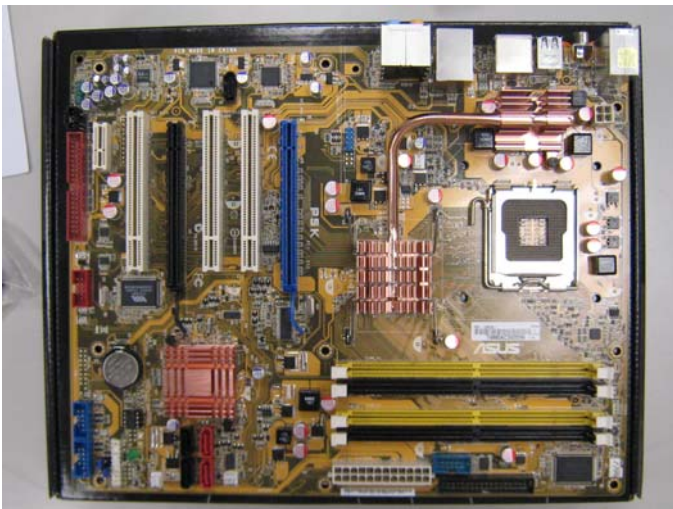


GIGABYTE P35-DS3R 1.0 vs ASUS P5K

Thermal Test Report



GIGABYTE P35-DS3R



ASUS P5K

Test equipment:

CPU: Smithfield 840-XE FSB: 800MHz 3.2GHz
DDR2: Kingmax DDR2 800MHz 512MB*4
Display card: GV-NX73G128D-RH

Test items:

1. CPU power temperature comparison:
 - a. CPU 70A loading test
 - b. 3D mark 2006 test
 - c. P4 max power 100% test

2. VCC1_5 & DDR18V POWER & VCC1_05 temperature comparison:
 - a. 3D mark 2006 test

GIGABYTE P35-DS3R rev 1.0 (Ultra Durable 2): Design with 6 phase PWM + 18 MOSFET. Low Rds(on) MOSFET, Ferrite core choke, all Japanese made solid capacitors.

Asus P5K: Design with 3 phase PWM + 9 ordinary MOSFET only, non-Japanese solid capacitors.

Measurement Result: 6 phase power design is better than 3 phase power, the extra 3 phase results in much lower temperature.

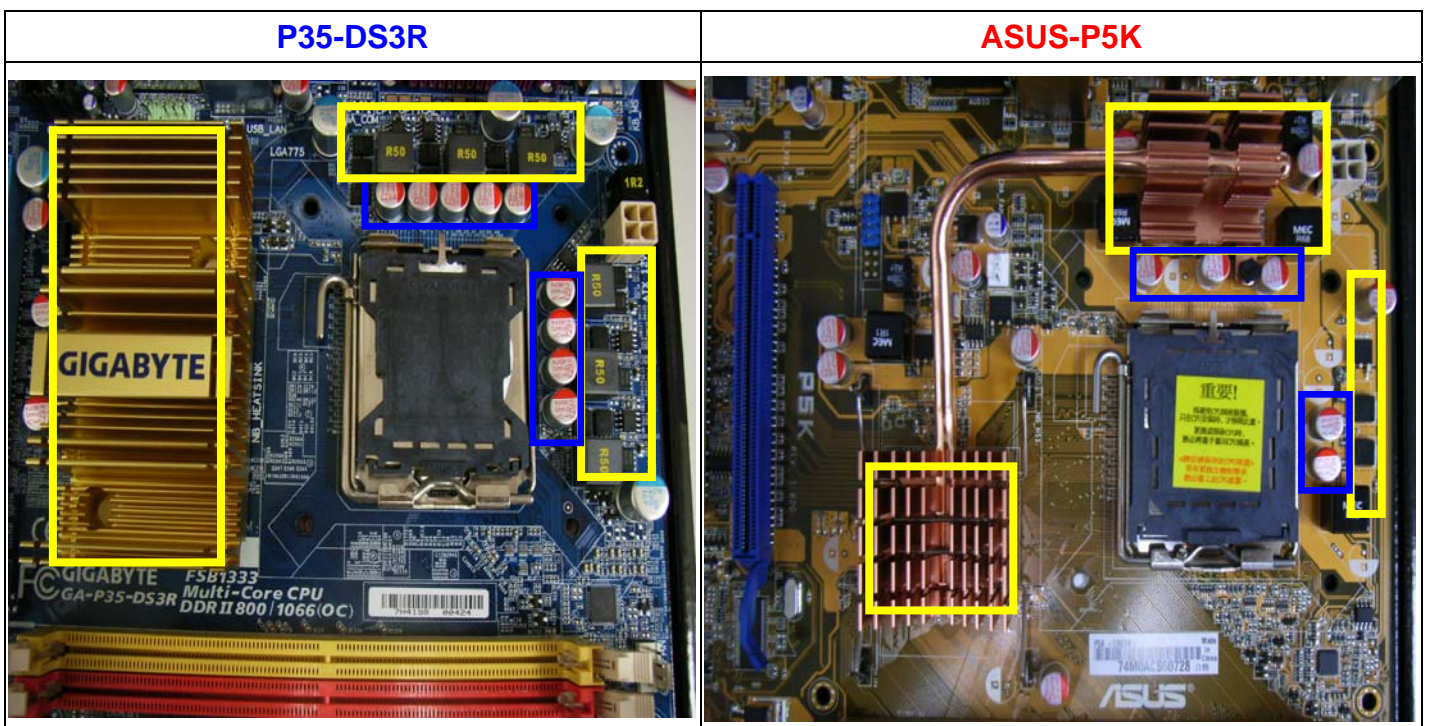
GIGABYTE P35-DS3R rev:1.0 VCORE is using 6 phase design, its goal is to increase efficiency especially in heavy loading. When use **Pentium (Extreme Edition) CPU like 840XE** Smithfield, thermal performance is much better than 3 phase design P5K (P35-DS3R has lower temperature result)

