

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-04-2013
End Item Title : M1WX SERIES MTBF
End Item Part Number : M1W4-5L80V3H (RoHS)
M1W4-5L80V3H (RoHS) MTBF : 335,317
Module Title: ZIPPY TECHNOLOGY CORP
Module Part Number : M1W / MTBF
Power Unit Module : M1W-2810V (RoHS)
Environmental Condition: GB
Ambient Temperature: 25°C

RELIABILITY MODELING OF REDUNDANT UNITS

Four Redundant Units:

Four 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.

$$\text{Total Failure Rate}(F) = M \lambda / (15/4) + B \lambda = 8.755594 / (15/4) + 0.647424 = 2.982249$$

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

$$\text{M1W4-5L80V3H (RoHS)(MTBF)} = F / 10^6 \text{Hrs} = 2.982249 / 10^6 = 335,317$$

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Date : MAR-04-2013 Time : 09:36:15
End Item Title : M1W SERIES MTBF
End Item Part Number : M1W-2810V (RoHS)
M1W-2810V (RoHS) MTBF : 114,213
Module Title : ZIPPY TECHNOLOGY CORP
Module Part Number : M1W / MTBF
Module Reference Designation : M1W
Environmental Condition : GB
Ambient Temperature: 25°C

M1W-2810V (RoHS)

ITEM #	Part Number	Ref Desig	Qual Level	Quant	Individual Failure Rate (F/10 ⁶ Hrs)	Total Failure Rate (F/10 ⁶ Hrs)
1	B102130002	BOM	NMIL	1	0.074349	0.074349
2	B102270003	BOM	NMIL	1	0.128027	0.128027
3	B102330003	BOM	NMIL	1	0.132621	0.132621
4	B102330005	BOM	NMIL	1	0.125731	0.125731
5	B102720004	BOM	NMIL	1	0.069564	0.069564
6	B102890002	BOM	NMIL	1	1.154544	1.154544
7	B200000001	BOM	SPECIAL	1	0.094935	0.094935
8	B200000276	BOM	SPECIAL	1	0.094935	0.094935
9	B200000296	BOM	SPECIAL	1	0.094935	0.094935
10	B200000332	BOM	SPECIAL	2	0.094935	0.189870
11	B200000333	BOM	SPECIAL	1	0.094935	0.094935
12	B200010052	BOM	NMIL	4	0.000798	0.003192
13	B200010080	BOM	NMIL	6	0.020220	0.121320
14	B200010087	BOM	NMIL	2	0.000798	0.001596
15	B200010091	BOM	NMIL	1	0.000514	0.000514
16	B200010098	BOM	NMIL	1	0.000798	0.000798
17	B200010099	BOM	NMIL	1	0.000798	0.000798
18	B200010105	BOM	NMIL	7	0.020220	0.141540
19	B200010109	BOM	NMIL	11	0.000798	0.008778
20	B200020004	BOM	NMIL	1	0.005156	0.005156
21	B200020017	BOM	NMIL	2	0.005156	0.010312
22	B200020020	BOM	NMIL	2	0.005156	0.010312
23	B200020021	BOM	NMIL	1	0.006751	0.006751
24	B200030038	BOM	NMIL	1	0.007617	0.007617

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25	B200030041	BOM	NMIL	1	0.007617	0.007617
26	B200040034	BOM	NMIL	1	0.005967	0.005967
27	B200040053	BOM	NMIL	1	0.010375	0.010375
28	B200040063	BOM	NMIL	1	0.010375	0.010375
29	B200040072	BOM	NMIL	1	0.005967	0.005967
30	B200040073	BOM	NMIL	13	0.005967	0.077571
31	B200040085	BOM	NMIL	1	0.010375	0.010375
32	B200050024	BOM	NMIL	1	0.005218	0.005218
33	B200050032	BOM	NMIL	7	0.005218	0.036526
34	B200050037	BOM	NMIL	2	0.005218	0.010436
35	B200060009	BOM	NMIL	1	0.009407	0.009407
36	B200070007	BOM	NMIL	2	0.004011	0.008022
37	B200110006	BOM	NMIL	7	0.004650	0.032550
38	B200110016	BOM	NMIL	3	0.004650	0.013950
39	B200110040	BOM	NMIL	7	0.004650	0.032550
40	B200110042	BOM	NMIL	5	0.004650	0.023250
41	B200110046	BOM	NMIL	17	0.004650	0.079050
42	B200110095	BOM	NMIL	2	0.004650	0.009300
43	B200110120	BOM	NMIL	4	0.004650	0.018600
44	B200110123	BOM	NMIL	2	0.004650	0.009300
45	B200110172	BOM	NMIL	3	0.004650	0.013950
46	B200110192	BOM	NMIL	3	0.004650	0.013950
47	B200110202	BOM	NMIL	4	0.004650	0.018600
48	B200110213	BOM	NMIL	2	0.004650	0.009300
49	B200110223	BOM	NMIL	4	0.005115	0.020460
50	B200110227	BOM	NMIL	3	0.004650	0.013950
51	B200110276	BOM	NMIL	2	0.004650	0.009300
52	B200110279	BOM	NMIL	3	0.004650	0.013950
53	B200110282	BOM	NMIL	4	0.004650	0.018600
54	B200110311	BOM	NMIL	1	0.004650	0.004650
55	B200110487	BOM	NMIL	1	0.004650	0.004650
56	B200110493	BOM	NMIL	3	0.005115	0.015345
57	B200110494	BOM	NMIL	2	0.004650	0.009300
58	B200110498	BOM	NMIL	1	0.004650	0.004650
59	B200110502	BOM	NMIL	1	0.004650	0.004650
60	B200110506	BOM	NMIL	2	0.004650	0.009300
61	B200110508	BOM	NMIL	1	0.004650	0.004650
62	B200110523	BOM	NMIL	1	0.004650	0.004650
63	B200110524	BOM	NMIL	1	0.004650	0.004650
64	B200110525	BOM	NMIL	1	0.004650	0.004650
65	B200110608	BOM	NMIL	3	0.007440	0.022320
66	B200110660	BOM	NMIL	1	0.004650	0.004650
67	B200110668	BOM	NMIL	1	0.004650	0.004650
68	B200120015	BOM	NMIL	1	0.007557	0.007557

