

# RELIABILITY REPORT





## Reliability Data Report Product Family R421

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LTC1695/99   LTC1757/58   LTC1840/44  
LTC1923/57/81/82   LTC3701/36/37  
LTC3772/76/80/83   LTC3803/05/08/09/  
LTC3822/24/36   LTC3872/73  
LTC4053/54/56/57/58/59   LTC4064/68  
LTC4100/4213/16   LTC4300  
LTC4400/01/02/03   LTC4555

# Reliability Data Report

## Report Number: R421

Report generated on: Thu Sep 20 13:24:14 PDT 2012

<b>OPERATING LIFE TEST</b>					
PACKAGE TYPE	SAMPLE SIZE	OLDEST DATE CODE	NEWEST DATE CODE	K DEVICE HRS (+125°C) <sup>1</sup>	No. of FAILURES <sub>2,3</sub>
QFN/DFN	693	0213	0846	628	0
SSOP/TSSOP	542	0040	0710	542	0
SOIC/SOT/MSOP	2426	0001	0815	3125	0
Totals	3,661	-	-	4,295	0

<b>HIGHLY ACCELERATED STRESS TEST AT +131 DEG C / 85% RH</b>					
PACKAGE TYPE	SAMPLE SIZE	OLDEST DATE CODE	NEWEST DATE CODE	K DEVICE HRS (+85°C) <sup>4</sup>	No. of FAILURES
QFN/DFN	48	0651	0651	92	0
SOIC/SOT/MSOP	239	0605	0709	458	0
Totals	287	-	-	550	0

<b>PRESSURE COOKER TEST AT 15 PSIG , +121 DEG C</b>					
PACKAGE TYPE	SAMPLE SIZE	OLDEST DATE CODE	NEWEST DATE CODE	K DEVICE HRS	No. of FAILURES
SSOP/TSSOP	13745	0032	1112	955	0
SOIC/SOT/MSOP	9119	0031	1122	669	0
QFN/DFN	11125	0233	1121	1537	0
Totals	33,989	-	-	3,161	0

<b>TEMP CYCLE FROM -65 TO 150 DEG C</b>					
PACKAGE TYPE	SAMPLE SIZE	OLDEST DATE CODE	NEWEST DATE CODE	K DEVICE CYCLES	No. of FAILURES
QFN/DFN	11506	0233	1121	4556	0
SSOP/TSSOP	3811	0032	1112	1367	0
SOIC/SOT/MSOP	13580	0031	1127	2501	0
Totals	28,897	-	-	8,424	0

<b>THERMAL SHOCK FROM -65 TO 150 DEG C</b>					
PACKAGE TYPE	SAMPLE SIZE	OLDEST DATE CODE	NEWEST DATE CODE	K DEVICE CYCLES	No. of FAILURES
SSOP/TSSOP	4300	0127	1112	1479	0
QFN/DFN	9438	0308	1121	3457	0
SOIC/SOT/MSOP	7916	0032	1122	1581	0
Totals	21,654	-	-	6,517	0

(1) Assumes Activation Energy = 0.7 Electron Volts  
 (2) Failure Rate Equivalent to +55 °C, 60% Confidence Level =0.43 FITS  
 (3) Mean Time Between Failure in Years = 267454.41  
 (4) Assumes 20X Acceleration from 85 °C to +131 °C  
 Note 1: 1 FIT = 1 Failure in One Billion Hours.  
 Note 2: HAST, Temp Cycle & Thermal Shock are subjected to J-STD-020 MSL Preconditioning

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<b>HIGH TEMPERATURE BAKE AT 175 DEG C</b>					
<b>PACKAGE TYPE</b>	<b>SAMPLE SIZE</b>	<b>OLDEST DATE CODE</b>	<b>NEWEST DATE CODE</b>	<b>K DEVICE HRS</b>	<b>No. of FAILURES</b>
SSOP/TSSOP	721	0727	0950	547	0
QFN/DFN	281	0611	1141	256	0
SOIC/SOT/MSOP	246	0930	1127	198	0
Totals	1,248	-	-	1,001	0

  

<b>HIGH TEMPERATURE BAKE AT 150 DEG C</b>					
<b>PACKAGE TYPE</b>	<b>SAMPLE SIZE</b>	<b>OLDEST DATE CODE</b>	<b>NEWEST DATE CODE</b>	<b>K DEVICE HRS</b>	<b>No. of FAILURES</b>
SSOP/TSSOP	50	0930	0930	25	0
QFN/DFN	350	0825	1013	350	0
Totals	400	-	-	375	0