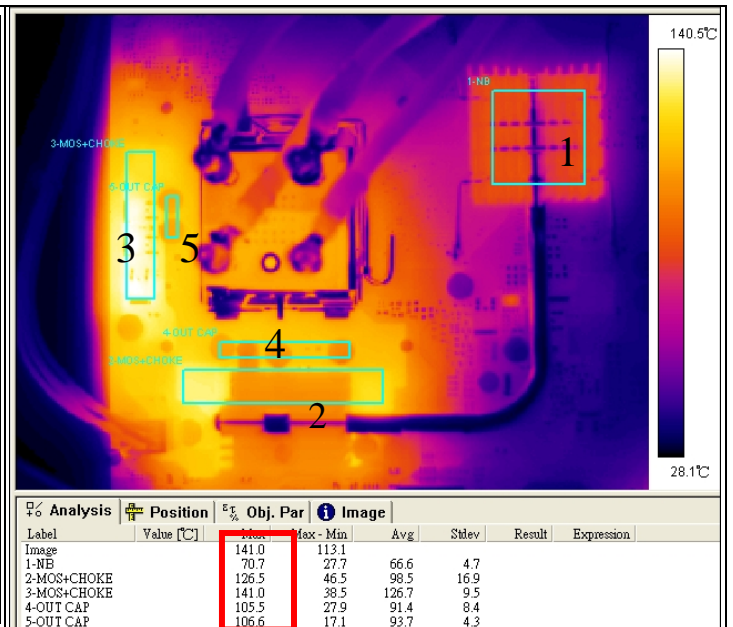
- a. **CPU 70A loading test:** GIGABYTE P35-DS3R CPU VCORE MOSFET temperature is **93.2 °C** maximum; ASUS P5K CPU VCORE MOSFET temperature is **141.0°C** maximum! Difference with **47.8 deg C!!!!**
- b. **3D mark 2006 test:** GIGABYTE P35-DS3R CPU VCORE MOSFET temperature is **86.9 °C** maximum; ASUS P5K CPU VCORE MOSFET temperature is **105.8°C**. Difference with **18.9 deg C!!!!**
- c. **P4 max power 100% test:** GIGABYTE P35-DS3R CPU VCORE MOSFET temperature is **129.0°C** maximum; ASUS P5K CPU VCORE MOSFET temperature is **166.9°C**. Difference with **37.9 Deg C!!!!**

Detail measurement data as follows:

1. CPU POWER temperature comparison:

A. Room temperature 25 deg C : 70A loading for 20 mins / no air flow, measure temperature of following points after 20 mins.

