

ZIPPY TECHNOLOGY CORP.
10F.,No.50,MINQUAN 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-13-2016
End Item Title : M1P2 SERIES MTBF
End Item Part Number : M1P2-5500K2V(RoHS)(PMBus NP1.2)
M1P2-5500K2V(RoHS)(PMBus NP1.2) MTBF : 242,993
Module Title: ZIPPY TECHNOLOGY CORP
Module Part Number : M1P / MTBF
Power Unit Module : M1P-2500K2(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.

$$\text{Total Failure Rate}(F) = M \lambda / (3/2) + B \lambda = 5.076423 / (3/2) + 0.731046 = 4.115328$$

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

$$\text{M1P2-5500K2V(RoHS)(PMBus NP1.2)(MTBF)} = F / 10^6 \text{ (Hrs)} = 1 / (4.115328 / 10^6) = 242,993$$

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MIL-HDBK-217F, Notice 2

Date : JAN-13-2016 Time : 14:52:39
End Item Title : M1P SERIES MTBF
End Item Part Number : M1P-2500K2(RoHS)(PMBus NP1.2)
M1P-2500K2(RoHS)(PMBus NP1.2) MTBF : 196,989
Module Title : ZIPPY TECHNOLOGY CORP
Module Part Number : M1P / MTBF
Module Reference Designation : M1P
Environmental Condition : GB
Ambient Temperature: 25°C

M1P-2500K2(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	B105830002	BOM	SPECIAL	1	0.209267	0.209267
2	B105830003	BOM	SPECIAL	1	0.334998	0.334998
3	B105830004	BOM	SPECIAL	1	0.073329	0.073329
4	B105830005	BOM	SPECIAL	1	0.190893	0.190893
5	B105830006	BOM	SPECIAL	1	0.026034	0.026034
6	B200000092	BOM	NMIL	1	0.029860	0.029860
7	B200000144	BOM	NMIL	1	0.033691	0.033691
8	B200000207	BOM	NMIL	1	0.030234	0.030234
9	B200000268	BOM	NMIL	1	0.030234	0.030234
10	B200000308	BOM	NMIL	4	0.030903	0.123612
11	B200000376	BOM	NMIL	1	0.030234	0.030234
12	B200000553	BOM	NMIL	1	0.031799	0.031799
13	B200000595	BOM	NMIL	1	0.034409	0.034409
14	B200010022	BOM	NMIL	1	0.000438	0.000438
15	B200010052	BOM	NMIL	9	0.000326	0.002934
16	B200010109	BOM	NMIL	5	0.000798	0.003990
17	B200010192	BOM	NMIL	1	0.008827	0.008827
18	B200010204	BOM	NMIL	6	0.018915	0.113490
19	B200010242	BOM	NMIL	4	0.031875	0.127500
20	B200020024	BOM	NMIL	6	0.005156	0.030936
21	B200020034	BOM	NMIL	1	0.005156	0.005156
22	B200030069	BOM	NMIL	1	0.007617	0.007617
23	B200030080	BOM	NMIL	1	0.005259	0.005259
24	B200030082	BOM	NMIL	1	0.007617	0.007617

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25	B200030083	BOM	NMIL	1	0.001995	0.001995
26	B200040101	BOM	NMIL	1	0.016111	0.016111
27	B200040110	BOM	NMIL	1	0.016111	0.016111
28	B200040120	BOM	NMIL	1	0.005967	0.005967
29	B200040133	BOM	NMIL	14	0.005967	0.083538
30	B200050036	BOM	NMIL	4	0.005218	0.020872
31	B200050040	BOM	NMIL	1	0.005218	0.005218
32	B200050045	BOM	NMIL	1	0.005218	0.005218
33	B200060022	BOM	NMIL	1	0.014607	0.014607
34	B200090005	BOM	NMIL	1	0.001265	0.001265
35	B200110001	BOM	NMIL	1	0.004650	0.004650
36	B200110035	BOM	NMIL	1	0.004650	0.004650
37	B200110123	BOM	NMIL	1	0.004650	0.004650
38	B200110162	BOM	NMIL	1	0.004650	0.004650
39	B200110177	BOM	NMIL	1	0.004650	0.004650
40	B200110185	BOM	NMIL	1	0.004650	0.004650
41	B200110279	BOM	NMIL	2	0.004650	0.009300
42	B200110282	BOM	NMIL	1	0.004650	0.004650
43	B200110337	BOM	NMIL	2	0.005115	0.010230
44	B200110343	BOM	NMIL	1	0.004650	0.004650
45	B200110488	BOM	NMIL	1	0.004650	0.004650
46	B200110506	BOM	NMIL	1	0.004650	0.004650
47	B200110508	BOM	NMIL	1	0.004650	0.004650
48	B200110512	BOM	NMIL	2	0.004650	0.009300
49	B200110529	BOM	NMIL	2	0.004650	0.009300
50	B200110530	BOM	NMIL	2	0.004650	0.009300
51	B200110542	BOM	NMIL	1	0.004650	0.004650
52	B200110545	BOM	NMIL	1	0.004650	0.004650
53	B200110557	BOM	NMIL	2	0.007440	0.014880
54	B200110564	BOM	NMIL	1	0.004650	0.004650
55	B200110695	BOM	NMIL	1	0.007440	0.007440
56	B200110696	BOM	NMIL	2	0.007440	0.014880
57	B200110729	BOM	NMIL	3	0.004650	0.013950
58	B200110730	BOM	NMIL	1	0.004650	0.004650
59	B200110731	BOM	NMIL	1	0.004650	0.004650
60	B200110733	BOM	NMIL	15	0.004650	0.069750
61	B200110735	BOM	NMIL	1	0.004650	0.004650
62	B200110739	BOM	NMIL	1	0.004650	0.004650
63	B200110743	BOM	NMIL	3	0.004650	0.013950
64	B200110775	BOM	NMIL	1	0.004650	0.004650
65	B200110800	BOM	NMIL	2	0.004650	0.009300
66	B200110806	BOM	NMIL	1	0.004650	0.004650
67	B200110807	BOM	NMIL	1	0.004650	0.004650
68	B200110808	BOM	NMIL	8	0.004650	0.037200

