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AT-27C512R CMOS EPROM RELIABILITY DATA\*

- 125°C OPERATING LIFE TEST
- 150°C HIGH TEMPERATURE REVERSE BIAS (HTRB)
- 200°C RETENTION BAKE
- PROGRAM/ERASE CYCLE
- 125°C OPERATING LIFE TEST (PLASTIC)
- 150°C RETENTION BAKE (PLASTIC)
- 15 PSIG PRESSURE POT
- 85°C/85% RELATIVE HUMIDITY OPERATING LIFE TEST
- EXTENDED THERMAL SHOCK
- EXTENDED TEMPERATURE CYCLE

\* This report was generated from AT-27C512R reliability testing. This data is applicable to the following device types due to same technology grouping as defined in MIL-M-38510 Appendix E:

AT-27C256R

AT-27C010

APRIL 2008

2325 Orchard Parkway San Jose CA. 95131

## AT-27C512/512R

125°C DYNAMIC OPERATING LIFE TEST

<u>LOT</u> <u>NUMBER</u>	<u>DATE</u> <u>CODE</u>	<u>SAMPLE</u> <u>SIZE</u>	<u>TOTAL</u> <u>CKT-HRS (K)</u>	<u>NUMBER</u> <u>OF FAILURES</u>
410-1	8650	77	77.0	0
413	8651	35	35.0	0
549-2	8701	77	77.0	0
40-1	8717	73	73.0	0
1782-1	8739	78	78.0	0
1680	8746	73	73.0	0
715	8801	78	78.0	0
3931	8810	78	78.0	0
82617	8C8834	78	78.0	0
81699	8B8831	77	77.0	0 (6.5V)
90640-1	9A8916	78	78.0	0 (R REV)
86921	9A8922	80	120.0	0
90641-3	9A8920	78	78.0	0 (R REV)
90685	9A8920	78	78.0	0 (A)
E901	9D9002	70	70.0	0 (R REV CSO)
30083	0A9015	78	78.0	0 (R REV CSO)
E901	9D9004	77	77.0	0 (R REV CSO)
00212	0B9024	77	77.0	0 (R REV CSO)
30273	0B9029	77	77.0	0 (R REV CSO)
02496	0C9041	77	77.0	0 (R REV CSO)
02653	0C9041	79	79.0	0 (R REV CSO)
10228	1B9122	78	78.0	0
131322	1B9124	77	77.0	0 (R REV CSO)
E32203-18	1C9134	78	78.0	0 (R REV CSO)
133092	1D9147	70	70.0	0 (R REV CSO)
133143	1D9146	70	70.0	0
133424	1D9207	78	78.0	0
232132	2C9232	155	155.0	0
232134B-3	2C9232	64	64.0	0
233863	2D9247	78	78.0	0
233759A-13	2D9250	78	78.0	0
2D1010-14	2D9307	80	80.0	0
2D1011A-4	3A9309	80	80.0	0
3A0669	3B9320	63	63.0	0
3C1091	3C9344	80	80.0	0
3D1095	3D9403	82	82.0	0
4A0019	4A9410	80	80.0	0
4A1336	4A9416	80	20.0	0
4B0511	4B9432	100	250.0	0
5B1375	5C9547	80	200.0	0

AT-27C512/512R

125°C DYNAMIC OPERATING LIFE TEST (CONT.)FAILURE RATE

<u>TOTAL DEVICE HOURS</u>	3,474,000 DEVICE HOURS
<u>BEST ESTIMATE</u>	$\lambda = 0.02\%$ PER 1,000 HOURS
<u>50°C AMBIENT</u>	EXTRAPOLATION TO 50°C VIA ARRHENNIUS EQUATION AND ACTIVATION ENERGY OF 0.5eV $\lambda = 0.001\%$ PER 1,000 HOURS (7 FITS)
<u>CONFIDENCE ESTIMATE</u>	$\lambda_{60} = 0.001\%$ PER 1,000 HOURS 60% CONFIDENCE (9 FITS) $\lambda_{90} = 0.002\%$ PER 1,000 HOURS 90% CONFIDENCE (23 FITS)

