISY VS=15V	- ISY VS=15V	- ISY VS=15V	VOS 50 OHM	VOS 50 OHM	VOS 50 OHM	VOS 50 OHM
	(mA)	(mA)	(mA)	(mA)	SIDE A (uV)	SIDE A (uV)	SIDE B (uV)	SIDE B (uV)
	0K	100K	0K	100K	0K	100K	0K	100K
17	5.009	4.92	-4.985	-4.925	11.002	11.052	-6.782	-7.458
18	5.072	4.581	-5.058	-4.587	-9.714	-24.182	11.182	-6.925
19	5.028	4.609	-5.02	-4.623	-14.771	-31.687	-15.316	-26.444
20	5.064	4.615	-5.059	-4.629	-30.983	-47.737	-27.346	-41.427
21	4.992	4.72	-4.984	-4.729	7.742	-25.774	-3.146	-52.205
30	4.853	4.532	-4.558	-4.558	-18.089	-39.859	-2.732	-18.313
34	4.955	4.542	-4.934	-4.567	-3.918	-25.674	-10.01	-22.75
35	4.899	4.6	-4.905	-4.608	5.572	-18.565	-38.78	-58.998
36	4.91	4.586	-4.904	-4.59	-24.317	-52.059	-3.967	-22.902
67	4.78	4.412	-4.768	-4.424	0.348	-19.69	-6.673	-18.458
68	4.901	4.491	-4.897	-4.492	-27.614	-38.971	-16.248	-28.228
69	4.907	4.52	-4.871	-4.523	12.664	9.966	-7.499	-12.789
70	4.946	4.565	-4.925	-4.558	-24.391	-40.088	-19.883	-38.897
93	4.988	4.575	-4.982	-4.577	-23.163	-41.097	-18.871	-31.323
94	4.915	4.486	-4.92	-4.474	-35.773	-49.146	-17.902	-26.697
95	4.952	4.586	-4.934	-4.572	-8.23	-36.724	-7.619	-27.976
96	4.838	4.409	-4.823	-4.426	-13.374	-32.842	-12.241	-28.134
108	5.068	4.559	-5.058	-4.562	-3.662	-21.642	-4.663	-21.743
109	5.047	4.59	-5.041	-4.598	-16.714	-38.812	4.921	-13.405
110	5.066	4.625	-5.058	-4.646	-16.018	-35.243	-20.028	-39.547
111	5.041	4.653	-5.027	-4.649	-28.038	-51.217	-31.75	-49.285
min	4.780	4.409	-5.059	-4.729	-35.773	-52.059	-38.780	-58.998
max	5.072	4.720	-4.768	-4.424	12.664	9.966	11.182	-6.925
mean	4.961	4.563	-4.951	-4.570	-13.622	-33.052	-12.429	-29.322
std. dev	0.086	0.075	0.086	0.075	13.577	14.455	12.041	13.724
mean - 3 sigma	4.703	4.339	-5.210	-4.794	-54.353	-76.418	-48.553	-70.494
mean +3 sigma	5.219	4.787	-4.693	-4.345	27.109	10.313	23.696	11.849

SN	+ IB VCM=0V	+ IB VCM=0V	+ IB VCM=0V	+ IB VCM=0V	- IB VCM=0V	- IB VCM=0V	- IB VCM=0V	- IB VCM=0V
	SIDE A (nA)	SIDE A (nA)	SIDE B (nA)	SIDE B (nA)	SIDE A (nA)	SIDE A (nA)	SIDE B (nA)	SIDE B (nA)
	0K	100K	0K	100K	0K	100K	0K	100K
17	10.085	9.662	9.029	8.737	8.026	7.655	6.652	6.279
18	7.022	454.325	5.339	429.782	5.694	463.383	4.122	437.717
19	4.813	495.295	3.601	488.553	3.866	511.476	2.374	492.726
20	7.724	520.844	7.192	438.219	5.788	530.335	5.548	446.177
21	9.373	703.472	7.827	729.87	8.075	747.154	5.649	759.618
30	7.666	536.728	8.727	405.462	6.287	539.249	7.297	406.366
34	12.195	623.38	11.243	507.493	10.786	645.282	9.204	516.064
35	10.649	688.572	9.13	648.491	10.393	699.915	9.229	683.183
36	12.631	640.018	11.722	639.935	11.094	649.989	9.697	639.062
67	7.767	375.254	4.989	351.058	6.532	389.487	3.502	369.519
68	9.068	505.493	7.198	492.65	7.189	520.962	5.425	498.184
69	8.351	467.495	5.172	515.665	7.079	475.27	4.342	523.485
