

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-23-2015
End Item Title : MTW2 SERIES MTBF
End Item Part Number : MTW2-5AD0B2V (RoHS)
MTW2-5AD0B2V (RoHS) MTBF : 157,189
Module Title: ZIPPY TECHNOLOGY CORP
Module Part Number : MTW / MTBF
Power Unit Module : MTW-5AD0B2 (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

$$\text{MTW2-5AD0B2V (RoHS)(MTBF)} = (3/2) \lambda = (3/2) \times 104,793 = 157,189$$

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MIL-HDBK-217F, Notice 2

Date : JAN-23-2015 Time : 16:40:25
End Item Title : MTW SERIES MTBF
End Item Part Number : MTW-5AD0B2 (RoHS)
MTW-5AD0B2 (RoHS) MTBF : 104,793
Module Title : ZIPPY TECHNOLOGY CORP
Module Part Number : MTW / MTBF
Module Reference Designation : MTW
Environmental Condition : GB
Ambient Temperature: 25°C

MTW-5AD0B2 (RoHS)

ITEM #	Part Number	Ref Desig	Qual Level	Quant	Individual Failure Rate (F/10 ⁶ Hrs)	Total Failure Rate (F/10 ⁶ Hrs)
1	B104430015	BOM	SPECIAL	1	0.078943	0.078943
2	B105590003	BOM	SPECIAL	1	0.072499	0.072499
3	B105630002	BOM	SPECIAL	1	0.095021	0.095021
4	B105630003	BOM	SPECIAL	1	0.206970	0.206970
5	B105630004	BOM	SPECIAL	1	0.202377	0.202377
6	B105630005	BOM	SPECIAL	1	0.485993	0.485993
7	B105630006	BOM	SPECIAL	1	0.195655	0.195655
8	B200000080	BOM	NMIL	1	0.029346	0.029346
9	B200000092	BOM	NMIL	1	0.029860	0.029860
10	B200000247	BOM	NMIL	1	0.030234	0.030234
11	B200000272	BOM	NMIL	1	0.030234	0.030234
12	B200000277	BOM	NMIL	1	0.031585	0.031585
13	B200000281	BOM	NMIL	1	0.030234	0.030234
14	B200000308	BOM	NMIL	3	0.030903	0.092709
15	B200000333	BOM	NMIL	3	0.033691	0.101073
16	B200000377	BOM	NMIL	1	0.031585	0.031585
17	B200000455	BOM	NMIL	1	0.032559	0.032559
18	B200010009	BOM	NMIL	1	0.000438	0.000438
19	B200010022	BOM	NMIL	3	0.000438	0.001314
20	B200010087	BOM	NMIL	2	0.008827	0.017654
21	B200010109	BOM	NMIL	8	0.000798	0.006384
22	B200010147	BOM	NMIL	6	0.031875	0.191250
23	B200010176	BOM	NMIL	3	0.031875	0.095625
24	B200010208	BOM	NMIL	4	0.031875	0.127500

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25	B200020018	BOM	NMIL	2	0.005156	0.010312
26	B200020034	BOM	NMIL	1	0.005156	0.005156
27	B200020037	BOM	NMIL	22	0.005156	0.113432
28	B200030019	BOM	NMIL	7	0.007617	0.053319
29	B200030081	BOM	NMIL	1	0.003446	0.003446
30	B200040005	BOM	NMIL	1	0.016111	0.016111
31	B200040015	BOM	NMIL	1	0.005967	0.005967
32	B200040062	BOM	NMIL	2	0.005967	0.011934
33	B200040063	BOM	NMIL	1	0.016111	0.016111
34	B200040073	BOM	NMIL	3	0.005967	0.017901
35	B200040104	BOM	NMIL	1	0.016111	0.016111
36	B200040120	BOM	NMIL	1	0.005967	0.005967
37	B200050032	BOM	NMIL	1	0.005218	0.005218
38	B200050036	BOM	NMIL	6	0.005218	0.031308
39	B200050040	BOM	NMIL	1	0.005218	0.005218
40	B200050048	BOM	NMIL	1	0.005218	0.005218
41	B200050085	BOM	NMIL	2	0.005218	0.010436
42	B200060024	BOM	NMIL	2	0.014607	0.029214
43	B200090005	BOM	NMIL	1	0.001265	0.001265
44	B200110001	BOM	NMIL	1	0.004650	0.004650
45	B200110040	BOM	NMIL	2	0.004650	0.009300
46	B200110042	BOM	NMIL	1	0.004650	0.004650
47	B200110046	BOM	NMIL	7	0.004650	0.032550
48	B200110120	BOM	NMIL	1	0.004650	0.004650
49	B200110127	BOM	NMIL	4	0.007440	0.029760
50	B200110151	BOM	NMIL	1	0.004650	0.004650
51	B200110172	BOM	NMIL	1	0.004650	0.004650
52	B200110176	BOM	NMIL	1	0.004650	0.004650
53	B200110190	BOM	NMIL	1	0.004650	0.004650
54	B200110223	BOM	NMIL	3	0.005115	0.015345
55	B200110282	BOM	NMIL	3	0.004650	0.013950
56	B200110317	BOM	NMIL	1	0.004650	0.004650
57	B200110346	BOM	NMIL	1	0.004650	0.004650
58	B200110487	BOM	NMIL	2	0.004650	0.009300
59	B200110495	BOM	NMIL	1	0.004650	0.004650
60	B200110503	BOM	NMIL	1	0.005115	0.005115
61	B200110508	BOM	NMIL	2	0.004650	0.009300
62	B200110523	BOM	NMIL	1	0.004650	0.004650
63	B200110529	BOM	NMIL	10	0.004650	0.046500
64	B200110588	BOM	NMIL	1	0.004650	0.004650
65	B200110675	BOM	NMIL	4	0.004650	0.018600
66	B200110729	BOM	NMIL	2	0.004650	0.009300
67	B200110731	BOM	NMIL	3	0.004650	0.013950
68	B200110733	BOM	NMIL	19	0.004650	0.088350

