

P1071: GF108, 1024MB x16 DDR3, DVI+HDMI+VGA

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| REV | VARIANT | NVPIN | ASSEMBLY |
|-----|-------------|--------------------|---|
| B | BASE | 600-11071-BASE-SCH | BASE LEVEL GENERIC SCHEMATIC ONLY, COMMON & NO_STUFF ASSEMBLY NOTES AND BOM NOT FINAL |
| 1 | SKU0000 | 600-11071-0000-000 | GF108-320-A1 650/1200/900MHz 1024MB/128bit DDR3, DVI-DL+HDMI+VGA |
| 2 | SKU0001 | 600-11071-0001-000 | GF108-320-A1 650/1200/900MHz 1024MB/128bit DDR3, DVI-DL+HDMI+VGA |
| 3 | SKU0002 | 600-11071-0002-000 | GF108-200-A1 650/1300/900MHz 1024MB/128bit DDR3, DVI-DL+HDMI+VGA |
| 4 | <UNDEFINED> | <UNDEFINED> | <UNDEFINED> |
| 5 | <UNDEFINED> | <UNDEFINED> | <UNDEFINED> |
| 6 | <UNDEFINED> | <UNDEFINED> | <UNDEFINED> |
| 7 | <UNDEFINED> | <UNDEFINED> | <UNDEFINED> |
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| 9 | <UNDEFINED> | <UNDEFINED> | <UNDEFINED> |
| 10 | <UNDEFINED> | <UNDEFINED> | <UNDEFINED> |
| 11 | <UNDEFINED> | <UNDEFINED> | <UNDEFINED> |
| 12 | <UNDEFINED> | <UNDEFINED> | <UNDEFINED> |
| 13 | <UNDEFINED> | <UNDEFINED> | <UNDEFINED> |
| 14 | <UNDEFINED> | <UNDEFINED> | <UNDEFINED> |
| 15 | <UNDEFINED> | <UNDEFINED> | <UNDEFINED> |

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| | |
|-------------|---|
| ASSEMBLY | BASE LEVEL GENERIC SCHEMATIC ONLY, COMMON & NO_STUFF ASSEMBLY NOTES AND BOM NOT FINAL |
| PAGE DETAIL | Overview |

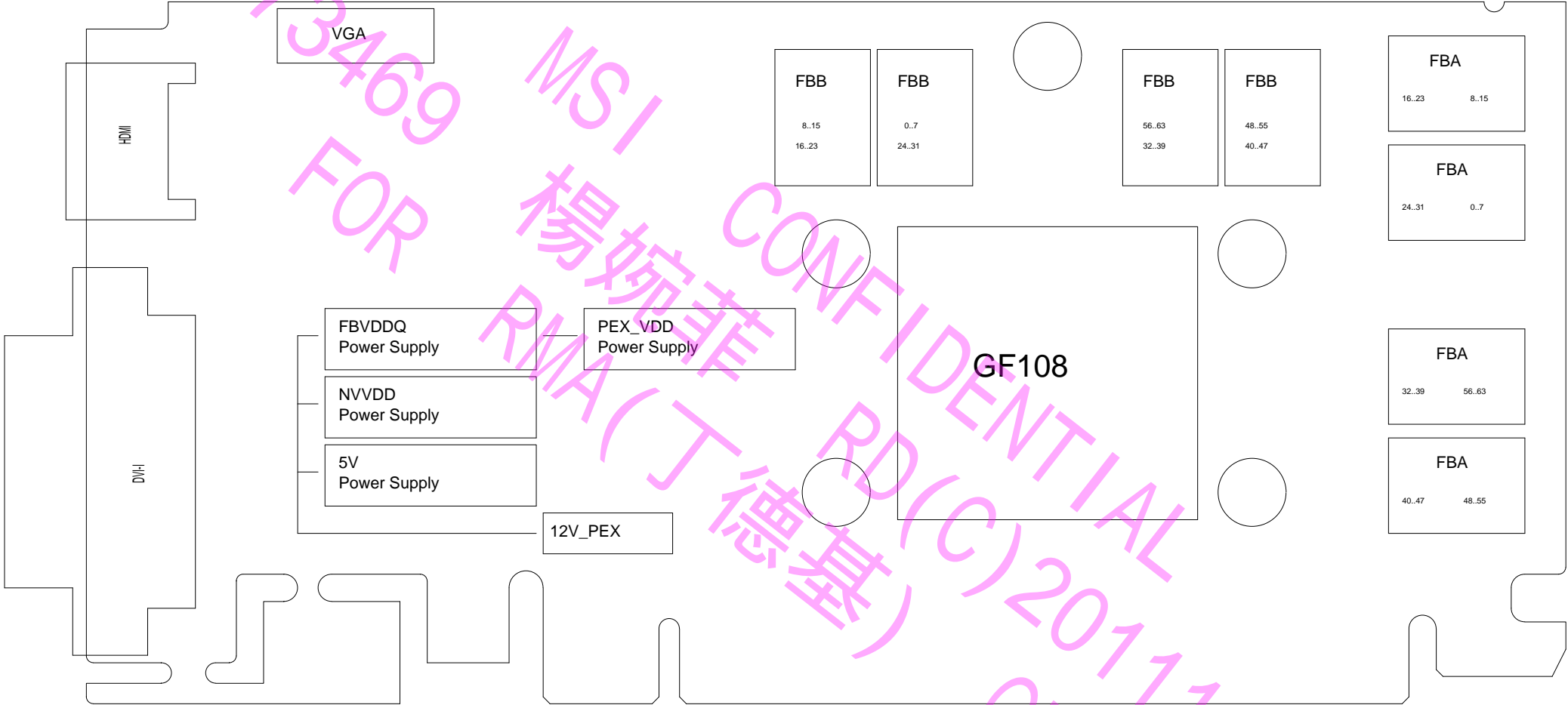
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Block Diagram



