

ZIPPY TECHNOLOGY CORP.
10F.,No.50,MINQUAN 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: NOV-09-2017
End Item Title : R1U2 SERIES MTBF
End Item Part Number : R1U2-5600K2H(RoHS)(PMBus WP1.2)
R1U2-5600K2H(RoHS)(PMBus WP1.2) MTBF : 238,305
Module Title: ZIPPY TECHNOLOGY CORP
Module Part Number : R1U / MTBF
Power Unit Module : R1U-2600K2(RoHS)(PMBus WP1.2)
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.

$$\text{Total Failure Rate}(F) = M \lambda / (3/2) + B \lambda = 5.253312 / (3/2) + 0.694086 = 4.196294$$

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

$$R1U2-5600K2H(RoHS)(PMBus WP1.2)(MTBF) = F / 10^6 \text{ (Hrs)} = 1 / (4.196294 / 10^6) = 238,305$$

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(Sorted by Part Number)
MIL-HDBK-217F, Notice 2

Date : NOV-09-2017 Time : 10:48:31
End Item Title : R1U SERIES MTBF
End Item Part Number : R1U-2600K2(RoHS)(PMBus WP1.2)
R1U-2600K2(RoHS)(PMBus WP1.2) MTBF : 190,356
Module Title : ZIPPY TECHNOLOGY CORP
Module Part Number : R1U / MTBF
Module Reference Designation : R1U
Environmental Condition : GB
Ambient Temperature: 25°C

R1U-2600K2(RoHS)(PMBus WP1.2)

ITEM #	Part Number	Ref Desig	Qual Level	Quant	Individual Failure Rate (F/10 ⁶ Hrs)	Total Failure Rate (F/10 ⁶ Hrs)
1	B105900010	BOM	SPECIAL	1	0.226012	0.226012
2	B106080002	BOM	SPECIAL	1	0.101232	0.101232
3	B106080003	BOM	SPECIAL	1	0.104791	0.104791
4	B106080004	BOM	SPECIAL	1	0.606885	0.606885
5	B106080005	BOM	SPECIAL	1	0.374260	0.374260
6	B200000296	BOM	NMIL	1	0.005248	0.005248
7	B200000308	BOM	NMIL	2	0.013289	0.026578
8	B200000559	BOM	NMIL	1	0.005483	0.005483
9	B200000603	BOM	NMIL	1	0.005248	0.005248
10	B200000612	BOM	NMIL	1	0.004716	0.004716
11	B200010052	BOM	NMIL	4	0.000337	0.001348
12	B200010056	BOM	NMIL	3	0.000323	0.000969
13	B200010068	BOM	NMIL	1	0.069762	0.069762
14	B200010242	BOM	NMIL	2	0.065527	0.131054
15	B200010252	BOM	NMIL	6	0.072168	0.433008
16	B200010266	BOM	NMIL	1	0.075893	0.075893
17	B200020024	BOM	NMIL	1	0.002332	0.002332
18	B200020034	BOM	NMIL	1	0.016175	0.016175
19	B200030069	BOM	NMIL	1	0.002308	0.002308
20	B200030083	BOM	NMIL	1	0.002308	0.002308
21	B200040073	BOM	NMIL	12	0.011646	0.139752
22	B200040120	BOM	NMIL	1	0.011646	0.011646
23	B200040133	BOM	NMIL	2	0.011646	0.023292
24	B200040147	BOM	NMIL	1	0.002465	0.002465

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25	B200040150	BOM	NMIL	1	0.011646	0.011646
26	B200050081	BOM	NMIL	5	0.003013	0.015065
27	B200050084	BOM	NMIL	1	0.003013	0.003013
28	B200050088	BOM	NMIL	1	0.003013	0.003013
29	B200060029	BOM	NMIL	1	0.013678	0.013678
30	B200090005	BOM	NMIL	1	0.001476	0.001476
31	B200110001	BOM	NMIL	1	0.002896	0.002896
32	B200110035	BOM	NMIL	1	0.002896	0.002896
33	B200110046	BOM	NMIL	1	0.002896	0.002896
34	B200110128	BOM	NMIL	1	0.001551	0.001551
35	B200110162	BOM	NMIL	1	0.002896	0.002896
36	B200110177	BOM	NMIL	1	0.002896	0.002896
37	B200110185	BOM	NMIL	1	0.002896	0.002896
38	B200110192	BOM	NMIL	1	0.002210	0.002210
39	B200110279	BOM	NMIL	1	0.002210	0.002210
40	B200110282	BOM	NMIL	1	0.002896	0.002896
41	B200110337	BOM	NMIL	2	0.003039	0.006078
42	B200110473	BOM	NMIL	3	0.002896	0.008688
43	B200110498	BOM	NMIL	2	0.002210	0.004420
44	B200110523	BOM	NMIL	1	0.002210	0.002210
45	B200110530	BOM	NMIL	1	0.002210	0.002210
46	B200110544	BOM	NMIL	1	0.002210	0.002210
47	B200110608	BOM	NMIL	3	0.002835	0.008505
48	B200110709	BOM	NMIL	1	0.002026	0.002026
49	B200110715	BOM	NMIL	2	0.002896	0.005792
50	B200110733	BOM	NMIL	9	0.002026	0.018234
51	B200110734	BOM	NMIL	1	0.002026	0.002026
52	B200110738	BOM	NMIL	5	0.002026	0.010130
53	B200110739	BOM	NMIL	1	0.002026	0.002026
54	B200110775	BOM	NMIL	1	0.002026	0.002026
55	B200110777	BOM	NMIL	1	0.002026	0.002026
56	B200110808	BOM	NMIL	7	0.002026	0.014182
57	B200110811	BOM	NMIL	1	0.002026	0.002026
58	B200110814	BOM	NMIL	1	0.002026	0.002026
59	B200110819	BOM	NMIL	1	0.002026	0.002026
60	B200110821	BOM	NMIL	1	0.002126	0.002126
61	B200110851	BOM	NMIL	1	0.002026	0.002026
62	B200110870	BOM	NMIL	1	0.002126	0.002126
63	B200110872	BOM	NMIL	1	0.002026	0.002026
64	B200110891	BOM	NMIL	1	0.002126	0.002126

