LINEAR TECHNOLOGY

RELIABILITY DATA

LTC1096/98/1196/97/98/1272/73/74/75/76/77/78/79/82/85/86/87/88/89/90
LTC1291/92/93/94/96/97/98/92/93 LTC1390/91 LTC1400/01/16/18 LTC1591/94/97/98
LTC1798 / LTC1821

6/17/04

• OPERATING LIFE TEST

PACKAGE TYPE	SAMPLE SIZE	OLDEST DATE CODE	NEWEST DATE CODE	K DEVICE HOURS (1) AT +125°C	NUMBER OF (2) FAILURES
CERDIP	620	8947	0116	1,077.45	0
SIDEBRAZE	14	9126	9126	47.07	0
PLASTIC DIP	954	9126	0414	850.28	0
SOIC/SOT/MSOP	582	9113	9909	545.57	0
SSOP/TSSOP	217	9740	0027	217.08	0
	2,387			2,737.45	0

• HIGHLY ACCELERATED STRESS TEST AT +131°C/85%RH

PACKAGE TYPE	SAMPLE SIZE	OLDEST DATE CODE	NEWEST DATE CODE	K DEVICE HOURS AT +85°C (4)	NUMBER OF FAILURES
PLASTIC DIP	155	9103	9739	580.84	0
SOIC/SOT/MSOP	64	9219	9323	92.52	0
	219			673.36	0

• PRESSURE COOKER TEST AT 15 PSIG, +121°C

PACKAGE TYPE	SAMPLE SIZE	OLDEST DATE CODE	NEWEST DATE CODE	K DEVICE HOURS	NUMBER OF FAILURES
PLASTIC DIP	6,994	9103	0343	381.51	0
SOIC/SOT/MSOP	7,655	9143	0345	729.69	0
SSOP/TSSOP	835	9522	0237	215.32	0
	15,484			1,326.52	0

• TEMP CYCLE FROM -65°C to +150°C

PACKAGE TYPE	SAMPLE SIZE	OLDEST DATE CODE	NEWEST DATE CODE	K DEVICE CYCLES	NUMBER OF FAILURES
CERDIP	50	9636	9636	5.00	0
PLASTIC DIP	1,324	9229	0343	187.08	0
SOIC/SOT/MSOP	2,545	9216	0345	786.47	0
SSOP/TSSOP	736	9522	0237	559.08	0
	4,655			1,537.62	0

• THERMAL SHOCK FROM -65°C to +150°C

PACKAGE TYPE	SAMPLE SIZE	OLDEST DATE CODE	NEWEST DATE CODE	K DEVICE CYCLES	NUMBER OF FAILURES
CERDIP	50	9636	9636	5.00	0
PLASTIC DIP	631	9147	9914	152.55	0
SOIC/SOT/MSOP	2,132	9143	0345	779.36	0
SSOP/TSSOP	642	9430	0116	376.75	0
	3,455			1,313.66	0

(1) Assumes Activation Energy = 0.7 Electron Volts
(2) Failure Rate Equivalent to +55°C, 60% Confidence Level = 4.32 FITS
(3) Mean Time Between Failures in Years = 26,407
(4) Assumes 20X Acceleration from 85°C to +131°C
Note: 1 FIT = 1 Failure in One Billion Hours.