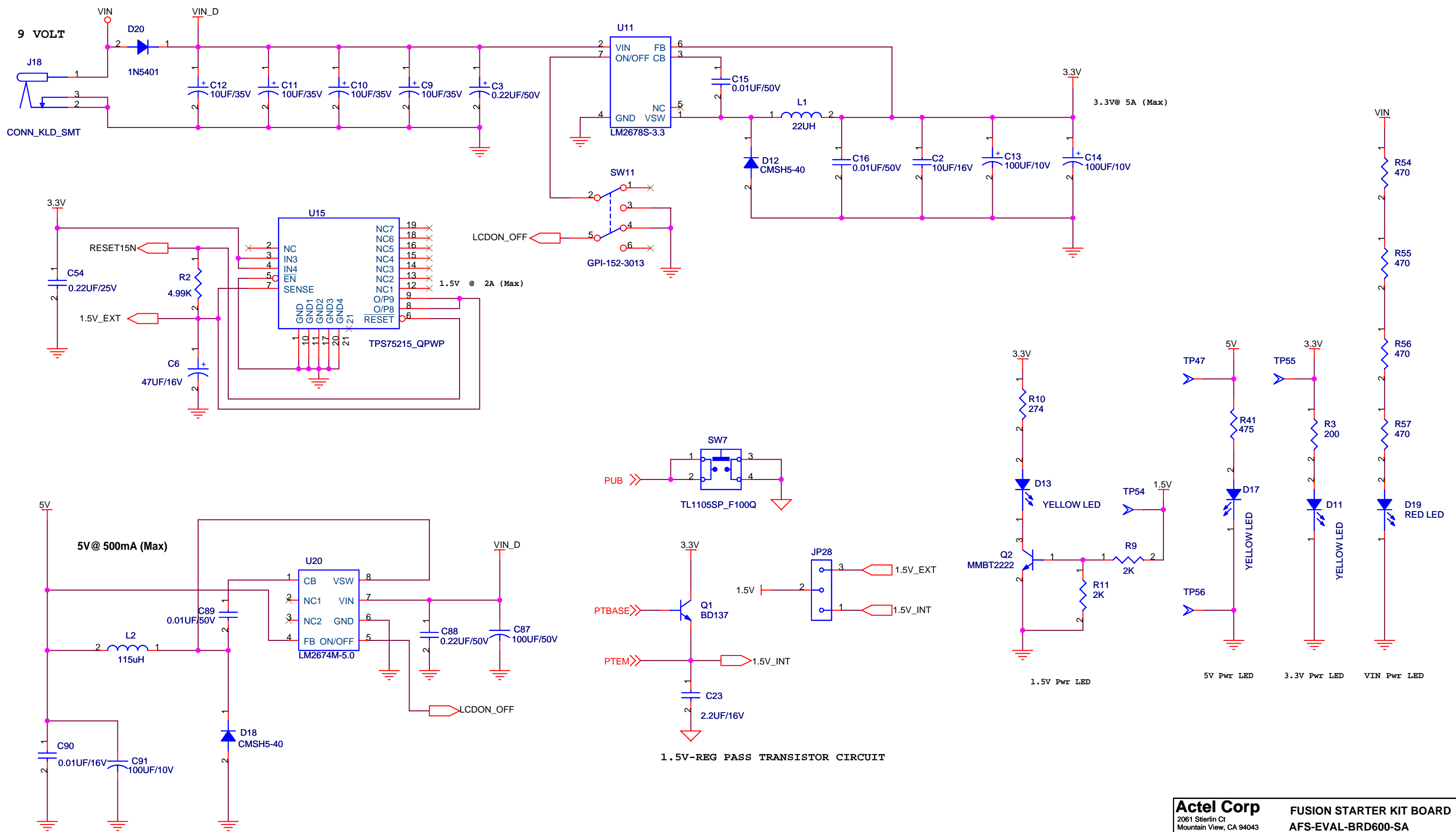


FUSION STARTER KIT BOARD

Actel Part #. AFS-EVAL-BRD600-SA

Date	ECO#	Revision History Description	Sheet	Initiater	Approval
10/10/05	0.1	capture the full schematic	1 to 12	Actel	
10/14/05	0.2	FPGA pins mapping to J14 header has been changed. 2.2uf Capacitor is added between signals PCAP and NCAP. SMA connector(J19),Oscillators (U1 and U2) were deleted. Tweeter circuit and LEDs connecte to AG pads were deleted. 3.3V and 1.5V current sense circuit and crystal circuit were added.	2,3,4,5,7,8,11&12	Sanmina-SCI	
10/17/05	0.3	Jumper is provided VCCPLA, VCCPLB & VAREF. Connection is made between VCCOSC to 3.3V_FPGA. Snubber Circuit is added parallel to Jumper which is provided to connect the Fan driven by P-Channel MOSFET.	3,4,5 & 12	Sanmina-SCI	
10/21/05	0.4	TRI Color Led added to P-Channel Mosfet circuit. Fan option is added for N- Channel Mosfets. Test pin is provided for VAREF Pin.	4 & 12	Sanmina-SCI	
10/22/05	0.5	Decoupling capacitors are added to 1.5V & 3.3V Power supply line connected to N-Channel Mosfets.	12	Sanmina-SCI	
10/26/05	0.6	JP75 JUMPER DELETED.	04	Sanmina-SCI	
10/27/05	0.7	JP74 Changed to shrouded header, Value of C98 is changed to 0.22uF. RC Filter circuit is added for AV0,AV1,AV2,AV3,AV4,AV5,AV8,AV9 AC1,AC2,AC3,AC4,AC5,AC8,AC9	04,11 & 12	Sanmina-SCI	
10/28/05	1.0	Documentation Changes	03,04,11 & 12	Sanmina-SCI	
01/26/06	1.1	Documentation Changes	08	Sanmina-SCI	

Actel Corp 2061 Stierlin Ct Mountain View, CA 94043		FUSION STARTER KIT BOARD AFS-EVAL-BRD600-SA	
Approvals:	Title: FUSION STARTER KIT BOARD		
Eng Mgr:			
Engr:			
Doc Ctrl:	Size: B	Document No:	Rev 1.1
Assembly:	Date: Thursday, January 26, 2006		Rev 1.1
Date:	DRAWN BY: Sanmina-SCI		Pg 1 of 12



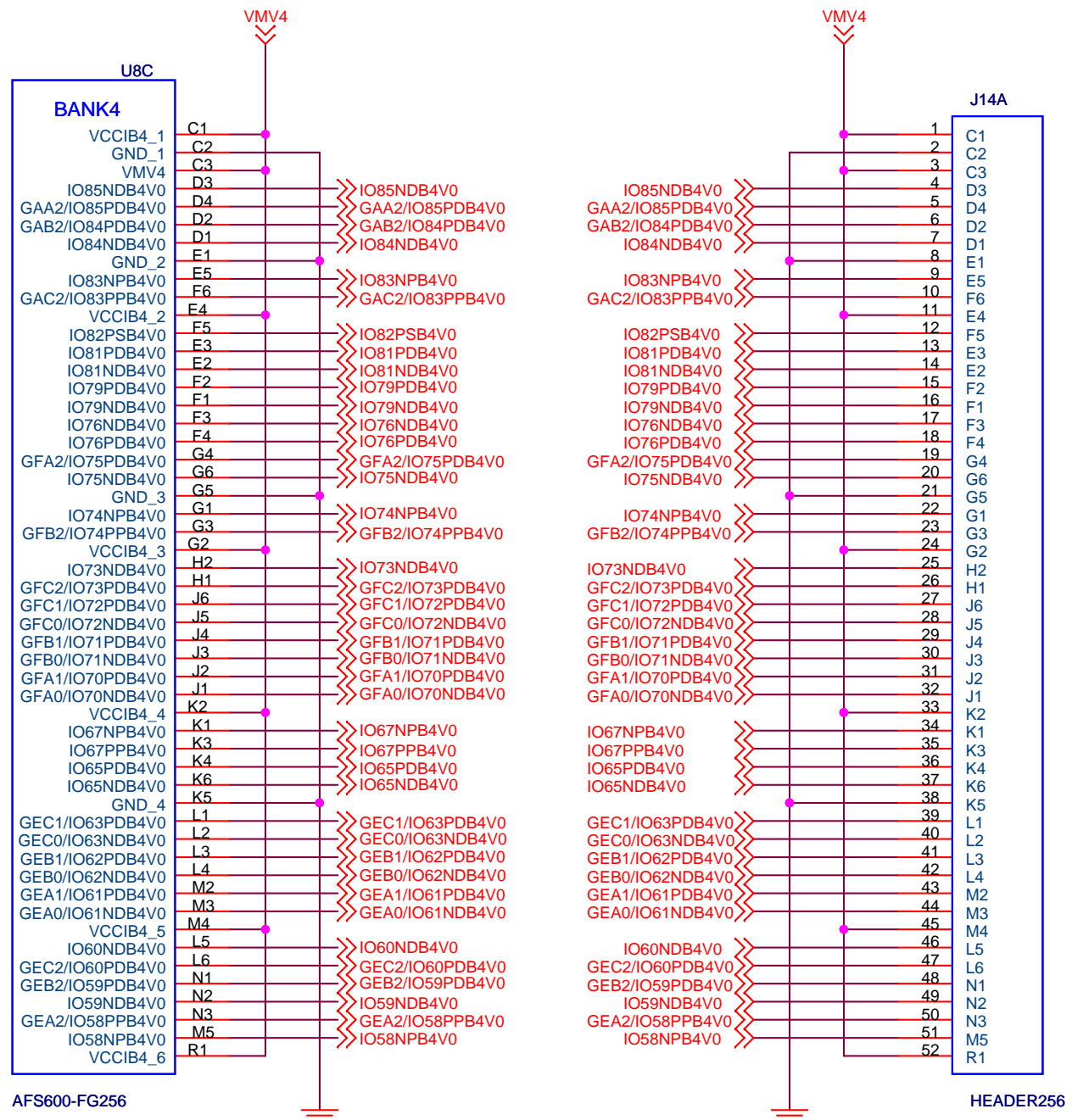
LCD POWER SUPPLY CIRCUIT

1.5V-REG PASS TRANSISTOR CIRCUIT

SCHEMATIC DIAGRAM NOTES
 1. UNLESS STATED OTHERWISE:
 A. ALL RESISTOR ARE IN OHMS, 5% TOLERANCE.
 B. ALL CAPACITORS ARE IN MICROFARADS, 10% TOLERANCE.

