

RELIABILITY PREDICTION STANDARD REPORT

(Sorted by Part Number)

MIL-HDBK-217F, Notice 2

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

Date: DEC-21-2009

End Item Title : DMRW SERIES MTBF

End Item Part Number : DMRW-5500V4V (RoHS)

DMRW-5500V4V (RoHS) MTBF : 166,427

Module Title: ZIPPY TECHNOLOGY CORP

Module Part Number : DMRW/MTBF

Power Unit Module : DMRW-3500V-R (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.

$$\begin{aligned}\text{Total Failure Rate}(F) &= M \lambda / (3/2) + B \lambda \\ &= 7.994704 / (3/2) + 0.678840 = 6.008643\end{aligned}$$

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

$$\begin{aligned}\text{DMRW-5500V4V (RoHS)(MTBF)} &= F/10^6\text{Hrs} = 6.008643/10^6 \\ &= 166,427\end{aligned}$$

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 : DEC-21-2009 Time : 13:20:25						
End Item Title : DMRW SERIES MTBF						
End Item Part Number : DMRW-3500V-R (RoHS)						
Module Title : ZIPPY TECHNOLOGY CORP						
Module Part Number : DMRW/MTBF						
Module Reference Designation : DMRW						
Environmental Condition : GB						
Ambient Temperature: 25°C						
<u>DMRW-3500V-R (RoHS)</u>						
ITEM	Part	Ref	Qual	Quant	Individual	Total
#	Number	Desig	Level		Failure Rate	Failure Rate
					(F/10^6Hrs)	(F/10^6Hrs)
1	B102720004	BOM	NMIL	1	0.069564	0.069564
2	B102970002	BOM	NMIL	1	0.074349	0.074349
3	B103210004	BOM	NMIL	1	0.065162	0.065162
4	B103280002	BOM	NMIL	1	0.339591	0.339591
5	B200000058	BOM	SPECIAL	1	0.094935	0.094935
6	B200000080	BOM	SPECIAL	2	0.094935	0.189870
7	B200000144	BOM	SPECIAL	1	0.094935	0.094935
8	B200000207	BOM	SPECIAL	1	0.094935	0.094935
9	B200000252	BOM	SPECIAL	1	0.094935	0.094935
10	B200000257	BOM	SPECIAL	1	0.094935	0.094935
11	B200000308	BOM	SPECIAL	4	0.094935	0.379740
12	B200010009	BOM	NMIL	1	0.000798	0.000798
13	B200010014	BOM	NMIL	1	0.000798	0.000798
14	B200010022	BOM	NMIL	2	0.000798	0.001596
15	B200010052	BOM	NMIL	1	0.000798	0.000798
16	B200010056	BOM	NMIL	2	0.000798	0.001596
17	B200010066	BOM	NMIL	1	0.031398	0.031398
18	B200010067	BOM	NMIL	2	0.000798	0.001596
19	B200010080	BOM	NMIL	7	0.031398	0.219786
20	B200010088	BOM	NMIL	1	0.031398	0.031398
21	B200010122	BOM	NMIL	1	0.031398	0.031398

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22	B200010123	BOM	NMIL	2	0.031398	0.062796
23	B200020004	BOM	NMIL	13	0.005156	0.067028
24	B200020010	BOM	NMIL	2	0.006751	0.013502
25	B200030018	BOM	NMIL	1	0.007617	0.007617
26	B200030019	BOM	NMIL	1	0.001995	0.001995
27	B200030046	BOM	NMIL	1	0.003446	0.003446
28	B200040012	BOM	NMIL	1	0.005967	0.005967
29	B200040056	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	B200050036	BOM	NMIL	2	0.005218	0.010436
34	B200050039	BOM	NMIL	1	0.005218	0.005218
35	B200050040	BOM	NMIL	1	0.005218	0.005218
36	B200090006	BOM	NMIL	1	0.001518	0.001518
37	B200110040	BOM	NMIL	2	0.004650	0.009300
38	B200110042	BOM	NMIL	8	0.004650	0.037200
39	B200110046	BOM	NMIL	7	0.004650	0.032550
40	B200110120	BOM	NMIL	1	0.004650	0.004650
41	B200110123	BOM	NMIL	4	0.004650	0.018600
42	B200110130	BOM	NMIL	1	0.004650	0.004650
43	B200110149	BOM	NMIL	2	0.004650	0.009300
44	B200110172	BOM	NMIL	2	0.004650	0.009300
45	B200110190	BOM	NMIL	2	0.004650	0.009300
46	B200110192	BOM	NMIL	3	0.004650	0.013950
47	B200110261	BOM	NMIL	1	0.004650	0.004650
48	B200110270	BOM	NMIL	3	0.004650	0.013950
49	B200110282	BOM	NMIL	2	0.004650	0.009300
50	B200110302	BOM	NMIL	1	0.005115	0.005115
51	B200110489	BOM	NMIL	1	0.004650	0.004650
52	B200110493	BOM	NMIL	1	0.005115	0.005115
53	B200110501	BOM	NMIL	1	0.004650	0.004650
54	B200110506	BOM	NMIL	1	0.004650	0.004650
55	B200110508	BOM	NMIL	2	0.004650	0.009300
56	B200110509	BOM	NMIL	1	0.004650	0.004650
57	B200110510	BOM	NMIL	1	0.004650	0.004650
58	B200110512	BOM	NMIL	3	0.004650	0.013950
59	B200110519	BOM	NMIL	1	0.004650	0.004650
60	B200110520	BOM	NMIL	1	0.004650	0.004650
61	B200110524	BOM	NMIL	2	0.004650	0.009300

