



CUSTOM FLEXIBLE HEATER MANUFACTURER

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Fullchance FILM HEATER TEST WITH SINK

2019.11

Test conduct by Fullchance



TEST CONDITION-SINK ALUMINUM

Cooler: AVC North Bridge Aluminum Sink

Sink size: 40x40x7mm

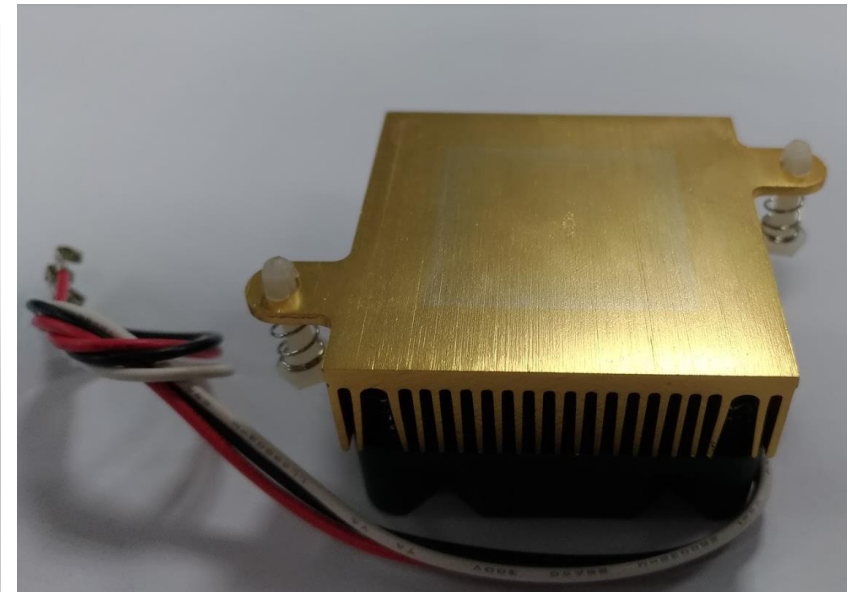
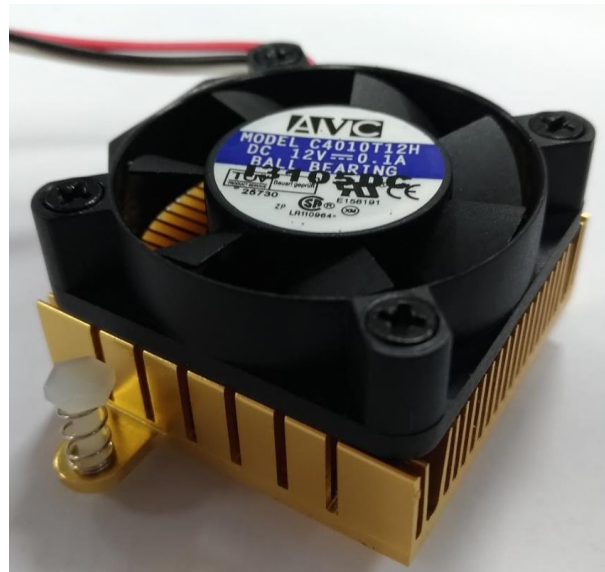
Condition: Heater stick on aluminum sink thickness with fan 38mm DIA fan.