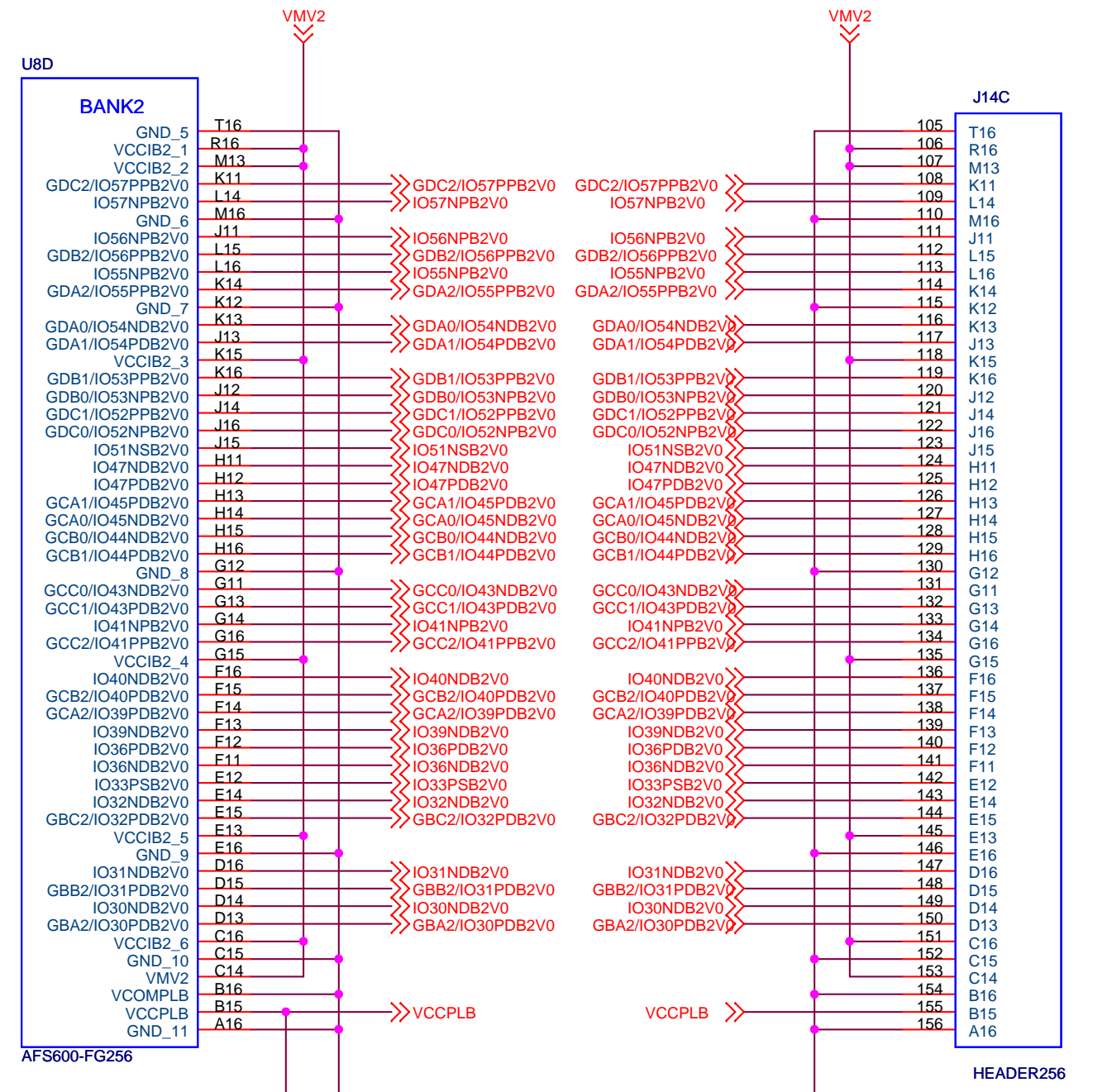
BOARD INFORMATION
 PCB FAB: ,REV.02 PCB ASSEMBLY: ,REV.02

Actel Corp		FUSION STARTER KIT BOARD	
2061 Sterlin Ct Mountain View, CA 94043		AFS-EVAL-BRD600-SA	
Approvals:	Title:	POWER SUPPLIES & INDICATION	
Eng Mgr:			
Doc Ctr:	Size:	Document No:	Rev
Assembly:	B		1.1
Tuesday, November 01, 2005	DRAWN BY: Sanmina-SCI		Pg 2 of 12
Date:			



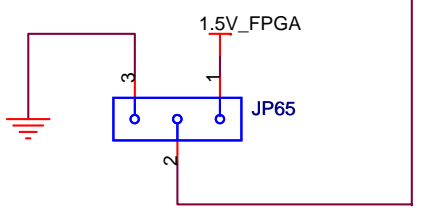
AFS600-FG256

TSW-126-07-L-D



AFS600-FG256

TSW-126-07-L-D

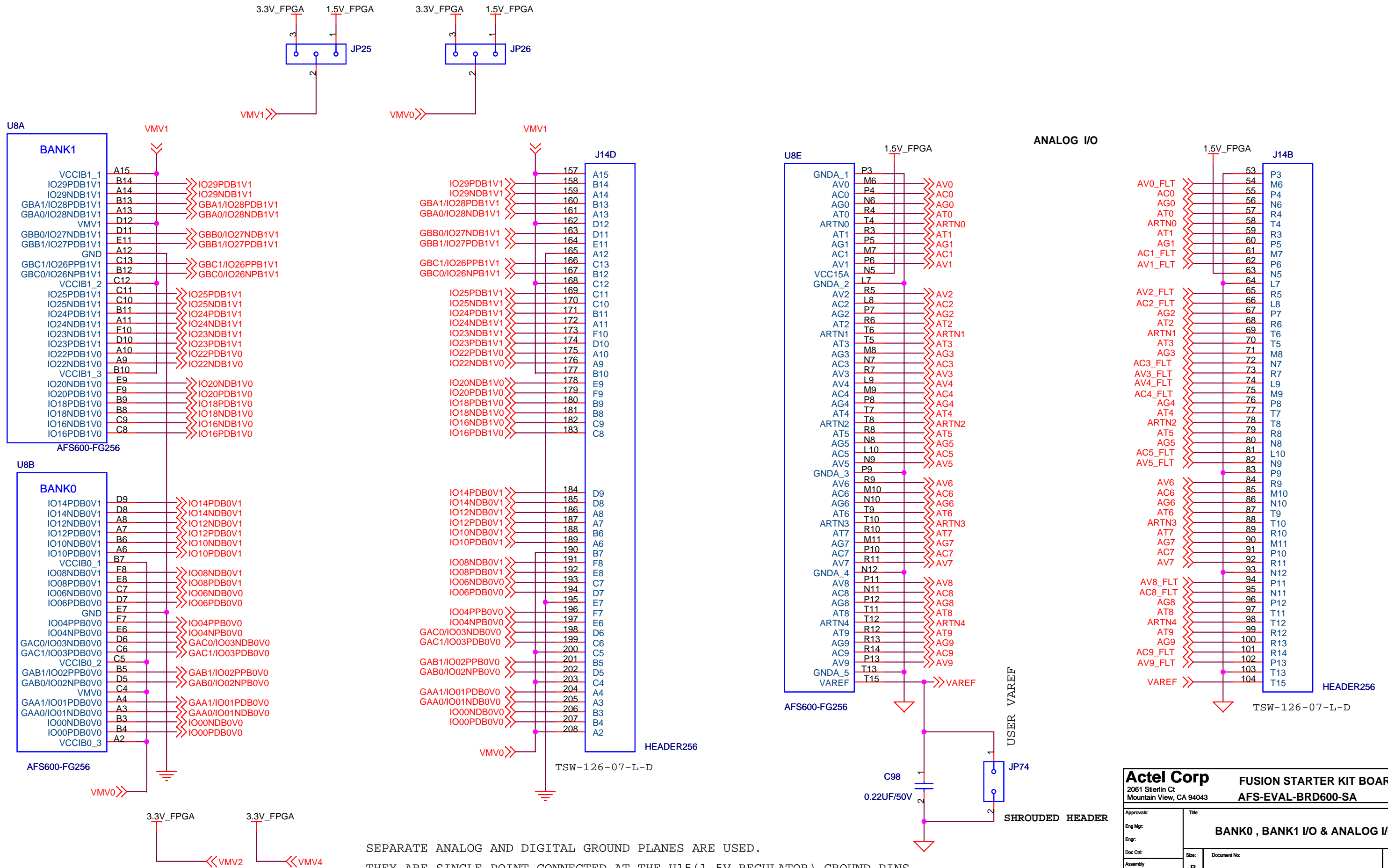


SEPARATE ANALOG AND DIGITAL GROUND PLANES ARE USED.
THEY ARE SINGLE POINT CONNECTED AT THE U15(1.5V REGULATOR) GROUND PINS.

SCHEMATIC DIAGRAM NOTES
1. UNLESS STATED OTHERWISE:
A. ALL RESISTOR ARE IN OHMS, 5% TOLERANCE.
B. ALL CAPACITORS ARE IN MICROFARADS, 10% TOLERANCE.

