

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: SEP-19-2014

End Item Title : M1Y2 SERIES MTBF

End Item Part Number : M1Y2-5150V2H (RoHS)(PMBus NP1.2)

M1Y2-5150V2H (RoHS)(PMBus NP1.2) MTBF : 208,132

Module Title: ZIPPY TECHNOLOGY CORP

Module Part Number : M1Y / MTBF

Power Unit Module : M1Y-2152V (RoHS)(PMBus NP1.2)

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.

$$\text{Total Failure Rate}(F) = M \lambda / (3/2) + B \lambda = 6.165822 / (3/2) + 0.694086 = 4.804634$$

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

$$\text{M1Y2-5150V2H (RoHS)(PMBus NP1.2)(MTBF)} = F / 10^6 \text{Hrs} = 4.804634 / 10^6 = 208,132$$

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(Sorted by Part Number)
MIL - HDBK - 217F, Notice 2

Date : SEP-19-2014 Time : 09:42:33
End Item Title : M1Y SERIES MTBF
End Item Part Number : M1Y-2152V (RoHS)(PMBus NP1.2)
M1Y-2152V (RoHS)(PMBus NP1.2) MTBF : 162,184
Module Title : ZIPPY TECHNOLOGY CORP
Module Part Number : M1Y / MTBF
Module Reference Designation : M1Y
Environmental Condition : GB
Ambient Temperature: 25°C

M1Y-2152V (RoHS)(PMBus NP1.2)

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	B104470003	BOM	NMIL	1	0.197783	0.197783
4	B105250002	BOM	NMIL	1	0.195486	0.195486
5	B105250005	BOM	NMIL	1	0.026430	0.026430
6	B200000144	BOM	SPECIAL	1	0.094935	0.094935
7	B200000268	BOM	SPECIAL	1	0.094935	0.094935
8	B200000281	BOM	SPECIAL	2	0.094935	0.189870
9	B200000308	BOM	SPECIAL	4	0.094935	0.379740
10	B200000521	BOM	SPECIAL	1	0.094935	0.094935
11	B200000552	BOM	SPECIAL	1	0.094935	0.094935
12	B200000553	BOM	SPECIAL	1	0.094935	0.094935
13	B200000554	BOM	SPECIAL	1	0.094935	0.094935
14	B200000555	BOM	SPECIAL	1	0.094935	0.094935
15	B200010022	BOM	NMIL	2	0.000798	0.001596
16	B200010052	BOM	NMIL	3	0.000798	0.002394
17	B200010056	BOM	NMIL	2	0.000798	0.001596
18	B200010087	BOM	NMIL	2	0.000798	0.001596
19	B200010216	BOM	NMIL	2	0.029514	0.059028
20	B200020024	BOM	NMIL	10	0.005156	0.051560
21	B200020034	BOM	NMIL	1	0.005156	0.005156
22	B200030055	BOM	NMIL	1	0.007617	0.007617
23	B200030061	BOM	NMIL	1	0.003446	0.003446
24	B200030080	BOM	NMIL	1	0.005259	0.005259

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25	B200030081	BOM	NMIL	1	0.003446	0.003446
26	B200040015	BOM	NMIL	1	0.005967	0.005967
27	B200040059	BOM	NMIL	1	0.005967	0.005967
28	B200040112	BOM	NMIL	1	0.005967	0.005967
29	B200040115	BOM	NMIL	1	0.015144	0.015144
30	B200040116	BOM	NMIL	1	0.015144	0.015144
31	B200050035	BOM	NMIL	1	0.005218	0.005218
32	B200050036	BOM	NMIL	1	0.005218	0.005218
33	B200050037	BOM	NMIL	1	0.005218	0.005218
34	B200050045	BOM	NMIL	3	0.005218	0.015654
35	B200060025	BOM	NMIL	1	0.007950	0.007950
36	B200090005	BOM	NMIL	1	0.001518	0.001518
37	B200110040	BOM	NMIL	1	0.004650	0.004650
38	B200110042	BOM	NMIL	3	0.004650	0.013950
39	B200110123	BOM	NMIL	2	0.004650	0.009300
40	B200110127	BOM	NMIL	1	0.007440	0.007440
41	B200110190	BOM	NMIL	1	0.004650	0.004650
42	B200110261	BOM	NMIL	1	0.004650	0.004650
43	B200110279	BOM	NMIL	2	0.004650	0.009300
44	B200110319	BOM	NMIL	1	0.004650	0.004650
45	B200110337	BOM	NMIL	2	0.005115	0.010230
46	B200110343	BOM	NMIL	1	0.004650	0.004650
47	B200110506	BOM	NMIL	1	0.004650	0.004650
48	B200110512	BOM	NMIL	2	0.004650	0.009300
49	B200110523	BOM	NMIL	1	0.004650	0.004650
50	B200110529	BOM	NMIL	4	0.004650	0.018600
51	B200110531	BOM	NMIL	2	0.004650	0.009300
52	B200110542	BOM	NMIL	2	0.004650	0.009300
53	B200110557	BOM	NMIL	2	0.007440	0.014880
54	B200110564	BOM	NMIL	1	0.004650	0.004650
55	B200110615	BOM	NMIL	1	0.004650	0.004650
56	B200110691	BOM	NMIL	1	0.004650	0.004650
57	B200110695	BOM	NMIL	3	0.007440	0.022320
58	B200110696	BOM	NMIL	3	0.007440	0.022320
59	B200110729	BOM	NMIL	2	0.004650	0.009300
60	B200110732	BOM	NMIL	1	0.004650	0.004650
61	B200110733	BOM	NMIL	5	0.004650	0.023250
62	B200110734	BOM	NMIL	1	0.004650	0.004650
63	B200110737	BOM	NMIL	1	0.004650	0.004650
64	B200110739	BOM	NMIL	1	0.004650	0.004650
65	B200110743	BOM	NMIL	5	0.004650	0.023250
66	B200110746	BOM	NMIL	1	0.004650	0.004650
67	B200110775	BOM	NMIL	6	0.004650	0.027900
68	B200110776	BOM	NMIL	3	0.004650	0.013950

