

M38A - DVT

06/22/06

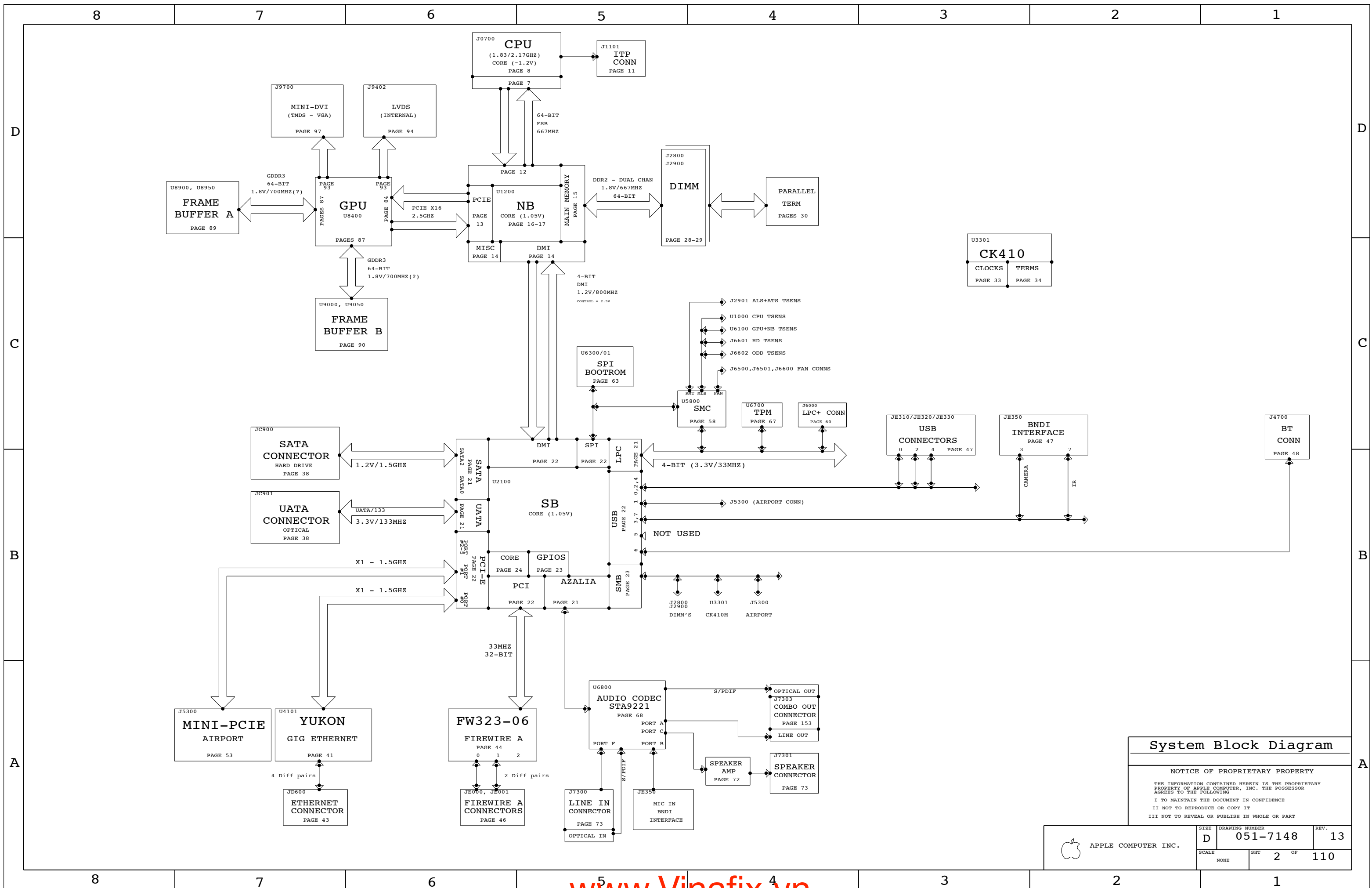
1. ALL RESISTANCE VALUES ARE IN OHMS, 0.1 WATT +/- 5%.
2. ALL CAPACITANCE VALUES ARE IN MICROFARADS.
3. ALL CRYSTALS & OSCILLATOR VALUES ARE IN HERTZ.

REV	ZONE	ECN	DESCRIPTION OF CHANGE	CK APPD	ENG APPD
				DATE	DATE
13		445818	ENGINEERING RELEASED	06/22/06	06/22/04

PAGE	DRI	PDF	CIRCUIT
1	JD	JD 1	TABLE OF CONTENTS
2	JD	JD 2	SYSTEM BLOCK DIAGRAM
3	RT	RT 3	POWER BLOCK DIAGRAM
4	JD	JD 4	TABLE ITEMS & REVISION HISTORY
5	JD	JD 5	FUNC TEST
6	RT	RT 6	POWER CONNECTOR / POWER ALIAS
(M42) 7	MS	JD 7	CPU - BUS INTERFACE
(M42) 8	MS	JD 8	CPU - PWR & GND
9	MS	JD 9	CPU - DECAPS
(M42) 10	MS	JD 10	CPU - THERMAL SENSOR
M42 11	MS	JD 11	CPU - ITP CONN
M1 12	PS	JH 12	NB - CPU INTERFACE
M1 13	PS	JH 13	NB - VIDEO INTERFACE
14	PS	JH 14	NB - MISC INTERFACES
M1 15	PS	JH 15	NB - DDR2 INTERFACE
M1 16	PS	JH 16	NB - POWER 1
M1 17	PS	JH 17	NB - POWER 2
M1 18	PS	JH 18	NB - GROUNDS
19	PS	JH 19	NB - DECAPS
M1 20	PS	JH 20	NB - CONFIG STRAPS
21	JD	JD 21	SB - RTC, LAN, AUDIO, ATA, CPU, LPC
22	JD	JD 22	SB - PCIE, SPI, USB, DMI, PCI
23	JD	JD 23	SB - SMB, GPIO, PM, CLKS
24	JD	JD 24	SB - POWERS AND GROUNDS
25	JD	JD 25	SB - DECAPS
26	JD	JD 26	SB - MISC
27	JD	JD 27	SB - SMB BUS CONNECTIONS
28	PS	JD 28	DDR2 - SO-DIMM CONN A
29	PS	JD 29	DDR2 - SO-DIMM CONN B (REVERSED)
30	PS	JD 30	DDR2 - TERMINATION
M1 31	RT	RT 31	DDR2 - VTT SUPPLY
M42 33	JD	JD 32	CLOCKS - GENERATOR
34	JD	JD 33	CLOCKS - TERMINATIONS
38	JD	JD 34	ATA (SATA AND IDE) CONN'S
(M42) 41	JD	JD 35	LAN - YUKON'S PCIE INTERFACE
42	JD	JD 36	LAN - YUKON'S PWR, MISC
43	JD	JD 37	LAN - CONN
44	JD	JD 38	FIREWIRE - FW323-06
45	JD	JD 39	FIREWIRE - DECAPS
46	JD	JD 40	FIREWIRE - CONN'S
47	JD	JD 41	USB - CONN'S

PAGE	DRI	PDF	CIRCUIT
53	JD	JD 43	PCI-E - AIRPORT MINI-PCIE CONN
54	JD	JD 44	PCI-E - UNUSED PORTS
58	MS	MS 45	SMC - H8S2116
59	MS	MS 46	SMC - SMB BUSSES, MISC
60	MS	MS 47	SMC - LPC+ CONN
61	JH	JH 48	SMC - GPU/NB THERMAL SENSOR
RX 63	MS	JD 49	SMC - SPI BOOTROM
65	MS	MS 50	SMC - FANS
66	MS	MS 51	SMC - FANS
67	JD	JD 52	SMC - TPM
SO 68	PT	JD 53	AUDIO - CODEC, VREG, MIC BIAS
SO 72	PT	JD 54	AUDIO - INTERNAL SPEAKER AMP
SO 73	PT	JD 55	AUDIO - I/O CONN'S, EMC
SO 74	PT	JD 56	AUDIO - DETECT TRANSLATORS
RP 75	RT	RT 57	VR - CPU CORE
RP 76	RT	RT 58	VR - CPU I-V SENSE CKT
RP 77	RT	RT 59	VR - "S0" 1.2V & 2.5V (GRAFIX)
RP 78	RT	RT 60	VR - "S0" 1.8V
RP 79	RT	RT 61	VR - "S3" 1.8V
RP 80	RT	RT 62	VR - "S0" 1.5V
RP 81	RT	RT 63	VR - "S0" 1.05V
RP 83	RT	RT 64	VR - "S3" 3.3V AND 5V
JH 84	JH	JH 65	GPU - M56 PCI-E
M1 85	JH	JH 66	GPU - VCORE SUPPLY
M1 86	JH	JH 67	GPU - M56 CORE PWR
M1 87	JH	JH 68	GPU - M56 FRAME BUFFER
M1 88	JH	JH 69	GPU - MISC
M1 89	JH	JH 70	GPU - GDDR SDRAM A
M1 90	JH	JH 71	GPU - GDDR SDRAM B
M1 91	JH	JH 72	GPU - M56 GPIO, DVO, MISC
M1 92	JH	JH 73	GPU - M56 CLOCKS
M1 93	JH	JH 74	GPU - M56 VIDEO INTERFACES
JH 94	JH	JH 75	GPU - INTERNAL DISPLAY CONN'S
JH 95	JH	JH 76	GPU - TP'S
JH 96	JH	JH 77	GPU - TMDS, INVERTER, EXT VGA
JH 97	JH	JH 78	GPU - EXTERNAL DISPLAY CONN'S

<p style="font-size: small;">DIMENSIONS ARE IN MILLIMETERS</p> <p>XX : _____</p> <p>X.XX : _____</p> <p>X.XXX : _____</p> <p>ANGLES : _____</p> <p style="text-align: center;">DO NOT SCALE DRAWING</p> <div style="text-align: center;"> <p style="font-size: x-small;">THIRD ANGLE PROJECTION</p> </div>	<p>METRIC</p>	<div style="text-align: right;"> <p>Apple Computer Inc.</p> </div> <p style="font-size: x-small; text-align: center;">NOTICE OF PROPRIETARY PROPERTY</p> <p style="font-size: x-small; text-align: center;">THE INFORMATION CONTAINED HEREIN IS THE PROPRIETARY PROPERTY OF APPLE COMPUTER, INC. THE POSSESSOR AGREES TO THE FOLLOWING</p> <p style="font-size: x-small; text-align: center;">I TO MAINTAIN THE DOCUMENT IN CONFIDENCE II NOT TO REPRODUCE OR COPY IT III NOT TO REVEAL OR PUBLISH IN WHOLE OR PART</p> <p style="text-align: center; font-weight: bold; font-size: large;">SCH, MLB, M38A</p> <p style="text-align: right;">DRAWING NUMBER 051-7148 REV. 13</p> <p style="text-align: right; font-size: x-small;">SHT 1 OF 110</p>
<p>DRAPPR</p> <p>ENG APPD</p> <p>QA APPD</p> <p>RELEASE</p>	<p>DESIGN CK</p> <p>MFG APPD</p> <p>DESIGNER</p> <p>SCALE</p>	<p>TITLE</p> <p>SIZE D</p>

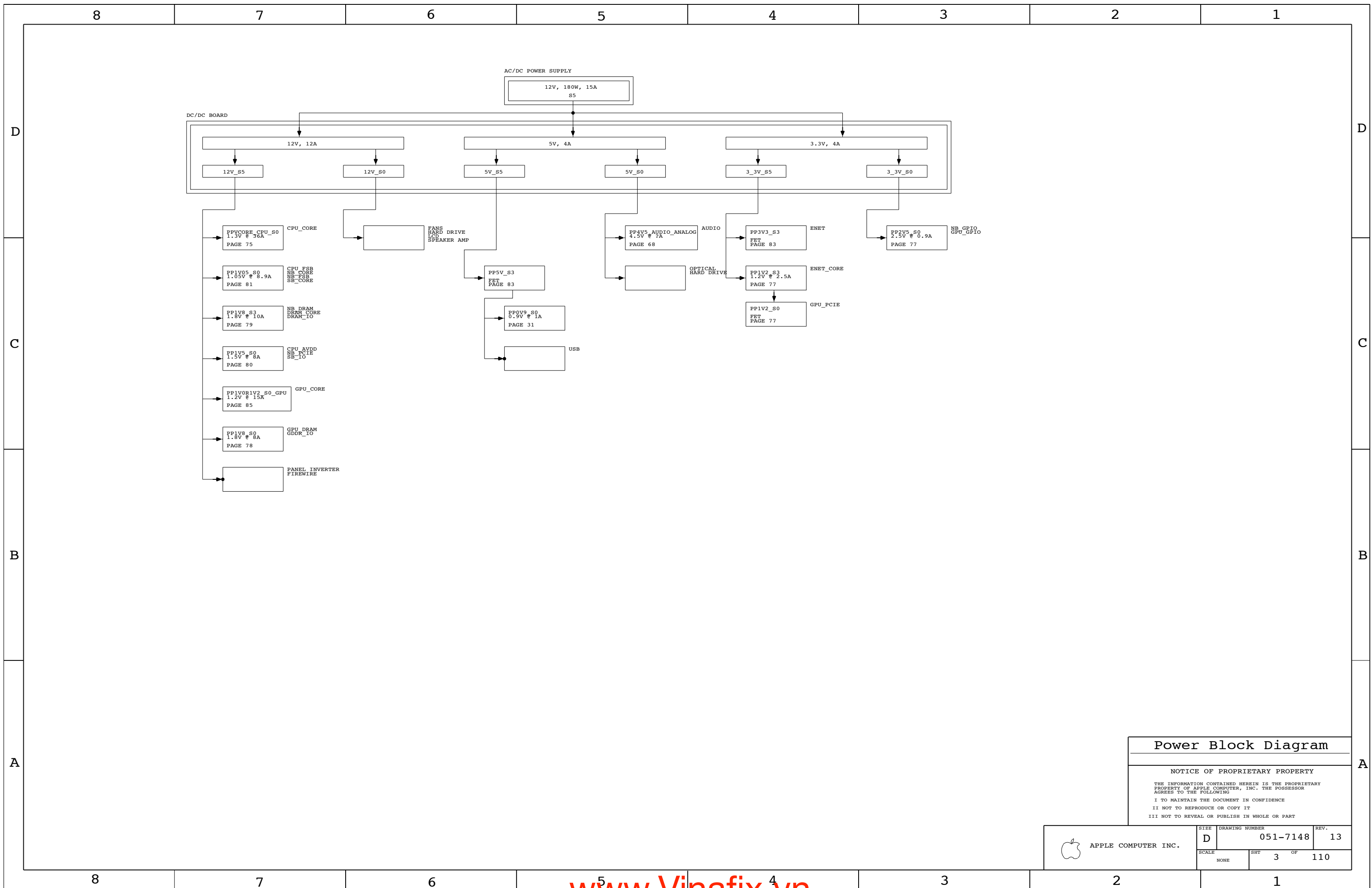


System Block Diagram

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	D	051-7148	13
SCALE	SHT	OF	
NONE	2	110	



Power Block Diagram

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APPLE COMPUTER INC.	SIZE D	DRAWING NUMBER 051-7148	REV. 13
	SCALE NONE	SHT 3	OF 110

8

7

6

5

4

3

2

1

COMMON

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
51180025	1	IC,CPU-SKT,479BGA	J0700	CRITICAL	
33880328	1	IC,945PM,NORTHBRIDGE	U1200	CRITICAL	
34380385	1	IC,SB,652BGA	U2100	CRITICAL	
33880344	1	IC,ATI,M56P,GRAFIXCTLR,880BGA,LF	U8400	CRITICAL	
35980101	1	IC,CY28445-5,CLK GEN,68PIN QFN	U3301	CRITICAL	
33880270	1	IC,888053,1GIBIT ENET XCVR,64P QFN,MO	U4101	CRITICAL	
(33580382) 34181797	1	IC,ENET LAN ROM	U4102	CRITICAL	
33880279	1	IC,FW32306,1394A LINK,TOFP	U4400	CRITICAL	

34181789	1	IC,TPM,TSSOP,28P	U6700	CRITICAL	LEMENU
UNSCREENED P/N 35381235 35381465	1	IC,CPU VREG,IMVP,TWO PHASE	U7500	CRITICAL	

12880078	3	CAP,EL,AL,330UF,20%,16V,10X12.7MM,SMD,LF	C7517,C7518,C7910	CRITICAL	
825-6447	1	MLB LABEL,48.0X4.8	X14	CRITICAL	

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
12680096	12680076		C7801	SANYO W16CE680EX 680UF 16V LF
12680086	12680078		C699,C940,C1900,C1901,C1968	SANYO W6CE330FS 330UF 6.3V LF
12880080	12880078		C7517,C7518,C7910	SANYO 166VP330H 330UF 16V SMD LF
124-0338	124-0333		C7501,C8014	CAP,AL,EL,680UF,16V,RAD,10X12.5MM
13880580	13880552			22UF 0805
35381321	35381105		U7910	LM339
37880141	37880140		LED#01,LED#02,LED#03	LED
35381461	35381465		U7500	CPU REGULATOR - ISL9504

(34181908 - DEVEL)
(34181909 - FINAL)
(33580384 - BLNK)

(34181907 - PROG)
(33880274 - BLNK)

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
051-7148	1	PCB,SCHM,MLB,M38A	SCH1		17_INCH_LCD
820-2052	1	PCB,FAB,MLB,M38A	MLB1		17_INCH_LCD
34170040	1	EPI ROM,M38A	U6301	CRITICAL	17_INCH_LCD
11480264	1	3.01K,1%,1/16W,402,MF-LF	R8522		GPU_VCORE_1P2V
34170039	1	IC,SMC,M38A	U5800	CRITICAL	17_INCH_LCD
33880315	1	IC,ATI,M56LP,GRAFIX CTLR,880BGA,LF	U8400	CRITICAL	GPU_B26_LP
11480287	1	5.11K,1%,1/16W,402,MF-LF	R8522		GPU_VCORE_0P953V
11480281	1	4.53K,1%,1/16W,402,MF-LF	R8522		GPU_VCORE_1P0V
33783299	1	2.00GHZ MEROM	CPU	CRITICAL	2P00_CPU
33783293	1	2.16GHZ MEROM	CPU	CRITICAL	2P16_CPU

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
33380354	4	IC,SGRAM,GDDR3,8MX32,700MHZ,136FBGA	U8900,U8950,U9000,U9050	CRITICAL	ATI_FB_128M_SAMSUNG
33380358	4	IC,SGRAM,GDDR3,8MX32,700MHZ,136FBGA	U8900,U8950,U9000,U9050	CRITICAL	ATI_FB_128M_HYNIX
33380376	4	IC,SGRAM,GDDR3,8MX32,700MHZ,136FBGA	U8900,U8950,U9000,U9050	CRITICAL	ATI_FB_128M_INFINEON

PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
33380350	4	IC,SGRAM,GDDR3,16MX32,700MHZ,136FBGA	U8900,U8950,U9000,U9050	CRITICAL	ATI_FB_256M_SAMSUNG
33380351	4	IC,SGRAM,GDDR3,16MX32,700MHZ,136FBGA	U8900,U8950,U9000,U9050	CRITICAL	ATI_FB_256M_HYNIX
33380377	4	IC,SGRAM,GDDR3,16MX32,700MHZ,136FBGA	U8900,U8950,U9000,U9050	CRITICAL	ATI_FB_256M_INFINEON

Table Items

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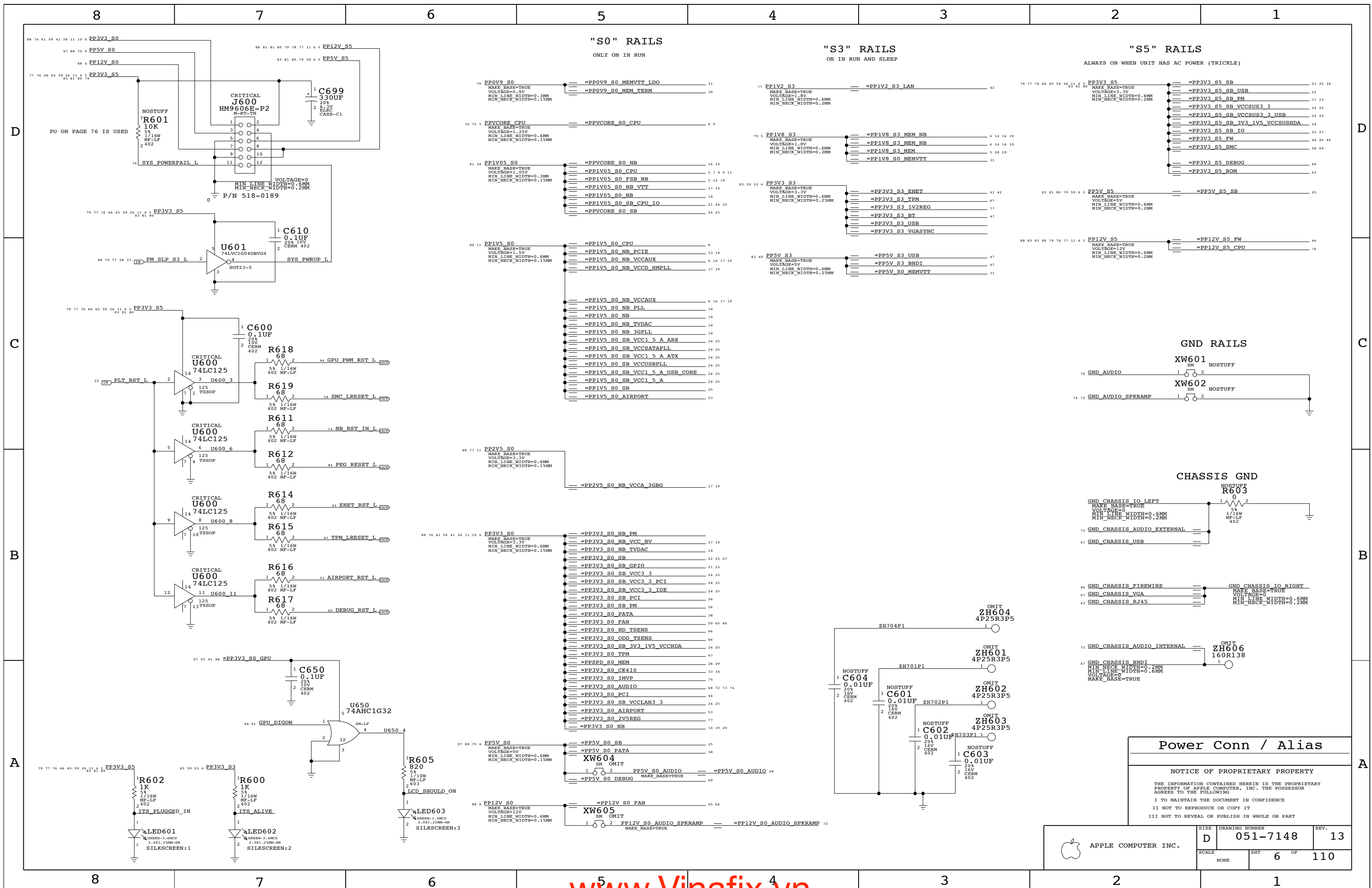
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SIZE	DRAWING NUMBER	REV.
D	051-7148	13
SCALE	SHT	OF
NONE	4	110

	8	7	6	5	4	3	2	1
	<p>LAYOUT NOTE: PLACE NEAR J0700</p> <p>12 7 5 FSB A L<6> PP600</p> <p>12 7 5 FSB ADSTB L<0> PP601</p> <p>12 7 5 FSB A L<27> PP602</p> <p>12 7 5 FSB ADSTB L<1> PP603</p> <p>12 7 5 FSB D L<0> PP604</p> <p>12 7 5 FSB DSTBN L<0> PP605</p> <p>12 7 5 FSB DSTBP L<0> PP606</p> <p>12 7 5 FSB DINV L<0> PP607</p> <p>12 7 5 FSB D L<16> PP608</p> <p>12 7 5 FSB DSTBN L<1> PP609</p> <p>12 7 5 FSB DSTBP L<1> PP610</p> <p>12 7 5 FSB DINV L<1> PP611</p> <p>12 7 5 FSB D L<41> PP612</p> <p>12 7 5 FSB DSTBN L<2> PP613</p> <p>12 7 5 FSB DSTBP L<2> PP614</p> <p>12 7 5 FSB DINV L<2> PP615</p> <p>12 7 5 FSB D L<59> PP616</p> <p>12 7 5 FSB DSTBN L<3> PP617</p> <p>12 7 5 FSB DSTBP L<3> PP618</p> <p>12 7 5 FSB DINV L<3> PP619</p> <p>12 7 5 FSB LOCK L PP620</p> <p>12 7 5 FSB CURST L PP621</p> <p>21 7 CPU INIT L PP622</p> <p>21 7 CPU A20M L PP623</p> <p>21 7 CPU IGNE L PP624</p> <p>21 7 CPU STCLK L PP625</p> <p>21 7 CPU INTR PP626</p> <p>21 7 CPU NMI PP627</p> <p>21 7 CPU SMI L PP628</p> <p>34 7 FSB CLK CPU P PP629</p> <p>34 7 FSB CLK CPU N PP630</p> <p>LAYOUT NOTE: PLACE NEAR U2100</p> <p>34 21 SB CLK100M SATA P PP6C4</p> <p>34 21 SB CLK100M SATA N PP6C5</p> <p>38 21 IDE PDIOR L PP6C6</p> <p>38 21 IDE PDIORBY PP6C7</p> <p>38 21 IDE PDD<9> PP6C8</p> <p>34 22 PCI CLK SB PP6D0</p> <p>41 22 PCIE A D2R P PP6D1</p> <p>41 22 PCIE A D2R N PP6D2</p> <p>52 22 PCIE B D2R P PP6E1</p> <p>52 22 PCIE B D2R N PP6E2</p> <p>22 14 DMI N2S P<0> PP6D3</p> <p>22 14 DMI N2S N<0> PP6D4</p> <p>34 22 SB CLK100M DMI P PP6D5</p> <p>34 22 SB CLK100M DMI N PP6D6</p> <p>58 26 23 FM SYSRST L PP6D7</p> <p>58 45 23 FM_CLKRUN L PP6D8</p> <p>34 23 SB_CLK14P3M_TIMER PP6D9</p> <p>34 23 SB_CLK48M_USBCTLR PP6E0</p> <p>LAYOUT NOTE: PLACE NEAR U1200</p> <p>12 7 5 FSB A L<6> PP631</p> <p>12 7 5 FSB ADSTB L<0> PP632</p> <p>12 7 5 FSB A L<27> PP633</p> <p>12 7 5 FSB ADSTB L<1> PP634</p> <p>12 7 5 FSB D L<0> PP635</p> <p>12 7 5 FSB DSTBN L<0> PP636</p> <p>12 7 5 FSB DSTBP L<0> PP637</p> <p>12 7 5 FSB DINV L<0> PP638</p> <p>12 7 5 FSB D L<16> PP639</p> <p>12 7 5 FSB DSTBN L<1> PP640</p> <p>12 7 5 FSB DSTBP L<1> PP641</p> <p>12 7 5 FSB DINV L<1> PP642</p> <p>12 7 5 FSB D L<41> PP643</p> <p>12 7 5 FSB DSTBN L<2> PP644</p> <p>12 7 5 FSB DSTBP L<2> PP645</p> <p>12 7 5 FSB DINV L<2> PP646</p> <p>12 7 5 FSB D L<59> PP647</p> <p>12 7 5 FSB DSTBN L<3> PP648</p> <p>12 7 5 FSB DSTBP L<3> PP649</p> <p>12 7 5 FSB DINV L<3> PP650</p> <p>12 7 5 FSB LOCK L PP651</p> <p>12 7 5 FSB HIT L PP652</p> <p>12 7 5 FSB HITM L PP653</p> <p>12 7 5 FSB BNR L PP654</p> <p>12 7 5 FSB BREQ0 L PP655</p> <p>12 7 5 FSB DBSY L PP656</p> <p>12 7 5 FSB DPWR L PP657</p> <p>12 7 5 FSB REQ L<0> PP658</p> <p>12 7 5 FSB REQ L<1> PP659</p> <p>12 7 5 FSB REQ L<2> PP660</p> <p>12 7 5 FSB REQ L<3> PP661</p> <p>12 7 5 FSB REQ L<4> PP662</p> <p>34 12 FSB_CLK_NB_P PP663</p> <p>34 12 FSB_CLK_NB_N PP664</p> <p>14 14 VR_PWRGOOD_DELAY PP665</p> <p>14 14 NB_RST_IN_L_R PP666</p> <p>22 14 DMI_S2N_N<0> PP673</p> <p>22 14 DMI_S2N_P<0> PP674</p> <p>19 14 MEM_VREF_NB_0 PP6E1</p> <p>19 14 MEM_VREF_NB_1 PP675</p> <p>28 15 MEM_A_DQ<7> PP676</p> <p>28 15 MEM_A_DQ<14> PP677</p> <p>28 15 MEM_A_DQ<16> PP678</p> <p>28 15 MEM_A_DQ<25> PP679</p> <p>28 15 MEM_A_DQ<39> PP680</p> <p>28 15 MEM_A_DQ<47> PP681</p> <p>28 15 MEM_A_DQ<54> PP682</p> <p>28 15 MEM_A_DQ<59> PP683</p> <p>28 15 MEM_A_DQS_P<0> PP684</p> <p>28 15 MEM_A_DQS_N<0> PP685</p> <p>28 15 MEM_A_DQS_P<1> PP686</p> <p>28 15 MEM_A_DQS_N<1> PP687</p> <p>28 15 MEM_A_DQS_P<2> PP688</p> <p>28 15 MEM_A_DQS_N<2> PP689</p> <p>28 15 MEM_A_DQS_P<3> PP690</p> <p>28 15 MEM_A_DQS_N<3> PP691</p> <p>28 15 MEM_A_DQS_P<4> PP692</p> <p>28 15 MEM_A_DQS_N<4> PP693</p> <p>28 15 MEM_A_DQS_P<5> PP694</p> <p>28 15 MEM_A_DQS_N<5> PP695</p> <p>28 15 MEM_A_DQS_P<6> PP696</p> <p>28 15 MEM_A_DQS_N<6> PP697</p> <p>28 15 MEM_A_DQS_P<7> PP698</p> <p>28 15 MEM_A_DQS_N<7> PP699</p> <p>29 15 MEM_B_DQ<6> PP6A0</p> <p>29 15 MEM_B_DQ<8> PP6A1</p> <p>29 15 MEM_B_DQ<23> PP6A2</p> <p>29 15 MEM_B_DQ<25> PP6A3</p> <p>29 15 MEM_B_DQ<38> PP6A4</p> <p>29 15 MEM_B_DQ<44> PP6A5</p> <p>29 15 MEM_B_DQ<48> PP6A6</p> <p>29 15 MEM_B_DQ<62> PP6A7</p> <p>29 15 MEM_B_DQS_P<0> PP6A8</p> <p>29 15 MEM_B_DQS_N<0> PP6A9</p> <p>29 15 MEM_B_DQS_P<1> PP6B0</p> <p>29 15 MEM_B_DQS_N<1> PP6B1</p> <p>29 15 MEM_B_DQS_P<2> PP6B2</p> <p>29 15 MEM_B_DQS_N<2> PP6B3</p> <p>29 15 MEM_B_DQS_P<3> PP6B4</p> <p>29 15 MEM_B_DQS_N<3> PP6B5</p> <p>29 15 MEM_B_DQS_P<4> PP6B6</p> <p>29 15 MEM_B_DQS_N<4> PP6B7</p> <p>29 15 MEM_B_DQS_P<5> PP6B8</p> <p>29 15 MEM_B_DQS_N<5> PP6B9</p> <p>29 15 MEM_B_DQS_P<6> PP6C0</p> <p>29 15 MEM_B_DQS_N<6> PP6C1</p> <p>29 15 MEM_B_DQS_P<7> PP6C2</p> <p>29 15 MEM_B_DQS_N<7> PP6C3</p> <p>LAYOUT NOTE: PLACE NEAR U8400</p> <p>89 87 5 FB_A_DQ<0> PP8700</p> <p>89 87 5 FB_A_DQ<8> PP8701</p> <p>89 87 5 FB_A_DQ<16> PP8702</p> <p>89 87 5 FB_A_DQ<24> PP8703</p> <p>89 87 5 FB_A_DQ<32> PP8704</p> <p>89 87 5 FB_A_DQ<40> PP8705</p> <p>89 87 5 FB_A_DQ<48> PP8706</p> <p>89 87 5 FB_A_DQ<56> PP8707</p> <p>89 87 5 FB_A_MA<3> PP8708</p> <p>89 87 5 FB_A_RDQS<0> PP8709</p> <p>89 87 5 FB_A_RDQS<1> PP8710</p> <p>89 87 5 FB_A_RDQS<2> PP8711</p> <p>89 87 5 FB_A_RDQS<3> PP8712</p> <p>89 87 5 FB_A_RDQS<4> PP8713</p> <p>89 87 5 FB_A_RDQS<5> PP8714</p> <p>89 87 5 FB_A_RDQS<6> PP8715</p> <p>89 87 5 FB_A_RDQS<7> PP8716</p> <p>90 87 5 FB_B_DQ<0> PP8720</p> <p>90 87 5 FB_B_DQ<8> PP8721</p> <p>90 87 5 FB_B_DQ<16> PP8722</p> <p>90 87 5 FB_B_DQ<24> PP8723</p> <p>90 87 5 FB_B_DQ<32> PP8724</p> <p>90 87 5 FB_B_DQ<40> PP8725</p> <p>90 87 5 FB_B_DQ<48> PP8726</p> <p>90 87 5 FB_B_DQ<56> PP8727</p> <p>90 87 5 FB_B_MA<3> PP8728</p> <p>90 87 5 FB_B_RDQS<0> PP8729</p> <p>90 87 5 FB_B_RDQS<1> PP8730</p> <p>90 87 5 FB_B_RDQS<2> PP8731</p> <p>90 87 5 FB_B_RDQS<3> PP8732</p> <p>90 87 5 FB_B_RDQS<4> PP8733</p> <p>90 87 5 FB_B_RDQS<5> PP8734</p> <p>90 87 5 FB_B_RDQS<6> PP8735</p> <p>90 87 5 FB_B_RDQS<7> PP8736</p> <p>84 34 GPU_CLK100M_PCIE_P PP8400</p> <p>84 34 GPU_CLK100M_PCIE_N PP8401</p> <p>LAYOUT NOTE: PLACE NEAR U8900</p> <p>89 87 5 FB_A_CKE<0> PP8900</p> 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FB_B_WE_L<1> PP9024</p> <p>90 87 5 FB_B_CAS_L<1> PP9025</p> <p>90 87 5 FB_B_RAS_L<1> PP9026</p> <p>90 87 5 FB_B_MA<3> PP9027</p> <p>90 88 5 DRAM_RST PP9028</p> <p>90 87 5 FB_B_WDQS<5> PP9029</p> <p>90 87 5 FB_B_WDQS<6> PP9030</p> <p>90 87 5 FB_B_WDQS<4> PP9031</p> <p>90 87 5 FB_B_WDQS<7> PP9032</p> <p>90 87 5 FB_B_DQ<32> PP9033</p> <p>90 87 5 FB_B_DQ<40> PP9034</p> <p>90 87 5 FB_B_DQ<48> PP9035</p> <p>90 87 5 FB_B_DQ<56> PP9036</p> <p>PLACE NEAR R1210 AND R1211</p> <p>12 NB_FSB_VREF PP1200</p> <p>SM-TP50-TOP</p> <p>PP1201</p> <p>SM-TP50-TOP</p> <p>PP1202</p> <p>SM-TP50-TOP</p> <p>PLACE NEAR R0705 AND R0706</p> <p>11 9 8 7 6 PP1V05_S0_CPU PP700</p> <p>SM-TP50-TOP</p> <p>PP701</p> <p>CPU_GTLREF</p> <p>SM-TP50-TOP</p> <p>PP702</p> <p>SM-TP50-TOP</p> <p>PLACE NEAR R2800 AND R2801</p> <p>29 28 6 PP1V8_S3_MEM PP2800</p> <p>SM-TP50-TOP</p> <p>PP2801</p> <p>MEM_VREF</p> <p>SM-TP50-TOP</p> <p>PP2802</p> <p>SM-TP50-TOP</p> <p>MISC GROUND VIAS</p> <p>ZH500 HOLE-VIA</p> <p>ZH510 HOLE-VIA</p> <p>ZH520 HOLE-VIA</p> <p>ZH501 HOLE-VIA</p> <p>ZH511 HOLE-VIA</p> <p>ZH521 HOLE-VIA</p> <p>ZH502 HOLE-VIA</p> <p>ZH512 HOLE-VIA</p> <p>ZH522 HOLE-VIA</p> <p>ZH503 HOLE-VIA</p> <p>ZH513 HOLE-VIA</p> <p>ZH523 HOLE-VIA</p> <p>ZH504 HOLE-VIA</p> <p>ZH514 HOLE-VIA</p> <p>ZH524 HOLE-VIA</p> <p>ZH505 HOLE-VIA</p> <p>ZH515 HOLE-VIA</p> <p>ZH525 HOLE-VIA</p> <p>ZH506 HOLE-VIA</p> <p>ZH516 HOLE-VIA</p> <p>ZH526 HOLE-VIA</p> <p>ZH507 HOLE-VIA</p> <p>ZH517 HOLE-VIA</p> <p>ZH527 HOLE-VIA</p> <p>ZH508 HOLE-VIA</p> <p>ZH518 HOLE-VIA</p> <p>ZH528 HOLE-VIA</p> <p>ZH509 HOLE-VIA</p> <p>ZH519 HOLE-VIA</p> <p>ZH529 HOLE-VIA</p> <p>34 ENET_MDI_R_N<0> NO_TEST=TRUE</p> <p>34 TP_PCI_CLK_SPARE NO_TEST=TRUE</p> <p>34 TP_MEM_B_A<14> NO_TEST=TRUE</p> <p>34 TP_MEM_B_A<15> NO_TEST=TRUE</p> <p>41 ENET_MDI_R_N<0> NO_TEST=TRUE</p> <p>41 ENET_MDI_R_N<1> NO_TEST=TRUE</p> <p>41 ENET_MDI_R_N<2> NO_TEST=TRUE</p> <p>41 ENET_MDI_R_N<3> NO_TEST=TRUE</p> <p>41 ENET_MDI_R_P<0> NO_TEST=TRUE</p> <p>41 ENET_MDI_R_P<1> NO_TEST=TRUE</p> <p>41 ENET_MDI_R_P<2> NO_TEST=TRUE</p> <p>41 ENET_MDI_R_P<3> NO_TEST=TRUE</p> <p>SIZE DRAWING NUMBER REV. 13</p> <p>D 051-7148</p> <p>SCALE NONE SHT 5 OF 110</p> <p>APPLE COMPUTER INC.</p> <p>FUNC TEST 1 OF 2</p> <p>NOTICE OF PROPRIETARY PROPERTY</p> <p>THE INFORMATION CONTAINED HEREIN IS THE PROPRIETARY PROPERTY OF APPLE COMPUTER, INC. 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"S0" RAILS
ONLY ON IN RUN

"S3" RAILS
ON IN RUN AND SLEEP

"S5" RAILS
ALWAYS ON WHEN UNIT HAS AC POWER (TRICKLE)

GND RAILS

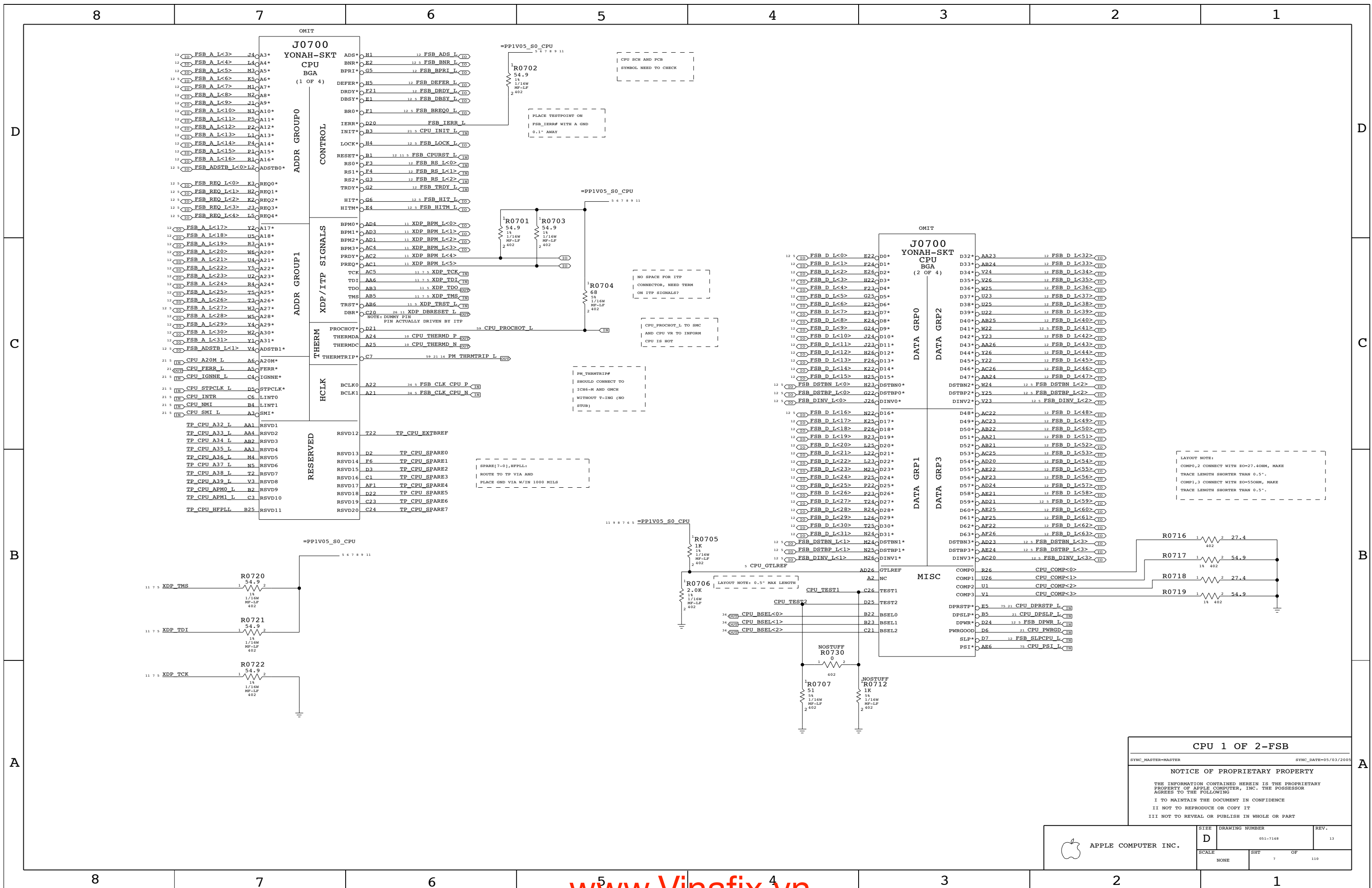
CHASSIS GND

Power Conn / Alias

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SCALE	SHT	OF	
NONE	6	110	



J0700 YONAH-SKT CPU BGA (1 OF 4)

12	FSB A L<3>	J4	A3*
12	FSB A L<4>	L4	A4*
12	FSB A L<5>	M3	A5*
12	FSB A L<6>	K3	A6*
12	FSB A L<7>	M1	A7*
12	FSB A L<8>	N2	A8*
12	FSB A L<9>	J1	A9*
12	FSB A L<10>	N3	A10*
12	FSB A L<11>	P5	A11*
12	FSB A L<12>	P2	A12*
12	FSB A L<13>	L1	A13*
12	FSB A L<14>	P1	A14*
12	FSB A L<15>	P1	A15*
12	FSB A L<16>	R1	A16*
12	FSB ADSTB L<0>	I2	ADSTB0*
12	FSB REQ L<0>	K3	REQ0*
12	FSB REQ L<1>	H2	REQ1*
12	FSB REQ L<2>	K2	REQ2*
12	FSB REQ L<3>	J3	REQ3*
12	FSB REQ L<4>	L5	REQ4*
12	FSB A L<17>	Y2	A17*
12	FSB A L<18>	U5	A18*
12	FSB A L<19>	R3	A19*
12	FSB A L<20>	W6	A20*
12	FSB A L<21>	U4	A21*
12	FSB A L<22>	Y3	A22*
12	FSB A L<23>	U2	A23*
12	FSB A L<24>	R4	A24*
12	FSB A L<25>	T3	A25*
12	FSB A L<26>	T3	A26*
12	FSB A L<27>	W3	A27*
12	FSB A L<28>	W3	A28*
12	FSB A L<29>	Y4	A29*
12	FSB A L<30>	A30	A30*
12	FSB A L<31>	Y1	A31*
12	FSB ADSTB L<1>	V4	ADSTB1*
21	CPU A20M L	A6	A20M*
21	CPU FERR L	A5	FERR*
21	CPU IGNE L	C4	IGNE*
21	CPU STPCLK L	D3	STPCLK*
21	CPU INTR	C6	LINT0
21	CPU NMI	B4	LINT1
21	CPU SMI L	A3	SMI*
TP CPU A32 L	AA1	RSVD1	
TP CPU A33 L	AA4	RSVD2	
TP CPU A34 L	AB2	RSVD3	
TP CPU A35 L	AA3	RSVD4	
TP CPU A36 L	M4	RSVD5	
TP CPU A37 L	N5	RSVD6	
TP CPU A38 L	T2	RSVD7	
TP CPU A39 L	V3	RSVD8	
TP CPU APH0 L	B2	RSVD9	
TP CPU APH1 L	C3	RSVD10	
TP CPU HFPLL	B25	RSVD11	

J0700 YONAH-SKT CPU BGA (2 OF 4)

AD5*	H1	12	FSB ADS L	(TD)
BNR*	E2	12	FSB BNR L	(TD)
BPRI*	G5	12	FSB BPRI L	(TD)
DEFER*	H5	12	FSB DEFER L	(TD)
DRDY*	E21	12	FSB DRDY L	(TD)
DBSY*	E1	12	FSB DBSY L	(TD)
BR0*	F1	12	FSB BREQ0 L	(TD)
IERR*	D20		FSB IERR L	
INIT*	B3	21	CPU INIT L	(TD)
LOCK*	H4	12	FSB LOCK L	(TD)
RESET*	B1	12	FSB CPURST L	(TD)
RS0*	F3	12	FSB RS L<0>	(TD)
RS1*	F4	12	FSB RS L<1>	(TD)
RS2*	G3	12	FSB RS L<2>	(TD)
TRDY*	G2	12	FSB TRDY L	(TD)
HIT*	G6	12	FSB HIT L	(TD)
HITM*	E4	12	FSB HITM L	(TD)
BPM0*	AD4	11	XDP BPM L<0>	(TD)
BPM1*	AD3	11	XDP BPM L<1>	(TD)
BPM2*	AD1	11	XDP BPM L<2>	(TD)
BPM3*	AC4	11	XDP BPM L<3>	(TD)
PRDY*	AC2	11	XDP BPM L<4>	(TD)
PREQ*	AC1	11	XDP BPM L<5>	(TD)
TCK	AC5	11	7.5 XDP TCK	(TD)
TDI	AA6	11	7.5 XDP TDI	(TD)
TDO	AB3	11	7.5 XDP TDO	(TD)
TMS	AB5	11	7.5 XDP TMS	(TD)
TRST*	AB6	11	7.5 XDP TRST L	(TD)
DBR*	C20	24	11 XDP DBRESET L	(TD)
			NOTE: DUMMY PIN PIN ACTUALLY DRIVEN BY ITP	
PROCHOT*	D21		59 CPU_PROCHOT L	(TD)
THERMDA	A24	10	CPU_THERMD P	(TD)
THERMDC	A25	10	CPU_THERMD N	(TD)
THERMTRIP*	C7	59	21 14 PM_THERMTRIP L	(TD)
BCLK0	A22	34	5 FSB_CLK_CPU P	(TD)
BCLK1	A21	34	5 FSB_CLK_CPU N	(TD)
			PH_THERMTRIP# SHOULD CONNECT TO ICH6-M AND GMCH WITHOUT T-ING (NO STUB)	
RSVD12	T22		TP_CPU_EXTBREF	
RSVD13	D2		TP_CPU_SPARE0	
RSVD14	F6		TP_CPU_SPARE1	
RSVD15	D3		TP_CPU_SPARE2	
RSVD16	C1		TP_CPU_SPARE3	
RSVD17	AF1		TP_CPU_SPARE4	
RSVD18	D22		TP_CPU_SPARE5	
RSVD19	C23		TP_CPU_SPARE6	
RSVD20	C24		TP_CPU_SPARE7	

J0700 YONAH-SKT CPU BGA (3 OF 4)

12	FSB D L<0>	E22	D0*
12	FSB D L<1>	F24	D1*
12	FSB D L<2>	E26	D2*
12	FSB D L<3>	H22	D3*
12	FSB D L<4>	F23	D4*
12	FSB D L<5>	G25	D5*
12	FSB D L<6>	E25	D6*
12	FSB D L<7>	E23	D7*
12	FSB D L<8>	E24	D8*
12	FSB D L<9>	G24	D9*
12	FSB D L<10>	J24	D10*
12	FSB D L<11>	J23	D11*
12	FSB D L<12>	H26	D12*
12	FSB D L<13>	F26	D13*
12	FSB D L<14>	K22	D14*
12	FSB D L<15>	H25	D15*
12	FSB DSTBN L<0>	G22	DSTBN0*
12	FSB DSTBP L<0>	G22	DSTBP0*
12	FSB DINV L<0>	J26	DINV0*
12	FSB D L<16>	N22	D16*
12	FSB D L<17>	K25	D17*
12	FSB D L<18>	P26	D18*
12	FSB D L<19>	R23	D19*
12	FSB D L<20>	L25	D20*
12	FSB D L<21>	L24	D21*
12	FSB D L<22>	L23	D22*
12	FSB D L<23>	M23	D23*
12	FSB D L<24>	P25	D24*
12	FSB D L<25>	P22	D25*
12	FSB D L<26>	P22	D26*
12	FSB D L<27>	T24	D27*
12	FSB D L<28>	R24	D28*
12	FSB D L<29>	L26	D29*
12	FSB D L<30>	T23	D30*
12	FSB D L<31>	N24	D31*
12	FSB DSTBN L<1>	N24	DSTBN1*
12	FSB DSTBP L<1>	N23	DSTBP1*
12	FSB DINV L<1>	N26	DINV1*
AD26			OTLREF
A2			NC
C26			TEST1
D25			TEST2
B22			BSEL0
B23			BSEL1
C21			BSEL2

J0700 YONAH-SKT CPU BGA (4 OF 4)

AA23	12	FSB D L<32>	(TD)	
AB24	12	FSB D L<33>	(TD)	
V24	12	FSB D L<34>	(TD)	
V26	12	FSB D L<35>	(TD)	
W25	12	FSB D L<36>	(TD)	
U23	12	FSB D L<37>	(TD)	
U25	12	FSB D L<38>	(TD)	
U22	12	FSB D L<39>	(TD)	
AB25	12	FSB D L<40>	(TD)	
W22	12	FSB D L<41>	(TD)	
Y23	12	FSB D L<42>	(TD)	
AA26	12	FSB D L<43>	(TD)	
Y26	12	FSB D L<44>	(TD)	
Y22	12	FSB D L<45>	(TD)	
AC26	12	FSB D L<46>	(TD)	
AA24	12	FSB D L<47>	(TD)	
W24	12	FSB DSTBN L<2>	(TD)	
V25	12	FSB DSTBP L<2>	(TD)	
V23	12	FSB DINV L<2>	(TD)	
AC23	12	FSB D L<48>	(TD)	
AC23	12	FSB D L<49>	(TD)	
AB22	12	FSB D L<50>	(TD)	
AA21	12	FSB D L<51>	(TD)	
AB21	12	FSB D L<52>	(TD)	
AC25	12	FSB D L<53>	(TD)	
AD20	12	FSB D L<54>	(TD)	
AE22	12	FSB D L<55>	(TD)	
AE23	12	FSB D L<56>	(TD)	
AD24	12	FSB D L<57>	(TD)	
AE21	12	FSB D L<58>	(TD)	
AD21	12	FSB D L<59>	(TD)	
AE25	12	FSB D L<60>	(TD)	
AE25	12	FSB D L<61>	(TD)	
AE22	12	FSB D L<62>	(TD)	
AE26	12	FSB D L<63>	(TD)	
AD23	12	FSB DSTBN L<3>	(TD)	
AE24	12	FSB DSTBP L<3>	(TD)	
AC20	12	FSB DINV L<3>	(TD)	
B26		CPU_COMP<0>		
U26		CPU_COMP<1>		
U1		CPU_COMP<2>		
V1		CPU_COMP<3>		
E5	75	21	CPU DPRSTP L	(TD)
B5	21		CPU_DPSLP L	(TD)
D24	12		FSB_DPWR L	(TD)
D6	21		CPU_PWRGD	(TD)
D7	12		FSB_SLPCPU L	(TD)
AE6	75		CPU_PSI L	(TD)

MISC

COMP0	B26	CPU_COMP<0>
COMP1	U26	CPU_COMP<1>
COMP2	U1	CPU_COMP<2>
COMP3	V1	CPU_COMP<3>
DPRSTP*	E5	75 21 CPU DPRSTP L
DPSLP*	B5	21 CPU DPSLP L
DPWR*	D24	12 FSB_DPWR L
PWRGOOD	D6	21 CPU_PWRGD
SLP*	D7	12 FSB_SLPCPU L
PSI*	AE6	75 CPU_PSI L

LAYOUT NOTE:
COMP0,2 CONNECT WITH 50-77.4OHM, MAKE TRACE LENGTH SHORTER THAN 0.5".
COMP1,3 CONNECT WITH 50-55OHM, MAKE TRACE LENGTH SHORTER THAN 0.5".

