

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: JUN-27-2014
End Item Title : M1X2 SERIES MTBF
End Item Part Number : M1X2-5550V2V (RoHS)
M1X2-5550V2V (RoHS) MTBF : 156,839
Module Title: ZIPPY TECHNOLOGY CORP
Module Part Number : M1X / MTBF
Power Unit Module : M1X-3552V (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.

$$\text{Total Failure Rate}(F) = M \lambda / (3/2) + B \lambda = 8.467357 / (3/2) + 0.731046 = 6.375951$$

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

$$\text{M1X2-5550V2V (RoHS)(MTBF)} = F / 10^6 \text{Hrs} = 6.375951 / 10^6 = 156,839$$

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Date : JUN-27-2014 Time : 14:45:23
End Item Title : M1X SERIES MTBF
End Item Part Number : M1X-3552V (RoHS)
M1X-3552V (RoHS) MTBF : 118,101
Module Title : ZIPPY TECHNOLOGY CORP
Module Part Number : M1X / MTBF
Module Reference Designation : M1X
Environmental Condition : GB
Ambient Temperature: 25°C

M1X-3552V (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	B102720004	BOM	NMIL	1	0.069564	0.069564
3	B104730002	BOM	NMIL	1	0.220751	0.220751
4	B104730015	BOM	NMIL	1	0.197783	0.197783
5	B104730019	BOM	NMIL	1	0.026430	0.026430
6	B200000080	BOM	SPECIAL	2	0.094935	0.189870
7	B200000092	BOM	SPECIAL	1	0.089240	0.089240
8	B200000144	BOM	SPECIAL	1	0.094935	0.094935
9	B200000252	BOM	SPECIAL	1	0.094935	0.094935
10	B200000268	BOM	SPECIAL	1	0.094935	0.094935
11	B200000276	BOM	SPECIAL	1	0.094935	0.094935
12	B200000308	BOM	SPECIAL	3	0.094935	0.284805
13	B200000316	BOM	SPECIAL	1	0.094935	0.094935
14	B200000443	BOM	SPECIAL	1	0.089240	0.089240
15	B200010022	BOM	NMIL	1	0.000162	0.000162
16	B200010056	BOM	NMIL	4	0.000116	0.000464
17	B200010080	BOM	NMIL	2	0.038916	0.077832
18	B200010083	BOM	NMIL	2	0.006810	0.013620
19	B200010084	BOM	NMIL	1	0.035532	0.035532
20	B200010166	BOM	NMIL	1	0.004410	0.004410
21	B200010176	BOM	NMIL	2	0.038916	0.077832
22	B200010186	BOM	NMIL	2	0.038916	0.077832
23	B200020014	BOM	NMIL	1	0.006751	0.006751
24	B200020021	BOM	NMIL	1	0.006751	0.006751

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25	B200020024	BOM	NMIL	12	0.005156	0.061872
26	B200030019	BOM	NMIL	1	0.007617	0.007617
27	B200040063	BOM	NMIL	1	0.015144	0.015144
28	B200040069	BOM	NMIL	1	0.002929	0.002929
29	B200050024	BOM	NMIL	1	0.005218	0.005218
30	B200050039	BOM	NMIL	1	0.005218	0.005218
31	B200050040	BOM	NMIL	4	0.005218	0.020872
32	B200050063	BOM	NMIL	1	0.064192	0.064192
33	B200060009	BOM	NMIL	1	0.013731	0.013731
34	B200090005	BOM	NMIL	1	0.001518	0.001518
35	B200110001	BOM	NMIL	1	0.004650	0.004650
36	B200110021	BOM	NMIL	2	0.004650	0.009300
37	B200110035	BOM	NMIL	2	0.004650	0.009300
38	B200110040	BOM	NMIL	11	0.004650	0.051150
39	B200110042	BOM	NMIL	2	0.004650	0.009300
40	B200110046	BOM	NMIL	7	0.004650	0.032550
41	B200110120	BOM	NMIL	3	0.004650	0.013950
42	B200110141	BOM	NMIL	1	0.004650	0.004650
43	B200110172	BOM	NMIL	4	0.004650	0.018600
44	B200110177	BOM	NMIL	1	0.004650	0.004650
45	B200110190	BOM	NMIL	1	0.004650	0.004650
46	B200110202	BOM	NMIL	1	0.004650	0.004650
47	B200110227	BOM	NMIL	6	0.004650	0.027900
48	B200110231	BOM	NMIL	1	0.004650	0.004650
49	B200110251	BOM	NMIL	1	0.004650	0.004650
50	B200110261	BOM	NMIL	2	0.004650	0.009300
51	B200110270	BOM	NMIL	2	0.004650	0.009300
52	B200110276	BOM	NMIL	2	0.004650	0.009300
53	B200110282	BOM	NMIL	8	0.004650	0.037200
54	B200110303	BOM	NMIL	4	0.005115	0.020460
55	B200110309	BOM	NMIL	1	0.004650	0.004650
56	B200110313	BOM	NMIL	1	0.004650	0.004650
57	B200110340	BOM	NMIL	1	0.004650	0.004650
58	B200110343	BOM	NMIL	1	0.004650	0.004650
59	B200110348	BOM	NMIL	1	0.004650	0.004650
60	B200110354	BOM	NMIL	1	0.004650	0.004650
61	B200110422	BOM	NMIL	1	0.004650	0.004650
62	B200110463	BOM	NMIL	1	0.005115	0.005115
63	B200110487	BOM	NMIL	1	0.004650	0.004650
64	B200110489	BOM	NMIL	1	0.004650	0.004650
65	B200110490	BOM	NMIL	1	0.004650	0.004650
66	B200110494	BOM	NMIL	1	0.004650	0.004650
67	B200110517	BOM	NMIL	1	0.004650	0.004650
68	B200110541	BOM	NMIL	1	0.004650	0.004650

