

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: OCT-12-2012  
End Item Title : DM1P2 SERIES MTBF  
End Item Part Number : DM1P2-5500V4V (RoHS)  
DM1P2-5500V4V (RoHS) MTBF : 208,670  
Module Title: ZIPPY TECHNOLOGY CORP  
Module Part Number : DM1P / MTBF  
Power Unit Module : DM1P-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.

$$\text{Total Failure Rate}(F) = M \lambda / (3/2) + B \lambda = 6.091807 / (3/2) + 0.731046 = 4.792251$$

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

$$\text{DM1P2-5500V4V (RoHS)(MTBF)} = F / 10^6 \text{Hrs} = 4.792251 / 10^6 = 208,670$$

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 : OCT-12-2012      Time : 10:15:32  
End Item Title : DM1P SERIES MTBF  
End Item Part Number : DM1P-2500V (RoHS)  
DM1P-2500V (RoHS) MTBF : 164,155  
Module Title : ZIPPY TECHNOLOGY CORP  
Module Part Number : DM1P / MTBF  
Module Reference Designation : DM1P  
Environmental Condition : GB  
Ambient Temperature: 25°C

**DM1P-2500V (RoHS)**

ITEM #	Part Number	Ref Desig	Qual Level	Quant	Individual Failure Rate (F/10 <sup>6</sup> Hrs)	Total Failure Rate (F/10 <sup>6</sup> Hrs)
1	B102330004	BOM	NMIL	1	0.069564	0.069564
2	B103120002	BOM	NMIL	1	0.080219	0.080219
3	B103210004	BOM	NMIL	1	0.065162	0.065162
4	B104090003	BOM	NMIL	1	0.132621	0.132621
5	B104170002	BOM	NMIL	1	0.220943	0.220943
6	B200000001	BOM	SPECIAL	3	0.094935	0.284805
7	B200000080	BOM	SPECIAL	3	0.094935	0.284805
8	B200000144	BOM	SPECIAL	1	0.094935	0.094935
9	B200000207	BOM	SPECIAL	1	0.094935	0.094935
10	B200000257	BOM	SPECIAL	1	0.094935	0.094935
11	B200000268	BOM	SPECIAL	1	0.094935	0.094935
12	B200000308	BOM	SPECIAL	1	0.094935	0.094935
13	B200000316	BOM	SPECIAL	1	0.094935	0.094935
14	B200000377	BOM	SPECIAL	1	0.094935	0.094935
15	B200010009	BOM	NMIL	1	0.000798	0.000798
16	B200010022	BOM	NMIL	1	0.000798	0.000798
17	B200010052	BOM	NMIL	1	0.000798	0.000798
18	B200010056	BOM	NMIL	3	0.000798	0.002394
19	B200010067	BOM	NMIL	2	0.000798	0.001596
20	B200010080	BOM	NMIL	2	0.031398	0.062796
21	B200010153	BOM	NMIL	2	0.031398	0.062796
22	B200010161	BOM	NMIL	2	0.031398	0.062796
23	B200010162	BOM	NMIL	1	0.031398	0.031398
24	B200020004	BOM	NMIL	15	0.005156	0.077340

