

APEX MICROTECHNOLOGY CORPORATION
RELIABILITY PREDICTION
PA97

by

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Date of prediction: 06-Dec-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 =	2 W
Supply voltage is +/-	400 V
An AC signal is applied.	
Product introduction date:	25-May-00

The results of this prediction are:

31.1 failures per million hours; or,
MTBF=32.1 thousand hours.

Transistors, Low Frequency, Bipolar:

$$L_p = L_b * P_{iT} * P_{iR} * P_{iS}$$

Q1		Volts = 20	Watts = 0.38	Tj = 150	'K/W= 328.95
Usage:	Vstress = 0.65	Vpwr = 0.65	Ic = 0.001	Vs = 0.0325	Power = 0.0007
Lb	PiT	PiR	PiS	Nc	Tj = 40.214
0.00074	1.411392	0.6991	0.0498	1	3.63E-05

Q2		Volts = 20	Watts = 0.38	Tj = 150	'K/W= 328.95
Usage:	Vstress = 3	Vpwr = 3	Ic = 0.001	Vs = 0.15	Power = 0.003
Lb	PiT	PiR	PiS	Nc	Tj = 40.987
0.00074	1.435041	0.6991	0.0716	1	5.32E-05

Transistors, Low Frequency, Si JFET: Lb = 0.0045

$$L_p = L_b * P_{iT}$$

Q10A,B		Volts = 25	Watts = 0.55	Tj = 150	'K/W= 227.27
Usage:		Vpwr = 4	Id = 0.001		Power = 0.004
Lb	PiT			Nc	Tj = 40.909
0.0045	1.387333			2	0.012486

Q6		Volts = 450	Watts = 0.38	Tj = 150	'K/W= 328.95
Usage:		Vpwr = 0.7	Id = 1E-07		Power = 7E-08
Lb	PiT			Nc	Tj = 40
0.0045	1.362842			1	0.006133

Transistors, Low Frequency, Si MOSFET: Lb = 0.012

$$L_p = L_b * P_{iT}$$

Q15		Volts = 450	Watts = 4	Tj = 150	'K/W= 31.25
Usage:		Vpwr = 200	Id = 0.01		Power = 2
Lb	PiT			Nc	Tj = 102.5
0.012	3.793289			1	0.045519

Q7,8		Volts = 450	Watts = 4	Tj = 150	'K/W= 31.25
Usage:		Vpwr = 397	Id = 0.001		Power = 0.397
Lb	PiT			Nc	Tj = 52.406
0.012	1.722969			2	0.041351