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| ASSEMBLY | BASE LEVEL GENERIC SCHEMATIC ONLY; COMMON & NO-STUFF ASSEMBLY NOTES AND BOARD NOT FINAL |
| PAGE DETAIL | Board Block Diagram |

| | | | |
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GPU Frame Buffer

G1B

PGA_0073_P000_000000

COM000

276 FBA

L32

N33

N34

N35

N36

N37

N38

N39

N40

N41

N42

N43

N44

N45

N46

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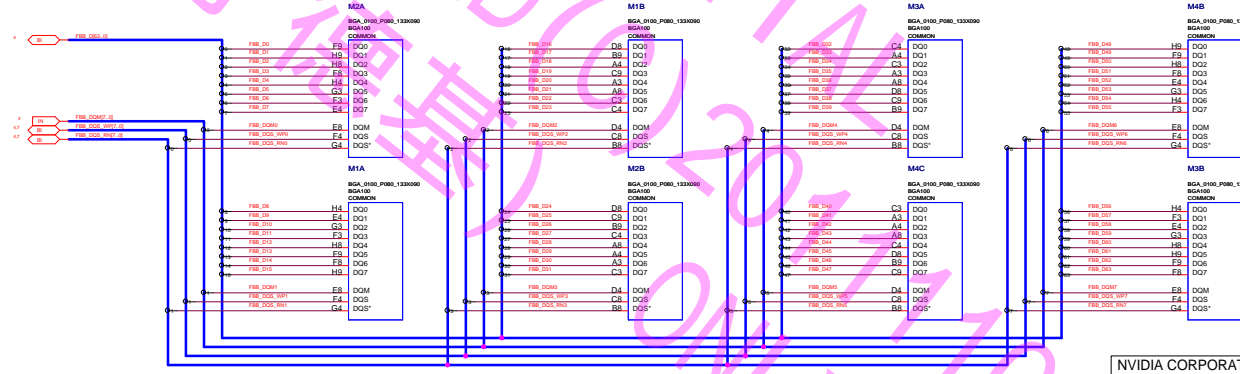
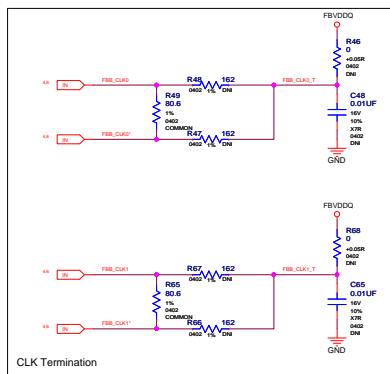
N359


FBB Partition

| Net Name | | MIN_WIDTH | VOLTAGE | MAX_CURRENT |
|----------|------------|-----------|---------|-------------|
| IN | F8B_CLM0_T | | 0.75V | |
| IN | F8B_CLM5_T | | 0.75V | |
| IN | F8B_VREF0 | 1.080V | | |
| IN | F8B_VREF1 | 1.080V | | |
| IN | F8B_Z01 | 1.080V | | |
| IN | F8B_Z01 | 1.080V | | |
| IN | F8B_Z02 | 1.080V | | |
| IN | F8B_Z03 | 1.080V | | |

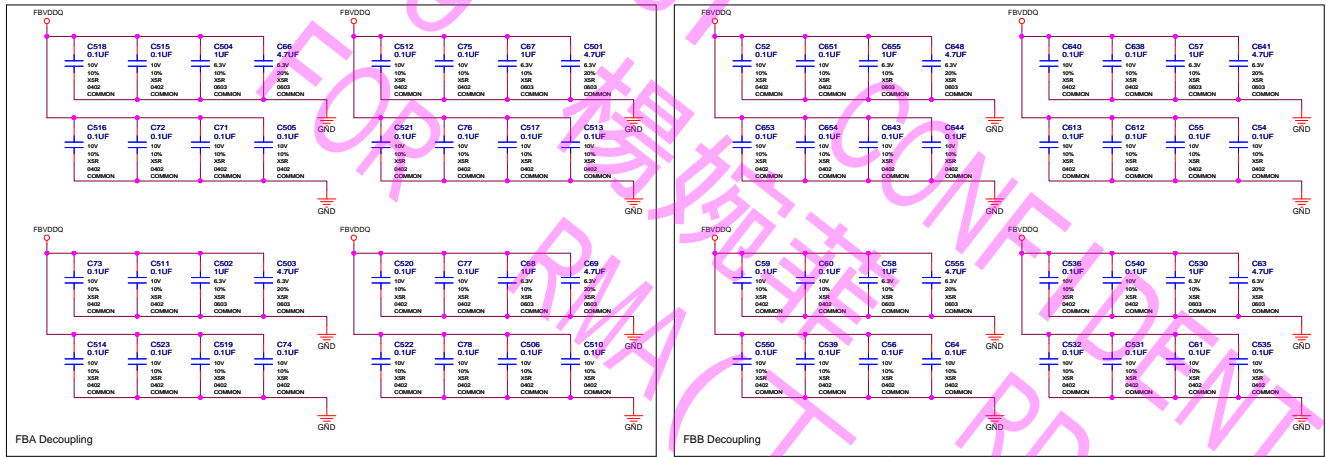


| CMD | +E.21* | +E.23* |
|-------|--------|--------|
| CMD0 | CS0* | |
| CMD1 | | |
| CMD2 | OST | |
| CMD3 | CXE | |
| CMD4 | | |
| CMD5 | BST | BST |
| CMD6 | A8 | A8 |
| CMD7 | A7 | A7 |
| CMD8 | A2 | A2 |
| CMD9 | A1 | A1 |
| CMD10 | A4 | A4 |
| CMD11 | A1 | A1 |
| CMD12 | BAG | BAG |
| CMD13 | WB* | WB* |
| CMD14 | | |
| CMD15 | CAP* | CAP* |
| CMD16 | CS0* | CS0* |
| CMD17 | | |
| CMD18 | | OST |
| CMD19 | | CXE |
| CMD20 | A13 | A13 |
| CMD21 | A8 | A8 |
| CMD22 | A6 | A6 |
| CMD23 | A11 | A11 |
| CMD24 | AC | AC |
| CMD25 | A3 | A3 |
| CMD26 | BAG | BAG |
| CMD27 | BAG | BAG |
| CMD28 | A12 | A12 |
| CMD29 | A10 | A10 |
| CMD30 | BAG* | BAG* |
| CMD31 | | |



