

**RELIABILITY MONITOR REPORT
FOR**

BGA Package

Dallas Semiconductor

**4401 South Beltwood Parkway
Dallas, TX 75244-3292**

**This Report was prepared by
Dallas Semiconductor Reliability Engineering**

Summary:

The data in the tables that follow was generated as the result of an on-going Package Reliability Monitor. The assemblies covered by this package monitor are:

| ASSY SITE | PINS | PACKAGE | | |
|-----------------|------|---------|-----------------|-------------|
| ASAT | 256 | CSBGA | ASAT | 349 CSBGA |
| ASAT | 400 | CSBGA | ATP (Amkor, PI) | 256 BGA |
| ATP (Amkor, PI) | 272 | BGA | ATP (Amkor, PI) | 100 CSBGA |
| ATP (Amkor, PI) | 16 | CSBGA | ATP (Amkor, PI) | 169 CSBGA |
| ATP (Amkor, PI) | 25 | CSBGA | ATP (Amkor, PI) | 256 CSBGA |
| ATP (Amkor, PI) | 49 | CSBGA | ATP (Amkor, PI) | 144 TE-PBGA |
| ATP (Amkor, PI) | 144 | TECSBGA | ATP (Amkor, PI) | 256 TECSBGA |
| Carsem | 25 | CSBGA | Stats | 256 BGA |
| Stats | 100 | CSBGA | Stats | 16 CSBGA |
| Stats | 25 | CSBGA | Stats | 49 CSBGA |

The calculated failure rate for this assembly is:

FAILURE RATE: MTTF (YRS): 8545 FITS: 13.4

The parameters used to calculate this failure rate are as follows:

Cf: 60% Ea: 0.7 B: 0 Tu: 25 °C Vu: 5.5 Volts

The reliability data follows. At the start of this data is a description of the assembly vehicle used to generate this reliability data. The next section is the detailed reliability data for each stress. The reliability data section includes the latest data available. This report covers data between 10/1/03 and 9/30/04 .

Assembly Information:

Package Type: CSBGA 27 mm
Flammability: UL 94-V0
Moisture Sensitivity
(JEDEC J-STD20A) Level 3
Date Code Range: 0403 to 0403

OPERATING LIFE

| DESCRIPTION | DATE CODE | TEST VEHICLE | CONDITION | READPOINT | QUANTITY | FAILS | FA NO |
|-------------------|-----------|--------------|-----------------|-----------|----------|----------|-------|
| HIGH TEMP OP LIFE | 0403 | DS3184 | 125C, 3.5 VOLTS | 1000 HRS | 45 | 0 | |
| Total: | | | | | | 0 | |

Assembly Information:

Package Type: TE-PBGA 17 mm
Flammability: UL 94-V0
Moisture Sensitivity
(JEDEC J-STD20A) Level 3
Date Code Range: 0402 to 0402

OPERATING LIFE

| DESCRIPTION | DATE CODE | TEST VEHICLE | CONDITION | READPOINT | QUANTITY | FAILS | FA NO |
|-------------------|-----------|--------------|-----------------|-----------|----------|----------|-------|
| HIGH TEMP OP LIFE | 0402 | DS21448 | 125C, 3.5 VOLTS | 1000 HRS | 45 | 0 | |
| Total: | | | | | | 0 | |

FAILURE RATE: MTTF (YRS): 8545 FITS: 13.4