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69	B200110796	BOM	NMIL	1	0.004650	0.004650
70	B200110807	BOM	NMIL	1	0.004650	0.004650
71	B200110811	BOM	NMIL	1	0.004650	0.004650
72	B200110812	BOM	NMIL	1	0.004650	0.004650
73	B200110819	BOM	NMIL	1	0.004650	0.004650
74	B200110820	BOM	NMIL	1	0.004650	0.004650
75	B200110822	BOM	NMIL	1	0.005115	0.005115
76	B200110841	BOM	NMIL	2	0.004650	0.009300
77	B200110843	BOM	NMIL	1	0.005115	0.005115
78	B200110844	BOM	NMIL	1	0.004650	0.004650
79	B200110848	BOM	NMIL	1	0.004650	0.004650
80	B200110854	BOM	NMIL	2	0.004650	0.009300
81	B200110864	BOM	NMIL	1	0.004650	0.004650
82	B200110865	BOM	NMIL	1	0.004650	0.004650
83	B200110872	BOM	NMIL	1	0.004650	0.004650
84	B200110949	BOM	NMIL	1	0.005115	0.005115
85	B200110984	BOM	NMIL	2	0.004650	0.009300
86	B200110987	BOM	NMIL	2	0.004650	0.009300
87	B200110988	BOM	NMIL	1	0.004650	0.004650
88	B200110989	BOM	NMIL	1	0.004650	0.004650
89	B200110990	BOM	NMIL	1	0.005115	0.005115
90	B200110991	BOM	NMIL	1	0.004650	0.004650
91	B200110992	BOM	NMIL	1	0.005115	0.005115
92	B200110993	BOM	NMIL	1	0.007440	0.007440
93	B200160011	BOM	NMIL	1	0.065000	0.065000
94	B200160017	BOM	NMIL	1	0.065000	0.065000
95	B200170022	BOM	NMIL	1	0.004875	0.004875
96	B200170023	BOM	NMIL	1	0.004875	0.004875
97	B200180094	BOM	N/A	1	0.008146	0.008146
98	B200180095	BOM	N/A	1	0.009327	0.009327
99	B200190087	BOM	N/A	1	0.016840	0.016840
100	B200190088	BOM	N/A	3	0.015889	0.047667
101	B200190089	BOM	N/A	1	0.013308	0.013308
102	B200200020	BOM	N/A	1	0.011856	0.011856
103	B200200060	BOM	N/A	1	0.012930	0.012930
104	B200200066	BOM	N/A	1	0.010911	0.010911
105	B200200074	BOM	N/A	3	0.015274	0.045822
106	B200200075	BOM	N/A	4	0.018108	0.072432
107	B200200078	BOM	N/A	1	0.010037	0.010037
108	B200200113	BOM	N/A	4	0.009203	0.036812
109	B200200114	BOM	N/A	6	0.011856	0.071136
110	B200200115	BOM	N/A	3	0.007791	0.023373
111	B200200116	BOM	N/A	2	0.007144	0.014288
112	B200200117	BOM	N/A	2	0.010037	0.020074

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113	B200200125	BOM	N/A	1	0.006575	0.006575
114	B200200140	BOM	N/A	1	0.009335	0.009335
115	B200200157	BOM	N/A	2	0.011856	0.023712
116	B200200174	BOM	N/A	1	0.011856	0.011856
117	B200200175	BOM	N/A	1	0.007878	0.007878
118	B200220018	BOM	N/A	2	0.012681	0.025362
119	B200220064	BOM	N/A	1	0.010761	0.010761
120	B200230036	BOM	N/A	1	0.047478	0.047478
121	B200230198	BOM	N/A	2	0.054717	0.109434
122	B200230210	BOM	N/A	1	0.047478	0.047478
123	B200230289	BOM	N/A	2	0.034047	0.068094
124	B200230336	BOM	N/A	5	0.023884	0.119420
125	B200230338	BOM	N/A	1	0.027382	0.027382
126	B200230350	BOM	N/A	2	0.135838	0.271676
127	B200230424	BOM	N/A	2	0.049061	0.098122
128	B200250009	BOM	NMIL	1	0.021770	0.021770
129	B200260208	BOM	NMIL	1	0.025794	0.025794
130	B200260359	BOM	NMIL	1	0.025794	0.025794
131	B200280012	BOM	NMIL	1	0.015958	0.015958
132	B200290005	BOM	NMIL	1	0.013740	0.013740
133	B200300414	BOM	NMIL	1	0.024575	0.024575
134	B200300415	BOM	NMIL	1	0.003614	0.003614
135	B200310012	BOM	NMIL	1	0.028764	0.028764
136	B210090197	BOM	KNOWNFR	1	2.050780	2.050780
137	B210160047	BOM	N/A	1	0.010000	0.010000
138	B210192030	N/A	STANDARD	1	0.016567	0.016567

Total Failure Rate (F/10⁶Hrs) : 6.165822
Mean Time (in hours) Between Failures (MTBF) : 162,184