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Memory Decoupling



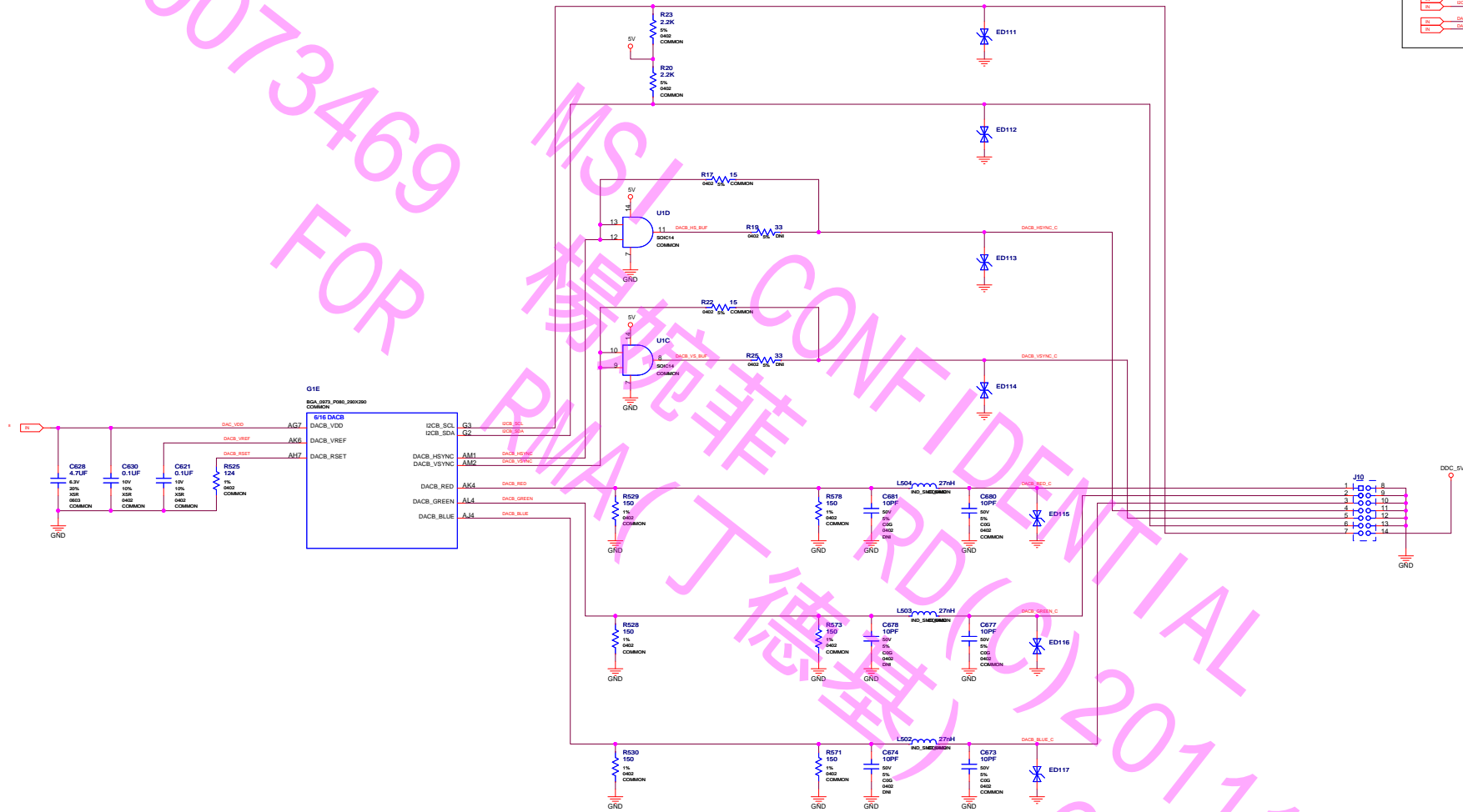
| Net Name | | DIFF_PAIR | CRITICAL | IMPEDANCE |
|---------------|---------------|-------------|----------|-----------|
| FBA_DQS_W0V_0 | FBA_DQS_W0V_0 | FBA_DQS0_1 | + | 50ohm |
| | FBA_DQS_W0V_0 | FBA_DQS0_2 | + | 50ohm |
| | FBA_DQS_W0V_0 | FBA_DQS0_3 | + | 50ohm |
| | FBA_DQS_W0V_0 | FBA_DQS0_4 | + | 50ohm |
| | FBA_DQS_W0V_0 | FBA_DQS0_5 | + | 50ohm |
| | FBA_DQS_W0V_0 | FBA_DQS0_6 | + | 50ohm |
| | FBA_DQS_W0V_0 | FBA_DQS0_7 | + | 50ohm |
| | FBA_DQS_W0V_0 | FBA_DQS0_8 | + | 50ohm |
| | FBA_DQS_W0V_0 | FBA_DQS0_9 | + | 50ohm |
| | FBA_DQS_W0V_0 | FBA_DQS0_10 | + | 50ohm |
| | FBA_DQS_W0V_0 | FBA_DQS0_11 | + | 50ohm |
| | FBA_DQS_W0V_0 | FBA_DQS0_12 | + | 50ohm |
| | FBA_DQS_W0V_0 | FBA_DQS0_13 | + | 50ohm |
| | FBA_DQS_W0V_0 | FBA_DQS0_14 | + | 50ohm |
| FBB_DQS_W0V_0 | FBB_DQS_W0V_0 | FBB_DQS0_1 | + | 50ohm |
| | FBB_DQS_W0V_0 | FBB_DQS0_2 | + | 50ohm |
| | FBB_DQS_W0V_0 | FBB_DQS0_3 | + | 50ohm |
| | FBB_DQS_W0V_0 | FBB_DQS0_4 | + | 50ohm |
| | FBB_DQS_W0V_0 | FBB_DQS0_5 | + | 50ohm |
| | FBB_DQS_W0V_0 | FBB_DQS0_6 | + | 50ohm |
| | FBB_DQS_W0V_0 | FBB_DQS0_7 | + | 50ohm |
| | FBB_DQS_W0V_0 | FBB_DQS0_8 | + | 50ohm |
| | FBB_DQS_W0V_0 | FBB_DQS0_9 | + | 50ohm |
| | FBB_DQS_W0V_0 | FBB_DQS0_10 | + | 50ohm |
| | FBB_DQS_W0V_0 | FBB_DQS0_11 | + | 50ohm |
| | FBB_DQS_W0V_0 | FBB_DQS0_12 | + | 50ohm |
| | FBB_DQS_W0V_0 | FBB_DQS0_13 | + | 50ohm |
| | FBB_DQS_W0V_0 | FBB_DQS0_14 | + | 50ohm |

