



## 7. Package Related Reliability Test Data

### Temperature Cycle Test (TCT)

#### 1. Test Condition

Condition: T = -65°C / 15min , +150 °C/15min, Non-bias

Duration: 500 cycles

#### 2. DRAM Products

| Package Type | Period | Total No of Samples | No. of Fails | Reject Information |
|--------------|--------|---------------------|--------------|--------------------|
| BGA          | Q3,14  | 77                  | 0            |                    |
|              | Q4,14  | 77                  | 0            |                    |
|              | Q1,15  | 77                  | 0            |                    |
|              | Q2,15  | 77                  | 0            |                    |

#### 3. Non-Volatile Memory Products

| Package Type | Period | Total No of Samples | No. of Fails | Reject Information |
|--------------|--------|---------------------|--------------|--------------------|
| SOP          | Q3,14  | 77                  | 0            |                    |
|              | Q4,14  | 77                  | 0            |                    |
|              | Q1,15  | 77                  | 0            |                    |
|              | Q2,15  | 77                  | 0            |                    |
| TSOP         | Q3,14  | 77                  | 0            |                    |
|              | Q4,14  | 77                  | 0            |                    |
|              | Q1,15  | 77                  | 0            |                    |
|              | Q2,15  | 77                  | 0            |                    |



## Pressure Cooker Test (PCT) / Un-biased Highly Accelerated Stress Test (uHAST)

### 1. Test Condition

Condition: T = 121°C, RH = 100%, Non-bias for PCT

T = 130°C, RH = 85%, Non-bias for uHAST

Duration: 96 hrs

### 2. DRAM Products

| Package Type | Period | Total No of Samples | No. of Fails | Reject Information |
|--------------|--------|---------------------|--------------|--------------------|
| BGA          | Q3,14  | 77                  | 0            |                    |
|              | Q4,14  | 77                  | 0            |                    |
|              | Q1,15  | 77                  | 0            |                    |
|              | Q2,15  | 77                  | 0            |                    |

### 3. Non-Volatile Memory Products

| Package Type | Period | Total No of Samples | No. of Fails | Reject Information |
|--------------|--------|---------------------|--------------|--------------------|
| SOP          | Q3,14  | 77                  | 0            |                    |
|              | Q4,14  | 77                  | 0            |                    |
|              | Q1,15  | 77                  | 0            |                    |
|              | Q2,15  | 77                  | 0            |                    |
| TSOP         | Q3,14  | 77                  | 0            |                    |
|              | Q4,14  | 77                  | 0            |                    |
|              | Q1,15  | 77                  | 0            |                    |
|              | Q2,15  | 77                  | 0            |                    |



## Highly Accelerated Stress Test (HAST)

### 1. Test Condition

Condition: T = 130°C for TSOP/SOP

T = 121°C for BGA

RH = 85%.

Bias =Vddmax

Duration: 168 hrs

### 2. DRAM Products

| Package Type | Period | Total No of Samples | No. of Fails | Reject Information |
|--------------|--------|---------------------|--------------|--------------------|
| BGA          | Q3,14  | 77                  | 0            |                    |
|              | Q4,14  | 77                  | 0            |                    |
|              | Q1,15  | 77                  | 0            |                    |
|              | Q2,15  | 77                  | 0            |                    |

### 3. Non-Volatile Memory Products

| Package Type | Period | Total No of Samples | No. of Fails | Reject Information |
|--------------|--------|---------------------|--------------|--------------------|
| SOP          | Q3,14  | 77                  | 0            |                    |
|              | Q4,14  | 77                  | 0            |                    |
|              | Q1,15  | 77                  | 0            |                    |
|              | Q2,15  | 77                  | 0            |                    |
| TSOP         | Q3,14  | 77                  | 0            |                    |
|              | Q4,14  | 77                  | 0            |                    |
|              | Q1,15  | 77                  | 0            |                    |
|              | Q2,15  | 77                  | 0            |                    |