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69	B200110811	BOM	NMIL	1	0.004650	0.004650
70	B200110813	BOM	NMIL	1	0.004650	0.004650
71	B200110814	BOM	NMIL	1	0.004650	0.004650
72	B200110819	BOM	NMIL	1	0.004650	0.004650
73	B200110821	BOM	NMIL	2	0.005115	0.010230
74	B200110834	BOM	NMIL	2	0.004650	0.009300
75	B200110844	BOM	NMIL	1	0.004650	0.004650
76	B200110854	BOM	NMIL	2	0.004650	0.009300
77	B200110870	BOM	NMIL	1	0.005115	0.005115
78	B200110872	BOM	NMIL	2	0.004650	0.009300
79	B200110891	BOM	NMIL	1	0.005115	0.005115
80	B200110928	BOM	NMIL	1	0.004650	0.004650
81	B200110991	BOM	NMIL	1	0.004650	0.004650
82	B200111014	BOM	NMIL	1	0.004650	0.004650
83	B200111016	BOM	NMIL	1	0.004650	0.004650
84	B200111022	BOM	NMIL	1	0.004650	0.004650
85	B200120198	BOM	NMIL	1	0.007735	0.007735
86	B200160009	BOM	NMIL	1	0.065000	0.065000
87	B200160017	BOM	NMIL	1	0.065000	0.065000
88	B200170024	BOM	NMIL	1	0.004875	0.004875
89	B200170026	BOM	NMIL	2	0.004875	0.009750
90	B200170032	BOM	NMIL	2	0.004875	0.009750
91	B200180075	BOM	NMIL	1	0.009327	0.009327
92	B200190038	BOM	NMIL	2	0.013308	0.026616
93	B200190082	BOM	NMIL	1	0.014624	0.014624
94	B200200064	BOM	NMIL	1	0.008470	0.008470
95	B200200074	BOM	NMIL	2	0.015274	0.030548
96	B200200083	BOM	NMIL	1	0.007144	0.007144
97	B200200113	BOM	NMIL	2	0.009203	0.018406
98	B200200114	BOM	NMIL	4	0.011856	0.047424
99	B200200115	BOM	NMIL	2	0.007791	0.015582
100	B200200116	BOM	NMIL	3	0.007144	0.021432
101	B200200120	BOM	NMIL	1	0.010911	0.010911
102	B200200140	BOM	NMIL	1	0.009335	0.009335
103	B200200156	BOM	NMIL	1	0.011856	0.011856
104	B200200158	BOM	NMIL	1	0.007791	0.007791
105	B200220042	BOM	NMIL	2	0.012681	0.025362
106	B200220063	BOM	NMIL	1	0.012681	0.012681
107	B200230057	BOM	NMIL	1	0.005460	0.005460
108	B200230210	BOM	NMIL	1	0.022409	0.022409
109	B200230276	BOM	NMIL	2	0.004738	0.009476
110	B200230281	BOM	NMIL	4	0.017185	0.068740
111	B200230338	BOM	NMIL	3	0.004872	0.014616
112	B200230381	BOM	NMIL	1	0.020200	0.020200

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113	B200230436	BOM	NMIL	1	0.006259	0.006259
114	B200230470	BOM	NMIL	1	0.045078	0.045078
115	B200230486	BOM	NMIL	4	0.014670	0.058680
116	B200250009	BOM	NMIL	1	0.023160	0.023160
117	B200260388	BOM	NMIL	1	0.027440	0.027440
118	B200260389	BOM	NMIL	1	0.027440	0.027440
119	B200280012	BOM	NMIL	2	0.015958	0.031916
120	B200290005	BOM	NMIL	1	0.013740	0.013740
121	B200300382	BOM	NMIL	1	0.003845	0.003845
122	B200300410	BOM	NMIL	1	0.003845	0.003845
123	B200300432	BOM	NMIL	1	0.003845	0.003845
124	B200300446	BOM	NMIL	1	0.026144	0.026144
125	B200310015	BOM	NMIL	1	0.027383	0.027383
126	B200370005	BOM	NMIL	1	0.000692	0.000692
127	B200370050	BOM	NMIL	1	0.000665	0.000665
128	B200370069	BOM	NMIL	1	0.000778	0.000778
129	B200370085	BOM	NMIL	1	0.000719	0.000719
130	B210060137	BOM	NMIL	1	0.034577	0.034577
131	B210090115	BOM	SPECIAL	1	2.030495	2.030495
132	B210160046	BOM	NMIL	1	0.010000	0.010000
133	B210191722	BOM	NMIL	1	0.019996	0.019996
134	B210192373	BOM	NMIL	1	0.014656	0.014656

Total Failure Rate (F/10 ⁶ Hrs) :	5.076423
Mean Time (in hours) Between Failures (MTBF) :	196,989