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| | |
|--------------|---|
| ASSEMBLY | BASE LEVEL GENERIC SCHEMATIC ONLY; COMMON & NO STUFF ASSEMBLY NOTES AND BOARD NOT FINAL |
| PAGE: DETAIL | Memory Decoupling |

| | | | |
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DACB VGA Header



| Net Name | | MIN_WIDTH | VOLTAGE | MAX_CURRENT |
|----------|-----------|-----------|---------|-------------|
| P1 | DCB_SCL | | | |
| P2 | DCB_SDA | | | |
| P3 | DCB_VREF | 100k | | |
| P4 | DCB_RESET | 100k | | |

No connected mounting pins

CON_HDR_002X006_TH_ST_M_P100_CBL

CON_HDR_002X006_TH_ST_M_P100_CBL

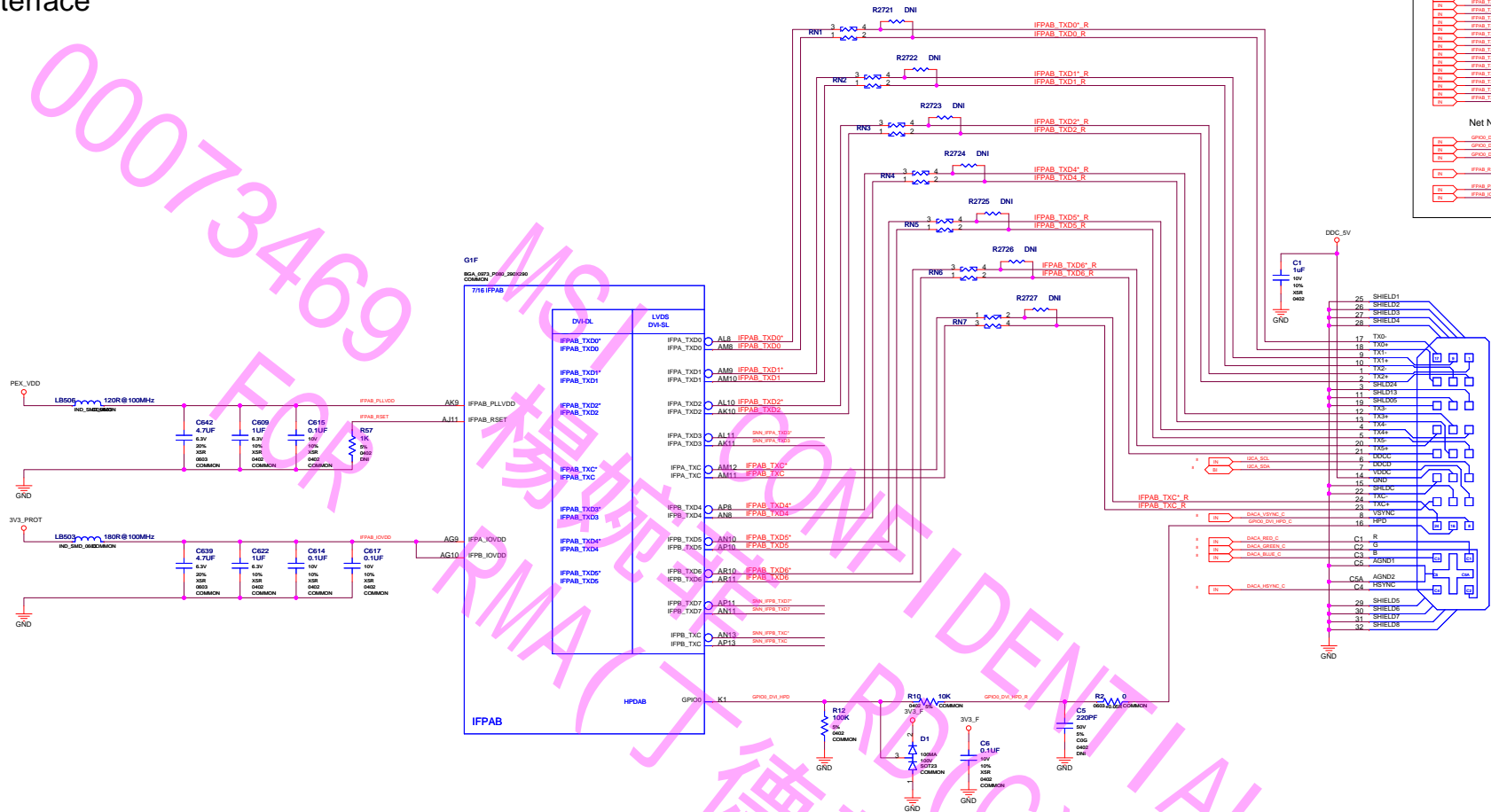
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|-------------|---|
| ASSEMBLY | BASE LEVEL GENERIC SCHEMATIC ONLY, COMMON & NO_STUFF ASSEMBLY NOTES AND BOM NOT FINAL |
| PAGE DETAIL | DACB VGA Header |

