

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: JAN-16-2014
End Item Title : M1S2 SERIES MTBF
End Item Part Number : M1S2-5501V4H (RoHS)
M1S2-5501V4H (RoHS) MTBF : 206,424
Module Title: ZIPPY TECHNOLOGY CORP
Module Part Number : M1S / MTBF
Power Unit Module : M1S-3501V (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.

$$\text{Total Failure Rate}(F) = M \lambda / (3/2) + B \lambda = 6.223386 / (3/2) + 0.695472 = 4.844396$$

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

$$M1S2-5501V4H (RoHS)(MTBF) = F / 10^6 \text{Hrs} = 4.844396 / 10^6 = 206,424$$

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

Date : JAN-16-2014 Time : 15:15:32
End Item Title : M1S SERIES MTBF
End Item Part Number : M1S-3501V (RoHS)
M1S-3501V (RoHS) MTBF : 160,684
Module Title : ZIPPY TECHNOLOGY CORP
Module Part Number : M1S / MTBF
Module Reference Designation : M1S
Environmental Condition : GB
Ambient Temperature: 25°C

M1S-3501V (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	B103210004	BOM	NMIL	1	0.065162	0.065162
3	B103730002	BOM	NMIL	1	0.132621	0.132621
4	B103730005	BOM	NMIL	1	0.411835	0.411835
5	B103730006	BOM	NMIL	1	0.080219	0.080219
6	B103730008	BOM	NMIL	1	0.033705	0.033705
7	B200000080	BOM	SPECIAL	1	0.094935	0.094935
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	B200000308	BOM	SPECIAL	1	0.094935	0.094935
12	B200000316	BOM	SPECIAL	1	0.094935	0.094935
13	B200000364	BOM	SPECIAL	1	0.094935	0.094935
14	B200000443	BOM	SPECIAL	1	0.094935	0.094935
15	B200010022	BOM	NMIL	1	0.000798	0.000798
16	B200010057	BOM	NMIL	4	0.030770	0.123080
17	B200010067	BOM	NMIL	2	0.000798	0.001596
18	B200010083	BOM	NMIL	1	0.000782	0.000782
19	B200020024	BOM	NMIL	9	0.005156	0.046404
20	B200030069	BOM	NMIL	3	0.007617	0.022851
21	B200040012	BOM	NMIL	1	0.005967	0.005967
22	B200040015	BOM	NMIL	2	0.005967	0.011934
23	B200040059	BOM	NMIL	1	0.005967	0.005967
24	B200040063	BOM	NMIL	1	0.015789	0.015789

ZIPPY TECHNOLOGY CORP
10F, No.50, MIN CHYUAN RD
XINDIAN DIST., NEW TAIPEI CITY, TAIWAN, R.O.C.

25	B200040067	BOM	NMIL	1	0.015789	0.015789
26	B200050036	BOM	NMIL	4	0.005218	0.020872
27	B200050039	BOM	NMIL	1	0.005218	0.005218
28	B200050045	BOM	NMIL	3	0.005218	0.015654
29	B200060009	BOM	NMIL	1	0.014315	0.014315
30	B200090005	BOM	NMIL	1	0.001518	0.001518
31	B200110001	BOM	NMIL	1	0.004650	0.004650
32	B200110035	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	B200110087	BOM	NMIL	2	0.004650	0.009300
37	B200110120	BOM	NMIL	15	0.004650	0.069750
38	B200110123	BOM	NMIL	4	0.004650	0.018600
39	B200110126	BOM	NMIL	1	0.007440	0.007440
40	B200110127	BOM	NMIL	3	0.007440	0.022320
41	B200110172	BOM	NMIL	1	0.004650	0.004650
42	B200110276	BOM	NMIL	3	0.004650	0.013950
43	B200110282	BOM	NMIL	4	0.004650	0.018600
44	B200110343	BOM	NMIL	1	0.004650	0.004650
45	B200110488	BOM	NMIL	1	0.004650	0.004650
46	B200110494	BOM	NMIL	1	0.004650	0.004650
47	B200110503	BOM	NMIL	1	0.005115	0.005115
48	B200110505	BOM	NMIL	1	0.004650	0.004650
49	B200110506	BOM	NMIL	1	0.004650	0.004650
50	B200110508	BOM	NMIL	1	0.004650	0.004650
51	B200110510	BOM	NMIL	1	0.004650	0.004650
52	B200110512	BOM	NMIL	1	0.004650	0.004650
53	B200110519	BOM	NMIL	1	0.004650	0.004650
54	B200110520	BOM	NMIL	1	0.004650	0.004650
55	B200110521	BOM	NMIL	1	0.004650	0.004650
56	B200110523	BOM	NMIL	1	0.004650	0.004650
57	B200110525	BOM	NMIL	2	0.004650	0.009300
58	B200110538	BOM	NMIL	1	0.004650	0.004650
59	B200110542	BOM	NMIL	1	0.004650	0.004650
60	B200110550	BOM	NMIL	1	0.004650	0.004650
61	B200110553	BOM	NMIL	1	0.004650	0.004650
62	B200110561	BOM	NMIL	4	0.004650	0.018600
63	B200110583	BOM	NMIL	1	0.004650	0.004650
64	B200110588	BOM	NMIL	1	0.004650	0.004650
65	B200110590	BOM	NMIL	1	0.005115	0.005115
66	B200110594	BOM	NMIL	1	0.004650	0.004650
67	B200110598	BOM	NMIL	2	0.004650	0.009300
68	B200110618	BOM	NMIL	1	0.004650	0.004650