CPU 1 OF 2-FSB

SYNC_MASTER=MASTER SYNC_DATE=05/03/2005

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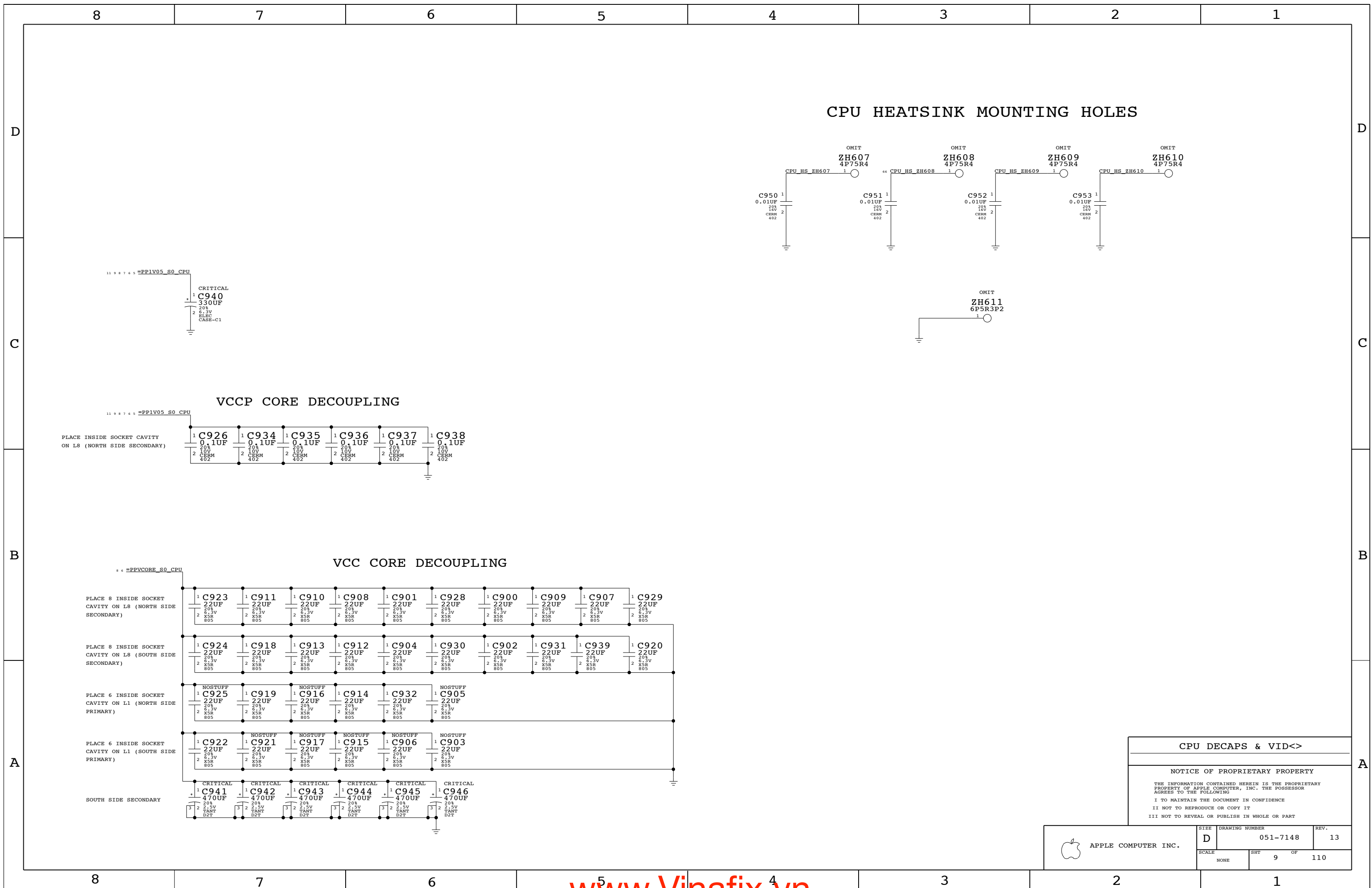
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SIZE	DRAWING NUMBER	REV.
D	051-7148	13
SCALE	SHT	OF
NONE	7	110

APPLE COMPUTER INC.



CPU DECAPS & VID<>


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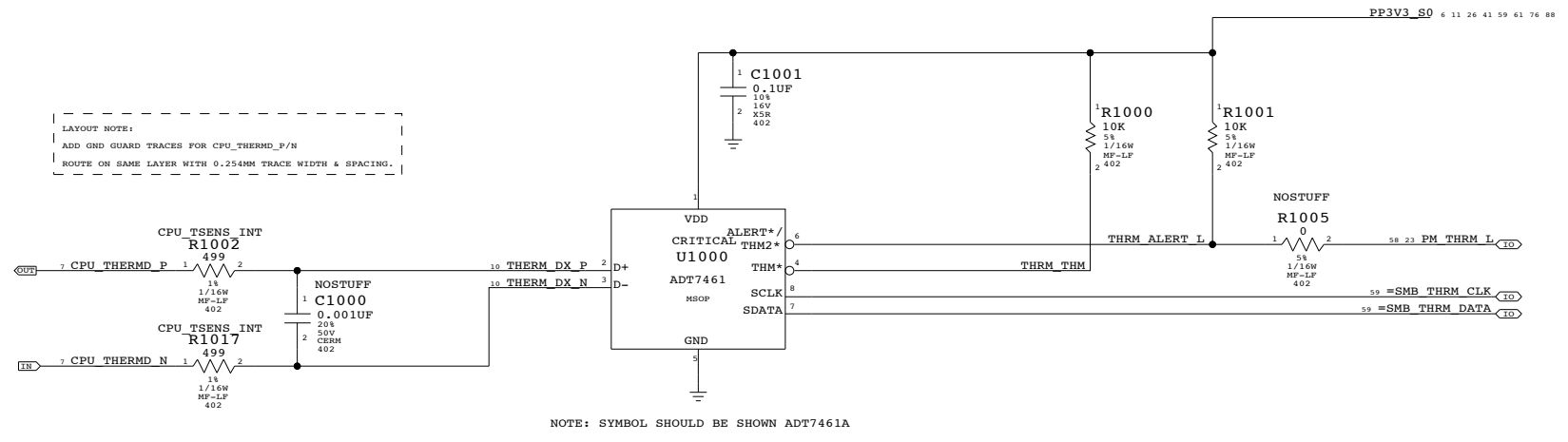
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	D	051-7148	13
SCALE	SHT	OF	REV.
NONE	9	110	

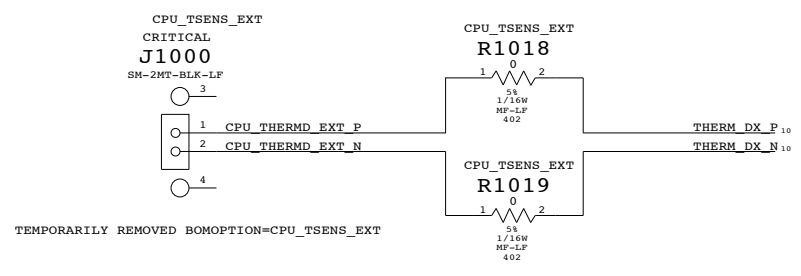
CPU THERMAL SENSOR

NOTE:
IF CPU T DIODE TO BE READ IN OFF STATE,
THEN THIS SHOULD BE S5

LAYOUT NOTE:
ADD GND GUARD TRACES FOR CPU_THERMD_P/N
ROUTE ON SAME LAYER WITH 0.254MM TRACE WIDTH & SPACING.



LAYOUT NOTE:
PLACE R1002 AND R1018 SUCH THAT THEY SHARE ONE PAD
PLACE R1017 AND R1019 SUCH THAT THEY SHARE ONE PAD



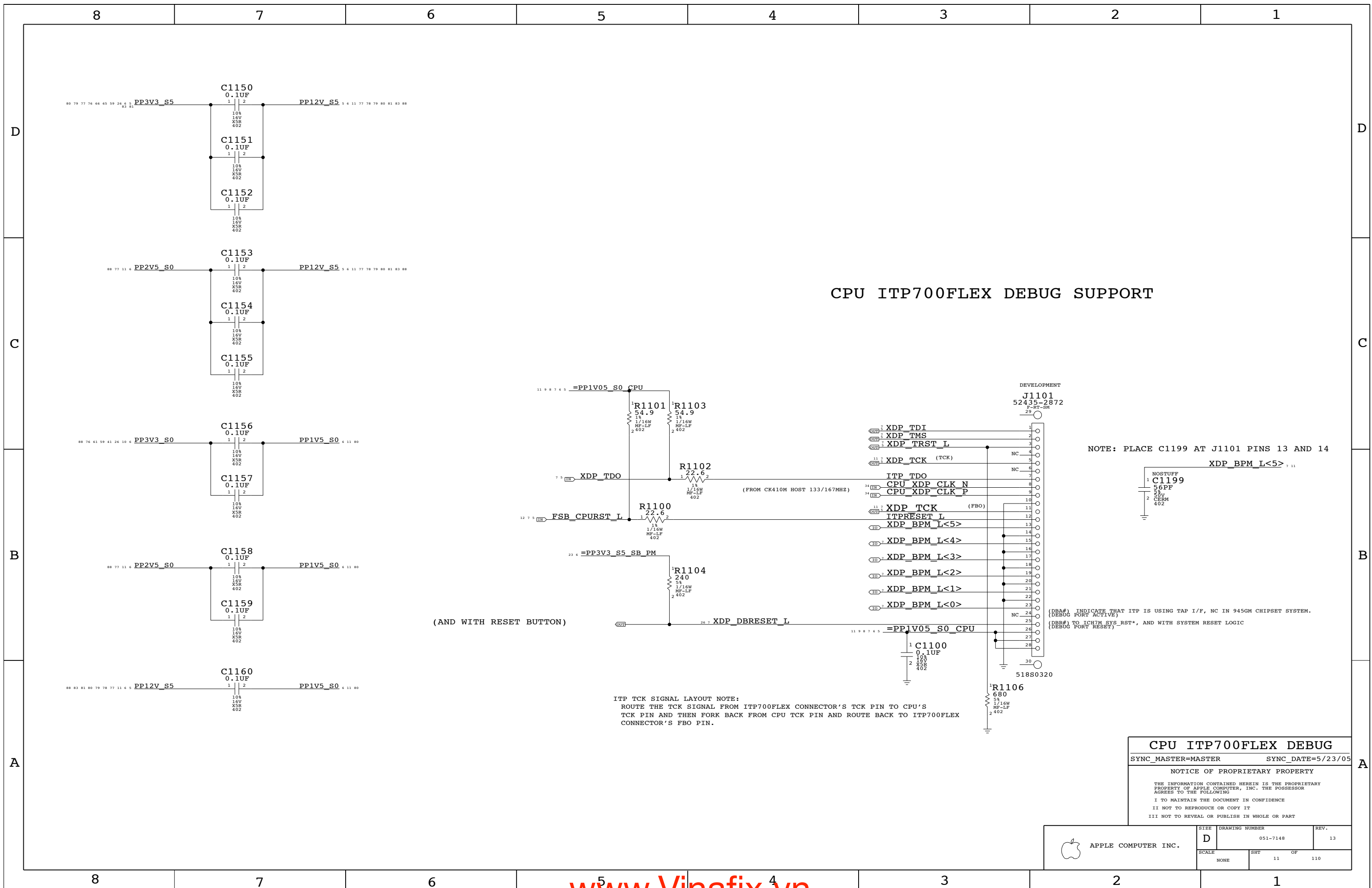
CPU TEMP SENSOR

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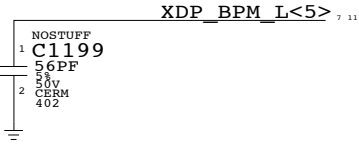
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SCALE	SHT		OF
NONE	10		110



CPU ITP700FLEX DEBUG SUPPORT

NOTE: PLACE C1199 AT J1101 PINS 13 AND 14

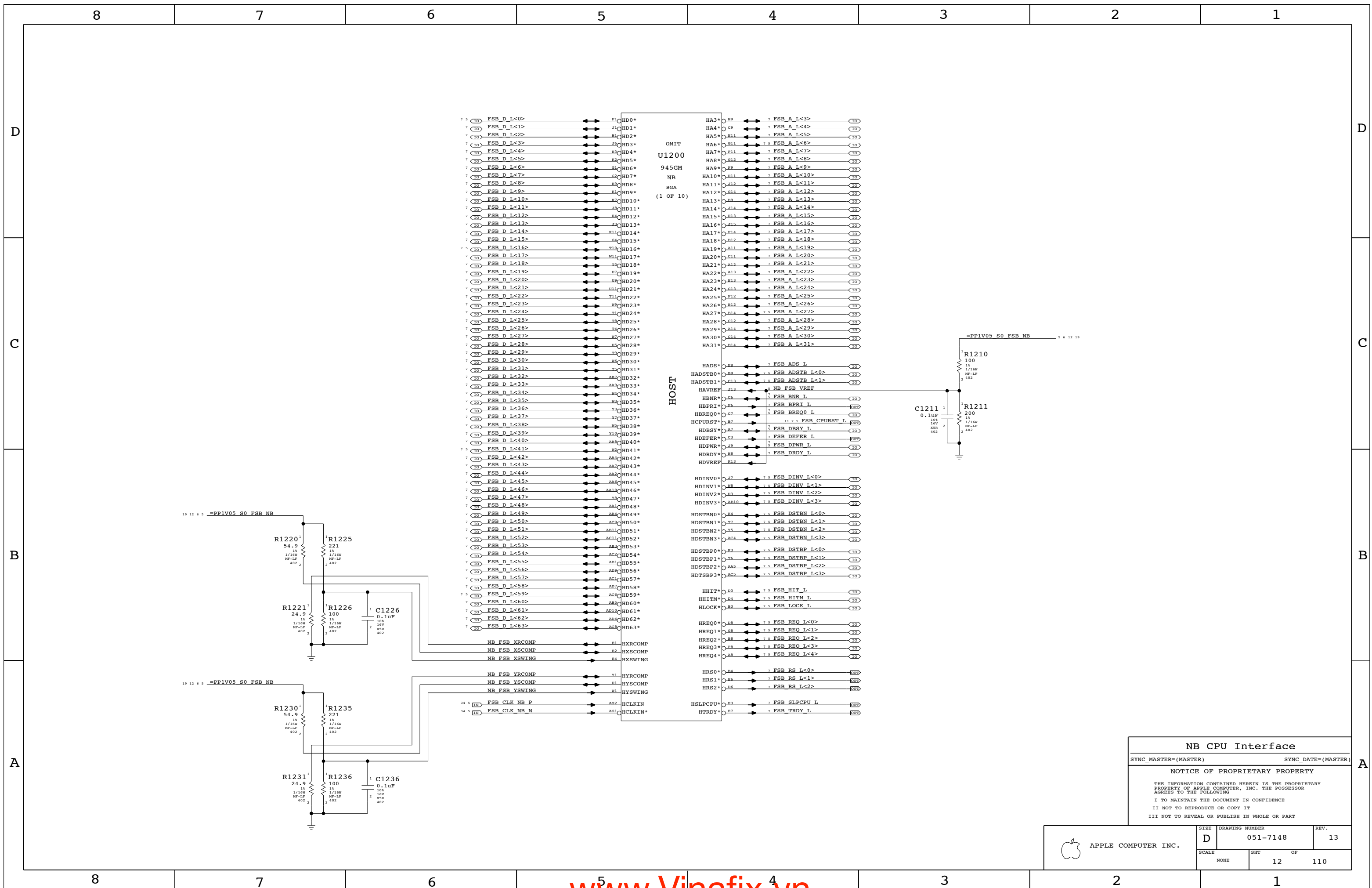


(DBA#) INDICATE THAT ITP IS USING TAP I/F, NC IN 945GM CHIPSET SYSTEM.
 (DBG#) TO ICH7M SYS_RST*, AND WITH SYSTEM RESET LOGIC
 (DEBUG PORT RESET)

ITP TCK SIGNAL LAYOUT NOTE:
 ROUTE THE TCK SIGNAL FROM ITP700FLEX CONNECTOR'S TCK PIN TO CPU'S
 TCK PIN AND THEN FORK BACK FROM CPU TCK PIN AND ROUTE BACK TO ITP700FLEX
 CONNECTOR'S FBO PIN.

CPU ITP700FLEX DEBUG
 SYNC_MASTER=MASTER SYNC_DATE=5/23/05
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SCALE	SHT	OF	110
NONE	11		



NB CPU Interface

SYNC_MASTER=(MASTER) SYNC_DATE=(MASTER)

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SCALE	SHT	OF	
NONE	12	110	

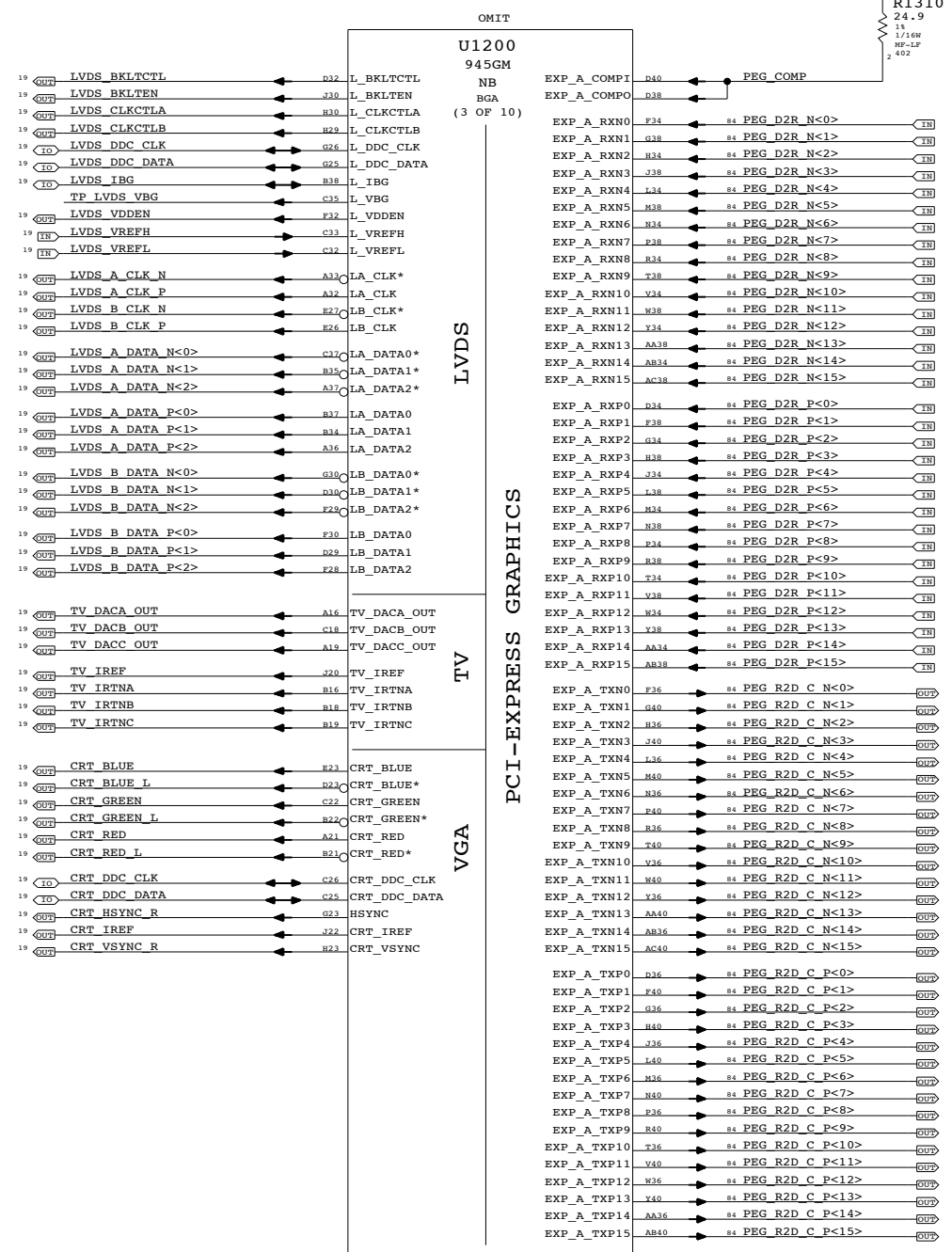
LVDS Disable
 Can leave all signals NC if LVDS is not implemented
 Tie VCC_TXLVDS and VCCA_LVDS to GND. If SDVO is used
 VCCD_LVDS must remain powered with proper decoupling.
 Otherwise, tie VCCD_LVDS to GND also.

TV-Out Signal Usage:
 Composite: DACA only
 S-Video: DACB & DACC only
 Component: DACA, DACB & DACC

Unused DAC outputs must remain powered, but can omit
 filtering components. Unused DAC outputs should
 connect to GND through 75-ohm resistors.

TV-Out Disable
 Tie DACx_OUT, IRTNx, and IREF to 1.5V power rail.
 Tie VCCD_TVDAC, VCCD_QTVDAC, VCCA_TVDACx, and
 VCCA_TVVBG to 1.5V power rail. Tie VSSA_TVVBG to GND.

CRT Disable
 Tie R/R#/G/G#/B/B# and IREF to VCC Core rail, tie
 HSYNC and VSYNC to GND. Tie VCCA_CRTDAC to VCC Core
 rail, and tie VSSA_CRTDAC and VCC_SYNC to GND.



SDVO Alternate Function

SDVO_TVCLKIN#
 SDVO_INT#
 SDVO_FLDSTALL#

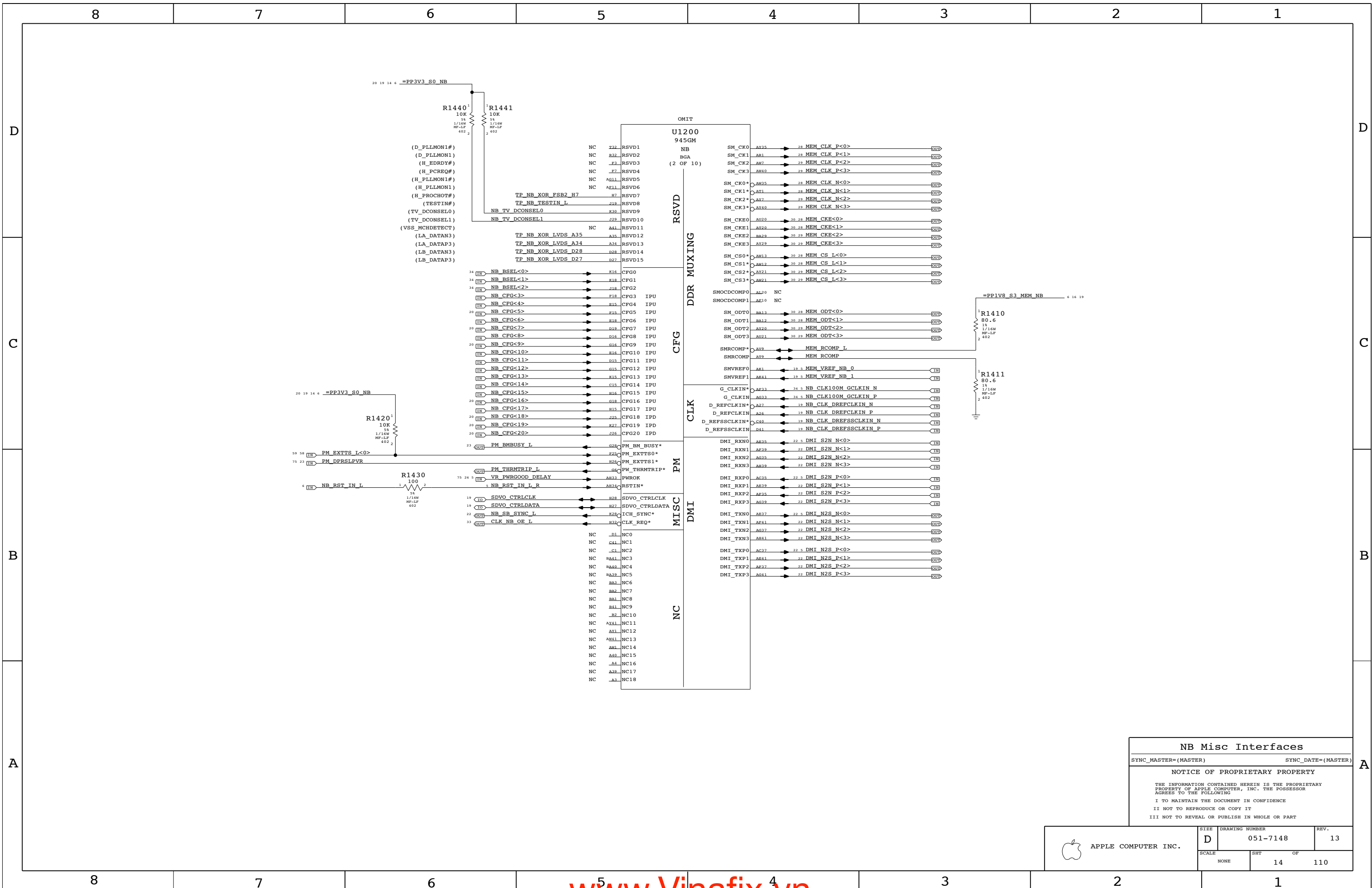
SDVO_TVCLKIN
 SDVO_INT
 SDVO_FLDSTALL

SDVOB_RED#
 SDVOB_GREEN#
 SDVOB_BLUE#
 SDVOB_CLKN
 SDVOC_RED#
 SDVOC_GREEN#
 SDVOC_BLUE#
 SDVOC_CLKN

SDVOB_RED
 SDVOB_GREEN
 SDVOB_BLUE
 SDVOB_CLKP
 SDVOC_RED
 SDVOC_GREEN
 SDVOC_BLUE
 SDVOC_CLKP

NB PEG / Video Interfaces
 SYNC_MASTER=(MASTER) SYNC_DATE=(MASTER)
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SCALE	SHT OF		
NONE	13 OF		110



NB Misc Interfaces

SYNC_MASTER=(MASTER) SYNC_DATE=(MASTER)

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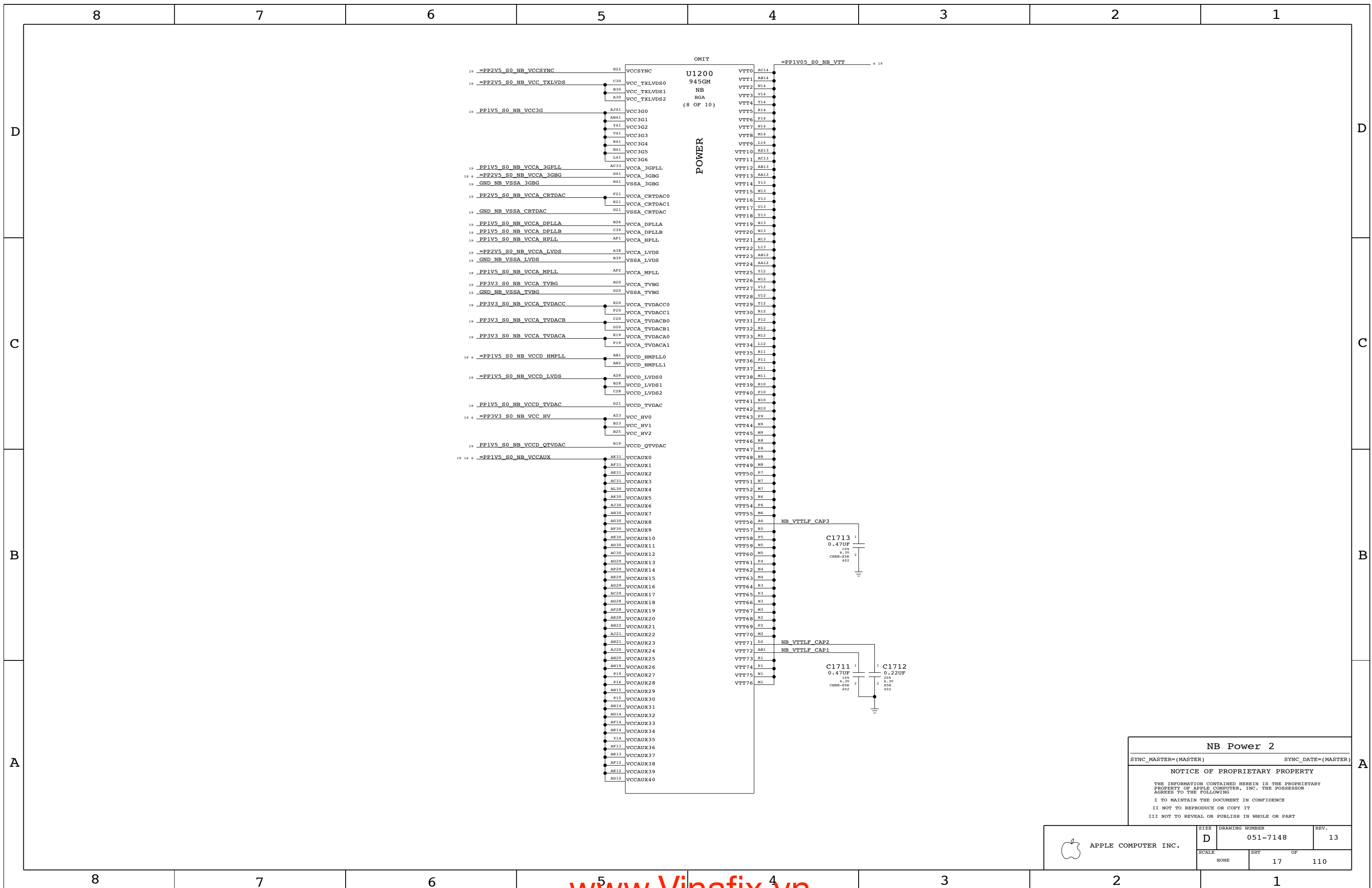
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	D	051-7148	13
SCALE	SHT OF		
NONE	14	110	



NB Power 2

SYNC_MASTER=(MASTER) SYNC_DATE=(MASTER)

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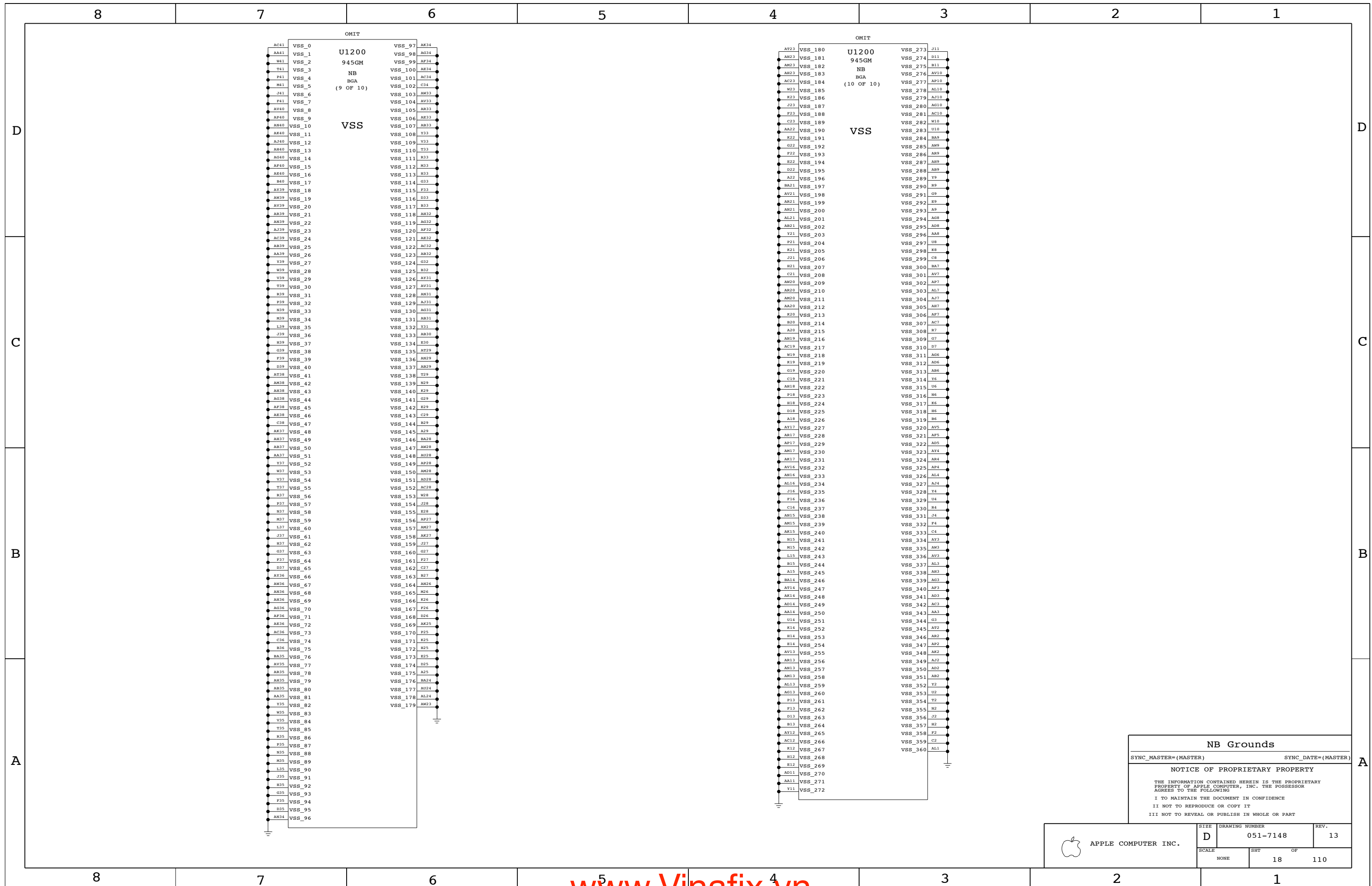
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APPLE COMPUTER INC.	SIZE D	DRAWING NUMBER 051-7148	REV. 13
	SCALE NONE	SHT 17	OF 110



NB Grounds

SYNC_MASTER=(MASTER) SYNC_DATE=(MASTER)

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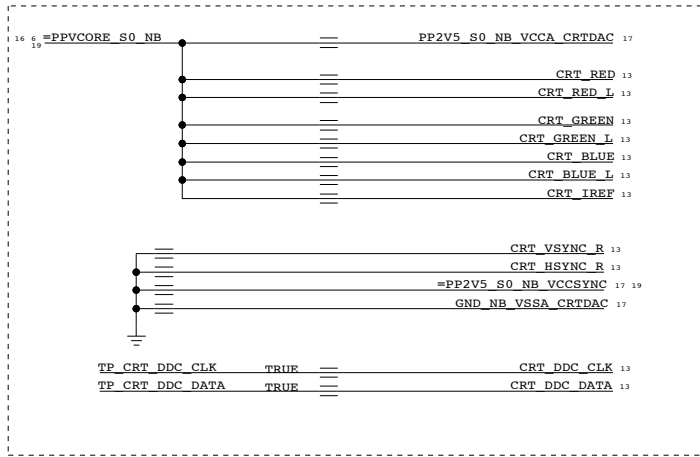
APPLE COMPUTER INC.	SIZE D	DRAWING NUMBER 051-7148	REV. 13
	SCALE NONE	SHIT 18	OF OF 110

Power Interface

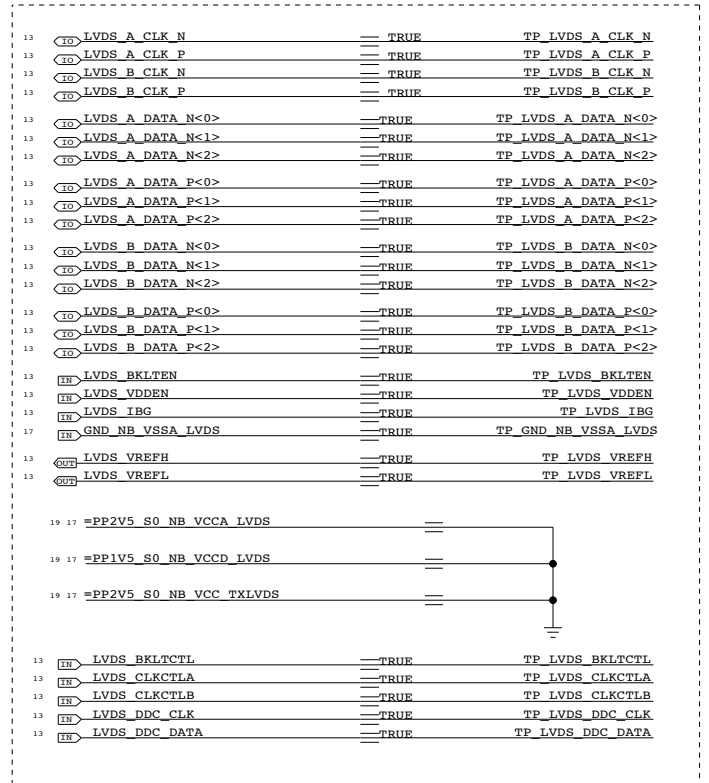
These are the power signals that leave the NB "block"

IN	=PP1V05_S0_FSB_NB	5 6 12
IN	=PPVCORE_S0_NB	6 16 19
IN	=PP1V05_S0_NB	6
IN	=PP1V05_S0_NB_VTT	6 17 19
IN	=PP1V5_S0_NB	6 19
IN	=PP1V5_S0_NB_PCIE	6 13
IN	=PP1V5_S0_NB_PLL	6 19
IN	=PP1V5_S0_NB_TVDAC	6 19
IN	=PP1V5_S0_NB_VCCD_HMPLL	6 19
IN	=PP1V5_S0_NB_VCCD_LVDS	17 19
IN	=PP1V5_S0_NB_VCCAUX	6 16 17 19
IN	=PP1V8_S3_MEM_NB	6 14 16 19
IN	=PP2V5_S0_NB_VCCSYNCR	17 19
IN	=PP2V5_S0_NB_VCC_TXLVDS	17 19
IN	=PP2V5_S0_NB_VCCA_3GBG	6 17 19
IN	=PP2V5_S0_NB_VCCA_LVDS	17 19
IN	=PP3V3_S0_NB	6 14 20
IN	=PP3V3_S0_NB_TVDAC	6
IN	=PP3V3_S0_NB_VCC_HV	6 17 19

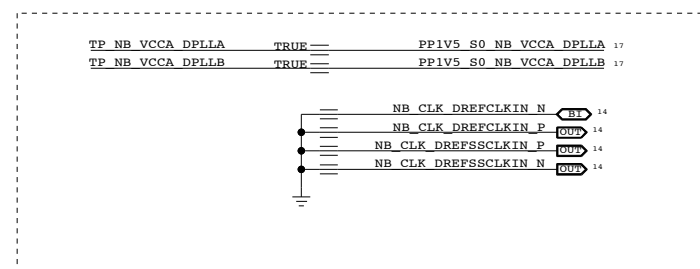
TVOUT DISABLE



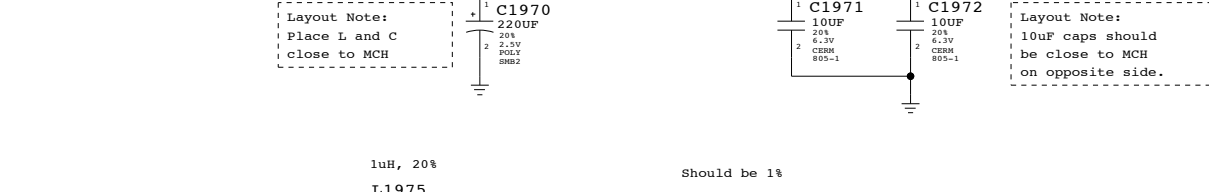
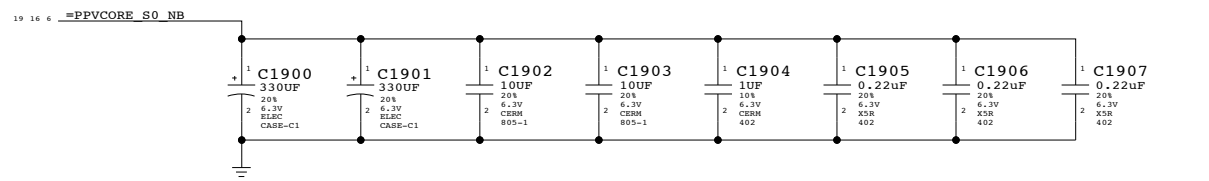
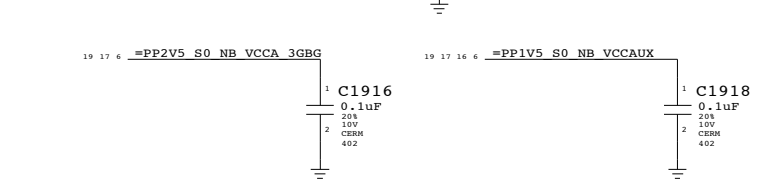
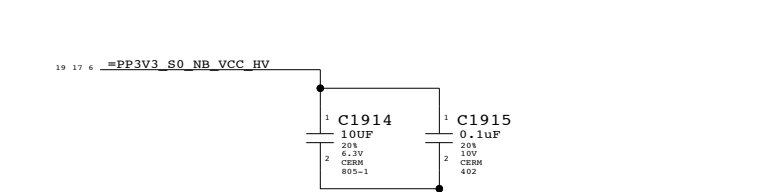
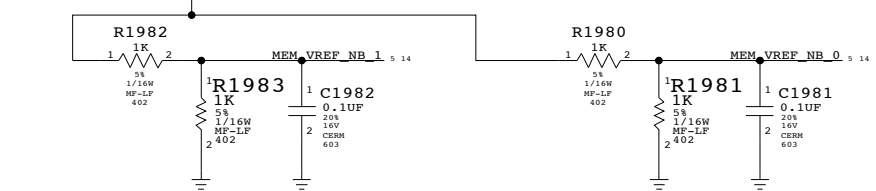
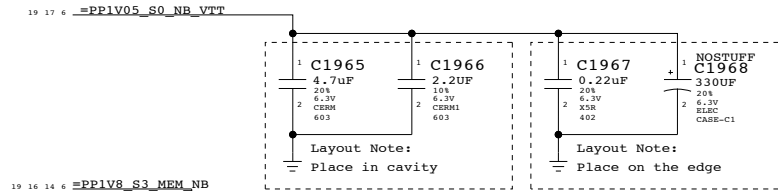
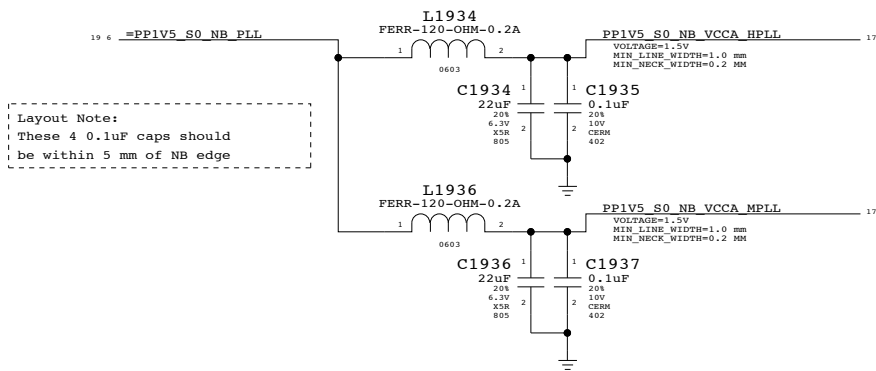
LVDS DISABLE



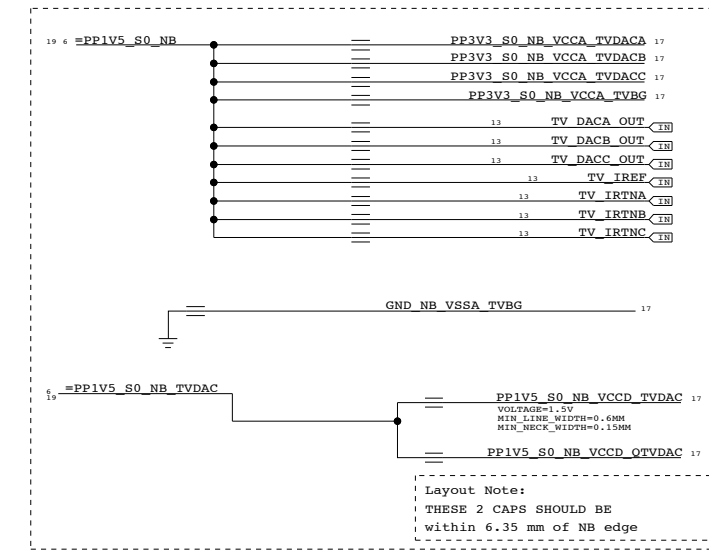
DISPLAY DISABLE



Layout Note:
These 4 0.1uF caps should be within 5 mm of NB edge



TVOUT DISABLE



Layout Note:
THESE 2 CAPS SHOULD BE WITHIN 6.35 mm OF NB EDGE

NB (GM) Decoupling

SYNC_MASTER=(MASTER) SYNC_DATE=(MASTER)

NOTICE OF PROPRIETARY PROPERTY

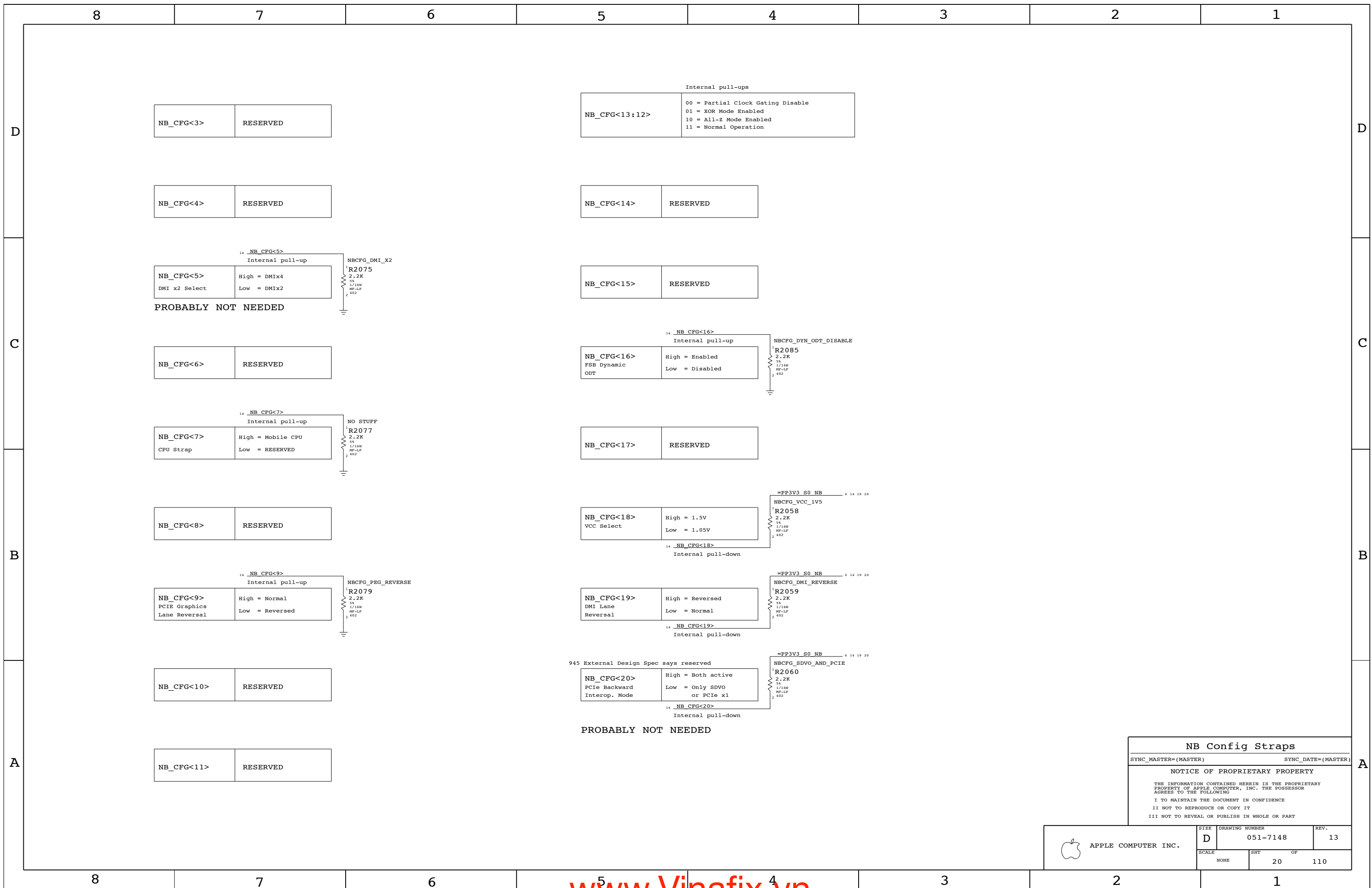
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	D	051-7148	13
SCALE	SHT	OF	
NONE	19	110	



NB Config Straps

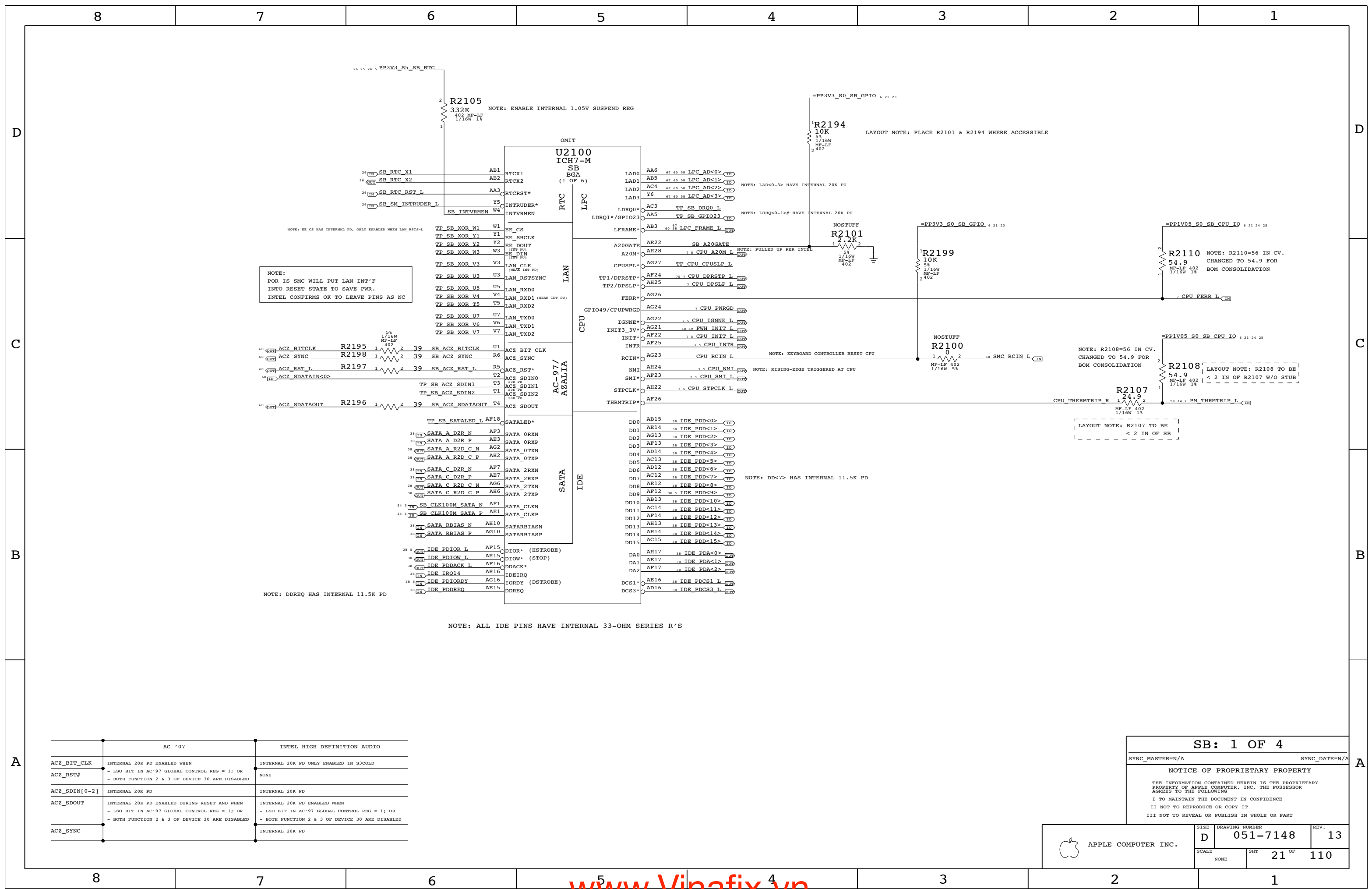
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	D	051-7148	13
SCALE		SHT	OF
NONE		20	110



NOTE:
 POR IS SMC WILL PUT LAN INT'F
 INTO RESET STATE TO SAVE PWR.
 INTEL CONFIRMS OK TO LEAVE PINS AS NC

NOTE: DDREQ HAS INTERNAL 11.5K PD

NOTE: ALL IDE PINS HAVE INTERNAL 33-OHM SERIES R'S

AC '07	INTEL HIGH DEFINITION AUDIO
ACZ_BIT_CLK	INTERNAL 20K PD ENABLED WHEN - LSO BIT IN AC'97 GLOBAL CONTROL REG = 1; OR
ACZ_RST#	NONE
ACZ_SDIN[0-2]	INTERNAL 20K PD
ACZ_SDOUT	INTERNAL 20K PD ENABLED DURING RESET AND WHEN - LSO BIT IN AC'97 GLOBAL CONTROL REG = 1; OR - BOTH FUNCTION 2 & 3 OF DEVICE 30 ARE DISABLED
ACZ_SYNC	INTERNAL 20K PD