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| PCB REV | P1071-ADD | PAGE | |
| BOM REV | A | DATE | 10-FEB-2010 |

TMD5 Interface



| Net Name | | DIFF_PAIR | CRITICAL | IMPEDANCE |
|----------|-----------------|-------------|----------|-------------|
| 16 | FFAB_T200 | FFAB_T200_1 | 1 | 40.000T |
| 16 | FFAB_T207 | FFAB_T200_1 | 1 | 40.000T |
| 16 | FFAB_T210 | FFAB_T200_1 | 1 | 40.000T |
| 16 | FFAB_T201 | FFAB_T200_1 | 1 | 40.000T |
| 16 | FFAB_T213 | FFAB_T200_1 | 1 | 40.000T |
| 16 | FFAB_T208 | FFAB_T200_1 | 1 | 40.000T |
| 16 | FFAB_T204 | FFAB_T200_1 | 1 | 40.000T |
| 16 | FFAB_T202 | FFAB_T200_1 | 1 | 40.000T |
| 16 | FFAB_T205 | FFAB_T200_1 | 1 | 40.000T |
| 16 | FFAB_T206 | FFAB_T200_1 | 1 | 40.000T |
| 16 | FFAB_T209 | FFAB_T200_1 | 1 | 40.000T |
| 16 | FFAB_T207 | FFAB_T200_1 | 1 | 40.000T |
| 16 | FFAB_T203 | FFAB_T200_1 | 1 | 40.000T |
| 16 | FFAB_T200 | FFAB_T200_1 | 1 | 40.000T |
| Net Name | | MIN_WIDTH | VOLTAGE | MAX_CURRENT |
| 16 | SPD01_D01_HWS | 120M | 1.050V | 0.100A |
| 16 | SPD01_D01_HWS_2 | 120M | 1.050V | 0.100A |
| 16 | SPD01_D01_HWS_0 | 120M | 3.0V | 0.000A |
| 16 | FFAB_RST1 | 120M | | |
| 16 | FFAB_PLVDD | 120M | 1.050V | 0.100A |
| 16 | FFAB_OVDD | 120M | 3.0V | 0.000A |

| | |
|-------------|---|
| ASSEMBLY | BASE LEVEL GENERIC SCHEMATIC ONLY, COMMON & NO_STUFF ASSEMBLY NOTES AND BOM NOT FINAL |
| PAGE DETAIL | TMDS Interface |

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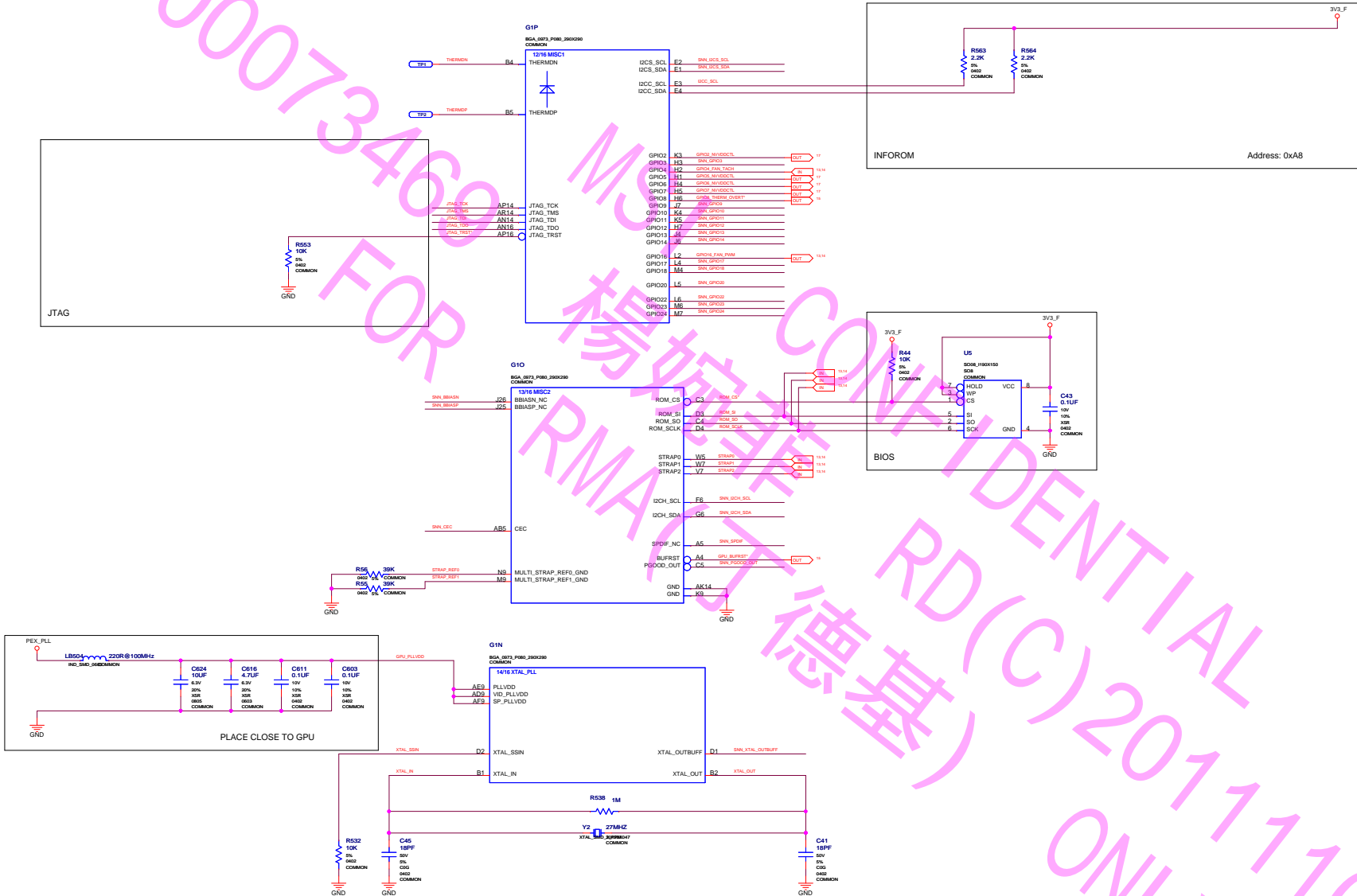
| | Net Name | MIN_WIDTH | VOLTAGE | MAX_CURRENT |
|----|------------------|-----------|---------|-------------|
| R1 | DC2_SDA | | | |
| R1 | DC2_SCL | | | |
| R1 | DC2_SDA_C | | | |
| R1 | DC2_SCL_C | | | |
| R1 | GPIO1_HK48_HFD | | | |
| R1 | GPIO1_HK48_HFD_B | | | |
| R1 | GPIO1_HK48_HFD_C | | | |
| R1 | FWF_TERM | 120Ω | 0V | |
| R1 | FWF_RESET | 120Ω | | |
| R1 | FWF_PLYVID | 120Ω | 3.3V | 0.050A |
| R1 | FWF_KHDD | 120Ω | 1.00V | 0.100A |