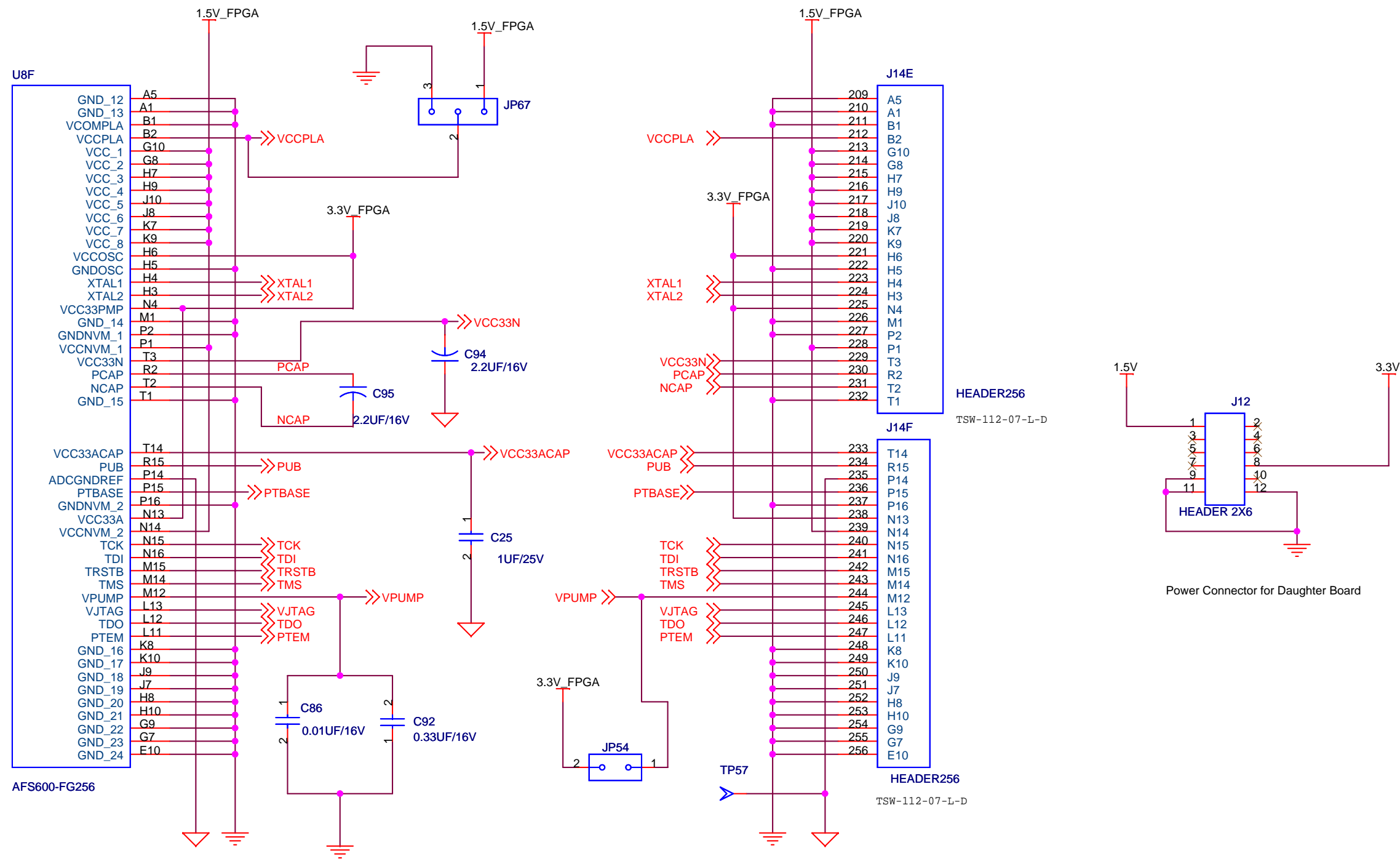
BOARD INFORMATION
PCB FAB: ,REV.02 PCB ASSEMBLY: ,REV.02

Actel Corp		FUSION STARTER KIT BOARD	
2061 Stierlin Ct Mountain View, CA 94043		AFS-EVAL-BRD600-SA	
Approvals:	Title:		
Eng Mgr:	BANK2 & BANK4 I/O		
Engr:	Size:	Document No:	Rev:
Doc Ctr:	B		1.1
Assembly:	DRAWN BY: Sanmina-SCI		Pg 3 of 12
Date: Tuesday, November 01, 2005			



SEPARATE ANALOG AND DIGITAL GROUND PLANES ARE USED.
THEY ARE SINGLE POINT CONNECTED AT THE U15(1.5V REGULATOR) GROUND PINS.

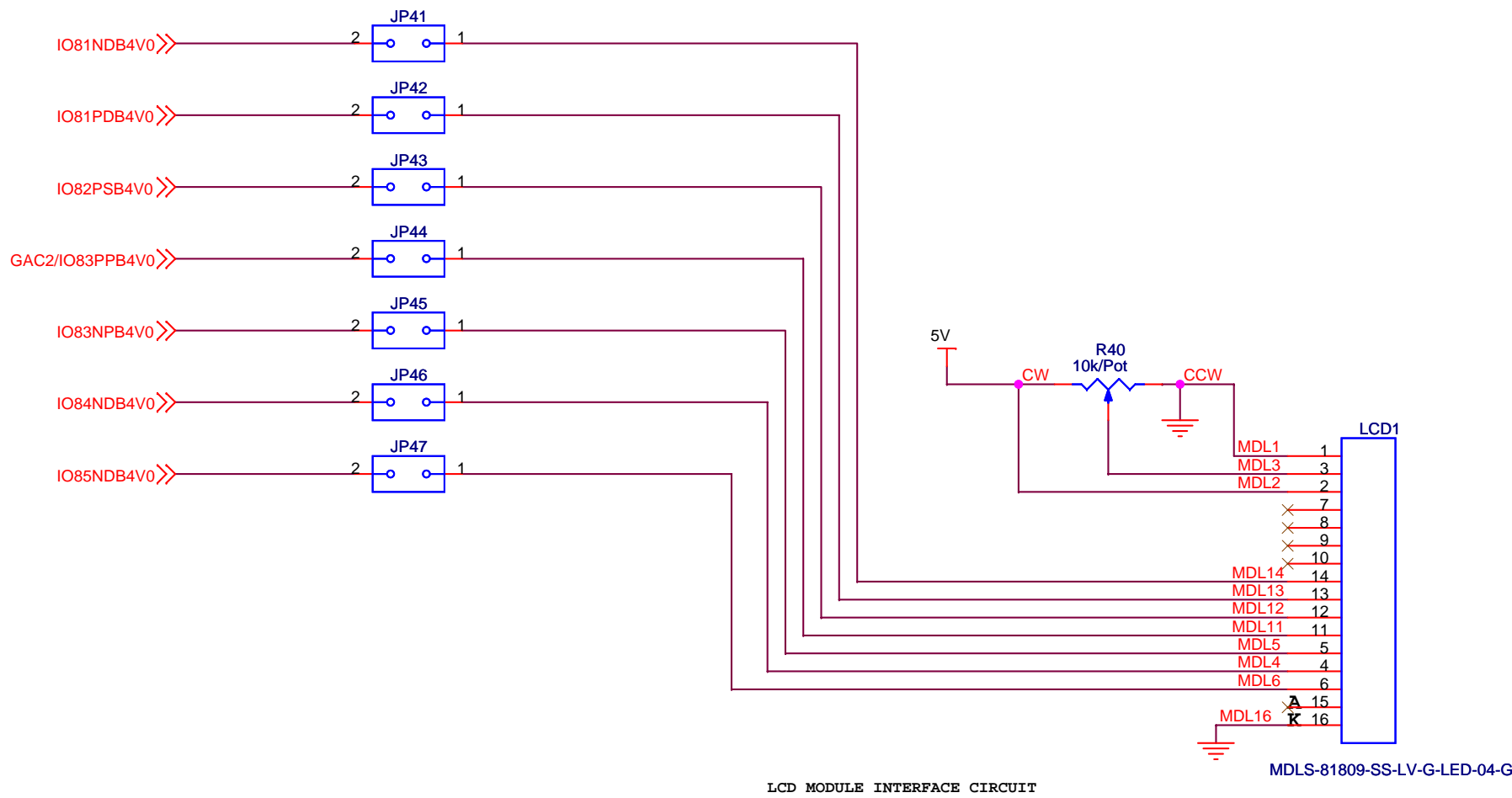
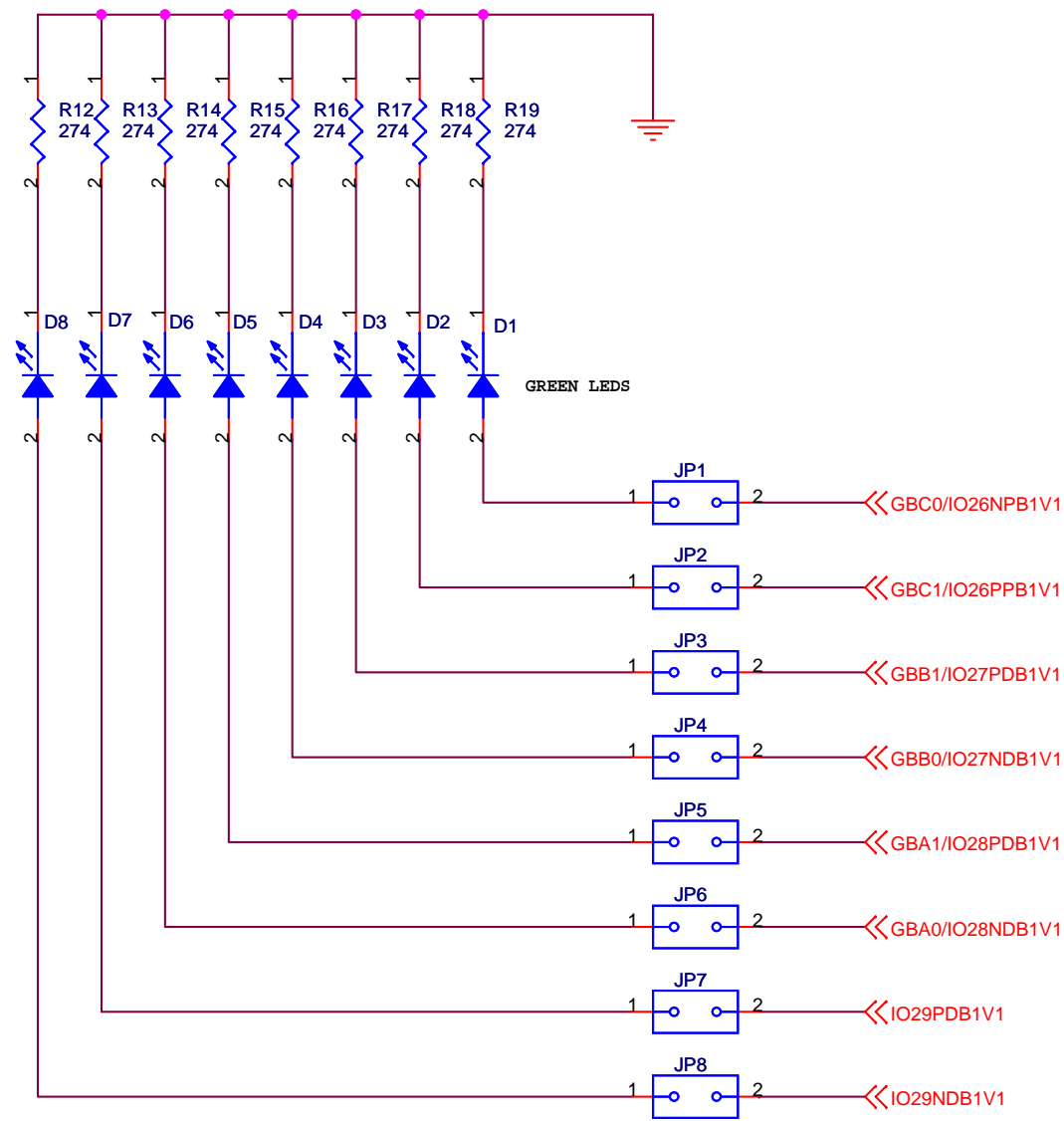
Actel Corp		FUSION STARTER KIT BOARD	
2061 Sterlin Ct Mountain View, CA 94043		AFS-EVAL-BRD600-SA	
Approvals:	Title:		
Eng Mgr:	BANK0 , BANK1 I/O & ANALOG I/O.		
Engr:	Size:	Document No:	Rev
Doc Ctrl:	B		1.1
Assembly:	Date:		Rev
Tuesday, November 01, 2005	Date:		1.1
Date:	DRAWN BY:		Pg 4 of 12
	Sanmina-SCI		



