

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: OCT-09-2012
End Item Title : BR2G SERIES MTBF
End Item Part Number : BR2G-5420V4V (RoHS)
BR2G-5420V4V (RoHS) MTBF : 194,636
Module Title: ZIPPY TECHNOLOGY CORP
Module Part Number : BGIN / MTBF
Power Unit Module : BGIN-3420V (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.

$$\text{Total Failure Rate}(F) = M \lambda / (3/2) + B \lambda = 6.713367 / (3/2) + 0.662208 = 5.137786$$

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

$$\text{BR2G-5420V4V (RoHS)(MTBF)} = F / 10^6 \text{Hrs} = 5.137786 / 10^6 = 194,636$$

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Date : OCT-09-2012 Time : 14:46:30
End Item Title : BGIN SERIES MTBF
End Item Part Number : BGIN-3420V (RoHS)
BGIN-3420V (RoHS) MTBF : 148,957
Module Title : ZIPPY TECHNOLOGY CORP
Module Part Number : BGIN / MTBF
Module Reference Designation : BGIN
Environmental Condition : GB
Ambient Temperature: 25°C

BGIN-3420V (RoHS)

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	B103670002	BOM	NMIL	1	0.339591	0.339591
4	B104000002	BOM	NMIL	1	0.204674	0.204674
5	B104040002	BOM	NMIL	1	0.074349	0.074349
6	B200000080	BOM	SPECIAL	2	0.094935	0.189870
7	B200000144	BOM	SPECIAL	1	0.094935	0.094935
8	B200000252	BOM	SPECIAL	1	0.094935	0.094935
9	B200000256	BOM	SPECIAL	1	0.094935	0.094935
10	B200000257	BOM	SPECIAL	1	0.094935	0.094935
11	B200000268	BOM	SPECIAL	1	0.094935	0.094935
12	B200000308	BOM	SPECIAL	4	0.094935	0.379740
13	B200000316	BOM	SPECIAL	2	0.094935	0.189870
14	B200000443	BOM	SPECIAL	1	0.094935	0.094935
15	B200010009	BOM	NMIL	1	0.000798	0.000798
16	B200010022	BOM	NMIL	2	0.000798	0.001596
17	B200010056	BOM	NMIL	2	0.000798	0.001596
18	B200010066	BOM	NMIL	1	0.031398	0.031398
19	B200010067	BOM	NMIL	2	0.000798	0.001596
20	B200010080	BOM	NMIL	4	0.031398	0.125592
21	B200010112	BOM	NMIL	2	0.031398	0.062796
22	B200010132	BOM	NMIL	1	0.031398	0.031398
23	B200010153	BOM	NMIL	2	0.031398	0.062796
24	B200010162	BOM	NMIL	1	0.031398	0.031398

