

ZIPPY TECHNOLOGY CORP
10F, No. 50, MIN CHYUAN RD
XINDIAN DIST., NEW TAIPEI CITY, TAIWAN, R.O.C.
RELIABILITY PREDICTION STANDARD REPORT
(Sorted by Part Number)
MIL-HDBK-217F, Notice 2

PRED-FIRST (c) Reliability Prediction Program, BJM Engineering Services

Date: MAR-01-2012
End Item Title : M1PX SERIES MTBF
End Item Part Number : M1P2-5500V4V (RoHS)
M1P2-5500V4V (RoHS) MTBF : 216,858
Module Title: ZIPPY TECHNOLOGY CORP
Module Part Number : M1P / MTBF
Power Unit Module : M1P-2500V (RoHS)
Environmental Condition: GB
Ambient Temperature: 25°C

RELIABILITY MODELING OF REDUNDANT UNITS

Two Redundant Units:

Two identical units may be connected in parallel, each capable of supplying the total required output. If one unit fails and can be removed from the system (does not interfere with the operation of the other unit), then the other unit supplies the required output. Using a constant failure rate, the following relations apply.

$$\text{Total Failure Rate}(F) = M \lambda / (3/2) + B \lambda = 5.820379 / (3/2) + 0.731046 = 4.611299$$

$M \lambda$ = Main power failure rate , $B \lambda$ = Back plane failure rate

$$\text{M1P2-5500V4V (RoHS)(MTBF)} = F / 10^6 \text{Hrs} = 4.611299 / 10^6 = 216,858$$

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Date : MAR-01-2012 Time : 10:55:41
End Item Title : M1P SERIES MTBF
End Item Part Number : M1P-2500V (RoHS)
M1P-2500V (RoHS) MTBF : 171,810
Module Title : ZIPPY TECHNOLOGY CORP
Module Part Number : M1P / MTBF
Module Reference Designation : M1P
Environmental Condition : GB
Ambient Temperature: 25°C

M1P-2500V (RoHS)

ITEM #	Part Number	Ref Desig	Qual Level	Quant	Individual Failure Rate (F/10 ⁶ Hrs)	Total Failure Rate (F/10 ⁶ Hrs)
1	B102330004	BOM	NMIL	1	0.069564	0.069564
2	B103120002	BOM	NMIL	1	0.290448	0.290448
3	B103210004	BOM	NMIL	1	0.065162	0.065162
4	B103950002	BOM	NMIL	1	0.132621	0.132621
5	B103950003	BOM	NMIL	1	0.220943	0.220943
6	B200000001	BOM	SPECIAL	3	0.094935	0.284805
7	B200000080	BOM	SPECIAL	2	0.094935	0.189870
8	B200000144	BOM	SPECIAL	1	0.094935	0.094935
9	B200000268	BOM	SPECIAL	1	0.094935	0.094935
10	B200000272	BOM	SPECIAL	1	0.094935	0.094935
11	B200000364	BOM	SPECIAL	1	0.094935	0.094935
12	B200010022	BOM	NMIL	1	0.000162	0.000162
13	B200010052	BOM	NMIL	1	0.000121	0.000121
14	B200010057	BOM	NMIL	2	0.041400	0.082800
15	B200010067	BOM	NMIL	2	0.004410	0.008820
16	B200010083	BOM	NMIL	1	0.007245	0.007245
17	B200010141	BOM	NMIL	2	0.041400	0.082800
18	B200020004	BOM	NMIL	9	0.005156	0.046404
19	B200030018	BOM	NMIL	2	0.007617	0.015234
20	B200040015	BOM	NMIL	1	0.005967	0.005967
21	B200040059	BOM	NMIL	1	0.005967	0.005967
22	B200040063	BOM	NMIL	1	0.016111	0.016111
23	B200050024	BOM	NMIL	1	0.005218	0.005218
24	B200050040	BOM	NMIL	5	0.005218	0.026090

