

ZIPPY TECHNOLOGY CORP
10F, No. 50, MIN CHYUAN 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: JAN-23-2013
End Item Title : BM1ZX SERIES MTBF
End Item Part Number : BM1Z2-5360V3V (RoHS)
BM1Z2-5360V3V (RoHS) MTBF : 152,323
Module Title: ZIPPY TECHNOLOGY CORP
Module Part Number : BM1Z / MTBF
Power Unit Module : BM1Z-5360V (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.

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

λ = failure rate per million hours

$$\text{BM1Z2-5360V3V (RoHS)(MTBF)} = (3/2) \lambda = (3/2) \times 101,549 = 152,323$$

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Date : JAN-23-2013 Time : 16:25:48
End Item Title : BM1Z SERIES MTBF
End Item Part Number : BM1Z-5360V (RoHS)
BM1Z-5360V (RoHS) MTBF : 101,549
Module Title : ZIPPY TECHNOLOGY CORP
Module Part Number : BM1Z / MTBF
Module Reference Designation : BM1Z
Environmental Condition : GB
Ambient Temperature: 25°C

BM1Z-5360V (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	NMIL	1	0.069564	0.069564
2	B102540002	BOM	NMIL	1	0.585978	0.585978
3	B102540013	BOM	NMIL	1	0.585978	0.585978
4	B102920002	BOM	NMIL	1	0.074349	0.074349
5	B103210004	BOM	NMIL	1	0.065162	0.065162
6	B104230002	BOM	NMIL	1	1.065562	1.065562
7	B200000001	BOM	SPECIAL	1	0.094935	0.094935
8	B200000242	BOM	SPECIAL	2	0.094935	0.189870
9	B200000252	BOM	SPECIAL	1	0.094935	0.094935
10	B200000264	BOM	SPECIAL	1	0.094935	0.094935
11	B200000316	BOM	SPECIAL	2	0.094935	0.189870
12	B200000351	BOM	SPECIAL	1	0.094935	0.094935
13	B200000443	BOM	SPECIAL	1	0.094935	0.094935
14	B200010022	BOM	NMIL	2	0.000798	0.001596
15	B200010052	BOM	NMIL	2	0.000798	0.001596
16	B200010056	BOM	NMIL	5	0.000798	0.003990
17	B200010066	BOM	NMIL	1	0.031398	0.031398
18	B200010067	BOM	NMIL	3	0.000798	0.002394
19	B200010080	BOM	NMIL	4	0.031398	0.125592
20	B200010112	BOM	NMIL	2	0.031398	0.062796
21	B200010122	BOM	NMIL	1	0.031398	0.031398
22	B200010153	BOM	NMIL	2	0.031398	0.062796
23	B200010162	BOM	NMIL	1	0.031398	0.031398
24	B200020014	BOM	NMIL	1	0.006751	0.006751

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25	B200020018	BOM	NMIL	1	0.005156	0.005156
26	B200020024	BOM	NMIL	11	0.005156	0.056716
27	B200030018	BOM	NMIL	3	0.007617	0.022851
28	B200030030	BOM	NMIL	1	0.007617	0.007617
29	B200040059	BOM	NMIL	1	0.005967	0.005967
30	B200040063	BOM	NMIL	1	0.016111	0.016111
31	B200040084	BOM	NMIL	1	0.007909	0.007909
32	B200050024	BOM	NMIL	1	0.005218	0.005218
33	B200050037	BOM	NMIL	4	0.005218	0.020872
34	B200050039	BOM	NMIL	1	0.005218	0.005218
35	B200090005	BOM	NMIL	1	0.001518	0.001518
36	B200110001	BOM	NMIL	3	0.004650	0.013950
37	B200110035	BOM	NMIL	1	0.004650	0.004650
38	B200110040	BOM	NMIL	6	0.004650	0.027900
39	B200110042	BOM	NMIL	7	0.004650	0.032550
40	B200110046	BOM	NMIL	13	0.004650	0.060450
41	B200110058	BOM	NMIL	1	0.004650	0.004650
42	B200110120	BOM	NMIL	3	0.004650	0.013950
43	B200110123	BOM	NMIL	4	0.004650	0.018600
44	B200110131	BOM	NMIL	1	0.004650	0.004650
45	B200110151	BOM	NMIL	2	0.004650	0.009300
46	B200110162	BOM	NMIL	1	0.004650	0.004650
47	B200110172	BOM	NMIL	3	0.004650	0.013950
48	B200110177	BOM	NMIL	1	0.004650	0.004650
49	B200110190	BOM	NMIL	1	0.004650	0.004650
50	B200110192	BOM	NMIL	2	0.004650	0.009300
51	B200110227	BOM	NMIL	6	0.004650	0.027900
52	B200110235	BOM	NMIL	3	0.004650	0.013950
53	B200110259	BOM	NMIL	3	0.004650	0.013950
54	B200110276	BOM	NMIL	1	0.004650	0.004650
55	B200110279	BOM	NMIL	3	0.004650	0.013950
56	B200110282	BOM	NMIL	4	0.004650	0.018600
57	B200110296	BOM	NMIL	2	0.004650	0.009300
58	B200110302	BOM	NMIL	1	0.005115	0.005115
59	B200110348	BOM	NMIL	1	0.004650	0.004650
60	B200110386	BOM	NMIL	1	0.004650	0.004650
61	B200110501	BOM	NMIL	1	0.004650	0.004650
62	B200110512	BOM	NMIL	8	0.004650	0.037200
63	B200110514	BOM	NMIL	1	0.004650	0.004650
64	B200110525	BOM	NMIL	1	0.004650	0.004650
65	B200110542	BOM	NMIL	1	0.004650	0.004650
66	B200110551	BOM	NMIL	2	0.004650	0.009300
67	B200110554	BOM	NMIL	5	0.004650	0.023250
68	B200110561	BOM	NMIL	1	0.004650	0.004650