70	8.09	707.334	7.774	686.778	7.912	725.396	6.524	705.885
93	10.663	515.416	7.984	517.14	9.626	524.27	6.318	519.878
94	5.333	504.943	3.801	502.486	5.025	516.169	2.94	501.003
95	10.239	727.099	8.128	754.496	9.204	737.026	6.776	765.856
96	4.897	417.849	3.858	378.603	4.335	425.031	3.031	392.236
108	7.937	502.046	7.245	487.425	6.655	515.531	5.571	487.125
109	7.882	506.467	6.609	473.891	8	520.715	5.264	482.241
110	6.648	678.69	6.602	594.34	6.391	680.724	5.224	597.132
111	8.062	592.648	5.755	626.685	7.632	623.586	5.403	640.01
min	4.813	375.254	3.601	351.058	3.866	389.487	2.374	369.519
max	12.631	727.099	11.722	754.496	11.094	747.154	9.697	765.856
mean	8.530	555.220	7.105	530.418	7.378	572.048	5.672	543.173
std. dev	2.379	111.089	2.491	125.091	2.054	107.629	2.065	119.439
mean - 3 sigma	1.392	221.952	-0.366	155.146	1.217	249.161	-0.524	184.857
mean +3 sigma	15.668	888.488	14.577	905.689	13.540	894.934	11.868	901.490

SN	IOS VCM=0V	IOS VCM=0V	IOS VCM=0V	IOS VCM=0V	AVO RL=10K	AVO RL=10K	AVO RL=10K	AVO RL=10K
	SIDE A (nA)	SIDE A (nA)	SIDE B (nA)	SIDE B (nA)	SIDE A (V/mV)	SIDE A (V/mV)	SIDE B (V/mV)	SIDE B (V/mV)
	0K	100K	0K	100K	0K	100K	0K	100K
17	2.053	1.991	2.401	2.384	3734	4681.5	3446.2	4146
18	1.337	-10.643	1.179	-8.463	4640.1	301	3948	314.9
19	0.92	-17.212	1.224	-5.603	3898	328.4	3959.2	324.7
20	1.937	-10.717	1.625	-9.491	4392	292.3	3532.9	289
21	1.317	-44.628	2.221	-30.912	2887.2	267	3628.9	264.9
30	1.337	-3.839	1.492	-2.127	4973	328.1	3817.5	311.3
34	1.418	-23.498	2.027	-9.651	4003.6	265.2	3082.2	264.1
35	0.307	-12.617	-0.116	-35.296	3463.4	266.8	4844.8	269.4
36	1.564	-11.254	2.019	0.041	3331.5	274.3	3443.2	278.3
67	1.204	-15.187	1.527	-19.348	3888.4	342.1	4107.4	357.1
68	1.893	-16.901	1.743	-6.936	4628.5	297.3	3595.9	285.7
69	1.283	-9.619	0.839	-8.888	3200.5	317.4	3646.8	309.7
70	0.177	-18.885	1.225	-19.288	3559	263.7	3056.7	264
93	1.006	-10.71	1.653	-5.077	4441.3	278.8	3549.9	284.1
94	0.336	-12.062	0.848	0.038	3783.6	314	4345.6	311
95	1	-11.638	1.367	-12.476	3007.8	248.6	3692.9	251.3
96	0.543	-8.592	0.816	-14.332	4002.1	354.4	4224.7	344.4
108	1.244	-15.191	1.681	-1.168	4221.7	277.9	4450.5	286.5
109	-0.125	-15.341	1.354	-10.6	4892.2	279.9	3559.2	282.2
110	0.239	-4.051	1.32	-4.008	3568.4	278.6	4059.5	271.2
111	0.447	-32.179	0.253	-13.966	4013.9	276.5	3414.6	268.9
min	-0.125	-44.628	-0.116	-35.296	2887.200	248.600	3056.700	251.300
max	1.937	-3.839	2.221	0.041	4973.000	354.400	4844.800	357.100
mean	0.969	-15.238	1.315	-10.878	3939.810	292.615	3798.020	291.635
std. dev	0.590	9.397	0.577	9.489	603.502	29.180	449.762	28.541
mean - 3 sigma	-0.802	-43.428	-0.418	-39.345	2129.305	205.075	2448.733	206.013
mean +3 sigma	2.740	12.952	3.047	17.590	5750.315	380.155	5147.307	377.257



