AWR1642BOOST

PROC011

REVISIONS
SEE SHEET 2

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ASSEMBLY NOTES:

ASSEMBLIES MUST BE CLEAN AND FREE FROM FLUX AND ALL CONTAMINANTS. USE OF NO CLEAN FLUX IS NOT ACCEPTABLE

ASSEMBLIES MUST COMPLY WITH WORKMANSHIP STANDARDS IPC-A-610 CLASS 2, UNLESS OTHERWISE SPECIFIED

COMPONENTS MARKED "DNI = TRUE" WILL NOT BE ASSEMBLED

TEXAS INSTRUMENTS

SEMICONDUCTOR OPERATIONS

10/08/2016

CODE IDENTITY NUMBER 01295

SIZE	DRAWING NO.	REV
B	AWR1642BOOST	A

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BLOCK DIAGRAM

REVISIONS

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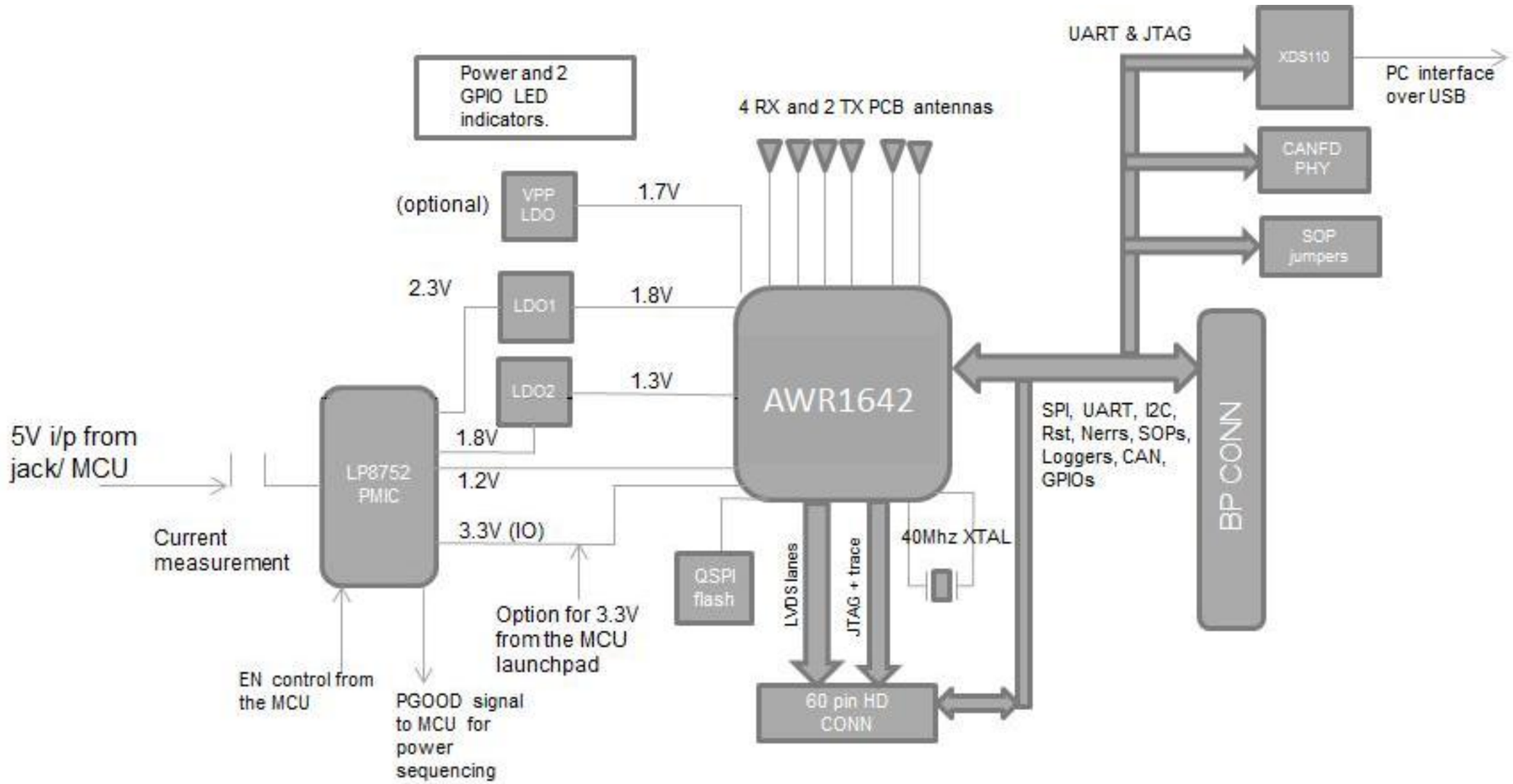