SB: 1 OF 4

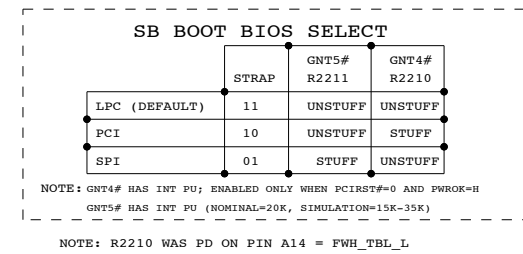
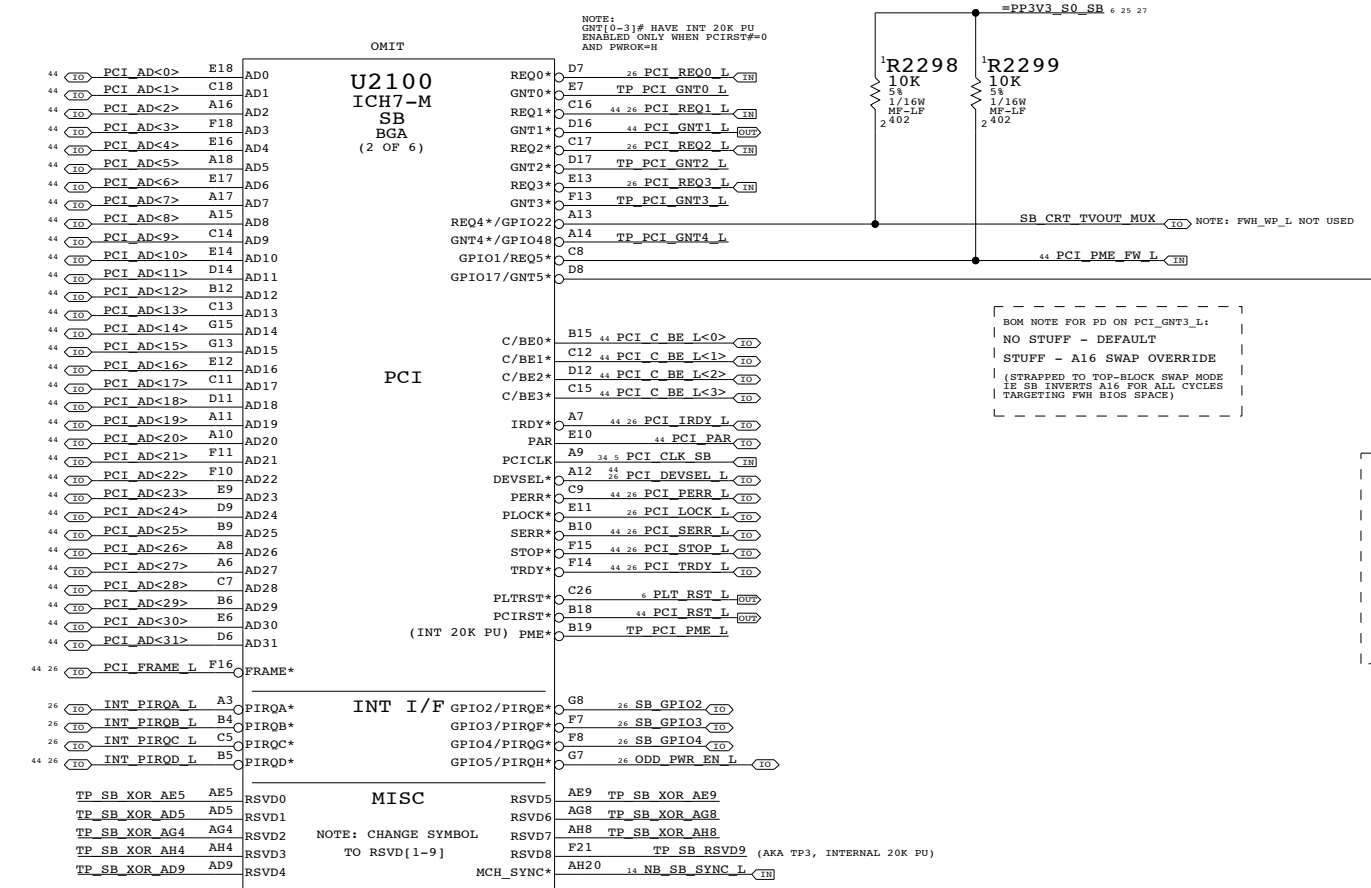
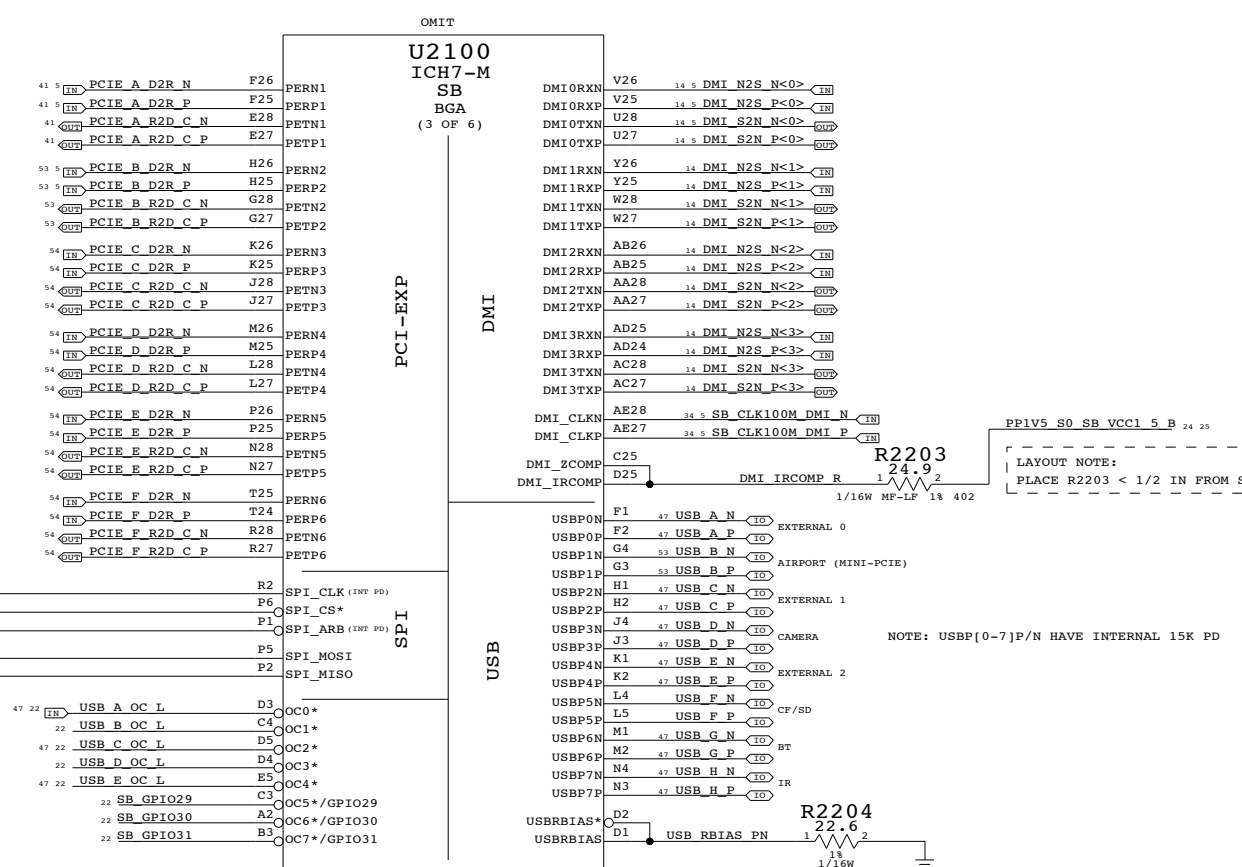
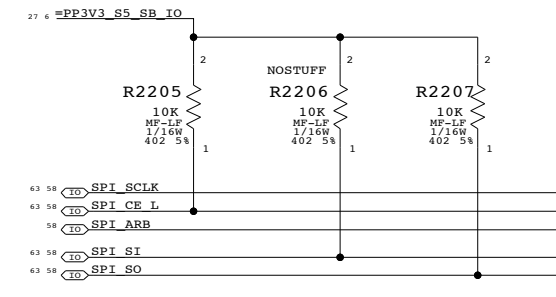
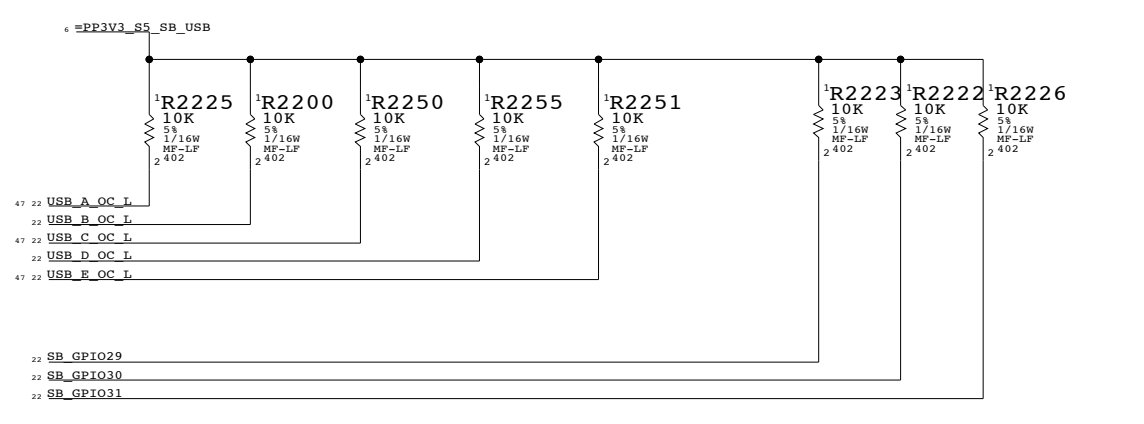
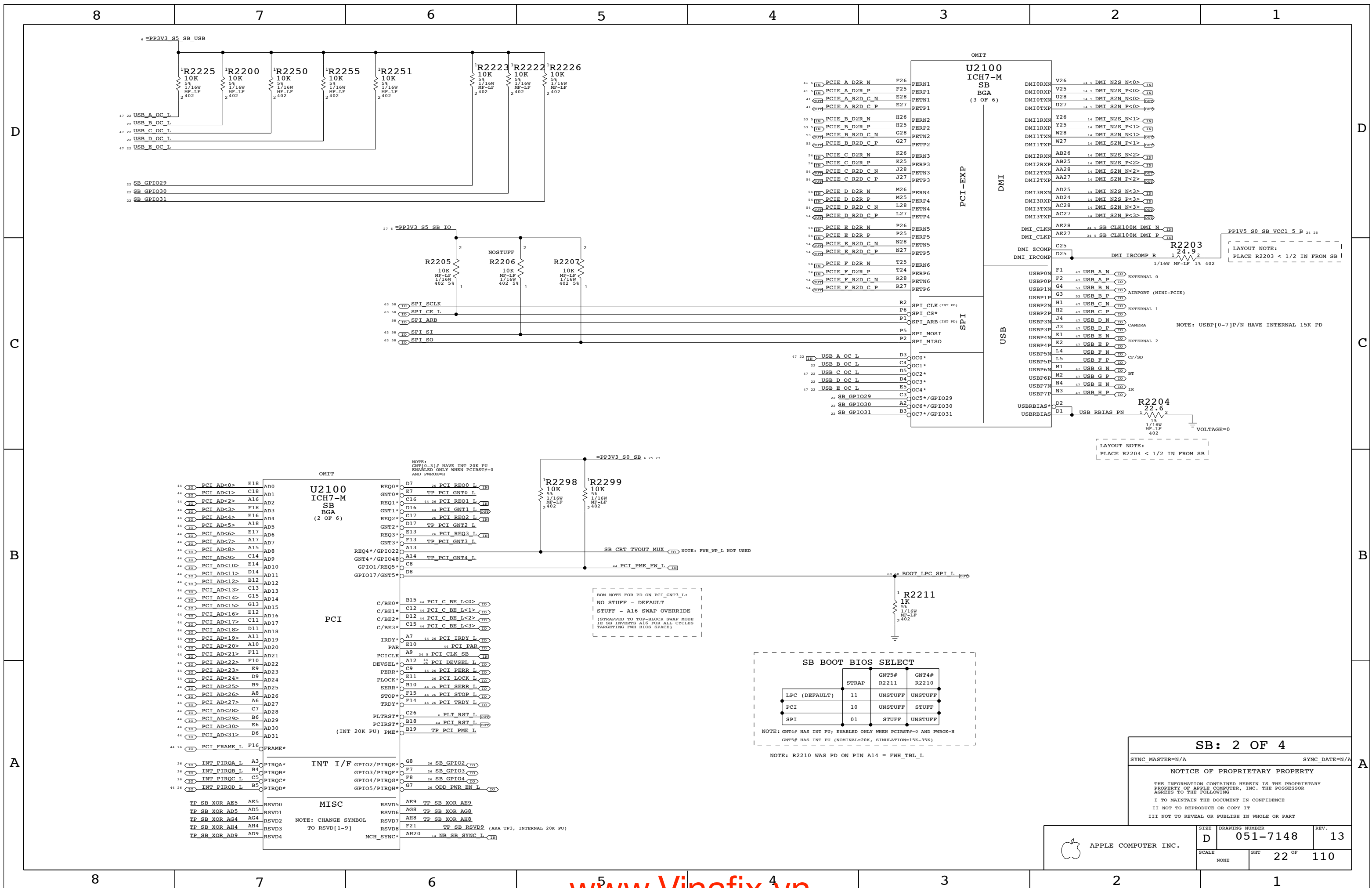
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	D	051-7148	13
SCALE	SHT	21 OF 110	
NONE			



SB: 2 OF 4

SYNC_MASTER=N/A SYNC_DATE=N/A

NOTICE OF PROPRIETARY PROPERTY

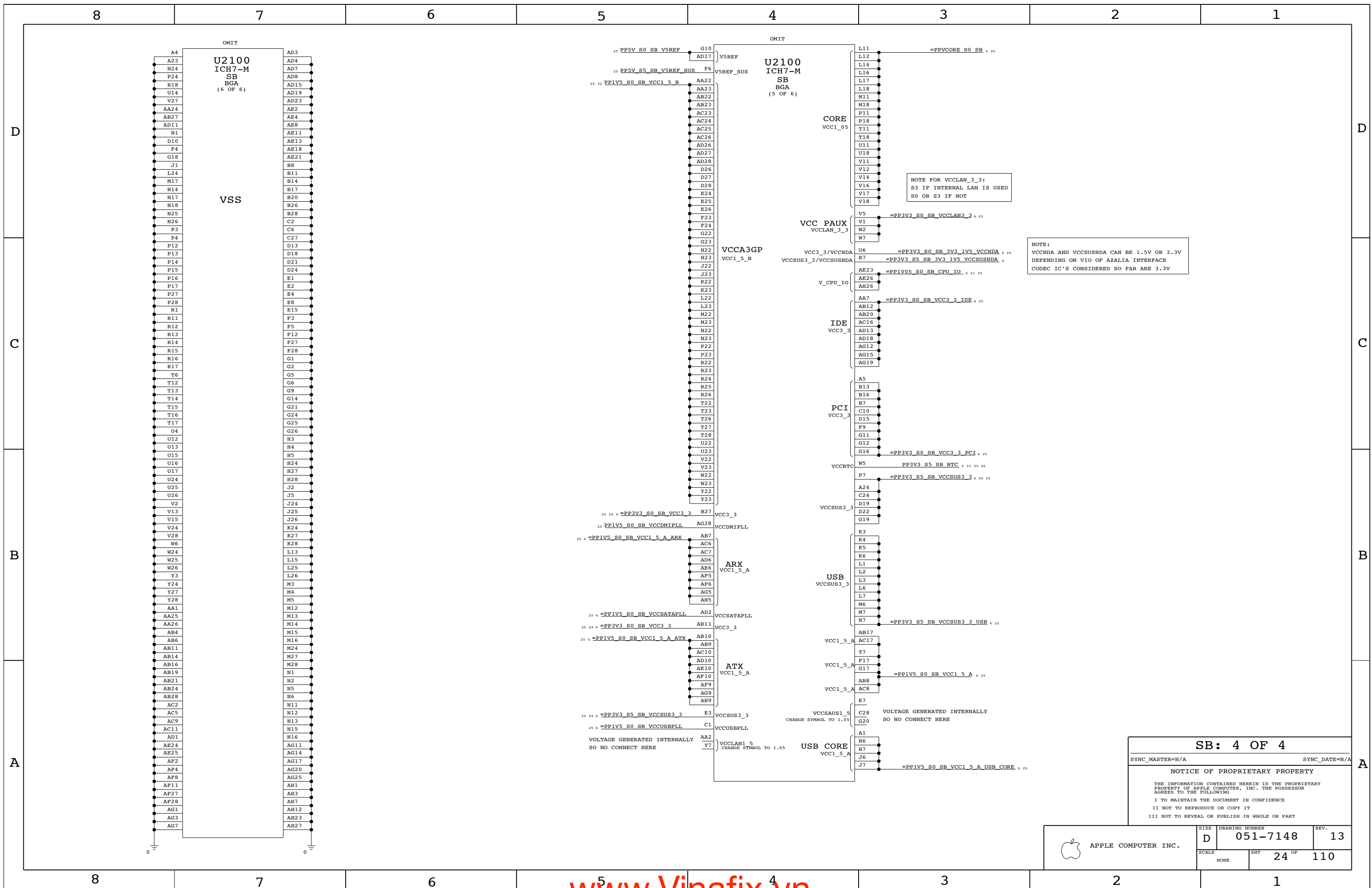
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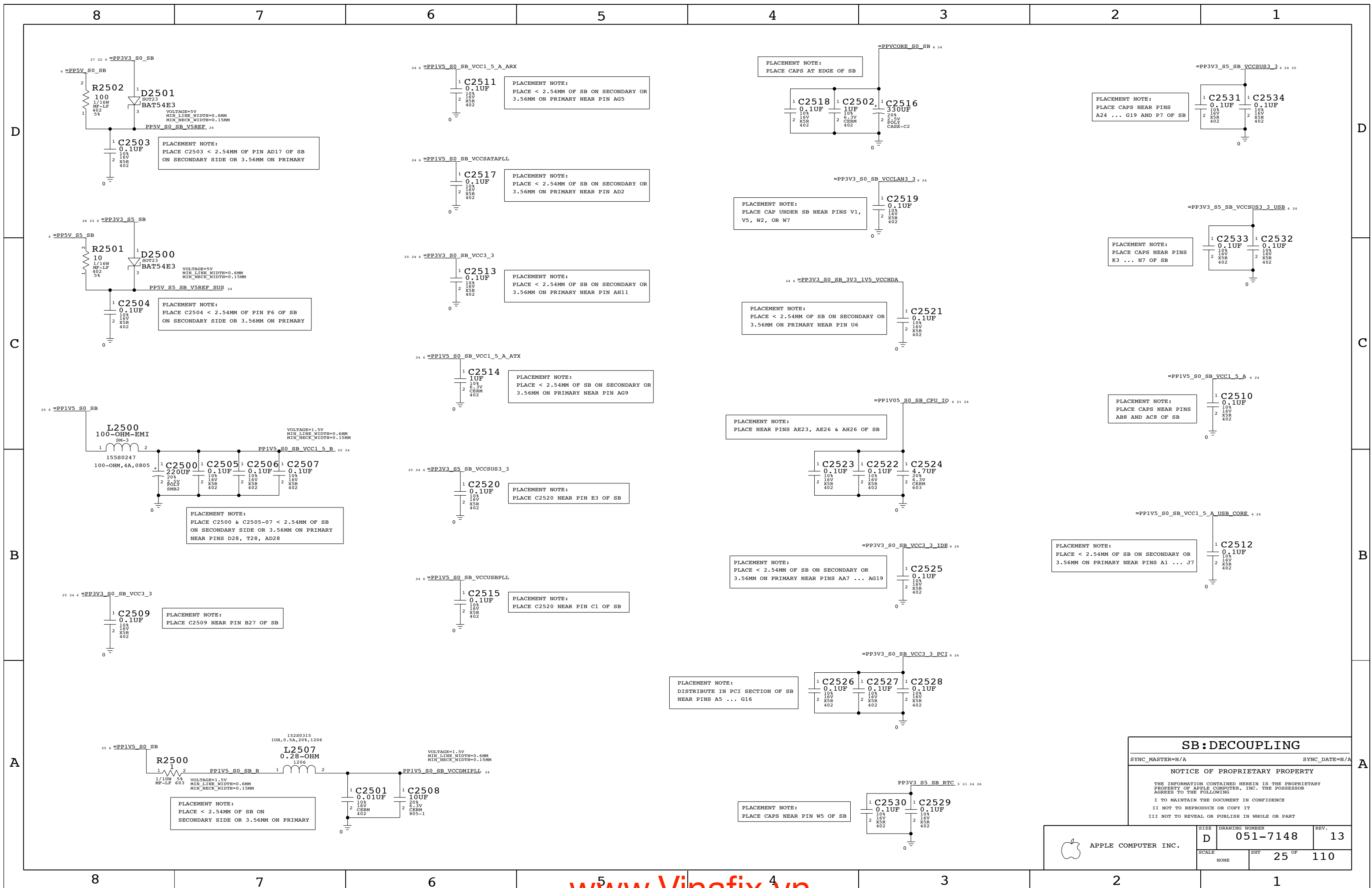
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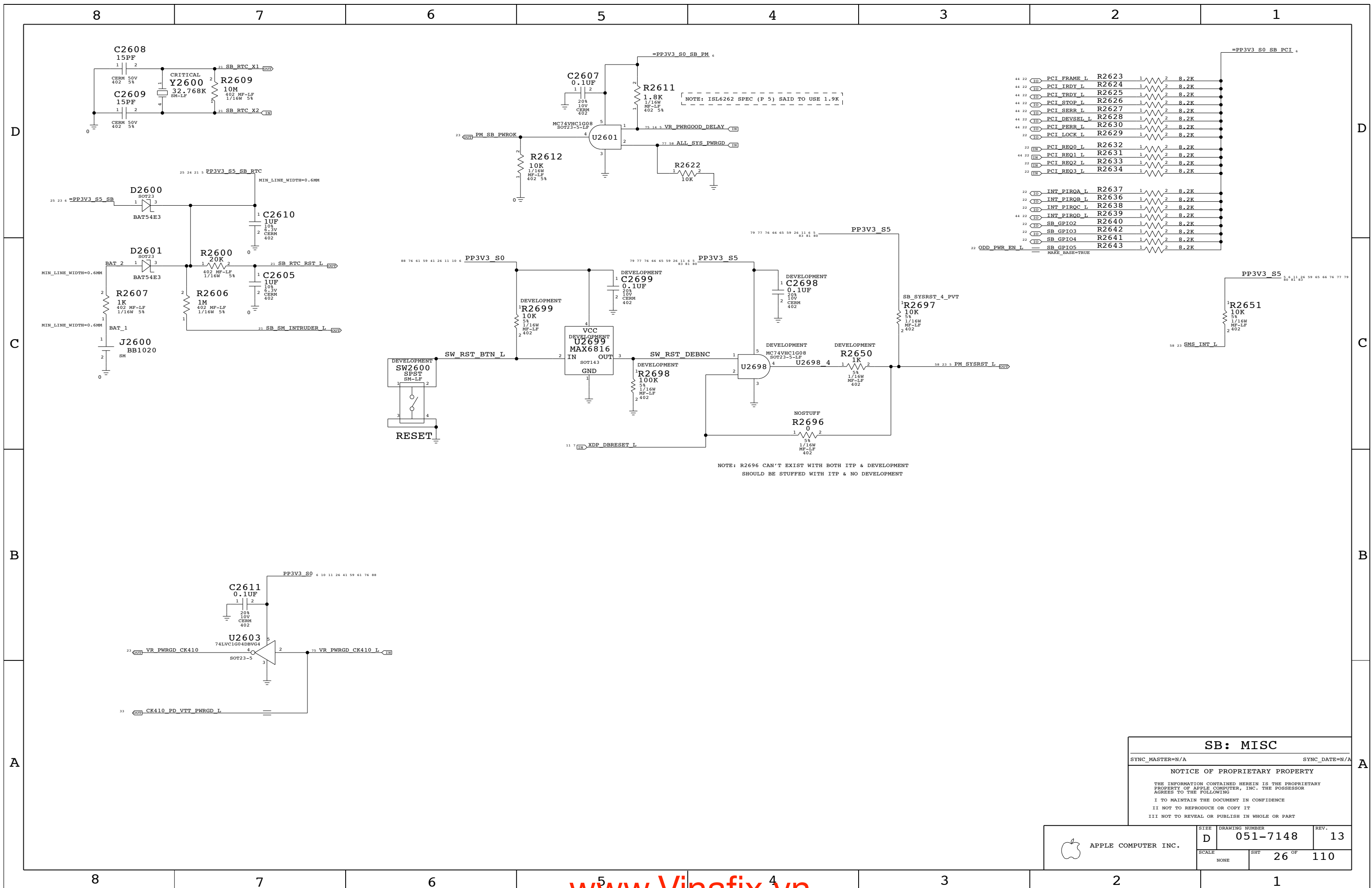
APPLE COMPUTER INC.	SIZE	DRAWING NUMBER	REV.
	D	051-7148	13
SCALE	SHT	22 OF	110
NONE			





SB: DECOUPLING
 SYNC_MASTER=N/A SYNC_DATE=N/A
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	D	051-7148	13
SCALE	SHT	25 OF	110
NONE			



SB: MISC

SYNC_MASTER=N/A SYNC_DATE=N/A

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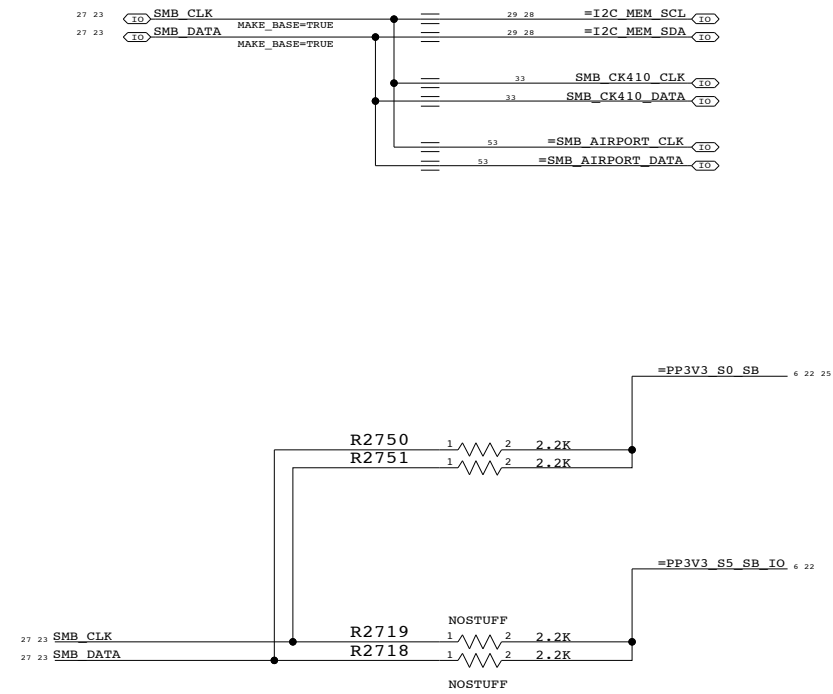
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II NOT TO REPRODUCE OR COPY IT

III NOT TO REVEAL OR PUBLISH IN WHOLE OR PART

APPLE COMPUTER INC.	SIZE	DRAWING NUMBER	REV.
	D	051-7148	13
SCALE	SHT	OF	
NONE	26	110	

SB I2C BUSSES




SB: SMB HUB

SYNC_MASTER=N/A SYNC_DATE=N/A

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 APPLE COMPUTER INC.	SIZE D	DRAWING NUMBER 051-7148	REV. 13
	SCALE NONE	SHT 27 OF	110

Page Notes

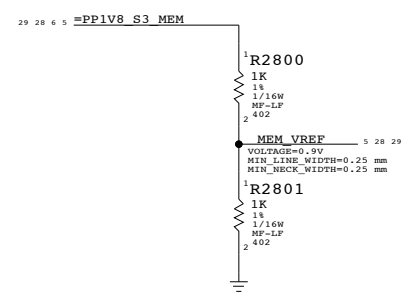
Power aliases required by this page:
 - =PP1V8_S3_MEM
 - =PPSPD_S0_MEM (2.5V - 3.3V)

Signal aliases required by this page:
 - =I2C_MEM_SCL
 - =I2C_MEM_SDA

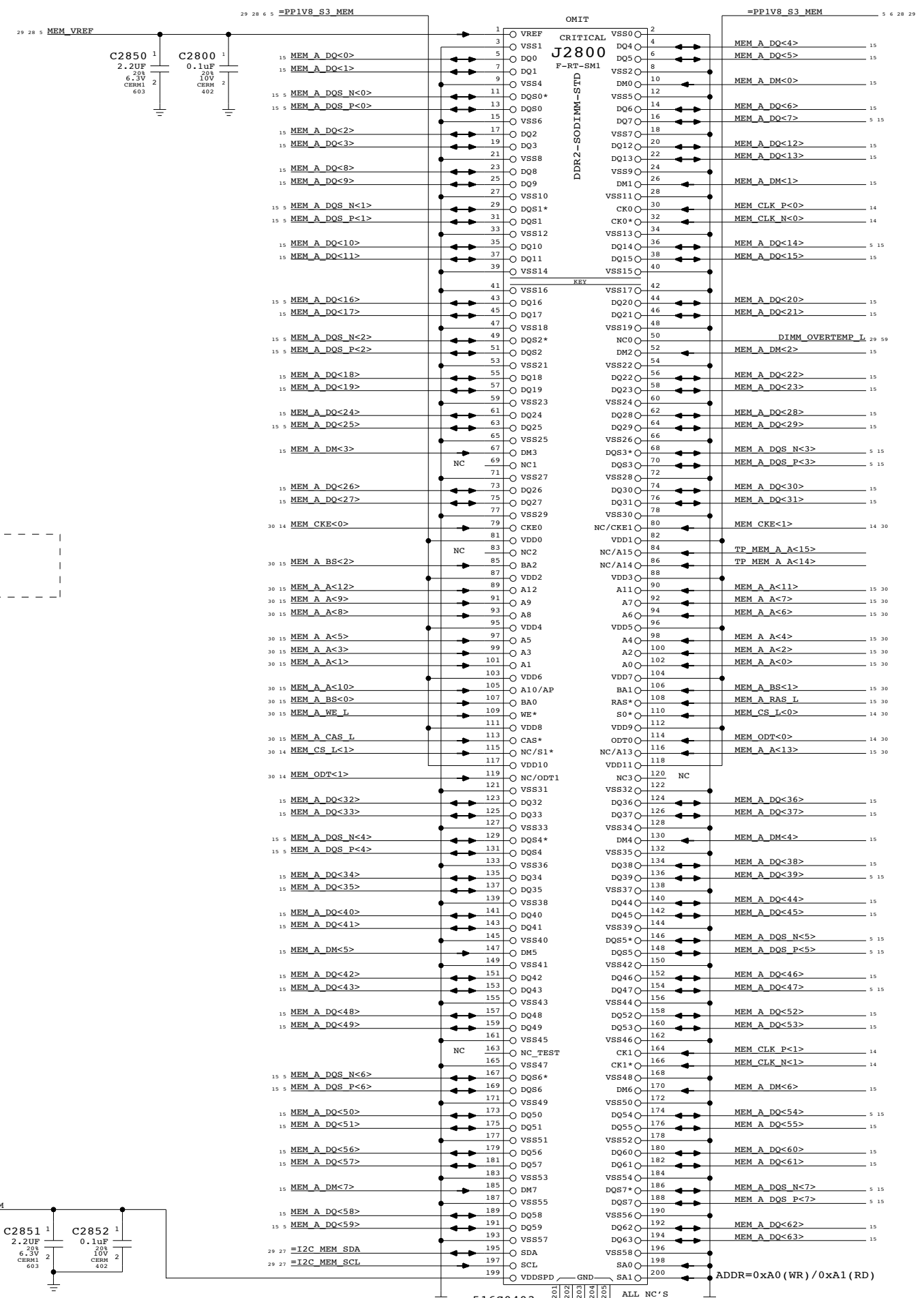
BOM options provided by this page:
 (NONE)

DDR2 VRef

One 0.1uF per connector



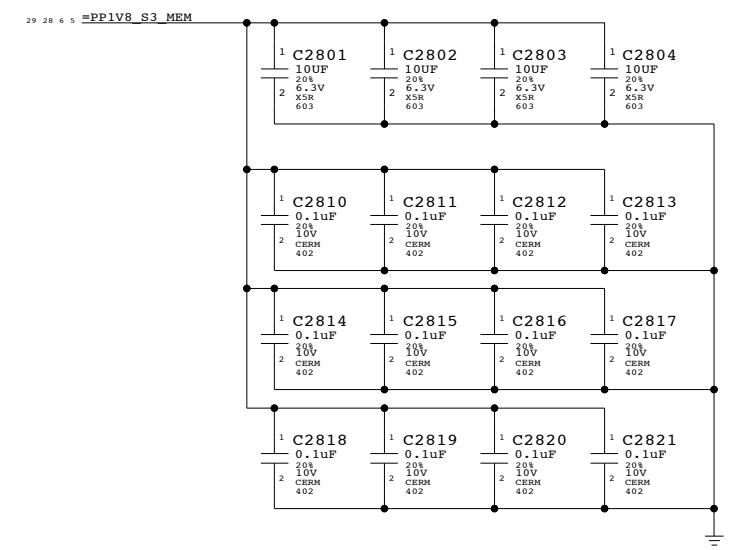
Yellow uses 10K divider and TLV2463 to drive MCH and DIMM connectors.
 (See Capell Valley pg 47)



PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
516S0403	1	DDR2 SODIMM STD CONN	J2800	CRITICAL	

DDR2 Bypass Caps

(For return current)



DDR2 SO-DIMM Connector A	
SYNC_MASTER=(MASTER)	SYNC_DATE=(MASTER)
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APPLE COMPUTER INC.	SIZE	DRAWING NUMBER	REV.
	D	051-7148	13
SCALE	SHT	OF	
NONE	28	110	

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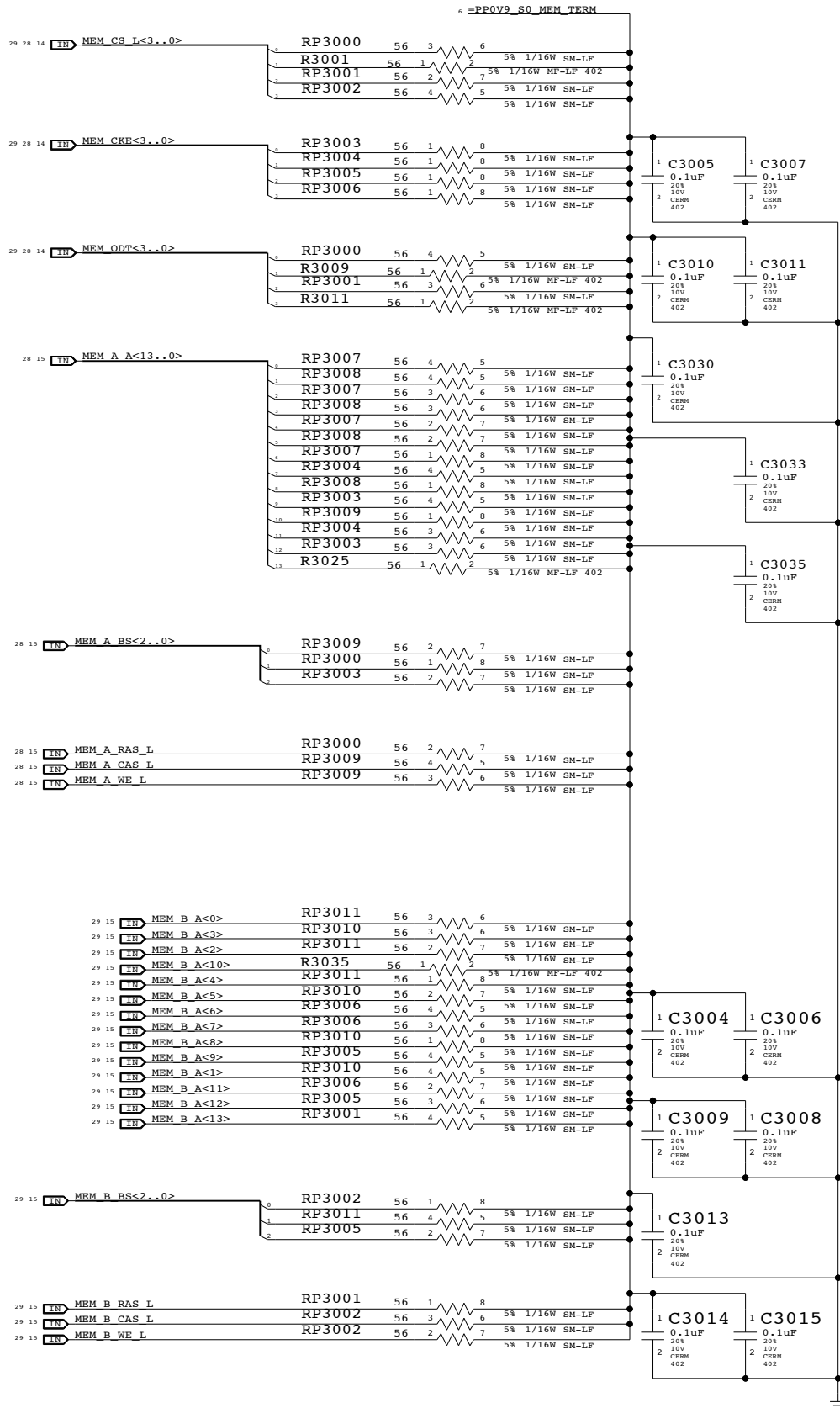
4

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1

One cap for each side of every RPAK, one cap for every two discrete resistors
BOMOPTION shown at the top of each group applies to every part below it



Memory Active Termination

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	D	051-7148	13
SCALE	SHT	OF	
NONE	30	110	

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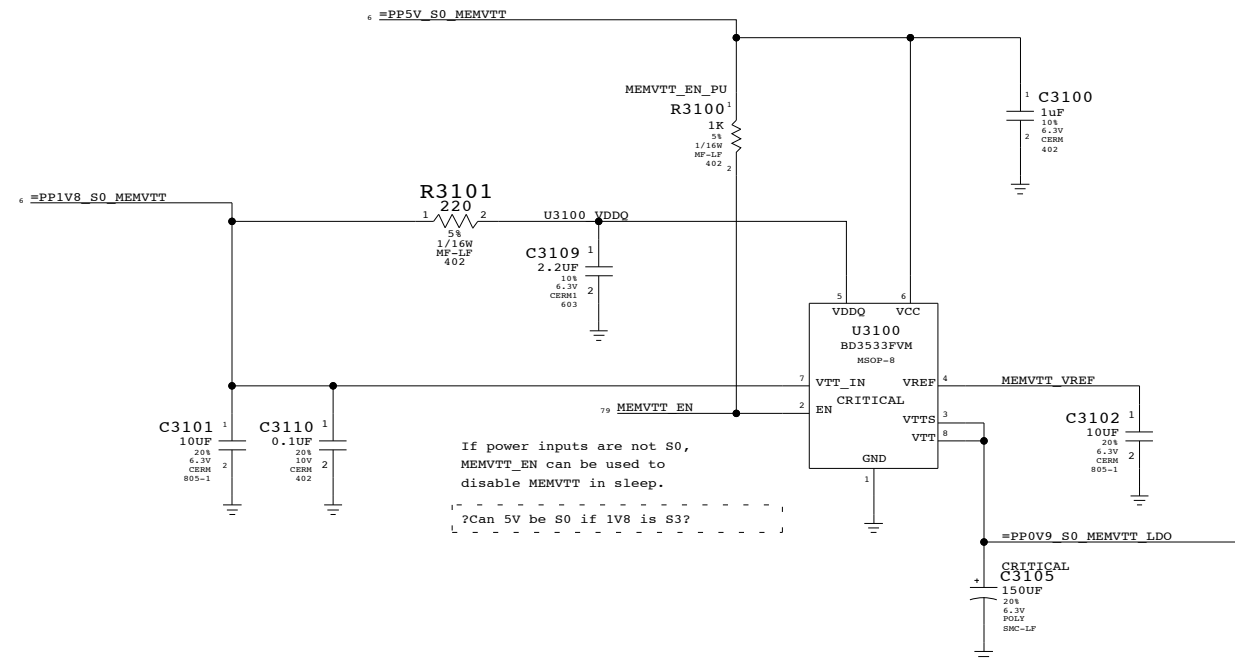
Page Notes

Power aliases required by this page:
 - =PP5V_S0_MEMVTT
 - =PP1V8_S0_MEMVTT
 - =PP0V9_S0_MEMVTT_LDO

Signal aliases required by this page:
 (NONE)

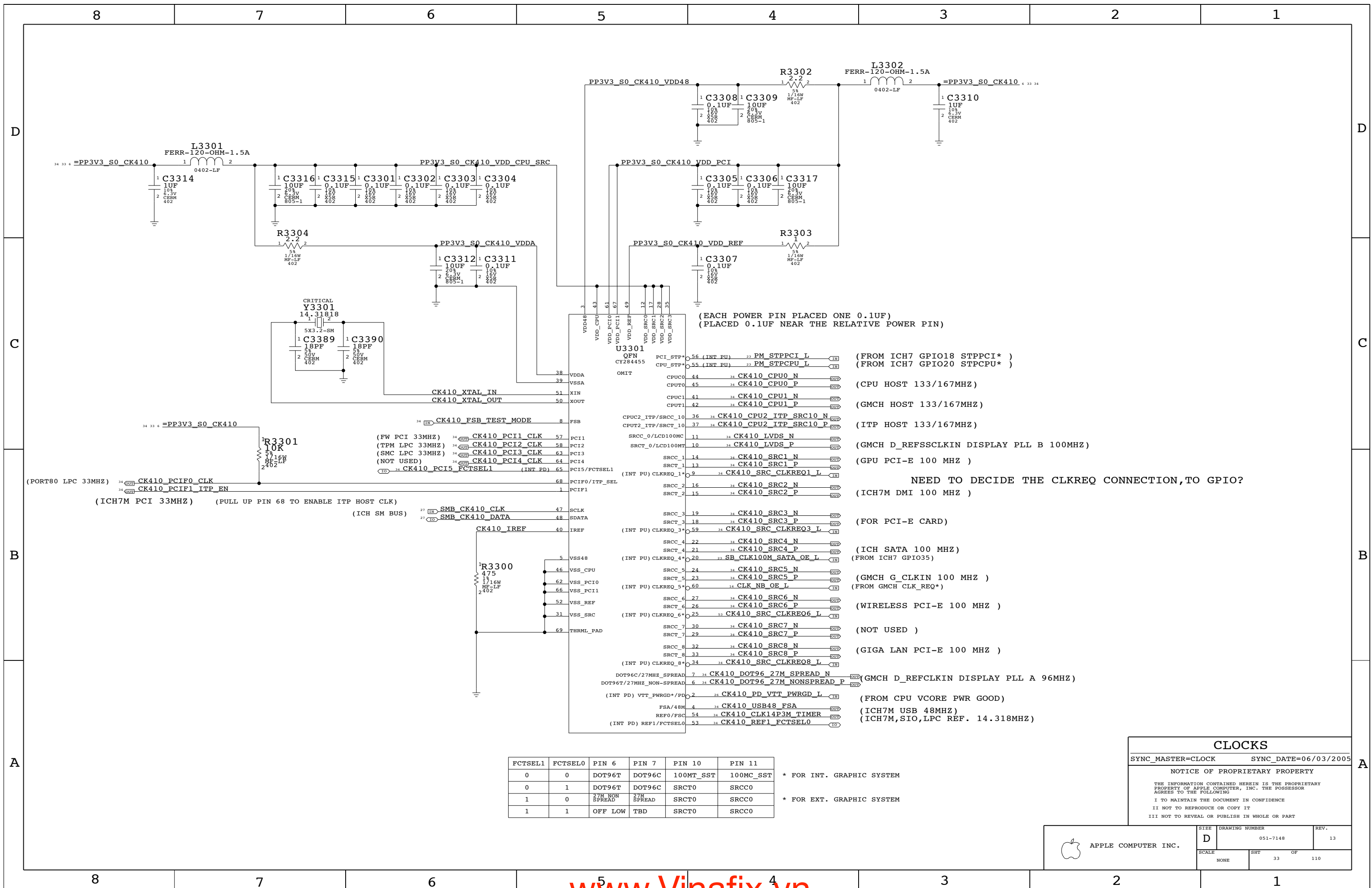
BOM options provided by this page:
 (NONE)

DDR2 Vtt Regulator



Memory Vtt Supply
 SYNC_MASTER=(MASTER) SYNC_DATE=(MASTER)
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	D	051-7148	13
SCALE	SHT	OF	
NONE	31	110	



(EACH POWER PIN PLACED ONE 0.1UF)
(PLACED 0.1UF NEAR THE RELATIVE POWER PIN)

(FROM ICH7 GPIO18 STPPPCI*)
(FROM ICH7 GPIO20 STPCPU*)

(CPU HOST 133/167MHZ)

(GMCH HOST 133/167MHZ)

(ITP HOST 133/167MHZ)

(GMCH D_REFSSCLKIN DISPLAY PLL B 100MHZ)

(GPU PCI-E 100 MHZ)

NEED TO DECIDE THE CLKREQ CONNECTION, TO GPIO?

(ICH7M DMI 100 MHZ)

(FOR PCI-E CARD)

(ICH SATA 100 MHZ)

(FROM ICH7 GPIO35)

(GMCH G_CLKIN 100 MHZ)

(FROM GMCH CLK_REQ*)

(WIRELESS PCI-E 100 MHZ)

(NOT USED)

(GIGA LAN PCI-E 100 MHZ)

(GMCH D_REFCLKIN DISPLAY PLL A 96MHZ)

(FROM CPU VCORE PWR GOOD)

(ICH7M USB 48MHZ)

(ICH7M,SIO,LPC REF. 14.318MHZ)

FCTSEL1	FCTSEL0	PIN 6	PIN 7	PIN 10	PIN 11
0	0	DOT96T	DOT96C	100MT_SST	100MC_SST
0	1	DOT96T	DOT96C	SRCT0	SRCC0
1	0	27M_NON_SPREAD	27M_SPREAD	SRCT0	SRCC0
1	1	OFF LOW	TBD	SRCT0	SRCC0

* FOR INT. GRAPHIC SYSTEM

* FOR EXT. GRAPHIC SYSTEM

CLOCKS

SYNC_MASTER=CLOCK SYNC_DATE=06/03/2005

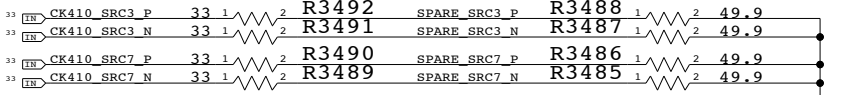
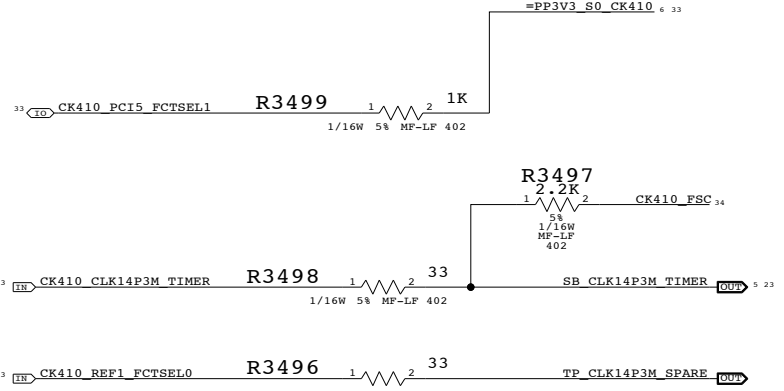
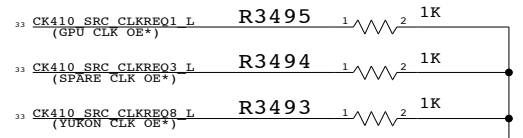
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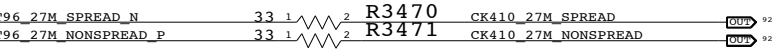
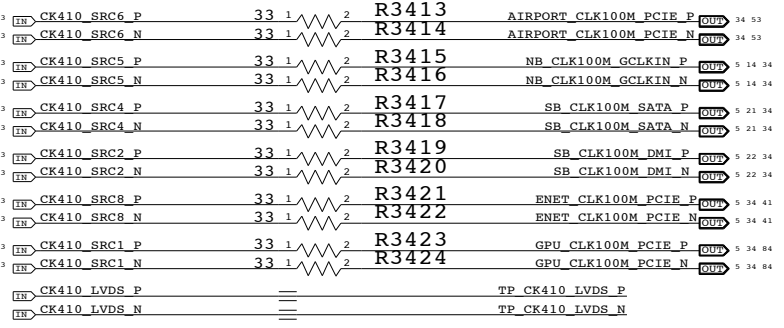
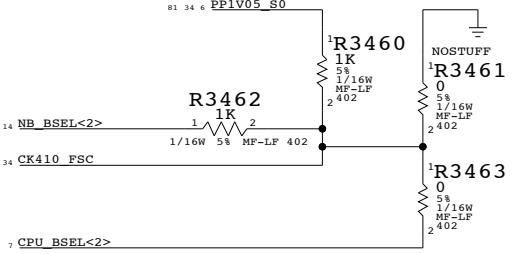
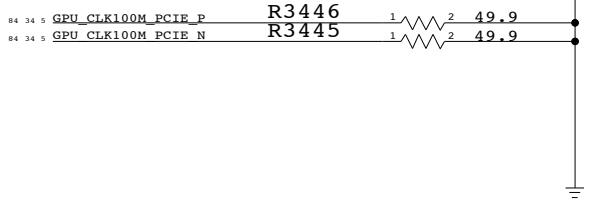
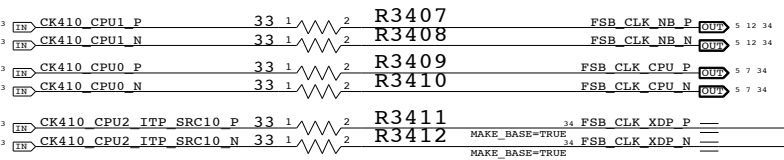
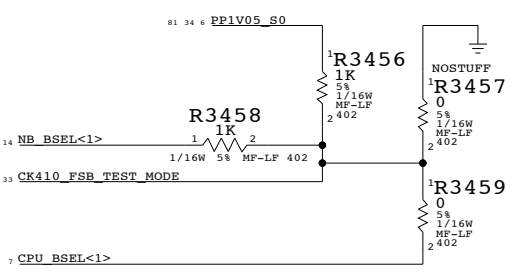
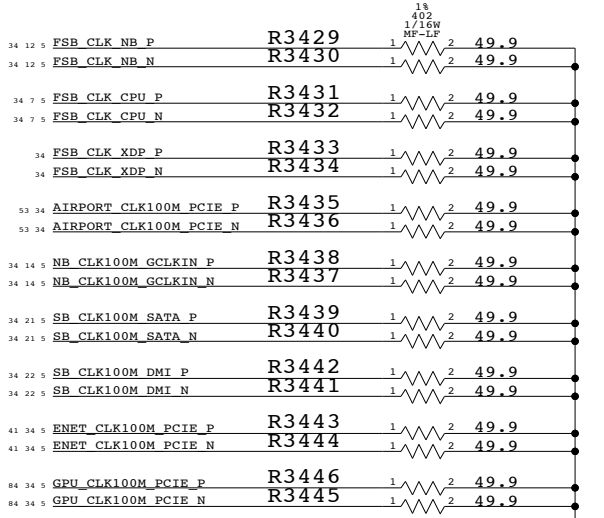
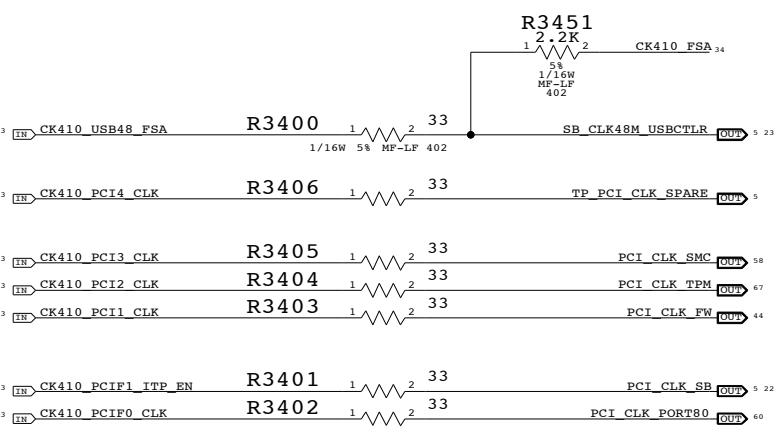
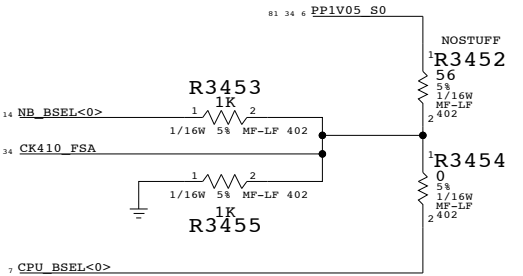
APPLE COMPUTER INC.	SIZE	DRAWING NUMBER	REV.
	D	051-7148	13
SCALE	SHT	OF	110
NONE	33		

NOTE: USE THESE PULL-DOWNS IF NOT CONNECTED TO GPIO'S



FSB FREQUENCY SELECT:

	STUFF	NO STUFF
CPU DRIVEN	R3454 R3455 R3461	R3452 R3453 R3463
533MHZ (133MHZ CPU CLK)	R3452 R3453 R3461	R3454 R3455 R3463
667MHZ (166MHZ CPU CLK)	R3452 R3453 R3461	R3454 R3455 R3463



