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ATF22V10C/CZ/CQZ EPLD RELIABILITY DATA

- 125°C OPERATING LIFE TEST (PLASTIC)
- 150°C RETENTION BAKE (PLASTIC)
- 121°C/15PSG PRESSURE POT TEST
- EXTENDED TEMPERATURE CYCLES
- 131°C/85% RELATIVE HUMIDITY HAST TEST

*This report was generated from AT22V10B reliability testing.
This data is applicable to the following device types due
to same technology grouping as defined in MIL-M-38535
Appendix A:

ATF750C
ATF750CL

ATF2500C
ATF750LVC

ATF22LV10C
ATF22LV10CZ

AT22LV10CQZ

JANUARY 2005

2325 Orchard Parkway San Jose CA. 95131

ATF22V10C/CZ/CQZ

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 FAILURES</u>
6B2269	6B9634	139	278.0	0
6D3498-1	6D9811	300	300.0	0
7D3432	7D9847	120	120.0	0
8D1561	8D9904	120	120.0	0
8D1586A	8D9904	300	300.0	0
9A1130-2	9A9923	100	100.0	0
0A3743	0A0025	120	120.0	0
8D0836-6	8D0136	100	100.0	0
2G6332	2G0318	100	100.0	0
4E5963-4	4E0431	100	100.0	0

FAILURE RATETOTAL DEVICE HOURS

1,748,000 DEVICE HOURS

BEST ESTIMATE $\lambda = 0.04\%$ PER 1,000 HOURS50°C AMBIENTEXTRAPOLATION TO 50°C VIA ARRHENNIUS
EQUATION AND ACTIVATION ENERGY OF
0.5eV $\lambda = 0.001\%$ PER 1,000 HOURS (13 FITS)CONFIDENCE ESTIMATE $\lambda_{60} = 0.002\%$ PER 1,000 HOURS

60% CONFIDENCE (18 FITS)

 $\lambda_{90} = 0.004\%$ PER 1,000 HOURS

90% CONFIDENCE (45 FITS)

ATF22V10C/CZ/CQZ

PLASTIC PACKAGE

150°C RETENTION BAKE

<u>LOT</u> <u>NUMBER</u>	<u>DATE</u> <u>CODE</u>	<u>SAMPLE</u> <u>SIZE</u>	<u>HOUR TO FAILURE</u>			
			<u>24</u>	<u>168</u>	<u>500</u>	<u>1,000</u>
6B2269	6B9634	320	0	0	0	0
6D3498-1	6D9811	100	0	0	0	0
8D1586A	8D9904	50	0	0	0	0
9A1130-2	9A9923	300	0	0	0	0
0A0383-5	0A0035	50	0	0	0	0
8D0836-6	8D0136	50	0	0	0	0
2G6332	2G0318	50	0	0	0	0
4E05963-4	4E0431	50	0	0	0	0

FAILURE RATETOTAL DEVICE HOURS

970,000 DEVICE HOURS

BEST ESTIMATE $\lambda = 0.07\%$ PER 1,000 HOURS50°C AMBIENTEXTRAPOLATION TO 50°C VIA ARRHENNIUS
EQUATION AND ACTIVATION ENERGY OF
0.5eV $\lambda = 0.001\%$ PER 1,000 HOURS (10 FITS)CONFIDENCE ESTIMATE $\lambda_{60} = 0.001\%$ PER 1,000 HOURS

60% CONFIDENCE (14 FITS)

 $\lambda_{90} = 0.004\%$ PER 1,000 HOURS

90% CONFIDENCE (34 FITS)

ATF22V10C/CZ/CQZ

PLASTIC PACKAGE

121°C/15PSG PRESSURE POT TEST

<u>DATE CODE</u>	<u>PACKAGE TYPE</u>	<u>SAMPLE SIZE</u>	<u>NUMBER OF FAILURES AT INDICATED HOURS</u>			
			<u>24</u>	<u>48</u>	<u>72</u>	<u>96</u>
8D9904	24 PDIP	50	0	0	0	0
9C0006	28 PLCC	49	0	0	0	0
0D0111	20 TSSOP	149	0	0	0	0
0A0035	24 PDIP	50	0	0	0	0
8D0136	24 PDIP	50	0	0	0	0
2G0318	24 PDIP	50	0	0	0	0
4E0431	24 PDIP	50	0	0	0	0

ATF22V10C/CZ/CQZ

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>PACKAGE</u> <u>TYPE</u>	<u>SAMPLE</u> <u>SIZE</u>	<u>NUMBER</u> <u>OF CYCLES</u>	<u>NUMBER</u> <u>OF FAILURES</u>
8D9904	24 PDIP	50	1000	0
9C0006	28 PLCC	100	1000	0
0A0035	24 PDIP	50	1000	0
0D0111	20 TSSOP	149	1000	0
2G0318	24 PDIP	50	1000	0
4E0431	24 PDIP	50	1000	0

ATF22V10C/CZ/CQZ

PLASTIC PACKAGE

131°C/85% RELATIVE HUMIDITY HAST TEST

<u>LOT</u> <u>NUMBER</u>	<u>PACKAGE</u> <u>TYPE</u>	<u>DATE</u> <u>CODE</u>	<u>SAMPLE</u> <u>SIZE</u>	<u>NUMBER OF FAILURES</u> <u>AT INDICATED HOURS</u>
				(100)
0A0383-5	24 PDIP	0A0035	50	0
8D0836-6	24 PDIP	8D0136	50	0
2G6332	24 PDIP	2G0318	50	0
4E5963-4	24 PDIP	4E0431	50	0