



ZIPPY TECHNOLOGY CORP.

Mean Time Between Failures PREDICTION REPORT

MIL-HDBK-217F, Notice 2

Product : Redundant Switching Power Supply

Model/Type : DR1T2-5180V2H(RoHS)(PMBus WP1.2)

Approval By		正式 資料 用 章	
Prepared By			

ZIPPY TECHNOLOGY CORP.
6F.,NO.48,WUQUAN RD.,
WUGU 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: JUL-27-2022
End Item Title : DR1T2 SERIES MTBF
End Item Part Number : DR1T2-5180V2H(RoHS)(PMBus WP1.2)
DR1T2-5180V2H(RoHS)(PMBus WP1.2) MTBF : 253,618
Module Title: ZIPPY TECHNOLOGY CORP
Module Part Number : DR1T / MTBF
Power Unit Module : DR1T-2180V2(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.

$$\text{Total Failure Rate}(F) = M\lambda / (3/2) + B\lambda = 5.202648 / (3/2) + 0.474501 = 3.942933$$

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

$$\text{DR1T2-5180V2H(RoHS)(PMBus WP1.2)(MTBF)} = F / 10^6 \text{ (Hrs)} = 1 / (3.942933 / 10^6) = 253,618$$

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RELIABILITY PREDICTION STANDARD REPORT
(Sorted by Part Number)
MIL-HDBK-217F, Notice 2

Date : JUL-27-2022 Time : 15:48:34
End Item Title : DR1T SERIES MTBF
End Item Part Number : DR1T-2180V2(RoHS)(PMBus WP1.2)
DR1T-2180V2(RoHS)(PMBus WP1.2) MTBF : 192,210
Module Title : ZIPPY TECHNOLOGY CORP
Module Part Number : DR1T / MTBF
Module Reference Designation : DR1T
Environmental Condition : GB
Ambient Temperature: 25°C

DR1T-2180V2(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	B105190015	BOM	SPECIAL	1	0.185981	0.185981
2	B106290007	BOM	SPECIAL	1	0.408971	0.408971
3	B106380002	BOM	SPECIAL	1	0.198611	0.198611
4	B106380005	BOM	SPECIAL	1	0.213709	0.213709
5	B106380008	BOM	SPECIAL	1	0.509336	0.509336
6	B106380010	BOM	SPECIAL	1	0.200521	0.200521
7	B200000521	BOM	NMIL	1	0.005806	0.005806
8	B200010052	BOM	NMIL	2	0.000627	0.001254
9	B200010099	BOM	NMIL	1	0.009694	0.009694
10	B200010109	BOM	NMIL	5	0.000627	0.003135
11	B200010167	BOM	NMIL	2	0.000648	0.001296
12	B200010252	BOM	NMIL	4	0.072168	0.288672
13	B200010268	BOM	NMIL	3	0.062382	0.187146
14	B200040073	BOM	NMIL	6	0.011646	0.069876
15	B200040123	BOM	NMIL	1	0.015069	0.015069
16	B200090005	BOM	NMIL	1	0.001476	0.001476
17	B200110042	BOM	NMIL	7	0.002210	0.015470
18	B200110123	BOM	NMIL	2	0.002210	0.004420
19	B200110156	BOM	NMIL	2	0.002896	0.005792
20	B200110227	BOM	NMIL	1	0.002896	0.002896
21	B200110235	BOM	NMIL	2	0.002896	0.005792
22	B200110279	BOM	NMIL	1	0.002210	0.002210
23	B200110325	BOM	NMIL	1	0.002896	0.002896
24	B200110357	BOM	NMIL	2	0.002896	0.005792

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ITEM #	Part Number	Ref Desig	Qual Level	Quant	Individual Failure Rate (F/10^6Hrs)	Total Failure Rate (F/10^6Hrs)
25	B200110502	BOM	NMIL	1	0.002210	0.002210
26	B200110508	BOM	NMIL	1	0.002210	0.002210
27	B200110512	BOM	NMIL	1	0.002210	0.002210
28	B200110564	BOM	NMIL	1	0.002210	0.002210
29	B200110638	BOM	NMIL	1	0.002319	0.002319
30	B200170019	BOM	NMIL	1	0.003721	0.003721
31	B200170029	BOM	NMIL	2	0.003721	0.007442
32	B200180112	BOM	NMIL	2	0.002134	0.004268
33	B200190098	BOM	NMIL	1	0.004493	0.004493
34	B200200082	BOM	NMIL	3	0.008395	0.025185
35	B200200086	BOM	NMIL	2	0.003089	0.006178
36	B200200092	BOM	NMIL	15	0.009620	0.144300
37	B200200153	BOM	NMIL	2	0.005166	0.010332
38	B200200156	BOM	NMIL	1	0.006356	0.006356
39	B200200205	BOM	NMIL	1	0.007820	0.007820
40	B200200218	BOM	NMIL	2	0.009620	0.019240
41	B200220014	BOM	NMIL	1	0.002796	0.002796
42	B200220054	BOM	NMIL	2	0.003943	0.007886
43	B200220082	BOM	NMIL	3	0.001208	0.003624
44	B200230198	BOM	NMIL	2	0.010273	0.020546
45	B200230377	BOM	NMIL	1	0.012682	0.012682
46	B200230564	BOM	NMIL	1	0.018460	0.018460
47	B200250057	BOM	NMIL	1	0.000220	0.000220
48	B200260280	BOM	NMIL	1	0.000187	0.000187
49	B200260441	BOM	NMIL	1	0.000212	0.000212
50	B200260442	BOM	NMIL	1	0.000246	0.000246
51	B200280017	BOM	NMIL	2	0.000623	0.001246
52	B200290015	BOM	NMIL	2	0.011159	0.022318
53	B200300505	BOM	NMIL	1	0.088152	0.088152
54	B200370102	BOM	NMIL	1	0.001091	0.001091
55	B200370114	BOM	NMIL	1	0.000962	0.000962
56	B200370115	BOM	NMIL	1	0.001196	0.001196
57	B210090243	BOM	SPECIAL	1	2.376670	2.376670
58	B210160044	BOM	NMIL	1	0.016264	0.016264
59	B210160069	BOM	NMIL	1	0.010000	0.010000
60	B210192875	BOM	NMIL	1	0.000733	0.000733
61	B210192917	BOM	NMIL	1	0.020842	0.020842

Total Failure Rate (F/10^6Hrs) : 5.202648

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ITEM #	Part Number	Ref Desig	Qual Level	Quant	Individual Failure Rate (F/10 ⁶ Hrs)	Total Failure Rate (F/10 ⁶ Hrs)
Mean Time (in hours) Between Failures (MTBF) :						192,210