CLOCKS: TERMINATIONS

SYNC_MASTER=N/A SYNC_DATE=N/A

NOTICE OF PROPRIETARY PROPERTY

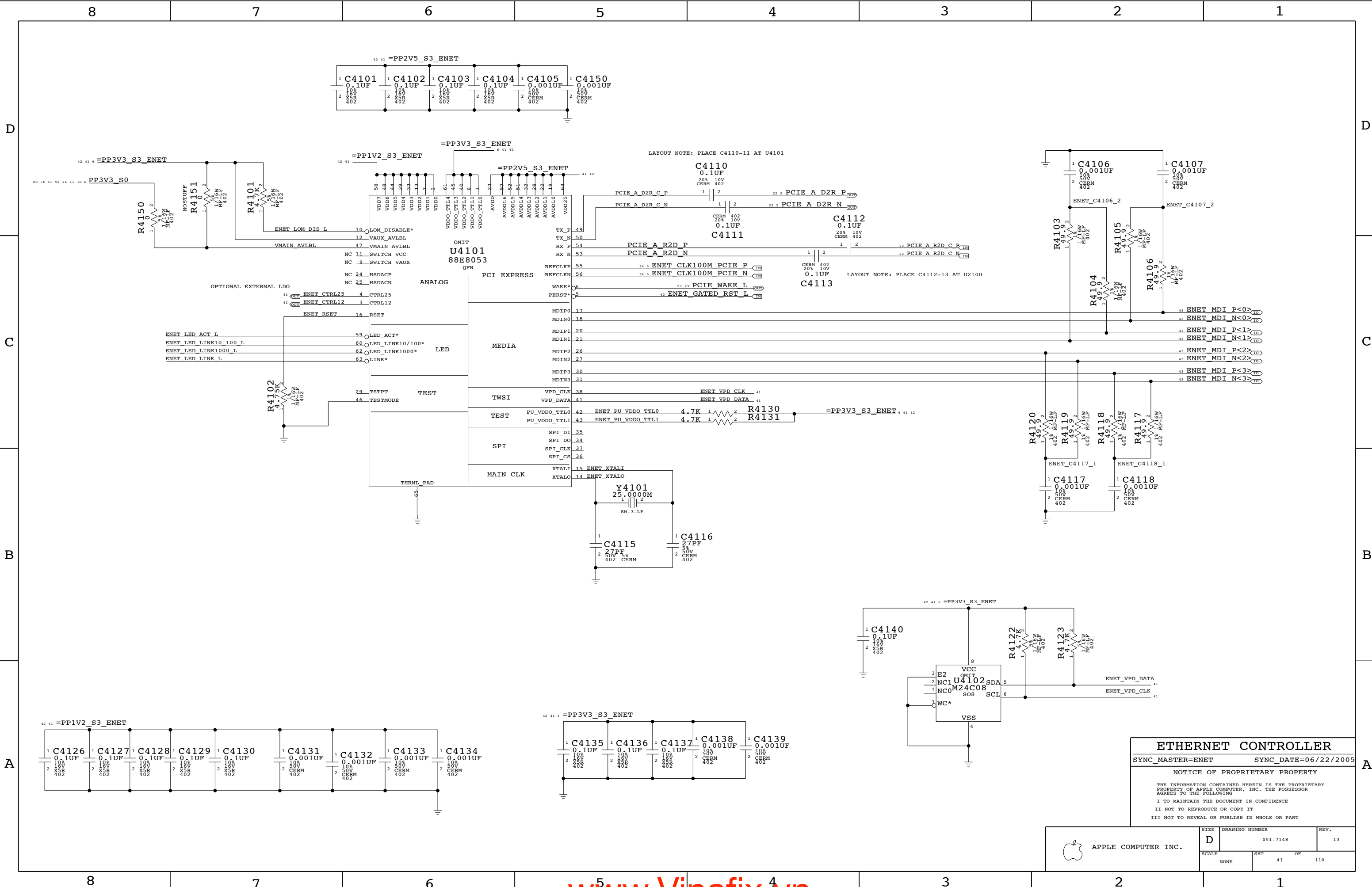
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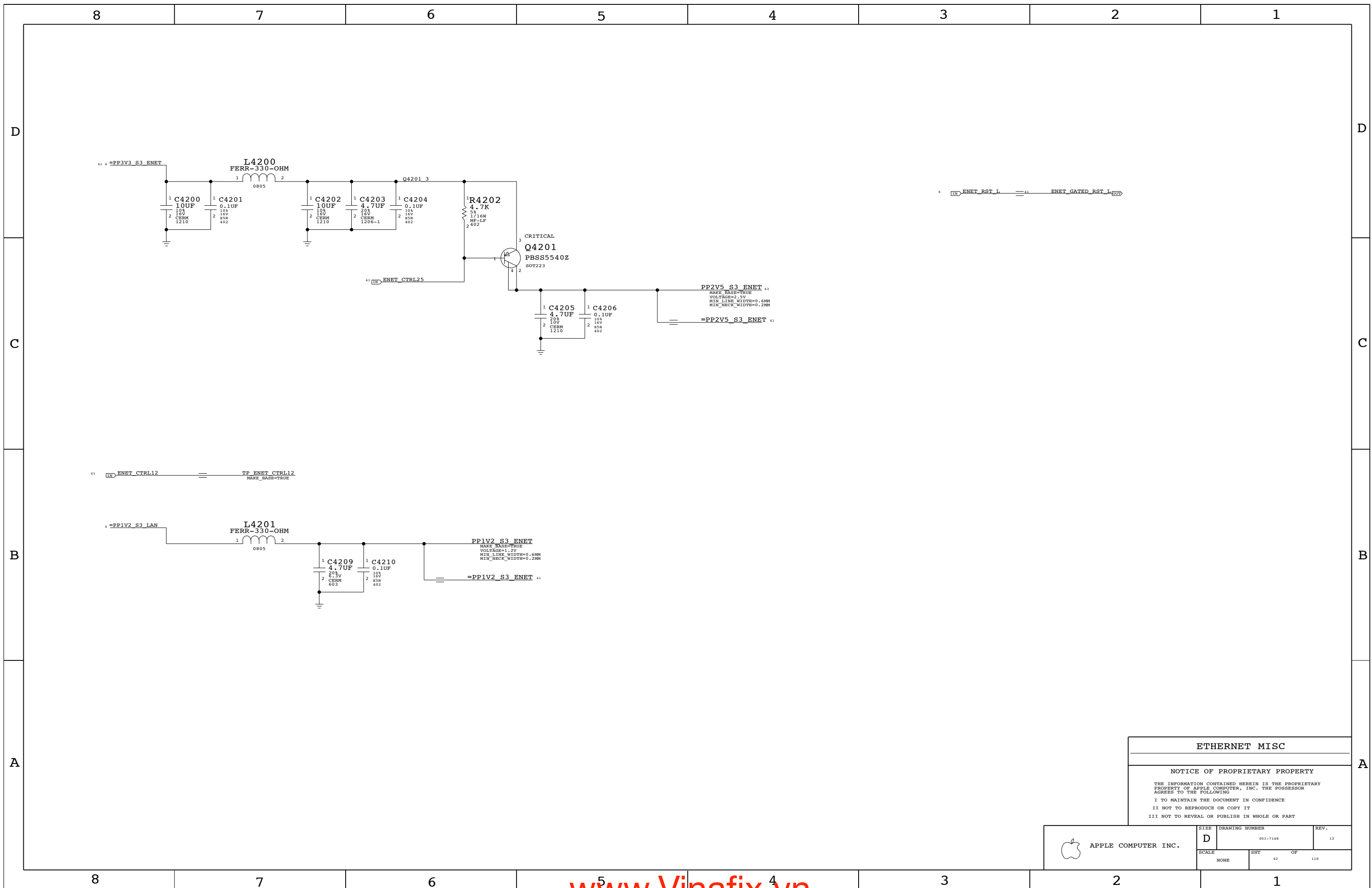
APPLE COMPUTER INC.	SIZE	DRAWING NUMBER	REV.
	D	051-7148	13
SCALE	NONE	SHT	OF
		34	110



ETHERNET CONTROLLER
 SYNC_MASTER=ENET SYNC_DATE=06/22/2005

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	SCALE NONE	SHEET 41	OF 110



ETHERNET MISC

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	SCALE NONE	SHEET 42	OF 110

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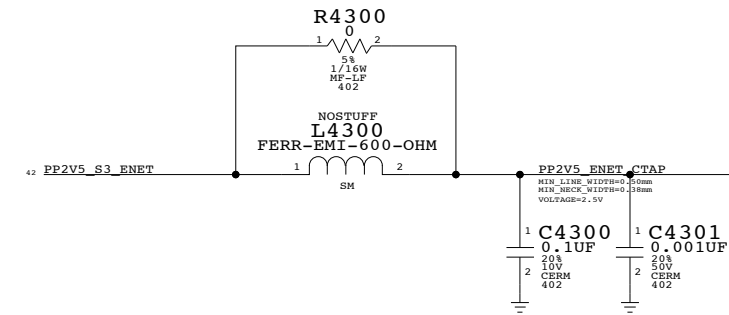
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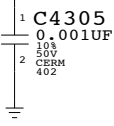
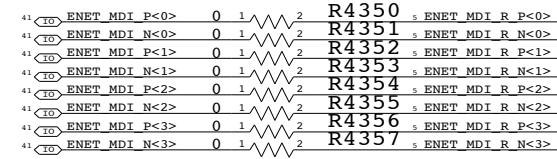
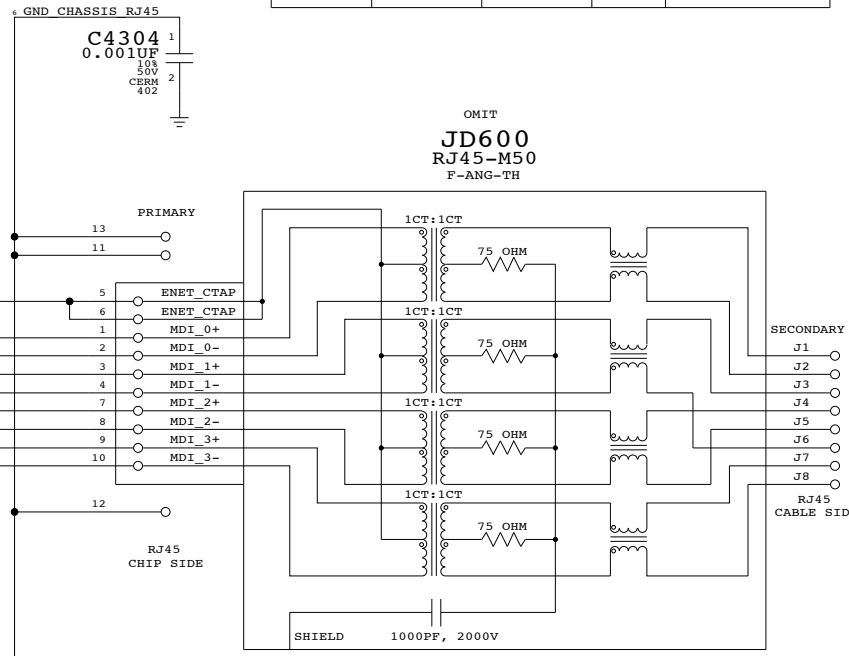
A

A



PART#	QTY	DESCRIPTION	REFERENCE DESIGNATOR(S)	CRITICAL	BOM OPTION
514-0366	1	FOXCONN AND DELTA RJ45	JD600	CRITICAL	

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:



ETHERNET CONNECTOR

NOTICE OF PROPRIETARY PROPERTY

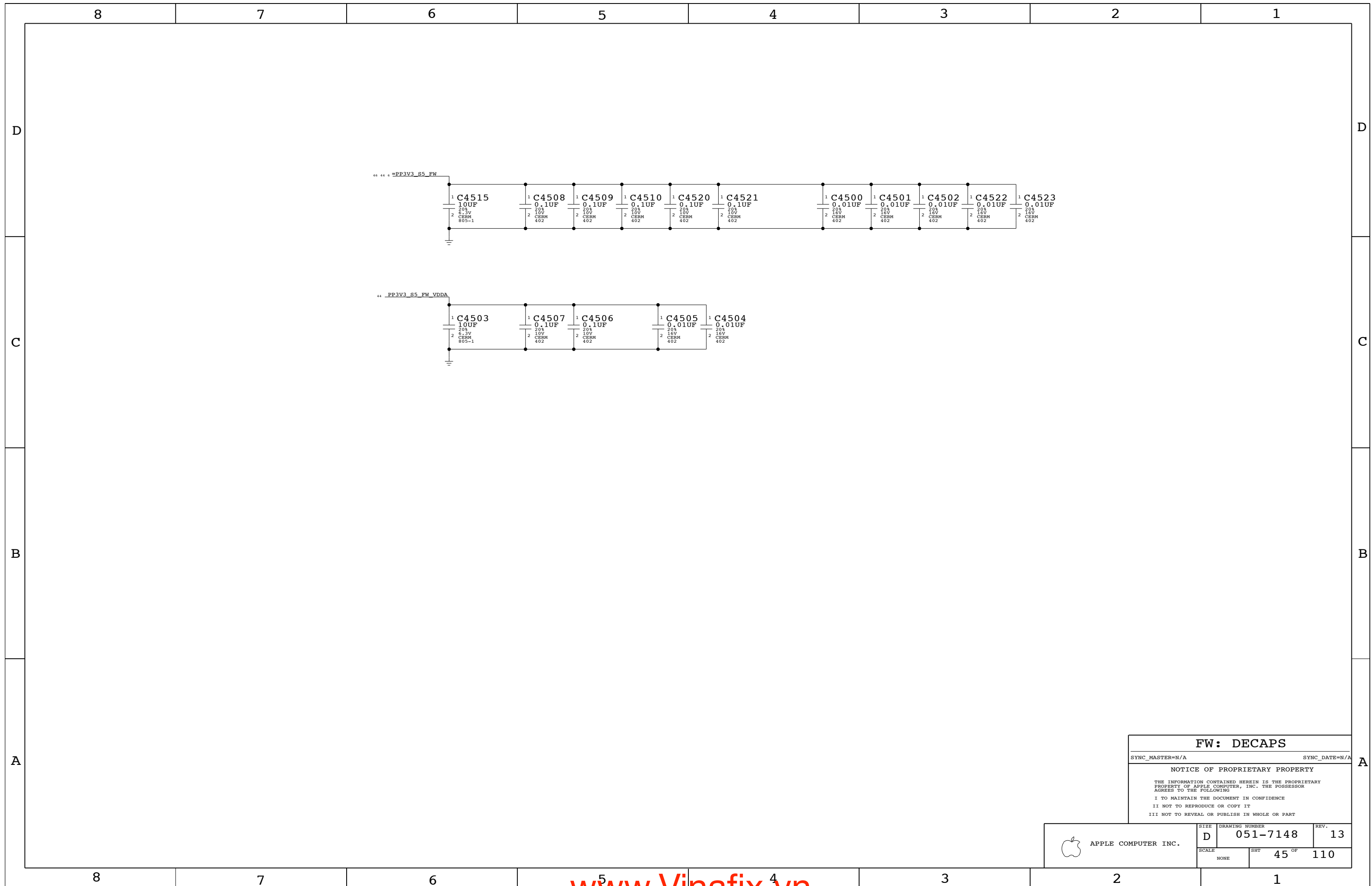
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SCALE		SHT	OF
NONE		43	110



FW: DECAPS

SYNC_MASTER=N/A SYNC_DATE=N/A


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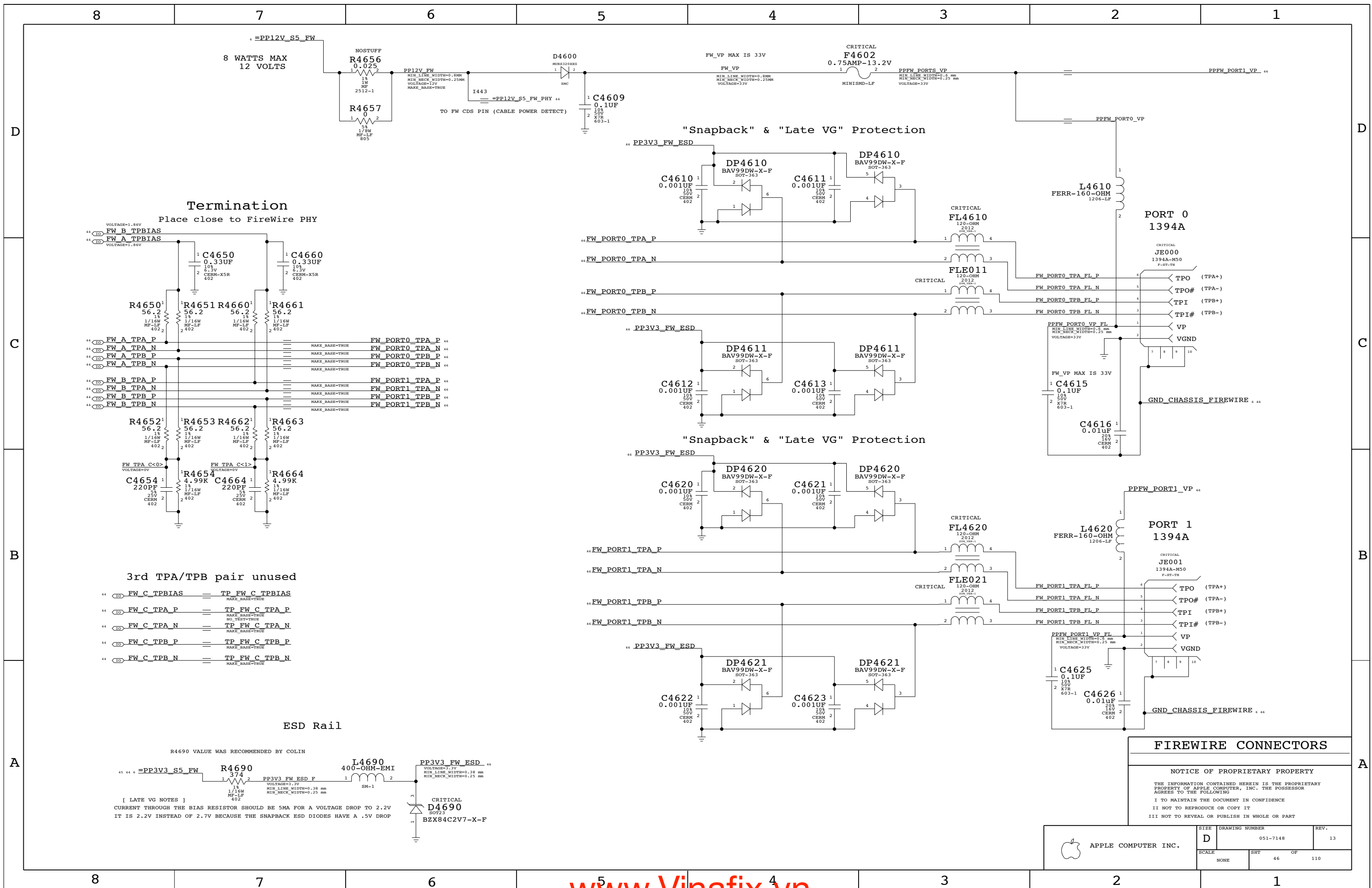
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	D	051-7148	13
SCALE	SHT		
NONE	45 OF		110



FIREWIRE CONNECTORS

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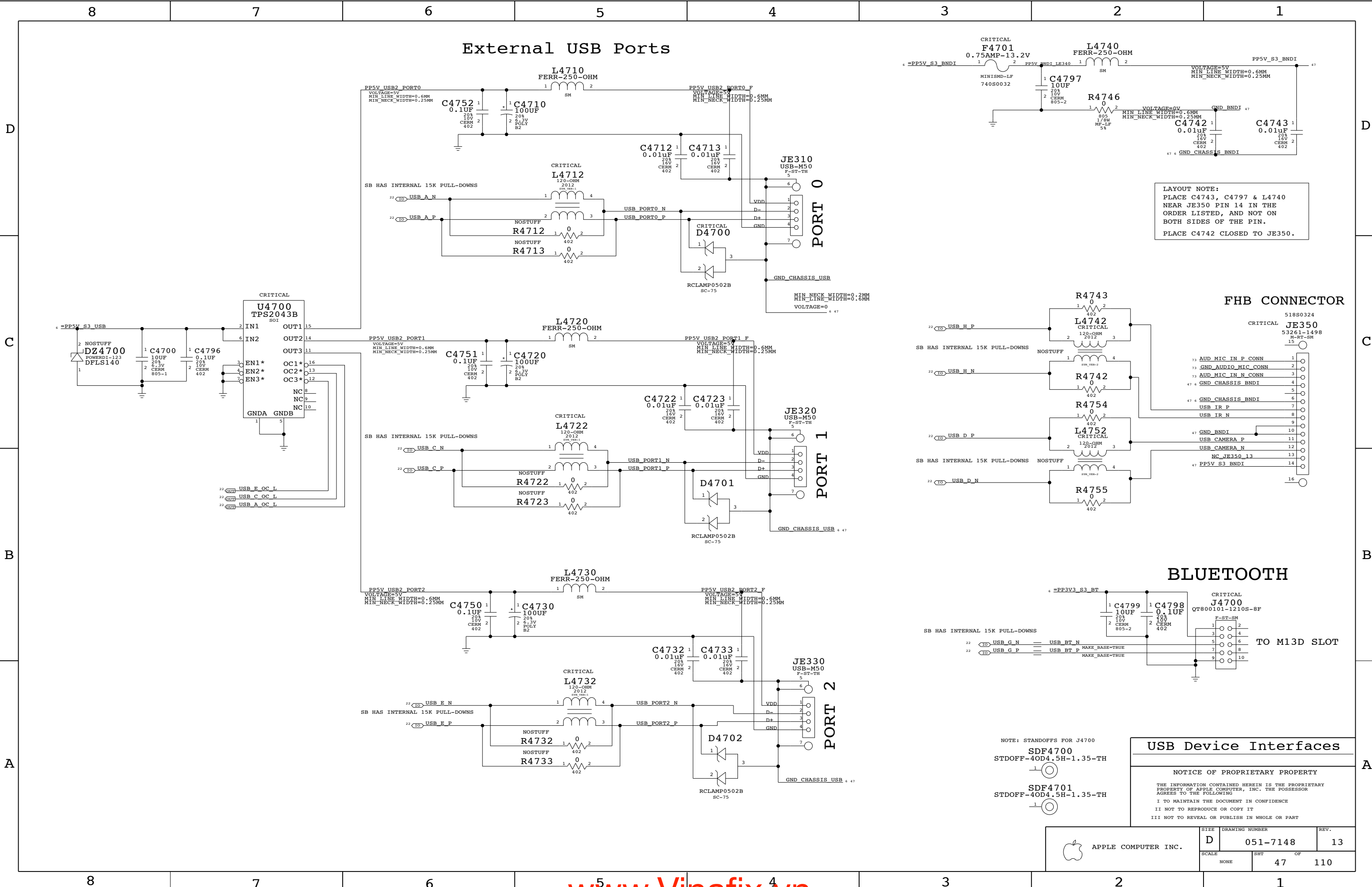
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III NOT TO REVEAL OR PUBLISH IN WHOLE OR PART

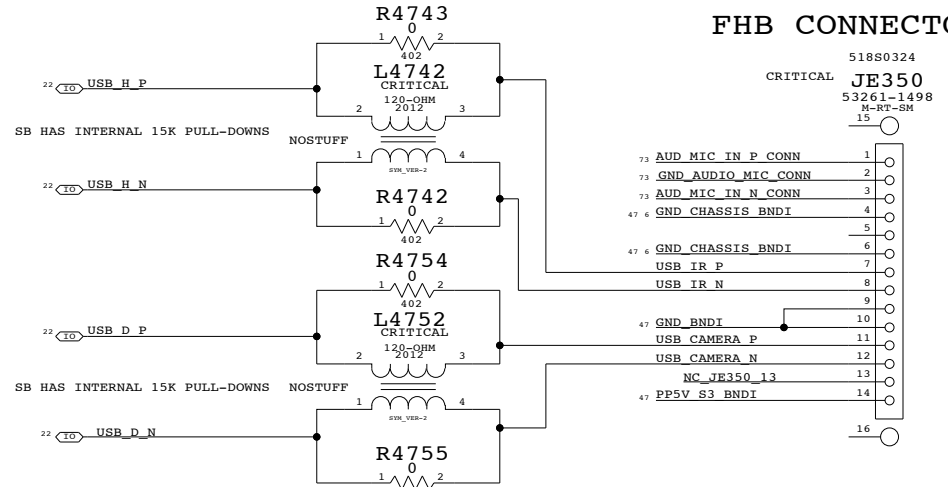
APPLE COMPUTER INC.	SIZE D	DRAWING NUMBER 051-7148	REV. 13
	SCALE NONE	SHT 46	OF 110

External USB Ports

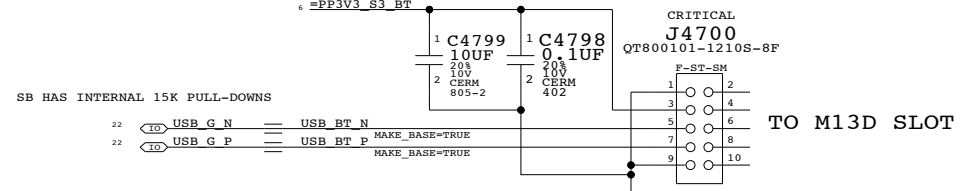


LAYOUT NOTE:
 PLACE C4743, C4797 & L4740
 NEAR JE350 PIN 14 IN THE
 ORDER LISTED, AND NOT ON
 BOTH SIDES OF THE PIN.
 PLACE C4742 CLOSED TO JE350.

FHB CONNECTOR



BLUETOOTH



NOTE: STANDOFFS FOR J4700
 SDF4700
 STDOFF-40D4.5H-1.35-TH
 SDF4701
 STDOFF-40D4.5H-1.35-TH

USB Device Interfaces

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APPLE COMPUTER INC.	SIZE	DRAWING NUMBER	REV.
	D	051-7148	13
SCALE	SHT	OF	
NONE	47	110	

8

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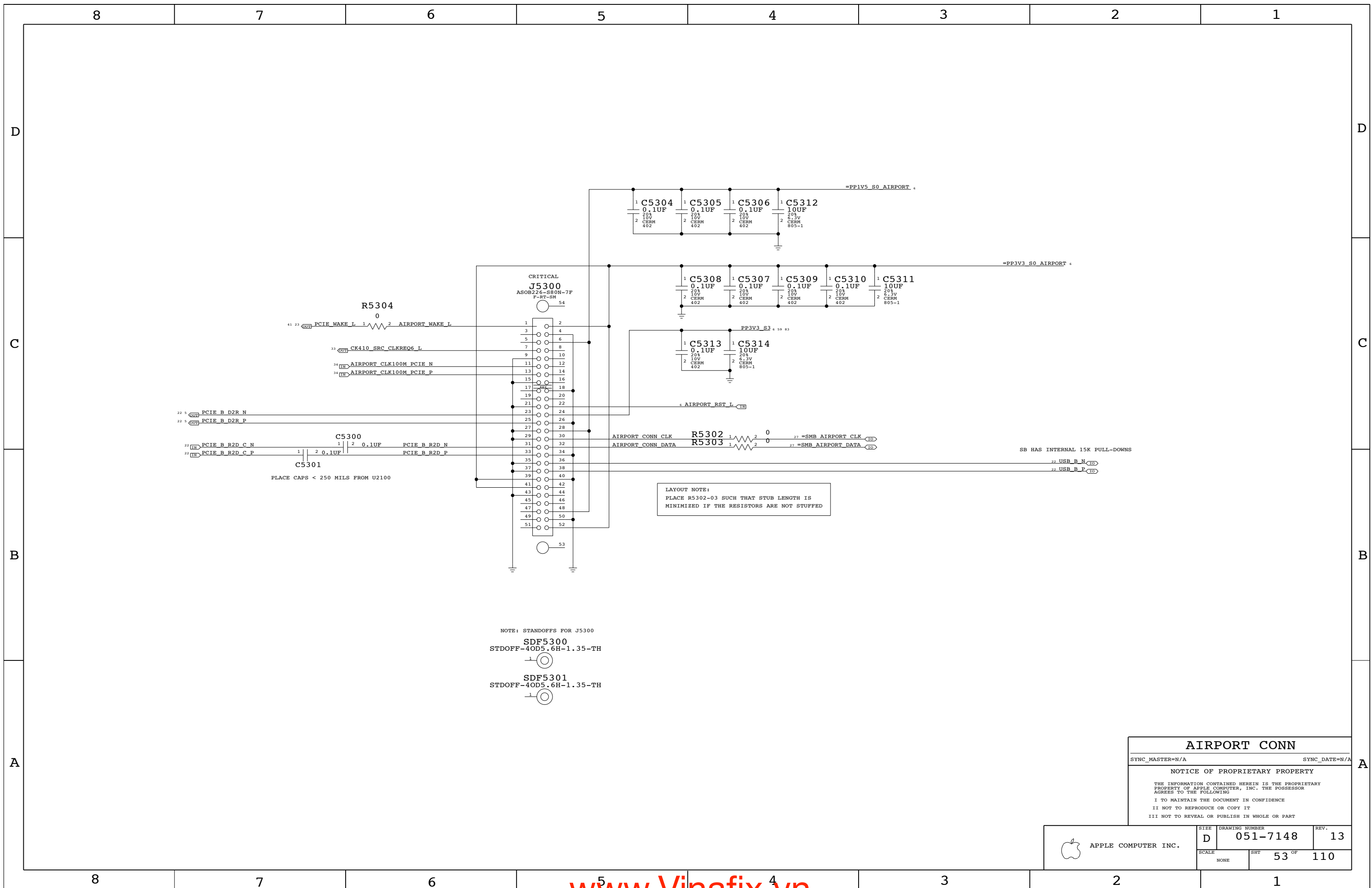
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



APPLE COMPUTER INC.

SIZE	DRAWING NUMBER	REV.
D	051-7148	13
SCALE	SHT	OF
NONE	48	110



LAYOUT NOTE:
 PLACE R5302-03 SUCH THAT STUB LENGTH IS
 MINIMIZED IF THE RESISTORS ARE NOT STUFFED

NOTE: STANDOFFS FOR J5300
 SDF5300
 STDOFF-4OD5.6H-1.35-TH

 SDF5301
 STDOFF-4OD5.6H-1.35-TH


AIRPORT CONN
 SYNC_MASTER=N/A SYNC_DATE=N/A
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APPLE COMPUTER INC.	SIZE	DRAWING NUMBER	REV.
	D	051-7148	13
SCALE	SHT	REV.	
NONE	53 OF	110	

8

7

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A

22 IN PCIE_C_R2D_C_N == TP PCIE_C_R2D_C_N
MAKE_BASE=TRUE

22 IN PCIE_C_R2D_C_P == TP PCIE_C_R2D_C_P
MAKE_BASE=TRUE

22 OUT PCIE_C_D2R_N == TP PCIE_C_D2R_N
MAKE_BASE=TRUE

22 OUT PCIE_C_D2R_P == TP PCIE_C_D2R_P
MAKE_BASE=TRUE

22 IN PCIE_D_R2D_C_N == TP PCIE_D_R2D_C_N
MAKE_BASE=TRUE

22 IN PCIE_D_R2D_C_P == TP PCIE_D_R2D_C_P
MAKE_BASE=TRUE

22 OUT PCIE_D_D2R_N == TP PCIE_D_D2R_N
MAKE_BASE=TRUE

22 OUT PCIE_D_D2R_P == TP PCIE_D_D2R_P
MAKE_BASE=TRUE

22 IN PCIE_E_R2D_C_N == TP PCIE_E_R2D_C_N
MAKE_BASE=TRUE

22 IN PCIE_E_R2D_C_P == TP PCIE_E_R2D_C_P
MAKE_BASE=TRUE

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MAKE_BASE=TRUE

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MAKE_BASE=TRUE

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MAKE_BASE=TRUE

22 IN PCIE_F_R2D_C_P == TP PCIE_F_R2D_C_P
MAKE_BASE=TRUE

22 OUT PCIE_F_D2R_N == TP PCIE_F_D2R_N
MAKE_BASE=TRUE

22 OUT PCIE_F_D2R_P == TP PCIE_F_D2R_P
MAKE_BASE=TRUE


PCIE UNUSED PORTS

SYNC_MASTER=N/A SYNC_DATE=N/A

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	SCALE NONE	SHT 54 OF	110

8

7

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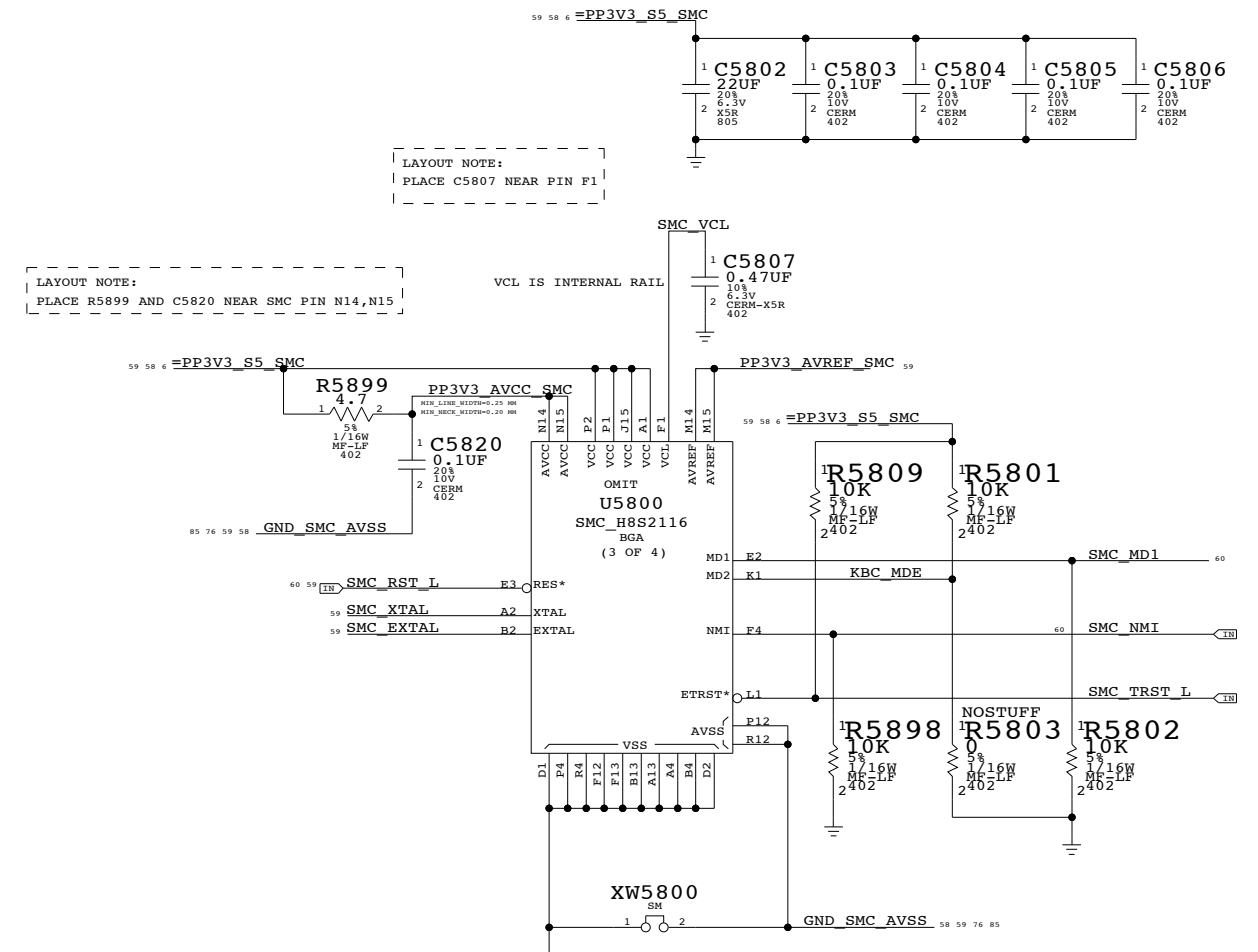
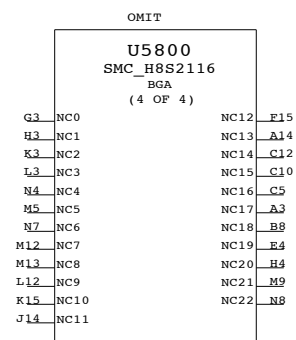
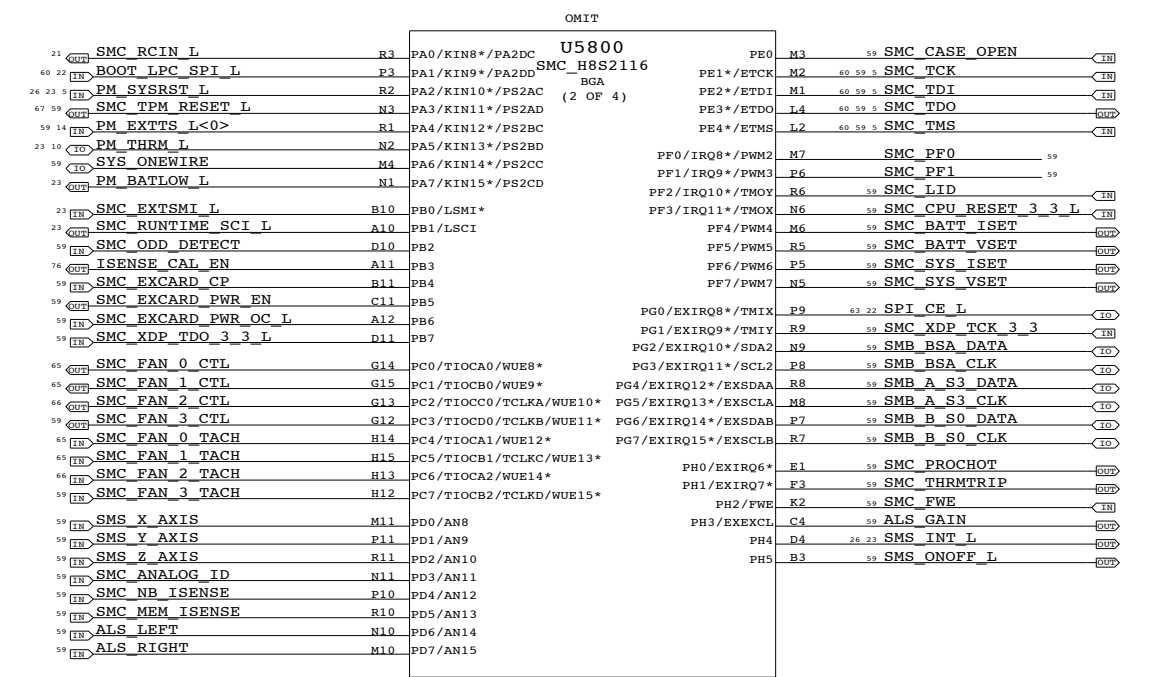
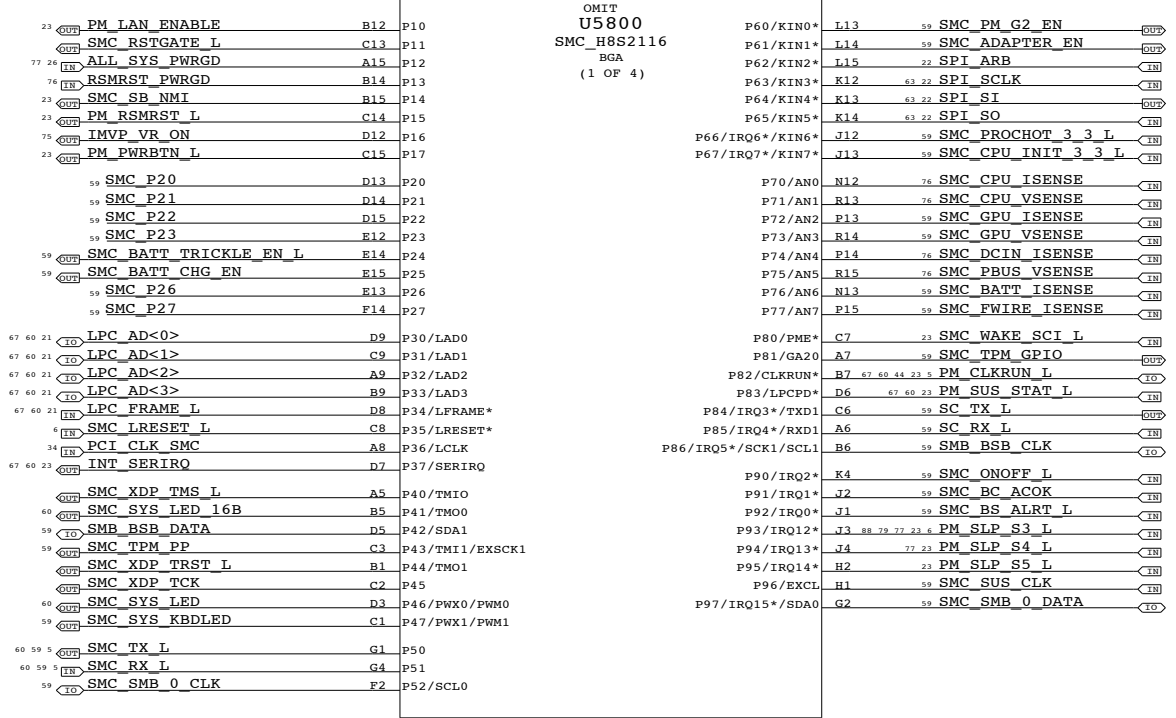
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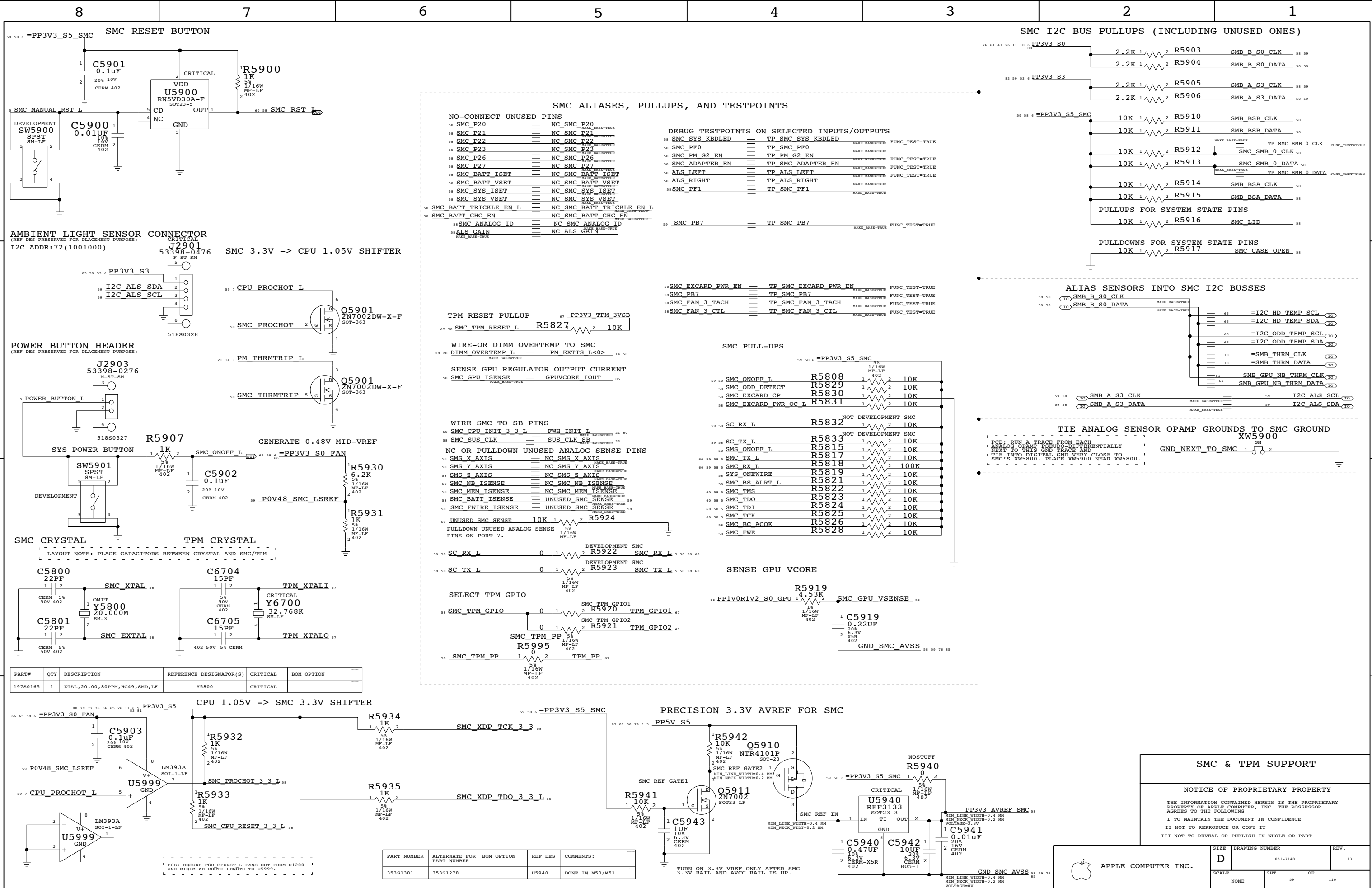
3

2

1

UNUSED PINS HAVE THE FORMAT SMC_XXX WHERE XXX IS THE PORT NUMBER. THEY ARE SET BY SOFTWARE TO BE DRIVEN OUTPUTS ALWAYS SO THEY CAN BE LEFT NO-CONNECTED.





SMC ALIASES, PULLUPS, AND TESTPOINTS

NO-CONNECT UNUSED PINS	DEBUG TESTPOINTS ON SELECTED INPUTS/OUTPUTS
SMC P20	SMC SYS_KBDLED
SMC P21	SMC PF0
SMC P22	SMC PM_G2_EN
SMC P23	SMC ADAPTER_EN
SMC P26	ALS_LEFT
SMC P27	ALS_RIGHT
SMC_BATT_ISET	SMC_PF1
SMC_BATT_VSET	
SMC_SYS_ISET	
SMC_SYS_VSET	
SMC_BATT_TRICKLE_EN_L	
SMC_BATT_CHG_EN	
SMC_ANALOG_ID	
ALS_GAIN	
SMC_EXCARD_PWR_EN	
SMC_PB7	
SMC_FAN_3_TACH	
SMC_FAN_3_CTL	

SMC PULL-UPS

SMC PIN	RESISTOR VALUE
SMC_ONOFF_L	10K
SMC_ODD_DETECT	10K
SMC_EXCARD_CP	10K
SMC_EXCARD_PWR_OC_L	10K
SC_RX_L	10K
SC_TX_L	10K
SMS_ONOFF_L	10K
SMC_TX_L	10K
SMC_RX_L	100K
SYS_ONEWIRE	10K
SMC_BS_ALERT_L	10K
SMC_TMS	10K
SMC_TDO	10K
SMC_TDI	10K
SMC_TCK	10K
SMC_BC_ACOK	10K
SMC_FWE	10K

SMC & TPM SUPPORT

PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS
35381381	35381278		U5940	DONE IN M50/M51

SMC & TPM SUPPORT

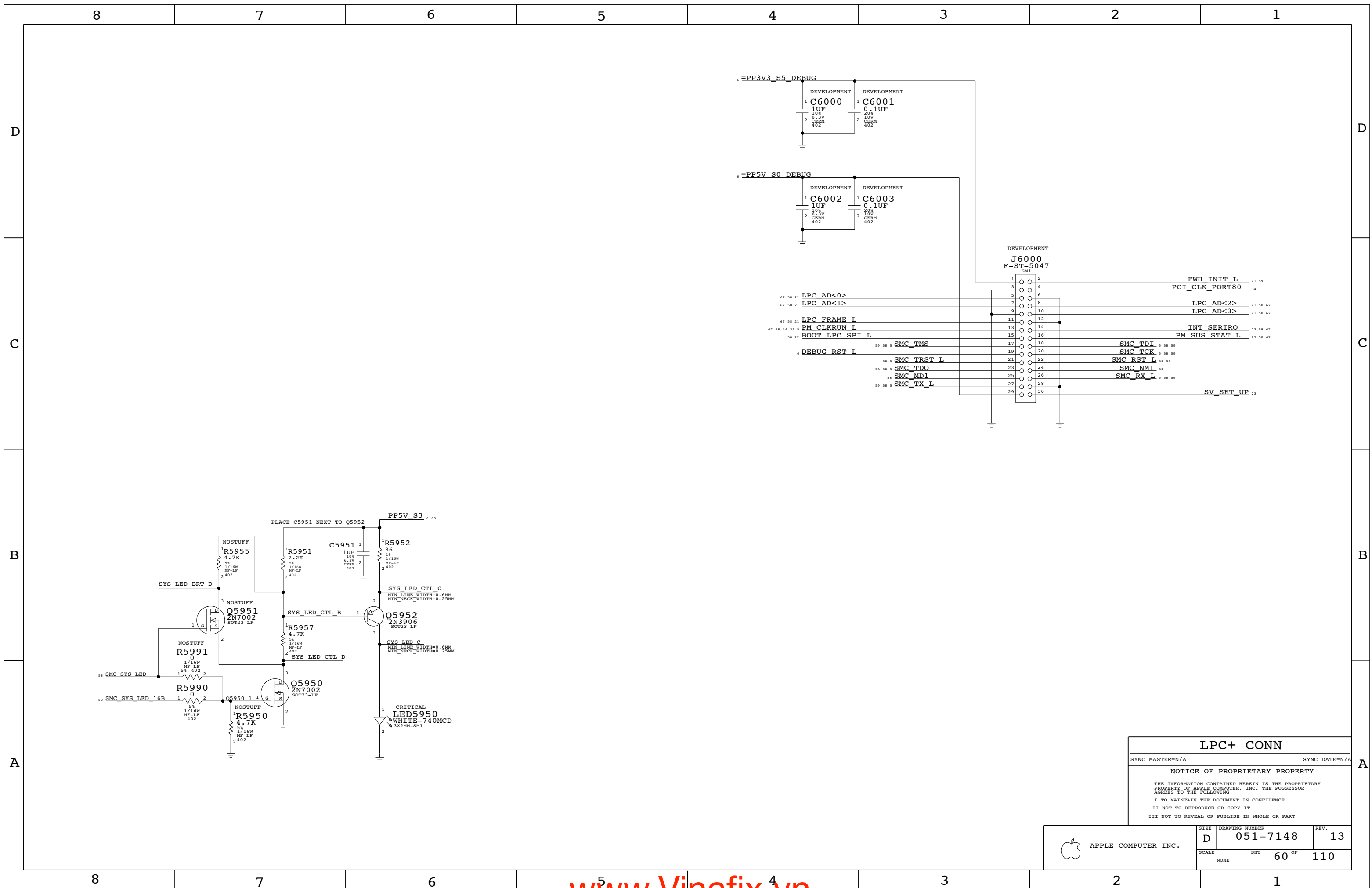
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SIZE	DRAWING NUMBER	REV.
D	051-7148	13

SCALE: NONE SHEET: 59 OF 110



LPC+ CONN

SYNC_MASTER=N/A SYNC_DATE=N/A

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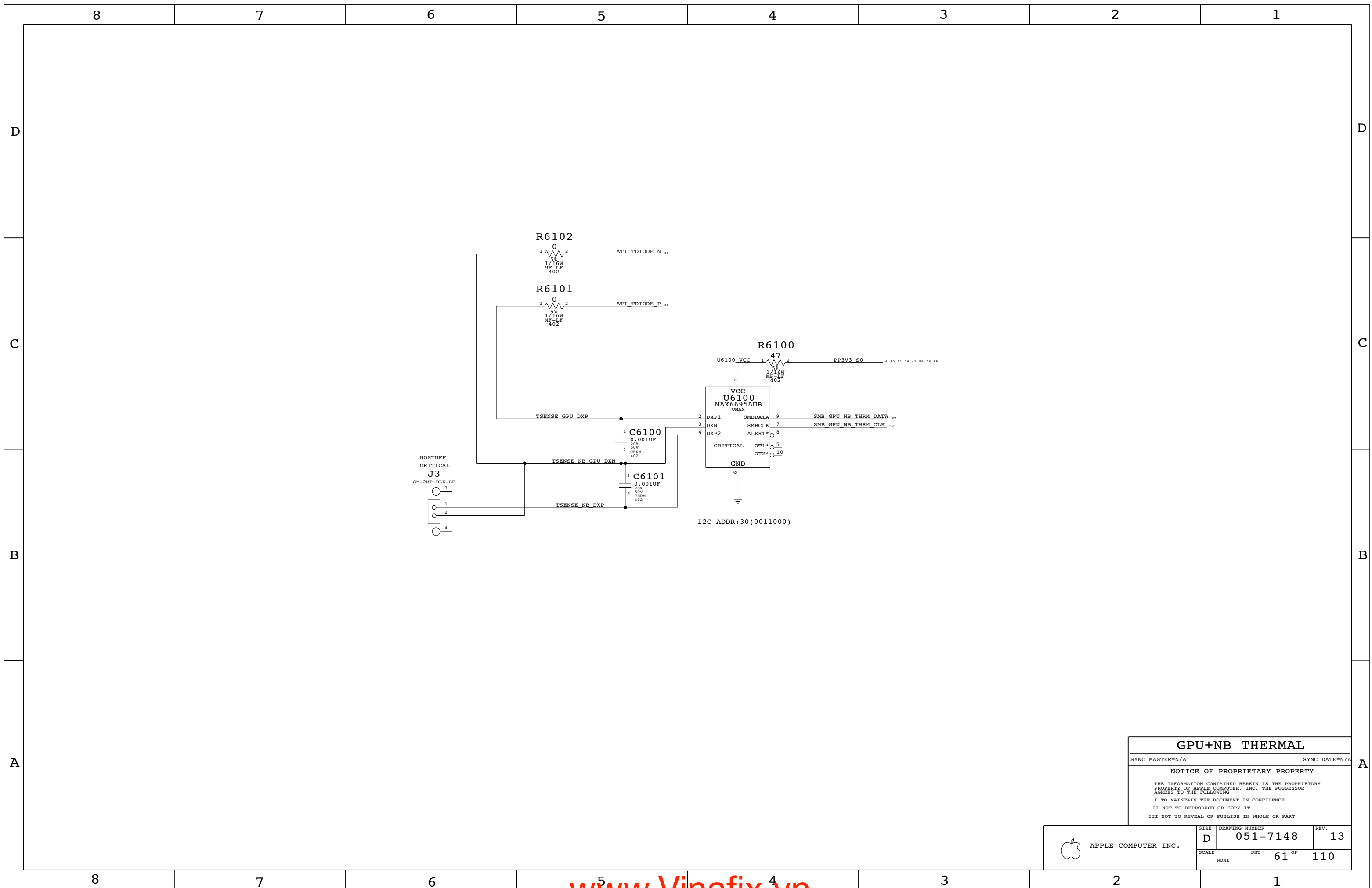
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	SCALE NONE	SHT 60	OF 110



