

Li98P Reliability Testing Report

1. RA test

Procedure

Tested for thermal resistance using a ASTM D5470 at different condition (room temperature, aging 80 °C, HAST and thermal shock).

1.1 Room temperature @ 25°C

1.2 Thermal Aging @ 80°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 : □-in ² /W) | 0 hr | 200 hrs | 400 hrs | 700 hrs | 1000 hrs |
|------------------------------------|-------|---------|---------|---------|----------|
| Room temperature | 0.752 | - | - | - | - |
| Thermal Aging | 0.752 | 0.756 | 0.760 | 0.761 | 0.764 |
| Thermal HAST | 0.752 | 0.750 | 0.747 | 0.745 | 0.741 |

| Code/(Unit : °C-in ² /W) | 100 cycles | 200 cycles | 300 cycles | 400 cycles | 500 cycles |
|-------------------------------------|------------|------------|------------|------------|------------|
| Thermal Cycling | 0.755 | 0.758 | 0.760 | 0.763 | 0.766 |

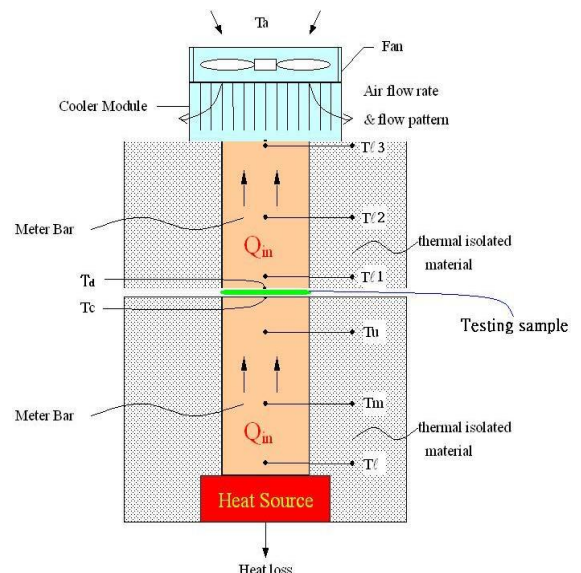
Test method : ASTM D5470

Heat power : 30W

Specimen Area: 1 inch²

Specimen thickness: 0.125 mm, n=5

Specimen area: 1 inch²



Li98P Reliability Testing Report

2. Peel Adhesion Test

Procedure

Adhere the specimen to the testing aluminum plate. (under 2kg roll)

Wait for 72 hrs at room temperature.

2.1 Room temperature @ 25°C

2.2 Thermal Aging @ 80°C (200 hrs, 400 hrs, 700 hrs, 1000 hrs)

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

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

Secure the end of the plate furthest away from the tab to the moving grip.

Begin peeling the tape at a 90 degree by moving the plate at the specified rate.

Record the average force required for peeling.

Results

| Code/(Unit : N/inch) | 0 hr | 200 hrs | 400 hrs | 700 hrs | 1000 hrs |
|----------------------|------|---------|---------|---------|----------|
| Room temperature | 12.1 | - | - | - | - |
| Thermal Aging | 12.1 | 12.4 | 12.8 | 13.2 | 13.4 |
| Thermal HAST | 12.1 | 12.6 | 13.1 | 13.6 | 14.2 |

| Code/(Unit : N/inch) | 100 cycles | 200 cycles | 300 cycles | 400 cycles | 500 cycles |
|----------------------|------------|------------|------------|------------|------------|
| Thermal Cycling | 12.5 | 12.9 | 13.4 | 13.8 | 14.2 |

Li98P Reliability Testing Report

3. Static Shear Test

Procedure:

PSTC-7 for adhesively bonded test

Results

| Code | Room temperature @ Holding 1000 g | 80°C @ Holding 1000 g |
|----------|-----------------------------------|-----------------------|
| 0.125 mm | >10000 min | >10000 min |

Note:

The data for design engineer guidance only.

Engineers are reminded to test the material in varies application.

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

Results

| Code/(Unit : □-in ² /W) | 0 hr | 200 hrs | 400 hrs | 700 hrs | 1000 hrs |
|------------------------------------|-------|---------|---------|---------|----------|
| Room temperature | 0.814 | - | - | - | - |
| Thermal Aging | 0.814 | 0.816 | 0.819 | 0.821 | 0.825 |
| Thermal HAST | 0.814 | 0.810 | 0.806 | 0.801 | 0.799 |

| Code/(Unit : °C-in ² /W) | 100 cycles | 200 cycles | 300 cycles | 400 cycles | 500 cycles |
|-------------------------------------|------------|------------|------------|------------|------------|
| Thermal Cycling | 0.815 | 0.818 | 0.824 | 0.826 | 0.825 |

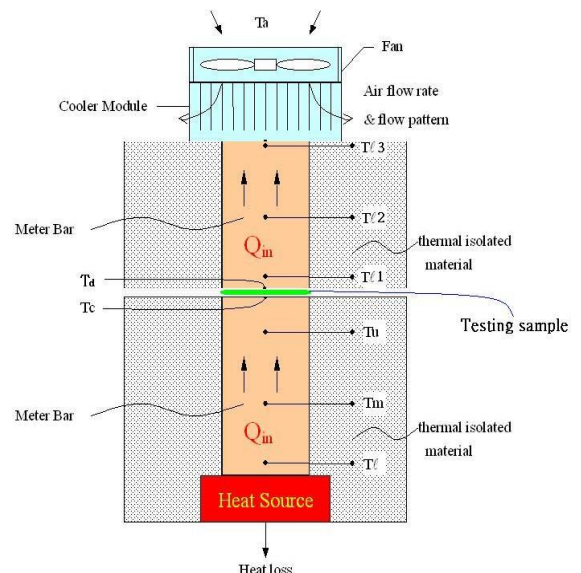
Test method : ASTM D5470

Heat power : 30W

Specimen Area: 1 inch²

Specimen thickness: 0.14 mm, n=5

Specimen area: 1 inch²



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2. Peel Adhesion Test

Procedure

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PSTC-7 for adhesively bonded test

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