AMBIENT TEMPERATURE: 26 DEGREE C

Heater TYPE 1: 25x25mm

- STICK WITH THERMAL PAD
- STICK WITHOUT THERMAL PAD

Heater TYPE 2: 40x40mm



HEATER TEST 1: 25X25

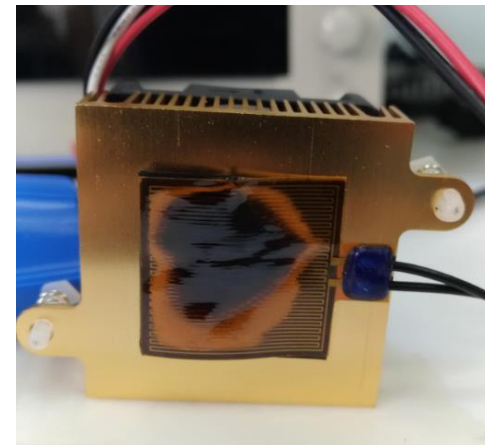
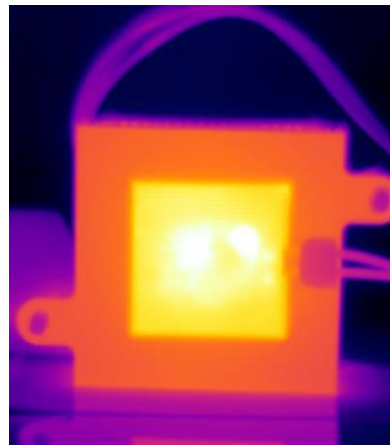
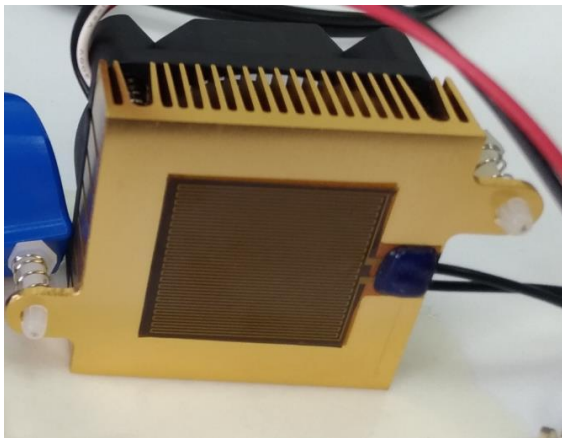
MAX WATT:33W

MAX TEMP.: 140 DEGREE C

WATT DENSITY: 5.28W/CM²

NOTE:

1. HEATER WERE STICK ON SINK USE 3M VHB AND THERMAL PAD IN BETWEEN.
2. HEATER WERE BURN OFF AFTER 10 SECONDS FAN TURN OFF.



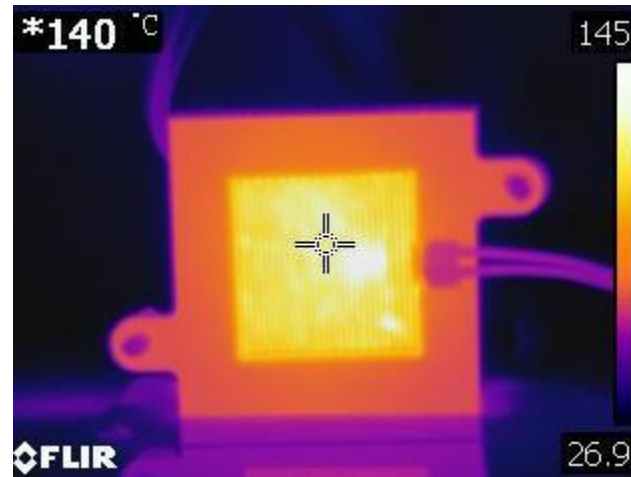
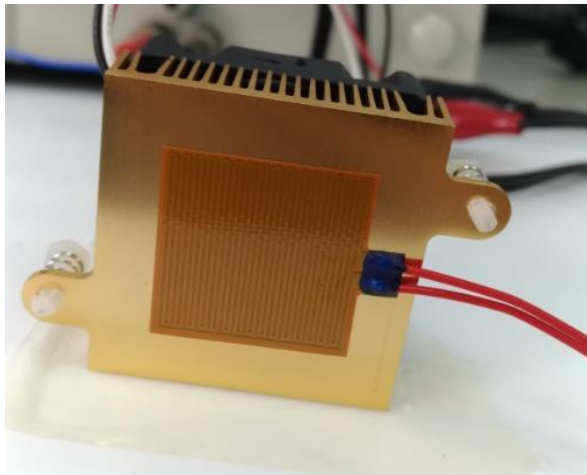
HEATER TEST 2: 25X25