GPU+NB THERMAL

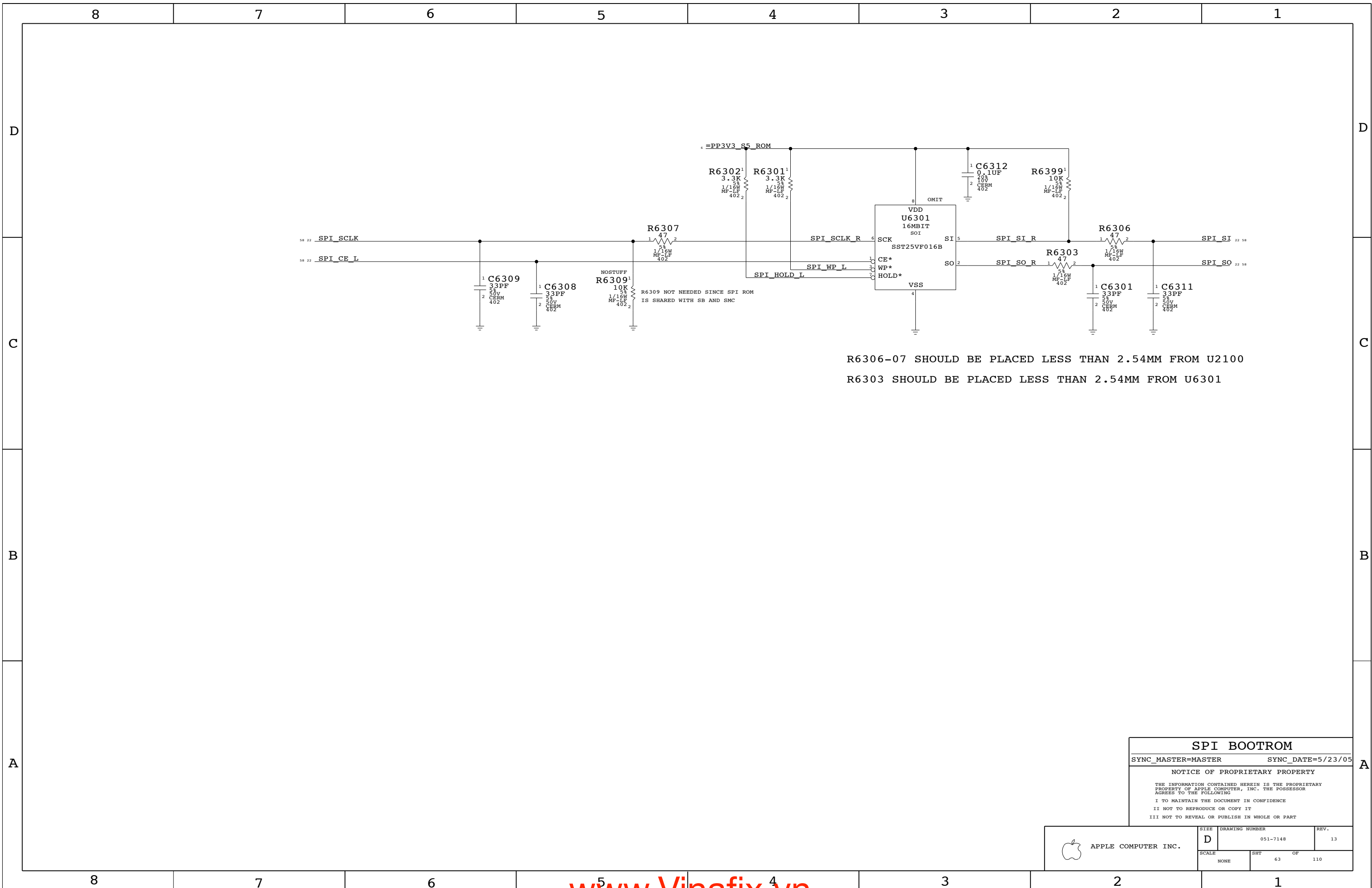
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	D	051-7148	13
SCALE	SHT	61 OF 110	
NONE			

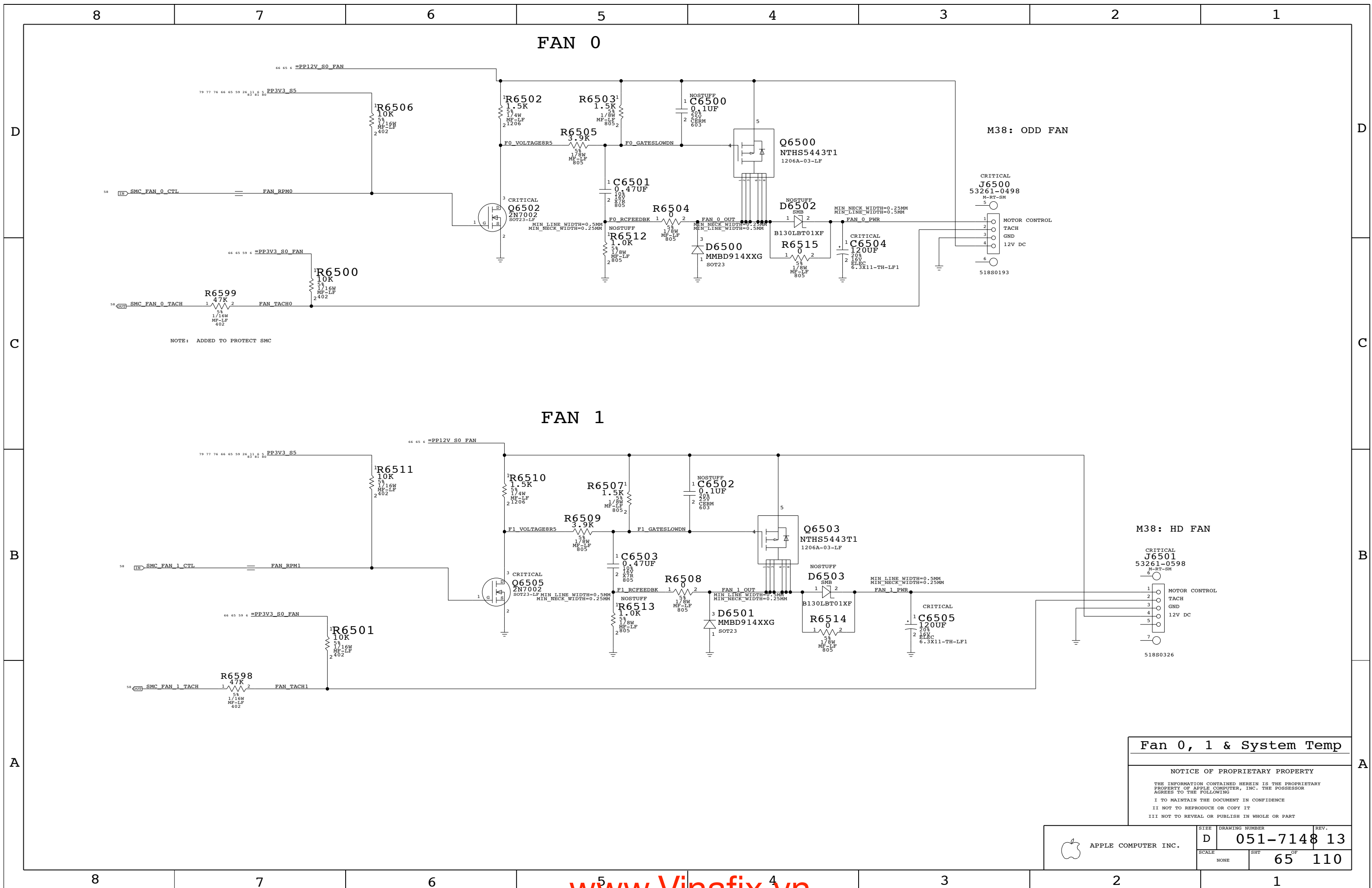


SPI BOOTROM

SYNC_MASTER=MASTER SYNC_DATE=5/23/05

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	SCALE NONE	SHT 63	OF 110

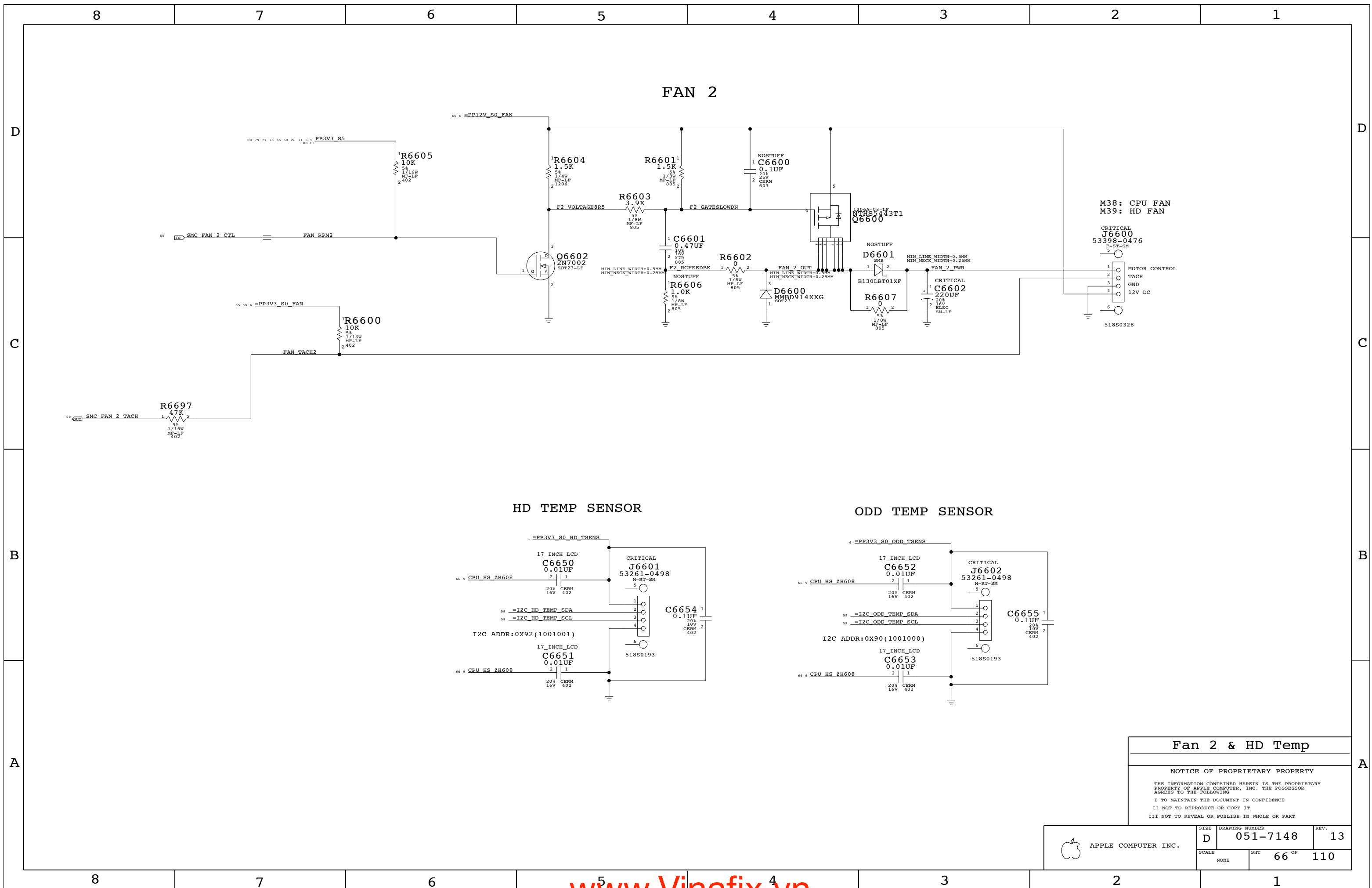


Fan 0, 1 & System Temp

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	NONE	051-7148	13
SCALE		SHT	OF
NONE		65	110



FAN 2

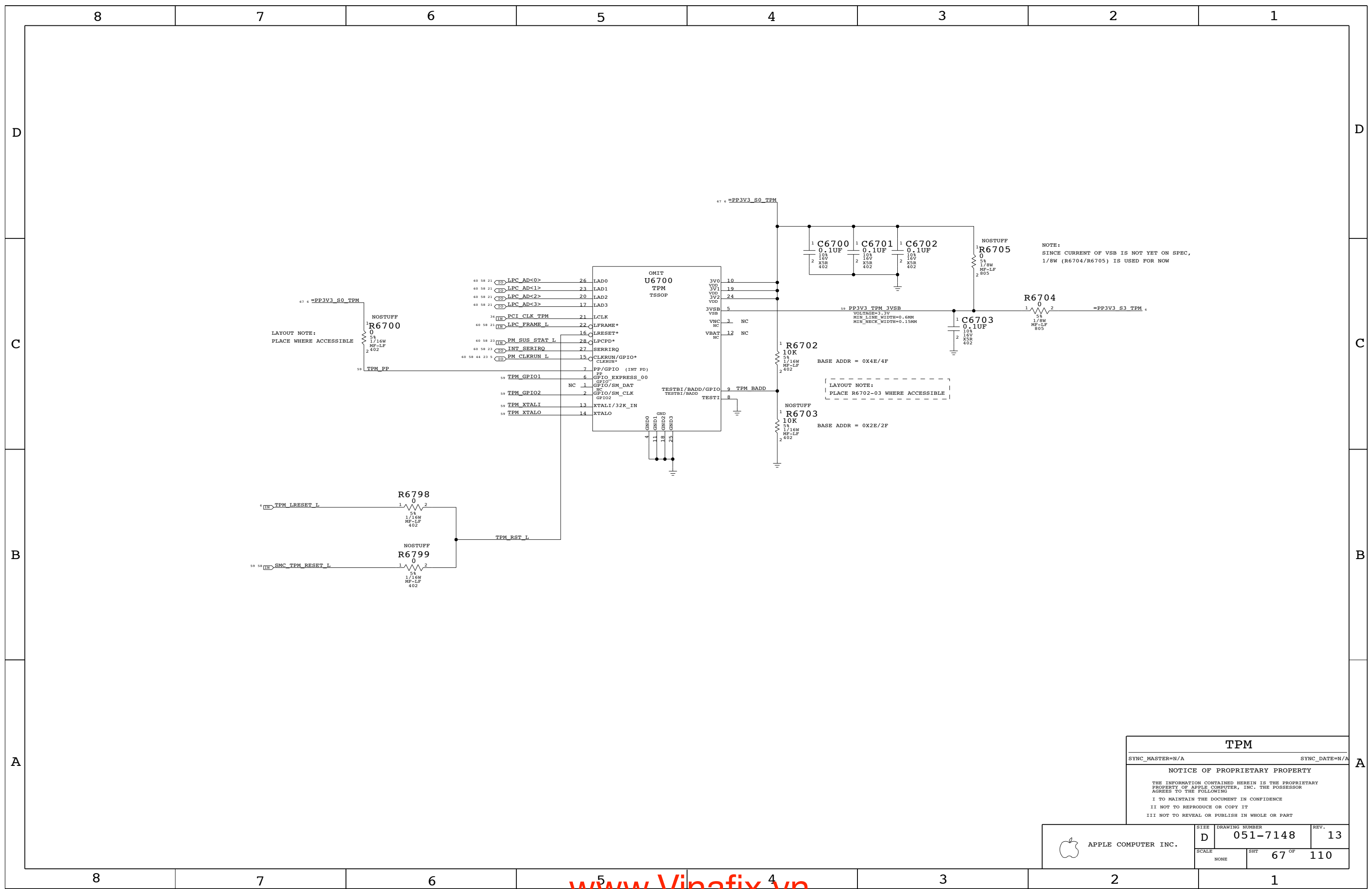
HD TEMP SENSOR

ODD TEMP SENSOR

Fan 2 & HD Temp

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APPLE COMPUTER INC.	SIZE	DRAWING NUMBER	REV.
	D	051-7148	13
SCALE	SHT	OF	
NONE	66	110	



LAYOUT NOTE:
PLACE WHERE ACCESSIBLE

LAYOUT NOTE:
PLACE R6702-03 WHERE ACCESSIBLE

NOTE:
SINCE CURRENT OF VSB IS NOT YET ON SPEC,
1/8W (R6704/R6705) IS USED FOR NOW

TPM

SYNC_MASTER=N/A SYNC_DATE=N/A

NOTICE OF PROPRIETARY PROPERTY

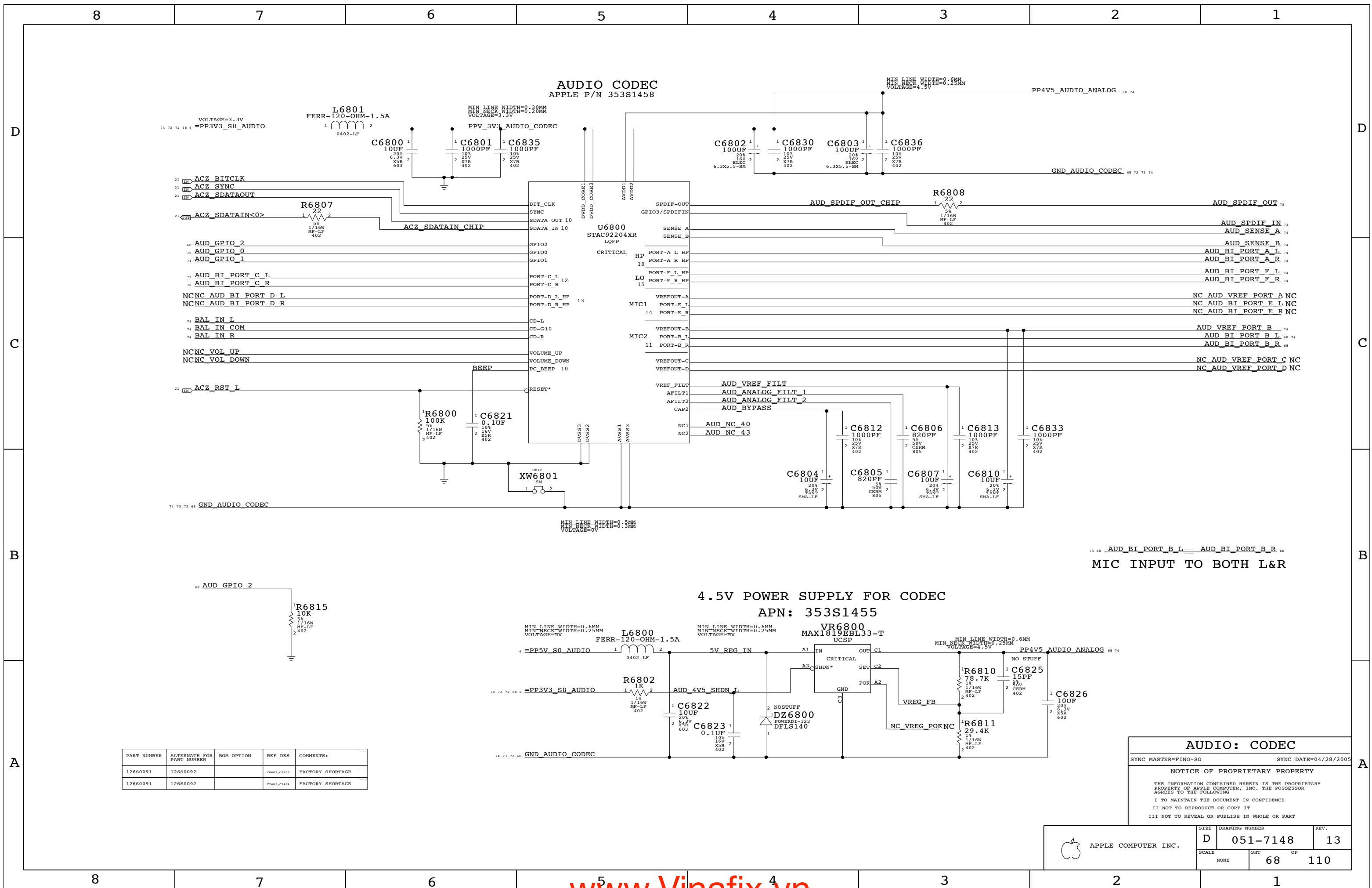
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	SCALE NONE	SHT 67 OF	110



PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS:
126S0091	126S0092		C6802, C6803	FACTORY SHORTAGE
126S0091	126S0092		C7403, C7404	FACTORY SHORTAGE

AUDIO: CODEC

SYNC_MASTER=FINO-SO SYNC_DATE=04/28/2005

NOTICE OF PROPRIETARY PROPERTY

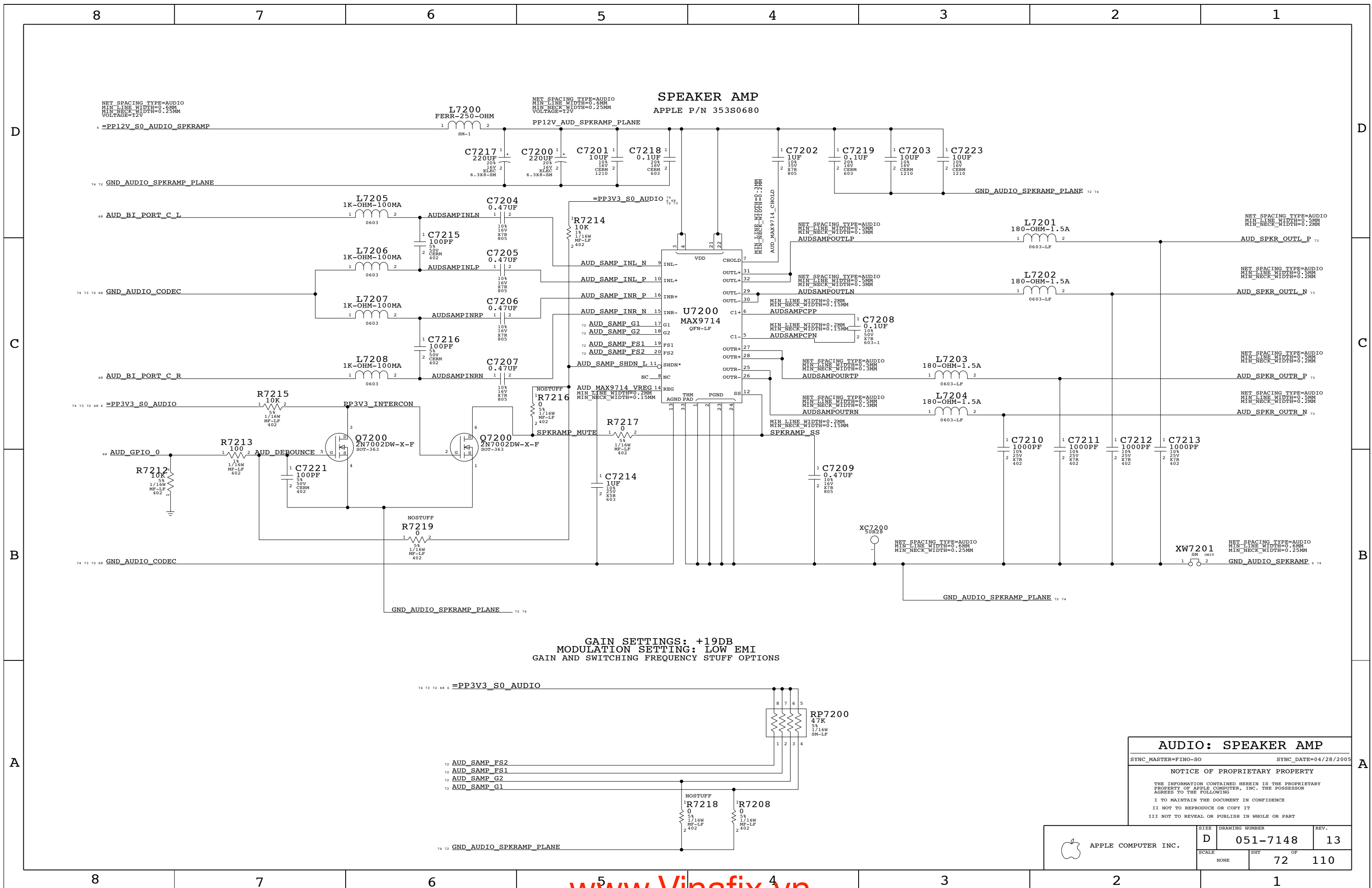
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	D	051-7148	13
SCALE	NONE	SHT OF	68 OF 110

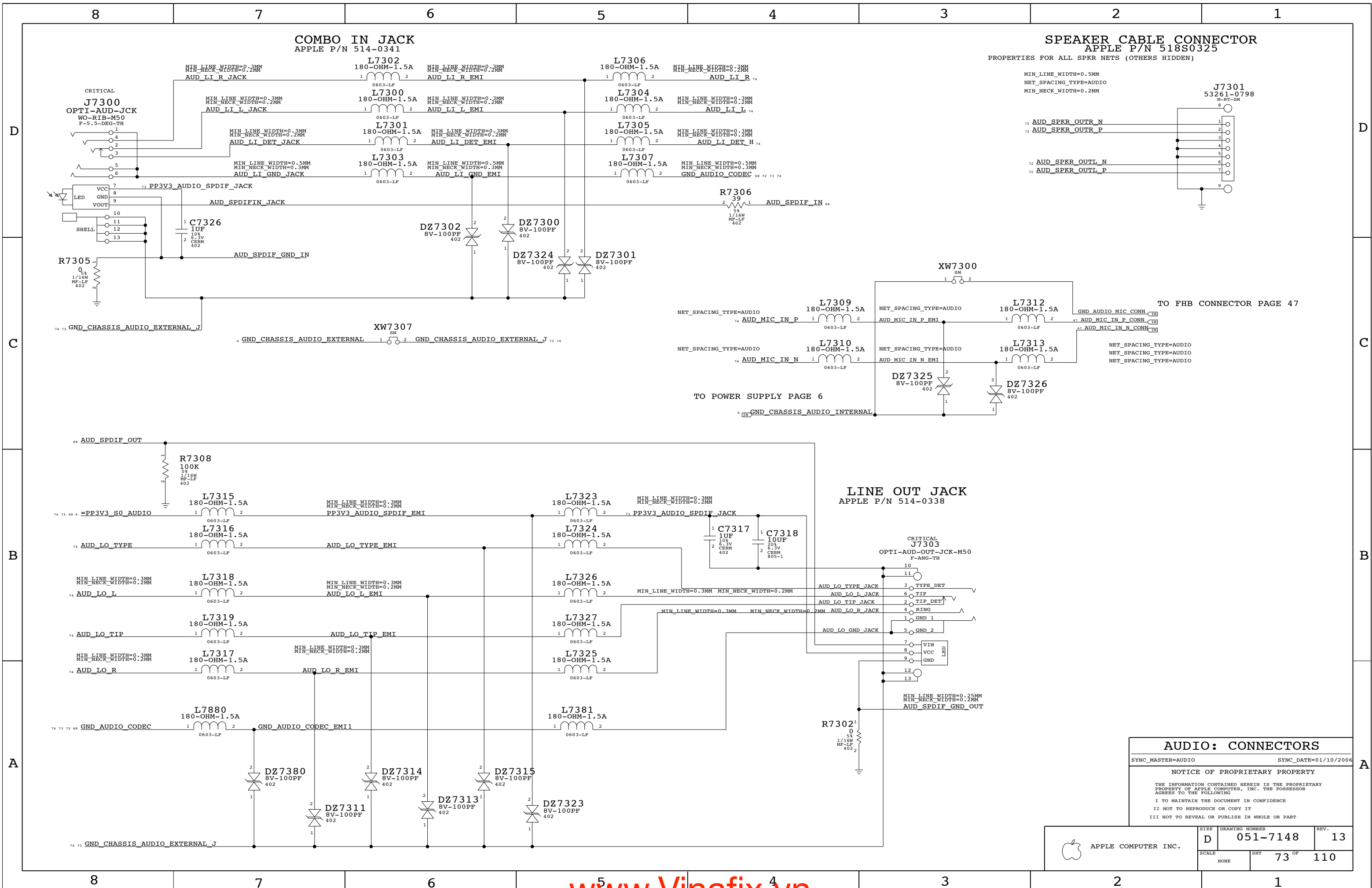


SPEAKER AMP
APPLE P/N 353S0680

GAIN SETTINGS: +19DB
MODULATION SETTING: LOW EMI
GAIN AND SWITCHING FREQUENCY STUFF OPTIONS

AUDIO: SPEAKER AMP
SYNC_MASTER=FINO-SO SYNC_DATE=04/28/2005
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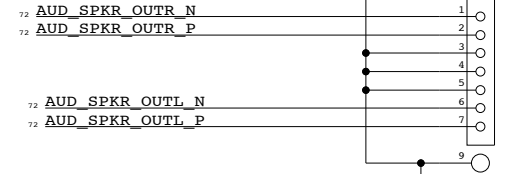
APPLE COMPUTER INC.	SIZE	DRAWING NUMBER	REV.
	D	051-7148	13
SCALE	NONE	SHT OF	72 110



SPEAKER CABLE CONNECTOR
APPLE P/N 518S0325

PROPERTIES FOR ALL SPKR NETS (OTHERS HIDDEN)

MIN_LINE_WIDTH=0.5MM
NET_SPACING_TYPE=AUDIO
MIN_NECK_WIDTH=0.2MM



COMBO IN JACK
APPLE P/N 514-0341

LINE OUT JACK
APPLE P/N 514-0338

AUDIO: CONNECTORS

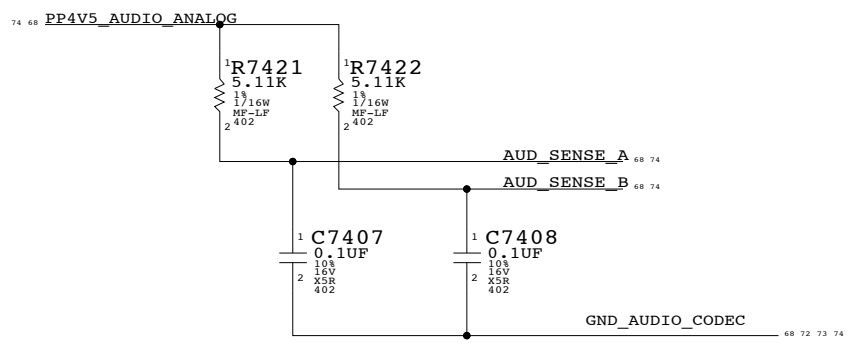
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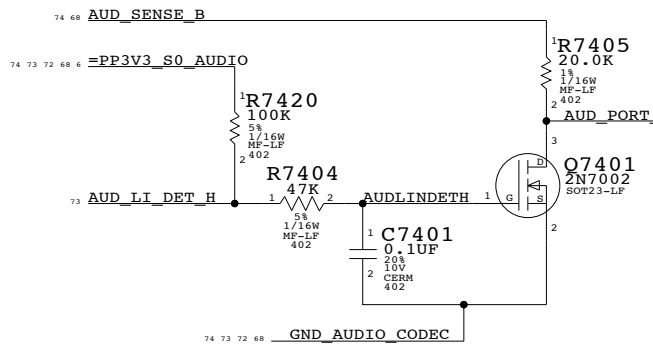
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SCALE	SHT	73 OF	110
NONE			

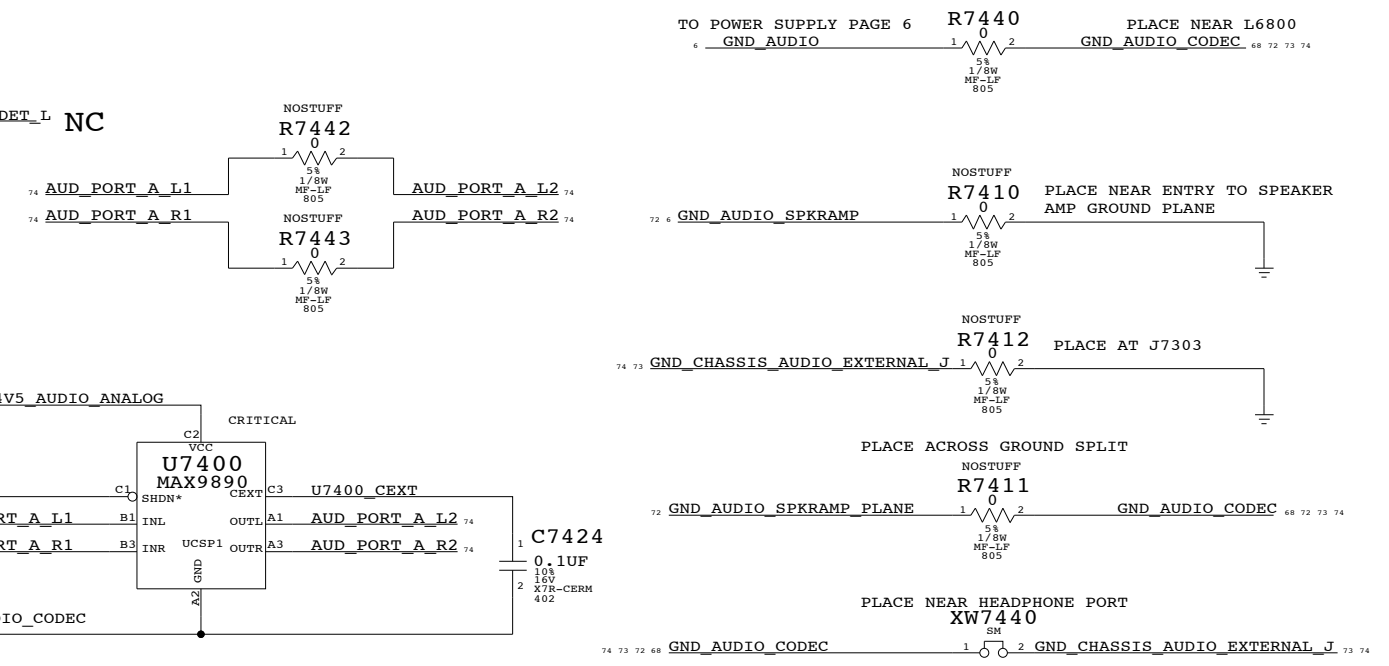
JACK SENSE PULL UPS (PLACE NEXT TO CODEC)



PORT F (LI) PLUG DETECT



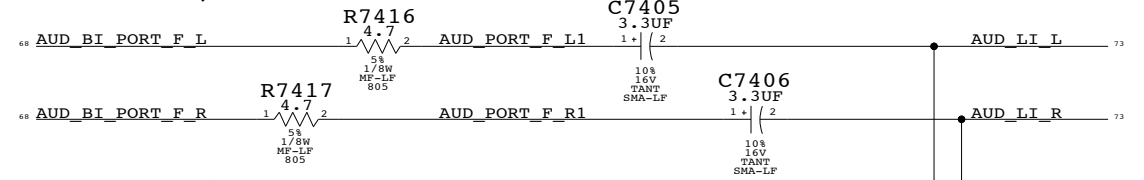
AUDIO GROUND RETURNS



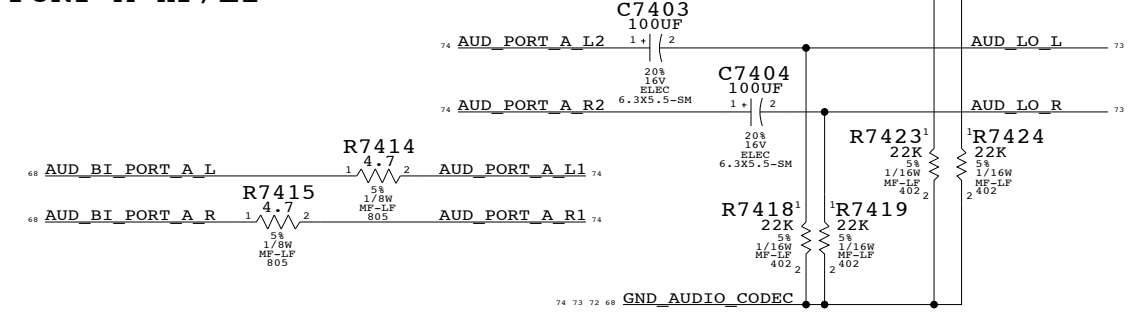
USED PORTS
 PORT A HP/LI
 PORT B MIC IN, VREF 80%
 PORT C BI SPEAKERS
 PORT F LI/LO

UNUSED PORTS
 PORT E SPDIF OUT DELEGATE
 PORT D

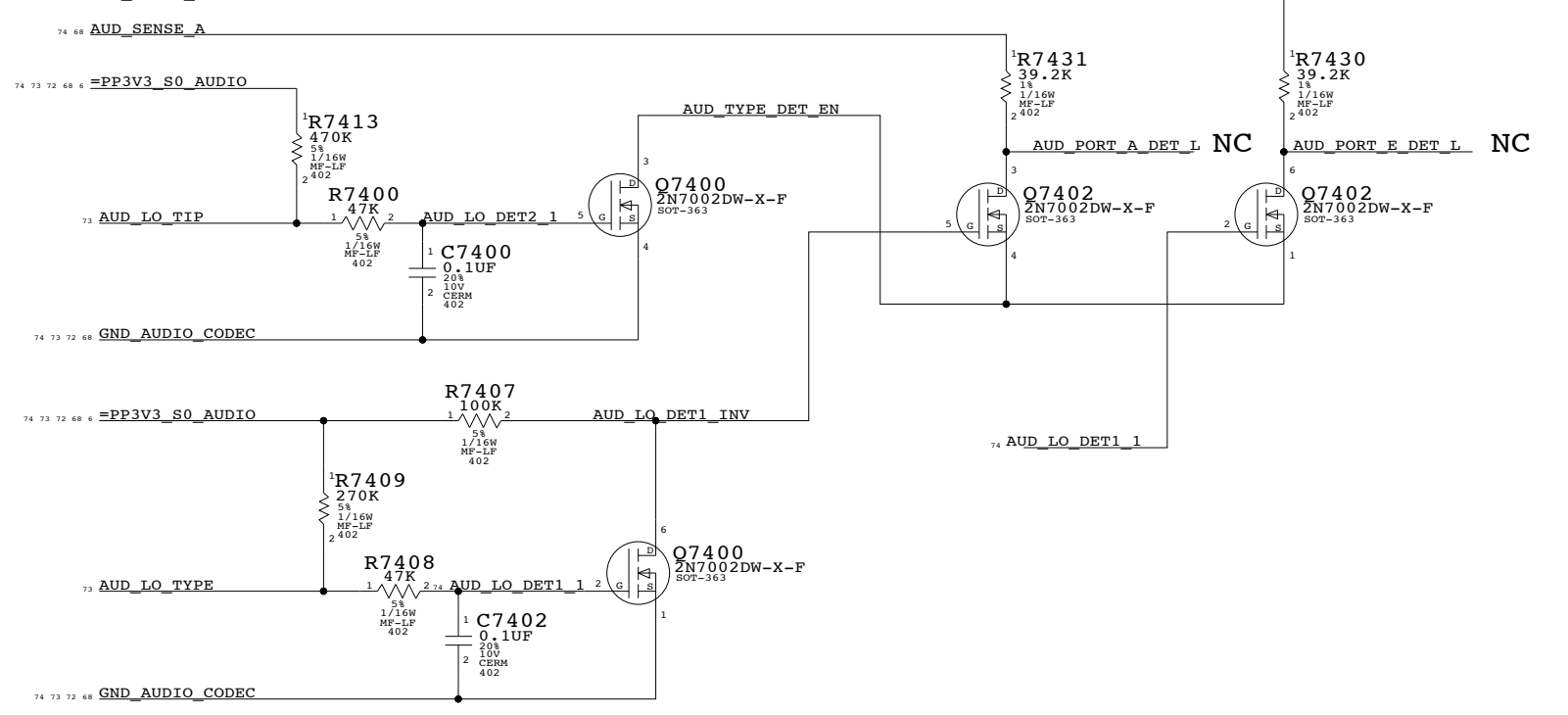
PORT F LI/LO



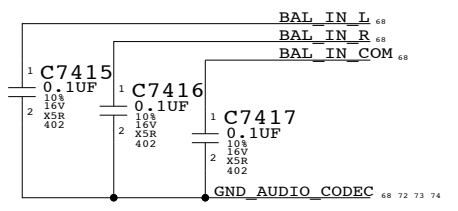
PORT A HP/LI



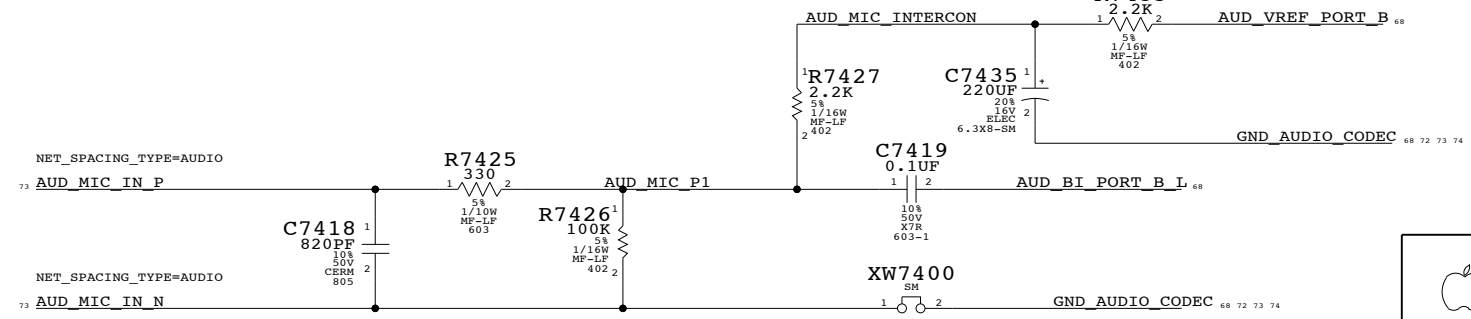
PORT A/H (LO/DIG_OUT) PLUG DETECT (E TELLS H TO COME ON)



UNUSED PORT TERMINATION

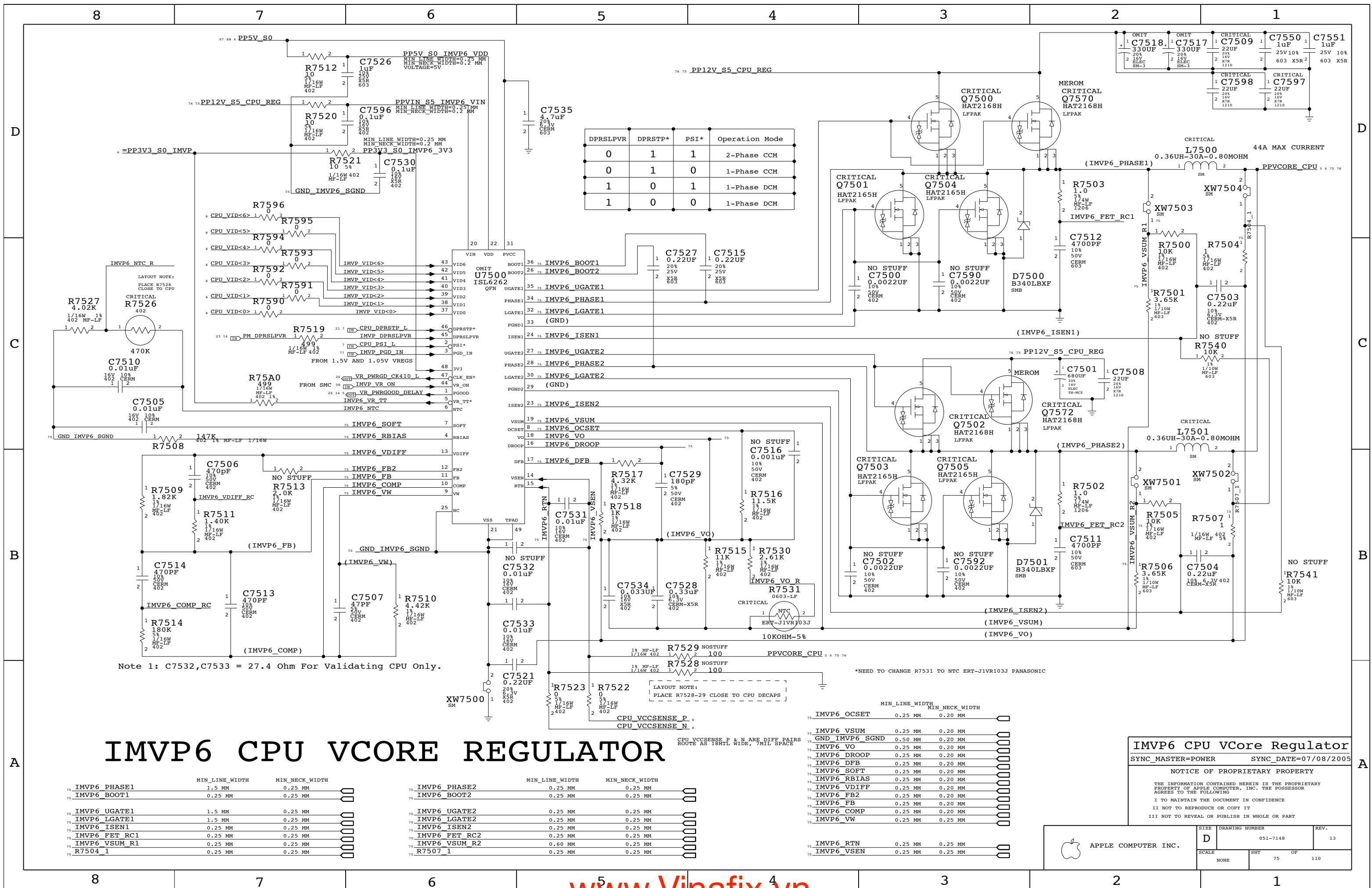


MICROPHONE IMPEDANCE MATCHING CIRCUIT



AUDIO: POWER SUPPLIES
 SYNC_MASTER=AUDIO SYNC_DATE=02/23/2006
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	D	051-7148	13
SCALE	SHT	74 OF	110
NONE			



DPRSLPVR	DPRSTP*	PSI*	Operation Mode
0	1	1	2-Phase CCM
0	1	0	1-Phase CCM
1	0	1	1-Phase DCM
1	0	0	1-Phase DCM

Pin	Signal	Pin	Signal
36	IMVP6_BOOT1	37	VID6
26	IMVP6_BOOT2	42	VID5
35	IMVP6_UGATE1	41	VID4
34	IMVP6_PHASE1	40	VID3
32	IMVP6_LGATE1	39	VID2
33	(GND)	38	VID1
24	IMVP6_ISEN1	37	VID0
27	IMVP6_UGATE2	46	DPRSTP*
28	IMVP6_PHASE2	45	DPRSLPVR
30	IMVP6_LGATE2	2	PSI*
29	(GND)	3	PGD_IN
23	IMVP6_ISEN2	48	3V3
19	IMVP6_VSUM	47	CLK_EN*
8	IMVP6_OCSET	44	VR_ON
18	IMVP6_VO	1	PGOOD
16	IMVP6_DROOP	5	VR_TT*
17	IMVP6_DFB	6	NTC
14	VSEN	7	SOFT
15	RTN	4	RBIAS
1	IMVP6_VSEN	13	VDIFF
1	IMVP6_VSEN	12	FB2
1	IMVP6_VSEN	11	FB
1	IMVP6_VSEN	10	COMP
1	IMVP6_VSEN	9	VW
1	IMVP6_VSEN	25	NC
1	IMVP6_VSEN	21	VSS
1	IMVP6_VSEN	49	TPAD

IMVP6 CPU VCore Regulator

Signal	MIN_LINE_WIDTH	MIN_NECK_WIDTH
IMVP6 PHASE1	1.5 MM	0.25 MM
IMVP6 BOOT1	0.25 MM	0.25 MM
IMVP6 UGATE1	1.5 MM	0.25 MM
IMVP6 LGATE1	1.5 MM	0.25 MM
IMVP6 ISEN1	0.25 MM	0.25 MM
IMVP6 FET RC1	0.25 MM	0.25 MM
IMVP6 VSUM R1	0.25 MM	0.25 MM
R7504_1	0.25 MM	0.25 MM

Signal	MIN_LINE_WIDTH	MIN_NECK_WIDTH
IMVP6 PHASE2	0.25 MM	0.25 MM
IMVP6 BOOT2	0.25 MM	0.25 MM
IMVP6 UGATE2	0.25 MM	0.25 MM
IMVP6 LGATE2	0.25 MM	0.25 MM
IMVP6 ISEN2	0.25 MM	0.25 MM
IMVP6 FET RC2	0.25 MM	0.25 MM
IMVP6 VSUM R2	0.60 MM	0.25 MM
R7507_1	0.25 MM	0.25 MM

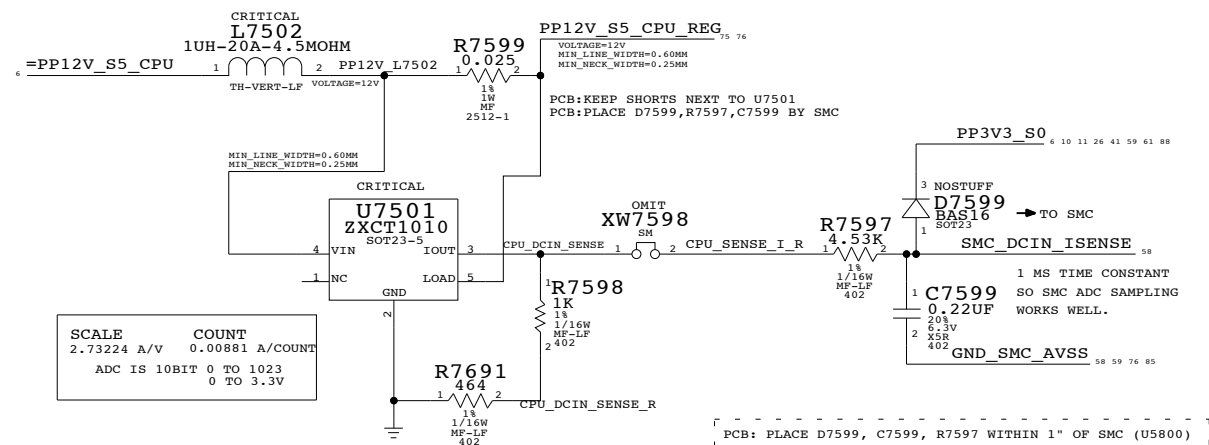
Signal	MIN_LINE_WIDTH	MIN_NECK_WIDTH
IMVP6_OCSET	0.25 MM	0.20 MM
IMVP6 VSUM	0.25 MM	0.20 MM
GND_IMVP6_SGND	0.50 MM	0.20 MM
IMVP6 VO	0.25 MM	0.20 MM
IMVP6 DROOP	0.25 MM	0.20 MM
IMVP6 DFB	0.25 MM	0.20 MM
IMVP6 SOFT	0.25 MM	0.20 MM
IMVP6 RBIAS	0.25 MM	0.20 MM
IMVP6 VDIFF	0.25 MM	0.20 MM
IMVP6 FB2	0.25 MM	0.20 MM
IMVP6 FB	0.25 MM	0.20 MM
IMVP6 COMP	0.25 MM	0.20 MM
IMVP6 VW	0.25 MM	0.25 MM
IMVP6 RTN	0.25 MM	0.25 MM
IMVP6 VSEN	0.25 MM	0.25 MM

IMVP6 CPU VCore Regulator
 SYNC_MASTER=POWER SYNC_DATE=07/08/2005

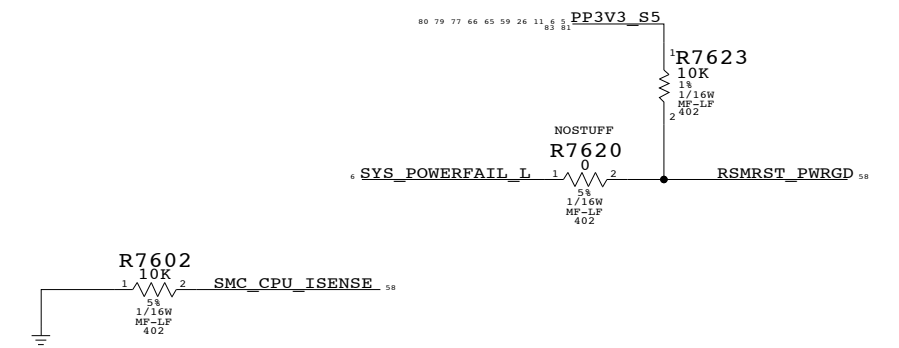
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	D	051-7148	13
SCALE	SHT	OF	110
NONE	75		

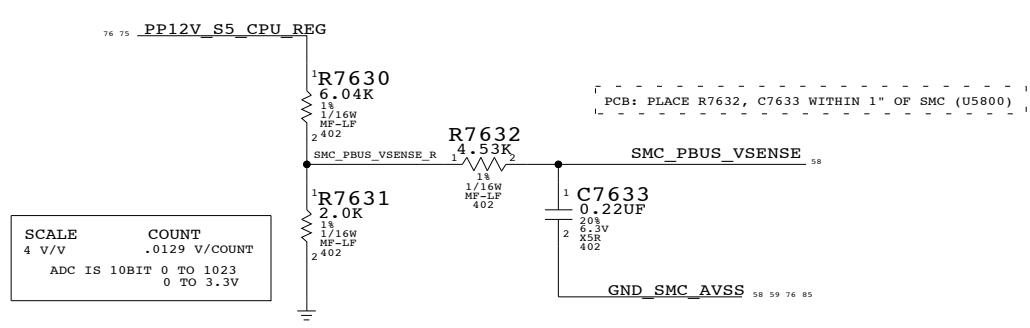
PROCESSOR VCORE CURRENT SENSE
(USING 12V INPUT CURRENT TO DERIVE CPU CURRENT)