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25	B200020004	BOM	NMIL	13	0.005156	0.067028
26	B200020014	BOM	NMIL	1	0.006751	0.006751
27	B200020016	BOM	NMIL	2	0.005156	0.010312
28	B200030003	BOM	NMIL	2	0.007617	0.015234
29	B200030018	BOM	NMIL	1	0.007617	0.007617
30	B200030019	BOM	NMIL	1	0.007617	0.007617
31	B200040015	BOM	NMIL	1	0.005967	0.005967
32	B200040059	BOM	NMIL	1	0.005967	0.005967
33	B200040063	BOM	NMIL	1	0.016111	0.016111
34	B200040084	BOM	NMIL	1	0.007909	0.007909
35	B200050024	BOM	NMIL	1	0.005218	0.005218
36	B200050039	BOM	NMIL	1	0.005218	0.005218
37	B200050040	BOM	NMIL	4	0.005218	0.020872
38	B200090005	BOM	NMIL	1	0.001518	0.001518
39	B200110001	BOM	NMIL	1	0.004650	0.004650
40	B200110042	BOM	NMIL	6	0.004650	0.027900
41	B200110046	BOM	NMIL	8	0.004650	0.037200
42	B200110111	BOM	NMIL	1	0.004650	0.004650
43	B200110120	BOM	NMIL	3	0.004650	0.013950
44	B200110123	BOM	NMIL	4	0.004650	0.018600
45	B200110172	BOM	NMIL	1	0.004650	0.004650
46	B200110192	BOM	NMIL	6	0.004650	0.027900
47	B200110261	BOM	NMIL	3	0.004650	0.013950
48	B200110270	BOM	NMIL	2	0.004650	0.009300
49	B200110276	BOM	NMIL	2	0.004650	0.009300
50	B200110279	BOM	NMIL	1	0.004650	0.004650
51	B200110282	BOM	NMIL	4	0.004650	0.018600
52	B200110302	BOM	NMIL	2	0.005115	0.010230
53	B200110303	BOM	NMIL	1	0.005115	0.005115
54	B200110317	BOM	NMIL	2	0.004650	0.009300
55	B200110343	BOM	NMIL	1	0.004650	0.004650
56	B200110489	BOM	NMIL	2	0.004650	0.009300
57	B200110491	BOM	NMIL	2	0.004650	0.009300
58	B200110493	BOM	NMIL	1	0.005115	0.005115
59	B200110494	BOM	NMIL	2	0.004650	0.009300
60	B200110501	BOM	NMIL	1	0.004650	0.004650
61	B200110504	BOM	NMIL	1	0.005115	0.005115
62	B200110505	BOM	NMIL	1	0.004650	0.004650
63	B200110509	BOM	NMIL	1	0.004650	0.004650
64	B200110510	BOM	NMIL	1	0.004650	0.004650
65	B200110512	BOM	NMIL	4	0.004650	0.018600
66	B200110519	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	4	0.004650	0.018600
70	B200110541	BOM	NMIL	1	0.004650	0.004650
71	B200110544	BOM	NMIL	1	0.004650	0.004650
72	B200110550	BOM	NMIL	1	0.004650	0.004650
73	B200110551	BOM	NMIL	1	0.004650	0.004650
74	B200110554	BOM	NMIL	10	0.004650	0.046500
75	B200110561	BOM	NMIL	1	0.004650	0.004650
76	B200110588	BOM	NMIL	1	0.004650	0.004650
77	B200110626	BOM	NMIL	1	0.004650	0.004650
78	B200110694	BOM	NMIL	1	0.004650	0.004650
79	B200110721	BOM	NMIL	1	0.004650	0.004650
80	B200120012	BOM	NMIL	1	0.007735	0.007735
81	B200120015	BOM	NMIL	1	0.007557	0.007557
82	B200120032	BOM	NMIL	1	0.006870	0.006870
83	B200120094	BOM	NMIL	1	0.006870	0.006870
84	B200120174	BOM	NMIL	1	0.004820	0.004820
85	B200160017	BOM	NMIL	1	0.065000	0.065000
86	B200160034	BOM	NMIL	1	0.105000	0.105000
87	B200170035	BOM	NMIL	2	0.004005	0.008010
88	B200170045	BOM	NMIL	2	0.002280	0.004560
89	B200190031	BOM	N/A	2	0.017894	0.035788
90	B200200021	BOM	N/A	1	0.015274	0.015274
91	B200200060	BOM	N/A	1	0.012930	0.012930
92	B200200061	BOM	N/A	1	0.008470	0.008470
93	B200200071	BOM	N/A	1	0.006048	0.006048
94	B200200083	BOM	N/A	5	0.007144	0.035720
95	B200200094	BOM	N/A	3	0.007791	0.023373
96	B200200101	BOM	N/A	1	0.016657	0.016657
97	B200200153	BOM	N/A	2	0.009203	0.018406
98	B200200156	BOM	N/A	12	0.011856	0.142272
99	B200200158	BOM	N/A	3	0.007791	0.023373
100	B200220021	BOM	N/A	1	0.002337	0.002337
101	B200220028	BOM	N/A	4	0.002647	0.010588
102	B200230198	BOM	N/A	4	0.058210	0.232840
103	B200230210	BOM	N/A	3	0.050508	0.151524
104	B200230277	BOM	N/A	2	0.041493	0.082986
105	B200230288	BOM	N/A	2	0.019246	0.038492
106	B200230337	BOM	N/A	2	0.022047	0.044094
107	B200230338	BOM	N/A	3	0.029130	0.087390
108	B200230377	BOM	N/A	2	0.028585	0.057170
109	B200230379	BOM	N/A	5	0.036547	0.182735
110	B200240003	BOM	N/A	1	0.052174	0.052174
111	B200250009	BOM	NMIL	1	0.023160	0.023160
112	B200260225	BOM	NMIL	1	0.027440	0.027440

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113	B200260271	BOM	NMIL	1	0.027440	0.027440
114	B200260318	BOM	NMIL	1	0.027440	0.027440
115	B200300219	BOM	NMIL	1	0.003845	0.003845
116	B200300236	BOM	NMIL	1	0.003845	0.003845
117	B200300269	BOM	NMIL	1	0.003845	0.003845
118	B200300344	BOM	NMIL	1	0.026144	0.026144
119	B210090085	BOM	KNOWNFR	1	1.995000	1.995000
120	B210160052	BOM	N/A	2	0.010000	0.020000
121	B210191427	N/A	STANDARD	1	0.020588	0.020588

Total Failure Rate (F/10⁶Hrs) : 6.713367
 Mean Time (in hours) Between Failures (MTBF) : **148,957**