MAX WATT:45.5W

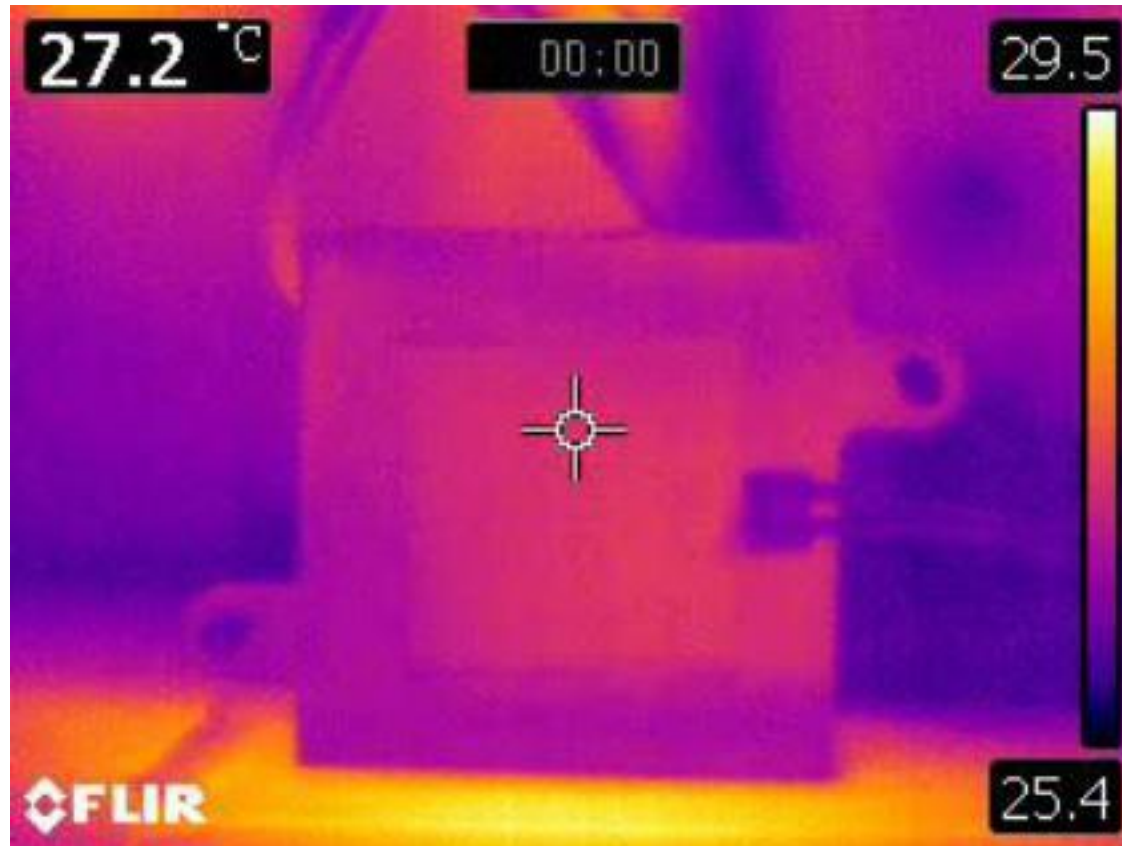
MAX TEMP.: 145 DEGREE C

WATT DENSITY: 7.28W/CM²

NOTE: HEATER WERE STICK ON SINK USE 3M VHB WITHOUT THERMAL PAD IN BETWEEN.