TEXAS INSTRUMENTS

SEMICONDUCTOR OPERATIONS

10/08/2016

CODE IDENTITY NUMBER 01295

SIZE	DRAWING NO.	REV
B	AWR1642BOOST	A
Block diagram		SHEET 2 OF 19

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REVISIONS

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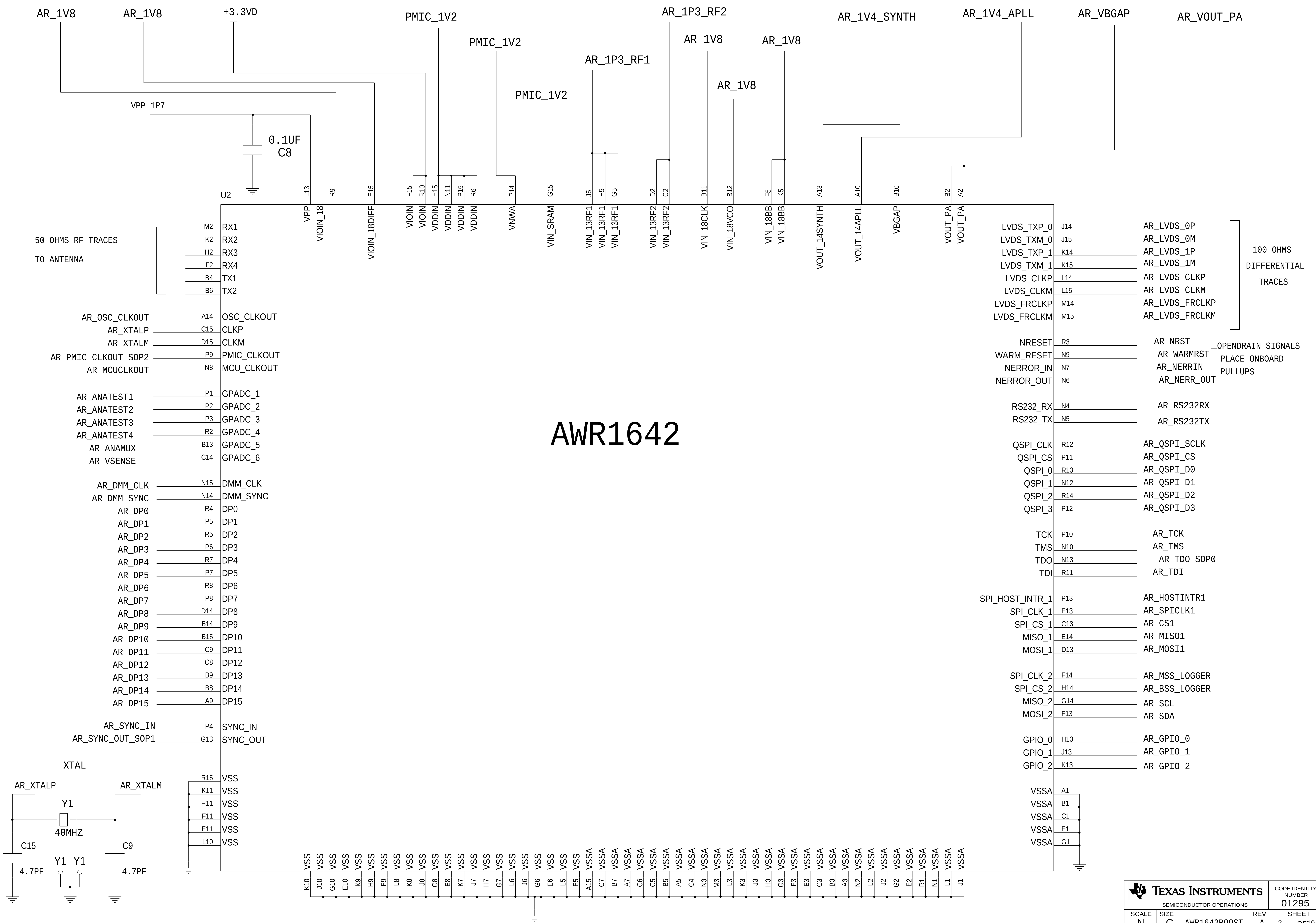

TEXAS INSTRUMENTS
SEMICONDUCTOR OPERATIONS

CODE IDENTITY NUMBER	SCALE	SIZE		REV	SHEET
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SUPPLY_DECOUPLING_CAPS

REVISIONS

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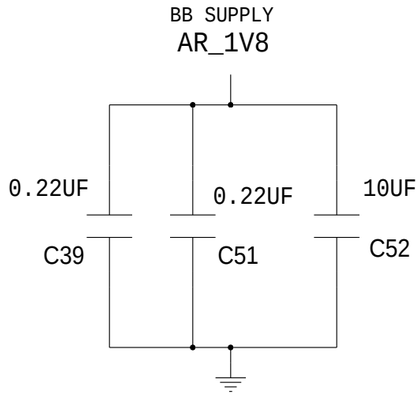
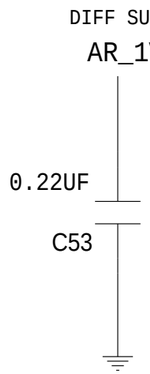
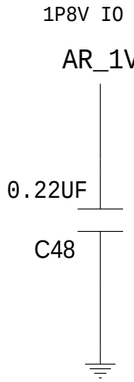
BB SUPPLY



