

RELIABILITY PREDICTION STANDARD REPORT

(Sorted by Part Number)

MIL-HDBK-217F, Notice 2

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

Date: AUG-02-2010

End Item Title : M1ZX SERIES MTBF

End Item Part Number : M1Z2-5500V3V (RoHS)

M1Z2-5500V3V (RoHS) MTBF: 158,388

Module Title: ZIPPY TECHNOLOGY CORP

Module Part Number : M1Z/MTBF

Power Unit Module : M1Z-5500V (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.

$$\begin{aligned} \text{MTBF} &= (1/\lambda) + (1/\lambda) - (1/(\lambda + \lambda)) \\ &= (3/2) \lambda \end{aligned}$$

λ = failure rate per million hours

$$\text{M1Z2-5500V3V (RoHS)(MTBF)} = (3/2) \lambda = (3/2) \times 105,592 = 158,388$$

ZIPPY TECHNOLOGY CORP
10F, No.50, MIN CHYUAN RD
SHIN-TIEN, TAIPEI HSIEN, TAIWAN, R.O.C.

RELIABILITY PREDICTION STANDARD REPORT						
(Sorted by Part Number)						
MIL - HDBK - 217F, Notice 2						
Date : AUG-02-2010 Time : 13:35:28						
End Item Title : M1Z SERIES MTBF						
End Item Part Number : M1Z-5500V (RoHS)						
Module Title : ZIPPY TECHNOLOGY CORP						
Module Part Number : M1Z/MTBF						
Module Reference Designation : M1Z						
Environmental Condition : GB						
Ambient Temperature: 25°C						
<u>M1Z-5500V (RoHS)</u>						
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	B102330004	BOM	NMIL	1	0.069564	0.069564
3	B102540002	BOM	NMIL	1	0.582975	0.582975
4	B102540003	BOM	NMIL	1	0.582975	0.582975
5	B102540004	BOM	NMIL	1	0.879263	0.879263
6	B200000001	BOM	SPECIAL	1	0.094935	0.094935
7	B200000058	BOM	SPECIAL	1	0.094935	0.094935
8	B200000092	BOM	SPECIAL	1	0.094935	0.094935
9	B200000242	BOM	SPECIAL	1	0.094935	0.094935
10	B200000252	BOM	SPECIAL	2	0.094935	0.189870
11	B200000276	BOM	SPECIAL	1	0.094935	0.094935
12	B200000316	BOM	SPECIAL	2	0.094935	0.189870
13	B200010022	BOM	NMIL	2	0.000798	0.001596
14	B200010052	BOM	NMIL	2	0.000798	0.001596
15	B200010056	BOM	NMIL	5	0.000798	0.003990
16	B200010057	BOM	NMIL	2	0.031398	0.062796
17	B200010067	BOM	NMIL	2	0.000798	0.001596
18	B200010080	BOM	NMIL	2	0.031398	0.062796
19	B200010081	BOM	NMIL	2	0.031398	0.062796
20	B200010083	BOM	NMIL	2	0.000798	0.001596
21	B200010084	BOM	NMIL	1	0.031398	0.031398
22	B200020004	BOM	NMIL	12	0.005156	0.061872
23	B200020014	BOM	NMIL	1	0.006751	0.006751
24	B200020021	BOM	NMIL	1	0.006751	0.006751
25	B200030019	BOM	NMIL	1	0.007617	0.007617