AT-27C512/512R

150°C HIGH TEMPERATURE REVERSE BIAS (HTRB)

<u>LOT NUMBER</u>	<u>SAMPLE SIZE</u>	<u>TOTAL CKT-HRS (K)</u>	<u>NUMBER OF FAILURES</u>
410-1	25	25.0	0
412-1	21	21.0	0
00212	77	77.0	0

FAILURE RATETOTAL DEVICE HOURS

123,000 DEVICE HOURS

BEST ESTIMATE $\lambda = 0.056\%$  PER 1,000 HOURS50°C AMBIENTEXTRAPOLATION TO 50°C VIA ARRHENNIUS  
EQUATION AND ACTIVATION ENERGY OF 0.5eV $\lambda = 0.008\%$  PER 1,000 HOURS (82 FITS)CONFIDENCE ESTIMATE

$\lambda_{60} = 0.011\%$  PER 1,000 HOURS  
60% CONFIDENCE (107 FITS)

$\lambda_{90} = 0.027\%$  PER 1,000 HOURS  
90% CONFIDENCE (272 FITS)

AT-27C512/512R

200°C RETENTION BAKE

<u>LOT NUMBER</u>	<u>DATE CODE</u>	<u>SAMPLE SIZE</u>	<u>TOTAL CKT-HRS (K)</u>	<u>NUMBER OF FAILURES</u>
715	8801	78	78.0	0
3765	8813	75	75.0	0
83609	8C8838	77	77.0	0
83821	8843	77	77.0	0
90641-3	9A8920	78	78.0	0
E901	9D9002	25	25.0	0 (R REV)
00064	0B9025	77	77.0	0 (R REV)
00212	0B9024	77	77.0	0 (R REV)
30273	0B9029	77	77.0	0 (R REV)
10228	1B9122	77	77.0	0
131322	1B9124	77	77.0	0 (R REV)
E32203-18	1C9134	77	77.0	0 (R REV)
232132	2C9232	77	77.0	0
232134B-3	2C9232	77	77.0	0
2D1010-14	2D9307	77	77.0	0
2D1011A-4	3A9309	77	77.0	0

FAILURE RATE

<u>TOTAL DEVICE HOURS</u>	1,180,000 DEVICE HOURS
<u>BEST ESTIMATE</u>	$\lambda = 0.06\%$ PER 1,000 HOURS
<u>50°C AMBIENT</u>	EXTRAPOLATION TO 50°C VIA ARRHENNIUS EQUATION AND ACTIVATION ENERGY OF 0.5eV $\lambda = 0.0002\%$ PER 1,000 HOURS (2 FITS)
<u>CONFIDENCE ESTIMATE</u>	$\lambda_{60} = 0.0003\%$ PER 1,000 HOURS 60% CONFIDENCE (3 FITS) $\lambda_{90} = 0.0007\%$ PER 1,000 HOURS 90% CONFIDENCE (7 FITS)

## AT-27C512/512R

## PROGRAM/ERASE CYCLE

<u>LOT</u> <u>NUMBER</u>	<u>DATE</u> <u>CODE</u>	<u>SAMPLE</u> <u>SIZE</u>	<u>NUMBER OF FAILURES AT CYCLES</u>				
			<u>10</u>	<u>20</u>	<u>30</u>	<u>40</u>	<u>50</u>
E901-14004	9D9002	15	0	0	0	0	0
00212	0B9024	28	0	0	0	0	0
30273	0B9029	30	0	0	0	0	0
10228	1B9122	79	0	0	0	0	0
E32203-18	1C9134	79	0	0	0	0	0
232134B-3	2C9232	65	0	0	0	0	0
233863	2D9247	80	0	0	0	0	0
3C1091	3C9344	80	0	0	0	0	0
4B0511	4B9432	100	0	0	0	0	0