SCHEMATIC DIAGRAM NOTES
 1. UNLESS STATED OTHERWISE:
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BOARD INFORMATION
 PCB FAB: , REV. 02 PCB ASSEMBLY: , REV. 02

Actel Corp 2061 Sterlin Ct Mountain View, CA 94043		FUSION STARTER KIT BOARD AFS-EVAL-BRD600-SA	
Approvals:	Title: VCC, GND & JTAG		
Eng Mgr:			
Engr:			
Doc Ctrl:	Size: B	Document No:	Rev: 1.1
Assembly:	Date: Tuesday, November 01, 2005		DRAWN BY: Sanmina-SCI
			Pg 5 of 12

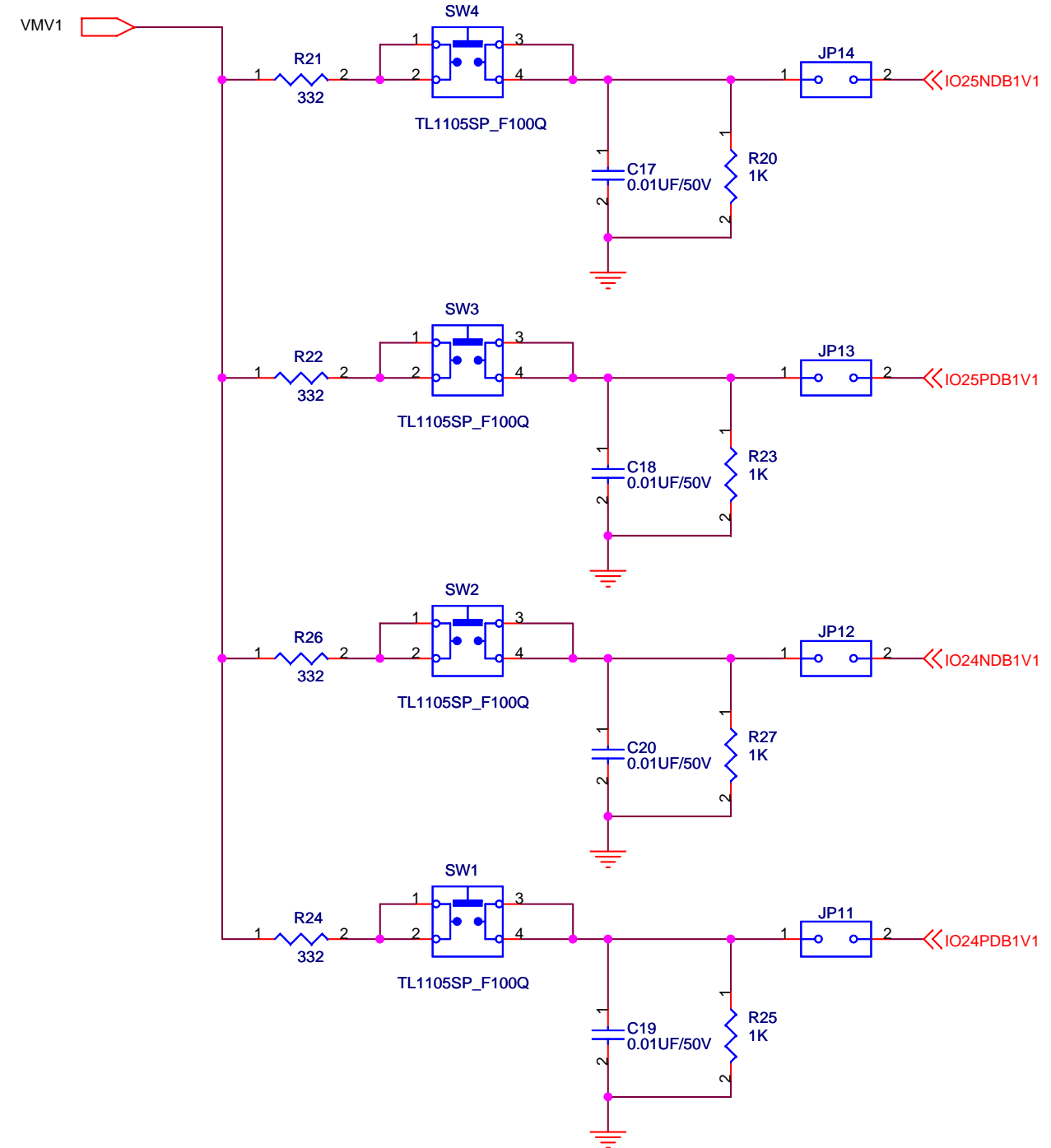
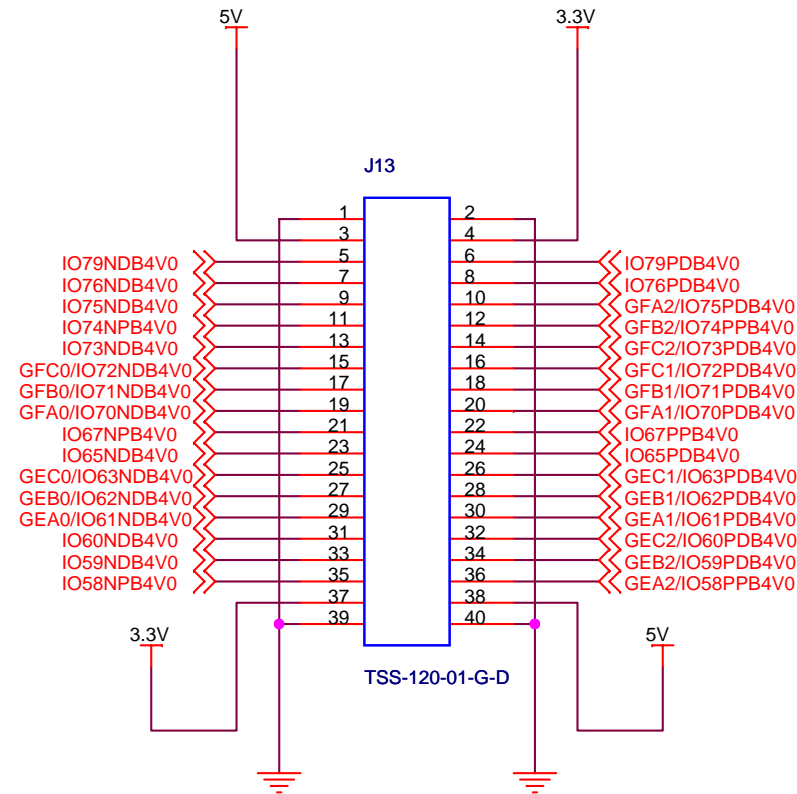


LCD MODULE INTERFACE CIRCUIT

SCHEMATIC DIAGRAM NOTES
 1. UNLESS STATED OTHERWISE:
 A. ALL RESISTOR ARE IN OHMS, 5% TOLERANCE.
 B. ALL CAPACITORS ARE IN MICROFARADS, 10% TOLERANCE.

BOARD INFORMATION
 PCB FAB: ,REV.02 PCB ASSEMBLY: ,REV.02

Actel Corp		FUSION STARTER KIT BOARD	
2061 Sterlin Ct Mountain View, CA 94043		AFS-EVAL-BRD600-SA	
Approvals:	Title:		
Eng Mgr:	LED & LCD MODULE INTERFACE		
Engr:			
Doc Ctrl:	Size:	Document No:	Rev
Assembly:	B		1.1
Tuesday, November 01, 2005	DRAWN BY: Sanmina-SCI		Pg 6 of 12
Date:			



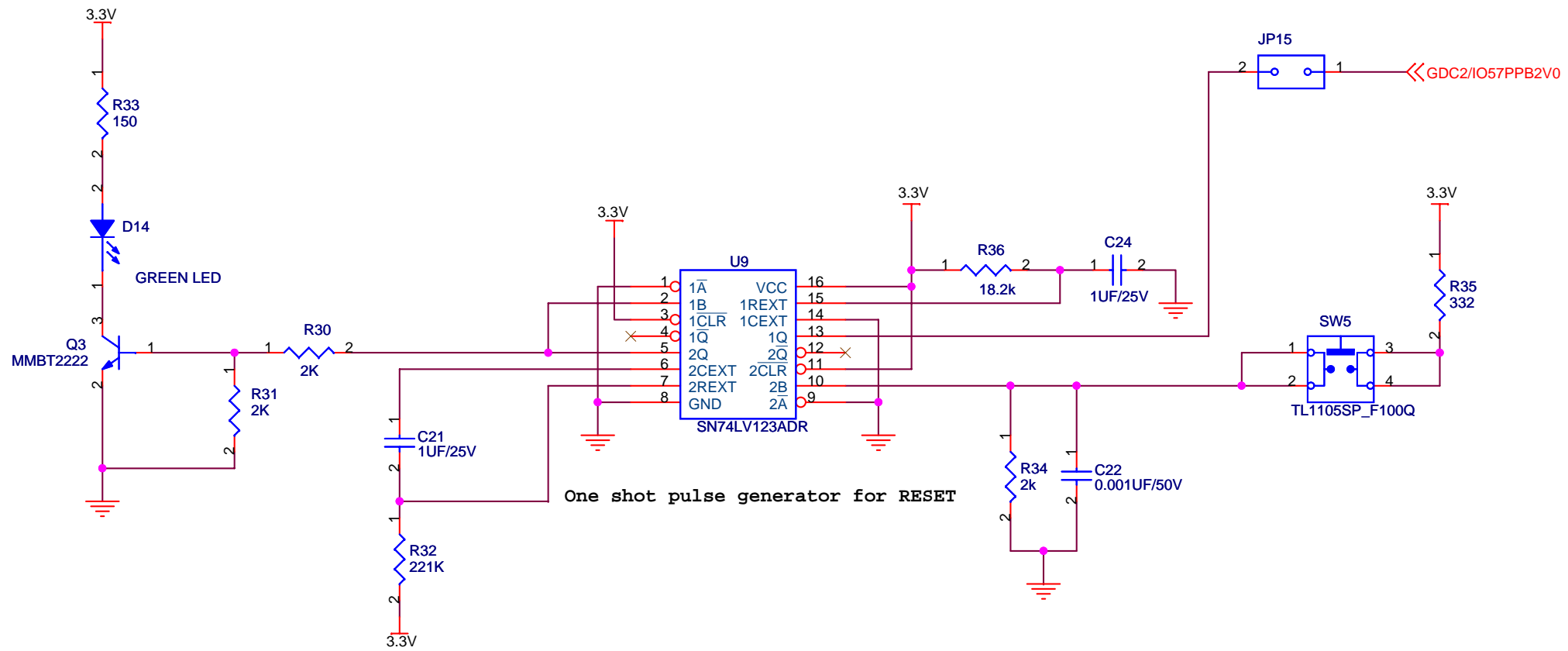
SCHEMATIC DIAGRAM NOTES

1. UNLESS STATED OTHERWISE:
 A. ALL RESISTOR ARE IN OHMS, 5% TOLERANCE.
 B. ALL CAPACITORS ARE IN MICROFARADS, 10% TOLERANCE.

