



## Reliability Data Report Product Family R386

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LT1500/01/06/07 LT1533/34  
LT1611/13 LT1761/62/63/64/65  
LT1959 LT1962/63/64  
LT3012/13/14 LT3021/27/28/32  
LT3150

# Reliability Data Report

## Report Number: R386

Report generated on: Wed Sep 19 10:21:02 PDT 2012

| OPERATING LIFE TEST |             |                     |                     |                                      |                                   |
|---------------------|-------------|---------------------|---------------------|--------------------------------------|-----------------------------------|
| PACKAGE TYPE        | SAMPLE SIZE | OLDEST DATE<br>CODE | NEWEST DATE<br>CODE | K DEVICE<br>HRS (125°C) <sup>1</sup> | No. of FAILURES<br><sup>2,3</sup> |
| SIDEBRAZE           | 30          | 9601                | 9601                | 30                                   | 0                                 |
| QFN/DFN             | 77          | 0502                | 0502                | 73                                   | 0                                 |
| SSOP/TSSOP          | 231         | 0502                | 0650                | 585                                  | 0                                 |
| SOIC/SOT/MSOP       | 1403        | 9601                | 0533                | 1240                                 | 0                                 |
| TO-220              | 145         | 9940                | 0213                | 84                                   | 0                                 |
| Totals              | 1,886       | -                   | -                   | 2,012                                | 0                                 |

| HIGHLY ACCELERATED STRESS TEST AT +131 DEG C / 85% RH |             |                     |                     |  |                 |
|---|-------------|---------------------|---------------------|--|-----------------|
| PACKAGE TYPE  | SAMPLE SIZE | OLDEST DATE<br>CODE | NEWEST DATE<br>CODE | K DEVICE<br>HOURS (+85°C) <sup>4</sup> | No. of FAILURES |
| SOIC/SOT/MSOP   | 437         | 9943                | 0620                | 2543                                   | 0               |
| Totals  | 437         | -                   | -                   | 2,543                                  | 0               |

| PRESSURE COOKER TEST AT 15 PSIG , +121 DEG C |             |                     |                     |                   |                 |
|--|-------------|---------------------|---------------------|-------------------|-----------------|
| PACKAGE TYPE                                 | SAMPLE SIZE | OLDEST DATE<br>CODE | NEWEST DATE<br>CODE | K DEVICE<br>HOURS | No. of FAILURES |
| QFN/DFN                                      | 6273        | 0000                | 1124                | 559               | 0               |
| SSOP/TSSOP                                   | 7707        | 9740                | 1120                | 532               | 0               |
| PLASTIC DIP                                  | 50          | 9607                | 9607                | 1                 | 0               |
| SOIC/SOT/MSOP                                | 47779       | 9610                | 1122                | 3507              | 0               |
| TO-220                                       | 2300        | 0121                | 1025                | 63                | 0               |
| TO-92  | 50          | 0808                | 0808                | 1                 | 0               |
| Totals                                       | 64,159      | -                   | -                   | 4,663             | 0               |

| TEMP CYCLE FROM -65 TO 150 DEG C |             |                     |                     |                    |                 |
|----------------------------------|-------------|---------------------|---------------------|--------------------|-----------------|
| PACKAGE TYPE                     | SAMPLE SIZE | OLDEST DATE<br>CODE | NEWEST DATE<br>CODE | K DEVICE<br>CYCLES | No. of FAILURES |
| QFN/DFN                          | 7740        | 0509                | 1124                | 1875               | 0               |
| SSOP/TSSOP                       | 8009        | 9740                | 1120                | 1761               | 0               |
| PLASTIC DIP                      | 50          | 9607                | 9607                | 5                  | 0               |
| SOIC/SOT/MSOP                    | 46169       | 9605                | 1122                | 10453              | 0               |
| TO-220                           | 4325        | 0121                | 1025                | 497                | 0               |
| TO-92                            | 50          | 0808                | 0808                | 5                  | 0               |
| Totals                           | 66,343      | -                   | -                   | 14,596             | 0               |

| TEMP CYCLE FROM -55 TO 125 DEG C |             |                     |                     |                    |                 |
|----------------------------------|-------------|---------------------|---------------------|--------------------|-----------------|
| PACKAGE TYPE                     | SAMPLE SIZE | OLDEST DATE<br>CODE | NEWEST DATE<br>CODE | K DEVICE<br>CYCLES | No. of FAILURES |
| SOIC/SOT/MSOP                    | 99          | 0913                | 0914                | 9                  | 0               |
| Totals                           | 99          | -                   | -                   | 9                  | 0               |

(1) Assumes Activation Energy = 1.0 Electron Volts

(2) Failure Rate Equivalent to +55 °C, 60% Confidence Level =0.91 FITS

(3) Mean Time Between Failure in Years = 125289.44

(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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### THERMAL SHOCK FROM -65 TO 150 DEG C

| PACKAGE TYPE  | SAMPLE SIZE | OLDEST DATE<br>CODE | NEWEST DATE<br>CODE | K DEVICE<br>CYCLES | No. of FAILURES |
|---------------|-------------|---------------------|---------------------|--------------------|-----------------|
| QFN/DFN       | 8327        | 0509                | 1124                | 1939               | 0               |
| SSOP/TSSOP    | 8088        | 0210                | 1120                | 1633               | 0               |
| PLASTIC DIP   | 50          | 9607                | 9607                | 5                  | 0               |
| SOIC/SOT/MSOP | 38164       | 9605                | 1122                | 7976               | 0               |
| TO-220        | 2275        | 0121                | 1025                | 247                | 0               |
| Totals        | 56,904      | -                   | -                   | 11,800             | 0               |

### HIGH TEMPERATURE BAKE AT 175 DEG C

| PACKAGE TYPE  | SAMPLE SIZE | OLDEST DATE<br>CODE | NEWEST DATE<br>CODE | K DEVICE<br>HOURS | No. of FAILURES |
|---------------|-------------|---------------------|---------------------|-------------------|-----------------|
| QFN/DFN       | 1077        | 0650                | 0709                | 1038              | 0               |
| SSOP/TSSOP    | 350         | 0824                | 0918                | 175               | 0               |
| SOIC/SOT/MSOP | 2420        | 0822                | 1015                | 2121              | 0               |
| Totals        | 3,847       | -                   | -                   | 3,334             | 0               |

### HIGH TEMPERATURE BAKE AT 150 DEG C

| PACKAGE TYPE  | SAMPLE SIZE | OLDEST DATE<br>CODE | NEWEST DATE<br>CODE | K DEVICE<br>HOURS | No. of FAILURES |
|---------------|-------------|---------------------|---------------------|-------------------|-----------------|
| QFN/DFN       | 1149        | 0650                | 0850                | 1686              | 0               |
| SOIC/SOT/MSOP | 398         | 0829                | 0832                | 398               | 0               |
| Totals        | 1,547       | -                   | -                   | 2,084             | 0               |