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XTAL, ROM, JTAG, Misc



| | Net Name | DIFF_PAIR | CRITICAL | IMPEDANCE |
|-----------------|----------------|-----------|----------|-----------|
| IN | ITAL_IN | ITAL | 1 | SUSP |
| IN | ITAL_OUT | ITAL | 1 | SUSP |
| Net Name | | | | |
| IN | ITAL_GSN | | | |
| IN | THESSIGN | 12MIL | | |
| IN | THESSIGNP | 12MIL | | |
| IN | JTAG_TCK | | | |
| IN | JTAG_TMS | | | |
| IN | JTAG_TRST | | | |
| IN | JTAG_TDO | | | |
| IN | JTAG_TDI | | | |
| IN | JTAG_TEST | | | |
| IN | STRAP_RESET | | | |
| IN | STRAP_RESET1 | | | |
| IN | SDC_SCL | | | |
| IN | SDC_SDA | | | |
| IN | SDC_SDA_0 | | | |
| IN | SDC_SDA_1 | | | |
| IN | BUM_VCC | 12MIL | 3.3V | |
| 12.5V | GPDI0_FAN_TACH | | | |
| IN | GPDI0_FAN_PWM | | | |
| IN | ROM_CS0 | | | |
| IN | ROM_CS | | | |
| IN | ROM_S0 | | | |
| IN | ROM_SELECT | | | |
| 12.5V | STRAP0 | | | |
| 12.5V | STRAP1 | | | |
| 12.5V | STRAP2 | | | |
| IN | CPU_PLVDD | 12MIL | 1.05V | 0.004A |

| | |
|-------------|---|
| ASSEMBLY | BASE LEVEL GENERIC SCHEMATIC ONLY, COMMON & NO_STUFF ASSEMBLY NOTES AND BOM NOT FINAL |
| PAGE DETAIL | XTAL, ROM, JTAG, M&c |

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| PCB REV | P1071-ADD |
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BOM REV

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| PAGE | |
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| DATE | 10-FEB-2010 |
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[illegible]

Top

Single Ended_Memory CMD
6.6929 mil
40 ohm +/- 10%

Bottom

Single Ended_Memory Data
3.937 mil
53 ohm +/- 10%

Top

Single Ended_RGB
4.76377 mil
50 ohm +/- 10%

Bottom

Single Ended_Memory Data
3.94 / 4.72 mil
90 ohm +/- 10%

Top

Differential_PCIE BUS
3.94 / 4.72 mil
90 ohm +/- 10%

Bottom


Differential_PCIE BUS
3.94 / 4.72 mil
90 ohm +/- 10%

Top

Differential_DVI
3.94 / 5.98 mil
90 ohm +/- 10%

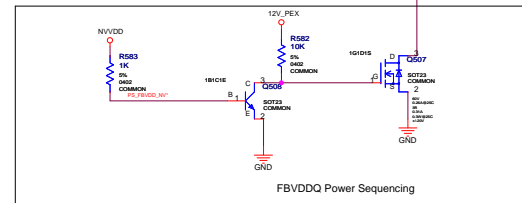
Bottom

Differential_Memory Clo
4.33 / 4.13 mil
80 ohm +/- 10%

| | | | |
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| PCB REV | P1071-A00 | PAGE | |
| BOM REV | A | DATE | 10-FEB-2010 |

[illegible]

| | Net Name | MIN_VOLT | VOLTAGE | MAX_CURRENT |
|----|-------------------|----------|---------|-------------|
| 20 | PS_FBIVD0_VCC | 1.80V | | |
| 21 | PS_FBIVD0_EN | 1.80V | | |
| 22 | PS_FBIVD0_GND | | | |
| 23 | | | | |
| 24 | PS_FBIVD0_BOOT | 1.80V | | |
| 25 | PS_FBIVD0_BOOT_PZ | 1.80V | | |
| 26 | PS_FBIVD0_FB | 1.80V | | |
| 27 | PS_FBIVD0_FB_VCC | 1.80V | | |
| 28 | PS_FBIVD0_IC_NP | 1.80V | | |
| 29 | | | | |
| 30 | PS_FBIVD0_LIS | 1.80V | | |
| 31 | PS_FBIVD0_LIS_PZ | 1.80V | | |
| 32 | PS_FBIVD0_LP | 1.80V | | |
| 33 | PS_FBIVD0_PWDN | 1.80V | | |
| 34 | PS_FBIVD0_SWAP | 1.80V | | |
| 35 | | | | |
| | FBIVD00 | 1.80V | 1.80V | 8.0A |



$$+MVDD = 0.8 * (1 + (ER12 / ER13))$$

| | |
|-------------|---|
| ASSEMBLY | BASE LEVEL GENERIC SCHEMATIC ONLY, COMMON & NO_STUFF ASSEMBLY NOTES AND BOM NOT FINAL |
| PAGE DETAIL | Power Supply II: FBVDDQ |