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69	B200110582	BOM	NMIL	1	0.004650	0.004650
70	B200110636	BOM	NMIL	1	0.005115	0.005115
71	B200120012	BOM	NMIL	1	0.007735	0.007735
72	B200120017	BOM	NMIL	1	0.009576	0.009576
73	B200120031	BOM	NMIL	1	0.006870	0.006870
74	B200120099	BOM	NMIL	1	0.006105	0.006105
75	B200120135	BOM	NMIL	1	0.007735	0.007735
76	B200160025	BOM	NMIL	1	0.065000	0.065000
77	B200160034	BOM	NMIL	1	0.065000	0.065000
78	B200170019	BOM	NMIL	2	0.004875	0.009750
79	B200170020	BOM	NMIL	2	0.004875	0.009750
80	B200170029	BOM	NMIL	3	0.004875	0.014625
81	B200190031	BOM	N/A	1	0.017894	0.017894
82	B200200053	BOM	N/A	1	0.014056	0.014056
83	B200200057	BOM	N/A	3	0.018108	0.054324
84	B200200060	BOM	N/A	1	0.012930	0.012930
85	B200200061	BOM	N/A	6	0.008470	0.050820
86	B200200071	BOM	N/A	1	0.006048	0.006048
87	B200200074	BOM	N/A	2	0.015274	0.030548
88	B200200083	BOM	N/A	1	0.007144	0.007144
89	B200200087	BOM	N/A	1	0.014056	0.014056
90	B200200127	BOM	N/A	2	0.007791	0.015582
91	B200200153	BOM	N/A	1	0.009203	0.009203
92	B200200156	BOM	N/A	7	0.011856	0.082992
93	B200220021	BOM	N/A	1	0.002337	0.002337
94	B200220028	BOM	N/A	3	0.002647	0.007941
95	B200220038	BOM	N/A	1	0.002898	0.002898
96	B200220048	BOM	N/A	1	0.002647	0.002647
97	B200230149	BOM	N/A	1	0.054821	0.054821
98	B200230198	BOM	N/A	5	0.058210	0.291050
99	B200230210	BOM	N/A	1	0.050508	0.050508
100	B200230275	BOM	N/A	5	0.029130	0.145650
101	B200230276	BOM	N/A	1	0.027414	0.027414
102	B200230277	BOM	N/A	2	0.041493	0.082986
103	B200230377	BOM	N/A	2	0.028585	0.057170
104	B200230379	BOM	N/A	4	0.036547	0.146188
105	B200240003	BOM	N/A	1	0.052174	0.052174
106	B200250009	BOM	NMIL	1	0.023160	0.023160
107	B200250016	BOM	NMIL	2	0.023160	0.046320
108	B200260225	BOM	NMIL	1	0.027440	0.027440
109	B200260252	BOM	NMIL	1	0.027440	0.027440
110	B200260271	BOM	NMIL	1	0.027440	0.027440
111	B200280012	BOM	NMIL	1	0.015958	0.015958
112	B200300219	BOM	NMIL	1	0.003845	0.003845

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113	B200300236	BOM	NMIL	1	0.003845	0.003845
114	B200300269	BOM	NMIL	1	0.003845	0.003845
115	B200300304	BOM	NMIL	1	0.026144	0.026144
116	B210140031	BOM	KNOWNFR	2	1.947362	3.894724
117	B210160052	BOM	N/A	2	0.010000	0.020000
118	B210191441	N/A	STANDARD	1	0.020588	0.020588

Total Failure Rate (F/10 ⁶ Hrs) :	9.847471
Mean Time (in hours) Between Failures (MTBF) :	101,549