

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: AUG-22-2014
End Item Title : G1WX SERIES MTBF
End Item Part Number : G1W4-5BG0V2H (RoHS)
G1W4-5BG0V2H (RoHS) MTBF : 311,444
Module Title: ZIPPY TECHNOLOGY CORP
Module Part Number : G1W / MTBF
Power Unit Module : G1W-3A12V (RoHS)
Environmental Condition: GB
Ambient Temperature: 25°C

RELIABILITY MODELING OF REDUNDANT UNITS

Four Redundant Units:

Four 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.

$$\text{Total Failure Rate}(F) = M \lambda / (15/4) + B \lambda = 9.165846 / (15/4) + 0.766620 = 3.210846$$

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

$$\text{G1W4-5BG0V2H (RoHS)(MTBF)} = F / 10^6 \text{Hrs} = 3.210846 / 10^6 = 311,444$$

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Date : JUN-04-2014 Time : 11:35:23
End Item Title : G1W SERIES MTBF
End Item Part Number : G1W-3A12V (RoHS)
G1W-3A12V (RoHS) MTBF : 109,101
Module Title : ZIPPY TECHNOLOGY CORP
Module Part Number : G1W / MTBF
Module Reference Designation : G1W
Environmental Condition : GB
Ambient Temperature: 25°C

G1W-3A12V (RoHS)

ITEM #	Part Number	Ref Desig	Qual Level	Quant	Individual Failure Rate (F/10 ⁶ Hrs)	Total Failure Rate (F/10 ⁶ Hrs)
1	B102820030	BOM	NMIL	1	0.220751	0.220751
2	B103210004	BOM	NMIL	1	0.065162	0.065162
3	B103450002	BOM	NMIL	1	0.072499	0.072499
4	B103450005	BOM	NMIL	1	0.074349	0.074349
5	B103680016	BOM	NMIL	1	0.026430	0.026430
6	B104470003	BOM	NMIL	1	0.197783	0.197783
7	B200000001	BOM	SPECIAL	3	0.094935	0.284805
8	B200000080	BOM	SPECIAL	2	0.094935	0.189870
9	B200000144	BOM	SPECIAL	1	0.094935	0.094935
10	B200000252	BOM	SPECIAL	1	0.094935	0.094935
11	B200000268	BOM	SPECIAL	1	0.094935	0.094935
12	B200000364	BOM	SPECIAL	1	0.094935	0.094935
13	B200000443	BOM	SPECIAL	1	0.100631	0.100631
14	B200010009	BOM	NMIL	1	0.000798	0.000798
15	B200010022	BOM	NMIL	2	0.000798	0.001596
16	B200010052	BOM	NMIL	1	0.000798	0.000798
17	B200010057	BOM	NMIL	3	0.031285	0.093855
18	B200010067	BOM	NMIL	4	0.000798	0.003192
19	B200010080	BOM	NMIL	4	0.031285	0.125140
20	B200010081	BOM	NMIL	2	0.031285	0.062570
21	B200010083	BOM	NMIL	2	0.000795	0.001590
22	B200010109	BOM	NMIL	3	0.000798	0.002394
23	B200010143	BOM	NMIL	2	0.031285	0.062570
24	B200020004	BOM	NMIL	14	0.005156	0.072184

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25	B200020021	BOM	NMIL	1	0.005156	0.005156
26	B200030019	BOM	NMIL	1	0.018136	0.018136
27	B200030034	BOM	NMIL	1	0.018136	0.018136
28	B200040012	BOM	NMIL	1	0.005967	0.005967
29	B200040059	BOM	NMIL	1	0.005967	0.005967
30	B200040063	BOM	NMIL	1	0.016053	0.016053
31	B200050039	BOM	NMIL	1	0.005218	0.005218
32	B200050040	BOM	NMIL	5	0.005218	0.026090
33	B200050045	BOM	NMIL	1	0.005218	0.005218
34	B200050063	BOM	NMIL	2	0.088493	0.176986
35	B200060009	BOM	NMIL	2	0.014555	0.029110
36	B200090005	BOM	NMIL	1	0.018095	0.018095
37	B200110035	BOM	NMIL	1	0.004650	0.004650
38	B200110040	BOM	NMIL	3	0.004650	0.013950
39	B200110042	BOM	NMIL	2	0.004650	0.009300
40	B200110095	BOM	NMIL	1	0.004650	0.004650
41	B200110120	BOM	NMIL	2	0.004650	0.009300
42	B200110123	BOM	NMIL	3	0.004650	0.013950
43	B200110127	BOM	NMIL	3	0.007440	0.022320
44	B200110156	BOM	NMIL	15	0.004650	0.069750
45	B200110172	BOM	NMIL	1	0.004650	0.004650
46	B200110192	BOM	NMIL	1	0.004650	0.004650
47	B200110217	BOM	NMIL	1	0.004650	0.004650
48	B200110227	BOM	NMIL	2	0.004650	0.009300
49	B200110235	BOM	NMIL	1	0.004650	0.004650
50	B200110261	BOM	NMIL	2	0.004650	0.009300
51	B200110270	BOM	NMIL	2	0.004650	0.009300
52	B200110276	BOM	NMIL	1	0.004650	0.004650
53	B200110279	BOM	NMIL	1	0.004650	0.004650
54	B200110282	BOM	NMIL	10	0.004650	0.046500
55	B200110337	BOM	NMIL	4	0.005115	0.020460
56	B200110343	BOM	NMIL	1	0.004650	0.004650
57	B200110348	BOM	NMIL	1	0.004650	0.004650
58	B200110488	BOM	NMIL	1	0.004650	0.004650
59	B200110489	BOM	NMIL	1	0.004650	0.004650
60	B200110490	BOM	NMIL	1	0.004650	0.004650
61	B200110492	BOM	NMIL	1	0.004650	0.004650
62	B200110494	BOM	NMIL	1	0.004650	0.004650
63	B200110503	BOM	NMIL	1	0.005115	0.005115
64	B200110505	BOM	NMIL	1	0.004650	0.004650
65	B200110508	BOM	NMIL	2	0.004650	0.009300
66	B200110510	BOM	NMIL	1	0.004650	0.004650
67	B200110523	BOM	NMIL	1	0.004650	0.004650
68	B200110525	BOM	NMIL	1	0.004650	0.004650

