Dallas Semiconductor Reliability Report: DS21FT40, Rev A3

Process: Single Poly, Double Metal (Ti/TiN layers used on all Metals) | 0.35 µ | PolySilicide

Metal: Al / 0.5% Cu / 0.8% Si

Gate Ox Thickness: 120

Passivation: TEOS Oxide / Nitride

Summary Data with Chi-Square Distribution Assumed.
Stress Ambient Temperature and Voltage to
Field Ambient Temperature And Voltage

Cf: 60%
Ea: 0.7
β: 1

Tuse: 55 °C
Vuse: 3 Volts

QUALIFICATION VEHICLES INCLUDED IN THIS ANALYSIS:

PRODUCT	REV	DIE SIZE (x)	DIE SIZE (y)	No. of Transistors
DS21FF44	A2	288	286	
DS21FT44	A2	288	286	

STRESS	CONDITION	READPOINT	QUANTITY	FAILS	DEVICE HRS
HIGH TEMPERATURE OPERATING LIFE					
INFANT LIFE	125C, 3.5 VOLTS	48 HOURS	771	0	4718628
HIGH VOLTAGE LIFE	125C, 3.5 VOLTS	336 HOURS	192	1	8246804
HIGH VOLTAGE LIFE	125C, 3.5 VOLTS	1000 HOURS	140	0	11860307
HIGH VOLTAGE LIFE	125C, 3.5 VOLTS	1500 HOURS	133	0	8481194
HIGH VOLTAGE LIFE	125C, 3.5 VOLTS	2000 HOURS	131	0	8416942

DATE CODE RANGE: **9844** to **9917** TOTALS: **1** DEVICE HRS: **4.17E+07**

EARLY LIFE (PPM@90% Cf): **2986** FAILURE RATE MTBF (yrs): **2355** FITs: **48**

FILE #	FAILURE MODE	FAILURE MECHANISM
23392	LOOPBACK	NO FA

Tuesday, January 09, 2001