

RELIABILITY REPORT





NOW PART OF



Reliability Data Report Product Family R413

LTC987 / LTC1726 / LTC1727 / LTC1728 /
LTC1921 / LTC1985 / LTC2369 / LTC2900 /
LTC2901 / LTC2902 / LTC2903 / LTC2904 /
LTC2905 / LTC2906 / LTC2907 / LTC2908 /
LTC2909 / LTC2910 / LTC2911 / LTC2912 /
LTC2913 / LTC2914 / LTC2915 / LTC2916 /
LTC2917 / LTC2918 / LTC2919 / LTC2920 /
LTC2923 / LTC2924 / LTC2925 / LTC2926 /
LTC2927 / LTC2928 / LTC2930 / LTC2931 /
LTC2932 / LTC2950 / LTC2951 / LTC2954 /
LTC4150 / LTC4257 / LTC4261 / LTC4263 /
LTC4265 / LTC4267 / LTC4273 / LTC4301 /
LTC4302 / LTC4354

Reliability Data Report

Report Number: R413

Report generated on: Mon Mar 05 10:50:54 PST 2018

| OPERATING LIFE TEST | | | | | |
|---------------------|-------------|---------------------|---------------------|---------------------------------------|-----------------------------------|
| PACKAGE TYPE | SAMPLE SIZE | OLDEST DATE CODE | NEWEST DATE CODE | K DEVICE HRS (+125°C) ¹ | No. of FAILURES _{2,3} |
| QFN/DFN | 3538 | 0421 | 1614 | 1356 | 0 |
| SSOP/TSSOP | 8905 | 0213 | 1709 | 1170 | 0 |
| SOIC/MSOP | 2131 | 9914 | 1550 | 1634 | 0 |
| SOT | 1138 | 0346 | 1201 | 997 | 0 |
| Totals | 15,712 | - | - | 5,157 | 0 |

| HIGHLY ACCELERATED STRESS TEST AT +130 DEG C / 85% RH | | | | | |
|---|-------------|---------------------|---------------------|--------------------------------------|-----------------|
| PACKAGE TYPE | SAMPLE SIZE | OLDEST DATE CODE | NEWEST DATE CODE | K DEVICE HRS (+85°C) ⁴ | No. of FAILURES |
| QFN/DFN | 356 | 0746 | 1531 | 923 | 0 |
| Totals | 356 | - | - | 923 | 0 |

| PRESSURE COOKER TEST AT 15 PSIG , +121 DEG C | | | | | |
|--|-------------|---------------------|---------------------|--------------|-----------------|
| PACKAGE TYPE | SAMPLE SIZE | OLDEST DATE CODE | NEWEST DATE CODE | K DEVICE HRS | No. of FAILURES |
| QFN/DFN | 10020 | 0325 | 1640 | 846 | 0 |
| SSOP/TSSOP | 7369 | 0436 | 1709 | 397 | 0 |
| SOIC/MSOP | 13453 | 9924 | 1712 | 735 | 0 |
| SOT | 42278 | 0004 | 1713 | 2227 | 0 |
| Totals | 73,120 | - | - | 4,205 | 0 |

| TEMP CYCLE FROM -40 TO 125 DEG C | | | | | |
|----------------------------------|-------------|---------------------|---------------------|--------------------|-----------------|
| PACKAGE TYPE | SAMPLE SIZE | OLDEST DATE CODE | NEWEST DATE CODE | K DEVICE CYCLES | No. of FAILURES |
| QFN/DFN | 25 | 1349 | 1349 | 25 | 0 |
| Totals | 25 | - | - | 25 | 0 |

| TEMP CYCLE FROM -65 TO 150 DEG C | | | | | |
|----------------------------------|-------------|---------------------|---------------------|--------------------|-----------------|
| PACKAGE TYPE | SAMPLE SIZE | OLDEST DATE CODE | NEWEST DATE CODE | K DEVICE CYCLES | No. of FAILURES |
| SSOP/TSSOP | 3308 | 0436 | 1645 | 1182 | 0 |
| QFN/DFN | 9167 | 0325 | 1640 | 2670 | 0 |
| SOIC/MSOP | 14815 | 9924 | 1712 | 2198 | 0 |
| SOT | 5969 | 0004 | 1713 | 1303 | 0 |
| Totals | 33,259 | - | - | 7,353 | 0 |

(1) Assumes Activation Energy = 0.7 Electron Volts
 (2) Failure Rate Equivalent to +55 °C, 60% Confidence Level =2.3 FITS
 (3) Mean Time Between Failure in Years = 49683.15
 (4) Assumes 20X Acceleration from 85 °C to +130 °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 CODE | NEWEST DATE CODE | K DEVICE CYCLES | No. of FAILURES |
| QFN/DFN | 8379 | 0325 | 1640 | 1998 | 0 |
| SSOP/TSSOP | 3434 | 0650 | 1645 | 748 | 0 |
| SOIC/MSOP | 11063 | 9924 | 1712 | 1668 | 0 |
| SOT | 6251 | 0004 | 1713 | 1267 | 0 |
| Totals | 29,127 | - | - | 5,681 | 0 |
| POWER CYCLE FROM 50 TO 100 DEG C | | | | | |
| PACKAGE TYPE | SAMPLE SIZE | OLDEST DATE CODE | NEWEST DATE CODE | K DEVICE CYCLES | No. of FAILURES |
| QFN/DFN | 44 | 1349 | 1349 | 44 | 0 |
| Totals | 44 | - | - | 44 | 0 |
| HIGH TEMPERATURE BAKE AT 150 DEG C | | | | | |
| PACKAGE TYPE | SAMPLE SIZE | OLDEST DATE CODE | NEWEST DATE CODE | K DEVICE HRS | No. of FAILURES |
| QFN/DFN | 940 | 0743 | 1640 | 940 | 0 |
| SSOP/TSSOP | 50 | 1018 | 1018 | 25 | 0 |
| Totals | 990 | - | - | 965 | 0 |
| HIGH TEMPERATURE BAKE AT 175 DEG C | | | | | |
| PACKAGE TYPE | SAMPLE SIZE | OLDEST DATE CODE | NEWEST DATE CODE | K DEVICE HRS | No. of FAILURES |
| QFN/DFN | 581 | 1349 | 1550 | 581 | 0 |
| SSOP/TSSOP | 150 | 1018 | 1514 | 75 | 0 |
| SOIC/MSOP | 448 | 0838 | 1631 | 324 | 0 |
| SOT | 348 | 0831 | 1228 | 323 | 0 |
| Totals | 1,527 | - | - | 1,303 | 0 |