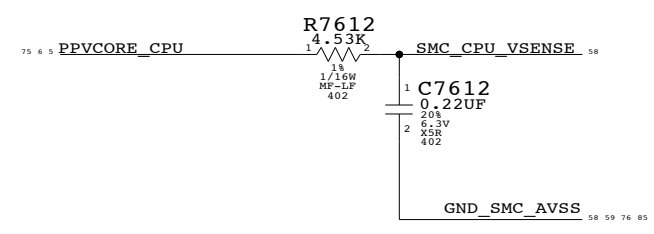
SMC PWRGD PULLUP



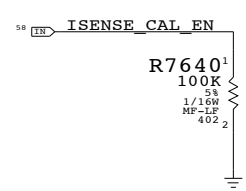
PROCESSOR DCIN VOLTAGE SENSE
(SCALING 12V INPUT VOLTAGE TO SMC)



PROCESSOR VCORE SENSE

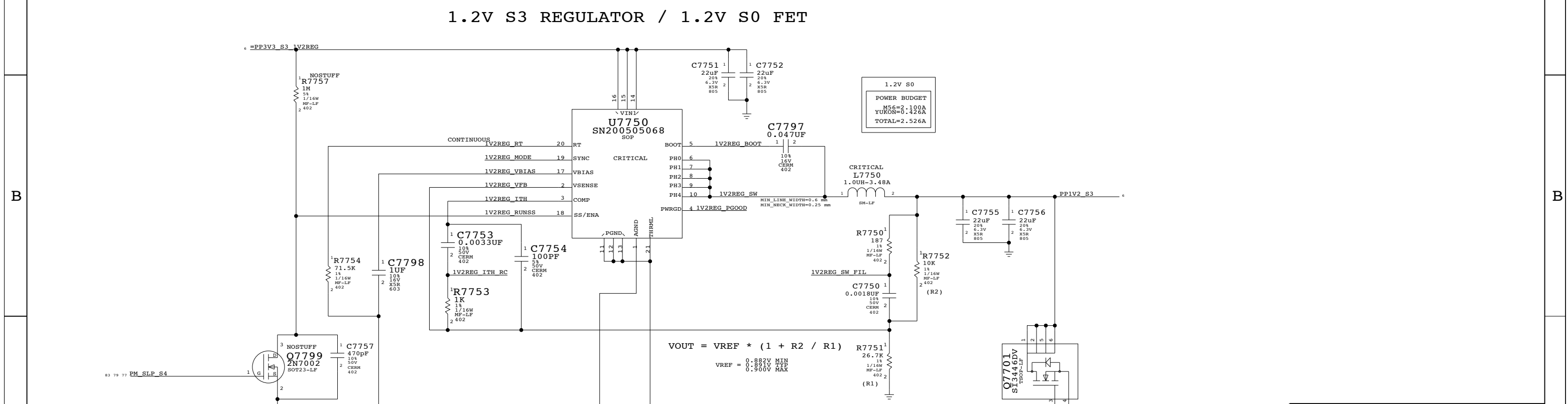
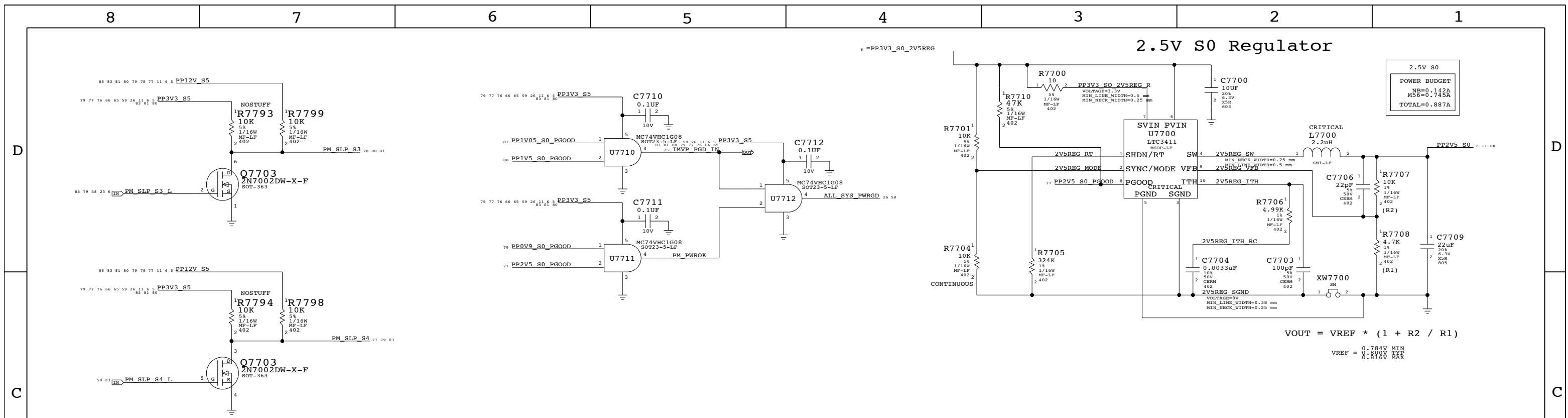


Current Sense Calibration Circuit
Switches in fixed load on power supplies to calibrate current sense circuits



CPU SENSE CIRCUITRIES
 SYNC_MASTER=(MASTER) SYNC_DATE=(MASTER)
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	D	051-7148	13
SCALE	SHT	76 OF 110	
NONE			



2.5V & 1.2V GRAPHICS REGULATORS

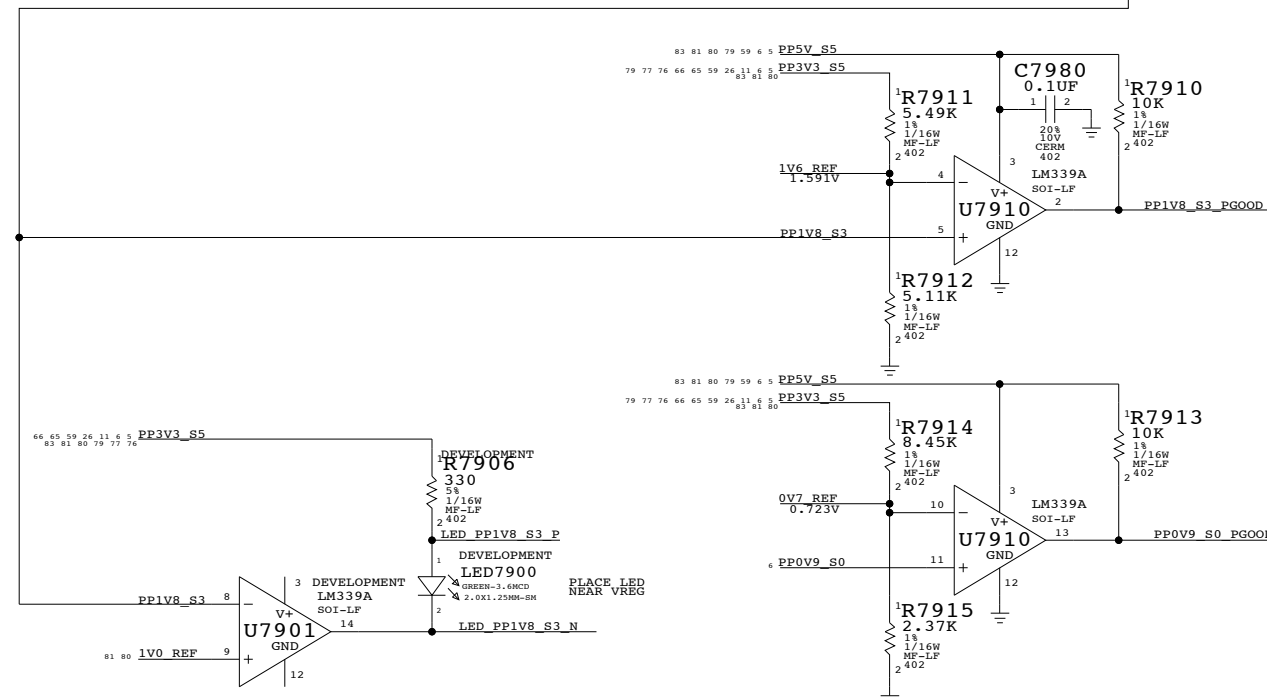
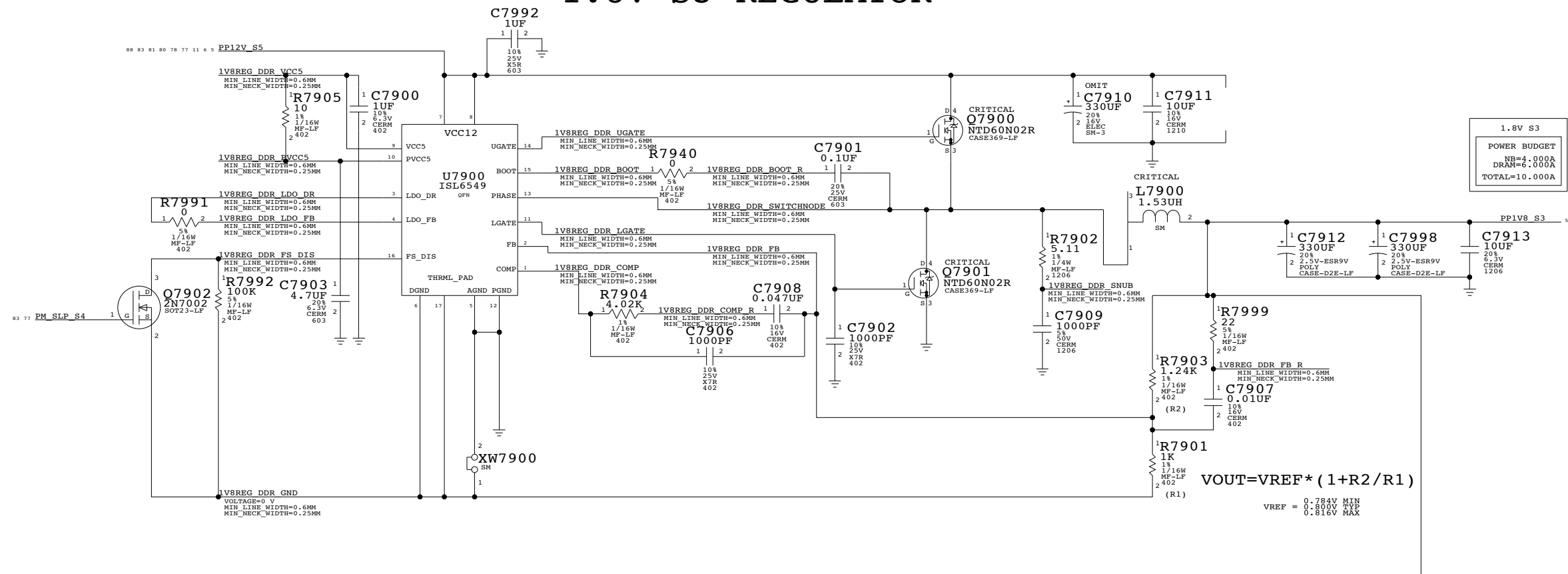
SYNC_MASTER=(MASTER) SYNC_DATE=(MASTER)

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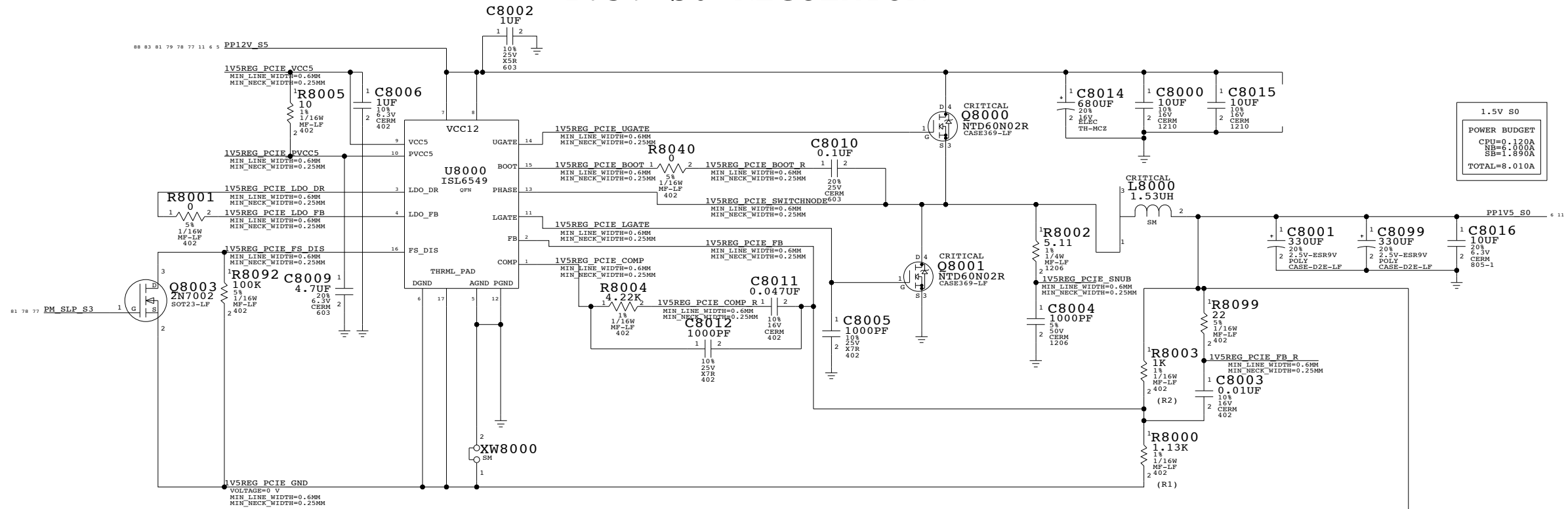
APPLE COMPUTER INC.	SIZE	DRAWING NUMBER	REV.
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SCALE	SHT	OF	
NONE	77	110	

1.8V S3 REGULATOR



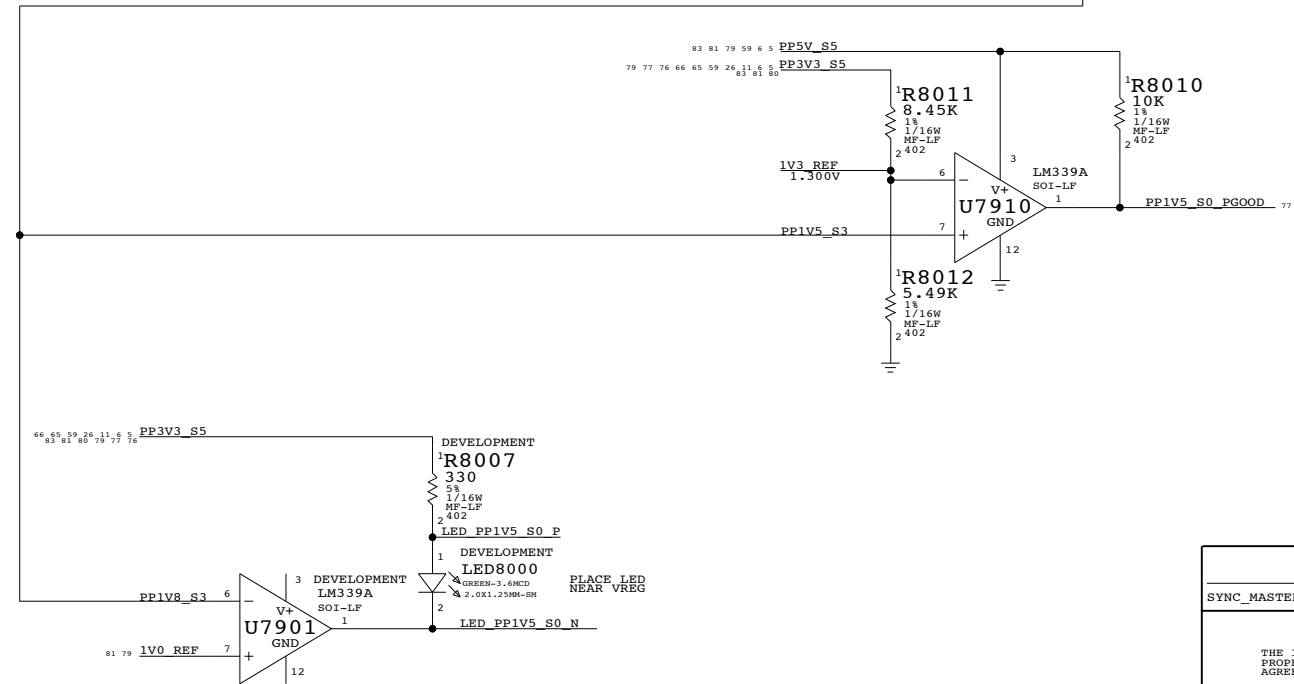
APPLE COMPUTER INC.		SIZE	DRAWING NUMBER	REV.
		D	051-7148	13
		SCALE	SHT	79 OF 110
		NONE		

1.5V S0 REGULATOR



$$V_{OUT} = V_{REF} * (1 + R2/R1)$$

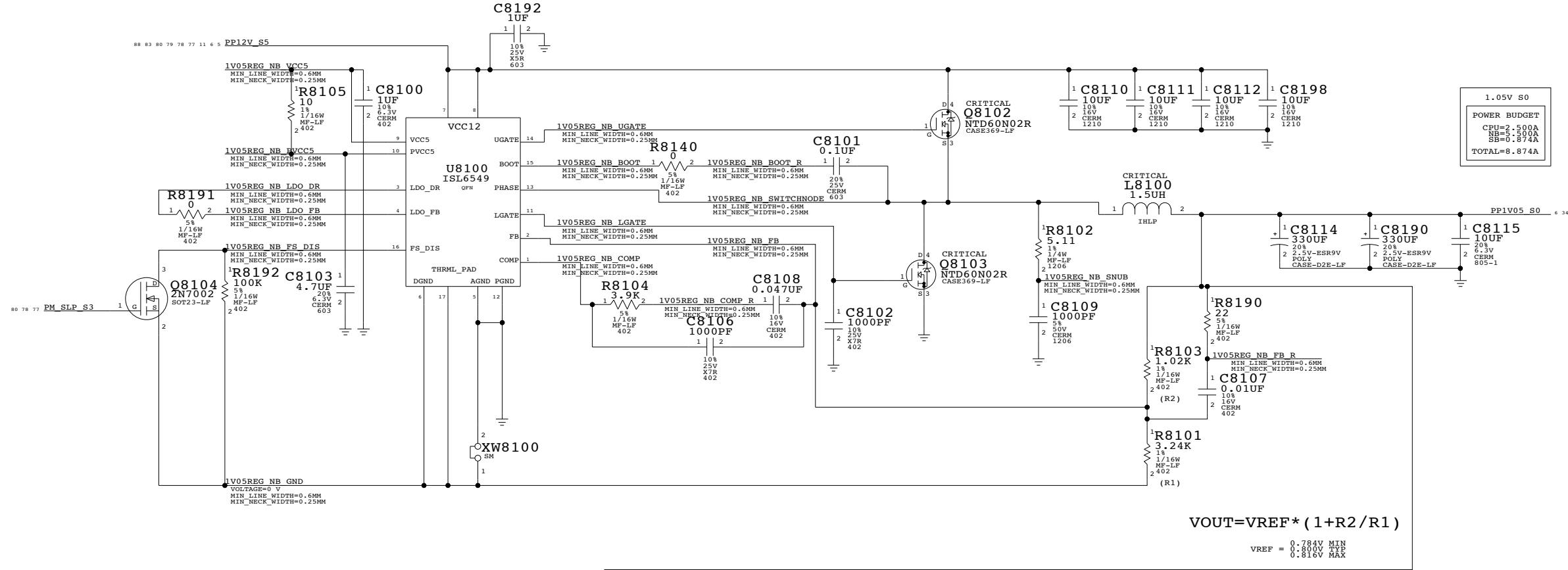
$$V_{REF} = \begin{matrix} 0.784V \text{ MIN} \\ 0.800V \text{ TYP} \\ 0.816V \text{ MAX} \end{matrix}$$



1.5V Vreg
 SYNC_MASTER=FINO-PC SYNC_DATE=05/18/2005
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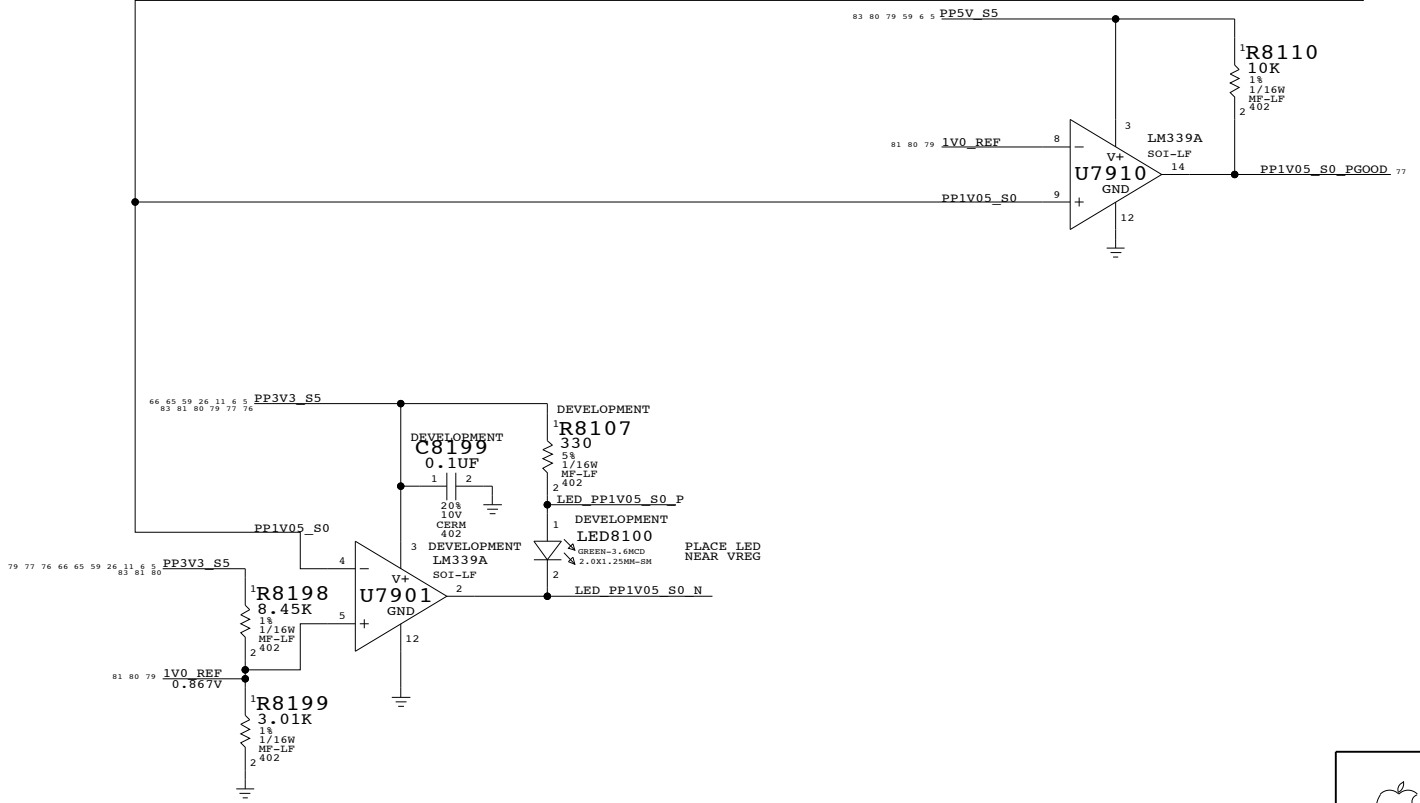
APPLE COMPUTER INC.	SIZE	DRAWING NUMBER	REV.
	D	051-7148	13
SCALE	SHT	80 OF	110
NONE			

1.05V S0 REGULATOR



$$V_{OUT} = V_{REF} * (1 + R2/R1)$$

VREF = 0.784V MIN
0.800V TYP
0.816V MAX



1.05V VREG

SYNC_MASTER=M38-RT SYNC_DATE=05/18/2005

NOTICE OF PROPRIETARY PROPERTY

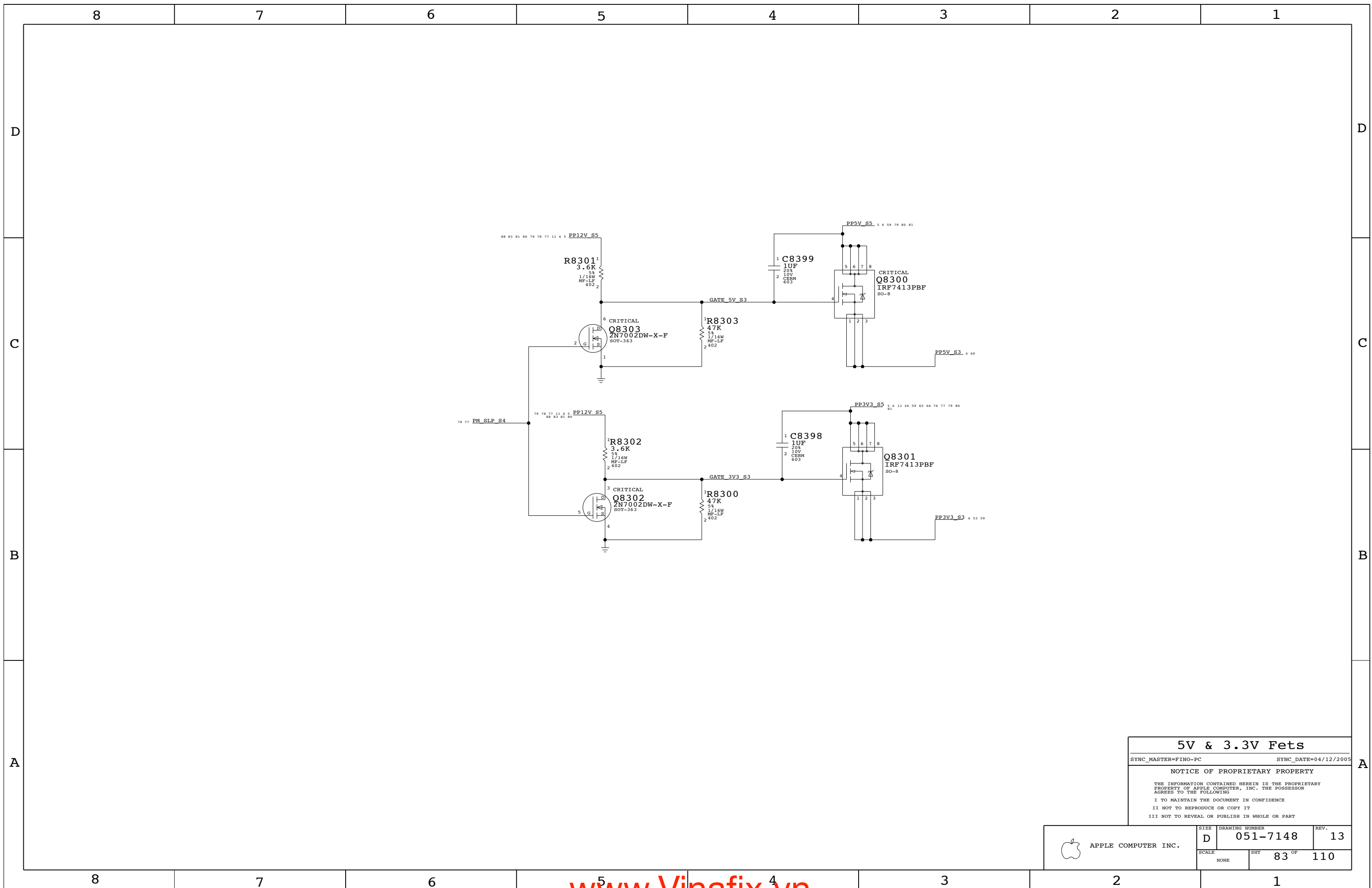
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	D	051-7148	13
SCALE	SHT	81 OF	110
NONE			



5V & 3.3V Fets

SYNC_MASTER=FINO-PC SYNC_DATE=04/12/2005

NOTICE OF PROPRIETARY PROPERTY

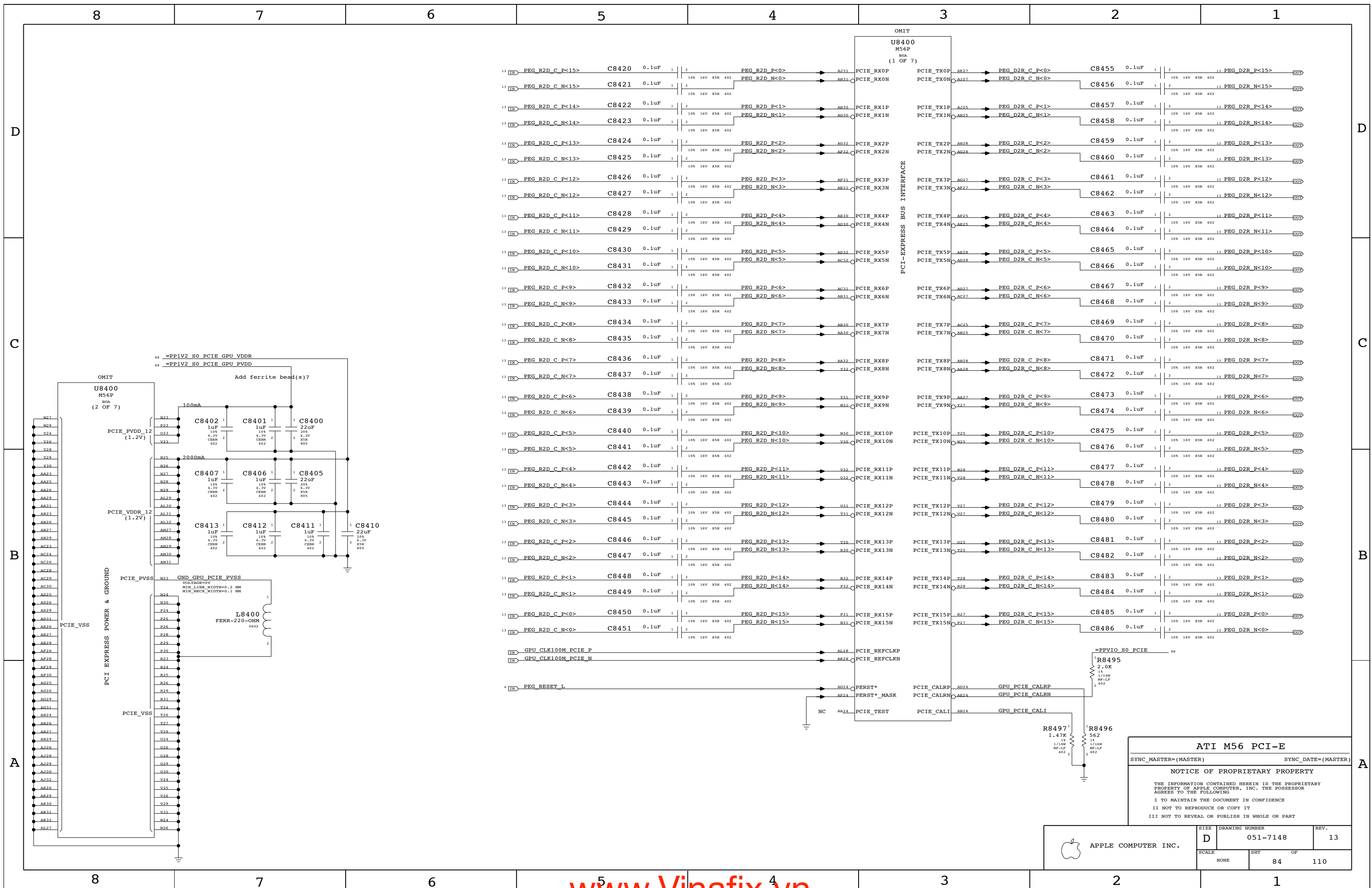
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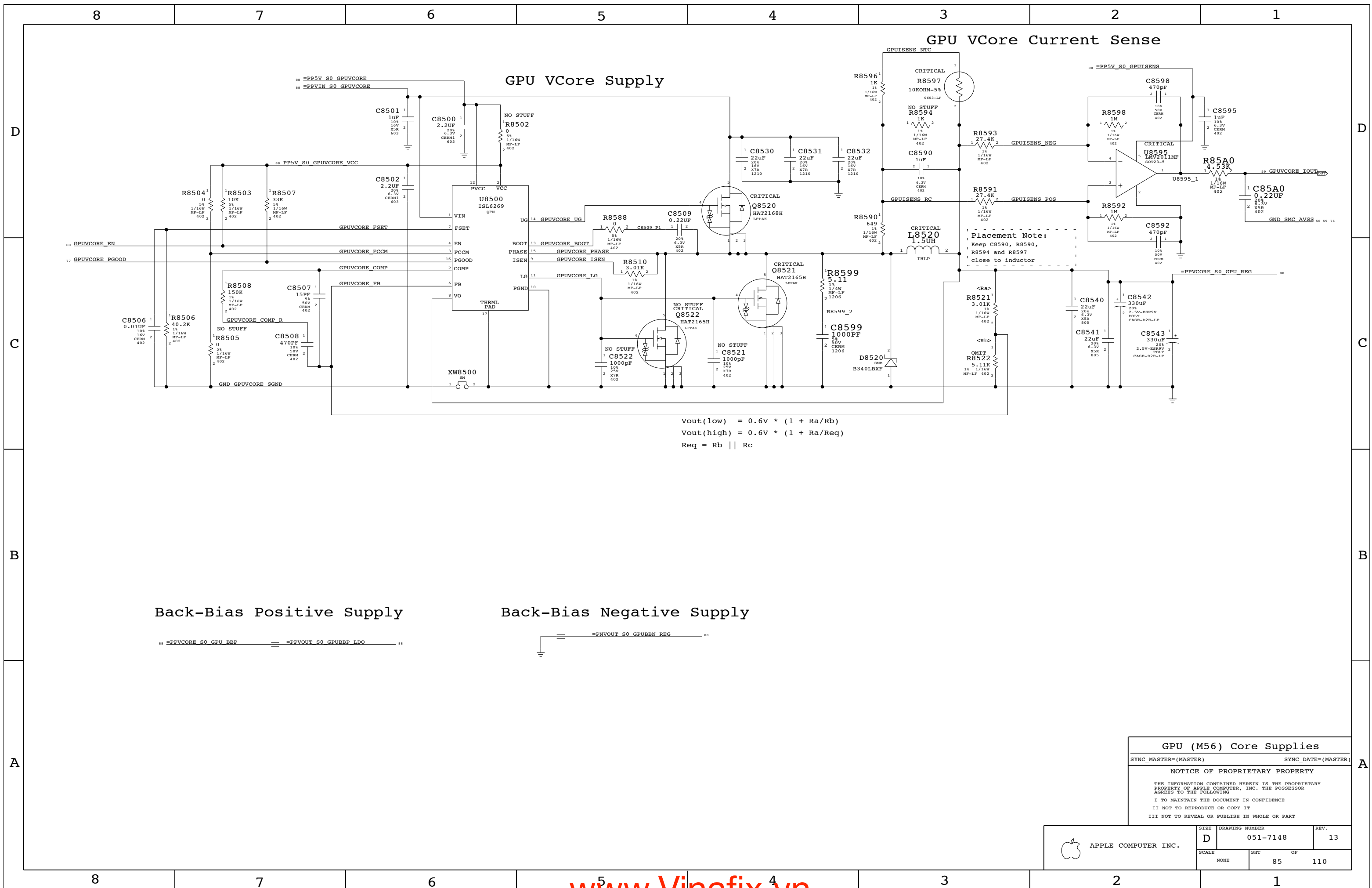
III NOT TO REVEAL OR PUBLISH IN WHOLE OR PART

APPLE COMPUTER INC.	SIZE D	DRAWING NUMBER 051-7148	REV. 13
	SCALE NONE	SHEET 83 OF 110	



ATI M56 PCI-E
 SYNC_MASTER=(MASTER) SYNC_DATE=(MASTER)
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APPLE COMPUTER INC.	SIZE	DRAWING NUMBER	REV.
	D	051-7148	13
SCALE	SHT	OF	
NONE	84	110	



GPU VCore Supply

GPU VCore Current Sense

$$V_{out}(low) = 0.6V * (1 + R_a/R_b)$$

$$V_{out}(high) = 0.6V * (1 + R_a/R_{eq})$$

$$R_{eq} = R_b || R_c$$

Back-Bias Positive Supply

== PPVCORE_S0_GPU_BBP == PPVOUT_S0_GPUBBP_LDO ==

Back-Bias Negative Supply

== PNVOUT_S0_GPUBBN_REG ==

GPU (M56) Core Supplies
 SYNC_MASTER=(MASTER) SYNC_DATE=(MASTER)
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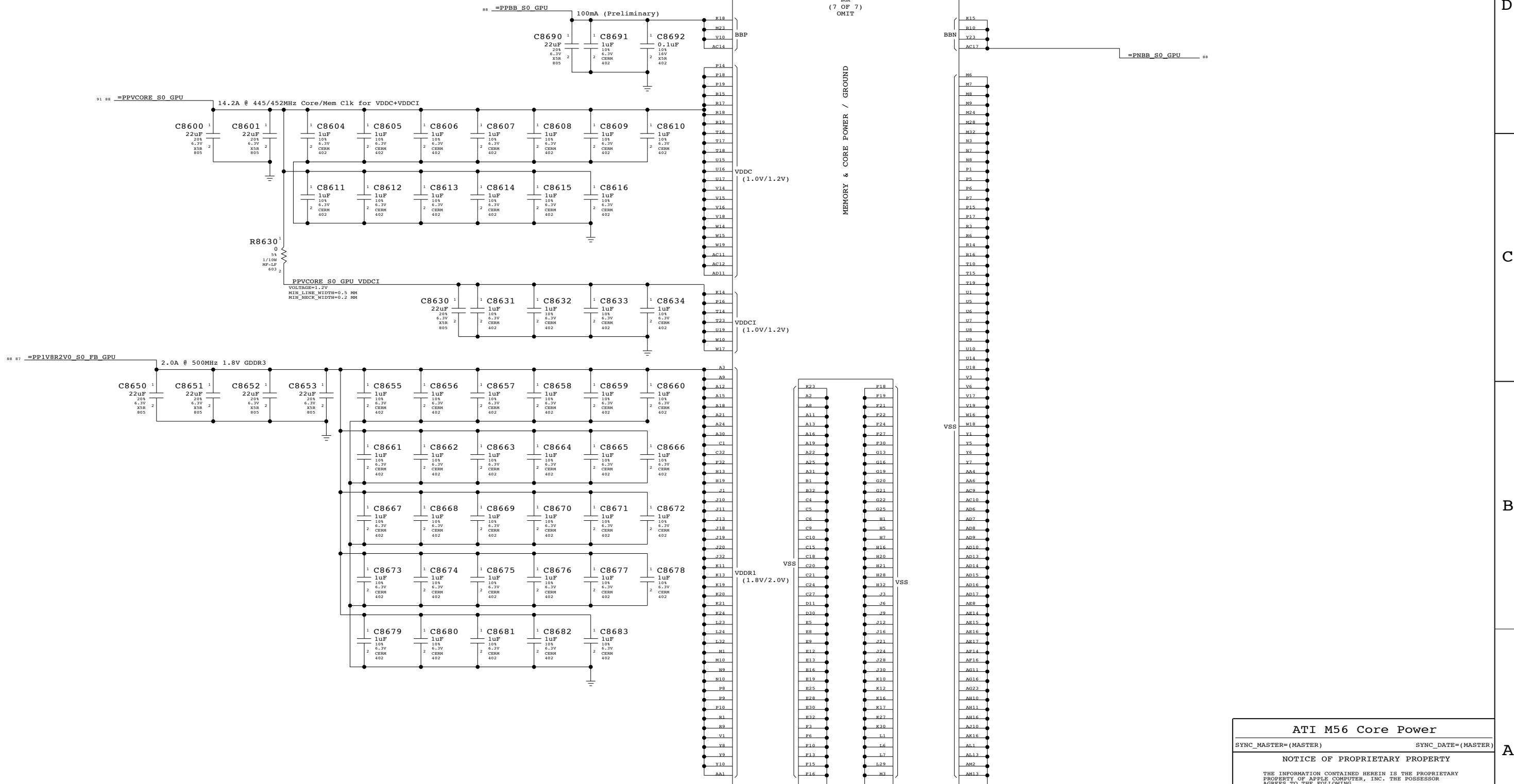
APPLE COMPUTER INC.	SIZE	DRAWING NUMBER	REV.
	D	051-7148	13
SCALE	SHT	OF	
NONE	85	110	

Page Notes

Power aliases required by this page:
 - =PP1V5_GPU_VDD15
 - =PP1VR1V3_GPU_VCORE

Signal aliases required by this page:
 (NONE)

BOM options provided by this page:
 (NONE)



ATI M56 Core Power

SYNC_MASTER=(MASTER) SYNC_DATE=(MASTER)

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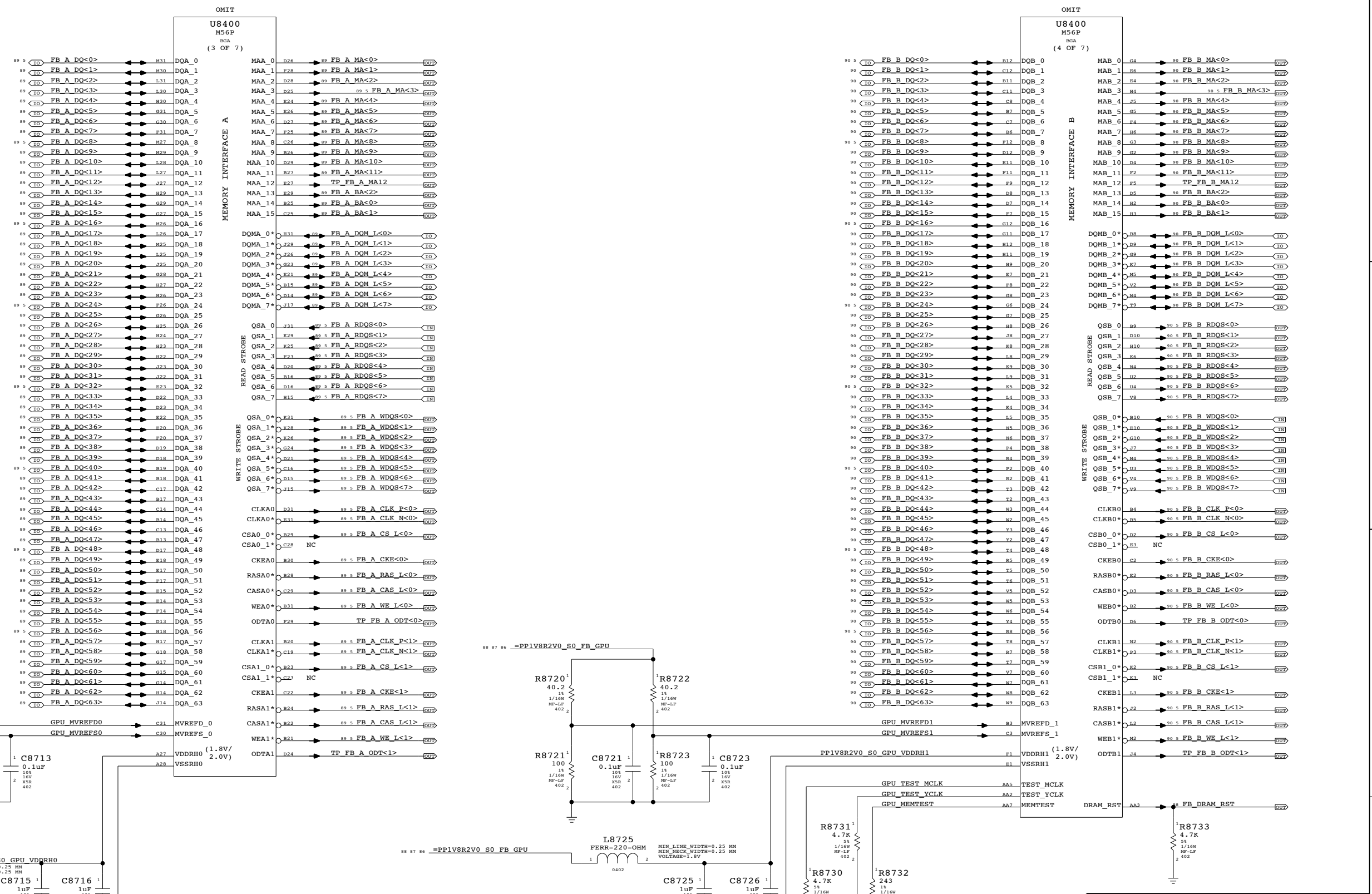
II NOT TO REPRODUCE OR COPY IT

III NOT TO REVEAL OR PUBLISH IN WHOLE OR PART

APPLE COMPUTER INC.	SIZE	DRAWING NUMBER	REV.
	D	051-7148	13
SCALE	SHT	OF	
NONE	86	110	

Page Notes

Power aliases required by this page:
- =PP1V8R2V0_S0_FB_GPU
Signal aliases required by this page:
(NONE)
BOM options provided by this page:
(NONE)



ATI M56 Frame Buffer I/F
SYNC_MASTER=(MASTER) SYNC_DATE=(MASTER)
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Table with columns for SIZE, DRAWING NUMBER, REV., SCALE, and SHEET OF. Includes Apple logo and text 'APPLE COMPUTER INC.' and '87 OF 110'.

8

7

6

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1

"S0" GPU RAILS

ONLY ON IN RUN

59 PP1V0R1V2_S0_GPU
 MAKE_BASE=TRUE
 MIN_LINE_WIDTH=0.6MM
 MIN_NECK_WIDTH=0.125MM
 VOLTAGE=1.2V

85 PP3V_S0_GPUVCORE_VCC
 MAKE_BASE=TRUE
 MIN_LINE_WIDTH=0.6MM
 MIN_NECK_WIDTH=0.125MM
 VOLTAGE=5V

PP1V2_GPU_IO_S0
 MAKE_BASE=TRUE
 MIN_LINE_WIDTH=0.6MM
 MIN_NECK_WIDTH=0.125MM
 VOLTAGE=1.2V

PPBB_S0_GPU
 MAKE_BASE=TRUE
 MIN_LINE_WIDTH=0.6MM
 MIN_NECK_WIDTH=0.125MM
 VOLTAGE=1.2V

PNBB_S0_GPU
 MAKE_BASE=TRUE
 MIN_LINE_WIDTH=0.6MM
 MIN_NECK_WIDTH=0.2MM
 VOLTAGE=0

76 41 59 41 26 11 10 6 PP3V3_S0
 MAKE_BASE=TRUE
 MIN_LINE_WIDTH=0.6MM
 MIN_NECK_WIDTH=0.125MM
 VOLTAGE=1.2V

77 11 6 PP2V5_S0
 MAKE_BASE=TRUE
 MIN_LINE_WIDTH=0.6MM
 MIN_NECK_WIDTH=0.125MM
 VOLTAGE=1.8V

PP1V8R2V0_S0_FB_GPU
 MAKE_BASE=TRUE
 MIN_LINE_WIDTH=0.6MM
 MIN_NECK_WIDTH=0.125MM
 VOLTAGE=1.8V

83 81 80 79 78 77 11 6 5 PP12V_S5

6 PP12V_S0

97 75 6 PP5V_S0
 MAKE_BASE=TRUE
 MIN_LINE_WIDTH=0.6MM
 MIN_NECK_WIDTH=0.125MM
 VOLTAGE=1.2V

85 GPUVCORE_EN
 MAKE_BASE=TRUE
 MIN_LINE_WIDTH=0.6MM
 MIN_NECK_WIDTH=0.125MM
 VOLTAGE=1.2V

87 FB_DRAM_RST
 MAKE_BASE=TRUE
 MIN_LINE_WIDTH=0.6MM
 MIN_NECK_WIDTH=0.125MM
 VOLTAGE=1.2V

M56 GPIOs

91 GPU_GPIO_0
 GPIO 0 = TRANSMITTER POWER SAVINGS ENABLE
 INTERNAL PULL DOWN, ATI RECOMMENDS HIGH

91 GPU_GPIO_1
 GPIO 1 = TRANSMITTER DE-EMPHASIS ENABLE
 INTERNAL PULL DOWN, ATI RECOMMENDS HIGH

91 GPU_GPIO_2

91 GPU_GPIO_3

91 GPU_GPIO_4
 GPIO 4 = DEBUG SIGNALS OUT

91 GPU_GPIO_5

91 GPU_GPIO_6

TP GPU_GPIO_7
 MAKE_BASE=TRUE

91 GPU_GPIO_8

NC GPU_GPIO_10
 MAKE_BASE=TRUE

91 GPU_GPIO_9

91 GPU_GPIO_13

91 GPU_GPIO_12

91 GPU_GPIO_11

91 GPU_GPIO_24

91 GPU_GPIO_27

91 GPU_GPIO_28

91 GPU_GPIO_29

GPU_VCORE_LOW
 MAKE_BASE=TRUE

GPU_GPIO_15

GPIO 15 = SWITCH CORE VOLTAGE HIGH TO LOW
 EXTERNAL PULL DOWN RECOMMENDED

=PP3V3_S0_GPU_VDDR3 88 91

TP GPU_GPIO_14
 MAKE_BASE=TRUE

TP GPU_GPIO_17
 MAKE_BASE=TRUE

TP GPU_VGA_R
 MAKE_BASE=TRUE

TP GPU_VGA_G
 MAKE_BASE=TRUE

TP GPU_VGA_B
 MAKE_BASE=TRUE

TP GPU_VGA_HSYNC
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TP GPU_VGA_VSYNC
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TP GPU_TV_Y
 MAKE_BASE=TRUE

TP GPU_TV_COMP
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TP GPU_TV_C
 MAKE_BASE=TRUE

TP GPU_DDC_B_CLK
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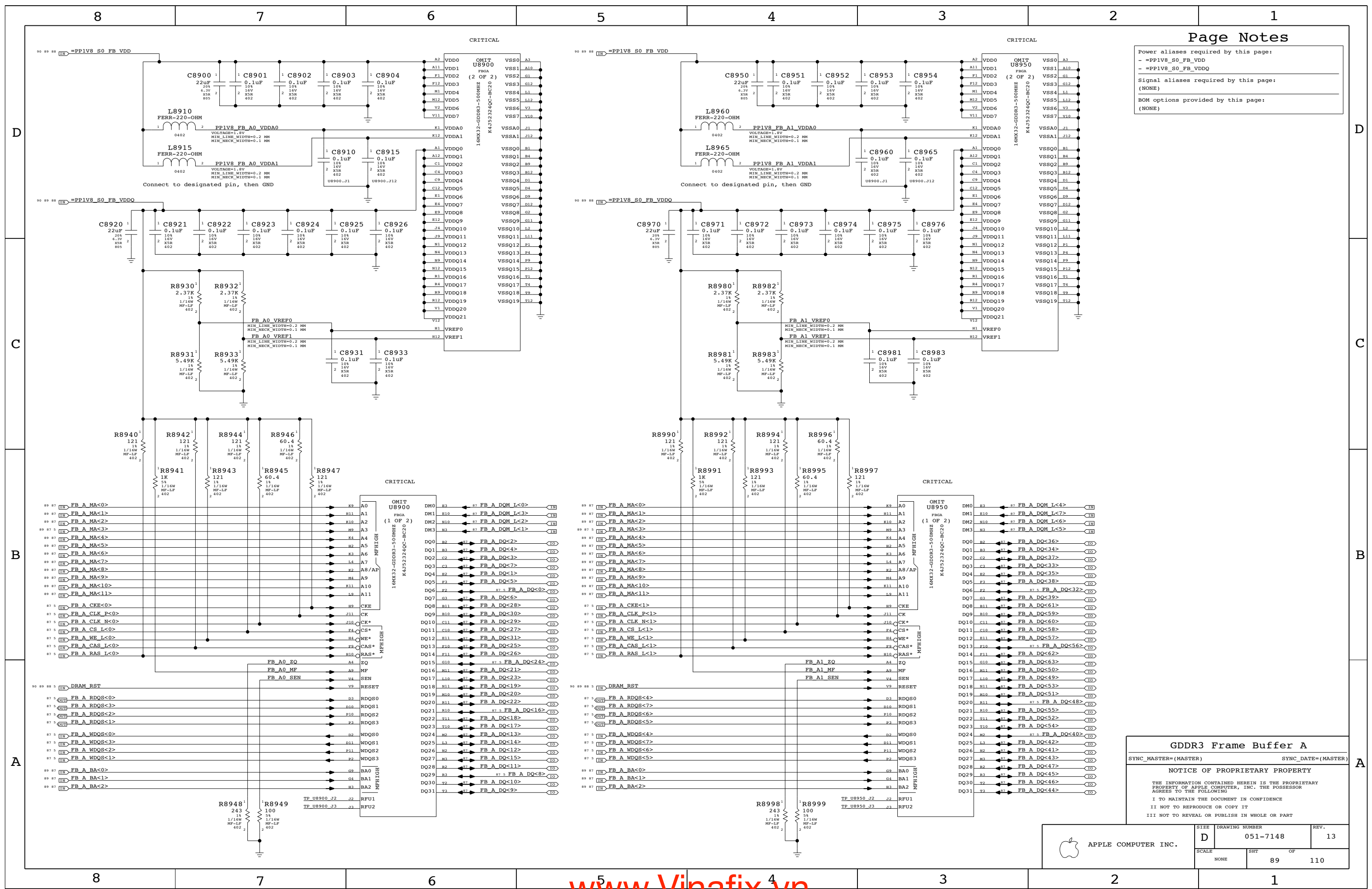
TP GPU_DDC_B_DATA
 MAKE_BASE=TRUE

GPU MISC

Power aliases required by this page:
 - =PPIV8_S0_FB_VDD
 - =PPIV8_S0_FB_VDDQ

Signal aliases required by this page:
 (NONE)

BOM options provided by this page:
 (NONE)



GDDR3 Frame Buffer A

SYNC_MASTER=(MASTER) SYNC_DATE=(MASTER)

