

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: JUL-19-2016
End Item Title : DR2G SERIES MTBF
End Item Part Number : DR2G-5500V4V(RoHS)
DR2G-5500V4V(RoHS) MTBF : 258,143
Module Title: ZIPPY TECHNOLOGY CORP
Module Part Number : DGIN / MTBF
Power Unit Module : DGIN-3500V(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.

$$\text{Total Failure Rate(F)} = M \lambda / (3/2) + B \lambda = 4.767520 / (3/2) + 0.695472 = 3.873819$$

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

$$\text{DR2G-5500V4V(RoHS)(MTBF)} = F / 10^6 \text{ (Hrs)} = 1 / (3.873819 / 10^6) = 258,143$$

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

Date : JUL-19-2017 Time : 17:15:32
End Item Title : DGIN SERIES MTBF
End Item Part Number : DGIN-3500V(RoHS)
DGIN-3500V(RoHS) MTBF : 209,753
Module Title : ZIPPY TECHNOLOGY CORP
Module Part Number : DGIN / MTBF
Module Reference Designation : DGIN
Environmental Condition : GB
Ambient Temperature: 25°C

DGIN-3500V(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	SPECIAL	1	0.197478	0.197478
2	B103210004	BOM	SPECIAL	1	0.075116	0.075116
3	B103660019	BOM	SPECIAL	1	0.264629	0.264629
4	B104000002	BOM	SPECIAL	1	0.146609	0.146609
5	B104000005	BOM	SPECIAL	1	0.060549	0.060549
6	B104040002	BOM	SPECIAL	1	0.065917	0.065917
7	B200000080	BOM	NMIL	2	0.013293	0.026586
8	B200000144	BOM	NMIL	1	0.004901	0.004901
9	B200000252	BOM	NMIL	1	0.005806	0.005806
10	B200000256	BOM	NMIL	1	0.004579	0.004579
11	B200000257	BOM	NMIL	1	0.006152	0.006152
12	B200000268	BOM	NMIL	1	0.004579	0.004579
13	B200000308	BOM	NMIL	4	0.013289	0.053156
14	B200000316	BOM	NMIL	2	0.005601	0.011202
15	B200000443	BOM	NMIL	1	0.014220	0.014220
16	B200010009	BOM	NMIL	1	0.000971	0.000971
17	B200010022	BOM	NMIL	2	0.000453	0.000906
18	B200010056	BOM	NMIL	2	0.000323	0.000646
19	B200010066	BOM	NMIL	1	0.075893	0.075893
20	B200010080	BOM	NMIL	4	0.065527	0.262108
21	B200010112	BOM	NMIL	2	0.065527	0.131054
22	B200010132	BOM	NMIL	1	0.073390	0.073390
23	B200010153	BOM	NMIL	2	0.065527	0.131054
24	B200010162	BOM	NMIL	1	0.073390	0.073390

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25	B200010192	BOM	NMIL	2	0.008014	0.016028
26	B200020014	BOM	NMIL	1	0.005633	0.005633
27	B200020016	BOM	NMIL	2	0.005156	0.010312
28	B200020024	BOM	NMIL	13	0.002332	0.030316
29	B200030069	BOM	NMIL	1	0.002308	0.002308
30	B200030089	BOM	NMIL	2	0.002102	0.004204
31	B200030107	BOM	NMIL	1	0.002308	0.002308
32	B200040063	BOM	NMIL	1	0.015829	0.015829
33	B200040073	BOM	NMIL	1	0.011646	0.011646
34	B200040117	BOM	NMIL	1	0.009260	0.009260
35	B200040139	BOM	NMIL	1	0.015829	0.015829
36	B200050024	BOM	NMIL	1	0.004016	0.004016
37	B200050039	BOM	NMIL	1	0.004607	0.004607
38	B200050040	BOM	NMIL	4	0.005992	0.023968
39	B200090005	BOM	NMIL	1	0.001476	0.001476
40	B200110001	BOM	NMIL	1	0.002896	0.002896
41	B200110040	BOM	NMIL	1	0.002896	0.002896
42	B200110042	BOM	NMIL	6	0.002210	0.013260
43	B200110046	BOM	NMIL	8	0.002896	0.023168
44	B200110120	BOM	NMIL	3	0.002896	0.008688
45	B200110123	BOM	NMIL	5	0.002210	0.011050
46	B200110172	BOM	NMIL	1	0.002896	0.002896
47	B200110192	BOM	NMIL	4	0.002210	0.008840
48	B200110261	BOM	NMIL	3	0.002210	0.006630
49	B200110270	BOM	NMIL	2	0.002210	0.004420
50	B200110276	BOM	NMIL	2	0.002896	0.005792
51	B200110279	BOM	NMIL	1	0.002210	0.002210
52	B200110282	BOM	NMIL	4	0.002896	0.011584
53	B200110302	BOM	NMIL	2	0.002032	0.004064
54	B200110317	BOM	NMIL	2	0.002896	0.005792
55	B200110343	BOM	NMIL	1	0.002210	0.002210
56	B200110489	BOM	NMIL	2	0.002210	0.004420
57	B200110491	BOM	NMIL	1	0.002210	0.002210
58	B200110493	BOM	NMIL	1	0.002319	0.002319
59	B200110494	BOM	NMIL	2	0.002210	0.004420
60	B200110501	BOM	NMIL	1	0.002210	0.002210
61	B200110504	BOM	NMIL	1	0.002319	0.002319
62	B200110505	BOM	NMIL	1	0.002210	0.002210
63	B200110510	BOM	NMIL	1	0.002210	0.002210
64	B200110512	BOM	NMIL	4	0.002210	0.008840

