

RELIABILITY PREDICTION STANDARD REPORT

(Sorted by Part Number)

MIL-HDBK-217F, Notice 2

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

Date: OCT-02-2002

End Item Title : MRW SERIES MTBF

End Item Part Number : MRW-6400P

Module Title: ZIPPY TECHNOLOGY CORP

Module Part Number : MRW/MTBF

Power Unit Module : MRW-6400P-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.

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

λ = failure rate per million hours

$$\text{MRW-6400P (MTBF)} = 3/2\lambda = 3/2 \times 68716 = 103074$$

ZIPPY TECHNOLOGY CORP
2F,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 : SEP-24-2002		Time : 11:06:25				
End Item Title : MRW SERIES MTBF						
End Item Part Number : MRW-6400P-R						
Module Title : ZIPPY TECHNOLOGY CORP						
Module Part Number : MRW/MTBF						
Module Reference Designation : MRW						
Environmental Condition : GB						
<u>MRW-6400P-R</u>						
ITEM	Part	Ref	Qual	Quant	Individual	Total
#	Number	Desig	Level		Failure Rate	Failure Rate
					(F/10^6Hrs)	(F/10^6Hrs)
1	200-HA174313	BOM	SPECIAL	3	0.094935	0.284805
2	200-KIA7818P	BOM	SPECIAL	1	0.094935	0.094935
3	200-LT1248CS	BOM	SPECIAL	1	0.094935	0.094935
4	200-LTV817B0	BOM	SPECIAL	2	0.094935	0.189870
5	200-M51957B0	BOM	SPECIAL	1	0.094935	0.094935
6	200-TL431CL0	BOM	SPECIAL	1	0.094935	0.094935
7	200-TOP233Y0	BOM	SPECIAL	1	0.094935	0.094935
8	200-UC3845N0	BOM	SPECIAL	1	0.094935	0.094935
9	201-2SB772U0	BOM	NMIL	2	0.000798	0.001596
10	201-2SC18150	BOM	NMIL	1	0.000798	0.000798
11	201-2SD882U0	BOM	NMIL	1	0.000798	0.000798
12	201-AP80N030	BOM	NMIL	1	0.031398	0.031398
13	201-MMBT2221	BOM	NMIL	1	0.031398	0.031398
14	201-PN2907U1	BOM	NMIL	5	0.000798	0.003990
15	201-SPP20N60	BOM	NMIL	4	0.031398	0.125592
16	202-11N41481	BOM	NMIL	1	0.005156	0.005156
17	202-11N41482	BOM	NMIL	12	0.005156	0.061872
18	202-11N58200	BOM	NMIL	1	0.005156	0.005156
19	202-218U2UU1	BOM	NMIL	2	0.000798	0.001596
20	202-340CPQ10	BOM	NMIL	1	0.018136	0.018136
21	202-340L15CT	BOM	NMIL	1	0.116461	0.116461
22	202-372CPQ00	BOM	NMIL	1	0.116461	0.116461
23	202-3KSL60A0	BOM	NMIL	1	0.116461	0.116461
24	202-3MBR4040	BOM	NMIL	1	0.116461	0.116461
25	202-3SB56000	BOM	NMIL	1	0.116461	0.116461

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26	202-3SS14UU1	BOM	NMIL	1	0.116461	0.116461
27	202-3SS16UU1	BOM	NMIL	2	0.116461	0.232922
28	202-4BYM26C1	BOM	NMIL	2	0.128888	0.257776
29	202-4BYV28U0	BOM	NMIL	4	0.128888	0.515552
30	202-4BYV36E1	BOM	NMIL	1	0.128888	0.128888
31	202-4HFA15T0	BOM	NMIL	1	0.128888	0.128888
32	202-4PR10021	BOM	NMIL	1	0.128888	0.128888
33	202-4US1DUU1	BOM	NMIL	4	0.128888	0.515552
34	202-5PBU1000	BOM	NMIL	1	0.019591	0.019591
35	210-100004L1	BOM	NMIL	1	0.012866	0.012866
36	210-101004L1	BOM	NMIL	4	0.012866	0.051464
37	210-101014L1	BOM	NMIL	3	0.012866	0.038598
38	210-101024L1	BOM	NMIL	9	0.012866	0.115794
39	210-101034L1	BOM	NMIL	5	0.012866	0.064330
40	210-101054L1	BOM	NMIL	4	0.012866	0.051464
41	210-101214L1	BOM	NMIL	3	0.012866	0.038598
42	210-101234L1	BOM	NMIL	2	0.012866	0.025732
43	210-101504L1	BOM	NMIL	3	0.012866	0.038598
44	210-101514L1	BOM	NMIL	1	0.012866	0.012866
45	210-102024L1	BOM	NMIL	1	0.012866	0.012866
46	210-102034L1	BOM	NMIL	1	0.012866	0.012866
47	210-102124L1	BOM	NMIL	1	0.012866	0.012866
48	210-102204L1	BOM	NMIL	2	0.012866	0.025732
49	210-102214L1	BOM	NMIL	1	0.012866	0.012866
50	210-102214L1	BOM	NMIL	1	0.012866	0.012866
51	210-102424L1	BOM	NMIL	2	0.012866	0.025732
52	210-102724L1	BOM	NMIL	1	0.012866	0.012866
53	210-102734L1	BOM	NMIL	1	0.012866	0.012866
54	210-103024L1	BOM	NMIL	3	0.012866	0.038598
55	210-103304L1	BOM	NMIL	4	0.012866	0.051464
56	210-103314L1	BOM	NMIL	7	0.012866	0.090062
57	210-103324L1	BOM	NMIL	1	0.012866	0.012866
58	210-103324L1	BOM	NMIL	4	0.012866	0.051464
59	210-103624L1	BOM	NMIL	3	0.012866	0.038598
60	210-103924L1	BOM	NMIL	1	0.012866	0.012866
61	210-104704L1	BOM	NMIL	5	0.012866	0.064330
62	210-104704L1	BOM	NMIL	1	0.012866	0.012866
63	210-104724L1	BOM	NMIL	1	0.012866	0.012866
64	210-104724L1	BOM	NMIL	1	0.012866	0.012866
65	210-104744L1	BOM	NMIL	1	0.012866	0.012866
66	210-105114L1	BOM	NMIL	1	0.012866	0.012866
67	210-105124L1	BOM	NMIL	1	0.012866	0.012866
68	210-105604L1	BOM	NMIL	1	0.012866	0.012866
69	210-105624L1	BOM	NMIL	6	0.012866	0.077196