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25	B200050045	BOM	NMIL	2	0.005218	0.010436
26	B200050054	BOM	NMIL	1	0.088813	0.088813
27	B200060019	BOM	NMIL	1	0.014607	0.014607
28	B200090038	BOM	NMIL	1	0.001518	0.001518
29	B200110001	BOM	NMIL	1	0.004650	0.004650
30	B200110022	BOM	NMIL	1	0.004650	0.004650
31	B200110035	BOM	NMIL	1	0.004650	0.004650
32	B200110040	BOM	NMIL	1	0.004650	0.004650
33	B200110042	BOM	NMIL	3	0.004650	0.013950
34	B200110046	BOM	NMIL	9	0.004650	0.041850
35	B200110073	BOM	NMIL	2	0.005115	0.010230
36	B200110123	BOM	NMIL	3	0.004650	0.013950
37	B200110172	BOM	NMIL	1	0.004650	0.004650
38	B200110227	BOM	NMIL	2	0.004650	0.009300
39	B200110261	BOM	NMIL	3	0.004650	0.013950
40	B200110270	BOM	NMIL	2	0.004650	0.009300
41	B200110276	BOM	NMIL	1	0.004650	0.004650
42	B200110282	BOM	NMIL	4	0.004650	0.018600
43	B200110321	BOM	NMIL	3	0.005115	0.015345
44	B200110343	BOM	NMIL	2	0.004650	0.009300
45	B200110489	BOM	NMIL	1	0.004650	0.004650
46	B200110490	BOM	NMIL	1	0.004650	0.004650
47	B200110491	BOM	NMIL	1	0.004650	0.004650
48	B200110494	BOM	NMIL	2	0.004650	0.009300
49	B200110503	BOM	NMIL	2	0.005115	0.010230
50	B200110505	BOM	NMIL	1	0.004650	0.004650
51	B200110506	BOM	NMIL	1	0.004650	0.004650
52	B200110508	BOM	NMIL	1	0.004650	0.004650
53	B200110510	BOM	NMIL	1	0.004650	0.004650
54	B200110514	BOM	NMIL	1	0.004650	0.004650
55	B200110519	BOM	NMIL	1	0.004650	0.004650
56	B200110523	BOM	NMIL	3	0.004650	0.013950
57	B200110525	BOM	NMIL	1	0.004650	0.004650
58	B200110544	BOM	NMIL	1	0.004650	0.004650
59	B200110553	BOM	NMIL	1	0.004650	0.004650
60	B200110561	BOM	NMIL	5	0.004650	0.023250
61	B200110565	BOM	NMIL	1	0.004650	0.004650
62	B200110588	BOM	NMIL	1	0.004650	0.004650
63	B200110598	BOM	NMIL	2	0.004650	0.009300
64	B200110613	BOM	NMIL	1	0.004650	0.004650
65	B200110623	BOM	NMIL	1	0.004650	0.004650
66	B200110627	BOM	NMIL	1	0.005115	0.005115
67	B200110757	BOM	NMIL	1	0.004650	0.004650
68	B200120012	BOM	NMIL	3	0.007735	0.023205

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69	B200120017	BOM	NMIL	1	0.009576	0.009576
70	B200120101	BOM	NMIL	1	0.006105	0.006105
71	B200120160	BOM	NMIL	1	0.005425	0.005425
72	B200160011	BOM	NMIL	1	0.065000	0.065000
73	B200160017	BOM	NMIL	1	0.065000	0.065000
74	B200170020	BOM	NMIL	2	0.004875	0.009750
75	B200170021	BOM	NMIL	1	0.004875	0.004875
76	B200170026	BOM	NMIL	1	0.004875	0.004875
77	B200180075	BOM	N/A	1	0.008923	0.008923
78	B200190064	BOM	N/A	1	0.016840	0.016840
79	B200200060	BOM	N/A	1	0.012930	0.012930
80	B200200061	BOM	N/A	3	0.008470	0.025410
81	B200200064	BOM	N/A	1	0.008470	0.008470
82	B200200069	BOM	N/A	1	0.006575	0.006575
83	B200200071	BOM	N/A	1	0.006048	0.006048
84	B200200074	BOM	N/A	2	0.015274	0.030548
85	B200200083	BOM	N/A	3	0.007144	0.021432
86	B200200087	BOM	N/A	1	0.014056	0.014056
87	B200200089	BOM	N/A	1	0.016657	0.016657
88	B200200095	BOM	N/A	2	0.016657	0.033314
89	B200200101	BOM	N/A	2	0.016657	0.033314
90	B200200153	BOM	N/A	2	0.009203	0.018406
91	B200200156	BOM	N/A	3	0.011856	0.035568
92	B200200157	BOM	N/A	1	0.011856	0.011856
93	B200200158	BOM	N/A	1	0.007791	0.007791
94	B200220018	BOM	N/A	3	0.002416	0.007248
95	B200220021	BOM	N/A	1	0.002337	0.002337
96	B200220063	BOM	N/A	1	0.002416	0.002416
97	B200230198	BOM	N/A	5	0.058210	0.291050
98	B200230210	BOM	N/A	1	0.050508	0.050508
99	B200230277	BOM	N/A	1	0.041493	0.041493
100	B200230338	BOM	N/A	4	0.029130	0.116520
101	B200230347	BOM	N/A	1	0.019246	0.019246
102	B200230397	BOM	N/A	1	0.173370	0.173370
103	B200250009	BOM	NMIL	1	0.023160	0.023160
104	B200260255	BOM	NMIL	1	0.027440	0.027440
105	B200260265	BOM	NMIL	1	0.027440	0.027440
106	B200260281	BOM	NMIL	1	0.027440	0.027440
107	B200280012	BOM	NMIL	2	0.015958	0.031916
108	B200300236	BOM	NMIL	1	0.003845	0.003845
109	B200300274	BOM	NMIL	1	0.003845	0.003845
110	B200300293	BOM	NMIL	1	0.026144	0.026144
111	B200310007	BOM	NMIL	1	0.030600	0.030600
112	B210090085	BOM	KNOWNFR	1	1.995000	1.995000

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113	B210160001	BOM	N/A	1	0.010000	0.010000
114	B210191426	N/A	STANDARD	1	0.022077	0.022077

Total Failure Rate (F/10 ⁶ Hrs) :	5.820379
Mean Time (in hours) Between Failures (MTBF) :	171,810