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69	B200110544	BOM	NMIL	1	0.004650	0.004650
70	B200110626	BOM	NMIL	1	0.004650	0.004650
71	B200110627	BOM	NMIL	1	0.005115	0.005115
72	B200110635	BOM	NMIL	1	0.004650	0.004650
73	B200110907	BOM	NMIL	3	0.004650	0.013950
74	B200110908	BOM	NMIL	1	0.004650	0.004650
75	B200120015	BOM	NMIL	1	0.007557	0.007557
76	B200120017	BOM	NMIL	1	0.009576	0.009576
77	B200120154	BOM	NMIL	1	0.008509	0.008509
78	B200120162	BOM	NMIL	1	0.007735	0.007735
79	B200160011	BOM	NMIL	1	0.065000	0.065000
80	B200160017	BOM	NMIL	1	0.065000	0.065000
81	B200170020	BOM	NMIL	3	0.004875	0.014625
82	B200170026	BOM	NMIL	3	0.004875	0.014625
83	B200180075	BOM	N/A	3	0.008923	0.026769
84	B200190033	BOM	N/A	1	0.013308	0.013308
85	B200190035	BOM	N/A	1	0.015889	0.015889
86	B200200057	BOM	N/A	2	0.018108	0.036216
87	B200200060	BOM	N/A	2	0.012930	0.025860
88	B200200061	BOM	N/A	3	0.008470	0.025410
89	B200200066	BOM	N/A	1	0.010911	0.010911
90	B200200069	BOM	N/A	1	0.006575	0.006575
91	B200200074	BOM	N/A	4	0.015274	0.061096
92	B200200078	BOM	N/A	1	0.010037	0.010037
93	B200200083	BOM	N/A	2	0.007144	0.014288
94	B200200156	BOM	N/A	5	0.011856	0.059280
95	B200200158	BOM	N/A	3	0.007791	0.023373
96	B200220021	BOM	N/A	1	0.002337	0.002337
97	B200220028	BOM	N/A	3	0.002647	0.007941
98	B200220041	BOM	N/A	1	0.002198	0.002198
99	B200230036	BOM	N/A	1	0.047478	0.047478
100	B200230149	BOM	N/A	1	0.051532	0.051532
101	B200230198	BOM	N/A	5	0.054717	0.273585
102	B200230276	BOM	N/A	1	0.025769	0.025769
103	B200230277	BOM	N/A	2	0.039003	0.078006
104	B200230288	BOM	N/A	1	0.018091	0.018091
105	B200230335	BOM	N/A	1	0.167943	0.167943
106	B200230336	BOM	N/A	1	0.023884	0.023884
107	B200230338	BOM	N/A	4	0.027382	0.109528
108	B200230384	BOM	N/A	2	0.042772	0.085544
109	B200250009	BOM	NMIL	1	0.021770	0.021770
110	B200260127	BOM	NMIL	1	0.025794	0.025794
111	B200260204	BOM	NMIL	1	0.025794	0.025794
112	B200260245	BOM	NMIL	1	0.025794	0.025794

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113	B200260251	BOM	NMIL	1	0.025794	0.025794
114	B200280012	BOM	NMIL	2	0.015958	0.031916
115	B200290009	BOM	NMIL	2	0.013740	0.027480
116	B200300166	BOM	NMIL	1	0.003614	0.003614
117	B200300219	BOM	NMIL	1	0.003614	0.003614
118	B200300237	BOM	NMIL	1	0.003614	0.003614
119	B200300238	BOM	NMIL	1	0.024575	0.024575
120	B200310004	BOM	NMIL	1	0.028764	0.028764
121	B210140037	BOM	KNOWNFR	2	2.070550	4.141100
122	B210160059	BOM	N/A	1	0.010000	0.010000
123	B210191721	N/A	STANDARD	1	0.020588	0.020588
124	B210191722	N/A	STANDARD	1	0.022077	0.022077

Total Failure Rate (F/10 ⁶ Hrs) :	8.467357
Mean Time (in hours) Between Failures (MTBF) :	118,101