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26	B200030030	BOM	NMIL	1	0.007617	0.007617
27	B200040068	BOM	NMIL	1	0.016111	0.016111
28	B200040069	BOM	NMIL	1	0.002929	0.002929
29	B200050024	BOM	NMIL	2	0.005218	0.010436
30	B200050037	BOM	NMIL	4	0.005218	0.020872
31	B200050039	BOM	NMIL	1	0.005218	0.005218
32	B200050054	BOM	NMIL	1	0.088813	0.088813
33	B200060009	BOM	NMIL	1	0.014607	0.014607
34	B200090005	BOM	NMIL	1	0.001518	0.001518
35	B200110001	BOM	NMIL	2	0.004650	0.009300
36	B200110021	BOM	NMIL	2	0.004650	0.009300
37	B200110035	BOM	NMIL	2	0.004650	0.009300
38	B200110040	BOM	NMIL	9	0.004650	0.041850
39	B200110042	BOM	NMIL	4	0.004650	0.018600
40	B200110046	BOM	NMIL	15	0.004650	0.069750
41	B200110120	BOM	NMIL	4	0.004650	0.018600
42	B200110123	BOM	NMIL	1	0.004650	0.004650
43	B200110131	BOM	NMIL	1	0.004650	0.004650
44	B200110141	BOM	NMIL	1	0.004650	0.004650
45	B200110151	BOM	NMIL	1	0.004650	0.004650
46	B200110172	BOM	NMIL	4	0.004650	0.018600
47	B200110177	BOM	NMIL	1	0.004650	0.004650
48	B200110190	BOM	NMIL	2	0.004650	0.009300
49	B200110202	BOM	NMIL	1	0.004650	0.004650
50	B200110227	BOM	NMIL	6	0.004650	0.027900
51	B200110235	BOM	NMIL	3	0.004650	0.013950
52	B200110276	BOM	NMIL	4	0.004650	0.018600
53	B200110279	BOM	NMIL	1	0.004650	0.004650
54	B200110282	BOM	NMIL	8	0.004650	0.037200
55	B200110296	BOM	NMIL	2	0.004650	0.009300
56	B200110303	BOM	NMIL	4	0.005115	0.020460
57	B200110309	BOM	NMIL	1	0.004650	0.004650
58	B200110313	BOM	NMIL	1	0.004650	0.004650
59	B200110340	BOM	NMIL	1	0.004650	0.004650
60	B200110348	BOM	NMIL	1	0.004650	0.004650
61	B200110402	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	B200110514	BOM	NMIL	1	0.004650	0.004650
65	B200110525	BOM	NMIL	1	0.004650	0.004650
66	B200110582	BOM	NMIL	1	0.004650	0.004650
67	B200120015	BOM	NMIL	1	0.007557	0.007557
68	B200120031	BOM	NMIL	1	0.006870	0.006870
69	B200120119	BOM	NMIL	2	0.005425	0.010850

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70	B200120154	BOM	NMIL	1	0.008509	0.008509
71	B200120162	BOM	NMIL	1	0.007735	0.007735
72	B200160011	BOM	NMIL	1	0.065000	0.065000
73	B200160025	BOM	NMIL	1	0.065000	0.065000
74	B200170019	BOM	NMIL	2	0.004875	0.009750
75	B200170020	BOM	NMIL	2	0.004875	0.009750
76	B200180015	BOM	N/A	3	0.008923	0.026769
77	B200190022	BOM	N/A	1	0.015889	0.015889
78	B200190033	BOM	N/A	1	0.013308	0.013308
79	B200190035	BOM	N/A	1	0.015889	0.015889
80	B200200017	BOM	N/A	5	0.011856	0.059280
81	B200200057	BOM	N/A	2	0.018108	0.036216
82	B200200060	BOM	N/A	1	0.012930	0.012930
83	B200200061	BOM	N/A	2	0.008470	0.016940
84	B200200062	BOM	N/A	3	0.007791	0.023373
85	B200200066	BOM	N/A	1	0.010911	0.010911
86	B200200069	BOM	N/A	1	0.006575	0.006575
87	B200200074	BOM	N/A	4	0.015274	0.061096
88	B200220018	BOM	N/A	2	0.002416	0.004832
89	B200220021	BOM	N/A	1	0.002337	0.002337
90	B200220036	BOM	N/A	1	0.002647	0.002647
91	B200230036	BOM	N/A	1	0.050508	0.050508
92	B200230149	BOM	N/A	1	0.054821	0.054821
93	B200230198	BOM	N/A	5	0.058210	0.291050
94	B200230226	BOM	N/A	1	0.022233	0.022233
95	B200230275	BOM	N/A	4	0.029130	0.116520
96	B200230276	BOM	N/A	1	0.027414	0.027414
97	B200230277	BOM	N/A	2	0.041493	0.082986
98	B200230312	BOM	N/A	1	0.173370	0.173370
99	B200250009	BOM	NMIL	1	0.023160	0.023160
100	B200250011	BOM	NMIL	1	0.023160	0.023160
101	B200260085	BOM	NMIL	1	0.027440	0.027440
102	B200260175	BOM	NMIL	1	0.027440	0.027440
103	B200260176	BOM	NMIL	1	0.027440	0.027440
104	B200260225	BOM	NMIL	1	0.027440	0.027440
105	B200280012	BOM	NMIL	1	0.015958	0.015958
106	B200290009	BOM	NMIL	2	0.013740	0.027480
107	B200300166	BOM	NMIL	1	0.003845	0.003845
108	B200300219	BOM	NMIL	1	0.003845	0.003845
109	B200300237	BOM	NMIL	1	0.003845	0.003845
110	B200300238	BOM	NMIL	1	0.026144	0.026144
111	B200310004	BOM	NMIL	1	0.030600	0.030600
112	B210140015	BOM	KNOWNFR	2	1.947362	3.894724
113	B210160021	BOM	N/A	1	0.010000	0.010000

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114	B210190674	N/A	STANDARD	1	0.022077	0.022077
115	B210190890	N/A	STANDARD	1	0.020588	0.020588
			Total Failure Rate (F/10 ⁶ Hrs) :			9.470438
			Mean Time (in hours) Between Failures (MTBF) :			105,592