ZIPPY TECHNOLOGY CORP
10F, No.50, MIN CHYUAN RD
XINDIAN DIST., NEW TAIPEI CITY, TAIWAN, R.O.C.

69	B200110640	BOM	NMIL	1	0.004650	0.004650
70	B200110646	BOM	NMIL	1	0.004650	0.004650
71	B200120012	BOM	NMIL	1	0.007735	0.007735
72	B200120017	BOM	NMIL	1	0.009576	0.009576
73	B200120090	BOM	NMIL	1	0.006870	0.006870
74	B200120150	BOM	NMIL	1	0.004820	0.004820
75	B200160011	BOM	NMIL	1	0.065000	0.065000
76	B200160017	BOM	NMIL	1	0.065000	0.065000
77	B200170020	BOM	NMIL	2	0.004875	0.009750
78	B200170026	BOM	NMIL	3	0.004875	0.014625
79	B200180070	BOM	N/A	1	0.008146	0.008146
80	B200180075	BOM	N/A	1	0.009327	0.009327
81	B200190064	BOM	N/A	1	0.016840	0.016840
82	B200200061	BOM	N/A	1	0.008470	0.008470
83	B200200071	BOM	N/A	1	0.006048	0.006048
84	B200200074	BOM	N/A	1	0.015274	0.015274
85	B200200083	BOM	N/A	3	0.007144	0.021432
86	B200200089	BOM	N/A	2	0.016657	0.033314
87	B200200153	BOM	N/A	2	0.009203	0.018406
88	B200200155	BOM	N/A	2	0.009203	0.018406
89	B200200156	BOM	N/A	5	0.011856	0.059280
90	B200200158	BOM	N/A	2	0.007791	0.015582
91	B200200166	BOM	N/A	1	0.012930	0.012930
92	B200210004	BOM	N/A	2	0.006740	0.013480
93	B200220020	BOM	N/A	1	0.002337	0.002337
94	B200220036	BOM	N/A	2	0.013891	0.027782
95	B200220049	BOM	N/A	1	0.008751	0.008751
96	B200220060	BOM	N/A	1	0.008751	0.008751
97	B200230198	BOM	N/A	5	0.057046	0.285230
98	B200230210	BOM	N/A	2	0.049498	0.098996
99	B200230236	BOM	N/A	1	0.016452	0.016452
100	B200230277	BOM	N/A	1	0.040663	0.040663
101	B200230288	BOM	N/A	2	0.018861	0.037722
102	B200230338	BOM	N/A	2	0.028547	0.057094
103	B200230347	BOM	N/A	1	0.018861	0.018861
104	B200230380	BOM	N/A	3	0.197645	0.592935
105	B200230423	BOM	N/A	1	0.032703	0.032703
106	B200250009	BOM	NMIL	1	0.022697	0.022697
107	B200260125	BOM	NMIL	1	0.026891	0.026891
108	B200260255	BOM	NMIL	1	0.026891	0.026891
109	B200260264	BOM	NMIL	1	0.026891	0.026891
110	B200260265	BOM	NMIL	1	0.026891	0.026891
111	B200280012	BOM	NMIL	1	0.015958	0.015958
112	B200300236	BOM	NMIL	1	0.003768	0.003768

ZIPPY TECHNOLOGY CORP
10F, No.50, MIN CHYUAN RD
XINDIAN DIST., NEW TAIPEI CITY, TAIWAN, R.O.C.

113	B200300293	BOM	NMIL	1	0.025621	0.025621
114	B200300294	BOM	NMIL	1	0.003768	0.003768
115	B200310007	BOM	NMIL	1	0.029988	0.029988
116	B210090199	BOM	KNOWNFR	1	2.068077	2.068077
117	B210160046	BOM	N/A	1	0.010000	0.010000
118	B210191918	N/A	STANDARD	1	0.016567	0.016567

Total Failure Rate (F/10 ⁶ Hrs) :	6.223386
Mean Time (in hours) Between Failures (MTBF) :	160,684