

# RELIABILITY PREDICTION STANDARD REPORT

(Sorted by Part Number)

MIL-HDBK-217F, Notice 2

PRED-FIRST (c) Reliability Prediction Program, BJM Engineering Services

Date: JUL-25-2011

End Item Title : DG1W2 SERIES MTBF

End Item Part Number : DG1W2-5A10V3V (RoHS)

DG1W2-5A10V3V (RoHS) MTBF : 140,728

Module Title: ZIPPY TECHNOLOGY CORP

Module Part Number : DG1W/MTBF

Power Unit Module : DG1W-3A10V (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.

$$\begin{aligned} \text{Total Failure Rate}(F) &= M \lambda / (3/2) + B \lambda \\ &= 9.508856 / (3/2) + 0.766620 = 7.105857 \end{aligned}$$

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

$$\begin{aligned} \text{DG1W2-5A10V3V (RoHS)(MTBF)} &= F / 10^6 \text{Hrs} = 7.105857 / 10^6 \\ &= 140,728 \end{aligned}$$

ZIPPY TECHNOLOGY CORP  
10F, No.50, MIN CHYUAN RD  
SHIN-TIEN, TAIPEI HSIEN, TAIWAN, R.O.C.

RELIABILITY PREDICTION STANDARD REPORT						
(Sorted by Part Number)						
MIL - HDBK - 217F, Notice 2						
Date : JUL-25-2011      Time : 14:51:18						
End Item Title : DG1W SERIES MTBF						
End Item Part Number : DG1W-3A10V (RoHS)						
Module Title : ZIPPY TECHNOLOGY CORP						
Module Part Number : DG1W / MTBF						
Module Reference Designation : DG1W						
Environmental Condition : GB						
Ambient Temperature: 25°C						
<b><u>DG1W-3A10V (RoHS)</u></b>						
ITEM #	Part Number	Ref Desig	Qual Level	Quant	Individual Failure Rate (F/10 <sup>6</sup> Hrs)	Total Failure Rate (F/10 <sup>6</sup> Hrs)
1	B102970002	BOM	NMIL	1	0.074349	0.074349
2	B103280002	BOM	NMIL	1	0.339591	0.339591
3	B103450002	BOM	NMIL	1	0.072499	0.072499
4	B103450003	BOM	NMIL	1	0.202377	0.202377
5	B200000001	BOM	SPECIAL	4	0.094935	0.379740
6	B200000058	BOM	SPECIAL	1	0.094935	0.094935
7	B200000080	BOM	SPECIAL	3	0.094935	0.284805
8	B200000092	BOM	SPECIAL	1	0.094935	0.094935
9	B200000144	BOM	SPECIAL	1	0.094935	0.094935
10	B200000252	BOM	SPECIAL	1	0.094935	0.094935
11	B200000257	BOM	SPECIAL	1	0.094935	0.094935
12	B200000268	BOM	SPECIAL	1	0.094935	0.094935
13	B200000316	BOM	SPECIAL	1	0.094935	0.094935
14	B200010009	BOM	NMIL	3	0.000162	0.000486
15	B200010022	BOM	NMIL	2	0.000162	0.000324
16	B200010052	BOM	NMIL	1	0.000121	0.000121
17	B200010066	BOM	NMIL	2	0.037800	0.075600
18	B200010067	BOM	NMIL	4	0.004410	0.017640
19	B200010080	BOM	NMIL	6	0.041400	0.248400
20	B200010109	BOM	NMIL	1	0.000121	0.000121
21	B200010112	BOM	NMIL	2	0.041400	0.082800
22	B200010132	BOM	NMIL	1	0.041400	0.041400
23	B200010153	BOM	NMIL	2	0.041400	0.082800
24	B200010162	BOM	NMIL	1	0.041400	0.041400
25	B200020004	BOM	NMIL	15	0.005156	0.077340

ZIPPY TECHNOLOGY CORP  
10F, No.50, MIN CHYUAN RD  
SHIN-TIEN, TAIPEI HSIEN, TAIWAN, R.O.C.

26	B200020010	BOM	NMIL	2	0.006751	0.013502
27	B200020015	BOM	NMIL	1	0.006751	0.006751
28	B200030042	BOM	NMIL	1	0.007617	0.007617
29	B200040006	BOM	NMIL	1	0.007909	0.007909
30	B200040059	BOM	NMIL	1	0.005967	0.005967
31	B200040063	BOM	NMIL	1	0.016111	0.016111
32	B200050024	BOM	NMIL	1	0.005218	0.005218
33	B200050039	BOM	NMIL	1	0.005218	0.005218
34	B200050040	BOM	NMIL	4	0.005218	0.020872
35	B200090005	BOM	NMIL	1	0.001518	0.001518
36	B200110001	BOM	NMIL	4	0.004650	0.018600
37	B200110040	BOM	NMIL	1	0.004650	0.004650
38	B200110042	BOM	NMIL	8	0.004650	0.037200
39	B200110046	BOM	NMIL	9	0.004650	0.041850
40	B200110120	BOM	NMIL	3	0.004650	0.013950
41	B200110123	BOM	NMIL	7	0.004650	0.032550
42	B200110192	BOM	NMIL	2	0.004650	0.009300
43	B200110227	BOM	NMIL	4	0.004650	0.018600
44	B200110261	BOM	NMIL	2	0.004650	0.009300
45	B200110270	BOM	NMIL	2	0.004650	0.009300
46	B200110276	BOM	NMIL	2	0.004650	0.009300
47	B200110279	BOM	NMIL	2	0.004650	0.009300
48	B200110282	BOM	NMIL	6	0.004650	0.027900
49	B200110302	BOM	NMIL	2	0.005115	0.010230
50	B200110343	BOM	NMIL	1	0.004650	0.004650
51	B200110489	BOM	NMIL	1	0.004650	0.004650
52	B200110492	BOM	NMIL	1	0.004650	0.004650
53	B200110493	BOM	NMIL	1	0.005115	0.005115
54	B200110494	BOM	NMIL	2	0.004650	0.009300
55	B200110501	BOM	NMIL	1	0.004650	0.004650
56	B200110508	BOM	NMIL	2	0.004650	0.009300
57	B200110510	BOM	NMIL	1	0.004650	0.004650
58	B200110512	BOM	NMIL	5	0.004650	0.023250
59	B200110520	BOM	NMIL	1	0.004650	0.004650
60	B200110523	BOM	NMIL	2	0.004650	0.009300
61	B200110524	BOM	NMIL	2	0.004650	0.009300
62	B200110525	BOM	NMIL	1	0.004650	0.004650
63	B200110531	BOM	NMIL	2	0.004650	0.009300
64	B200110542	BOM	NMIL	1	0.004650	0.004650
65	B200110543	BOM	NMIL	1	0.004650	0.004650
66	B200110544	BOM	NMIL	1	0.004650	0.004650
67	B200110550	BOM	NMIL	1	0.004650	0.004650
68	B200110551	BOM	NMIL	1	0.004650	0.004650
69	B200110554	BOM	NMIL	13	0.004650	0.060450