AT-27C512R

PLASTIC PACKAGE

125°C DYNAMIC OPERATING LIFE TEST

<u>LOT NUMBER</u>	<u>DATE CODE</u>	<u>SAMPLE SIZE</u>	<u>TOTAL CKT-HRS(K)</u>	<u>NUMBER OF FAILS</u>
	8818	53	110.3	1 (SINGLE BIT)
96042	9C8946	76	76.0	0
E901	9D9004	77	77.0	0
00069	0B9028	72	72.0	0
04131	1A9108	110	110.0	0 (7V)
E132203	1C9139	77	77.0	0
131527	1B9138	80	80.0	0
133152	1D9146	43	43.0	0
133093	1D9204	92	92.0	0
231591	2B9221	160	160.0	0
232376	2C9230	79	79.0	0
232621	2C9231	145	145.0	0
231659	2B9229	80	80.0	0
234031	2D9248	163	163.0	0
233759D	2D9250	319	319.0	0
234344	2D9302	231	231.0	0
234709V3	2D9303	77	77.0	0
234918BF11	3D9306	80	80.0	0
2D1010	2D9306	80	80.0	0
2D1011AG1	3A9307	79	79.0	0
2D1010-4	3A9309	80	80.0	0
2D1011A-6	3A9309	79	79.0	0
234836	3A9314	77	77.0	0
3A0449AA	3B9316	80	80.0	0
3D1448	3D9404	77	77.0	0
4A0245	4A9411	80	80.0	0
4B0511A	4B9428	80	80.0	0
4B0511A-2	4B9429	80	80.0	0
4B2367	4B9436	157	157.0	0
5A1919	5A9519	80	80.0	0
5B2168	5B9533	80	80.0	0
5C2484	5C9544	160	160.0	0
5D0312	5D9606	100	100.0	0
6E3228B1	6E9644	200	200.0	0
7B1682	7B9735	199	199.0	0
7A2609-2	7A9747	201	201.0	0
7D2453	7D9807	100	100.0	0
8A0394B	8A9812	300	300.0	0
8A0484	8A9812	100	100.0	0
8A3922-1	8A9826	100	100.0	0
8A3474	8A9828	250	250.0	0
8D3392B	8D9909	100	100.0	0
9A0095	9A9911	250	250.0	0

## AT-27C512R (CONTINUED)

## PLASTIC PACKAGE

125°C DYNAMIC OPERATING LIFE TEST (CONTINUED)

<u>LOT NUMBER</u>	<u>DATE CODE</u>	<u>SAMPLE SIZE</u>	<u>TOTAL CKT-HRS(K)</u>	<u>NUMBER OF FAILS</u>
9C4094B	9C9949	100	100.0	0
9D2586-1	9D0023	200	200.0	0
0A2960	0A0019	249	249.0	0
0C1683	0C0042	100	100.0	0
1B3338	1B0141	250	250.0	0
2E3103-1	2E0217	100	100.0	0
2J1207-1	2J0301	250	250.0	0
4J0898-2A	4J0451	100	100.0	0
6J2439-3	6J0707	100	100.0	0
7F2309-3	7F0721	100	100.0	0
7H2084	7H0745	100	100.0	0

FAILURE RATETOTAL DEVICE HOURS

6,889,300 DEVICE HOURS

BEST ESTIMATE $\lambda = 0.01 \%$  PER 1,000 HOURS50°C AMBIENT

EXTRAPOLATION TO 50°C VIA ARRHENNIUS  
EQUATION AND ACTIVATION ENERGY OF 0.5eV  
 $\lambda = 0.0003 \%$  PER 1,000 HOURS (3 FITS)

CONFIDENCE ESTIMATE

$\lambda_{60} = 0.0005\%$  PER 1,000 HOURS  
60% CONFIDENCE (5 FITS)  
 $\lambda_{90} = 0.001 \%$  PER 1,000 HOURS  
90% CONFIDENCE (11 FITS)