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

25	B200030018	BOM	NMIL	4	0.007617	0.030468
26	B200030042	BOM	NMIL	1	0.007617	0.007617
27	B200040015	BOM	NMIL	1	0.005967	0.005967
28	B200040059	BOM	NMIL	1	0.005967	0.005967
29	B200040063	BOM	NMIL	1	0.016111	0.016111
30	B200040084	BOM	NMIL	1	0.007909	0.007909
31	B200050024	BOM	NMIL	1	0.005218	0.005218
32	B200050027	BOM	NMIL	2	0.005218	0.010436
33	B200050036	BOM	NMIL	2	0.005218	0.010436
34	B200050040	BOM	NMIL	2	0.005218	0.010436
35	B200090005	BOM	NMIL	1	0.001518	0.001518
36	B200110001	BOM	NMIL	1	0.004650	0.004650
37	B200110022	BOM	NMIL	1	0.004650	0.004650
38	B200110042	BOM	NMIL	8	0.004650	0.037200
39	B200110046	BOM	NMIL	7	0.004650	0.032550
40	B200110073	BOM	NMIL	2	0.005115	0.010230
41	B200110095	BOM	NMIL	1	0.004650	0.004650
42	B200110123	BOM	NMIL	6	0.004650	0.027900
43	B200110172	BOM	NMIL	1	0.004650	0.004650
44	B200110190	BOM	NMIL	3	0.004650	0.013950
45	B200110192	BOM	NMIL	3	0.004650	0.013950
46	B200110227	BOM	NMIL	2	0.004650	0.009300
47	B200110261	BOM	NMIL	2	0.004650	0.009300
48	B200110270	BOM	NMIL	2	0.004650	0.009300
49	B200110276	BOM	NMIL	1	0.004650	0.004650
50	B200110279	BOM	NMIL	2	0.004650	0.009300
51	B200110343	BOM	NMIL	1	0.004650	0.004650
52	B200110488	BOM	NMIL	1	0.004650	0.004650
53	B200110489	BOM	NMIL	1	0.004650	0.004650
54	B200110492	BOM	NMIL	1	0.004650	0.004650
55	B200110493	BOM	NMIL	1	0.005115	0.005115
56	B200110494	BOM	NMIL	3	0.004650	0.013950
57	B200110498	BOM	NMIL	1	0.004650	0.004650
58	B200110501	BOM	NMIL	1	0.004650	0.004650
59	B200110503	BOM	NMIL	1	0.005115	0.005115
60	B200110505	BOM	NMIL	1	0.004650	0.004650
61	B200110508	BOM	NMIL	1	0.004650	0.004650
62	B200110510	BOM	NMIL	1	0.004650	0.004650
63	B200110512	BOM	NMIL	2	0.004650	0.009300
64	B200110514	BOM	NMIL	1	0.004650	0.004650
65	B200110519	BOM	NMIL	2	0.004650	0.009300
66	B200110523	BOM	NMIL	2	0.004650	0.009300
67	B200110524	BOM	NMIL	1	0.004650	0.004650
68	B200110525	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	B200110544	BOM	NMIL	1	0.004650	0.004650
70	B200110545	BOM	NMIL	1	0.004650	0.004650
71	B200110550	BOM	NMIL	1	0.004650	0.004650
72	B200110551	BOM	NMIL	1	0.004650	0.004650
73	B200110554	BOM	NMIL	4	0.004650	0.018600
74	B200110556	BOM	NMIL	1	0.004650	0.004650
75	B200110560	BOM	NMIL	1	0.004650	0.004650
76	B200110561	BOM	NMIL	6	0.004650	0.027900
77	B200110565	BOM	NMIL	1	0.004650	0.004650
78	B200110571	BOM	NMIL	1	0.004650	0.004650
79	B200110588	BOM	NMIL	1	0.004650	0.004650
80	B200110590	BOM	NMIL	1	0.005115	0.005115
81	B200110613	BOM	NMIL	2	0.004650	0.009300
82	B200110627	BOM	NMIL	1	0.005115	0.005115
83	B200110658	BOM	NMIL	2	0.004650	0.009300
84	B200120012	BOM	NMIL	3	0.007735	0.023205
85	B200120017	BOM	NMIL	1	0.009576	0.009576
86	B200120032	BOM	NMIL	1	0.006870	0.006870
87	B200120091	BOM	NMIL	1	0.007735	0.007735
88	B200120174	BOM	NMIL	1	0.004820	0.004820
89	B200160017	BOM	NMIL	1	0.065000	0.065000
90	B200160034	BOM	NMIL	1	0.105000	0.105000
91	B200170020	BOM	NMIL	2	0.004875	0.009750
92	B200170029	BOM	NMIL	3	0.004875	0.014625
93	B200190031	BOM	N/A	1	0.017894	0.017894
94	B200200021	BOM	N/A	5	0.015274	0.076370
95	B200200060	BOM	N/A	1	0.012930	0.012930
96	B200200061	BOM	N/A	3	0.008470	0.025410
97	B200200066	BOM	N/A	1	0.010911	0.010911
98	B200200069	BOM	N/A	1	0.006575	0.006575
99	B200200071	BOM	N/A	1	0.006048	0.006048
100	B200200078	BOM	N/A	1	0.010037	0.010037
101	B200200083	BOM	N/A	3	0.007144	0.021432
102	B200200089	BOM	N/A	4	0.016657	0.066628
103	B200200101	BOM	N/A	1	0.016657	0.016657
104	B200200153	BOM	N/A	3	0.009203	0.027609
105	B200200156	BOM	N/A	6	0.011856	0.071136
106	B200200157	BOM	N/A	1	0.011856	0.011856
107	B200200158	BOM	N/A	2	0.007791	0.015582
108	B200210007	BOM	N/A	1	0.021805	0.021805
109	B200220018	BOM	N/A	3	0.002416	0.007248
110	B200220020	BOM	N/A	1	0.002337	0.002337
111	B200220028	BOM	N/A	1	0.002647	0.002647
112	B200220071	BOM	N/A	1	0.002767	0.002767

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

113	B200230198	BOM	N/A	5	0.058210	0.291050
114	B200230210	BOM	N/A	1	0.050508	0.050508
115	B200230276	BOM	N/A	1	0.027414	0.027414
116	B200230277	BOM	N/A	1	0.041493	0.041493
117	B200230338	BOM	N/A	3	0.029130	0.087390
118	B200230370	BOM	N/A	1	0.046540	0.046540
119	B200230377	BOM	N/A	2	0.028585	0.057170
120	B200250009	BOM	NMIL	1	0.023160	0.023160
121	B200260271	BOM	NMIL	1	0.027440	0.027440
122	B200260325	BOM	NMIL	1	0.027440	0.027440
123	B200260327	BOM	NMIL	1	0.027440	0.027440
124	B200300219	BOM	NMIL	1	0.003845	0.003845
125	B200300236	BOM	NMIL	1	0.003845	0.003845
126	B200300269	BOM	NMIL	1	0.003845	0.003845
127	B200300298	BOM	NMIL	1	0.026144	0.026144
128	B210090085	BOM	KNOWNFR	1	1.995000	1.995000
129	B210160052	BOM	N/A	1	0.010000	0.010000
130	B210191504	N/A	STANDARD	1	0.022077	0.022077

Total Failure Rate (F/10<sup>6</sup>Hrs) : 6.091807  
 Mean Time (in hours) Between Failures (MTBF) : **164,155**