HEATER HEAT UP VIDEO:25X25



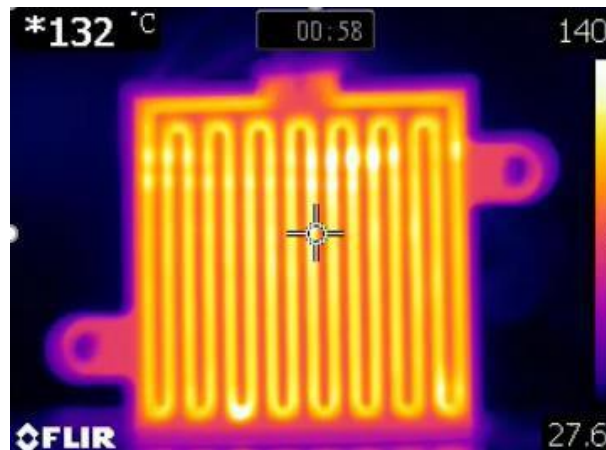
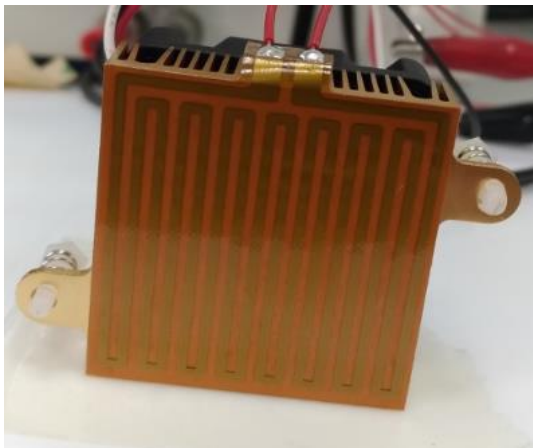
HEATER TEST 3: 40X40

WATT:60.75W

MAX TEMP.: 140 DEGREE C

WATT DENSITY: 3.79W/CM²

NOTE: HEATER WERE STICK ON SINK USE 3M VHB WITHOUT THERMAL PAD IN BETWEEN.



HEATER HEAT UP VIDEO:40X40



TEST CONDITION-COOLER MASTER T2 MINI

Cooler: Cooler Master T2 Mini

Sink size: 32x32x117mm

Condition: Heater stick on aluminum sink thickness with fan 88mm DIA fan.

AMBIENT TEMPERATURE: 27 DEGREE C

Heater TYPE 1: 30x30mm

- STICK WITHOUT THERMAL PAD



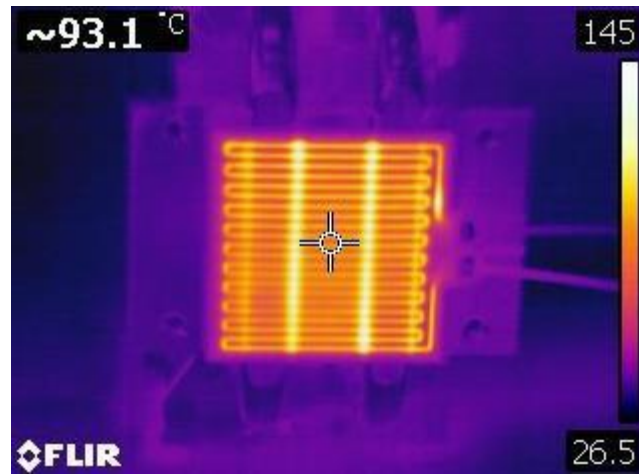
HEATER TEST 4: 30X30

WATT:68.85W

MAX TEMP.: 145 DEGREE C

WATT DENSITY: 7.65W/CM²

NOTE: HEATER WERE STICK ON SINK USE 3M VHB WITHOUT THERMAL PAD IN BETWEEN.



HEATER HEAT UP VIDEO:30X30



CONCLUSION

1. Fullchance Commercial polyimide film heater can sustain up to 3.79-7.65 w/cm² with sink installed.
2. Compare heater 3 and 4. Best test condition is not to use thermal pad and use high efficiency heat sink that meet heater dimension.

| | Max watt | Watt density | Sink vs Heater area | Note |
|----------------|----------|--------------|---------------------|--|
| Heater 1 25x25 | 33 | 5.28 | 39% | Stick with VHB and Thermal pad |
| Heater 2 25x25 | 45.5 | 7.28 | 39% | Stick use VHB only |
| Heater 3 40x40 | 60.75 | 3.79 | 100% | Stick use VHB only |
| Heater 4 30x30 | 68.85 | 7.65 | 88% | Stick use VHB only / Cooler Master T2 Mini |