NVIDIA CORPORATION

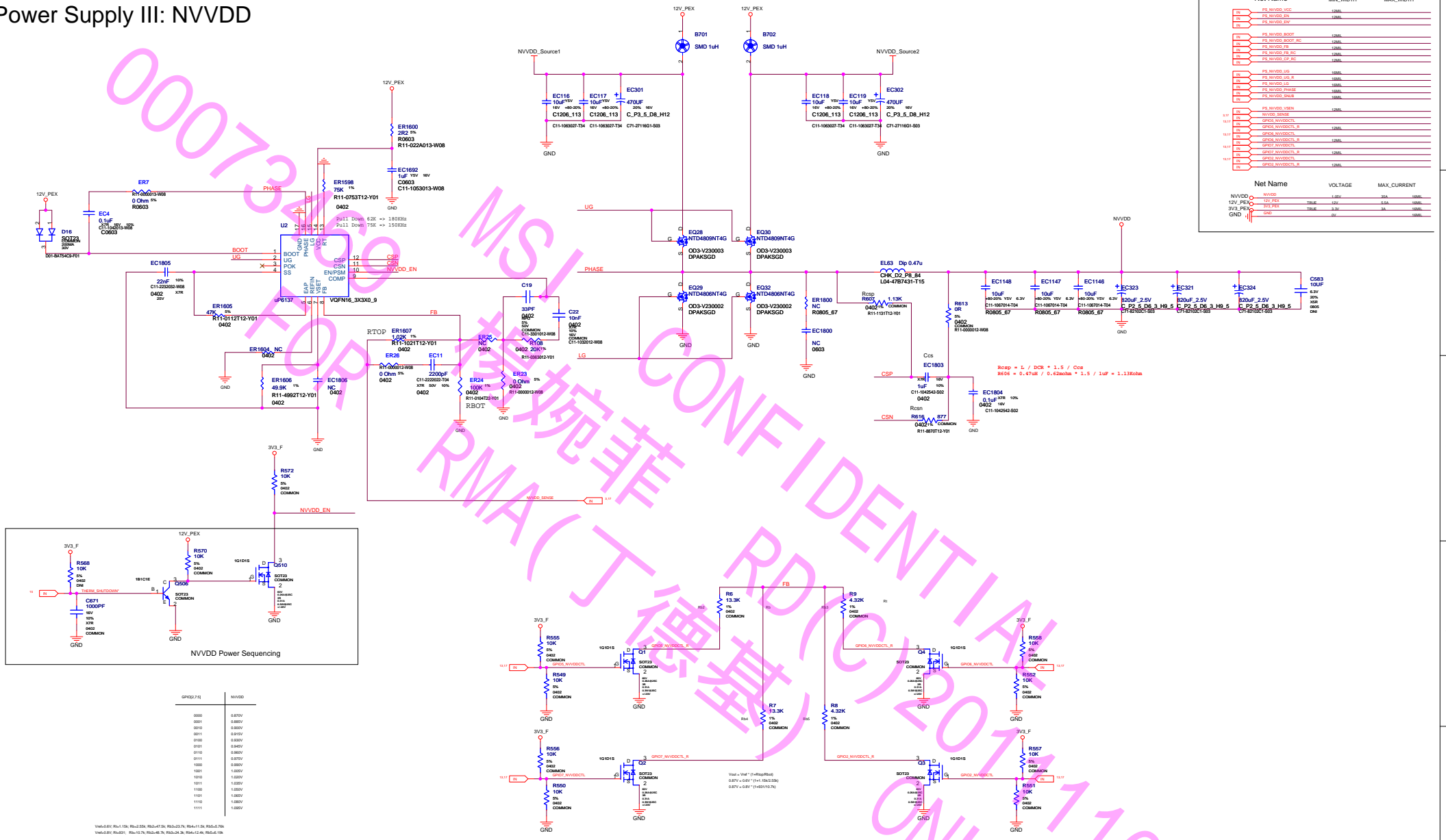
2701 SAN TOMAS EXPRESSWAY
SANTA CLARA, CA 95050, USA



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|---------|--------------------|------|-------------|
| NV_PN | 600-11071-BASE-SCH | | |
| PCB REV | P1071-A00 | PAGE | |
| BOM REV | A | DATE | 10-FEB-2010 |

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Power Supply III: NVVDD



NVIDIA CORPORATION

2701 SAN TOMAS EXPRESSWAY
SANTA CLARA, CA 95050, USA



| | |
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| NV_PN | 600-11071-BASE-SCH |
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| PCB REV | P1071-ADD |
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| BOM REV | A |
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14

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| PAGE | |
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| DATE | 10-FEB-2010 |
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H

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|-------------|---|
| ASSEMBLY | BASE LEVEL GENERIC SCHEMATIC ONLY, COMMON & NO_STUFF ASSEMBLY NOTES AND BOM NOT FINAL |
| PAGE DETAIL | Power Supply III: NVVDD |