AT-27C512R

PLASTIC PACKAGE

150°C RETENTION BAKE

LOT NUMBER	DATE CODE	PKG TYPE	SAMPLE SIZE	NUMBER OF FAILURES AT INDICATED HOURS		
				(250)	(500)	(1000)
	8818	28 P-DIP	52	0	0	0
	8D8908	32 PLCC	80	0	0	0
E901	9D9004	28 P-DIP	48	0	0	0
99814	0B9024	28 P-DIP	77	1	0	0 (MARG. VCC)
02596	0D9043	32 PLCC	77	0	0	0
131527	1B9138	28 TSOP	77	0	0	0
13347	1D9146	32 PLCC	77	0	0	0
134210	2A9208	32 PLCC	360	0	0	0
231591	2B9221	32 PLCC	179	0	0	0
231659	2B9229	32 PLCC	77	0	0	0
232376	2C9230	32 PLCC	77	0	0	0
232132	2C9232	32 PLCC	77	0	0	0
232134B-3	2C9232	32 PLCC	77	0	0	0
234030	2D9248	32 PLCC	154	0	0	0
234031	2D9248	32 PLCC	77	0	0	0
233759D	2D9250	32 PLCC	355	0	0	0
234271	2D9251	32 PLCC	154	0	0	0
234283	2D9252	32 PLCC	154	0	0	0
234344	2D9302	32 PLCC	693	0	0	0
234692	2D9303	32 PLCC	308	0	0	0
234707	2D9303	32 PLCC	462	0	0	0
234709	2D9303	32 PLCC	308	0	0	0
234918BF11	2D9306	32 PLCC	77	0	0	0
2D1011AG1	3A9307	32 PLCC	77	0	0	0
234677BV	3A9307	32 PLC	77	0	0	0
234875A	3A9307	32 PLCC	77	0	0	0
234982AV	3A9307	32 PLCC	77	0	0	0
234986BV	3A9307	32 PLCC	77	0	0	0
234836G2	3A9309	32 PLCC	77	0	0	0
2D1010-4	3A9309	28 TSOP	77	0	0	0
2D1011A-6	3A9309	28 TSOP	77	0	0	0
2D1108	3A9309	28 TSOP	77	0	0	0
234836G1	3A9314	32 PLCC	77	0	0	0
3A0449	3A9316	32 PLCC	154	0	0	0
3D1448	3D9404	32 PLCC	77	0	0	0
4A1332	4A9415	32 PLCC	45	0	0	0
4B1652	4B9420	28 PDIP	77	0	0	0
4B0511A	4B9428	32 PLCC	80	0	0	0
4B0511A-2	4B9429	28 TSOP	79	0	0	0
5A1919	5A9519	28 SOIC	77	0	0	0
5B1908	5B9530	32 PLCC	306	0	0	0
5B0816	5B9527	28 SOIC	85	0	0	0

AT-27C512R  
 PLASTIC PACKAGE  
150°C RETENTION BAKE (CONT.)

<u>LOT</u> <u>NUMBER</u>	<u>DATE</u> <u>CODE</u>	<u>PKG</u> <u>TYPE</u>	<u>SAMPLE</u> <u>SIZE</u>	<u>NUMBER OF FAILURES</u> <u>AT INDICATED HOURS</u>		
				<u>(168)</u>	<u>(500)</u>	<u>(1000)</u>
5B2168	5B9533	28 SOIC	111	0	0	0
5D0312	5D9605	32 PLCC	100	0	0	0
5D1778	5D9611	32 PLCC	94	0	0	0
5D1778A	5D9611	32 PLCC	94	0	0	0
6E3228B1	6E9644	32 PLCC	200	0	0	0
7A0871	7A9706	28 TSOP	356	0	0	0
7A2611	7A9720	28 PDIP	244	0	0	0
7B1682	7B9735	32 PLCC	266	0	0	0
7A2609-2	7A9747	28 TSOP	200	0	0	0
7D3453	7D9807	28 PDIP	100	0	0	0
8A0394B	8A9812	32 PLCC	100	0	0	0
8A0484	8A9812	32 PDIP	306	0	0	0
8A3922-1	8A9826	32 PLCC	100	0	0	0
8A3474	8A9831	32 PLCC	250	0	0	0
8D3392B	8D9909	32 PLCC	50	0	0	0
9A0095	9A9911	28 PDIP	250	0	0	0
9C4094B	9C9949	32 PLCC	50	0	0	0
9D2568-1	9D0023	32 PLCC	100	0	0	0
0A2960	0A0019	32 PLCC	250	0	0	0
0C1683	0C0042	32 PLCC	50	0	0	0
1B3338	1B0141	32 PLCC	250	0	0	0
2E0883	2E0212	32 PLCC	250	0	0	0
2E3103-1	2E0217	32 PLCC	50	0	0	0
2J1207-1	2J0301	28 PDIP	250	0	0	0
3H1213	3H0340	28 SOIC	500	0	0	0
4J0898-2A	4J0451	28 PDIP	50	0	0	0
6J2439-3	6J0707	28 SOIC	77	0	0	0
7F2309-3	7F0721	28 SOIC	77	0	0	0
7H2084	7H0745	32 PLCC	77	0	0	0