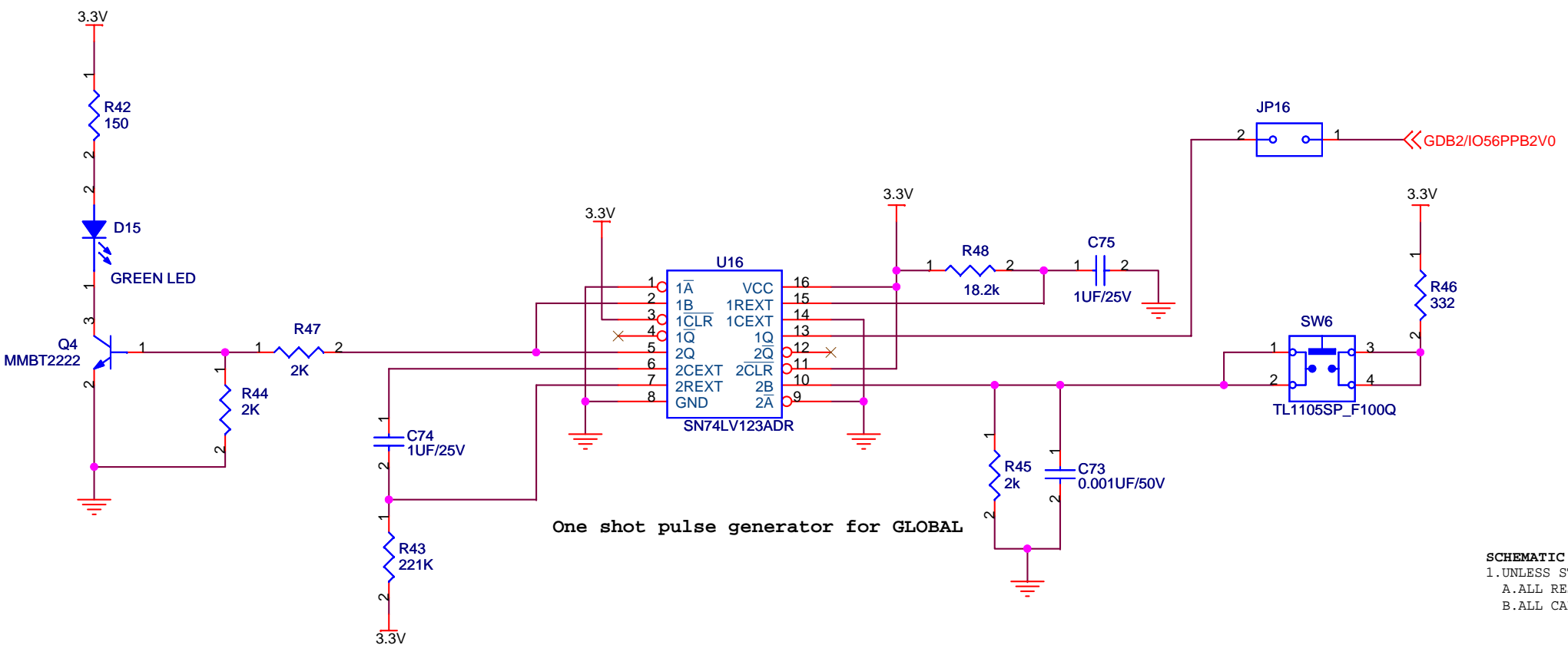
BOARD INFORMATION

PCB FAB: ,REV.02 PCB ASSEMBLY: ,REV.02

Actel Corp		FUSION STARTER KIT BOARD	
2061 Sterlin Ct Mountain View, CA 94043		AFS-EVAL-BRD600-SA	
Approvals:	Title: PUSH BUTTON INTERFACE & 40PIN HEADER		
Eng Mgr:	Size: Document No: Rev 1.1		
Engr:			
Doc Ctrl:	Assembly: B		
Tuesday, November 01, 2005	DRAWN BY: Sanmina-SCI		
Date:	Pg 7 of 12		



One shot pulse generator for RESET

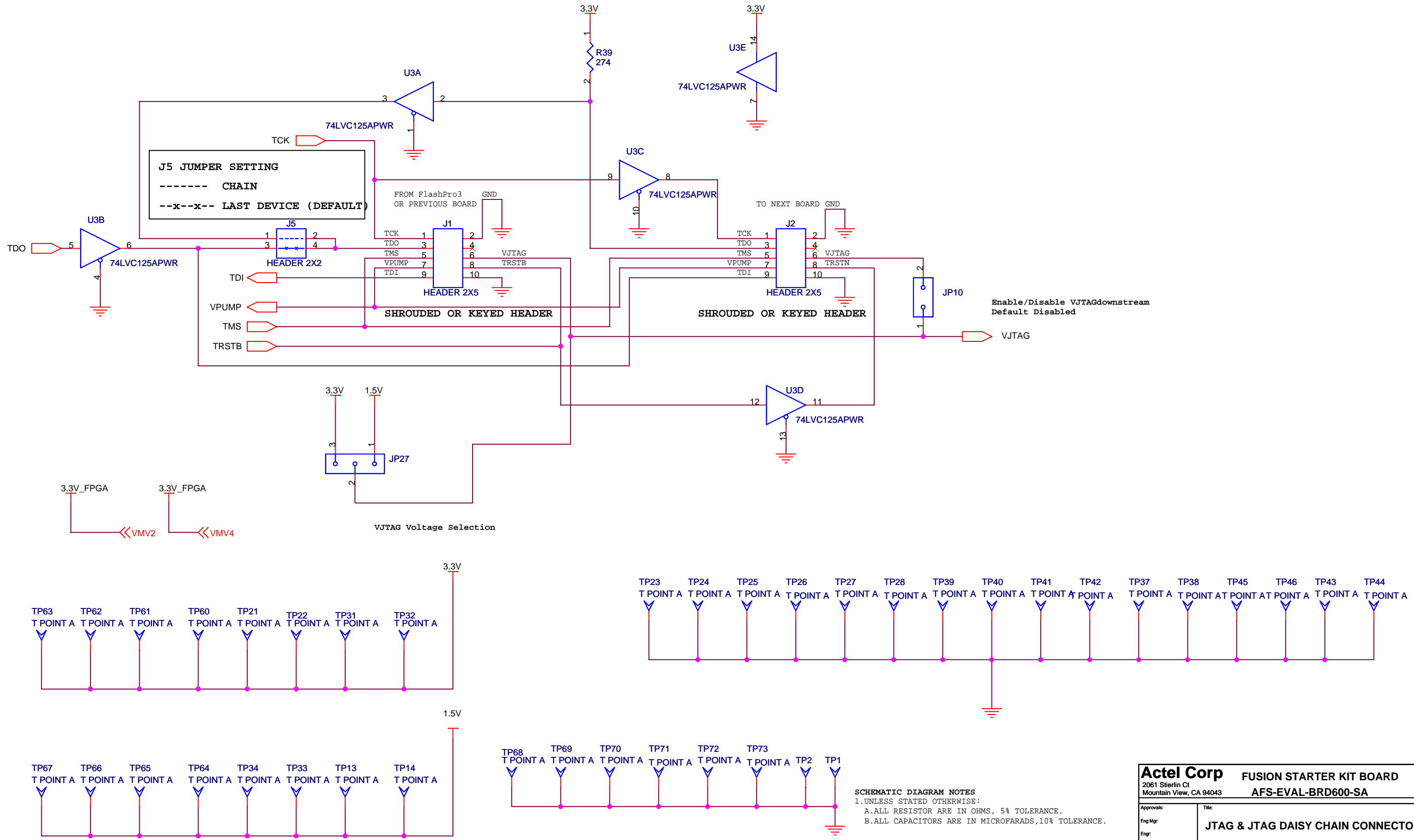


One shot pulse generator for GLOBAL

SCHEMATIC DIAGRAM NOTES
 1. UNLESS STATED OTHERWISE:
 A. ALL RESISTOR ARE IN OHMS, 5% TOLERANCE.
 B. ALL CAPACITORS ARE IN MICROFARADS, 10% TOLERANCE.

