



Reliability Engineering

There are many accepted standards for determining piece part level failure rates in aerospace equipment. The most common are MIL-STD-217F Notice 2, BellCore and Manufacturer's experience.

Failure Rate Predictions:

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When one thinks of reliability engineering, the term that predominantly comes to mind is the "reliability prediction", or more accurately the failure rate prediction. This is perhaps the basic building block of all developmental analysis, e.g. failure mode & effects analysis, fault tree analysis, risk assessment, availability and probability of failure, etc.

Parnassus provides its clientel with a reliable out-source for reliability predictions using most standard methods and can produce its reports in all formats. Our database systems allow us to output reports with total flexibility in field content and report format, and our expertise assures your predictions will be delivered in an accurate, timely and professional manner.

PL Porter Company
30 August, 1999

GEN-3 Motor Drive (Motherboard) PIECE PART RELIABILITY PREDICTION

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File name: Gen3RelSample.xls
Worksheet name: MtrDrv

Part No	Ref Des	Description	Qty	Manf Part	Manf	Failure	Failure	Rel Prediction Coefficients									
								Total FR	LP(ea)	Lb	PICV	PIQ	PIE	FISR		D/Cyc	Qty
CC030ER3	C24, C25	CAP 30PF 50V RADIAL +/- 10%	2	CCP300J50V	MERITEK	0.0034	2.62E-02	0.0039	0.56	3	4						2
CC210ER3	C60	CAP .001MF 50V MONO RAD 0.1	1	8462228	FUTURE ACT	0.0039	3.74E-02	0.0039	0.8	3	4						1
CC310FR1	C22, C23	CAP .01MF 100V MONO RAD 0.2CC	2	RD16R103K101	MERITEK	0.1039	6.19E-02	0.0039	1.11	3	4						2
CC410ER5	Various	.1MF 50V MONO FORM LD 20C	21	RD162U104M500	MERITEK	1.2776	8.08E-02	0.0039	1.3	3	4						21
CG610DR3	C8, C10	CAP 10MF 35V RADIAL TANTALUM	2	TAN1035EDTK(A)	EV ELEC	0.0137	8.89E-03	0.0065	1.32	1	4	0.2					2
CG50FRD-SUB	P1, P2	CONN 50 PIN FEMALE D-SUB	2	17DD-50SC	NEWARK	0.0504	2.52E-02	0.0005	1	4.2	12						2
CD7PHL32	JP1	CONN HEADER 7 PIN LOCKING	1	26-604-070	MOLEX	0.0123	1.20E-02	0.0005	1	2	12						1
CO1843M04	Y1	CRYSTAL 1.843200 MHz HC-4	1	6810451	FUTURE ACT	0.1500	1.50E-01	0.013	1	12							1
DB2A400V2	M-DB1	BRIDGE RECTIFIER 2A 400V SQUAR	1	KBP204	TAS ELEC	0.0116	1.16E-02	0.003	1	0.05	1	5.5	13				1
DB25A600VF	M-DB1	BRIDGE RECTIFIER 25A 600V FLAT	1	D25X860	HV COMP	0.0116	1.16E-02	0.003	1	0.05	1	5.5	13				4
DLH01R02	M-DB	LED RED T 1 3/4 H/INT	1	AM-53HT	ADVANCED	0.0087	8.10E-03	0.0023	1.6								1
DR01A400F2	D1, D2, D12, D13	DIODE 1A 400V FAST REC PLASTIC	4	1N4936	TAS ELEC	0.0154	3.88E-03	0.001	1	0.05	1	5.5	13				4
DS1N4148	D5	SIGNAL DIODE 100MA 100V	1	D10N4148T	EV ELEC	0.0147	1.47E-02	0.0038	1	0.05	1	5.5	13				1
DZ106V5W1	M-D1, D4	ZENER DIODE 6.0V 0.5W GLASS	2	1N5238B	FUTURE ACT	0.1359	9.30E-02	0.013	1	1	1	5.5	13				2
DZ110V01W2	M-D7, D9	ZENER DIODE 10V 1W PLASTIC	2	1N4740AT	EV ELEC	0.1359	9.30E-02	0.013	1	1	1	5.5	13				2
DZ168V600U	M-DB10/11	TVS 68V 600W UNIDIRECTIONAL	3	2749927	FUTURE ACT	0.2769	9.30E-02	0.013	1	1	1	5.5	13				3