FAILURE RATE

TOTAL DEVICE HOURS

6,639,000 DEVICE HOURS

BEST ESTIMATE

$\lambda = 0.01\%$  PER 1,000 HOURS

50°C AMBIENT

EXTRAPOLATION TO 50°C VIA ARRHENNIUS  
 EQUATION AND ACTIVATION ENERGY OF 0.5eV  
 $\lambda = 0.0001\%$  PER 1,000 HOURS (1 FITS)

CONFIDENCE ESTIMATE

$\lambda_{60} = 0.0002\%$  PER 1,000 HOURS  
 60% CONFIDENCE (2 FITS)  
 $\lambda_{90} = 0.0005\%$  PER 1,000 HOURS  
 90% CONFIDENCE (5 FITS)

AT-27C512R

PLASTIC PACKAGE

PRESSURE POT TEST

<u>DATE</u> <u>CODE</u>	<u>PACKAGE</u> <u>TYPE</u>	<u>SAMPLE</u> <u>SIZE</u>	<u>NUMBER OF FAILURES</u> <u>AT INDICATED HOURS</u>			
			<u>(24)</u>	<u>(48)</u>	<u>(72)</u>	<u>(96)</u>
8809	28 P-DIP	33	0	0	0	0
8752	28 P-DIP	36	0	0	0	0
8808	32 PLCC	41	0	0	0	0
8D8844	32 PLCC	50	0	0	0	0
8D8849	28 P-DIP	42	0	0	0	0
9C8947	28 P-DIP	90	0	0	0	0
9D9003	28 P-DIP	45	0	0	0	0
0A9020	28 P-DIP	45	0	0	0	0
0B9033	32 PLCC	47	0	0	0	0
0C9034	32 PLCC	45	0	0	0	0
0C9039	28 P-DIP	45	0	0	0	0
0C9040	32 PLCC	45	0	0	0	1
0D9046	28 P-DIP	45	0	0	0	0
0D9051	28 P-DIP	45	0	0	0	0
0D9101	28 P-DIP	45	0	0	0	0
1A9116	28 P-DIP	45	0	0	0	0
1C9134	32 PLCC	45	0	0	0	0
1C9139	32 PLCC	45	0	0	0	0
1C9138	28 TSOP	90	0	0	0	0
1D9146	32 PLCC	70	0	0	0	0
1D9204	28 P-DIP	45	0	0	0	0
2B9221	32 PLCC	90	0	0	0	0
2B9226	32 PLCC	22	0	0	0	0
2B9227	32 PLCC	45	0	0	0	0
2B9229	32 PLCC	45	0	0	0	0
2B9230	32 PLCC	45	0	0	0	0
2B9231	32 PLCC	90	0	0	0	0
2C9232	28 SOIC	45	0	0	0	0
2C9233	32 PLCC	45	0	0	0	0
2D9249	32 PLCC	135	0	0	0	0
2D9248	32 PLCC	90	0	0	0	0
2D9250	32 PLCC	135	0	0	0	0
2D9251	32 PLCC	45	0	0	0	0
2D9252	32 PLCC	45	0	0	0	0
2D9302	32 PLCC	180	0	0	0	0
2D9303	32 PLCC	125	0	0	0	0
2D9306	32 PLCC	135	0	0	0	0
2D9307	32 PLCC	80	0	0	0	0
3A9309	28 TSOP	25	0	0	0	0
3B9316	32 PLCC	54	0	0	0	0
4A9420	28 PDIP	77	0	0	0	0
4A9423	28 PDIP	90	0	0	0	0
4B9429	28 TSOP	59	0	0	0	0