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69	B200110529	BOM	NMIL	3	0.004650	0.013950
70	B200110531	BOM	NMIL	2	0.004650	0.009300
71	B200110541	BOM	NMIL	1	0.004650	0.004650
72	B200110544	BOM	NMIL	1	0.004650	0.004650
73	B200110550	BOM	NMIL	2	0.004650	0.009300
74	B200110554	BOM	NMIL	12	0.004650	0.055800
75	B200110561	BOM	NMIL	1	0.004650	0.004650
76	B200110564	BOM	NMIL	1	0.004650	0.004650
77	B200110588	BOM	NMIL	1	0.004650	0.004650
78	B200110613	BOM	NMIL	2	0.004650	0.009300
79	B200110626	BOM	NMIL	1	0.004650	0.004650
80	B200110627	BOM	NMIL	1	0.005115	0.005115
81	B200110635	BOM	NMIL	1	0.004650	0.004650
82	B200120015	BOM	NMIL	1	0.008509	0.008509
83	B200120154	BOM	NMIL	1	0.008509	0.008509
84	B200120160	BOM	NMIL	1	0.008705	0.008705
85	B200160011	BOM	NMIL	1	0.065000	0.065000
86	B200160017	BOM	NMIL	1	0.065000	0.065000
87	B200170018	BOM	NMIL	2	0.005156	0.010312
88	B200170032	BOM	NMIL	3	0.005156	0.015468
89	B200170035	BOM	NMIL	4	0.005156	0.020624
90	B200180075	BOM	N/A	4	0.008923	0.035692
91	B200190022	BOM	N/A	1	0.015889	0.015889
92	B200190033	BOM	N/A	1	0.013308	0.013308
93	B200200021	BOM	N/A	3	0.015274	0.045822
94	B200200022	BOM	N/A	2	0.015274	0.030548
95	B200200060	BOM	N/A	1	0.012930	0.012930
96	B200200061	BOM	N/A	4	0.008470	0.033880
97	B200200064	BOM	N/A	1	0.008470	0.008470
98	B200200068	BOM	N/A	1	0.006575	0.006575
99	B200200071	BOM	N/A	1	0.006048	0.006048
100	B200200083	BOM	N/A	2	0.007144	0.014288
101	B200200148	BOM	N/A	1	0.009203	0.009203
102	B200200153	BOM	N/A	3	0.009203	0.027609
103	B200200156	BOM	N/A	5	0.011856	0.059280
104	B200200158	BOM	N/A	1	0.007791	0.007791
105	B200220018	BOM	N/A	3	0.002416	0.007248
106	B200220020	BOM	N/A	1	0.002337	0.002337
107	B200220053	BOM	N/A	1	0.002537	0.002537
108	B200230057	BOM	N/A	1	0.031480	0.031480
109	B200230198	BOM	N/A	6	0.058000	0.348000
110	B200230210	BOM	N/A	2	0.050327	0.100654
111	B200230277	BOM	N/A	3	0.041343	0.124029
112	B200230288	BOM	N/A	2	0.019176	0.038352

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113	B200230313	BOM	N/A	2	0.166618	0.333236
114	B200230338	BOM	N/A	3	0.029025	0.087075
115	B200250009	BOM	NMIL	1	0.082560	0.082560
116	B200260204	BOM	NMIL	1	0.087734	0.087734
117	B200260246	BOM	NMIL	1	0.087734	0.087734
118	B200260292	BOM	NMIL	1	0.087734	0.087734
119	B200260293	BOM	NMIL	1	0.087734	0.087734
120	B200280012	BOM	NMIL	3	0.015958	0.047874
121	B200300219	BOM	NMIL	1	0.003831	0.003831
122	B200300236	BOM	NMIL	1	0.003831	0.003831
123	B200300273	BOM	NMIL	1	0.026050	0.026050
124	B200300274	BOM	NMIL	1	0.003831	0.003831
125	B200310003	BOM	NMIL	1	0.030490	0.030490
126	B210140038	BOM	KNOWNFR	2	2.070549	4.141098
127	B210160025	BOM	N/A	1	0.010000	0.010000
128	B210191847	N/A	STANDARD	1	0.020588	0.020588

Total Failure Rate (F/10 ⁶ Hrs) :	9.165846
Mean Time (in hours) Between Failures (MTBF) :	109,101