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62	B200110525	BOM	NMIL	1	0.004650	0.004650
63	B200110529	BOM	NMIL	7	0.004650	0.032550
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	10	0.004650	0.046500
70	B200110561	BOM	NMIL	1	0.004650	0.004650
71	B200110576	BOM	NMIL	1	0.004650	0.004650
72	B200110588	BOM	NMIL	1	0.004650	0.004650
73	B200110618	BOM	NMIL	1	0.004650	0.004650
74	B200110619	BOM	NMIL	1	0.004650	0.004650
75	B200110623	BOM	NMIL	1	0.004650	0.004650
76	B200110626	BOM	NMIL	1	0.004650	0.004650
77	B200110662	BOM	NMIL	1	0.004650	0.004650
78	B200110705	BOM	NMIL	3	0.004650	0.013950
79	B200120012	BOM	NMIL	1	0.007735	0.007735
80	B200120015	BOM	NMIL	1	0.008509	0.008509
81	B200120032	BOM	NMIL	1	0.006870	0.006870
82	B200120102	BOM	NMIL	1	0.007735	0.007735
83	B200160017	BOM	NMIL	1	0.065000	0.065000
84	B200160034	BOM	NMIL	1	0.105000	0.105000
85	B200170029	BOM	NMIL	3	0.004875	0.014625
86	B200190031	BOM	N/A	1	0.017894	0.017894
87	B200200006	BOM	N/A	2	0.007144	0.014288
88	B200200012	BOM	N/A	4	0.009203	0.036812
89	B200200013	BOM	N/A	1	0.009203	0.009203
90	B200200017	BOM	N/A	7	0.011856	0.082992
91	B200200021	BOM	N/A	1	0.015274	0.015274
92	B200200029	BOM	N/A	1	0.006048	0.006048
93	B200200047	BOM	N/A	1	0.008470	0.008470
94	B200200053	BOM	N/A	1	0.014056	0.014056
95	B200200060	BOM	N/A	2	0.012930	0.025860
96	B200200061	BOM	N/A	3	0.008470	0.025410
97	B200200062	BOM	N/A	2	0.007791	0.015582
98	B200200101	BOM	N/A	1	0.016657	0.016657
99	B200220021	BOM	N/A	1	0.002337	0.002337
100	B200220028	BOM	N/A	2	0.002647	0.005294
101	B200220038	BOM	N/A	1	0.002898	0.002898

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102	B200230198	BOM	N/A	5	0.058210	0.291050
103	B200230210	BOM	N/A	1	0.050508	0.050508
104	B200230217	BOM	N/A	2	0.041493	0.082986
105	B200230236	BOM	N/A	1	0.016788	0.016788
106	B200230288	BOM	N/A	2	0.019246	0.038492
107	B200230337	BOM	N/A	1	0.022047	0.022047
108	B200230338	BOM	N/A	3	0.029130	0.087390
109	B200230377	BOM	N/A	2	0.028585	0.057170
110	B200230379	BOM	N/A	5	0.036547	0.182735
111	B200240003	BOM	N/A	1	0.052174	0.052174
112	B200250009	BOM	NMIL	1	0.023160	0.023160
113	B200260215	BOM	NMIL	1	0.043960	0.043960
114	B200260250	BOM	NMIL	1	0.043960	0.043960
115	B200260252	BOM	NMIL	1	0.043960	0.043960
116	B200300219	BOM	NMIL	1	0.003845	0.003845
117	B200300236	BOM	NMIL	1	0.003845	0.003845
118	B200300269	BOM	NMIL	1	0.003845	0.003845
119	B200300318	BOM	NMIL	1	0.026144	0.026144
120	B210090072	BOM	KNOWNFR	2	1.915660	3.831320
121	B210160052	BOM	N/A	1	0.010000	0.010000
122	B210191144	N/A	STANDARD	1	0.020588	0.020588
			Total Failure Rate (F/10^6Hrs) :			7.994704
		Mean Time (in hours) Between Failures (MTBF) :				125.083