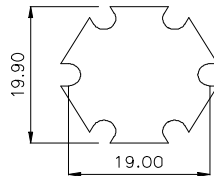


### 1. Scope:

This test method is designed to evaluate the performance of Board temperature (Tb) between TRICON, MCPCB and FR-4 on Aluminum board with corresponding to power.

### 2. Test specimens

a). 3 set of samples were prepared. The dimension as below:



b). Board thickness: 1.60mm

c). Mounted the LED onto the center of the boards, apply the thermal conductive adhesive onto the beneath metal part and cured. Refer to diagram 1.

Thermal conductive adhesive: **AMICON E3503-1**

d).LED specification: **Luxeon III Side Emitter - Red color**



Diagram 1

### 3. Apparatus

3.1. **Power Supply source:** Kenwood Regulated DC power supply PR18-3.

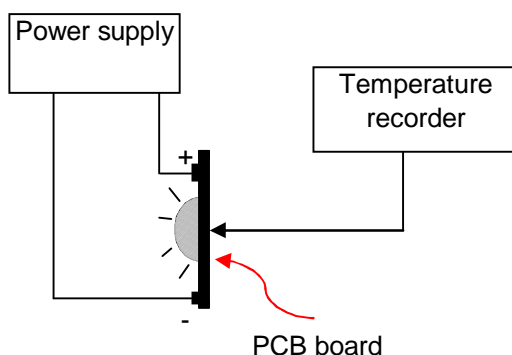
3.2. **Measurement Meter:** Advantest R6871E digital multimeter.

3.3. **Temperature Recording:** Yokogawa Temperature Recorder.

### 4. Procedure



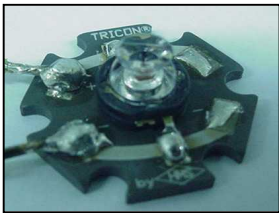
4.1. Prepare the circuit connection as below diagram, the test specimen will drive with 750mA , 1000mA and 1400mA forward current. Record the board temperature rise when it was reached the saturation level.

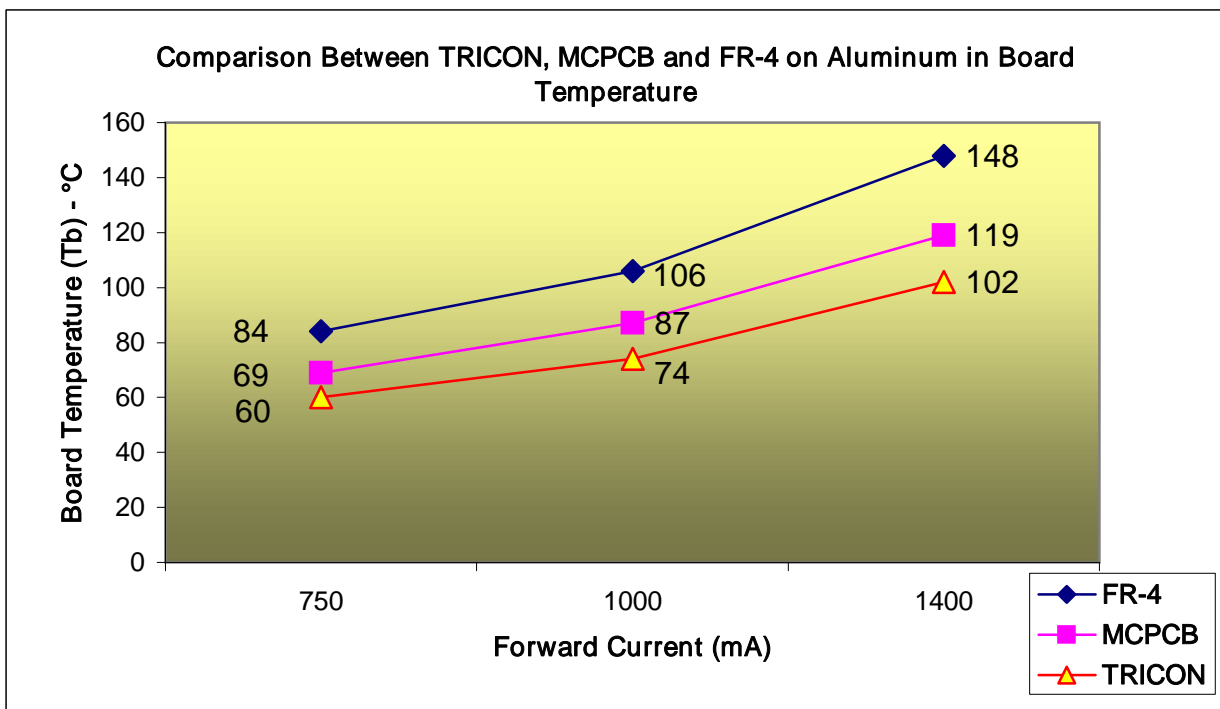
4.2. After finishing each test, the test specimens must be cool down to room temperature before start for the next test. The procedure will repeat for next test.



**Result**

Room temperature: 27°C

Sample	LED Colors	Forward current	Board Temperature (°C)
		IF (mA)	
 FR-4 on Aluminum	RED	750	84.0
		1000	106.0
		1400	148.0
 MCPCB	RED	750	69.0
		1000	87.0
		1400	119.0
 TRICON	RED	750	60.0
		1000	74.0
		1400	102.0



On-Axis Illuminance (Lux) vs. Different type of boards at 1 meter with current drive 1000mA