BOARD INFORMATION
 PCB FAB: ,REV.02 PCB ASSEMBLY: ,REV.02

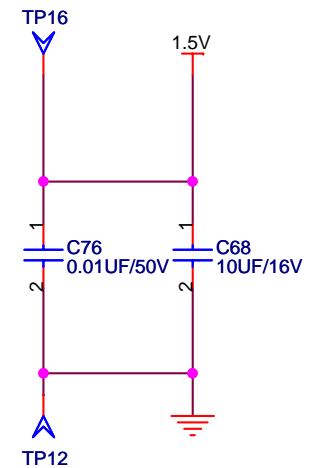
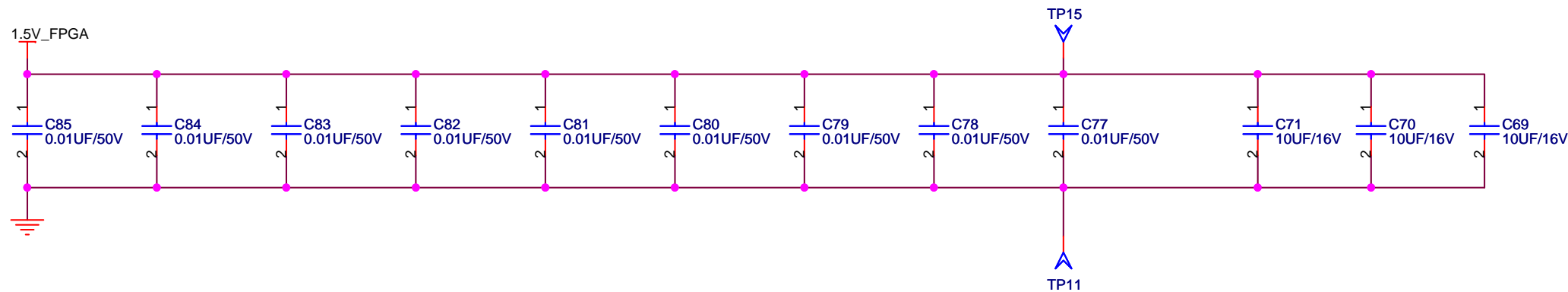
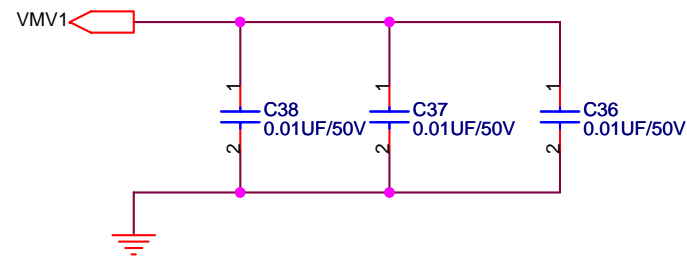
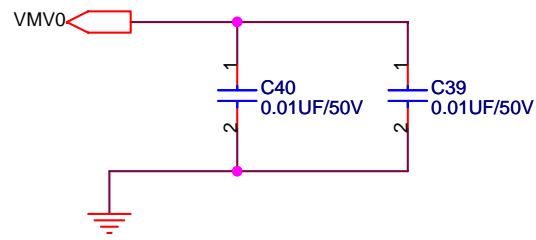
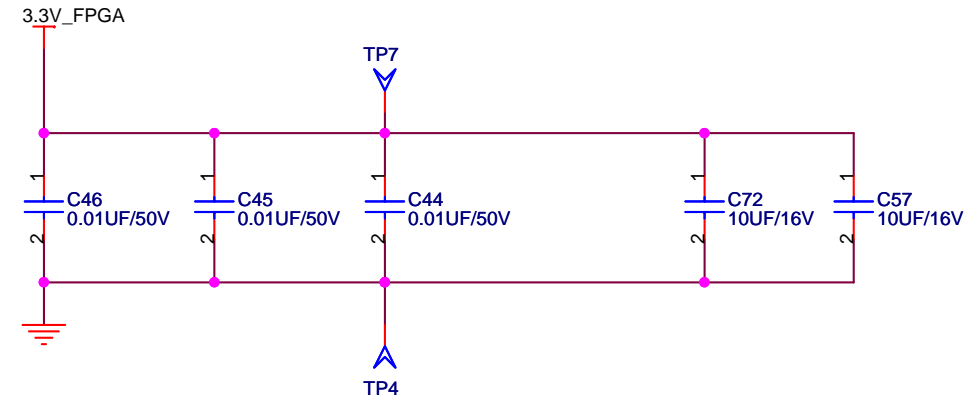
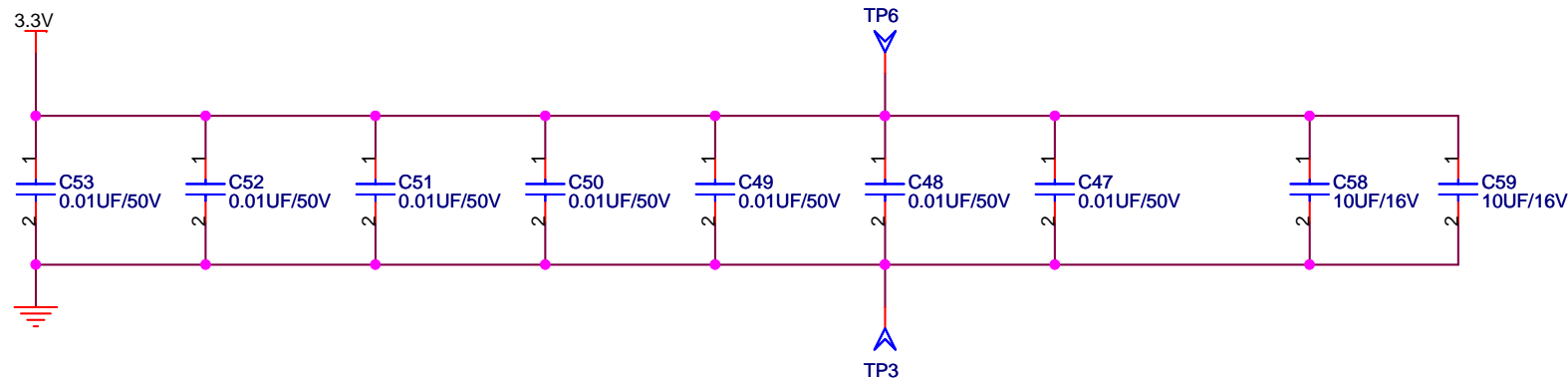
Actel Corp		FUSION STARTER KIT BOARD	
2061 Sterlin Ct Mountain View, CA 94043		AFS-EVAL-BRD600-SA	
Approvals:	Title:		
Eng Mgr:	PULSE GENERATOR FOR RESET & GLOBAL		
Engr:	Size:	Document No:	Rev
Doc Ctrl:	B		1.1
Assembly:	DRAWN BY: Sanmina-SCI		Pg 8 of 12
Thursday, January 26, 2006 Date:			



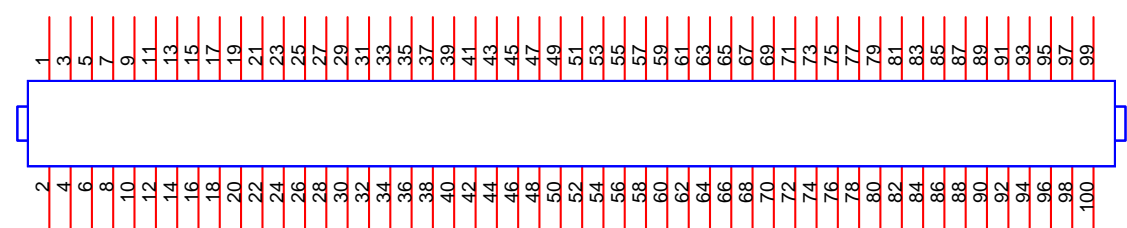
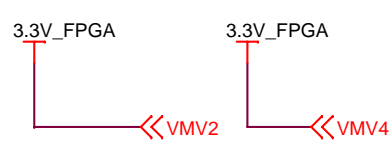
SCHEMATIC DIAGRAM NOTES
 1. UNLESS STATED OTHERWISE:
 A. ALL RESISTOR ARE IN OHMS, 5% TOLERANCE.
 B. ALL CAPACITORS ARE IN MICROFARADS, 10% TOLERANCE.

BOARD INFORMATION
 PCB FAB: ,REV.02 PCB ASSEMBLY: ,REV.02

Actel Corp		FUSION STARTER KIT BOARD	
2061 Sterlin Ct Mountain View, CA 94043		AFS-EVAL-BRD600-SA	
Approvals:	Title:		
Eng Mgr:	JTAG & JTAG DAISY CHAIN CONNECTOR		
Engr:	Size:	Document No:	Rev
Doc Ctrl:	B		1.1
Assembly:	Date:		Rev
Tuesday, November 01, 2005	Date:		1.1
Drawn By:	Sanmina-SCI		Pg 9 of 12



