

# TG6050 Reliability Testing Report

## 1. RA test

### Procedure

Tested for thermal resistance using a ASTM D5470 at different condition (room temperature, aging 125 °C, HAST and thermal shock).

**1.1 Room temperature @ 25°C**

**1.2 Thermal Aging @ 125°C (200 hrs, 400 hrs, 700 hrs, 1000 hrs)**

**1.3 Thermal HAST @ 85°C/85%RH (200 hrs, 400 hrs, 700 hrs, 1000 hrs)**

**1.4 Thermal Cycling @ -40°C to 120°C for 500 cycles (100 cycles, 200 cycles, 300 cycles, 400 cycles, 500 cycles)**

During testing and aging, the samples were maintained between two round aluminum disks of one square inch in surface area.

During Aging, clamps were used to hold a constant pressure on the sample.

## Results

Code/(Unit : °C-in <sup>2</sup> /W)	0 hr	200 hrs	400 hrs	700 hrs	1000 hrs
Room temperature	0.252	-	-	-	-
Thermal Aging	0.252	0.254	0.255	0.258	0.262
Thermal HAST	0.252	0.250	0.247	0.245	0.244

Code/(Unit : °C-in <sup>2</sup> /W)	100 cycles	200 cycles	300 cycles	400 cycles	500 cycles
Thermal Cycling	0.255	0.257	0.256	0.258	0.260

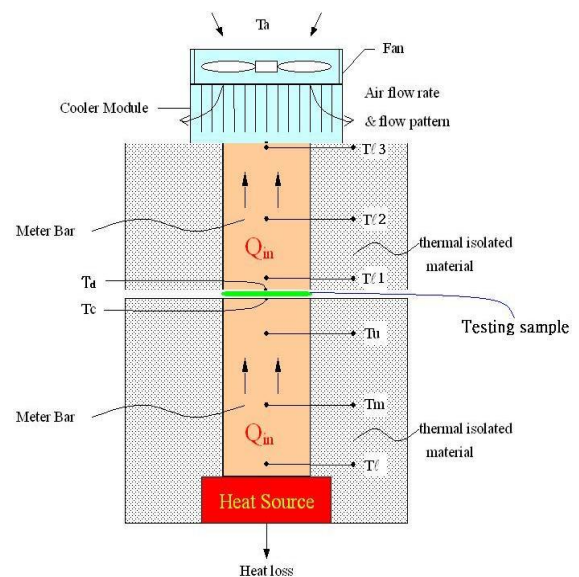
Test method: ASTM D5470

Heat power: 30W

Pressure: 50 psi

Specimen thickness: 1.0 mm, n=5

Specimen area: 1 inch<sup>2</sup>



# TG6050 Reliability Testing Report

## 2. Breakdown Voltage Test

### Procedure

Tested for Breakdown Voltage Test using a ASTM D149 at different condition (room temperature, aging 125°C, HAST and thermal shock).

**3.1 Room temperature @ 25°C**

**3.2 Thermal Aging @ 125°C (200 hrs, 400 hrs, 700 hrs, 1000 hrs)**

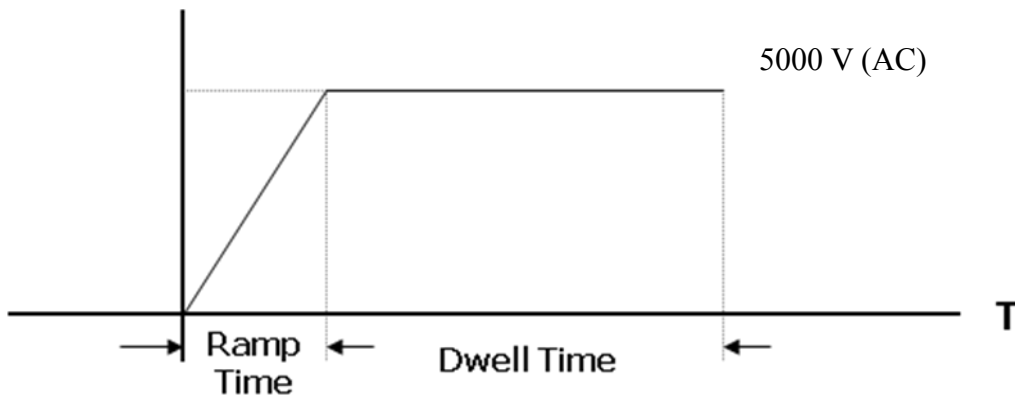
**3.3 Thermal HAST @ 85°C/85%RH (200 hrs, 400 hrs, 700 hrs, 1000 hrs)**

**3.4 Thermal Cycling @ -40°C to 120°C for 500 cycles (100 cycles, 200 cycles, 300 cycles, 400 cycles, 500 cycles)**

## Results

High pot (AC @ kV)	0 hr	200 hrs	400 hrs	700 hrs	1000 hrs
Room temperature	>5	-	-	-	-
Thermal Aging	>5	>5	>5	>5	>5
Thermal HAST	>5	>5	>5	>5	>5

High pot (AC @ kV)	100 cycles	200 cycles	300 cycles	400 cycles	500 cycles
Thermal Cycling	>5	>5	>5	>5	>5



**Ramp time: 20 sec**

**Dwell time: 60 sec**

**Max Voltage: 5000 V (AC)**

Note:

The data for design engineer guidance only. Observed performance varies in application.

Engineers are reminded to test the material in application.