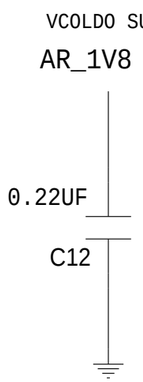
DIFF SUPPLY



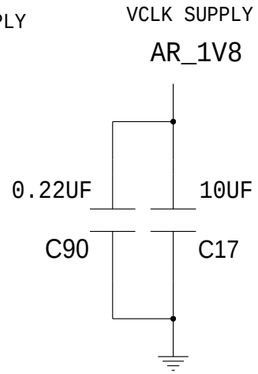
1P8V IO SUPPLY



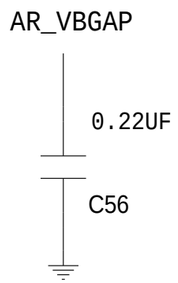
VCOLDO SUPPLY



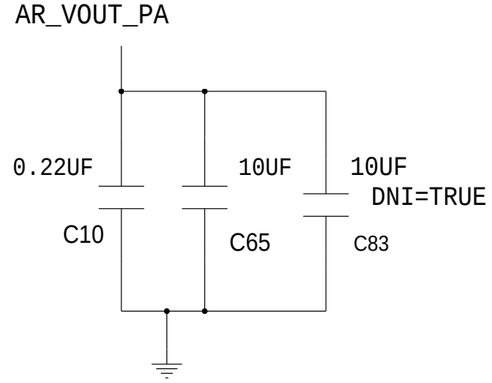
VCLK SUPPLY



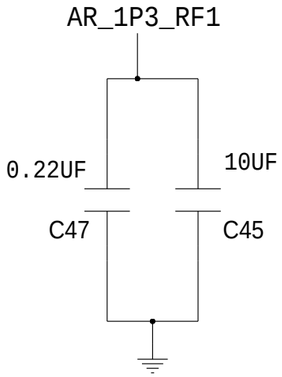
AR_VBGAP



AR_VOUT_PA



RF1 SUPPLY



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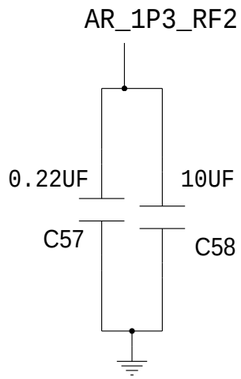
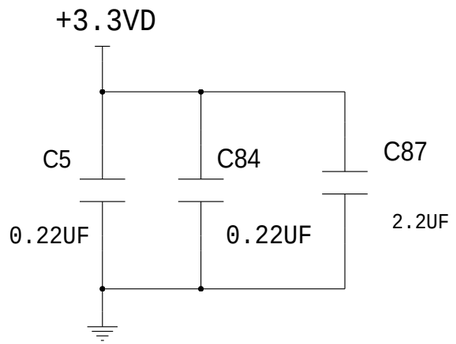
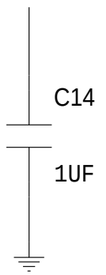