U5 TQ100

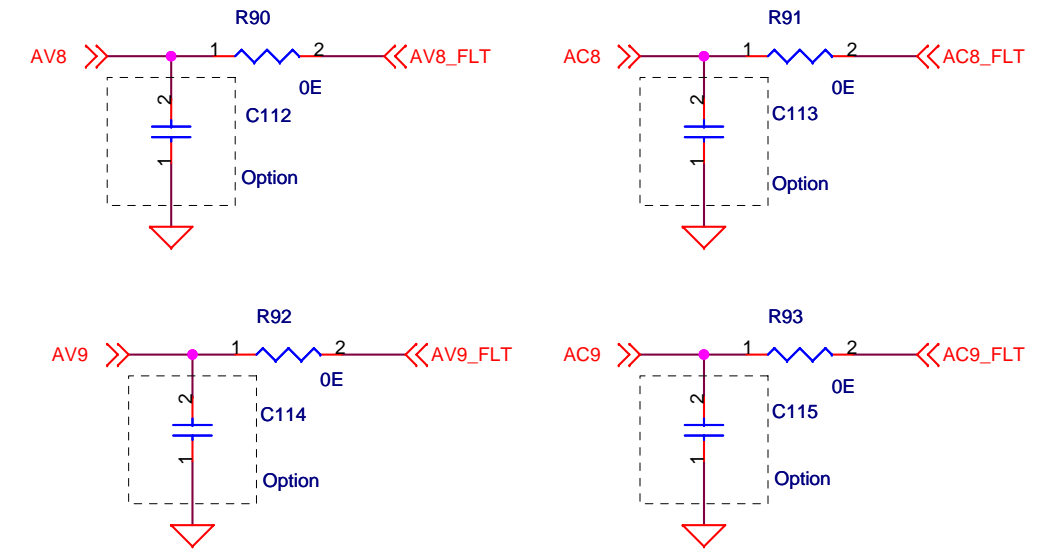
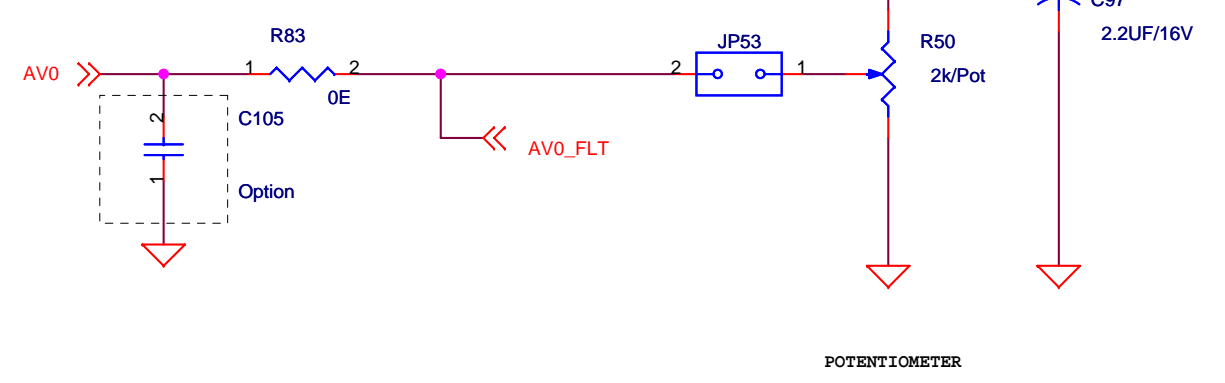
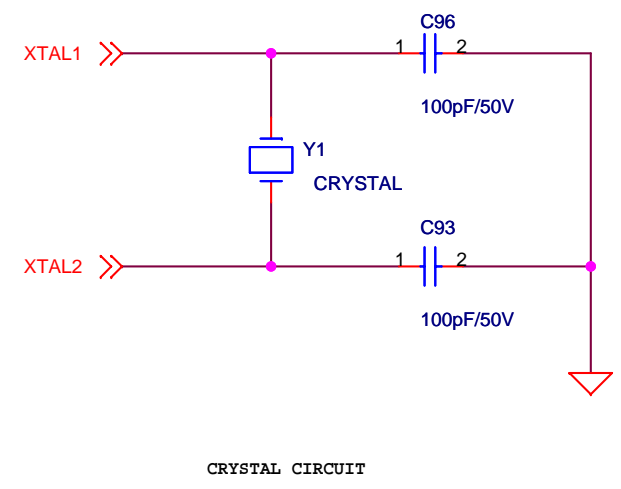
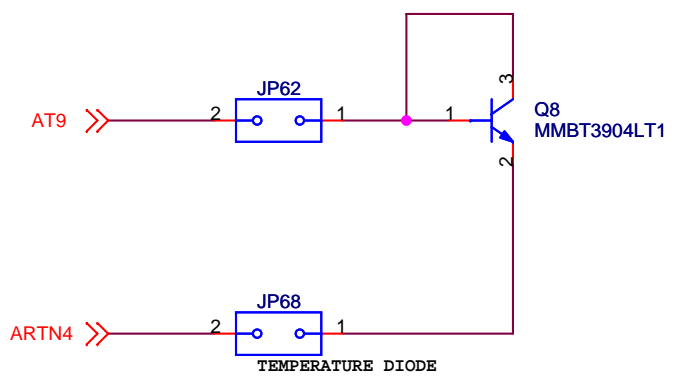
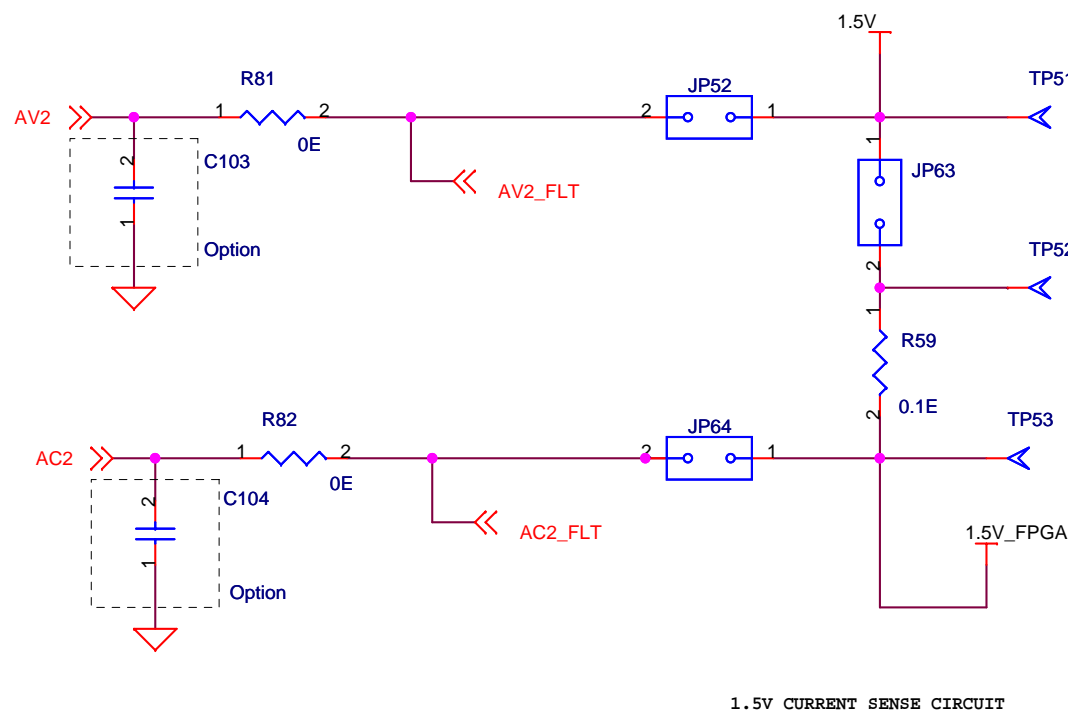
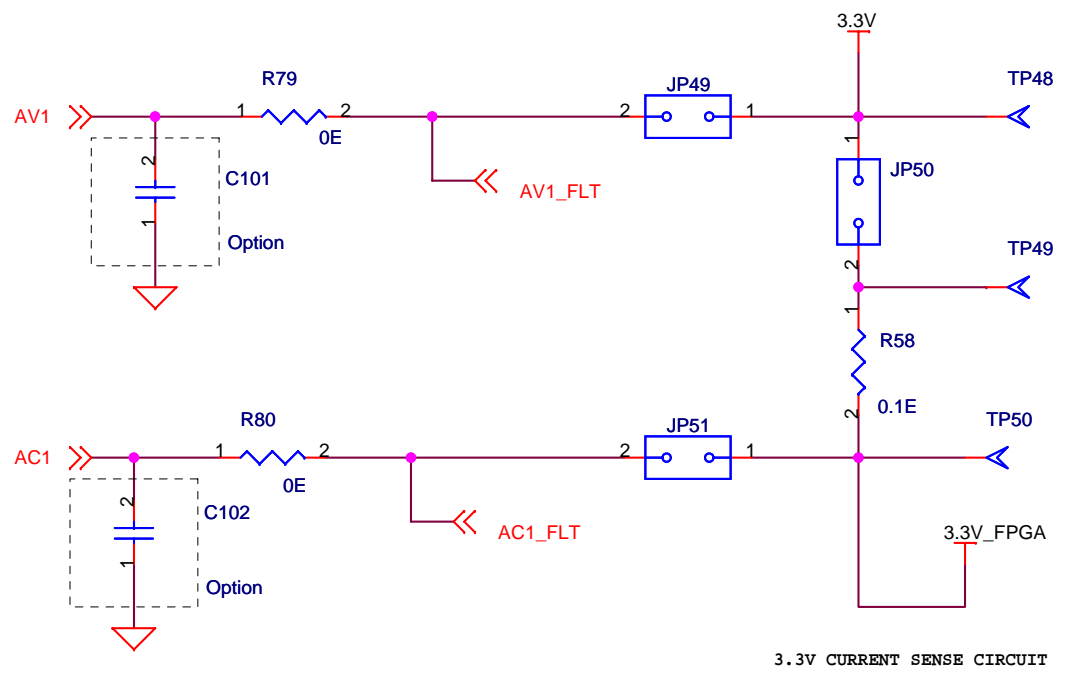


PADS FOR AUXILLIARY TQ100

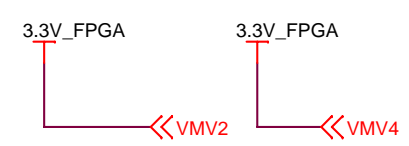
SCHEMATIC DIAGRAM NOTES
 1. UNLESS STATED OTHERWISE:
 A. ALL RESISTOR ARE IN OHMS, 5% TOLERANCE.
 B. ALL CAPACITORS ARE IN MICROFARADS, 10% TOLERANCE.

BOARD INFORMATION
 PCB FAB: ,REV.02 PCB ASSEMBLY: ,REV.02

Actel Corp		FUSION STARTER KIT BOARD	
2061 Stierlin Ct Mountain View, CA 94043		AFS-EVAL-BRD600-SA	
Approvals:	Title:		
Eng Mgr:	DECOUPLING CAPACITORS		
Eng:			
Doc Ctrl:	Size:	Document No:	Rev:
Assembly:	B		1.1
Date:	DRAWN BY:		Page:
Tuesday, November 01, 2005	Sanmina-SCI		0 of 12



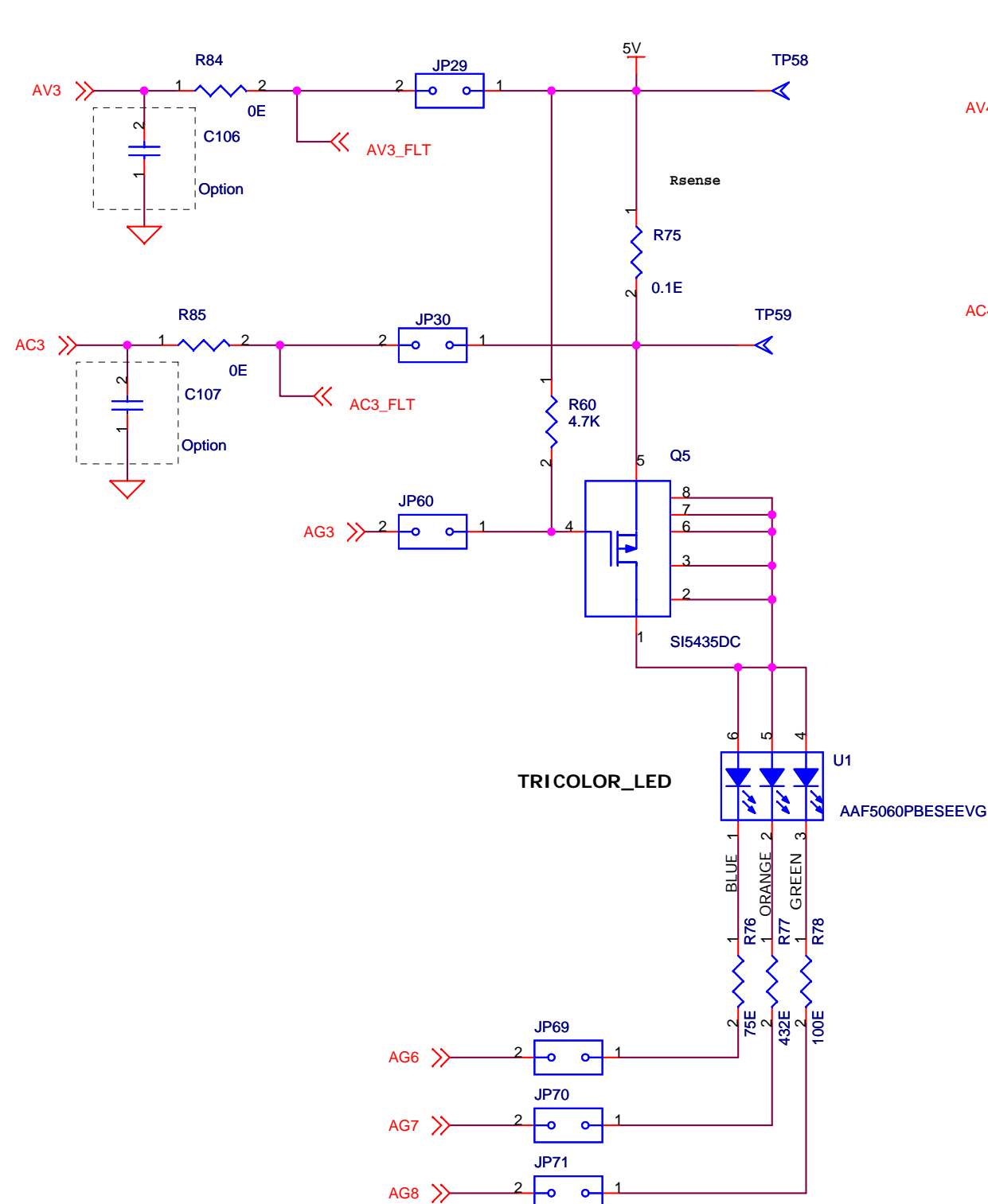
LOW PASS R-C FILTER OPTION IS PROVIDED FOR AVx AND ACx PINS.
R VALUE SHOULD NOT EXCEED 200 OHMS.