FX050X05.00	F1, F2	FUSE MOV 50V 5A RADIAL	2	2129393	FUTURE ACT	0.183	0.00E+00	0.01	9								2
FX060X00.20	F11 - F14	FUSE MOV 60V 0.2A RADIAL	4	5469760	FUTURE ACT	0.183	0.00E+00	0.01	9								4
FX060X01.80	F3, F4, F7, F10	FUSE MOV 60V 1.5A RADIAL	4	5457763	FUTURE ACT	0.183	0.00E+00	0.01	9								4
IC8A1013CP	U6A6	IC DUAL PRECIS OP AMP LO OPSET	1	LT1013CN6	ARRAW ELEC	0.0572	3.79E-02										1
IC8A393	U7	INT CIRC DUAL VOLT COMP ARATOR	1	4074376	FUTURE ACT	0.0686	8.86E-02										1
ICM52891A	U2, U9	IC 8-BIT SERIAL LATCH SRCE DAK	2	4713277	FUTURE ACT	0.0686	8.86E-02										2
ICM537C660	U4	IC 8-BIT UC OTP & PLCC 8051	1	3020808	FUTURE ACT	0.0686	8.86E-02										1
RB1100.2F	R32, R33	RESISTOR CARB 1K OHM 1/4W 1%	2	RMF RN55C-1KFT	EV ELEC	0.0480	2.40E-02	0.0012	1	5	4						2
RB1107.2F	R19, R20	RES METAL FILM	2	RMF RN55C-1X07KFT	EV ELEC	0.0480	2.40E-02	0.0012	1	5	4						2
RB1154.2F	R21, R22	RES METAL FILM	2	RMF RN55C-1X54KFT	EV ELEC	0.0480	2.40E-02	0.0012	1	5	4						2
RB1165.2F	R1, R2	RES METAL FILM 165K 1/4W 1%	2	RMF RN55C-1X65KFT	EV ELEC	0.0480	2.40E-02	0.0012	1	5	4						2
RB267.2F	R7, R8	RES METAL FILM	2	RMF RN55D-267FT	EV ELEC	0.0480	2.40E-02	0.0012	1	5	4						2
RB316.2F	R9, R10	RES METAL FILM	2	RMF RN55C-316FT	EV ELEC	0.0480	2.40E-02	0.0012	1	5	4						2
RB383.2F	R11, R12	RES METAL FILM	2	RMF RN55D-383FT	EV ELEC	0.0480	2.40E-02	0.0012	1	5	4						2
RB475.2F	R13, R14	RES METAL FILM	2	RMF RN55C-475FT	EV ELEC	0.0480	2.40E-02	0.0012	1	5	4						2
RB604.2F	R15, R16	RES METAL FILM	2	RMF RN55C-604FT	EV ELEC	0.0480	2.40E-02	0.0012	1	5	4						2
RB768.2F	R17, R18	RES METAL FILM	2	RMF RN55D-768FT	EV ELEC	0.0480	2.40E-02	0.0012	1	5	4						2
RD2100.1K	R36, R37	RES METOX 1K OHM 1W 10%	2	4341707	FUTURE ACT	0.0063	1.17E-03	0.00072	1.1	1	4						2
RN3100.10GS	RP1, RP2	RES NETWORK 10K OHM COMMON	2	RKLB3103G	NATIONAL EL	0.0220	1.10E-02	0.00006	3	4	1.91	8					2
RY1C1203	K1 thru K14	RELAY SPDT 12V 20A 0.3MM GAP	14	JIM-12V	MASTER DIST	0.0227	1.62E-03	0.006	0.05	1	0.1	6	3	15	0.2		14
SQM18P05	Q5, Q6	MOSFET 50V -18A 0.14 OM TO220	2	9863267	FUTURE ACT	8.040	1.4E+00	0.012	1	4							2
SQM27N10	Q3, Q4	MOSFET 100V 27A 0.052 OM TO220	2	8599243	FUTURE ACT	1.3729	8.88E-01	0.012	1	4							2
SR2E4N804	Q1, Q2	TRANSISTOR 40V 0.2A NPN TO92	2	8599244	FUTURE ACT	0.0087	4.07E-03	0.00074	1	0.7	1	0.11	5.5	13			2
SU035V500A2	RV1, RV2, RV3	MOV 35VAC 500A RADIAL	3	Z10L660	ITAL ELEC	18.7469	6.29E+00	0.093	1	1.4	1	2	3	8	1		3
SU017V500A2	RV4	MOV 17VAC 500A RADIAL	1	Z19L270	ITAL ELEC	8.1309	8.19E+00	0.073	1	1.4	1.05	2	3	8	1		1
SV+05.75P03LD	U5	VOLT REG +5V 750MA RESET LO-DP	1	6769285	FUTURE ACT	0.0310	3.10E-02										1
SV+1201P03LD	U1	VOLT REG +12V 1A LO-DROP TO220	1	628617	FUTURE ACT	0.0310	3.10E-02										1
SWB051A1	ST (INDY)	SWITCH SPST ROCKER DP	1	76R98056	CAL SWITCH	0.3400	3.40E-01	0.034	1	1							1
Motor Drive (Motherboard) Predicted Failure Rate:								36.680	FPMH								
								27,263	Mean Time Between Failures (Predicted)								



Parnassus Database Systems

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