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69	B200110738	BOM	NMIL	1	0.004650	0.004650
70	B200110740	BOM	NMIL	2	0.004650	0.009300
71	B200110775	BOM	NMIL	1	0.004650	0.004650
72	B200110776	BOM	NMIL	1	0.004650	0.004650
73	B200110777	BOM	NMIL	1	0.004650	0.004650
74	B200110807	BOM	NMIL	1	0.004650	0.004650
75	B200110811	BOM	NMIL	1	0.004650	0.004650
76	B200110829	BOM	NMIL	3	0.007440	0.022320
77	B200110831	BOM	NMIL	1	0.004650	0.004650
78	B200110844	BOM	NMIL	1	0.004650	0.004650
79	B200110845	BOM	NMIL	1	0.004650	0.004650
80	B200110847	BOM	NMIL	3	0.004650	0.013950
81	B200110869	BOM	NMIL	1	0.004650	0.004650
82	B200110963	BOM	NMIL	2	0.004650	0.009300
83	B200110966	BOM	NMIL	1	0.004650	0.004650
84	B200120047	BOM	NMIL	1	0.008705	0.008705
85	B200160017	BOM	NMIL	1	0.065000	0.065000
86	B200160022	BOM	NMIL	1	0.065000	0.065000
87	B200170019	BOM	NMIL	6	0.004875	0.029250
88	B200170029	BOM	NMIL	2	0.004875	0.009750
89	B200170032	BOM	NMIL	3	0.004875	0.014625
90	B200180075	BOM	NMIL	1	0.009327	0.009327
91	B200180092	BOM	NMIL	1	0.008923	0.008923
92	B200190073	BOM	NMIL	1	0.017894	0.017894
93	B200200057	BOM	NMIL	1	0.018108	0.018108
94	B200200068	BOM	NMIL	1	0.006575	0.006575
95	B200200074	BOM	NMIL	7	0.015274	0.106918
96	B200200078	BOM	NMIL	1	0.010037	0.010037
97	B200200113	BOM	NMIL	2	0.009203	0.018406
98	B200200114	BOM	NMIL	2	0.011856	0.023712
99	B200200116	BOM	NMIL	2	0.007144	0.014288
100	B200200118	BOM	NMIL	1	0.015274	0.015274
101	B200200123	BOM	NMIL	2	0.005546	0.011092
102	B200200126	BOM	NMIL	1	0.019676	0.019676
103	B200200142	BOM	NMIL	2	0.014056	0.028112
104	B200200166	BOM	NMIL	1	0.012930	0.012930
105	B200200170	BOM	NMIL	3	0.014056	0.042168
106	B200220018	BOM	NMIL	3	0.012681	0.038043
107	B200220062	BOM	NMIL	1	0.010099	0.010099
108	B200230198	BOM	NMIL	2	0.058210	0.116420
109	B200230277	BOM	NMIL	1	0.041493	0.041493
110	B200230336	BOM	NMIL	2	0.025409	0.050818
111	B200230338	BOM	NMIL	4	0.029130	0.116520
112	B200230356	BOM	NMIL	6	0.044090	0.264540

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113	B200230447	BOM	NMIL	2	0.232432	0.464864
114	B200230454	BOM	NMIL	2	0.041371	0.082742
115	B200250009	BOM	NMIL	1	0.023160	0.023160
116	B200250016	BOM	NMIL	1	0.023160	0.023160
117	B200260181	BOM	NMIL	1	0.027440	0.027440
118	B200260279	BOM	NMIL	2	0.027440	0.054880
119	B200260293	BOM	NMIL	1	0.027440	0.027440
120	B200260365	BOM	NMIL	2	0.027440	0.054880
121	B200260374	BOM	NMIL	1	0.027440	0.027440
122	B200280018	BOM	NMIL	1	0.015958	0.015958
123	B200290005	BOM	NMIL	1	0.013740	0.013740
124	B200300361	BOM	NMIL	1	0.003845	0.003845
125	B200300382	BOM	NMIL	2	0.003845	0.007690
126	B200300406	BOM	NMIL	1	0.003845	0.003845
127	B200300428	BOM	NMIL	1	0.026144	0.026144
128	B200310010	BOM	NMIL	1	0.027383	0.027383
129	B210140052	BOM	SPECIAL	2	2.197912	4.395824
130	B210160025	BOM	NMIL	1	0.010000	0.010000
131	B210192214	BOM	NMIL	1	0.014656	0.014656

Total Failure Rate (F/10 ⁶ Hrs) :	9.542620
Mean Time (in hours) Between Failures (MTBF) :	104,793