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69	B200120160	BOM	NMIL	1	0.005425	0.005425
70	B200120168	BOM	NMIL	1	0.007735	0.007735
71	B200160022	BOM	NMIL	1	0.065000	0.065000
72	B200170015	BOM	NMIL	3	0.004875	0.014625
73	B200170021	BOM	NMIL	3	0.004875	0.014625
74	B200180005	BOM	N/A	1	0.009769	0.009769
75	B200180015	BOM	N/A	1	0.008923	0.008923
76	B200190022	BOM	N/A	2	0.015889	0.031778
77	B200190024	BOM	N/A	1	0.015889	0.015889
78	B200200012	BOM	N/A	1	0.009203	0.009203
79	B200200017	BOM	N/A	12	0.011856	0.142272
80	B200200053	BOM	N/A	2	0.014056	0.028112
81	B200200060	BOM	N/A	1	0.012930	0.012930
82	B200200062	BOM	N/A	1	0.007791	0.007791
83	B200200064	BOM	N/A	1	0.008470	0.008470
84	B200200069	BOM	N/A	1	0.006575	0.006575
85	B200200093	BOM	N/A	6	0.018108	0.108648
86	B200200095	BOM	N/A	2	0.016657	0.033314
87	B200200096	BOM	N/A	4	0.008147	0.032588
88	B200220021	BOM	N/A	1	0.002337	0.002337
89	B200220042	BOM	N/A	1	0.002416	0.002416
90	B200220043	BOM	N/A	2	0.002416	0.004832
91	B200220054	BOM	N/A	2	0.003478	0.006956
92	B200230036	BOM	N/A	1	0.032527	0.032527
93	B200230100	BOM	N/A	1	0.037487	0.037487
94	B200230143	BOM	N/A	1	0.028394	0.028394
95	B200230281	BOM	N/A	1	0.021490	0.021490
96	B200230313	BOM	N/A	2	0.107690	0.215380
97	B200230336	BOM	N/A	2	0.016363	0.032726
98	B200230338	BOM	N/A	2	0.018760	0.037520
99	B200230356	BOM	N/A	6	0.028394	0.170364
100	B200250009	BOM	NMIL	1	0.014915	0.014915
101	B200260125	BOM	NMIL	1	0.017671	0.017671
102	B200260228	BOM	NMIL	1	0.017671	0.017671
103	B200260231	BOM	NMIL	1	0.017671	0.017671
104	B200260247	BOM	NMIL	1	0.017671	0.017671
105	B200260248	BOM	NMIL	2	0.017671	0.035342
106	B200280012	BOM	NMIL	1	0.015958	0.015958
107	B200290002	BOM	NMIL	1	0.013740	0.013740
108	B200290011	BOM	NMIL	2	0.013740	0.027480
109	B200300219	BOM	NMIL	1	0.002476	0.002476
110	B200300248	BOM	NMIL	1	0.002476	0.002476
111	B200300264	BOM	NMIL	1	0.016837	0.016837
112	B210140013	BOM	KNOWNFR	2	2.070550	4.141100

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113	B210160025	BOM	N/A	1	0.010000	0.010000
114	B210190961	N/A	STANDARD	1	0.016567	0.016567

Total Failure Rate (F/10 ⁶ Hrs) :	8.755594
Mean Time (in hours) Between Failures (MTBF) :	114,213