

RELIABILITY PREDICTION STANDARD REPORT

(Sorted by Part Number)

MIL-HDBK-217F, Notice 2

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

Date: MAR-05-2003

End Item Title : R3G SERIES MTBF

End Item Part Number : R3G-6650P

Module Title: ZIPPY TECHNOLOGY CORP

Module Part Number : R3G / MTBF

Power Unit Module : GIN-6350P

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.

$$\begin{aligned} \text{MTBF} &= (1/\lambda) + (1/\lambda) + (1/\lambda) - \left[1 / (\lambda + \lambda + \lambda) \right] \\ &= 3 (1/\lambda) - (1/3)(1/\lambda) = (3 - 1/3) 1/\lambda \\ &= 8/3 \lambda \end{aligned}$$

λ = failure rate per million hours

$$\text{R3G-6650P (MTBF)} = 8/3 \lambda = 8/3 \times 75145 = 200386$$

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 : FEB-06-2002		Time : 09:15:38				
End Item Title : GIN SERIES MTBF						
End Item Part Number : GIN-6350P						
Module Title : ZIPPY TECHNOLOGY CORP						
Module Part Number : GIN/MTBF						
Module Reference Designation : GIN						
Environmental Condition : GB						
<u>GIN-6350P</u>						
ITEM	Part	Ref	Qual	Quant	Individual	Total
#	Number	Desig	Level		Failure Rate	Failure Rate
					(F/10⁶Hrs)	(F/10⁶Hrs)
1	200-HA174313	BOM	SPECIAL	6	0.094935	0.569610
2	200-LM324UU1	BOM	SPECIAL	3	0.094935	0.284805
3	200-LT1248CS	BOM	SPECIAL	1	0.094935	0.094935
4	200-LTV817B0	BOM	SPECIAL	3	0.094935	0.284805
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	201-2SB12601	BOM	NMIL	1	0.000798	0.000798
10	201-2SB772U0	BOM	NMIL	1	0.000798	0.000798
11	201-2SC18150	BOM	NMIL	1	0.000798	0.000798
12	201-2SD882U0	BOM	NMIL	1	0.000798	0.000798
13	201-HM5401U1	BOM	NMIL	1	0.000798	0.000798
14	201-MMBT2221	BOM	NMIL	1	0.031398	0.031398
15	201-PN2907U1	BOM	NMIL	3	0.000798	0.002394
16	201-SPP20N60	BOM	NMIL	4	0.031398	0.125592
17	202-11N41481	BOM	NMIL	1	0.005156	0.005156
18	202-11N41482	BOM	NMIL	17	0.005156	0.087652
19	202-11N58200	BOM	NMIL	1	0.005156	0.005156
20	202-11N58220	BOM	NMIL	1	0.005156	0.005156
21	202-218U2UU1	BOM	NMIL	2	0.000798	0.001596
22	202-330CPQ00	BOM	NMIL	1	0.018136	0.018136
23	202-340L15CT	BOM	NMIL	3	0.116461	0.349383
24	202-372CPQ00	BOM	NMIL	2	0.116461	0.232922
25	202-3SB36000	BOM	NMIL	1	0.116461	0.116461

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26	202-3SS14UU1	BOM	NMIL	1	0.116461	0.116461
27	202-4BYM26C1	BOM	NMIL	2	0.128888	0.257776
28	202-4BYV28U0	BOM	NMIL	2	0.128888	0.257776
29	202-4HFA15T0	BOM	NMIL	1	0.128888	0.128888
30	202-4PR30020	BOM	NMIL	1	0.128888	0.128888
31	202-4US1DUU1	BOM	NMIL	9	0.128888	1.159992
32	202-5PBU1000	BOM	NMIL	1	0.019591	0.019591
33	210-100004L1	BOM	NMIL	3	0.012866	0.038598
34	210-101004L1	BOM	NMIL	8	0.012866	0.102928
35	210-101014L1	BOM	NMIL	2	0.012866	0.025732
36	210-101024L1	BOM	NMIL	17	0.012866	0.218722
37	210-101034L1	BOM	NMIL	10	0.012866	0.128660
38	210-101214L1	BOM	NMIL	3	0.012866	0.038598
39	210-101234L1	BOM	NMIL	1	0.012866	0.012866
40	210-101534L1	BOM	NMIL	3	0.012866	0.038598
41	210-102024L1	BOM	NMIL	18	0.012866	0.231588
42	210-102034L1	BOM	NMIL	3	0.012866	0.038598
43	210-102124L1	BOM	NMIL	1	0.012866	0.012866
44	210-102204L1	BOM	NMIL	5	0.012866	0.064330
45	210-102214L1	BOM	NMIL	5	0.012866	0.064330
46	210-102224L1	BOM	NMIL	1	0.012866	0.012866
47	210-102424L1	BOM	NMIL	2	0.012866	0.025732
48	210-102724L1	BOM	NMIL	2	0.012866	0.025732
49	210-102734L1	BOM	NMIL	1	0.012866	0.012866
50	210-103024L1	BOM	NMIL	3	0.012866	0.038598
51	210-103314L1	BOM	NMIL	5	0.012866	0.064330
52	210-103324L1	BOM	NMIL	5	0.012866	0.064330
53	210-103624L1	BOM	NMIL	1	0.012866	0.012866
54	210-103924L1	BOM	NMIL	2	0.012866	0.025732
55	210-104704L1	BOM	NMIL	6	0.012866	0.077196
56	210-104724L1	BOM	NMIL	10	0.012866	0.128660
57	210-104734L1	BOM	NMIL	7	0.012866	0.090062
58	210-104744L1	BOM	NMIL	5	0.012866	0.064330
59	210-105114L1	BOM	NMIL	2	0.012866	0.025732
60	210-105118B1	BOM	NMIL	2	0.012866	0.025732
61	210-105124L1	BOM	NMIL	2	0.012866	0.025732
62	210-105604L1	BOM	NMIL	1	0.012866	0.012866
63	210-105614L1	BOM	NMIL	1	0.012866	0.012866
64	210-105624L1	BOM	NMIL	6	0.012866	0.077196
65	210-106224L1	BOM	NMIL	1	0.012866	0.012866
66	210-106244L1	BOM	NMIL	5	0.012866	0.064330
67	210-106834L1	BOM	NMIL	1	0.012866	0.012866
68	210-107518B1	BOM	NMIL	6	0.012866	0.077196
69	210-109144L1	BOM	NMIL	3	0.012866	0.038598