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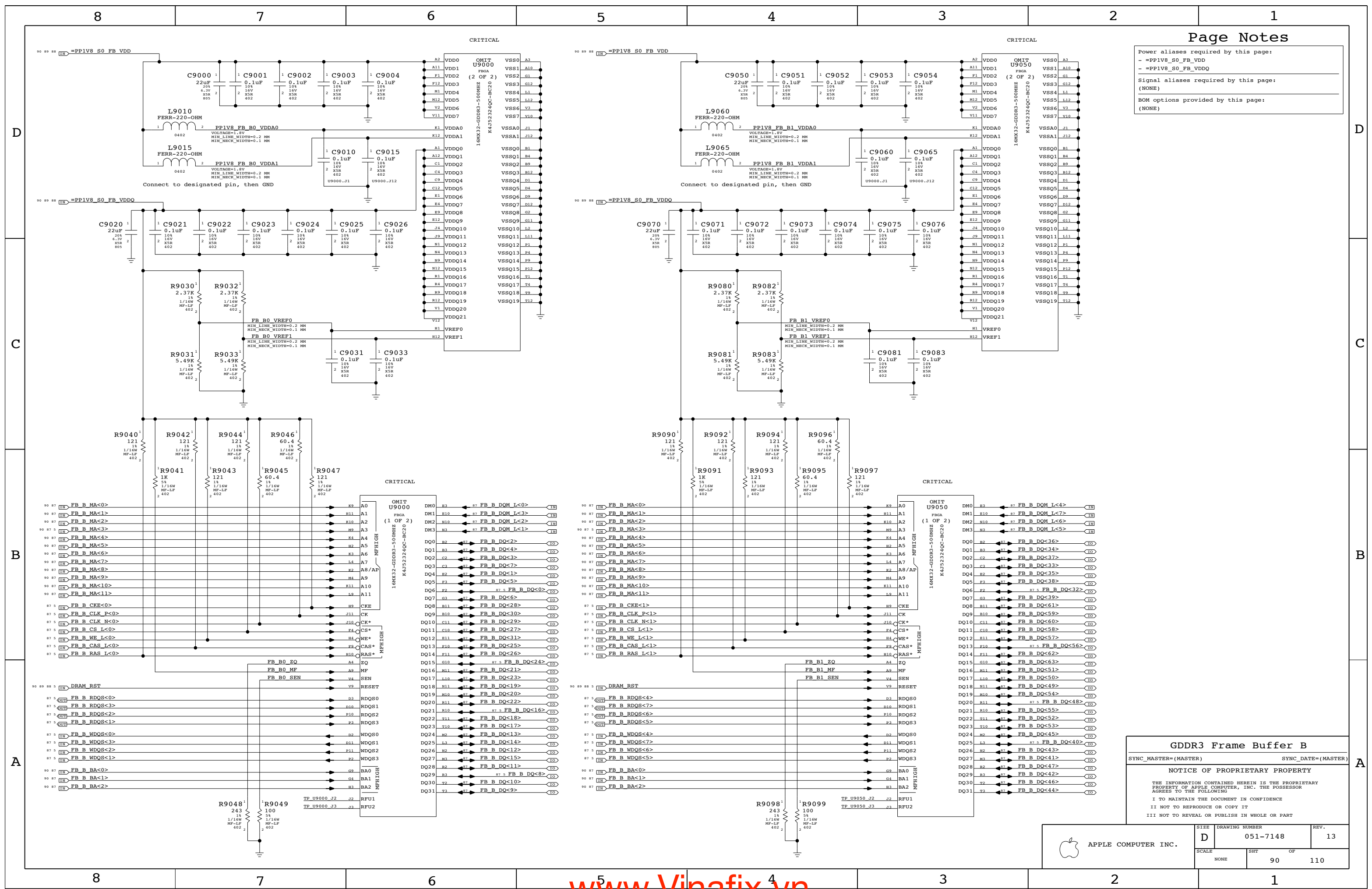
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	D	051-7148	13
SCALE	SHT	OF	
NONE	89	110	

Power aliases required by this page:
 - =PPIV8_S0_FB_VDD
 - =PPIV8_S0_FB_VDDQ

Signal aliases required by this page:
 (NONE)

BOM options provided by this page:
 (NONE)



GDDR3 Frame Buffer B

SYNC_MASTER=(MASTER) SYNC_DATE=(MASTER)

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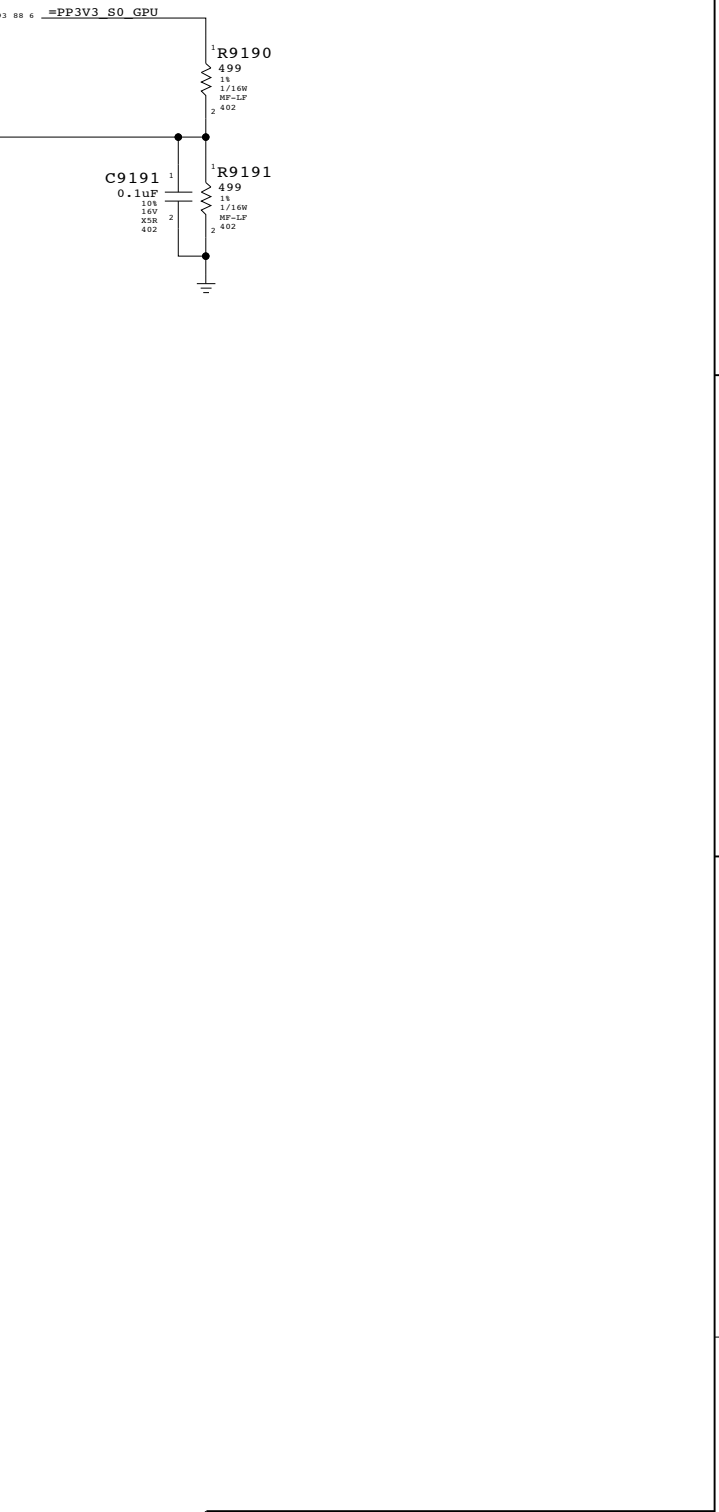
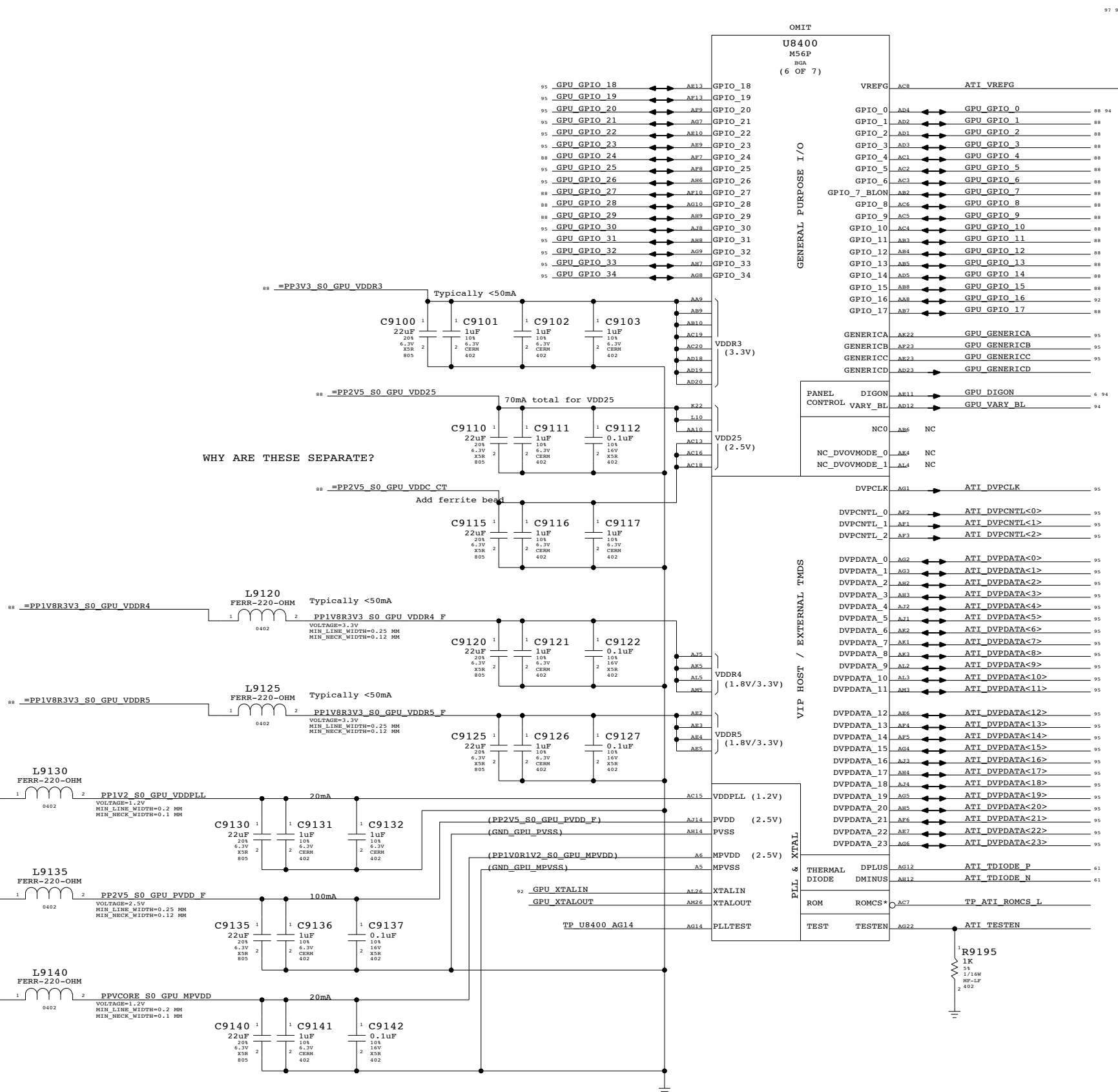
APPLE COMPUTER INC.	SIZE	DRAWING NUMBER	REV.
	D	051-7148	13
SCALE	SHT	OF	
NONE	90	110	

Page Notes

Power aliases required by this page:
 - =PP3V3_GPU_GPIOS
 - =PP2V5_PVDD
 - =PP1V8_GPU_LVDS_PLL

Signal aliases required by this page:
 - =I2C_GPU_TMDS_SDA - I2C data line for external TMDS transmitters
 - =I2C_GPU_TMDS_SCL - I2C clock line for external TMDS transmitters

BOM options provided by this page:
 (NONE)



ATI M56 GPIO/DVO/Misc

SYNC_MASTER=(MASTER) SYNC_DATE=(MASTER)

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SCALE	SHT	OF	
NONE	91	110	

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Page Notes

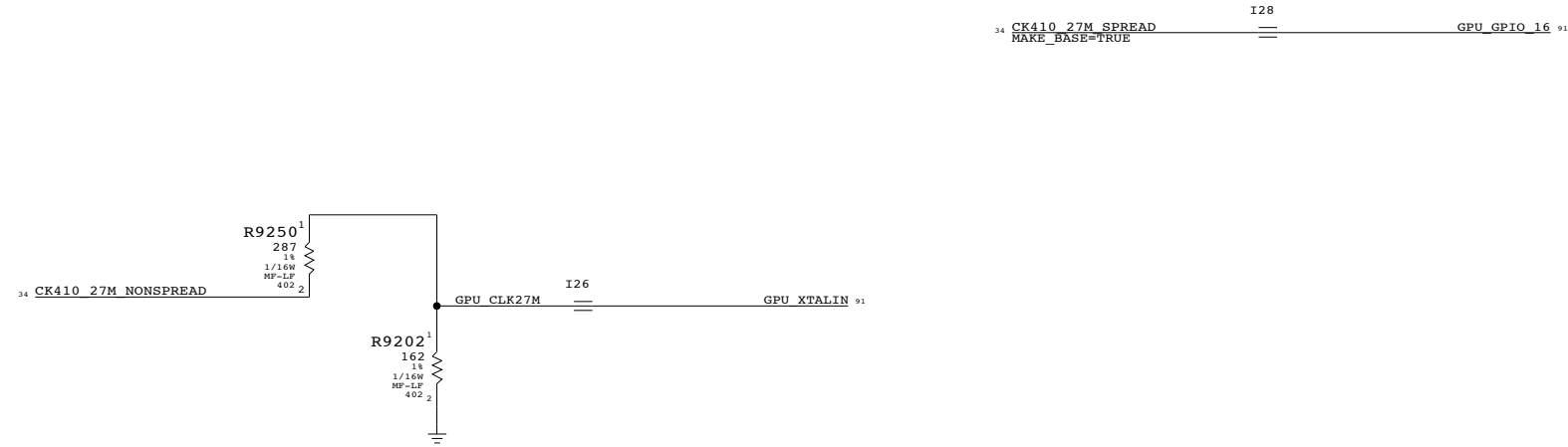
Power aliases required by this page:

- =PP3V3_GPU_CLOCKS - =PP3V3_GPU_PWRSEQ
- =PPVIN_GPU_LVDDR_LDO - =PP2V5_GPU_PWRSEQ
- =PP2V5_GPU_LVDDR_LDO - =PP1V8_GPU_PWRSEQ
- =PP1V5_GPU_PWRSEQ

Signal aliases required by this page:
(NONE)

BOM options provided by this page:

- GPU_SS - GPU_LVDDR_2V8



GPU CLOCKS

SYNC_MASTER=BOZEMAN SYNC_DATE=05/21/2005


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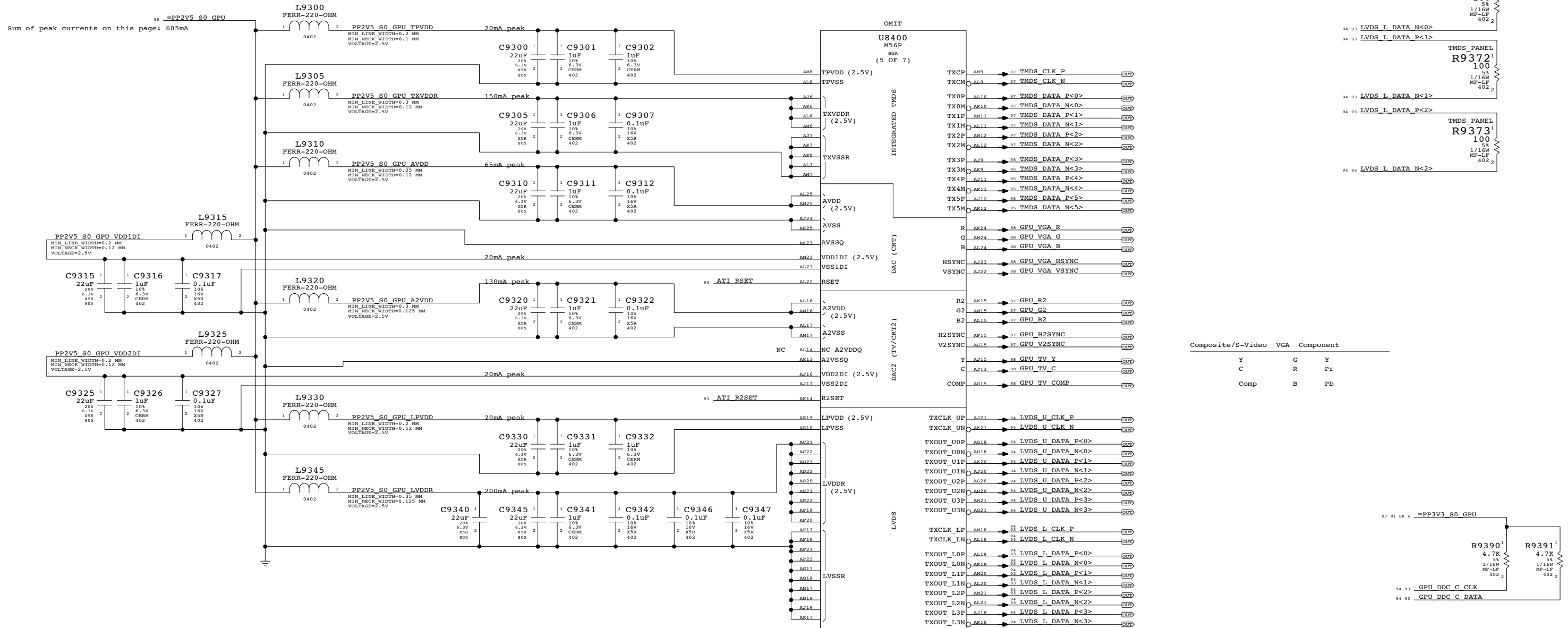
Page Notes

Power aliases required by this page:
 - =PP2V5_S0_GPU
 - =PP1V8R2V5_S0_GPU_LVDDR

Signal aliases required by this page:
 (NONE)

BOM options provided by this page:
 (NONE)

TERMINATION FOR TMDS USAGE OF LVDS PINS
 PLACE CLOSE TO GPU (U8400)



Composite/S-Video	VGA	Component
Y	G	Y
C	R	Pr
Comp	B	Pb

ATI M56 Video Interfaces

SYNC_MASTER=(MASTER) SYNC_DATE=(MASTER)

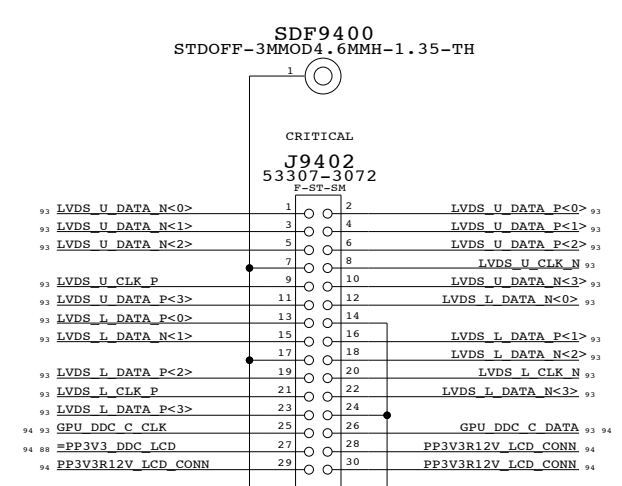
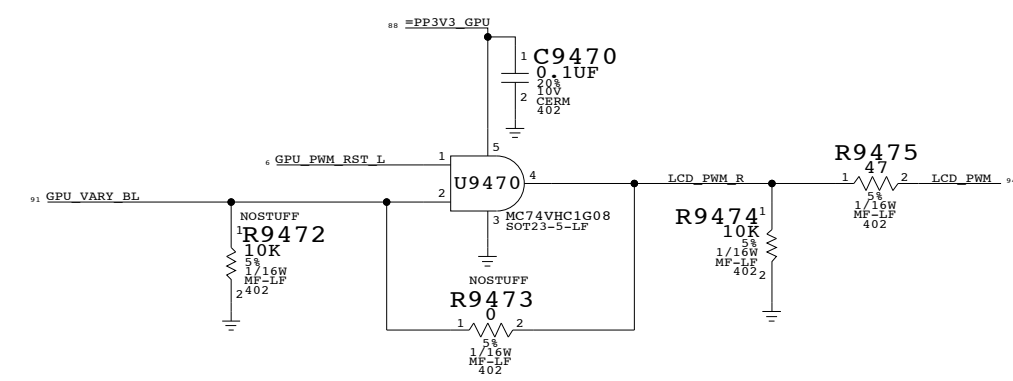
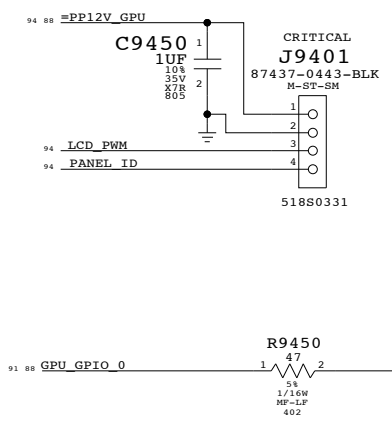
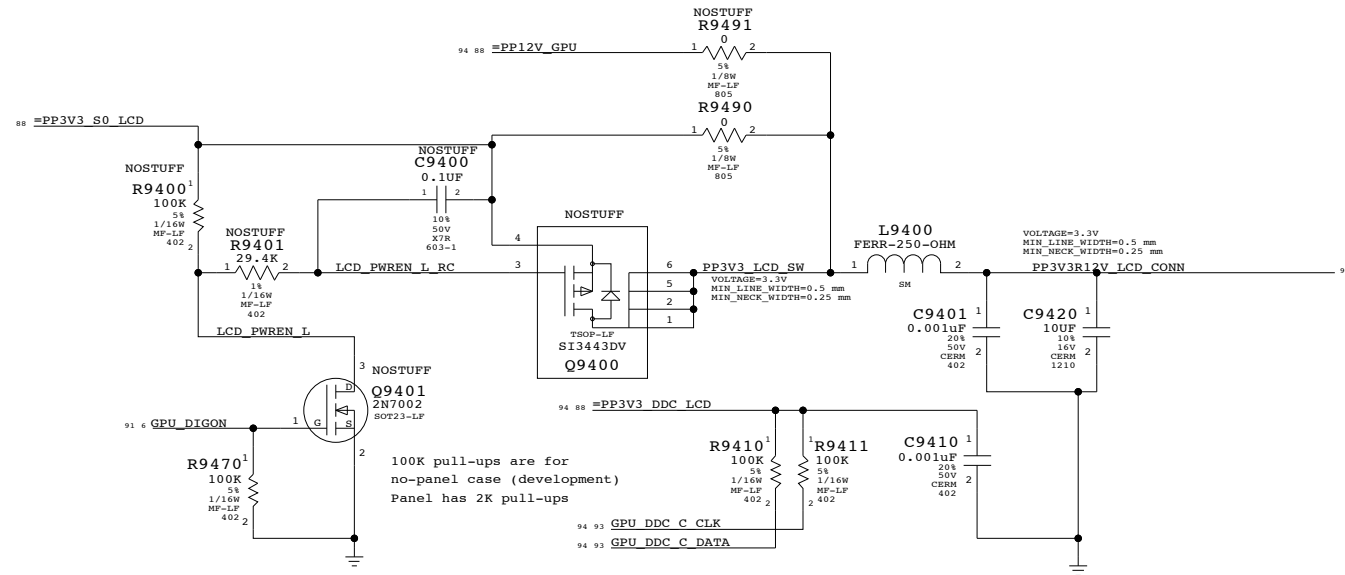
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	NONE	93	110	13

LCD (LVDS) INTERFACE

INVERTER INTERFACE



Internal Display Conns
 SYNC_MASTER=BOZEMAN SYNC_DATE=04/27/2005

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SCALE	SHT	OF	
NONE	94	110	



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 MAKE_BASE=TRUE

TP GPU GPIO<32> == GPU_GPIO_32 »
 MAKE_BASE=TRUE

TP GPU GPIO<31> == GPU_GPIO_31 »
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TP GPU GPIO<30> == GPU_GPIO_30 »
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TP GPU GPIO<26> == GPU_GPIO_26 »
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TP GPU GPIO<23> == GPU_GPIO_23 »
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TP GPU GPIO<22> == GPU_GPIO_22 »
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TP GPU GPIO<20> == GPU_GPIO_20 »
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TP GPU GPIO<19> == GPU_GPIO_19 »
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TP GPU GPIO<18> == GPU_GPIO_18 »
 MAKE_BASE=TRUE

TP GPU GENERICA == GPU_GENERICA »
 MAKE_BASE=TRUE

TP GPU GENERICB == GPU_GENERICB »
 MAKE_BASE=TRUE

TP GPU GENERICC == GPU_GENERICC »
 MAKE_BASE=TRUE

M56 TPS

NOTICE OF PROPRIETARY PROPERTY

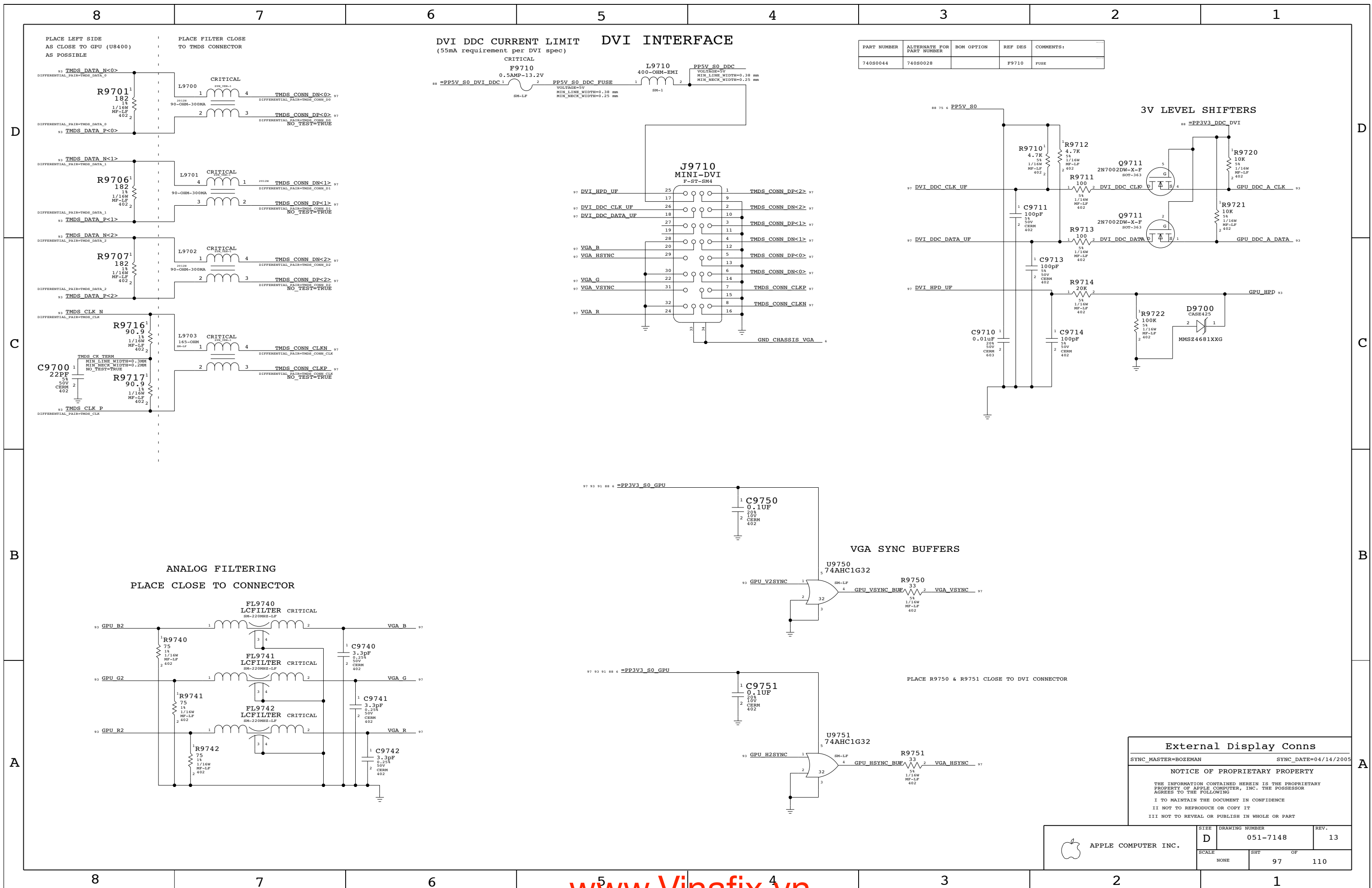
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APPLE COMPUTER INC.	SIZE	DRAWING NUMBER	REV.
	D	051-7148	13
SCALE	SHT	95 OF 110	
NONE			

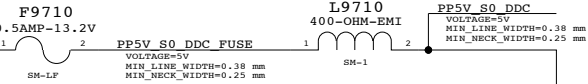


PART NUMBER	ALTERNATE FOR PART NUMBER	BOM OPTION	REF DES	COMMENTS
74080044	74080028		F9710	FUSE

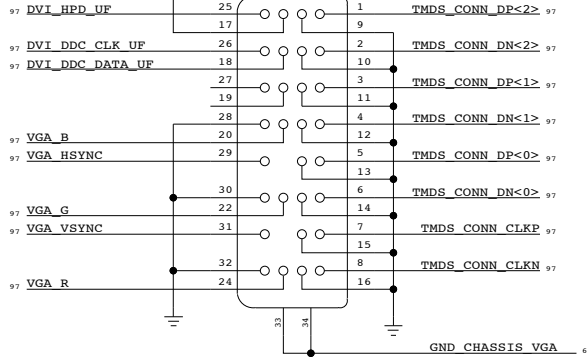
DVI DDC CURRENT LIMIT DVI INTERFACE

(55mA requirement per DVI spec)

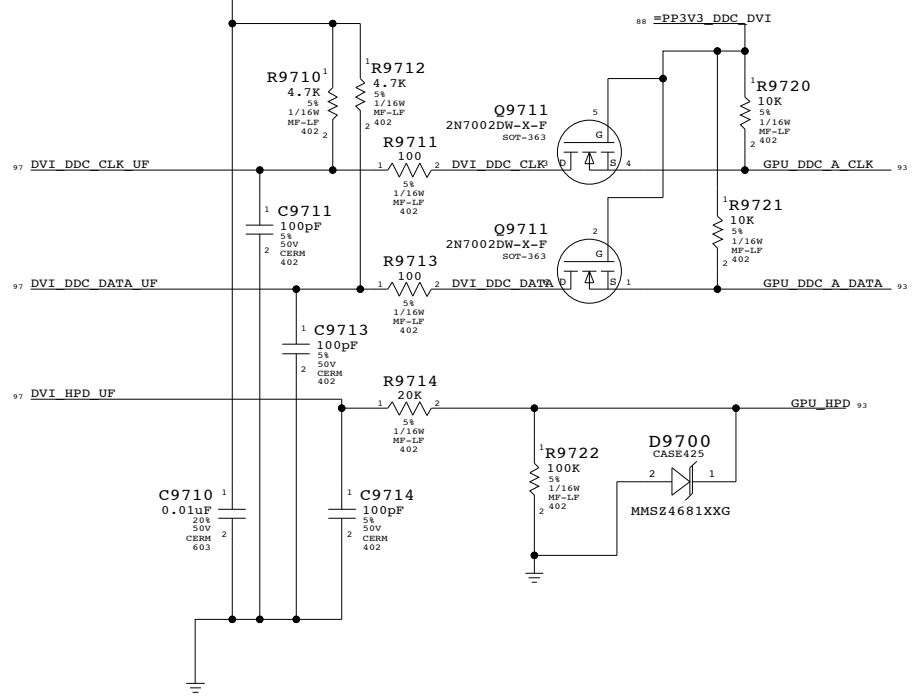
CRITICAL



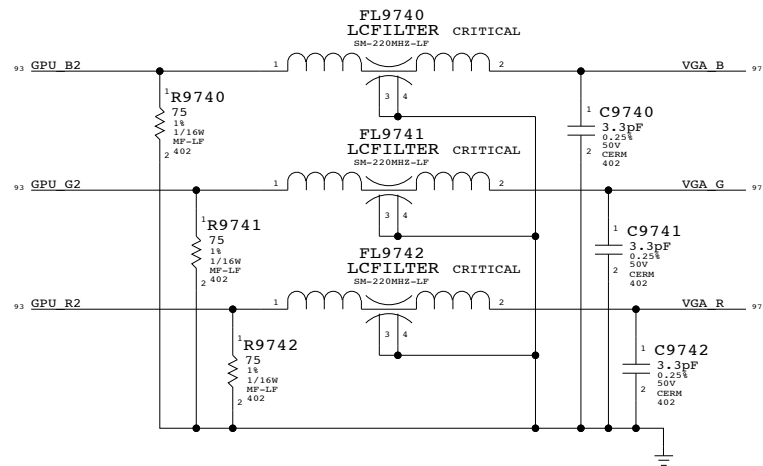
J9710 MINI-DVI



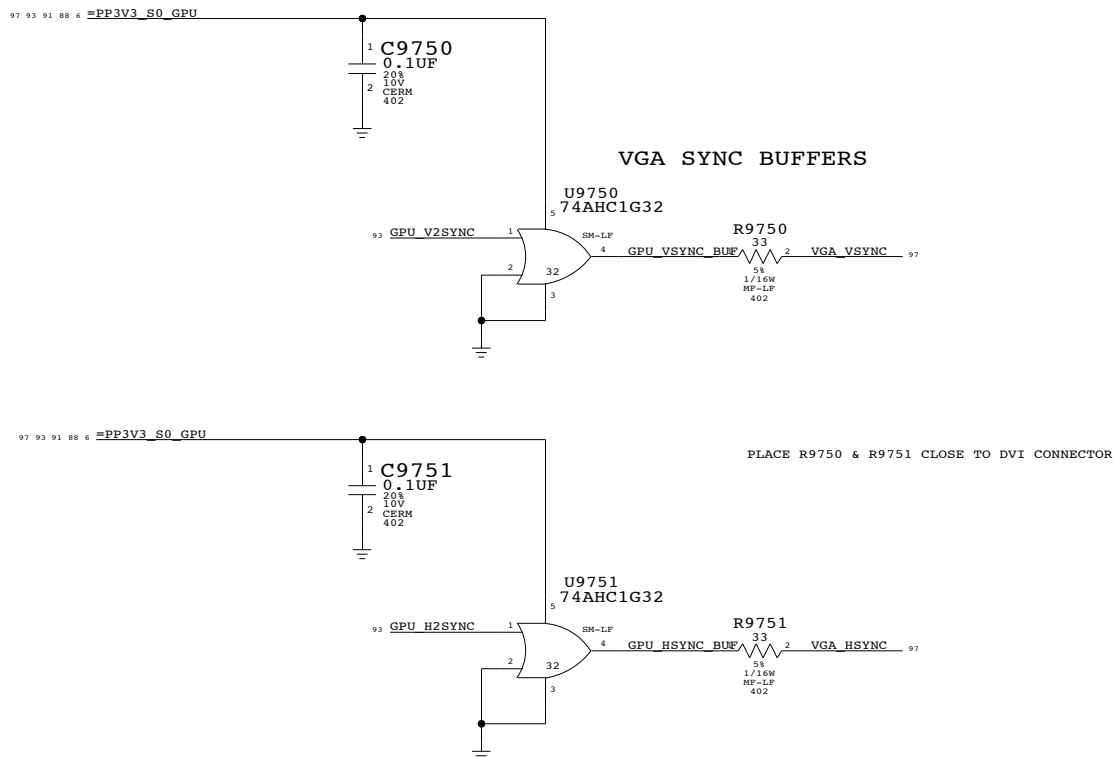
3V LEVEL SHIFTERS



ANALOG FILTERING
PLACE CLOSE TO CONNECTOR



VGA SYNC BUFFERS



External Display Conns
 SYNC_MASTER=BOZEMAN SYNC_DATE=04/14/2005
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	D	051-7148	13
SCALE	SHT	OF	
NONE	97	110	

8			7			6			5			4			3			2			1		
AUD_GPIO_1	AUD_GPIO_1 - @m38a_lib.M38A	68C7 74C5	CK410_SRC2_P	CK410_SRC2_P - @m38a_lib.M38A	3384 34A6	DMI_N2S_N<3>	DMI_N2S_N<3> - @m38a_lib.M38A	1484 22D2	FB_A_DQ<22>	FB_A_DQ<22> - @m38a_lib.M38A	87C7 89A6												
AUD_GPIO_2	AUD_GPIO_2 - @m38a_lib.M38A	68B7 68C7	CK410_SRC3_N	CK410_SRC3_N - @m38a_lib.M38A	3384 34D3	DMI_N2S_P<0>	DMI_N2S_P<0> - @m38a_lib.M38A	588 1484 22D2	FB_A_DQ<23>	FB_A_DQ<23> - @m38a_lib.M38A	87C7 89A6												
AUD_LI_DET_EMI	AUD_LI_DET_EMI - @m38a_lib.M38A	73D6	CK410_SRC4_N	CK410_SRC4_N - @m38a_lib.M38A	3384 34D3	DMI_N2S_P<1>	DMI_N2S_P<1> - @m38a_lib.M38A	1484 22D2	FB_A_DQ<24>	FB_A_DQ<24> - @m38a_lib.M38A	5A6 5D6 87C7 89A6												
AUD_LI_DET_H	AUD_LI_DET_H - @m38a_lib.M38A	73D4 74D6	CK410_SRC4_P	CK410_SRC4_P - @m38a_lib.M38A	3384 3486	DMI_N2S_P<2>	DMI_N2S_P<2> - @m38a_lib.M38A	1484 22D2	FB_A_DQ<25>	FB_A_DQ<25> - @m38a_lib.M38A	87C7 89A6												
AUD_LI_DET_JACK	AUD_LI_DET_JACK - @m38a_lib.M38A	73D7	CK410_SRC5_P	CK410_SRC5_P - @m38a_lib.M38A	3384 3486	DMI_N2S_P<3>	DMI_N2S_P<3> - @m38a_lib.M38A	1484 22D2	FB_A_DQ<26>	FB_A_DQ<26> - @m38a_lib.M38A	87C7 89A6												
AUD_LI_GND_EMI	AUD_LI_GND_EMI - @m38a_lib.M38A	73D6	CK410_SRC5_N	CK410_SRC5_N - @m38a_lib.M38A	3384 3486	DMI_S2N_N<0>	DMI_S2N_N<0> - @m38a_lib.M38A	5C7 1484 22D2	FB_A_DQ<27>	FB_A_DQ<27> - @m38a_lib.M38A	87C7 8986												
AUD_LI_GND_JACK	AUD_LI_GND_JACK - @m38a_lib.M38A	73D7	CK410_SRC5_P	CK410_SRC5_P - @m38a_lib.M38A	3384 3486	DMI_S2N_N<1>	DMI_S2N_N<1> - @m38a_lib.M38A	1484 22D2	FB_A_DQ<28>	FB_A_DQ<28> - @m38a_lib.M38A	87C7 8986												
AUD_LI_L	AUD_LI_L - @m38a_lib.M38A	73D4 74C5	CK410_SRC6_N	CK410_SRC6_N - @m38a_lib.M38A	3384 3486	DMI_S2N_N<2>	DMI_S2N_N<2> - @m38a_lib.M38A	1484 22D2	FB_A_DQ<29>	FB_A_DQ<29> - @m38a_lib.M38A	87C7 8986												
AUD_LI_L_EMI	AUD_LI_L_EMI - @m38a_lib.M38A	73D6	CK410_SRC6_P	CK410_SRC6_P - @m38a_lib.M38A	3384 3486	DMI_S2N_N<3>	DMI_S2N_N<3> - @m38a_lib.M38A	1484 22D2	FB_A_DQ<30>	FB_A_DQ<30> - @m38a_lib.M38A	87C7 8986												
AUD_LI_L_JACK	AUD_LI_L_JACK - @m38a_lib.M38A	73D7	CK410_SRC7_N	CK410_SRC7_N - @m38a_lib.M38A	3384 34D3	DMI_S2N_P<0>	DMI_S2N_P<0> - @m38a_lib.M38A	5C7 1484 22D2	FB_A_DQ<31>	FB_A_DQ<31> - @m38a_lib.M38A	87C7 89A6												
AUD_LI_R	AUD_LI_R - @m38a_lib.M38A	73D4 74C5	CK410_SRC7_P	CK410_SRC7_P - @m38a_lib.M38A	3384 34D3	DMI_S2N_P<1>	DMI_S2N_P<1> - @m38a_lib.M38A	1484 22D2	FB_A_DQ<32>	FB_A_DQ<32> - @m38a_lib.M38A	5A6 5D6 87C7 8982												
AUD_LI_R_EMI	AUD_LI_R_EMI - @m38a_lib.M38A	73D6	CK410_SRC8_N	CK410_SRC8_N - @m38a_lib.M38A	3384 34A6	DMI_S2N_P<2>	DMI_S2N_P<2> - @m38a_lib.M38A	1484 22D2	FB_A_DQ<33>	FB_A_DQ<33> - @m38a_lib.M38A	87C7 8983												
AUD_LI_R_JACK	AUD_LI_R_JACK - @m38a_lib.M38A	73D7	CK410_SRC8_P	CK410_SRC8_P - @m38a_lib.M38A	3384 34A6	DMI_S2N_P<3>	DMI_S2N_P<3> - @m38a_lib.M38A	1484 22D2	FB_A_DQ<34>	FB_A_DQ<34> - @m38a_lib.M38A	87C7 8983												
AUD_LO_DET1_1	AUD_LO_DET1_1 - @m38a_lib.M38A	74A4 74B2	CK410_SRC_CLKREQ1_L	CK410_SRC_CLKREQ1_L - @m38a_lib.M38A	3384 34D8	DVI_DDC_CLK	DVI_DDC_CLK - @m38a_lib.M38A	97D2	FB_A_DQ<35>	FB_A_DQ<35> - @m38a_lib.M38A	87C7 8983												
AUD_LO_DET1_INV	AUD_LO_DET1_INV - @m38a_lib.M38A	74B3	CK410_SRC_CLKREQ1_U	CK410_SRC_CLKREQ1_U - @m38a_lib.M38A	3384 34D8	DVI_DDC_CLK_UP	DVI_DDC_CLK_UP - @m38a_lib.M38A	97D3 97D5	FB_A_DQ<36>	FB_A_DQ<36> - @m38a_lib.M38A	87C7 8983												
AUD_LO_DET2_1	AUD_LO_DET2_1 - @m38a_lib.M38A	74B4	CK410_SRC_CLKREQ3_L	CK410_SRC_CLKREQ3_L - @m38a_lib.M38A	3384 34D8	DVI_DDC_DATA	DVI_DDC_DATA - @m38a_lib.M38A	97C2	FB_A_DQ<37>	FB_A_DQ<37> - @m38a_lib.M38A	87C7 8983												
AUD_LO_DET2_INV	AUD_LO_DET2_INV - @m38a_lib.M38A	73B4	CK410_SRC_CLKREQ6_L	CK410_SRC_CLKREQ6_L - @m38a_lib.M38A	3384 53C6	DVI_DDC_DATA_UP	DVI_DDC_DATA_UP - @m38a_lib.M38A	97C3 97D5	FB_A_DQ<38>	FB_A_DQ<38> - @m38a_lib.M38A	87C7 8983												
AUD_LO_DET3_1	AUD_LO_DET3_1 - @m38a_lib.M38A	73B7 74B5	CK410_SRC_CLKREQ6_U	CK410_SRC_CLKREQ6_U - @m38a_lib.M38A	3384 53C6	DVI_HPD_UP	DVI_HPD_UP - @m38a_lib.M38A	97C3 97D5	FB_A_DQ<39>	FB_A_DQ<39> - @m38a_lib.M38A	87C7 8983												
AUD_LO_L	AUD_LO_L - @m38a_lib.M38A	73B7	CK410_SRC_CLKREQ8_L	CK410_SRC_CLKREQ8_L - @m38a_lib.M38A	3384 34D8	ENET_C4106_2	ENET_C4106_2 - @m38a_lib.M38A	41D2	FB_A_DQ<40>	FB_A_DQ<40> - @m38a_lib.M38A	5A6 5D6 87C7 89A2												
AUD_LO_L_JACK	AUD_LO_L_JACK - @m38a_lib.M38A	73B4	CK410_SRC_CLKREQ8_U	CK410_SRC_CLKREQ8_U - @m38a_lib.M38A	3384 34D8	ENET_C4107_2	ENET_C4107_2 - @m38a_lib.M38A	41D2	FB_A_DQ<41>	FB_A_DQ<41> - @m38a_lib.M38A	87C7 89A3												
AUD_LO_R	AUD_LO_R - @m38a_lib.M38A	73A8 74B5	CK410_USB48_FSA	CK410_USB48_FSA - @m38a_lib.M38A	33A4 34C6	ENET_C4117_1	ENET_C4117_1 - @m38a_lib.M38A	41B2	FB_A_DQ<42>	FB_A_DQ<42> - @m38a_lib.M38A	87C7 89A3												
AUD_LO_R_EMI	AUD_LO_R_EMI - @m38a_lib.M38A	73A7	CK410_XTAL_IN	CK410_XTAL_IN - @m38a_lib.M38A	33C6	ENET_C4118_1	ENET_C4118_1 - @m38a_lib.M38A	41B2	FB_A_DQ<43>	FB_A_DQ<43> - @m38a_lib.M38A	87C7 89A3												
AUD_LO_R_JACK	AUD_LO_R_JACK - @m38a_lib.M38A	73B4	CK410_XTAL_OUT	CK410_XTAL_OUT - @m38a_lib.M38A	33C6	ENET_CLK100M_PCIE_N	ENET_CLK100M_PCIE_N - @m38a_lib.M38A	5D5 34A4 34B2 41C5	FB_A_DQ<44>	FB_A_DQ<44> - @m38a_lib.M38A	87B7 89A3												
AUD_LO_TIP	AUD_LO_TIP - @m38a_lib.M38A	73B8 74B5	CK410_XTAL_OUT	CK410_XTAL_OUT - @m38a_lib.M38A	33C6	ENET_CLK100M_PCIE_P	ENET_CLK100M_PCIE_P - @m38a_lib.M38A	5D5 34A4 34B2 41C5	FB_A_DQ<45>	FB_A_DQ<45> - @m38a_lib.M38A	87B7 89A3												
AUD_LO_TIP_INV	AUD_LO_TIP_INV - @m38a_lib.M38A	74B3	CLK_NB_OE_L	CLK_NB_OE_L - @m38a_lib.M38A	14B6 33B4	ENET_CLK100M_PCIE_P	ENET_CLK100M_PCIE_P - @m38a_lib.M38A	5D5 34A4 34B2 41C5	FB_A_DQ<46>	FB_A_DQ<46> - @m38a_lib.M38A	87B7 89A3												
AUD_LO_TIP2_1	AUD_LO_TIP2_1 - @m38a_lib.M38A	73B7	CPU_A20M_L	CPU_A20M_L - @m38a_lib.M38A	5C8 7C7 21C4	CPU_BSEL<0>	CPU_BSEL<0> - @m38a_lib.M38A	7B4 34B8	FB_A_DQ<47>	FB_A_DQ<47> - @m38a_lib.M38A	87B7 89A3												
AUD_LO_TIP2_INV	AUD_LO_TIP2_INV - @m38a_lib.M38A	74B4	CPU_BSEL<1>	CPU_BSEL<1> - @m38a_lib.M38A	7B4 34A8	CPU_BSEL<2>	CPU_BSEL<2> - @m38a_lib.M38A	7B4 34A8	FB_A_DQ<48>	FB_A_DQ<48> - @m38a_lib.M38A	5A6 5D6 87B7 89A2												
AUD_LO_TIP3_1	AUD_LO_TIP3_1 - @m38a_lib.M38A	73B4	CPU_BSEL<3>	CPU_BSEL<3> - @m38a_lib.M38A	7B4 34A8	CPU_COMP<0>	CPU_COMP<0> - @m38a_lib.M38A	7B2	FB_A_DQ<49>	FB_A_DQ<49> - @m38a_lib.M38A	87B7 89A3												
AUD_LO_TIP3_INV	AUD_LO_TIP3_INV - @m38a_lib.M38A	74B3	CPU_COMP<1>	CPU_COMP<1> - @m38a_lib.M38A	7B2	CPU_COMP<2>	CPU_COMP<2> - @m38a_lib.M38A	7B2	FB_A_DQ<50>	FB_A_DQ<50> - @m38a_lib.M38A	87B7 89A3												
AUD_LO_TIP4_1	AUD_LO_TIP4_1 - @m38a_lib.M38A	73B4	CPU_COMP<3>	CPU_COMP<3> - @m38a_lib.M38A	7B2	CPU_COMP<4>	CPU_COMP<4> - @m38a_lib.M38A	7B2	FB_A_DQ<51>	FB_A_DQ<51> - @m38a_lib.M38A	87B7 89A3												
AUD_LO_TIP4_INV	AUD_LO_TIP4_INV - @m38a_lib.M38A	74B3	CPU_DCIN_SENSE	CPU_DCIN_SENSE - @m38a_lib.M38A	76D7	CPU_DCIN_SENSE_R	CPU_DCIN_SENSE_R - @m38a_lib.M38A	76C7	FB_A_DQ<52>	FB_A_DQ<52> - @m38a_lib.M38A	87B7 89A3												
AUD_LO_TIP5_1	AUD_LO_TIP5_1 - @m38a_lib.M38A	73C3	CPU_DPRSTP_L	CPU_DPRSTP_L - @m38a_lib.M38A	7B3 21C4 75C6	CPU_DPRSTP_U	CPU_DPRSTP_U - @m38a_lib.M38A	7B3 21C4 75C6	FB_A_DQ<53>	FB_A_DQ<53> - @m38a_lib.M38A	87B7 89A3												
AUD_LO_TIP5_INV	AUD_LO_TIP5_INV - @m38a_lib.M38A	74B4	CPU_DPRSTP_U	CPU_DPRSTP_U - @m38a_lib.M38A	7B3 21C4	CPU_FERR_L	CPU_FERR_L - @m38a_lib.M38A	7C7 21C2	FB_A_DQ<54>	FB_A_DQ<54> - @m38a_lib.M38A	87B7 89A3												
AUD_LO_TIP6_1	AUD_LO_TIP6_1 - @m38a_lib.M38A	73B7	CPU_FERR_U	CPU_FERR_U - @m38a_lib.M38A	7C7 21C2	CPU_GTLREF	CPU_GTLREF - @m38a_lib.M38A	5D4 7B4	FB_A_DQ<55>	FB_A_DQ<55> - @m38a_lib.M38A	87B7 89A3												
AUD_LO_TIP6_INV	AUD_LO_TIP6_INV - @m38a_lib.M38A	74B3	CPU_HS_ZH607	CPU_HS_ZH607 - @m38a_lib.M38A	9D4	CPU_HS_ZH608	CPU_HS_ZH608 - @m38a_lib.M38A	9D4	FB_A_DQ<56>	FB_A_DQ<56> - @m38a_lib.M38A	87B7 89A3												
AUD_LO_TIP7_1	AUD_LO_TIP7_1 - @m38a_lib.M38A	68C4	CPU_HS_ZH609	CPU_HS_ZH609 - @m38a_lib.M38A	9D3	CPU_HS_ZH610	CPU_HS_ZH610 - @m38a_lib.M38A	9D2	FB_A_DQ<57>	FB_A_DQ<57> - @m38a_lib.M38A	87B7 89A3												
AUD_LO_TIP7_INV	AUD_LO_TIP7_INV - @m38a_lib.M38A	68B4	CPU_IGNNE_L	CPU_IGNNE_L - @m38a_lib.M38A	5C8 7C7 21C4	CPU_IGNNE_U	CPU_IGNNE_U - @m38a_lib.M38A	5C8 7C7 21C4	FB_A_DQ<58>	FB_A_DQ<58> - @m38a_lib.M38A	87B7 89A3												
AUD_PORT_A_DET_L	AUD_PORT_A_DET_L - @m38a_lib.M38A	74B2	CPU_INIT_L	CPU_INIT_L - @m38a_lib.M38A	5C8 7D6 21C4	CPU_INIT_U	CPU_INIT_U - @m38a_lib.M38A	5C8 7D6 21C4	FB_A_DQ<59>	FB_A_DQ<59> - @m38a_lib.M38A	87B7 89A3												
AUD_PORT_A_L1	AUD_PORT_A_L1 - @m38a_lib.M38A	74B7 74C4 74D4	CPU_INTR	CPU_INTR - @m38a_lib.M38A	5C8 7C7 21C4	CPU_INTR	CPU_INTR - @m38a_lib.M38A	5C8 7C7 21C4	FB_A_DQ<60>	FB_A_DQ<60> - @m38a_lib.M38A	87B7 89A3												
AUD_PORT_A_L2	AUD_PORT_A_L2 - @m38a_lib.M38A	74B7 74C3 74D3	CPU_INTR	CPU_INTR - @m38a_lib.M38A	5C8 7C7 21C4	CPU_INTR	CPU_INTR - @m38a_lib.M38A	5C8 7C7 21C4	FB_A_DQ<61>	FB_A_DQ<61> - @m38a_lib.M38A	87B7 89A3												
AUD_PORT_A_R1	AUD_PORT_A_R1 - @m38a_lib.M38A	74B7 74C4 74D4	CPU_INTR	CPU_INTR - @m38a_lib.M38A	5C8 7C7 21C4	CPU_INTR	CPU_INTR - @m38a_lib.M38A	5C8 7C7 21C4	FB_A_DQ<62>	FB_A_DQ<62> - @m38a_lib.M38A	87B7 89A3												
AUD_PORT_A_R2	AUD_PORT_A_R2 - @m38a_lib.M38A	74B7 74C3 74D3	CPU_INTR	CPU_INTR - @m38a_lib.M38A	5C8 7C7 21C4	CPU_INTR	CPU_INTR - @m38a_lib.M38A	5C8 7C7 21C4	FB_A_DQ<63>	FB_A_DQ<63> - @m38a_lib.M38A	87B7 89A3												
AUD_PORT_F_DET_L	AUD_PORT_F_DET_L - @m38a_lib.M38A	74B4	CPU_INTR	CPU_INTR - @m38a_lib.M38A	5C8 7C7 21C4	CPU_INTR	CPU_INTR - @m38a_lib.M38A	5C8 7C7 21C4	FB_A_DQ<64>	FB_A_DQ<64> - @m38a_lib.M38A	87B7 89A3												
AUD_PORT_F_DET_U	AUD_PORT_F_DET_U - @m38a_lib.M38A	74B4	CPU_INTR	CPU_INTR - @m38a_lib.M38A	5C8 7C7 21C4	CPU_INTR	CPU_INTR - @m38a_lib.M38A	5C8 7C7 21C4	FB_A_DQ<65>	FB_A_DQ<65> - @m38a_lib.M38A	87B7 89A3												
AUD_PORT_F_L1	AUD_PORT_F_L1 - @m38a_lib.M38A	74C7	CPU_INTR	CPU_INTR - @m38a_lib.M38A	5C8 7C7 21C4	CPU_INTR	CPU_INTR - @m38a_lib.M38A	5C8 7C7 21C4	FB_A_DQ<66>	FB_A_DQ<66> - @m38a_lib.M38A	87B7 89A3												
AUD_PORT_F_R1	AUD_PORT_F_R1 - @m38a_lib.M38A	74C7	CPU_INTR	CPU_INTR - @m38a_lib.M38A	5C8 7C7 21C4	CPU_INTR	CPU_INTR - @m38a_lib.M38A	5C8 7C7 21C4	FB_A_DQ<67>	FB_A_DQ<67> - @m38a_lib.M38A	87B7 89A3												
AUD_SAMP_FS1	AUD_SAMP_FS1 - @m38a_lib.M38A	72A6 72C5	CPU_INTR	CPU_INTR - @m38a_lib.M38A	5C8 7C7 21C4	CPU_INTR	CPU_INTR - @m38a_lib.M38A	5C8 7C7 21C4	FB_A_DQ<68>	FB_A_DQ<68> - @m38a_lib.M38A	87B7 89A3												

