APEX MICROTECHNOLOGY CORPORATION
RELIABILITY PREDICTION
PA51M

by

Granger Scofield

Date of prediction: 15-Mar-01

This reliability prediction is based on MIL-HDBK-217F, December 2, 1991 including Notice 2, February 28, 1995.

Conditions of this prediction are as follows:

Hybrid quality level is		Commercial	
Environment is	Gf	Ground, Fixed	
Case temperature is		40	C
Internal Power Dissipation =		25	W
Supply voltage is +/-		28	V

An AC signal is applied.

Product introduction date: 1-Aug-93

The results of this prediction are:

1 failures per million hours; or,

MTBF= 1003 thousand hours.

Monolithic Bipolar and MOS Linear Devices:
Lp = C1 * PiT

IC1		Watts =	2.68	Tj =	200	#/Qs =	56		
Usage:		Watts =	0.1			Max Tj =	46.53		
C1	PiT						Nc		
0.01	0.550451						1		0.005505

Transistors, Low Frequency, Bipolar:
Lp = Lb * PiT * PiR * PiS

Q2,5			Volts =	40	Watts =	1.2	Tj =	175	'K/W=	125
Usage:	Vstress =	1	Vpwr =	1	Ic =	0.025	Vs =	0.025	Power =	0.025
Lb	PiT		PiR	PiS				Nc	Tj =	43.125
0.00074	1.501901		1.0698	0.048626				2		0.000116
Q3,4			Volts =	40	Watts =	1.2	Tj =	175	'K/W=	125
Usage:	Vstress =	0.35	Vpwr =	0.35	Ic =	0.025	Vs =	0.0088	Power =	0.0088
Lb	PiT		PiR	PiS				Nc	Tj =	41.094
0.00074	1.438334		1.0698	0.046237				2		0.000105
Q1			Volts =	100	Watts =	145	Tj =	200	'K/W=	1.2069
Usage:	Vstress =	53.5	Fraction	Output Pwr = 1/		1	Vs =	0.535	Power =	25
Lb	PiT		PiR	PiS				Nc	Tj =	70.172
0.00074	2.544136		6.3053	0.236314				2		0.00561

Capacitors, ceramic general purpose type CK:
Lp = Lb * PiT * PiC * PiV Lb = 0.00099

C6			Volts =	100	pF =	1000			
Usage:	Vstress =	53.5					S =	0.535	
Lb	PiT	PiC	Pi V					Nc	
0.00099	1.92167	0.288	1.7089					1	0.000938

Sum of all components 0.012274

Hybrid microcircuit:
Lp=sumLc*(1+.2*PiE) * PiF * PiQ * PiL

0.012274	1.4	5.8	10	1

Total failures per million hours = 0.996611
Mean time between failures = 1003400