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70	210-20100BJ0	BOM	NMIL	1	0.013000	0.013000
71	210-20270BJ0	BOM	NMIL	1	0.013000	0.013000
72	210-20R15CJ0	BOM	NMIL	1	0.060262	0.060262
73	210-20R18CJA	BOM	NMIL	2	0.060262	0.120524
74	210-501020XE	BOM	NMIL	3	0.022113	0.066339
75	210-502030XB	BOM	NMIL	3	0.022113	0.066339
76	210-7SCK0570	BOM	NMIL	1	0.030153	0.030153
77	210-9R0040D0	BOM	NMIL	5	0.005156	0.025780
78	211-13343001	BOM	N/A	2	0.000000	0.000000
79	211-14743000	BOM	N/A	2	0.000000	0.000000
80	211-31020501	BOM	N/A	1	0.001443	0.001443
81	211-31030503	BOM	N/A	7	0.001443	0.010101
82	211-31040503	BOM	N/A	13	0.001443	0.018759
83	211-31050160	BOM	N/A	4	0.001443	0.005772
84	211-32220502	BOM	N/A	2	0.001443	0.002886
85	211-32240501	BOM	N/A	2	0.001443	0.002886
86	211-33320500	BOM	N/A	1	0.001443	0.001443
87	211-34710501	BOM	N/A	1	0.001443	0.001443
88	211-34740251	BOM	N/A	6	0.001443	0.008658
89	211-34740251	BOM	N/A	6	0.001443	0.008658
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	3	0.026770	0.080310
94	211-61050501	BOM	N/A	1	0.013759	0.013759
95	211-61070250	BOM	N/A	1	0.013759	0.013759
96	211-61080100	BOM	N/A	2	0.013759	0.027518
97	211-61080160	BOM	N/A	2	0.013759	0.027518
98	211-61086R30	BOM	N/A	1	0.013759	0.013759
99	211-62286R32	BOM	N/A	2	0.013759	0.027518
100	211-62774000	BOM	N/A	1	0.008369	0.008369
101	211-64760500	BOM	N/A	4	0.013759	0.055036
102	211-64770101	BOM	N/A	1	0.013759	0.013759
103	211-64770161	BOM	N/A	2	0.013759	0.027518
104	212-201R0UH0	BOM	NMIL	1	0.088051	0.088051
105	212-30520230	BOM	NMIL	1	0.182858	0.182858
106	212-3EMR0230	BOM	NMIL	2	0.182858	0.365716
107	212-3EMR0320	BOM	NMIL	2	0.182858	0.365716
108	212-3EMR0880	BOM	NMIL	1	0.182858	0.182858
109	212-3EMR0890	BOM	NMIL	1	0.182858	0.182858
110	212-3EMR0900	BOM	NMIL	1	0.182858	0.182858
111	212-3EMR1010	BOM	NMIL	1	0.182858	0.182858
112	212-3EMR1230	BOM	NMIL	1	0.182858	0.182858
113	212-3EMR1320	BOM	NMIL	1	0.182858	0.182858

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114	212-3EMR1330	BOM	NMIL	1	0.182858	0.182858
115	212-3EMR1340	BOM	NMIL	1	0.182858	0.182858
116	213-00023	BOM	NMIL	2	0.015958	0.031916
117	213-10009	BOM	NMIL	1	0.015958	0.015958
118	214-EMT07000	BOM	NMIL	1	0.021613	0.021613
119	214-EMT13600	BOM	NMIL	1	0.021613	0.021613
120	214-EMT14300	BOM	NMIL	1	0.021613	0.021613
121	221-11330	BOM	NMIL	1	0.120000	0.120000
122	215-00030	BOM	NMIL	1	0.012866	0.012866
123	225-12310(FAN)	BOM	KNOWNFR	1	3.000000	3.000000
124	226-21821	BOM	N/A	1	0.010000	0.010000
125	228-32008	N/A	STANDARD	1	0.022077	0.022077
126	228-59000	N/A	STANDARD	1	0.022077	0.022077
127	228-69000	N/A	STANDARD	1	0.022077	0.022077
			Total Failure Rate (F/10 ⁶ Hrs) :			13.307576
			Mean Time (in hours) Between Failures (MTBF) :			75,145