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A

B

C

D

E

F

10

H

| | | | | | | | | | | | | | | | |
|---------------------|--|----------------------|--|------------------|--|------------------|--|------------------|--|------------------|--|------------------|--|------------------|--|
| A | | B | | C | | D | | E | | F | | G | | H | |
| SNN_PS_SLLVDD0 4.5C | | SNN_PS_PLXAVDD0 4.4C | | SNN_PS_VREF 4.5A | | SNN_GPH01 12.38 | | SNN_GPH03 13.20 | | SNN_GPH05 13.20 | | SNN_GPH10 13.20 | | SNN_GPH11 13.20 | |
| SNN_GPH12 13.20 | | SNN_GPH13 13.20 | | SNN_GPH14 13.20 | | SNN_GPH15 11.30 | | SNN_GPH17 13.20 | | SNN_GPH18 13.20 | | SNN_GPH19 12.48 | | SNN_GPH20 13.20 | |
| SNN_GPH22 13.20 | | SNN_GPH23 13.20 | | SNN_GPH24 13.20 | | SNN_GPH25 13.20 | | SNN_GPH26 13.20 | | SNN_GPH27 13.20 | | SNN_GPH28 13.20 | | SNN_GPH29 13.20 | |
| SNN_GPH30 13.20 | | SNN_GPH31 13.20 | | SNN_GPH32 13.20 | | SNN_GPH33 13.20 | | SNN_GPH34 13.20 | | SNN_GPH35 13.20 | | SNN_GPH36 13.20 | | SNN_GPH37 13.20 | |
| SNN_GPH38 13.20 | | SNN_GPH39 13.20 | | SNN_GPH40 13.20 | | SNN_GPH41 13.20 | | SNN_GPH42 13.20 | | SNN_GPH43 13.20 | | SNN_GPH44 13.20 | | SNN_GPH45 13.20 | |
| SNN_GPH46 13.20 | | SNN_GPH47 13.20 | | SNN_GPH48 13.20 | | SNN_GPH49 13.20 | | SNN_GPH50 13.20 | | SNN_GPH51 13.20 | | SNN_GPH52 13.20 | | SNN_GPH53 13.20 | |
| SNN_GPH54 13.20 | | SNN_GPH55 13.20 | | SNN_GPH56 13.20 | | SNN_GPH57 13.20 | | SNN_GPH58 13.20 | | SNN_GPH59 13.20 | | SNN_GPH60 13.20 | | SNN_GPH61 13.20 | |
| SNN_GPH62 13.20 | | SNN_GPH63 13.20 | | SNN_GPH64 13.20 | | SNN_GPH65 13.20 | | SNN_GPH66 13.20 | | SNN_GPH67 13.20 | | SNN_GPH68 13.20 | | SNN_GPH69 13.20 | |
| SNN_GPH70 13.20 | | SNN_GPH71 13.20 | | SNN_GPH72 13.20 | | SNN_GPH73 13.20 | | SNN_GPH74 13.20 | | SNN_GPH75 13.20 | | SNN_GPH76 13.20 | | SNN_GPH77 13.20 | |
| SNN_GPH78 13.20 | | SNN_GPH79 13.20 | | SNN_GPH80 13.20 | | SNN_GPH81 13.20 | | SNN_GPH82 13.20 | | SNN_GPH83 13.20 | | SNN_GPH84 13.20 | | SNN_GPH85 13.20 | |
| SNN_GPH86 13.20 | | SNN_GPH87 13.20 | | SNN_GPH88 13.20 | | SNN_GPH89 13.20 | | SNN_GPH90 13.20 | | SNN_GPH91 13.20 | | SNN_GPH92 13.20 | | SNN_GPH93 13.20 | |
| SNN_GPH94 13.20 | | SNN_GPH95 13.20 | | SNN_GPH96 13.20 | | SNN_GPH97 13.20 | | SNN_GPH98 13.20 | | SNN_GPH99 13.20 | | SNN_GPH100 13.20 | | SNN_GPH101 13.20 | |
| SNN_GPH102 13.20 | | SNN_GPH103 13.20 | | SNN_GPH104 13.20 | | SNN_GPH105 13.20 | | SNN_GPH106 13.20 | | SNN_GPH107 13.20 | | SNN_GPH108 13.20 | | SNN_GPH109 13.20 | |
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| SNN_GPH134 13.20 | | SNN_GPH135 13.20 | | SNN_GPH136 13.20 | | SNN_GPH137 13.20 | | SNN_GPH138 13.20 | | SNN_GPH139 13.20 | | SNN_GPH140 13.20 | | SNN_GPH141 13.20 | |
| SNN_GPH142 13.20 | | SNN_GPH143 13.20 | | SNN_GPH144 13.20 | | SNN_GPH145 13.20 | | SNN_GPH146 13.20 | | SNN_GPH147 13.20 | | SNN_GPH148 13.20 | | SNN_GPH149 13.20 | |
| SNN_GPH150 13.20 | | SNN_GPH151 13.20 | | SNN_GPH152 13.20 | | SNN_GPH153 13.20 | | SNN_GPH154 13.20 | | SNN_GPH155 13.20 | | SNN_GPH156 13.20 | | SNN_GPH157 13.20 | |
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| SNN_GPH166 13.20 | | SNN_GPH167 13.20 | | SNN_GPH168 13.20 | | SNN_GPH169 13.20 | | SNN_GPH170 13.20 | | SNN_GPH171 13.20 | | SNN_GPH172 13.20 | | SNN_GPH173 13.20 | |
| SNN_GPH174 13.20 | | SNN_GPH175 13.20 | | SNN_GPH176 13.20 | | SNN_GPH177 13.20 | | SNN_GPH178 13.20 | | SNN_GPH179 13.20 | | SNN_GPH180 13.20 | | SNN_GPH181 13.20 | |
| SNN_GPH182 13.20 | | SNN_GPH183 13.20 | | SNN_GPH184 13.20 | | SNN_GPH185 13.20 | | SNN_GPH186 13.20 | | SNN_GPH187 13.20 | | SNN_GPH188 13.20 | | SNN_GPH189 13.20 | |
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