ZIPPY TECHNOLOGY CORP  
10F, No.50, MIN CHYUAN RD  
SHIN-TIEN, TAIPEI HSIEN, TAIWAN, R.O.C.

70	B200110561	BOM	NMIL	2	0.004650	0.009300
71	B200110574	BOM	NMIL	1	0.005115	0.005115
72	B200110613	BOM	NMIL	2	0.004650	0.009300
73	B200110626	BOM	NMIL	1	0.004650	0.004650
74	B200110627	BOM	NMIL	1	0.005115	0.005115
75	B200110759	BOM	NMIL	3	0.004650	0.013950
76	B200120015	BOM	NMIL	1	0.007557	0.007557
77	B200120032	BOM	NMIL	1	0.006870	0.006870
78	B200120091	BOM	NMIL	1	0.007735	0.007735
79	B200120174	BOM	NMIL	1	0.004820	0.004820
80	B200160017	BOM	NMIL	1	0.065000	0.065000
81	B200160034	BOM	NMIL	1	0.105000	0.105000
82	B200170020	BOM	NMIL	4	0.004875	0.019500
83	B200170029	BOM	NMIL	3	0.004875	0.014625
84	B200190031	BOM	N/A	2	0.017894	0.035788
85	B200200006	BOM	N/A	3	0.007144	0.021432
86	B200200012	BOM	N/A	4	0.009203	0.036812
87	B200200017	BOM	N/A	7	0.011856	0.082992
88	B200200021	BOM	N/A	2	0.015274	0.030548
89	B200200022	BOM	N/A	2	0.015274	0.030548
90	B200200060	BOM	N/A	1	0.012930	0.012930
91	B200200061	BOM	N/A	6	0.008470	0.050820
92	B200200062	BOM	N/A	2	0.007791	0.015582
93	B200200069	BOM	N/A	1	0.006575	0.006575
94	B200200071	BOM	N/A	1	0.006048	0.006048
95	B200200078	BOM	N/A	1	0.010037	0.010037
96	B200200101	BOM	N/A	1	0.016657	0.016657
97	B200210007	BOM	N/A	2	0.021805	0.043610
98	B200220020	BOM	N/A	1	0.002337	0.002337
99	B200220028	BOM	N/A	6	0.002647	0.015882
100	B200220048	BOM	N/A	1	0.002647	0.002647
101	B200230198	BOM	N/A	6	0.058210	0.349260
102	B200230210	BOM	N/A	2	0.050508	0.101016
103	B200230277	BOM	N/A	2	0.041493	0.082986
104	B200230288	BOM	N/A	1	0.019246	0.019246
105	B200230336	BOM	N/A	1	0.025409	0.025409
106	B200230338	BOM	N/A	4	0.029130	0.116520
107	B200230377	BOM	N/A	2	0.028585	0.057170
108	B200230379	BOM	N/A	8	0.036547	0.292376
109	B200240005	BOM	N/A	1	0.067034	0.067034
110	B200250009	BOM	NMIL	1	0.023160	0.023160
111	B200260046	BOM	NMIL	1	0.027440	0.027440
112	B200260250	BOM	NMIL	1	0.027440	0.027440
113	B200260302	BOM	NMIL	1	0.027440	0.027440

ZIPPY TECHNOLOGY CORP  
 10F, No.50, MIN CHYUAN RD  
 SHIN-TIEN, TAIPEI HSIEN, TAIWAN, R.O.C.

114	B200260318	BOM	NMIL	1	0.027440	0.027440
115	B200300236	BOM	NMIL	1	0.003845	0.003845
116	B200300269	BOM	NMIL	1	0.003845	0.003845
117	B200300275	BOM	NMIL	1	0.026144	0.026144
118	B210140027	BOM	KNOWNFR	2	2.135275	4.270550
119	B210160052	BOM	N/A	2	0.010000	0.020000
120	B210191425	N/A	STANDARD	1	0.020588	0.020588
			Total Failure Rate (F/10 <sup>6</sup> Hrs) :			9.508856
			Mean Time (in hours) Between Failures (MTBF) :			<b>105,165</b>