ZIPPY TECHNOLOGY CORP.

Mean Time Between Failures
PREDICTION REPORT

MIL-HDBK-217F,Notice 2

Product : Redundant Switching Power Supply

Model/Type : R1T2-5300G2H(RoHS)(PMBus WP1.2)

Approval By	Roger Chiang	正式資料用章	正式資料 APR-02-2019 研發本部
Prepared By	TainTsuanLin		

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: APR-02-2019
End Item Title : R1T2 SERIES MTBF
End Item Part Number : R1T2-5300G2H(RoHS)(PMBus WP1.2)
R1T2-5300G2H(RoHS)(PMBus WP1.2) MTBF : 264,177
Module Title: ZIPPY TECHNOLOGY CORP
Module Part Number : R1T / MTBF
Power Unit Module : R1T-2300G2(RoHS)(PMBus WP1.2)
Environmental Condition: GB
Ambient Temperature: 25℃

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.

Total Failure Rate(F) ＝ M λ /(3/2)+B λ ＝ 4.966252/(3/2)+0.474501 = 3.785336

M λ = Main power failure rate ，B λ = Back plane failure rate

R1T2-5300G2H(RoHS)(PMBus WP1.2)(MTBF) ＝ F/10^6 (Hrs) ＝ 1/(3.785336/10^6) ＝ 264,177

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

Date : APR-02-2019 Time : 09:02:42
End Item Title : R1T SERIES MTBF
End Item Part Number : R1T-2300G2(RoHS)(PMBus WP1.2)
R1T-2300G2(RoHS)(PMBus WP1.2) MTBF : 201,359
Module Title : ZIPPY TECHNOLOGY CORP
Module Part Number : R1T / MTBF
Module Reference Designation : R1T
Environmental Condition : GB
Ambient Temperature: 25℃

R1T-2300G2(RoHS)(PMBus WP1.2)

ITEM #	Part Number	Ref Desig	Qual Level	Quant	Individual Failure Rate (F/10^6Hrs)	Total Failure Rate (F/10^6Hrs)
1	B105190015	BOM	SPECIAL	1	0.206753	0.206753
2	B106060002	BOM	SPECIAL	1	0.346834	0.346834
3	B106180003	BOM	SPECIAL	1	0.486756	0.486756
4	B106180007	BOM	SPECIAL	1	0.201411	0.201411
5	B106180009	BOM	SPECIAL	1	0.214111	0.214111
6	B200000521	BOM	NMIL	1	0.005806	0.005806
7	B200010052	BOM	NMIL	2	0.000627	0.001254
8	B200010099	BOM	NMIL	1	0.009694	0.009694
9	B200010109	BOM	NMIL	5	0.000627	0.003135
10	B200010167	BOM	NMIL	2	0.000648	0.001296
11	B200010252	BOM	NMIL	4	0.072168	0.288672
12	B200010253	BOM	NMIL	1	0.065527	0.065527
13	B200010257	BOM	NMIL	2	0.065527	0.131054
14	B200020020	BOM	NMIL	2	0.000424	0.000848
15	B200020024	BOM	NMIL	1	0.000424	0.000424
16	B200020034	BOM	NMIL	1	0.002941	0.002941
17	B200030107	BOM	NMIL	1	0.002308	0.002308
18	B200040073	BOM	NMIL	6	0.011646	0.069876
19	B200040125	BOM	NMIL	1	0.004278	0.004278
20	B200050084	BOM	NMIL	1	0.003013	0.003013
21	B200060025	BOM	NMIL	1	0.003001	0.003001
22	B200090005	BOM	NMIL	1	0.001476	0.001476
23	B200110042	BOM	NMIL	7	0.002210	0.015470
24	B200110123	BOM	NMIL	2	0.002210	0.004420

ZIPPY TECHNOLOGY CORP.
10F.,No.50,MINQUAN RD.,
XINDIAN DIST.,NEW TAIPEI CITY,TAIWAN,R.O.C.