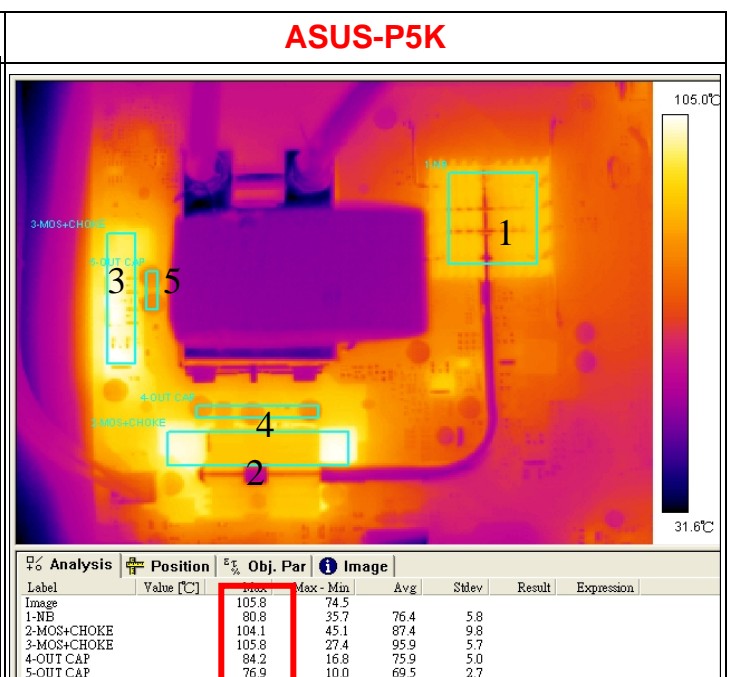
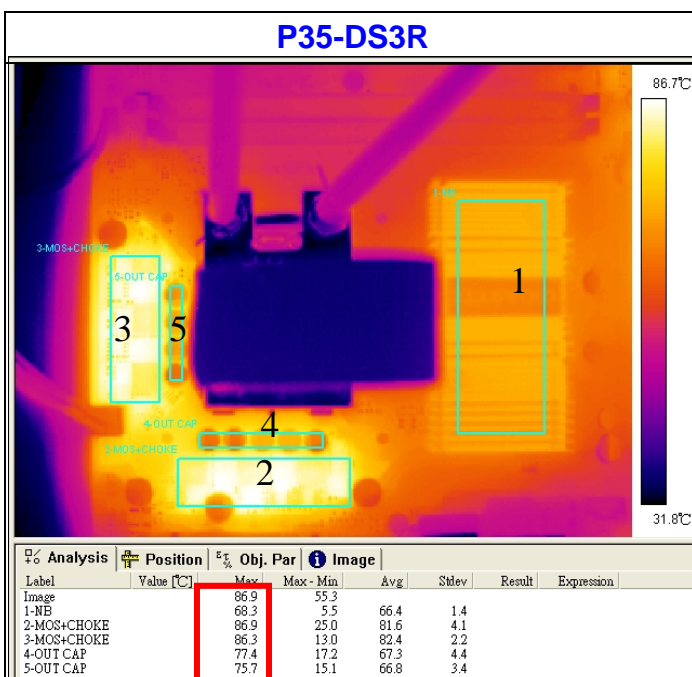




70A loading -- CPU VCORE

Under room temperature		P35-DS3R 1.0	ASUS-P5K
		Max °C	Max °C
Position 1	North bridge	42.1	70.7
Position 2	MOSFET + Choke	91.0	126.5
Position 3	MOSFET + Choke	93.2	141.0
Position 4	Output capacitor	82.6	105.5
Position 5	Output capacitor	82.5	106.6