SCHEMATIC DIAGRAM NOTES
 1. UNLESS STATED OTHERWISE:
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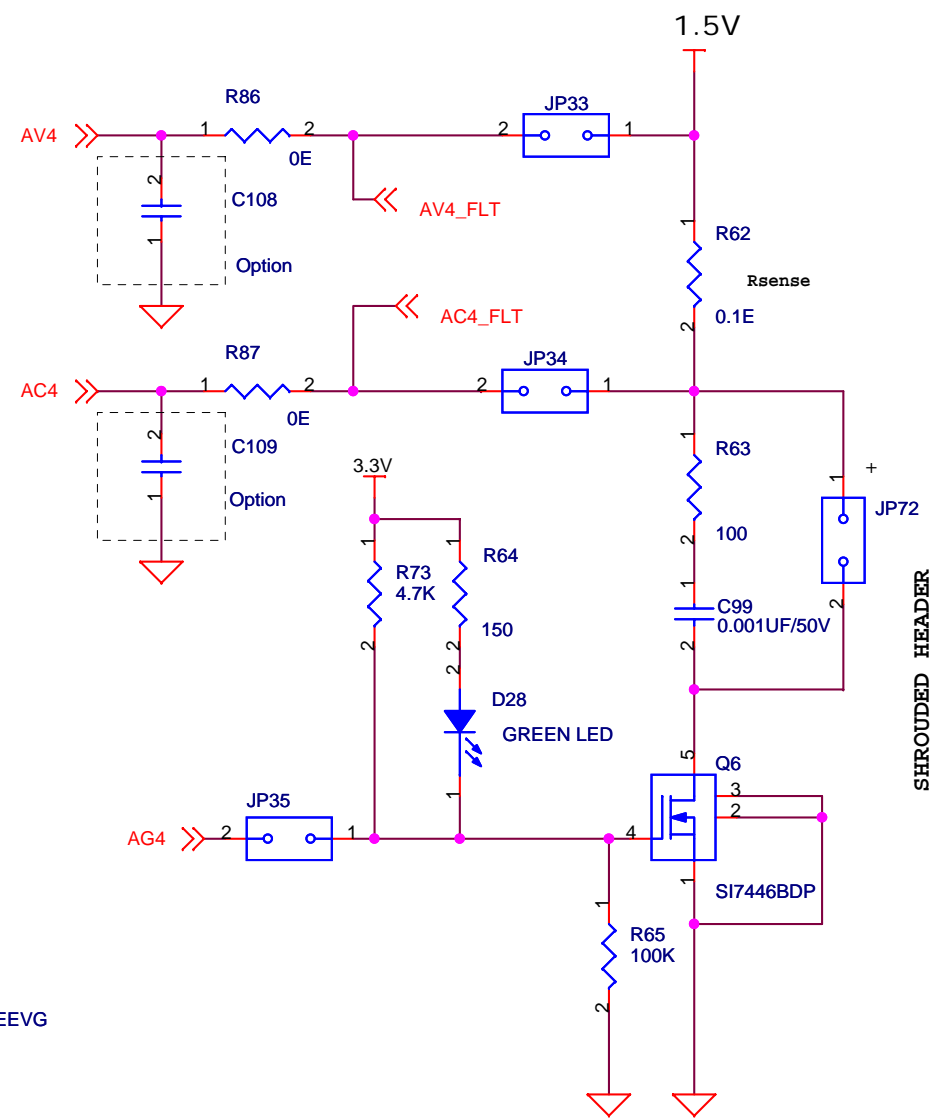
BOARD INFORMATION
 PCB FAB: ,REV.02 PCB ASSEMBLY: ,REV.02

Actel Corp		FUSION STARTER KIT BOARD	
2061 Stierlin Ct Mountain View, CA 94043		AFS-EVAL-BRD600-SA	
Approvals:	Title:		
Eng Mgr:	CRYSTAL, 1.5 & 3.3 CURRENT SENSE, TEMP. DIODE & POT		
Eng:	Size:	Document No:	Rev:
Doc Ctrl:	B		1.1
Assembly:	Date:		Page:
Tuesday, November 01, 2005	DRAWN BY: Sanmina-SCI		1 of 12

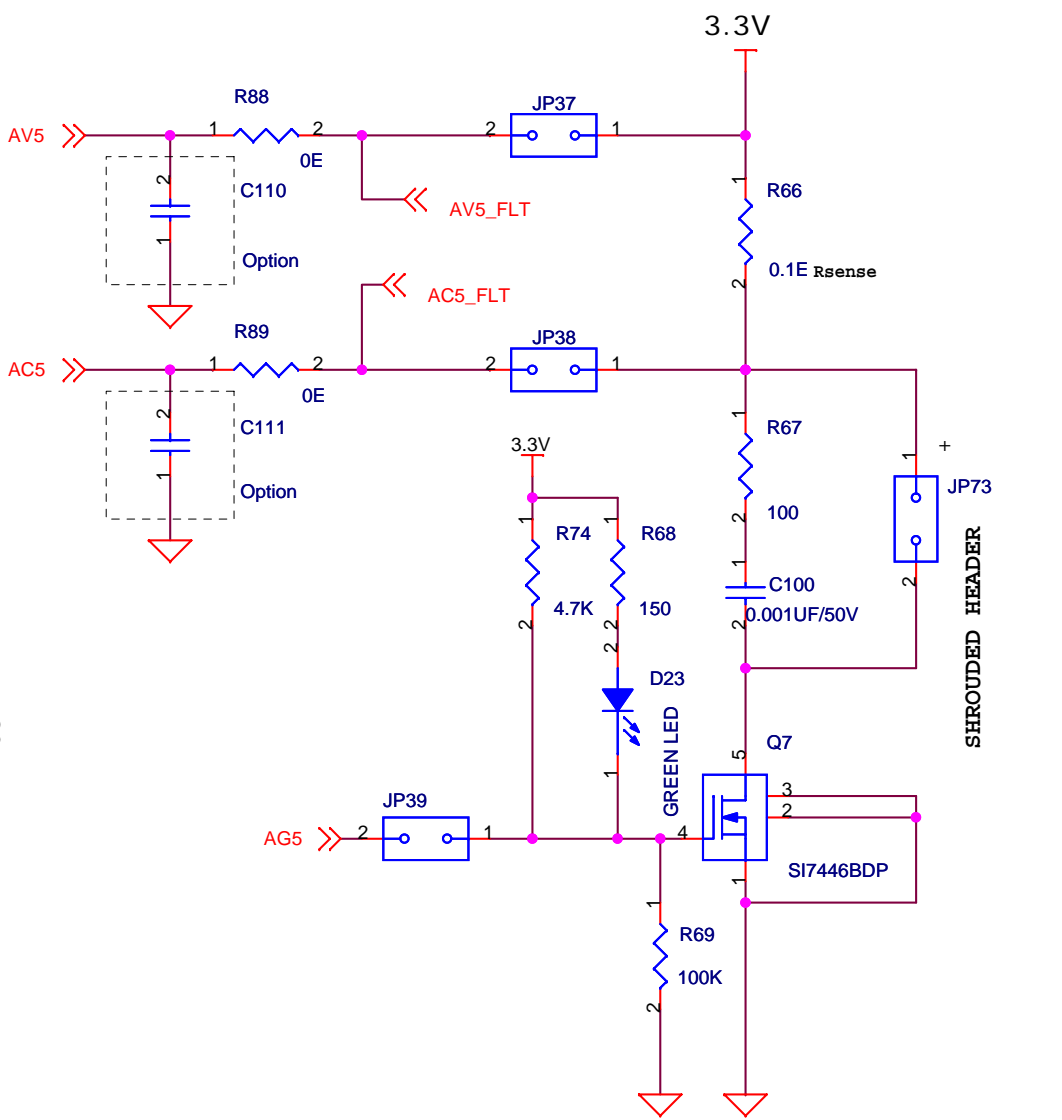


P- CHANNEL MOSFET DRIVING TRICOLOR LED

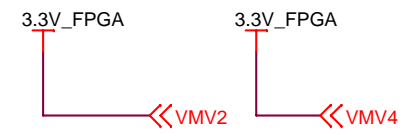
LOW PASS R-C FILTER OPTION IS PROVIDED FOR AVx AND ACx PINS.
R VALUE SHOULD NOT EXCEED 200 OHMS.



N- CHANNEL MOSFET FOR SWITCHING 1.5V TO FAN



N- CHANNEL MOSFET FOR SWITCHING 3.3V TO FAN



Actel Corp		FUSION STARTER KIT BOARD	
2061 Stierlin Ct Mountain View, CA 94043		AFS-EVAL-BRD600-SA	
Approvals:	Title:	MOSFET DRIVERS & TRI COLOR LED CIRCUIT	
Eng Mgr:	Size:	Document No:	Rev
Eng:	B		1.0
Doc Ctrl:	Date:		Tuesday, November 01, 2005
Assembly:	DRAWN BY:		Sanmina-SCI
			Fig 2 of 12