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65	B200110928	BOM	NMIL	1	0.002026	0.002026
66	B200111016	BOM	NMIL	1	0.002026	0.002026
67	B200111021	BOM	NMIL	1	0.002126	0.002126
68	B200111022	BOM	NMIL	1	0.002026	0.002026
69	B200111024	BOM	NMIL	1	0.002026	0.002026
70	B200120170	BOM	NMIL	1	0.004786	0.004786
71	B200160009	BOM	NMIL	1	0.007893	0.007893
72	B200170055	BOM	NMIL	1	0.003721	0.003721
73	B200170071	BOM	NMIL	3	0.003177	0.009531
74	B200180075	BOM	NMIL	3	0.001907	0.005721
75	B200190037	BOM	NMIL	1	0.012538	0.012538
76	B200190072	BOM	NMIL	1	0.010940	0.010940
77	B200200075	BOM	NMIL	1	0.009676	0.009676
78	B200200092	BOM	NMIL	8	0.009620	0.076960
79	B200200116	BOM	NMIL	4	0.004199	0.016796
80	B200200140	BOM	NMIL	1	0.003664	0.003664
81	B200200142	BOM	NMIL	1	0.007306	0.007306
82	B200200158	BOM	NMIL	1	0.004508	0.004508
83	B200200193	BOM	NMIL	1	0.004827	0.004827
84	B200200197	BOM	NMIL	1	0.005939	0.005939
85	B200200207	BOM	NMIL	2	0.005166	0.010332
86	B200200208	BOM	NMIL	5	0.006356	0.031780
87	B200200213	BOM	NMIL	1	0.004224	0.004224
88	B200220020	BOM	NMIL	1	0.003440	0.003440
89	B200220082	BOM	NMIL	3	0.001208	0.003624
90	B200220087	BOM	NMIL	2	0.001125	0.002250
91	B200230210	BOM	NMIL	1	0.008794	0.008794
92	B200230276	BOM	NMIL	3	0.001395	0.004185
93	B200230281	BOM	NMIL	1	0.008469	0.008469
94	B200230288	BOM	NMIL	1	0.001248	0.001248
95	B200230381	BOM	NMIL	1	0.006761	0.006761
96	B200230417	BOM	NMIL	1	0.001779	0.001779
97	B200230436	BOM	NMIL	2	0.001991	0.003982
98	B200230442	BOM	NMIL	1	0.024244	0.024244
99	B200230537	BOM	NMIL	1	0.013030	0.013030
100	B200230538	BOM	NMIL	2	0.014654	0.029308
101	B200240012	BOM	NMIL	1	0.005171	0.005171
102	B200250009	BOM	NMIL	1	0.012238	0.012238
103	B200260266	BOM	NMIL	1	0.010178	0.010178
104	B200260382	BOM	NMIL	1	0.021662	0.021662

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105	B200260413	BOM	NMIL	1	0.011008	0.011008
106	B200280012	BOM	NMIL	1	0.000623	0.000623
107	B200300475	BOM	NMIL	1	0.030512	0.030512
108	B200300476	BOM	NMIL	1	0.003626	0.003626
109	B200310019	BOM	NMIL	1	0.005232	0.005232
110	B200370069	BOM	NMIL	1	0.001373	0.001373
111	B200370081	BOM	NMIL	1	0.000962	0.000962
112	B200370085	BOM	NMIL	1	0.001196	0.001196
113	B210060136	BOM	NMIL	1	0.024396	0.024396
114	B210090232	BOM	SPECIAL	1	2.182912	2.182912
115	B210160060	BOM	NMIL	1	0.010000	0.010000
116	B210192657	BOM	NMIL	1	0.023541	0.023541

Total Failure Rate (F/10⁶Hrs) : 5.253312
Mean Time (in hours) Between Failures (MTBF) : 190,356