<p>8</p> <p>7</p> <p>6</p> <p>5</p> <p>4</p> <p>3</p> <p>2</p> <p>1</p>	<p>8</p> <p>7</p> <p>6</p> <p>5</p> <p>4</p> <p>3</p> <p>2</p> <p>1</p>	<p>8</p> <p>7</p> <p>6</p> <p>5</p> <p>4</p> <p>3</p> <p>2</p> <p>1</p>	<p>8</p> <p>7</p> <p>6</p> <p>5</p> <p>4</p> <p>3</p> <p>2</p> <p>1</p>	<p>8</p> <p>7</p> <p>6</p> <p>5</p> <p>4</p> <p>3</p> <p>2</p> <p>1</p>
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D	C7528	CAP_402	m38a[7585]	C7529	CAP_402	m38a[7585]	C7530	CAP_402	m38a[7586]	C7531	CAP_402	m38a[7585]	C7532	CAP_402	m38a[7586]	C7533	CAP_402	m38a[7586]	C7534	CAP_402	m38a[7585]	C7535	CAP_603	m38a[7505]	C7550	CAP_603	m38a[7501]	C7551	CAP_603	m38a[7501]	C7590	CAP_402	m38a[75C3]	C7592	CAP_402	m38a[75B3]	C7596	CAP_402	m38a[75D6]	C7597	CAP_1210	m38a[75D1]	C7598	CAP_1210	m38a[75D1]	C7599	CAP_402	m38a[76D6]	C7612	CAP_402	m38a[76B2]	C7633	CAP_402	m38a[76C7]	C7700	CAP_603	m38a[77D2]	C7703	CAP_402	m38a[77C2]	C7704	CAP_402	m38a[77C2]	C7706	CAP_402	m38a[77D2]	C7709	CAP_805	m38a[77D1]	C7710	CAP_402	m38a[77D5]	C7711	CAP_402	m38a[77D5]	C7712	CAP_402	m38a[77D4]	C7750	CAP_402	m38a[77A4]	C7751	CAP_805	m38a[77B5]	C7752	CAP_805	m38a[77B5]	C7753	CAP_402	m38a[77B6]	C7754	CAP_402	m38a[77B6]	C7755	CAP_805	m38a[77B4]	C7756	CAP_805	m38a[77B3]	C7757	CAP_402	m38a[77A7]	C7797	CAP_402	m38a[77B4]	C7798	CAP_603	m38a[77B7]	C7799	CAP_402	m38a[77A3]	C7800	CAP_1210	m38a[78C3]	C7801	CAP_P_SM-LF	m38a[78C4]	C7802	CAP_603	m38a[78C6]	C7803	CAP_603	m38a[78B6]	C7804	CAP_402	m38a[78C6]	C7805	CAP_603	m38a[78C4]	C7806	CAP_805-1	m38a[78B2]	C7807	CAP_P_CASE-D2E-LF	m38a[78B3]	C7809	CAP_402	m38a[78B3]	C7810	CAP_402	m38a[78B4]	C7811	CAP_402	m38a[78B5]	C7813	CAP_1206	m38a[78B4]	C7814	CAP_402	m38a[78B5]	C7817	CAP_P_CASE-D2E-LF	m38a[78B2]	C7900	CAP_402	m38a[79D6]	C7901	CAP_603	m38a[79D5]	C7902	CAP_402	m38a[79C5]	C7903	CAP_603	m38a[79C7]	C7906	CAP_402	m38a[79C5]	C7907	CAP_402	m38a[79C3]	C7908	CAP_402	m38a[79C5]	C7909	CAP_1206	m38a[79C4]	C7910	CAP_P_SM-3	m38a[79D4]	C7911	CAP_1210	m38a[79D3]	C7912	CAP_P_CASE-D2E-LF	m38a[79C3]	C7913	CAP_1206	m38a[79C2]	C7980	CAP_402	m38a[79B3]	C7992	CAP_603	m38a[79D6]	C7998	CAP_P_CASE-D2E-LF	m38a[79C3]	C8000	CAP_1210	m38a[80D3]	C8001	CAP_P_CASE-D2E-LF	m38a[80C3]	C8002	CAP_603	m38a[80D6]	C8003	CAP_402	m38a[80C3]	C8004	CAP_1206	m38a[80C4]	C8005	CAP_402	m38a[80C4]	C8006	CAP_402	m38a[80D6]	C8009	CAP_603	m38a[80C6]	C8010	CAP_603	m38a[80C4]	C8011	CAP_402	m38a[80C5]	C8012	CAP_402	m38a[80C5]	C8014	CAP_P_TH-MC2	m38a[80D4]	C8015	CAP_1210	m38a[80D3]	C8016	CAP_805-1	m38a[80C2]	C8099	CAP_P_CASE-D2E-LF	m38a[80C2]	C8100	CAP_402	m38a[81D6]	C8101	CAP_603	m38a[81C5]	C8102	CAP_402	m38a[81C5]	C8103	CAP_603	m38a[81C7]	C8106	CAP_402	m38a[81C5]	C8107	CAP_402	m38a[81C3]	C8108	CAP_402	m38a[81C5]	C8109	CAP_1206	m38a[81C4]	C8110	CAP_1210	m38a[81D4]	C8111	CAP_1210	m38a[81D3]	C8112	CAP_1210	m38a[81D3]	C8114	CAP_P_CASE-D2E-LF	m38a[81C3]	C8115	CAP_805-1	m38a[81C2]	C8190	CAP_P_CASE-D2E-LF	m38a[81C3]	C8192	CAP_603	m38a[81D6]	C8198	CAP_1210	m38a[81D3]	C8199	CAP_402	m38a[81A5]	C8398	CAP_603	m38a[83B4]	C8399	CAP_603	m38a[83C4]	C8400	CAP_805	m38a[84C7]	C8401	CAP_402	m38a[84C7]	C8402	CAP_402	m38a[84C7]	C8405	CAP_805	m38a[84B7]	C8406	CAP_402	m38a[84B7]	C8407	CAP_402	m38a[84B7]	C8410	CAP_805	m38a[84B6]	C8411	CAP_402	m38a[84B7]	C8412	CAP_402	m38a[84B7]	C8413	CAP_402	m38a[84B7]	C8420	CAP_402	m38a[84D5]	C8421	CAP_402	m38a[84D5]	C8422	CAP_402	m38a[84D5]	C8423	CAP_402	m38a[84D5]	C8424	CAP_402	m38a[84D5]	C8425	CAP_402	m38a[84D5]	C8426	CAP_402	m38a[84D5]	C8427	CAP_402	m38a[84D5]	C8428	CAP_402	m38a[84D5]	C8429	CAP_402	m38a[84C5]	C8430	CAP_402	m38a[84C5]	C8431	CAP_402	m38a[84C5]	C8432	CAP_402	m38a[84C5]	C8433	CAP_402	m38a[84C5]	C8434	CAP_402	m38a[84C5]	C8435	CAP_402	m38a[84C5]	C8436	CAP_402	m38a[84C5]	C8437	CAP_402	m38a[84C5]	C8438	CAP_402	m38a[84C5]	C8439	CAP_402	m38a[84C5]	C8440	CAP_402	m38a[84B5]	C8441	CAP_402	m38a[84B5]	C8442	CAP_402	m38a[84B5]	C8443	CAP_402	m38a[84B5]	C8444	CAP_402	m38a[84B5]	C8445	CAP_402	m38a[84B5]	C8446	CAP_402	m38a[84B5]	C8447	CAP_402	m38a[84B5]	C8448	CAP_402	m38a[84B5]	C8449	CAP_402	m38a[84B5]	C8450	CAP_402	m38a[84B5]	C8451	CAP_402	m38a[84B5]	C8455	CAP_402	m38a[84D2]	C8456	CAP_402	m38a[84D2]	C8457	CAP_402	m38a[84D2]	C8458	CAP_402	m38a[84D2]	C8459	CAP_402	m38a[84D2]	C8460	CAP_402	m38a[84D2]	C8461	CAP_402	m38a[84D2]	C8462	CAP_402	m38a[84D2]	C8463	CAP_402	m38a[84D2]	C8464	CAP_402	m38a[84C2]	C8465	CAP_402	m38a[84C2]	C8466	CAP_402	m38a[84C2]	C8467	CAP_402	m38a[84C2]	C8468	CAP_402	m38a[84C2]	C8469	CAP_402	m38a[84C2]	C8470	CAP_402	m38a[84C2]	C8471	CAP_402	m38a[84C2]	C8472	CAP_402	m38a[84C2]	C8473	CAP_402	m38a[84C2]	C8474	CAP_402	m38a[84C2]	C8475	CAP_402	m38a[84B2]	C8476	CAP_402	m38a[84B2]	C8477	CAP_402	m38a[84B2]	C8478	CAP_402	m38a[84B2]	C8479	CAP_402	m38a[84B2]	C8480	CAP_402	m38a[84B2]	C8481	CAP_402	m38a[84B2]	C8482	CAP_402	m38a[84B2]	C8483	CAP_402	m38a[84B2]	C8484	CAP_402	m38a[84B2]	C8485	CAP_402	m38a[84B2]	C8486	CAP_402	m38a[84B2]	C8500	CAP_603	m38a[85D6]	C8501	CAP_603	m38a[85D6]	C8502	CAP_603	m38a[85D6]	C8506	CAP_402	m38a[85C8]	C8507	CAP_402	m38a[85C7]	C8508	CAP_402	m38a[85C7]	C8509	CAP_402	m38a[85C5]	C8521	CAP_402	m38a[85C4]	C8522	CAP_402	m38a[85C5]	C8530	CAP_1210	m38a[85D4]	C8531	CAP_1210	m38a[85D4]	C8532	CAP_1210	m38a[85D4]	C8540	CAP_805	m38a[85C2]	C8541	CAP_805	m38a[85C2]	C8542	CAP_P_CASE-D2E-LF	m38a[85C2]	C8543	CAP_P_CASE-D2E-LF	m38a[85C3]	C8590	CAP_1210	m38a[85D3]	C8592	CAP_402	m38a[85C2]	C8595	CAP_402	m38a[85D1]	C8598	CAP_402	m38a[85D2]	C8599	CAP_1206	m38a[85C4]	C8600	CAP_805	m38a[86C7]	C8601	CAP_805	m38a[86C7]	C8604	CAP_402	m38a[86C7]	C8605	CAP_402	m38a[86C6]	C8606	CAP_402	m38a[86C6]	C8607	CAP_402	m38a[86C6]	C8608	CAP_402	m38a[86C5]	C8609	CAP_402	m38a[86C5]	C8610	CAP_402	m38a[86C5]	C8611	CAP_402	m38a[86C7]	C8612	CAP_402	m38a[86C6]	C8613	CAP_402	m38a[86C6]	C8614	CAP_402	m38a[86C6]	C8615	CAP_402	m38a[86C5]	C8616	CAP_402	m38a[86C5]	C8630	CAP_805	m38a[86C6]	C8631	CAP_402	m38a[86C6]	C8632	CAP_402	m38a[86C5]	C8633	CAP_402	m38a[86C5]	C8634	CAP_402	m38a[86C5]	C8650	CAP_805	m38a[86B7]	C8651	CAP_805	m38a[86B7]	C8652	CAP_805	m38a[86B7]	C8653	CAP_805	m38a[86B6]	C8655	CAP_402	m38a[86B6]	C8656	CAP_402	m38a[86B6]	C8657	CAP_402	m38a[86B6]	C8658	CAP_402	m38a[86B5]	C8659	CAP_402	m38a[86B5]	C8660	CAP_402	m38a[86B5]	C8661	CAP_402	m38a[86B6]	C8662	CAP_402	m38a[86B6]	C8663	CAP_402	m38a[86B6]	C8664	CAP_402	m38a[86B5]	C8665	CAP_402	m38a[86B5]	C8666	CAP_402	m38a[86B5]	C8667	CAP_402	m38a[86B6]	C8668	CAP_402	m38a[86B6]	C8669	CAP_402	m38a[86B6]	C8670	CAP_402	m38a[86B5]	C8671	CAP_402	m38a[86B5]	C8672	CAP_402	m38a[86B5]	C8673	CAP_402	m38a[86B6]	C8674	CAP_402	m38a[86B6]	C8675	CAP_402	m38a[86B6]	C8676	CAP_402	m38a[86B5]	C8677	CAP_402	m38a[86B5]	C8678	CAP_402	m38a[86B5]	C8679	CAP_402	m38a[86A6]	C8680	CAP_402	m38a[86A6]	C8681	CAP_402	m38a[86A6]	C8682	CAP_402	m38a[86A5]	C8683	CAP_402	m38a[86A5]	C8690	CAP_805	m38a[86D5]	C8691	CAP_402	m38a[86D5]	C8692	CAP_402	m38a[86D5]	C8711	CAP_402	m38a[87B7]	C8713	CAP_402	m38a[87B7]	C8715	CAP_402	m38a[87A7]	C8716	CAP_402	m38a[87A6]	C8721	CAP_402	m38a[87B4]	C8723	CAP_402	m38a[87B4]	C8725	CAP_402	m38a[87A4]	C8726	CAP_402	m38a[87A3]	C8900	CAP_805	m38a[89D7]	C8901	CAP_402	m38a[89D7]	C8902	CAP_402	m38a[89D7]	C8903	CAP_402	m38a[89D7]	C8904	CAP_402	m38a[89D6]	C8910	CAP_402	m38a[89D7]	C8915	CAP_402	m38a[89D6]	C8920	CAP_805	m38a[89C8]	C8921	CAP_402	m38a[89C8]	C8922	CAP_402	m38a[89C7]	C8923	CAP_402	m38a[89C7]	C8924	CAP_402	m38a[89C7]	C8925	CAP_402	m38a[89C7]	C8926	CAP_402	m38a[89C6]	C8931	CAP_402	m38a[89C7]	C8933	CAP_402	m38a[89C6]	C8950	CAP_805	m38a[89D4]	C8951	CAP_402	m38a[89D4]	C8952	CAP_402	m38a[89D4]	C8953	CAP_402	m38a[89D3]	C8954	CAP_402	m38a[89D3]	C8960	CAP_402	m38a[89D3]	C8965	CAP_402	m38a[89D3]	C8970	CAP_805	m38a[89C5]	C8971	CAP_402	m38a[89C4]	C8972	CAP_402	m38a[89C4]	C8973	CAP_402	m38a[89C4]	C8974	CAP_402	m38a[89C4]	C8975	CAP_402	m38a[89C3]	C8976	CAP_402	m38a[89C3]	C8981	CAP_402	m38a[89C3]	C8983	CAP_402	m38a[89C3]	C9000	CAP_805	m38a[90D7]	C9001	CAP_402	m38a[90D7]	C9002	CAP_402	m38a[90D7]	C9003	CAP_402	m38a[90D7]	C9004	CAP_402	m38a[90D6]	C9010	CAP_402	m38a[90D7]	C9015	CAP_402	m38a[90D6]	C9020	CAP_805	m38a[90C8]	C9021	CAP_402	m38a[90C8]	C9022	CAP_402	m38a[90C7]	C9023	CAP_402	m38a[90C7]	C9024	CAP_402	m38a[90C7]	C9025	CAP_402	m38a[90C7]	C9026	CAP_402	m38a[90C6]	C9031	CAP_402	m38a[90C7]	C9033	CAP_402	m38a[90C6]	C9050	CAP_805	m38a[90D4]	C9051	CAP_402	m38a[90D4]	C9052	CAP_402	m38a[90D4]	C9053	CAP_402	m38a[90D3]	C9054	CAP_402	m38a[90D3]	C9060	CAP_402	m38a[90D3]	C9065	CAP_402	m38a[90D3]	C9070	CAP_805	m38a[90C5]	C9071	CAP_402	m38a[90C4]	C9072	CAP_402	m38a[90C4]	C9073	CAP_402	m38a[90C4]	C9074	CAP_402	m38a[90C4]	C9075	CAP_402	m38a[90C3]	C9076	CAP_402	m38a[90C3]	C9081	CAP_402	m38a[90C3]	C9083	CAP_402	m38a[90C3]	C9100	CAP_805	m38a[91C5]	C9101	CAP_402	m38a[91C5]	C9102	CAP_402	m38a[91C5]	C9103	CAP_402	m38a[91C5]	C9110	CAP_805	m38a[91C5]	C9111	CAP_402	m38a[91C5]	C9112	CAP_402	m38a[91C5]	C9115	CAP_805	m38a[91B5]	C9116	CAP_402	m38a[91B5]	C9117	CAP_402	m38a[91B5]	C9120	CAP_805	m38a[91B5]	C9121	CAP_402	m38a[91B5]	C9122	CAP_402	m38a[91B5]	C9125	CAP_805	m38a[91B5]	C9126	CAP_402	m38a[91B5]	C9127	CAP_402	m38a[91B5]	C9130	CAP_805	m38a[91A6]	C9131	CAP_402	m38a[91A6]	C9132	CAP_402	m38a[91A5]	C9135	CAP_805	m38a[91A6]	C9136	CAP_402	m38a[91A6]	C9137	CAP_402	m38a[91A5]	C9140	CAP_805	m38a[91A6]	C9141	CAP_402	m38a[91A6]	C9142	CAP_402	m38a[91A5]	C9191	CAP_402	m38a[91D2]	C9300	CAP_805	m38a[93C6]	C9301	CAP_402	m38a[93C6]	C9302	CAP_402	m38a[93C5]	C9305	CAP_805	m38a[93C6]	C9306	CAP_402	m38a[93C6]	C9307	CAP_402	m38a[93C5]	C9310	CAP_805	m38a[93C6]	C9311	CAP_402	m38a[93C6]	C9312	CAP_402	m38a[93C5]	C9315	CAP_805	m38a[93B8]	C9316	CAP_402	m38a[93B8]	C9317	CAP_402	m38a[93B7]	C9320	CAP_805	m38a[93B6]	C9321	CAP_805	m38a[93B6]	C9322	CAP_402	m38a[93B5]	C9325	CAP_805	m38a[93B8]	C9326	CAP_402	m38a[93B8]	C9327	CAP_402	m38a[93B7]	C9330	CAP_805	m38a[93B6]	C9331	CAP_402	m38a[93B6]	C93

	8		7		6		5		4		3		2		1	
D	R1104	RES_402	m38a[1185]		R2719	RES_402	m38a[2787]		R4356	RES_402	m38a[43C7]		R6504	RES_805	m38a[65C5]	
	R1106	RES_402	m38a[11A3]		R2750	RES_402	m38a[27C7]		R4357	RES_402	m38a[43B7]		R6505	RES_805	m38a[65D5]	
	R1210	RES_402	m38a[12C3]		R2751	RES_402	m38a[27C7]		R4402	RES_402	m38a[44B3]		R6506	RES_402	m38a[65D6]	
	R1211	RES_402	m38a[12C3]		R2800	RES_402	m38a[28C7]		R4403	RES_402	m38a[44B5]		R6507	RES_805	m38a[65B5]	
	R1220	RES_402	m38a[12B7]		R2801	RES_402	m38a[28C7]		R4407	RES_402	m38a[44A7]		R6508	RES_805	m38a[65B5]	
	R1221	RES_402	m38a[12B7]		R2900	RES_402	m38a[29A3]		R4409	RES_402	m38a[44B3]		R6509	RES_805	m38a[65B5]	
	R1225	RES_402	m38a[12B7]		R3001	RES_402	m38a[30D4]		R4410	RES_402	m38a[44D2]		R6510	RES_1206	m38a[65B6]	
	R1226	RES_402	m38a[12B7]		R3009	RES_402	m38a[30D4]		R4411	RES_402	m38a[44D6]		R6511	RES_402	m38a[65B6]	
	R1230	RES_402	m38a[12A7]		R3011	RES_402	m38a[30C4]		R4412	RES_402	m38a[44C1]		R6512	RES_805	m38a[65C5]	
	R1231	RES_402	m38a[12A7]		R3025	RES_402	m38a[30C4]		R4413	RES_402	m38a[44C3]		R6513	RES_805	m38a[65B5]	
	R1235	RES_402	m38a[12A7]		R3035	RES_402	m38a[30B4]		R4414	RES_402	m38a[44C3]		R6514	RES_805	m38a[65B4]	
	R1236	RES_402	m38a[12A7]		R3100	RES_402	m38a[31C5]		R4416	RES_402	m38a[44A5]		R6515	RES_805	m38a[65C4]	
	R1310	RES_402	m38a[13D3]		R3101	RES_402	m38a[31C5]		R4450	RES_402	m38a[44B3]		R6598	RES_402	m38a[65A7]	
	R1410	RES_402	m38a[14C3]		R3300	RES_402	m38a[33B6]		R4451	RES_402	m38a[44B3]		R6599	RES_402	m38a[65C7]	
	R1411	RES_402	m38a[14C3]		R3301	RES_402	m38a[33B7]		R4452	RES_402	m38a[44B3]		R6600	RES_402	m38a[66C7]	
	R1420	RES_402	m38a[14B6]		R3302	RES_402	m38a[33D4]		R4453	RES_402	m38a[44B3]		R6601	RES_805	m38a[66D5]	
	R1430	RES_402	m38a[14B6]		R3303	RES_402	m38a[33C4]		R4454	RES_402	m38a[44B3]		R6602	RES_805	m38a[66C4]	
	R1440	RES_402	m38a[14D6]		R3304	RES_402	m38a[33C7]		R4455	RES_402	m38a[44B3]		R6603	RES_805	m38a[66D5]	
	R1441	RES_402	m38a[14D6]		R3400	RES_402	m38a[34C5]		R4650	RES_402	m38a[46C8]		R6604	RES_1206	m38a[66D5]	
	R1975	RES_402	m38a[19A4]		R3401	RES_402	m38a[34B5]		R4651	RES_402	m38a[46C7]		R6605	RES_402	m38a[66D6]	
	R1980	RES_402	m38a[19B7]		R3402	RES_402	m38a[34B5]		R4652	RES_402	m38a[46B8]		R6606	RES_805	m38a[66C5]	
	R1981	RES_402	m38a[19B7]		R3403	RES_402	m38a[34C5]		R4653	RES_402	m38a[46B7]		R6607	RES_805	m38a[66C3]	
	R1982	RES_402	m38a[19B8]		R3404	RES_402	m38a[34C5]		R4654	RES_402	m38a[46B7]		R6697	RES_402	m38a[66C8]	
	R1983	RES_402	m38a[19B8]		R3405	RES_402	m38a[34C5]		R4656	RES_2512-1	m38a[46D6]		R6700	RES_402	m38a[67C6]	
	R2058	RES_402	m38a[20B4]		R3406	RES_402	m38a[34C5]		R4657	RES_805	m38a[46D6]		R6702	RES_402	m38a[67C4]	
R2059	RES_402	m38a[20B4]		R3407	RES_402	m38a[34B5]		R4660	RES_402	m38a[46C7]		R6703	RES_402	m38a[67C4]		
R2060	RES_402	m38a[20A4]		R3408	RES_402	m38a[34B5]		R4661	RES_402	m38a[46C7]		R6704	RES_805	m38a[67C2]		
R2075	RES_402	m38a[20C7]		R3409	RES_402	m38a[34B5]		R4662	RES_402	m38a[46B7]		R6705	RES_805	m38a[67C3]		
R2077	RES_402	m38a[20B7]		R3410	RES_402	m38a[34B5]		R4663	RES_402	m38a[46B7]		R6798	RES_402	m38a[67B6]		
R2079	RES_402	m38a[20B7]		R3411	RES_402	m38a[34B5]		R4664	RES_402	m38a[46B7]		R6799	RES_402	m38a[67B6]		
R2085	RES_402	m38a[20C4]		R3412	RES_402	m38a[34B5]		R4690	RES_402	m38a[46A7]		R6800	RES_402	m38a[68C6]		
R2100	RES_402	m38a[21C3]		R3413	RES_402	m38a[34B5]		R4712	RES_402	m38a[47C5]		R6802	RES_402	m38a[68A5]		
R2101	RES_402	m38a[21C4]		R3414	RES_402	m38a[34B5]		R4713	RES_402	m38a[47C5]		R6807	RES_402	m38a[68D7]		
R2105	RES_402	m38a[21D6]		R3415	RES_402	m38a[34B5]		R4722	RES_402	m38a[47B5]		R6808	RES_402	m38a[68D3]		
R2107	RES_402	m38a[21C2]		R3416	RES_402	m38a[34B5]		R4723	RES_402	m38a[47B5]		R6810	RES_402	m38a[68A3]		
R2108	RES_402	m38a[21C2]		R3417	RES_402	m38a[34B5]		R4732	RES_402	m38a[47A5]		R6811	RES_402	m38a[68A3]		
R2110	RES_402	m38a[21C2]		R3418	RES_402	m38a[34B5]		R4733	RES_402	m38a[47A5]		R6815	RES_402	m38a[68B7]		
R2194	RES_402	m38a[21D4]		R3419	RES_402	m38a[34A5]		R4742	RES_402	m38a[47C2]		R7208	RES_402	m38a[72A4]		
R2195	RES_402	m38a[21C6]		R3420	RES_402	m38a[34A5]		R4743	RES_402	m38a[47C2]		R7212	RES_402	m38a[72B8]		
R2196	RES_402	m38a[21C6]		R3421	RES_402	m38a[34A5]		R4746	RES_805	m38a[47D2]		R7213	RES_402	m38a[72B7]		
R2197	RES_402	m38a[21C6]		R3422	RES_402	m38a[34A5]		R4754	RES_402	m38a[47C2]		R7214	RES_402	m38a[72C5]		
R2198	RES_402	m38a[21C6]		R3423	RES_402	m38a[34A5]		R4755	RES_402	m38a[47B2]		R7215	RES_402	m38a[72C7]		
R2199	RES_402	m38a[21C3]		R3424	RES_402	m38a[34A5]		R5302	RES_402	m38a[53B4]		R7216	RES_402	m38a[72C5]		
R2200	RES_402	m38a[22D7]		R3429	RES_402	m38a[34C1]		R5303	RES_402	m38a[53B4]		R7217	RES_402	m38a[72B5]		
R2203	RES_402	m38a[22C2]		R3430	RES_402	m38a[34C1]		R5304	RES_402	m38a[53C6]		R7218	RES_402	m38a[72A5]		
R2204	RES_402	m38a[22C2]		R3431	RES_402	m38a[34C1]		R5801	RES_402	m38a[58C2]		R7219	RES_402	m38a[72B6]		
R2205	RES_402	m38a[22C6]		R3432	RES_402	m38a[34C1]		R5802	RES_402	m38a[58C2]		R7302	RES_402	m38a[73A3]		
R2206	RES_402	m38a[22C5]		R3433	RES_402	m38a[34C1]		R5803	RES_402	m38a[58C2]		R7305	RES_402	m38a[73C8]		
R2207	RES_402	m38a[22C5]		R3434	RES_402	m38a[34C1]		R5808	RES_402	m38a[58C3]		R7306	RES_402	m38a[73D4]		
R2211	RES_402	m38a[22B3]		R3435	RES_402	m38a[34C1]		R5809	RES_402	m38a[58C2]		R7308	RES_402	m38a[73B8]		
R2222	RES_402	m38a[22D6]		R3436	RES_402	m38a[34C1]		R5815	RES_402	m38a[58B3]		R7400	RES_402	m38a[74B4]		
R2223	RES_402	m38a[22D6]		R3437	RES_402	m38a[34C1]		R5817	RES_402	m38a[58B3]		R7404	RES_402	m38a[74D5]		
R2225	RES_402	m38a[22D7]		R3438	RES_402	m38a[34C1]		R5818	RES_402	m38a[58B3]		R7405	RES_402	m38a[74D5]		
R2226	RES_402	m38a[22D5]		R3439	RES_402	m38a[34C1]		R5819	RES_402	m38a[58B3]		R7407	RES_402	m38a[74B4]		
R2250	RES_402	m38a[22D7]		R3440	RES_402	m38a[34C1]		R5821	RES_402	m38a[58B3]		R7408	RES_402	m38a[74A4]		
R2251	RES_402	m38a[22D6]		R3441	RES_402	m38a[34C1]		R5822	RES_402	m38a[58B3]		R7409	RES_402	m38a[74B4]		
R2255	RES_402	m38a[22D7]		R3442	RES_402	m38a[34C1]		R5823	RES_402	m38a[58B3]		R7410	RES_805	m38a[74D2]		
R2298	RES_402	m38a[22B5]		R3443	RES_402	m38a[34B1]		R5824	RES_402	m38a[58B3]		R7411	RES_805	m38a[74C2]		
R2299	RES_402	m38a[22B5]		R3444	RES_402	m38a[34B1]		R5825	RES_402	m38a[58B3]		R7412	RES_805	m38a[74C2]		
R2302	RES_402	m38a[23D3]		R3445	RES_402	m38a[34B1]		R5826	RES_402	m38a[58B3]		R7413	RES_402	m38a[74B4]		
R2303	RES_402	m38a[23D3]		R3446	RES_402	m38a[34B1]		R5827	RES_402	m38a[59C5]		R7414	RES_805	m38a[74B7]		
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R2306	RES_402	m38a[23B7]		R3452	RES_402	m38a[34B7]		R5829	RES_402	m38a[59C3]		R7416	RES_805	m38a[74C7]		
R2307	RES_402	m38a[23A7]		R3453	RES_402	m38a[34B8]		R5830	RES_402	m38a[59C3]		R7417	RES_805	m38a[74C8]		
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R2309	RES_402	m38a[23A7]		R3455	RES_402	m38a[34B8]		R5832	RES_402	m38a[59C3]		R7419	RES_402	m38a[74B6]		
R2310	RES_402	m38a[23A7]		R3456	RES_402	m38a[34B7]		R5833	RES_402	m38a[58B3]		R7420	RES_402	m38a[74D5]		
R2311	RES_402	m38a[23A7]		R3457	RES_402	m38a[34B7]		R5898	RES_402	m38a[58C2]		R7421	RES_402	m38a[74D8]		
R2313	RES_402	m38a[23A7]		R3458	RES_402	m38a[34B8]		R5899	RES_402	m38a[58D3]		R7422	RES_402	m38a[74D7]		
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R2316	RES_402	m38a[23D7]		R3460	RES_402	m38a[34A7]		R5903	RES_402	m38a[59D2]		R7424	RES_402	m38a[74B6]		
R2317	RES_402	m38a[23D7]		R3461	RES_402	m38a[34A7]		R5904	RES_402	m38a[59D2]		R7425	RES_603	m38a[74A5]		
R2318	RES_402	m38a[23D7]		R3462	RES_402	m38a[34A8]		R5905	RES_402	m38a[59D2]		R7426	RES_402	m38a[74A4]		
R2319	RES_402	m38a[23D2]		R3463	RES_402	m38a[34A7]		R5906	RES_402	m38a[59D2]		R7427	RES_402	m38a[74A4]		
R2320	RES_402	m38a[23D7]		R3470	RES_402	m38a[34A5]		R5907	RES_402	m38a[59B7]		R7430	RES_402	m38a[74C1]		
R2323	RES_402	m38a[23D5]		R3471	RES_402	m38a[34A5]		R5910	RES_402	m38a[59D2]		R7431	RES_402	m38a[74C2]		
R2326	RES_402	m38a[23D6]		R3485	RES_402	m38a[34D1]		R5911	RES_402	m38a[59D2]		R7435	RES_402	m38a[74A3]		
R2327	RES_402	m38a[23D6]		R3486	RES_402	m38a[34D1]		R5912	RES_402	m38a[59D2]		R7437	RES_402	m38a[74C5]		
R2343	RES_402	m38a[23D1]		R3487	RES_402	m38a[34D1]		R5913	RES_402	m38a[59D2]		R7440	RES_805	m38a[74D2]		
R2388	RES_402	m38a[23A3]		R3488	RES_402	m38a[34D1]		R5914	RES_402	m38a[59D2]		R7442	RES_805	m38a[74D3]		
R2389	RES_402	m38a[38D5]		R3489	RES_402	m38a[34D2]										

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D	R7612 RES_402 m38a[76B2]	R7620 RES_402 m38a[76D2]	R7623 RES_402 m38a[76D1]	R7630 RES_402 m38a[76C8]	R7631 RES_402 m38a[76C8]	R7632 RES_402 m38a[76C7]	R7640 RES_402 m38a[76A7]	R7691 RES_402 m38a[76C7]	R7700 RES_402 m38a[77D3]	R7701 RES_402 m38a[77D4]	R7704 RES_402 m38a[77C4]	R7705 RES_402 m38a[77C3]	R7706 RES_402 m38a[77D2]	R7707 RES_402 m38a[77D1]	R7708 RES_402 m38a[77D1]	R7710 RES_402 m38a[77D3]	R7710 RES_402 m38a[77D3]	R7750 RES_402 m38a[77B4]	R7751 RES_402 m38a[77A4]	R7752 RES_402 m38a[77B4]	R7753 RES_402 m38a[77A6]	R7754 RES_402 m38a[77B7]	R7757 RES_402 m38a[77B7]	R7793 RES_402 m38a[77D7]	R7794 RES_402 m38a[77C7]	R7798 RES_402 m38a[77C7]	R7799 RES_402 m38a[77D7]	R7800 RES_402 m38a[78C7]	R7801 RES_402 m38a[78B7]	R7802 RES_402 m38a[78B3]	R7803 RES_402 m38a[78B3]	R7804 RES_1206 m38a[78B4]	R7805 RES_402 m38a[78B5]	R7812 RES_402 m38a[78B3]	R7840 RES_402 m38a[78C5]	R7892 RES_402 m38a[78B7]	R7901 RES_402 m38a[79C3]	R7902 RES_1206 m38a[79C4]	R7903 RES_402 m38a[79C3]	R7904 RES_402 m38a[79C5]	R7905 RES_402 m38a[79D7]	R7906 RES_402 m38a[79A4]	R7910 RES_402 m38a[79B2]	R7911 RES_402 m38a[79B3]	R7912 RES_402 m38a[79B3]	R7913 RES_402 m38a[79A2]	R7914 RES_402 m38a[79A3]	R7915 RES_402 m38a[79A3]	R7940 RES_402 m38a[79D5]	R7941 RES_402 m38a[79C7]	R7992 RES_402 m38a[79C7]	R7999 RES_402 m38a[79C3]	R8000 RES_402 m38a[80C3]	R8001 RES_402 m38a[80C7]	R8002 RES_1206 m38a[80C4]	R8003 RES_402 m38a[80C3]	R8004 RES_402 m38a[80C5]	R8005 RES_402 m38a[80D7]	R8007 RES_402 m38a[80A4]	R8010 RES_402 m38a[80B2]	R8011 RES_402 m38a[80B3]	R8012 RES_402 m38a[80B3]	R8040 RES_402 m38a[80C5]	R8092 RES_402 m38a[80C7]	R8099 RES_402 m38a[80C3]	R8101 RES_402 m38a[81C3]	R8102 RES_1206 m38a[81C4]	R8103 RES_402 m38a[81C3]	R8104 RES_402 m38a[81C5]	R8105 RES_402 m38a[81D7]	R8107 RES_402 m38a[81A4]	R8110 RES_402 m38a[81B3]	R8140 RES_402 m38a[81C5]	R8190 RES_402 m38a[81C3]	R8191 RES_402 m38a[81C7]	R8192 RES_402 m38a[81C7]	R8198 RES_402 m38a[81A5]	R8199 RES_402 m38a[81A5]	R8300 RES_402 m38a[83B4]	R8301 RES_402 m38a[83C5]	R8302 RES_402 m38a[83B5]	R8303 RES_402 m38a[83C4]	R8495 RES_402 m38a[84A2]	R8496 RES_402 m38a[84A2]	R8497 RES_402 m38a[84A2]	R8502 RES_402 m38a[85D6]	R8503 RES_402 m38a[85D7]	R8504 RES_402 m38a[85D7]	R8505 RES_402 m38a[85C7]	R8506 RES_402 m38a[85C8]	R8507 RES_402 m38a[85D7]	R8508 RES_402 m38a[85C7]	R8510 RES_402 m38a[85C5]	R8521 RES_402 m38a[85C3]	R8522 RES_402 m38a[85C3]	R8588 RES_402 m38a[85C5]	R8590 RES_402 m38a[85C3]	R8591 RES_402 m38a[85D3]	R8592 RES_402 m38a[85D2]	R8593 RES_402 m38a[85D3]	R8594 RES_402 m38a[85D3]	R8596 RES_402 m38a[85D3]	R8597 THERMISTOR_0603-LF m38a[85D3]	R8598 RES_402 m38a[85D2]	R8599 RES_1206 m38a[85C4]	R8630 RES_402 m38a[86C7]	R8710 RES_402 m38a[87B8]	R8711 RES_402 m38a[87A8]	R8712 RES_402 m38a[87B7]	R8713 RES_402 m38a[87A7]	R8720 RES_402 m38a[87B4]	R8721 RES_402 m38a[87A4]	R8722 RES_402 m38a[87B4]	R8723 RES_402 m38a[87A4]	R8730 RES_402 m38a[87A3]	R8731 RES_402 m38a[87A3]	R8732 RES_402 m38a[87A3]	R8733 RES_402 m38a[87A1]	R8800 RES_603 m38a[88D7]	R8801 RES_402 m38a[88A7]	R8802 RES_402 m38a[88D4]	R8803 RES_402 m38a[88D4]	R8804 RES_402 m38a[88D4]	R8805 RES_402 m38a[88C4]	R8806 RES_402 m38a[88C4]	R8807 RES_402 m38a[88C4]	R8808 RES_402 m38a[88C4]	R8809 RES_402 m38a[88C4]	R8810 RES_402 m38a[88C4]	R8811 RES_402 m38a[88B4]	R8812 RES_402 m38a[88C4]	R8813 RES_402 m38a[88D4]	R8830 RES_402 m38a[88B4]	R8831 RES_402 m38a[88B4]	R8832 RES_402 m38a[88B4]	R8833 RES_402 m38a[88B4]	R8850 RES_402 m38a[88B4]	R8930 RES_402 m38a[89C7]	R8931 RES_402 m38a[89C7]	R8932 RES_402 m38a[89C7]	R8933 RES_402 m38a[89C7]	R8940 RES_402 m38a[89B8]	R8941 RES_402 m38a[89B8]	R8942 RES_402 m38a[89B7]	R8943 RES_402 m38a[89B7]	R8944 RES_402 m38a[89B7]	R8945 RES_402 m38a[89B7]	R8946 RES_402 m38a[89B7]	R8947 RES_402 m38a[89B7]	R8948 RES_402 m38a[89A7]	R8949 RES_402 m38a[89A7]	R8980 RES_402 m38a[89C4]	R8981 RES_402 m38a[89C4]	R8982 RES_402 m38a[89C4]	R8983 RES_402 m38a[89C4]	R8990 RES_402 m38a[89B5]	R8991 RES_402 m38a[89B4]	R8992 RES_402 m38a[89B4]	R8993 RES_402 m38a[89B4]	R8994 RES_402 m38a[89B4]	R8995 RES_402 m38a[89B4]	R8996 RES_402 m38a[89B4]	R8997 RES_402 m38a[89A4]	R8998 RES_402 m38a[89A4]	R8999 RES_402 m38a[89A4]	R9030 RES_402 m38a[90C7]	R9031 RES_402 m38a[90C7]	R9032 RES_402 m38a[90C7]	R9033 RES_402 m38a[90C7]	R9040 RES_402 m38a[90B8]	R9041 RES_402 m38a[90B8]	R9042 RES_402 m38a[90B7]	R9043 RES_402 m38a[90B7]	R9044 RES_402 m38a[90B7]	R9045 RES_402 m38a[90B7]	R9046 RES_402 m38a[90B7]	R9047 RES_402 m38a[90B7]	R9048 RES_402 m38a[90A7]	R9049 RES_402 m38a[90A7]	R9080 RES_402 m38a[90C4]	R9081 RES_402 m38a[90C4]	R9082 RES_402 m38a[90C4]	R9083 RES_402 m38a[90C4]	R9090 RES_402 m38a[90B5]	R9091 RES_402 m38a[90B4]	R9092 RES_402 m38a[90B4]	R9093 RES_402 m38a[90B4]	R9094 RES_402 m38a[90B4]	R9095 RES_402 m38a[90B4]	R9096 RES_402 m38a[90B4]	R9097 RES_402 m38a[90B4]	R9098 RES_402 m38a[90A4]	R9099 RES_402 m38a[90A4]	R9190 RES_402 m38a[91D2]	R9191 RES_402 m38a[91D2]	R9195 RES_402 m38a[91A3]	R9202 RES_402 m38a[92C6]	R9250 RES_402 m38a[92C6]	R9350 RES_402 m38a[93A8]	R9351 RES_402 m38a[93A8]	R9370 RES_402 m38a[93D1]	R9371 RES_402 m38a[93D1]	R9372 RES_402 m38a[93C1]	R9373 RES_402 m38a[93C1]	R9390 RES_402 m38a[93A1]	R9391 RES_402 m38a[93A1]	R9400 RES_402 m38a[94C8]	R9401 RES_402 m38a[94C7]	R9410 RES_402 m38a[94C6]	R9411 RES_402 m38a[94C6]	R9450 RES_402 m38a[94C2]	R9470 RES_402 m38a[94C7]	R9472 RES_402 m38a[94B3]	R9473 RES_402 m38a[94B2]	R9474 RES_402 m38a[94B2]	R9475 RES_402 m38a[94B1]	R9490 RES_805 m38a[94C6]	R9491 RES_805 m38a[94D6]	R9701 RES_402 m38a[97D8]	R9706 RES_402 m38a[97D8]	R9707 RES_402 m38a[97C8]	R9710 RES_402 m38a[97D2]	R9711 RES_402 m38a[97D2]	R9712 RES_402 m38a[97D2]	R9713 RES_402 m38a[97C2]	R9714 RES_402 m38a[97C2]	R9716 RES_402 m38a[97C8]	R9717 RES_402 m38a[97C8]	R9720 RES_402 m38a[97D1]	R9721 RES_402 m38a[97D1]	R9722 RES_402 m38a[97C2]	R9740 RES_402 m38a[97A8]	R9741 RES_402 m38a[97A8]	R9742 RES_402 m38a[97A7]	R9750 RES_402 m38a[97B3]	R9751 RES_402 m38a[97A3]	RP2300 RPAK4P_SM-LF m38a[23D5]	RP3000 RPAK4P_SM-LF m38a[30B4 30C4 30D4 30D4]	RP3001 RPAK4P_SM-LF m38a[30C4 30A4 30A4 30D4]	RP3002 RPAK4P_SM-LF m38a[30A4 30A4 30A4 30D4]	RP3003 RPAK4P_SM-LF m38a[30C4 30C4 30C4 30D4]	RP3004 RPAK4P_SM-LF m38a[30C4 30C4 30D4]	RP3005 RPAK4P_SM-LF m38a[30B4 30A4 30A4 30D4]	RP3006 RPAK4P_SM-LF m38a[30B4 30B4 30A4 30D4]	RP3007 RPAK4P_SM-LF m38a[30C4 30C4 30C4 30C4]	RP3008 RPAK4P_SM-LF m38a[30C4 30C4 30C4 30C4]	RP3009 RPAK4P_SM-LF m38a[30B4 30B4 30C4 30C4]	RP3010 RPAK4P_SM-LF m38a[30B4 30B4 30B4 30B4]	RP3011 RPAK4P_SM-LF m38a[30B4 30A4 30B4 30B4]	RP7200 RPAK4P_SM-LF m38a[72A4]	SDF4700 PCB_STANDOFF m38a[47A2]	SDF4701 PCB_STANDOFF m38a[47A2]	SDF5300 PCB_STANDOFF m38a[53A5]	SDF5301 PCB_STANDOFF m38a[53A5]	SDF9400 PCB_STANDOFF m38a[94B6]	SDF9401 PCB_STANDOFF m38a[94A6]	SW2500 SWI_TACT_4SM_EVOPH_S m38a[26C6]	M-LF	SW5900 SWI_TACT_4SM_EVOPH_S m38a[59D8]	M-LF	SW5901 SWI_TACT_4SM_EVOPH_S m38a[59B8]	M-LF	U600 74LC125_TSOP m38a[6B7 6B7 6B7 6C7]	U601 SN74LVC1G04_SOT23-5 m38a[6C7]	U650 74AHC1G32_SM-LF m38a[6A7]	U1000 ADT7461_HSOP m38a[10D5]	U1200 NB_945GM_BGA m38a[12D5]	U1200 NB_945GM_BGA m38a[13D4]	U1200 NB_945GM_BGA m38a[14D5]	U1200 NB_945GM_BGA m38a[15D3 15D7]	U1200 NB_945GM_BGA m38a[16D2 16C8]	U1200 NB_945GM_BGA m38a[17D5]	U1200 NB_945GM_BGA m38a[18D4 18D7]	U2100 SB_1CH7M_BGA m38a[21D6]	U2100 SB_1CH7M_BGA m38a[22B7 22D3]	U2100 SB_1CH7M_BGA m38a[23D4]	U2100 SB_1CH7M_BGA m38a[24D4 24D7]	U2601 MC74VHC1G08_SOT23-5 m38a[26D5]	LF	U2603 SN74LVC1G04_SOT23-5 m38a[26A7]	U2698 MC74VHC1G08_SOT23-5 m38a[26C4]	LF	U2699 MAX6816_SOT143 m38a[26C5]	U3100 LREG_MB3533FVM_MSOP-8 m38a[31C5]	8	U3301 CLK_GEN_CY284455_QFN m38a[33C5]	U4101 88E8053_QFN m38a[41D5]	U4102 EPROM_M24C08_SO8 m38a[41A3]	U4400 FW32306_TOFP m38a[44D5]	U4700 SWI_TPS2043_SOI m38a[47C7]	U5800 SMC_H8S2116_BGA m38a[58A8 58C3 58C6 58D6]	U5900 VDEP_RNSVD_SOT23-5 m38a[59D8]	U5940 VREF_REF3133_SOT23-3 m38a[59A4]	U5999 COMPARATOR_LM393_SOI m38a[59A8 59A8]	-1-LF	U6100 MAX6695_UMAX m38a[61C4]	U6301 FLASH_SST25VF016B_SO m38a[63D3]	I_SOI	U6700 TPM_TSSOP m38a[67C5]	U6800 AUDIO_STAC92204XR_LQ m38a[68D5]	FP	U7200 MAX9714_QFN-LF m38a[72C5]	U7400 MAX9890_UCSP1 m38a[74C4]	U7500 ISL6262_QFN m38a[75C6]	U7501 ZXCT1010_SOT23-5 m38a[76D7]	U7700 LFC3411_MSOP-LF m38a[77D3]	U7710 MC74VHC1G08_SOT23-5 m38a[77D5]	LF	U7711 MC74VHC1G08_SOT23-5 m38a[77C5]	LF	U7712 MC74VHC1G08_SOT23-5 m38a[77D4]	LF	U7750 SN200505068_SOP m38a[77B6]	U7800 ISL6549_QFN m38a[78C6]	U7900 ISL6549_QFN m38a[79D6]	U7901 COMPARATOR_LM339A_SO m38a[79A5]	I-LF	U7901 COMPARATOR_LM339A_SO m38a[80A4]	I-LF	U7901 COMPARATOR_LM339A_SO m38a[81A5]	I-LF	U7910 COMPARATOR_LM339A_SO m38a[79A3 79B3]	I-LF	U7910 COMPARATOR_LM339A_SO m38a[80B2]	I-LF	U7910 COMPARATOR_LM339A_SO m38a[81B3]	I-LF	U8000 ISL6549_QFN m38a[80D6]	U8100 ISL6549_QFN m38a[81D6]	U8400 ATI_M56P_BGA m38a[84C8 84D4]	U8400 ATI_M56P_BGA m38a[86D4]	U8400 ATI_M56P_BGA m38a[87D2 87D6]	U8400 ATI_M56P_BGA m38a[91D4]	U8400 ATI_M56P_BGA m38a[93C4]	U8500 ISL6269_QFN m38a[85D6]	U8595 OPAMP_LMV2011_SOT23-5 m38a[85D2]	5	U8900 SGRAM_16MX32_GDDR3_1 m38a[89D6 89B6]	36H_FBGA	U8950 SGRAM_16MX32_GDDR3_1 m38a[89D3 89B3]	36H_FBGA	U9000 SGRAM_16MX32_GDDR3_1 m38a[90D6 90B6]	36H_FBGA	U9050 SGRAM_16MX32_GDDR3_1 m38a[90D3 90B3]	36H_FBGA	U9470 MC74VHC1G08_SOT23-5 m38a[94B2]	LF	U9750 74AHC1G32_SM-LF m38a[97B4]	U9751 74AHC1G32_SM-LF m38a[97A4]	VR6800 LREG_MAX1819_UCSP1 m38a[68A4]	XC7200 MTGHOLE m38a[72B3]	XW601 SHORT_SM m38a[6C2]	XW602 SHORT_SM m38a[6C2]	XW604 SHORT_SM m38a[6A5]	XW605 SHORT_SM m38a[6A5]	XW5800 SHORT_SM m38a[58B3]	XW5900 SHORT_SM m38a[59B1]	XW6801 SHORT_SM m38a[68B5]	XW7201 SHORT_SM m38a[72B2]	XW7300 SHORT_SM m38a[73C3]	XW7307 SHORT_SM m38a[73C6]	XW7400 SHORT_SM m38a[74A4]	XW7440 SHORT_SM m38a[74C2]	XW7500 SHORT_SM m38a[75A6]	XW7501 SHORT_SM m38a[75B2]	XW7502 SHORT_SM m38a[75B1]	XW7503 SHORT_SM m38a[75D2]	XW7504 SHORT_SM m38a[75D1]	XW7598 SHORT_SM m38a[76D7]	XW7700 SHORT_SM m38a[77C2]	XW7750 SHORT_SM m38a[77A5]	XW7800 SHORT_SM m38a[78B6]	XW7900 SHORT_SM m38a[79C6]	XW8000 SHORT_SM m38a[80C6]	XW8100 SHORT_SM m38a[81C6]	XW8500 SHORT_SM m38a[85C6]	Y2600 CRYSTAL_4PIN_SM-LF m38a[26D8]	Y3301 CRYSTAL_5X3.2-SM m38a[33C7]	Y4101 CRYSTAL_SM-3-LF m38a[41B5]	Y4400 CRYSTAL_HC49-USMD m38a[44D2]	Y5800 CRYSTAL_SM-3 m38a[59B8]	Y6700 CRYSTAL_4PIN_SM-LF m38a[59B7]	ZH500 HOLE_VIA m38a[5C1]	ZH501 HOLE_VIA m38a[5C1]	ZH502 HOLE_VIA m38a[5C1]	ZH503 HOLE_VIA m38a[5C1]	ZH504 HOLE_VIA m38a[5B1]	ZH505 HOLE_VIA m38a[5B1]	ZH506 HOLE_VIA m38a[5B1]	ZH507 HOLE_VIA m38a[5B1]	ZH508 HOLE_VIA m38a[5B1]	ZH509 HOLE_VIA m38a[5B1]	ZH510 HOLE_VIA m38a[5C1]	ZH511 HOLE_VIA m38a[5C1]	ZH512 HOLE_VIA m38a[5C1]	ZH513 HOLE_VIA m38a[5C1]	ZH514 HOLE_VIA m38a[5B1]	ZH515 HOLE_VIA m38a[5B1]	ZH516 HOLE_VIA m38a[5B1]	ZH517 HOLE_VIA m38a[5B1]	ZH518 HOLE_VIA m38a[5B1]	ZH519 HOLE_VIA m38a[5B1]	ZH520 HOLE_VIA m38a[5C1]	ZH521 HOLE_VIA m38a[5C1]	ZH522 HOLE_VIA m38a[5C1]	ZH523 HOLE_VIA m38a[5C1]	ZH524 HOLE_VIA m38a[5B1]	ZH525 HOLE_VIA m38a[5B1]	ZH526 HOLE_VIA m38a[5B1]	ZH527 HOLE_VIA m38a[5B1]	ZH528 HOLE_VIA m38a[5B1]	ZH529 HOLE_VIA m38a[5B1]	ZH601 MTGHOLE m38a[6A3]	ZH602 MTGHOLE m38a[6A3]	ZH603 MTGHOLE m38a[6A3]	ZH604 MTGHOLE m38a[6B3]	ZH606 MTGHOLE m38a[6A1]	ZH607 MTGHOLE m38a[9D4]	ZH608 MTGHOLE m38a[9D3]	ZH609 MTGHOLE m38a[9D2]	ZH610 MTGHOLE m38a[9D2]	ZH611 MTGHOLE m38a[9C3]
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