AT-27C512R

PLASTIC PACKAGE

PRESSURE POT TEST (CONTINUED)

DATE CODE	PACKAGE TYPE	SAMPLE SIZE	NUMBER OF FAILURES AT INDICATED HOURS			
			(24)	(48)	(72)	(96)
5B9533	28 SOIC	154	0	0	0	0
5D1778A	32 PLCC	77	0	0	0	0
6B9642	32 PLCC	77	0	0	0	0
6E9644	32 PLCC	154	0	0	0	0
7A9706	28 TSOP	154	0	0	0	0
7A9720	28 PDIP	199	0	0	0	0
7A9735	32 PLCC	200	0	0	0	0
7D9807	28 PDIP	50	0	0	0	0
7A9814	28 TSOP	50	0	0	0	0
8A9812	32 PLCC	50	0	0	0	0
8A9812	28 PDIP	50	0	0	0	0
8A9826	32 PLCC	50	0	0	0	0
8A9831	32 PLCC	50	0	0	0	0
9A9911	28 PDIP	100	0	0	0	0
9C9949	32 PLCC	50	0	0	0	0
9D0023	32 PLCC	50	0	0	0	0
0A0019	32 PLCC	100	0	0	0	0
0C0042	32 PLCC	50	0	0	0	0
1B0141	32 PLCC	100	0	0	0	0
2E0212	32 PLCC	100	0	0	0	0
2E0217	32 PLCC	50	0	0	0	0
2J0301	28 PDIP	100	0	0	0	0
3H0340	28 SOIC	100	0	0	0	0
4J0451	28 PDIP	50	0	0	0	0
4J0510	32 PLCC	98	0	0	0	0
6J0707	28 SOIC	77	0	0	0	0
7F0721	28 SOIC	77	0	0	0	0
7F0707	28 SOIC	77	0	0	0	0
7H0745	32 PLCC	77	0	0	0	0

AT-27C512R

PLASTIC PACKAGE

85°/85% RELATIVE HUMIDITY OPERATING LIFE TEST

<u>LOT</u> <u>NUMBER</u>	<u>DATE</u> <u>CODE</u>	<u>PACKAGE</u> <u>TYPE</u>	<u>SAMPLE</u> <u>SIZE</u>	<u>NUMBER OF FAILURES</u> <u>AT INDICATED HOURS</u>		
				(168)	(500)	(1000)
E03	0A9015	32 PLCC	36	0	0	0
30296	0B9015	32 PLCC	72	0	0	0
132203	1C9139	32 PLCC	44	0	0	0
13347	1C9146	32 PLCC	45	0	0	0
231591	2B9221	32 PLCC	44	0	0	0
232376	2C9230	32 PLCC	63	0	0	0
232621	2C9231	32 PLCC	45	0	0	0
234918BF11	2D9306	32 PLCC	45	0	0	0
2D1010	2D9306	32 PLCC	45	0	0	0
4A1731	4A9423	28 PDIP	45	0	0	0
4B0511A-2	4B9429	28 TSOP	77	0	0	0
6B3036	6B9642	32 PLCC	45	0	0	0
6E3228B1	6E9644	32 PLCC	63	0	0	0
6E3161	6E9649	28 PDIP	49	0	0	0
7A0771	7A9706	28 TSOP	77	0	0	0
7A2611	7A9770	28 PDIP	49	0	0	0
7B1682	7B9735	32 PLCC	27	0	0	0
7A2609-2	7A9747	28 TSOP	77	0	0	0
7A2609	7A9814	28 TSOP	49	0	0	0
7D2453	7D9807	28 PDIP	50	0	0	0
9A0095	9A9911	28 PDIP	49	0	0	0

AT-27C512R

PLASTIC PACKAGE

EXTENDED THERMAL SHOCK

-55°C TO +125°C

<u>DATE CODE</u>	<u>PKG TYPE</u>	<u>SAMPLE SIZE</u>	<u>NUMBER OF CYCLES</u>	<u>NUMBER OF FAILURES</u>
6B9642	32 PLCC	77	1000	0
6E9644	32 PLCC	77	1000	0
7A9706	28 TSOP	77	1000	0
7B9735	32 PLCC	100	1000	0

