

RELIABILITY PREDICTION STANDARD REPORT

(Sorted by Part Number)

MIL-HDBK-217F, Notice 2

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

Date: DEC-21-2005

End Item Title : MRT SERIES MTBF

End Item Part Number : MRT-6320P

Module Title: ZIPPY TECHNOLOGY CORP

Module Part Number : MRT/MTBF

Power Unit Module : MRT-6320P-R

Environmental Condition: GB

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.

$$\begin{aligned}\text{MTBF} &= (1/\lambda) + (1/\lambda) - \mathbf{[1/(\lambda + \lambda)]} \\ &= 3/(2\lambda)\end{aligned}$$

λ = failure rate per million hours

$$\text{MRT-6320P (MTBF)} = 3/2\lambda = 3/2 \times 107,008 = 160,512$$

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-21-2005 Time : 11:32:45						
End Item Title : MRT SERIES MTBF						
End Item Part Number : MRT-6320P-R						
Module Title : ZIPPY TECHNOLOGY CORP						
Module Part Number : MRT/MTBF						
Module Reference Designation : MRT						
Environmental Condition : GB						
<u>MRT-6320P-R</u>						
ITEM	Part	Ref	Qual	Quant	Individual	Total
#	Number	Desig	Level		Failure Rate	Failure Rate
					(F/10^6Hrs)	(F/10^6Hrs)
1	2210090016	BOM	KNOWNFR	2	2.060000	4.120000
2	2100770064	BOM	NMIL	1	0.578512	0.578512
3	2109020018	BOM	NMIL	1	0.297257	0.297257
4	B200000001	BOM	SPECIAL	2	0.094935	0.189870
5	B200000055	BOM	SPECIAL	1	0.094935	0.094935
6	B200000074	BOM	SPECIAL	1	0.094935	0.094935
7	B200000080	BOM	SPECIAL	2	0.094935	0.189870
8	B200000177	BOM	SPECIAL	1	0.095613	0.095613
9	B200010014	BOM	NMIL	1	0.000798	0.000798
10	B200010045	BOM	NMIL	1	0.031622	0.031622
11	B200010052	BOM	NMIL	2	0.000798	0.001596
12	B200010057	BOM	NMIL	2	0.031622	0.063244
13	B200010070	BOM	NMIL	2	0.000798	0.001596
14	B200010074	BOM	NMIL	2	0.031622	0.063244
15	B200010075	BOM	NMIL	1	0.000798	0.000798
16	B200020004	BOM	NMIL	9	0.005156	0.046404
17	B200020014	BOM	NMIL	1	0.005156	0.005156
18	B200020015	BOM	NMIL	1	0.005156	0.005156
19	B200030007	BOM	NMIL	1	0.018136	0.018136
20	B200030012	BOM	NMIL	1	0.018136	0.018136
21	B200040005	BOM	NMIL	2	0.117293	0.234586

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22	B200040011	BOM	NMIL	1	0.117293	0.117293
23	B200040017	BOM	NMIL	1	0.018266	0.018266
24	B200040023	BOM	NMIL	1	0.117293	0.117293
25	B200040029	BOM	NMIL	1	0.005156	0.005156
26	B200040034	BOM	NMIL	2	0.005156	0.010312
27	B200050015	BOM	NMIL	1	0.117293	0.117293
28	B200050018	BOM	NMIL	1	0.117293	0.117293
29	B200050023	BOM	NMIL	1	0.005156	0.005156
30	B200050037	BOM	NMIL	4	0.005156	0.020624
31	B200050043	BOM	NMIL	2	0.005156	0.010312
32	B200050045	BOM	NMIL	2	0.005156	0.010312
33	B200060003	BOM	NMIL	1	0.019731	0.019731
34	B200110001	BOM	NMIL	1	0.012866	0.012866
35	B200110035	BOM	NMIL	2	0.012866	0.025732
36	B200110040	BOM	NMIL	5	0.012866	0.064330
37	B200110046	BOM	NMIL	4	0.012866	0.051464
38	B200110058	BOM	NMIL	3	0.012866	0.038598
39	B200110061	BOM	NMIL	1	0.012866	0.012866
40	B200110080	BOM	NMIL	1	0.012866	0.012866
41	B200110087	BOM	NMIL	1	0.012866	0.012866
42	B200110095	BOM	NMIL	3	0.012866	0.038598
43	B200110120	BOM	NMIL	6	0.012866	0.077196
44	B200110127	BOM	NMIL	4	0.012866	0.051464
45	B200110138	BOM	NMIL	2	0.012866	0.025732
46	B200110144	BOM	NMIL	1	0.012866	0.012866
47	B200110162	BOM	NMIL	2	0.012866	0.025732
48	B200110172	BOM	NMIL	2	0.012866	0.025732
49	B200110201	BOM	NMIL	1	0.012866	0.012866
50	B200110203	BOM	NMIL	2	0.012866	0.025732
51	B200110217	BOM	NMIL	1	0.012866	0.012866
52	B200110227	BOM	NMIL	9	0.012866	0.115794
53	B200110235	BOM	NMIL	6	0.012866	0.077196
54	B200110259	BOM	NMIL	1	0.012866	0.012866
55	B200110276	BOM	NMIL	1	0.012866	0.012866
56	B200110317	BOM	NMIL	2	0.012866	0.025732
57	B200110327	BOM	NMIL	4	0.012866	0.051464
58	B200110354	BOM	NMIL	1	0.012866	0.012866
59	B200110362	BOM	NMIL	1	0.012866	0.012866
60	B200110365	BOM	NMIL	1	0.012866	0.012866
61	B200110378	BOM	NMIL	1	0.012866	0.012866