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65	B200110519	BOM	NMIL	1	0.002210	0.002210
66	B200110525	BOM	NMIL	2	0.002210	0.004420
67	B200110529	BOM	NMIL	4	0.002210	0.008840
68	B200110541	BOM	NMIL	1	0.002210	0.002210
69	B200110544	BOM	NMIL	1	0.002210	0.002210
70	B200110550	BOM	NMIL	1	0.002210	0.002210
71	B200110551	BOM	NMIL	2	0.002210	0.004420
72	B200110554	BOM	NMIL	10	0.002210	0.022100
73	B200110561	BOM	NMIL	1	0.002210	0.002210
74	B200110565	BOM	NMIL	1	0.002210	0.002210
75	B200110588	BOM	NMIL	1	0.002210	0.002210
76	B200110613	BOM	NMIL	1	0.002210	0.002210
77	B200110626	BOM	NMIL	1	0.002210	0.002210
78	B200110721	BOM	NMIL	1	0.002210	0.002210
79	B200110856	BOM	NMIL	1	0.002210	0.002210
80	B200120012	BOM	NMIL	1	0.007441	0.007441
81	B200120015	BOM	NMIL	1	0.004786	0.004786
82	B200120032	BOM	NMIL	1	0.006353	0.006353
83	B200120094	BOM	NMIL	1	0.007441	0.007441
84	B200120174	BOM	NMIL	1	0.004541	0.004541
85	B200160017	BOM	NMIL	1	0.004760	0.004760
86	B200160034	BOM	NMIL	1	0.029693	0.029693
87	B200170035	BOM	NMIL	2	0.003721	0.007442
88	B200170045	BOM	NMIL	1	0.007632	0.007632
89	B200190031	BOM	NMIL	2	0.013460	0.026920
90	B200200021	BOM	NMIL	1	0.007820	0.007820
91	B200200061	BOM	NMIL	1	0.004827	0.004827
92	B200200071	BOM	NMIL	1	0.003664	0.003664
93	B200200083	BOM	NMIL	5	0.004199	0.020995
94	B200200094	BOM	NMIL	3	0.004508	0.013524
95	B200200101	BOM	NMIL	1	0.008395	0.008395
96	B200200153	BOM	NMIL	2	0.005166	0.010332
97	B200200156	BOM	NMIL	12	0.006356	0.076272
98	B200200158	BOM	NMIL	3	0.004508	0.013524
99	B200200166	BOM	NMIL	1	0.006824	0.006824
100	B200220021	BOM	NMIL	1	0.003440	0.003440
101	B200220028	BOM	NMIL	4	0.001294	0.005176
102	B200230198	BOM	NMIL	4	0.010543	0.042172
103	B200230210	BOM	NMIL	3	0.008794	0.026382
104	B200230277	BOM	NMIL	1	0.002274	0.002274

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105	B200230288	BOM	NMIL	2	0.001248	0.002496
106	B200230337	BOM	NMIL	2	0.001484	0.002968
107	B200230338	BOM	NMIL	3	0.002034	0.006102
108	B200230341	BOM	NMIL	1	0.001048	0.001048
109	B200230377	BOM	NMIL	2	0.009871	0.019742
110	B200230379	BOM	NMIL	5	0.014034	0.070170
111	B200240003	BOM	NMIL	1	0.008764	0.008764
112	B200250009	BOM	NMIL	1	0.012238	0.012238
113	B200260225	BOM	NMIL	1	0.019936	0.019936
114	B200260271	BOM	NMIL	1	0.019936	0.019936
115	B200260318	BOM	NMIL	1	0.013343	0.013343
116	B200300219	BOM	NMIL	1	0.006683	0.006683
117	B200300236	BOM	NMIL	1	0.008910	0.008910
118	B200300269	BOM	NMIL	1	0.004265	0.004265
119	B200300344	BOM	NMIL	1	0.024824	0.024824
120	B200370003	BOM	NMIL	1	0.000962	0.000962
121	B200370005	BOM	NMIL	1	0.001091	0.001091
122	B210090117	BOM	SPECIAL	1	2.068077	2.068077
123	B210160052	BOM	NMIL	2	0.010000	0.020000
124	B210191962	BOM	NMIL	1	0.043060	0.043060

Total Failure Rate (F/10^6Hrs) : 4.767520
Mean Time (in hours) Between Failures (MTBF) : **209,753**