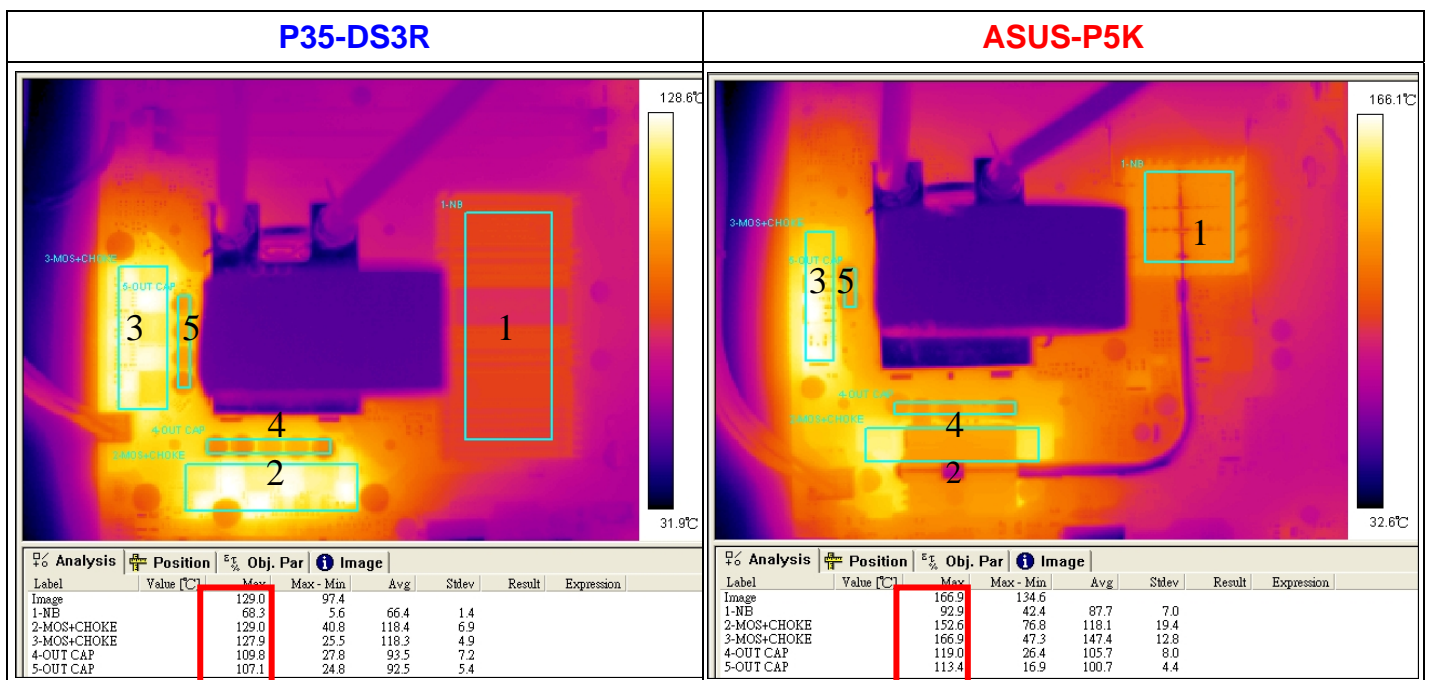
B. Room temperature 25 deg C: Run 3D mark 2006; CPU use water cooling (no air flow interference) / measure temperature of following points after 20 mins.



3D mark 2006 -- CPU VCORE

Under room temperature		P35-DS3R 1.0	ASUS-P5K
		Max °C	Max °C
Position 1	North bridge	68.3	80.8
Position 2	MOSFET + Choke	86.9	104.1
Position 3	MOSFET + Choke	86.3	105.8
Position 4	Output capacitor	77.4	84.2
Position 5	Output capacitor	75.7	76.9

C. Room temperature 25 deg C : Run P4 Max power 100%; CPU use water cooling (no air flow interference) / measure temperature of following points after 20 mins.



P4 Max power -- CPU VCORE

Under room temperature		P35-DS3R-1.01	ASUS-P5K
		Max °C	Max °C
Position 1	North bridge	68.3	92.9
Position 2	Mos +choke	129.0	152.6
Position 3	Mos +choke	127.9	166.9
Position 4	Output capacitors	109.8	119.0
Position 5	Output capacitors	107.1	113.4

Conclusion: ASUS P5K although has heat pipe covering north bridge chipset and MOSFETs, but which temperatures are still much higher than GIGABYTE P35-DS3R.