

RELIABILITY DATA

LTM2881 / LTM2882 / LTM2883

3/16/2011

• OPERATING LIFE TEST

PACKAGE TYPE	SAMPLE SIZE	OLDEST DATE CODE	NEWEST DATE CODE	K DEVICE HOURS AT +125°C	NUMBER OF FAILURES
32L LGA	154	0920	0930	154.00	0
32L BGA	77	0920	0930	77.00	0
	231			231.00	0

• J-STD-020 LEVEL 3 PRECONDITIONING (192 HOURS 30°C/60%RH + 3x IR REFLOW +260°C)

PACKAGE TYPE	SAMPLE SIZE	OLDEST DATE CODE	NEWEST DATE CODE	K DEVICE HOURS AT +30°C	NUMBER OF FAILURES
32L LGA	616	0920	0930	118.27	0
32L BGA	924	1015	1015	177.40	0
	1,540			295.67	0

• TEMP CYCLE [-40°C to +125°C for LGA] [-55°C to +125°C for BGA]

PACKAGE TYPE	SAMPLE SIZE	OLDEST DATE CODE	NEWEST DATE CODE	K DEVICE CYCLES	NUMBER OF FAILURES
32L LGA	249	0920	0930	421.00	0
32L BGA	231	1015	1015	231.00	0
	249			652.00	0

• THERMAL SHOCK [-40°C to +125°C for LGA] [-55°C to +125°C for BGA]

PACKAGE TYPE	SAMPLE SIZE	OLDEST DATE CODE	NEWEST DATE CODE	K DEVICE CYCLES	NUMBER OF FAILURES
32L LGA	292	0920	0930	507.00	0
32L BGA	231	1015	1015	231.00	0
	523			738.00	0

• HIGH TEMPERATURE BAKE at 150°C

PACKAGE TYPE	SAMPLE SIZE	OLDEST DATE CODE	NEWEST DATE CODE	K DEVICE HOURS AT +150°C	NUMBER OF FAILURES
32L LGA	202	0920	0920	404.00	0
32L BGA	143	1015	1015	143.00	0
	345			547.00	0

• SOLDER SHOCK: 3h PCT plus 1x SOLDER IMMERSION at 245°C

PACKAGE TYPE	SAMPLE SIZE	OLDEST DATE CODE	NEWEST DATE CODE		NUMBER OF FAILURES
32L LGA	73	0920	0920		0
32L BGA	75	1015	1015		0
	148				0

• BOARD MOUNT TEMP CYCLE: 0°C TO +100°C

PACKAGE TYPE	SAMPLE SIZE	OLDEST DATE CODE	NEWEST DATE CODE	K DEVICE CYCLES	NUMBER OF FAILURES
32L LGA	80	0920	0920	280.00	0
	80			280.00	0

- (1) Assumes Activation Energy = 1.0 Electron Volts
 (2) Failure Rate Equivalent to +55°C, Assuming 60% Confidence Level = 7.93 FITS
 (3) Mean Time Between Failures (MTBF) = 14,386 Years
 (4) LTC Dry Packs This Product. Level 3 per J-STD-020 Floor Life is 168 Hours at 30°C/60%RH. If This Time Limit is Exceeded, Dry Bake is Recommended.

Note: 1 FIT = 1 Failure in One Billion Hours.



OP LIFE DATA FOR THE LTM28XX FAMILY

DATE CODE	DEVICE TYPE	PKG TYPE	SAMPLE SIZE	PARA-METRIC FAIL	CATA-STROPHIC FAIL	HOURS AT +125°C	DEVICE HOURS AT +125°C
0920	LTM2881	LGA	77	0	0	1,000	77,000
0930	LTM2882	LGA	77	0	0	1,000	77,000
0930	LTM2883	BGA	77	0	0	1,000	77,000
3	LOTS		231	0	0		231,000

TEMP CYCLE DATA FOR THE LTM28XX FAMILY (Component Level)

DATE CODE	DEVICE TYPE	PKG TYPE	SAMPLE SIZE	PARA-METRIC FAIL	CATA-STROPHIC FAIL	CYCLES ON TC -40°C TO +125°C	DEVICE CYCLES -40°C TO +125°C
0920	LTM2881	LGA	58	0	0	2,000	116,000
0920	LTM2881	LGA	48	0	0	2,000	96,000
0920	LTM2881	LGA	66	0	0	2,000	132,000
0930	LTM2882	LGA	77	0	0	1,000	77,000
4	LOTS		249	0	0		421,000

DATE CODE	DEVICE TYPE	PKG TYPE	SAMPLE SIZE	PARA-METRIC FAIL	CATA-STROPHIC FAIL	CYCLES ON TC -55°C TO +125°C	DEVICE CYCLES -55°C TO +125°C
1015	LTM2883	BGA	77	0	0	1,000	77,000
1015	LTM2883	BGA	77	0	0	1,000	77,000
1015	LTM2883	BGA	77	0	0	1,000	77,000
3	LOTS		231	0	0		231,000

THERMAL SHOCK DATA FOR THE LTM28XX FAMILY (Component Level)

DATE CODE	DEVICE TYPE	PKG TYPE	SAMPLE SIZE	PARA-METRIC FAIL	CATA-STROPHIC FAIL	CYCLES ON TS -40°C TO +125°C	DEVICE CYCLES -40°C TO +125°C
0920	LTM2881	LGA	70	0	0	2,000	140,000
0920	LTM2881	LGA	77	0	0	2,000	154,000
0920	LTM2881	LGA	68	0	0	2,000	136,000
0930	LTM2882	LGA	77	0	0	1,000	77,000
4	LOTS		292	0	0		507,000

DATE CODE	DEVICE TYPE	PKG TYPE	SAMPLE SIZE	PARA-METRIC FAIL	CATA-STROPHIC FAIL	CYCLES ON TS -55°C TO +125°C	DEVICE CYCLES -40°C TO +125°C
1015	LTM2883	BGA	77	0	0	1,000	77,000
1015	LTM2883	BGA	77	0	0	1,000	77,000
1015	LTM2883	BGA	77	0	0	1,000	77,000
3	LOTS		231	0	0		231,000

150°C HIGH TEMPERATURE BAKE DATA FOR THE LTM28XX FAMILY

DATE CODE	DEVICE TYPE	PKG TYPE	SAMPLE SIZE	PARA-METRIC FAIL	CATA-STROPHIC FAIL	HOURS AT +150°C	DEVICE HOURS AT +150°C
0920	LTM2881	LGA	65	0	0	2,000	130,000
0920	LTM2881	LGA	60	0	0	2,000	120,000
0920	LTM2881	LGA	77	0	0	2,000	154,000
1015	LTM2881	BGA	77	0	0	1,000	77,000
1015	LTM2881	BGA	76	0	0	1,000	76,000
5	LOTS		355	0	0		557,000

BOARD MOUNT TEMP CYCLE DATA FOR THE LTM288XX FAMILY

DATE CODE	DEVICE TYPE	PKG TYPE	SAMPLE SIZE	PARA-METRIC FAIL	CATA-STROPHIC FAIL	CYCLES ON TC 0°C TO +100°C	DEVICE CYCLES 0°C TO +100°C	SOLDER PASTE
0920	LTM2880	LGA	80	0	0	3,500	280,000	SnAgCu
1	LOT		80	0	0		280,000	

* 10 °C per minute ramp rate