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62	B200110382	BOM	NMIL	1	0.012866	0.012866
63	B200110385	BOM	NMIL	1	0.012866	0.012866
64	B200110413	BOM	NMIL	1	0.012866	0.012866
65	B200120007	BOM	NMIL	1	0.034747	0.034747
66	B200120029	BOM	NMIL	1	0.034747	0.034747
67	B200120039	BOM	NMIL	1	0.034747	0.034747
68	B200120043	BOM	NMIL	1	0.034747	0.034747
69	B200120099	BOM	NMIL	2	0.013000	0.026000
70	B200120101	BOM	NMIL	1	0.013000	0.013000
71	B200160004	BOM	NMIL	1	0.030153	0.030153
72	B200180011	BOM	N/A	1	0.008055	0.008055
73	B200180015	BOM	N/A	2	0.008055	0.016110
74	B200200011	BOM	N/A	1	0.001443	0.001443
75	B200200013	BOM	N/A	5	0.001443	0.007215
76	B200200018	BOM	N/A	7	0.001443	0.010101
77	B200200037	BOM	N/A	2	0.001443	0.002886
78	B200220003	BOM	N/A	1	0.026770	0.026770
79	B200220010	BOM	N/A	1	0.026770	0.026770
80	B200220028	BOM	N/A	3	0.026770	0.080310
81	B200230002	BOM	N/A	1	0.013857	0.013857
82	B200230018	BOM	N/A	4	0.013857	0.055428
83	B200230036	BOM	N/A	1	0.013857	0.013857
84	B200230081	BOM	N/A	1	0.008429	0.008429
85	B200230086	BOM	N/A	2	0.013857	0.027714
86	B200230100	BOM	N/A	1	0.026961	0.026961
87	B200230117	BOM	N/A	1	0.013857	0.013857
88	B200230134	BOM	N/A	4	0.013857	0.055428
89	B200230210	BOM	N/A	1	0.013857	0.013857
90	B200250007	BOM	NMIL	2	0.083450	0.166900
91	B200250009	BOM	NMIL	1	0.083450	0.083450
92	B200260013	BOM	NMIL	1	0.088680	0.088680
93	B200260032	BOM	NMIL	2	0.088680	0.177360
94	B200260055	BOM	NMIL	1	0.088680	0.088680
95	B200260056	BOM	NMIL	1	0.088680	0.088680
96	B200260057	BOM	NMIL	1	0.088680	0.088680
97	B200260075	BOM	NMIL	1	0.088680	0.088680
98	B200260099	BOM	NMIL	1	0.088680	0.088680
99	B200280013	BOM	NMIL	2	0.015958	0.031916
100	B200290005	BOM	NMIL	1	0.013740	0.013740
101	B200300080	BOM	NMIL	1	0.021767	0.021767

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102	B200300101	BOM	NMIL	1	0.021767	0.021767
103	B210160019	BOM	N/A	1	0.010000	0.010000
104	B210190217	N/A	STANDAND	1	0.022077	0.022077
			Total Failure Rate (F/10^6Hrs) :			9.345103
		Mean Time (in hours) Between Failures (MTBF) :				107,008