Date: Oct. 10, 1994  
Subject: AT27C512R (18704A Latchup Data)  
From: T. Pearce  
To: G. Korsh, E. Hui, C. Lionbarger  
cc: M. Wong, LY. Lee

Three packaged units of the AT27C512R (18704A Stepping) from lot 4B0511 were tested for latchup. A curve tracer was used to force current into each pin and observe the latchup trigger current and voltage. A 9 ohm resistor was connected in parallel across the Vcc power supply to allow current to be forced out of the pin during testing. A separate ammeter was connected in series with the Vcc power supply to verify when latchup occurred.

The results are show in page 2 and indicate that the new AT27C512R (18704A) is quite immune to latchup under normal operating conditions (Vcc=5.5V, room temperature). Inputs can sustain -3.5V with respect to ground and no latchup is observed. No latchup is observed for possitive input voltages up to 23V where destructive junction breakdown occurs. Outputs can sustain 11.4V and -2.5V with respect to ground and no latchup is observed.

## AT27C512R (18704A) Latchup Trigger Current and Voltage

Pin	Function	-V (v)	-I (mA)	+V (v)	+I (mA)
1	A15	4.3	>600		
2	A12	4.5	>600		
3	A7	4.5	>600		
4	A6	4.5	>600		
5	A5	4.5	>600		
6	A4	4.6	>600		
7	A3	4.6	>600		
8	A2	3.8	>600		
9	A1	3.7	>600		
10	A0	3.7	>600		
11	O0	2.6	>600	11.4	>600
12	O1	2.5	>600	11.4	>600
13	O2	2.6	>600	11.4	>600
14	GND				
15	O3	2.6	>600	11.4	>600
16	O4	2.5	>600	11.5	>600
17	O5	2.5	>600	11.5	>600
18	O6	2.5	>600	11.4	>600
19	O7	2.6	>600	11.5	>500
20	CE	3.8	>600		
21	A10	3.9	>600		
22	OE	3.4	>600		
23	A11	4.8	>600		
24	A9	4.5	>600		
25	A8	4.6	>600		
26	A13	4.6	>600		
27	A14	4.5	>600		
28	VCC				



AT-27C512R

PLASTIC PACKAGE

EXTENDED TEMPERATURE CYCLE

-65°C to +150°C PLCC/TSOP/SOIC/PDIP  
-55°C to +125°C CBGA

<u>DATE</u> <u>CODE</u>	<u>PKG</u> <u>TYPE</u>	<u>SAMPLE</u> <u>SIZE</u>	<u>NUMBER</u> <u>OF CYCLES</u>	<u>NUMBER</u> <u>OF FAILURES</u>
6B9642	32 PLCC	77	1000	0
6E9644	32 PLCC	77	1000	0
7A9607	28 TSOP	77	1000	0
7A9747	28 TSOP	77	1000	0
7A9814	28 TSOP	77	1000	0
7B9735	32 PLCC	100	1000	0
7D9807	28 PDIP	50	1000	0
8A9812	32 PLCC	77	1000	0
8A9812	28 PDIP	50	1000	0
8A9826	32 PLCC	50	1000	0
8A9831	32 PLCC	100	1000	0
8D9909	32 PLCC	50	1000	0
9A9911	28 PDIP	100	1000	0
9C9949	32 PLCC	50	1000	0
9D0023	32 PLCC	50	1000	0
0A0019	32 PLCC	100	1000	0
0B0019	32 PLCC	100	1000	0
0C0042	32 PLCC	250	1000	0
0C0043	32 PLCC	315	1000	0
2E0212	32 PLCC	100	1000	0
2E0217	32 PLCC	50	1000	0
2J0301	28 PDIP	100	1000	0
4J0451	28 PDIP	50	1000	0
6J0707	28 SOIC	77	1000	0
7F0721	28 SOIC	77	1000	0
7G0707	28 SOIC	77	1000	0
7H0745	32 PLCC	77	1000	0