ITEM #	Part Number	Ref Desig	Qual Level	Quant	Individual Failure Rate (F/10^6Hrs)	Total Failure Rate (F/10^6Hrs)
25	B200110156	BOM	NMIL	2	0.002896	0.005792
26	B200110227	BOM	NMIL	1	0.002896	0.002896
27	B200110235	BOM	NMIL	2	0.002896	0.005792
28	B200110279	BOM	NMIL	1	0.002210	0.002210
29	B200110293	BOM	NMIL	2	0.003039	0.006078
30	B200110317	BOM	NMIL	1	0.002896	0.002896
31	B200110325	BOM	NMIL	1	0.002896	0.002896
32	B200110464	BOM	NMIL	1	0.002896	0.002896
33	B200110502	BOM	NMIL	1	0.002210	0.002210
34	B200110508	BOM	NMIL	1	0.002210	0.002210
35	B200110512	BOM	NMIL	1	0.002210	0.002210
36	B200110564	BOM	NMIL	1	0.002210	0.002210
37	B200110573	BOM	NMIL	3	0.002319	0.006957
38	B200110638	BOM	NMIL	1	0.002319	0.002319
39	B200160011	BOM	NMIL	1	0.008611	0.008611
40	B200170019	BOM	NMIL	1	0.003721	0.003721
41	B200170056	BOM	NMIL	2	0.003177	0.006354
42	B200180098	BOM	NMIL	1	0.001845	0.001845
43	B200180107	BOM	NMIL	1	0.001845	0.001845
44	B200190072	BOM	NMIL	1	0.010940	0.010940
45	B200190098	BOM	NMIL	1	0.004493	0.004493
46	B200200086	BOM	NMIL	2	0.003089	0.006178
47	B200200092	BOM	NMIL	15	0.009620	0.144300
48	B200200156	BOM	NMIL	1	0.006356	0.006356
49	B200200204	BOM	NMIL	1	0.007306	0.007306
50	B200200205	BOM	NMIL	1	0.007820	0.007820
51	B200200218	BOM	NMIL	2	0.009620	0.019240
52	B200220010	BOM	NMIL	1	0.003943	0.003943
53	B200220073	BOM	NMIL	1	0.002605	0.002605
54	B200220074	BOM	NMIL	1	0.002117	0.002117
55	B200220082	BOM	NMIL	5	0.001208	0.006040
56	B200230198	BOM	NMIL	2	0.010543	0.021086
57	B200230531	BOM	NMIL	1	0.021090	0.021090
58	B200240014	BOM	NMIL	1	0.004438	0.004438
59	B200250057	BOM	NMIL	1	0.000231	0.000231
60	B200260208	BOM	NMIL	1	0.000251	0.000251
61	B200260412	BOM	NMIL	1	0.000258	0.000258
62	B200260418	BOM	NMIL	1	0.000219	0.000219
63	B200280012	BOM	NMIL	1	0.000623	0.000623
64	B200290015	BOM	NMIL	2	0.011159	0.022318

ZIPPY TECHNOLOGY CORP.
10F.,No.50,MINQUAN RD.,
XINDIAN DIST.,NEW TAIPEI CITY,TAIWAN,R.O.C.

ITEM #	Part Number	Ref Desig	Qual Level	Quant	Individual Failure Rate (F/10^6Hrs)	Total Failure Rate (F/10^6Hrs)
65	B200300484	BOM	NMIL	1	0.090676	0.090676
66	B200310019	BOM	NMIL	1	0.005232	0.005232
67	B200370102	BOM	NMIL	1	0.001091	0.001091
68	B200370114	BOM	NMIL	2	0.000962	0.001924
69	B200370115	BOM	NMIL	1	0.001196	0.001196
70	B210060154	BOM	NMIL	1	0.024396	0.024396
71	B210090243	BOM	SPECIAL	1	2.376670	2.376670
72	B210160084	BOM	NMIL	1	0.010000	0.010000
73	B210192686	BOM	NMIL	1	0.000067	0.000067
74	B210192741	BOM	NMIL	1	0.020842	0.020842

Total Failure Rate (F/10^6Hrs) : 4.966252
Mean Time (in hours) Between Failures (MTBF) : **201,359**