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70	210-106224L1	BOM	NMIL	1	0.012866	0.012866
71	210-106244L1	BOM	NMIL	4	0.012866	0.051464
72	210-107544L1	BOM	NMIL	1	0.012866	0.012866
73	210-113524L1	BOM	NMIL	1	0.012866	0.012866
74	210-20100BJ0	BOM	NMIL	1	0.013000	0.013000
75	210-20221AJ0	BOM	NMIL	1	0.034747	0.034747
76	210-20270BJ0	BOM	NMIL	1	0.013000	0.013000
77	210-20R12CJ0	BOM	NMIL	2	0.060262	0.120524
78	210-20R16CJA	BOM	NMIL	1	0.060262	0.060262
79	210-7SCK2R59	BOM	NMIL	1	0.030153	0.030153
80	211-11053000	BOM	N/A	1	0.000000	0.000000
81	211-14743001	BOM	N/A	1	0.000000	0.000000
82	211-31020501	BOM	N/A	1	0.001443	0.001443
83	211-31030501	BOM	N/A	1	0.001443	0.001443
84	211-31030503	BOM	N/A	7	0.001443	0.010101
85	211-31040503	BOM	N/A	10	0.001443	0.014430
86	211-31050160	BOM	N/A	3	0.001443	0.004329
87	211-32220502	BOM	N/A	2	0.001443	0.002886
88	211-33320500	BOM	N/A	1	0.001443	0.001443
89	211-34710501	BOM	N/A	1	0.001443	0.001443
90	211-34740500	BOM	N/A	1	0.001443	0.001443
91	211-41060040	BOM	N/A	1	0.019448	0.019448
92	211-42250160	BOM	N/A	1	0.019448	0.019448
93	211-54722500	BOM	N/A	1	0.026770	0.026770
94	211-61050501	BOM	N/A	1	0.013759	0.013759
95	211-61086R30	BOM	N/A	1	0.013759	0.013759
96	211-61580160	BOM	N/A	2	0.013759	0.027518
97	211-62774000	BOM	N/A	1	0.008369	0.008369
98	211-63386R31	BOM	N/A	4	0.013759	0.055036
99	211-64760500	BOM	N/A	5	0.013759	0.068795
100	211-64764000	BOM	N/A	1	0.013759	0.013759
101	211-64770101	BOM	N/A	1	0.013759	0.013759
102	211-64770256	BOM	N/A	2	0.013759	0.027518
103	212-201R0UH0	BOM	NMIL	1	0.088051	0.088051
104	212-2EMR0070	BOM	NMIL	1	0.088051	0.088051
105	212-2EMR1010	BOM	NMIL	1	0.088051	0.088051
106	212-3EMR0230	BOM	NMIL	1	0.182858	0.182858
107	212-3EMR0320	BOM	NMIL	1	0.182858	0.182858
108	212-3EMR0890	BOM	NMIL	1	0.182858	0.182858
109	212-3EMR1200	BOM	NMIL	1	0.182858	0.182858
110	212-3EMR1540	BOM	NMIL	1	0.182858	0.182858
111	212-3EMR1630	BOM	NMIL	1	0.182858	0.182858
112	212-3EMR1640	BOM	NMIL	1	0.182858	0.182858
113	213-00023	BOM	NMIL	2	0.015958	0.031916

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114	213-10009	BOM	NMIL	1	0.015958	0.015958
115	214-EMT07000	BOM	NMIL	1	0.021613	0.021613
116	214-EMT14100	BOM	NMIL	1	0.021613	0.021613
117	214-EMT15000	BOM	NMIL	1	0.021613	0.021613
118	215-00029	BOM	NMIL	1	0.012866	0.012866
119	225-1221M(FAN)	BOM	KNOWNFR	2	3.510000	7.020000
120	226-21821	BOM	N/A	1	0.010000	0.010000
121	228-32008	N/A	STANDARD	1	0.022077	0.022077
122	228-59000	N/A	STANDARD	1	0.022077	0.022077
123	228-74000	N/A	STANDARD	1	0.022077	0.022077
			Total Failure Rate (F/10^6Hrs) :			14.552552
		Mean Time (in hours) Between Failures (MTBF) :				68,716