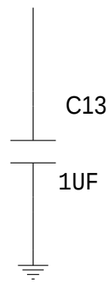
3V3IO SUPPLY



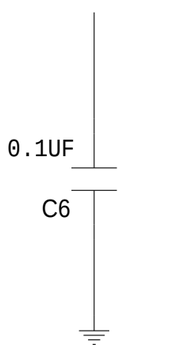
AR_1V4_SYNTH



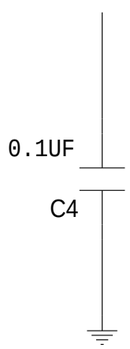
AR_1V4_APLL



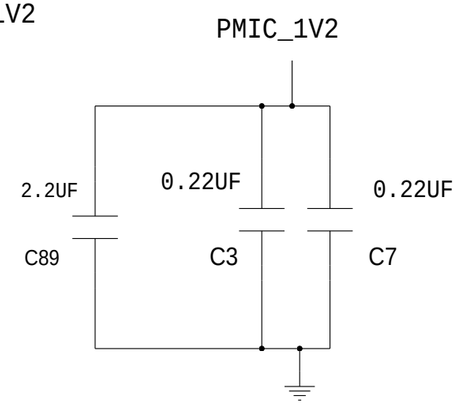
VNWA SUPPLY



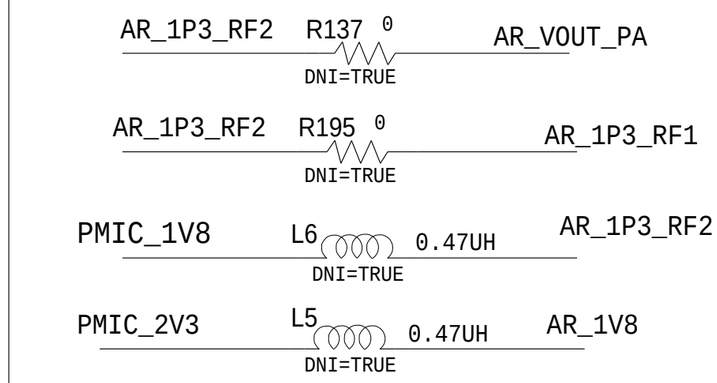
SRAM SUPPLY



DIG SUPPLY



OPTIONS FOR INTERNAL DEBUG ONLY



TEXAS INSTRUMENTS

SEMICONDUCTOR OPERATIONS

10/08/2016

CODE IDENTITY NUMBER 01295

SIZE	DRAWING NO.	REV
B	AWR1642BOOST	A

Decoupling caps

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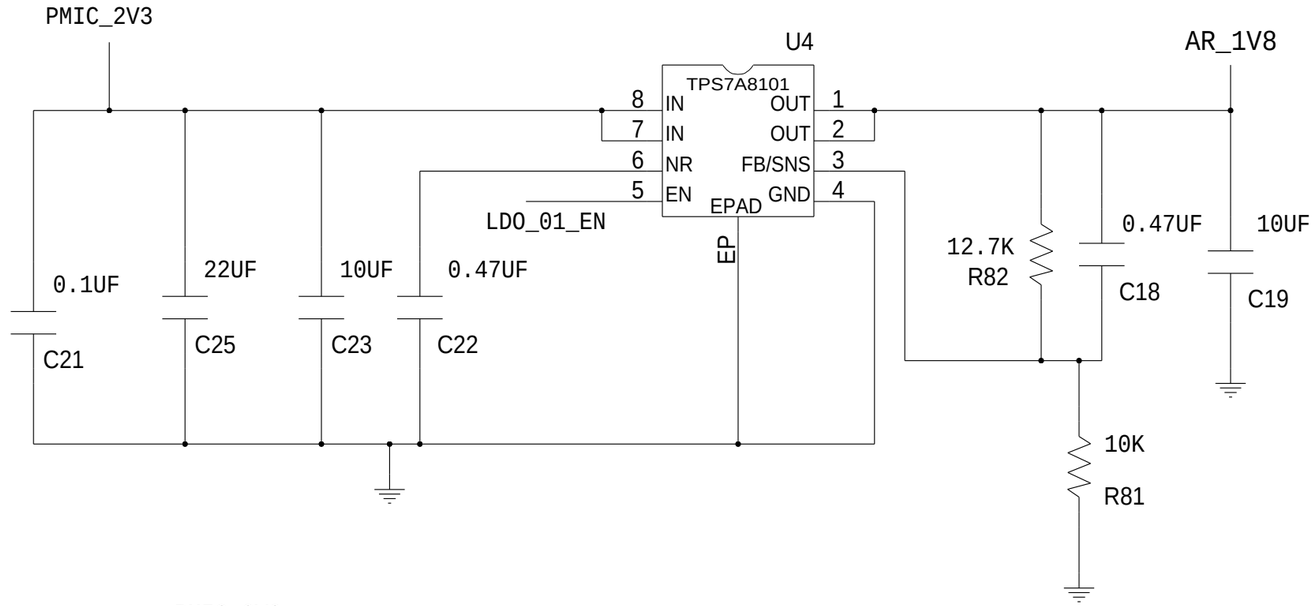
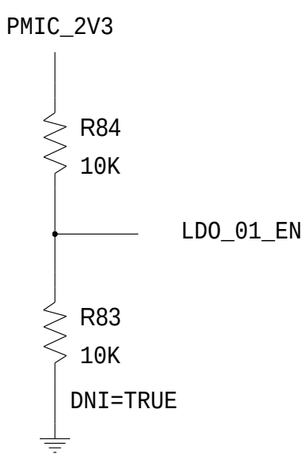
LDO_01 (1.8V OUTPUT)

REVISIONS
SEE SHEET 2





TEXAS INSTRUMENTS
SEMICONDUCTOR OPERATIONS
10/08/2016

CODE IDENTITY NUMBER 01295

SIZE	DRAWING NO.	REV
B	AWR1642BOOST	A

LDO_01 (1.8V Output) | SHEET 5 OF 19

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LDO_02 (1.3V LDO)

REVISIONS

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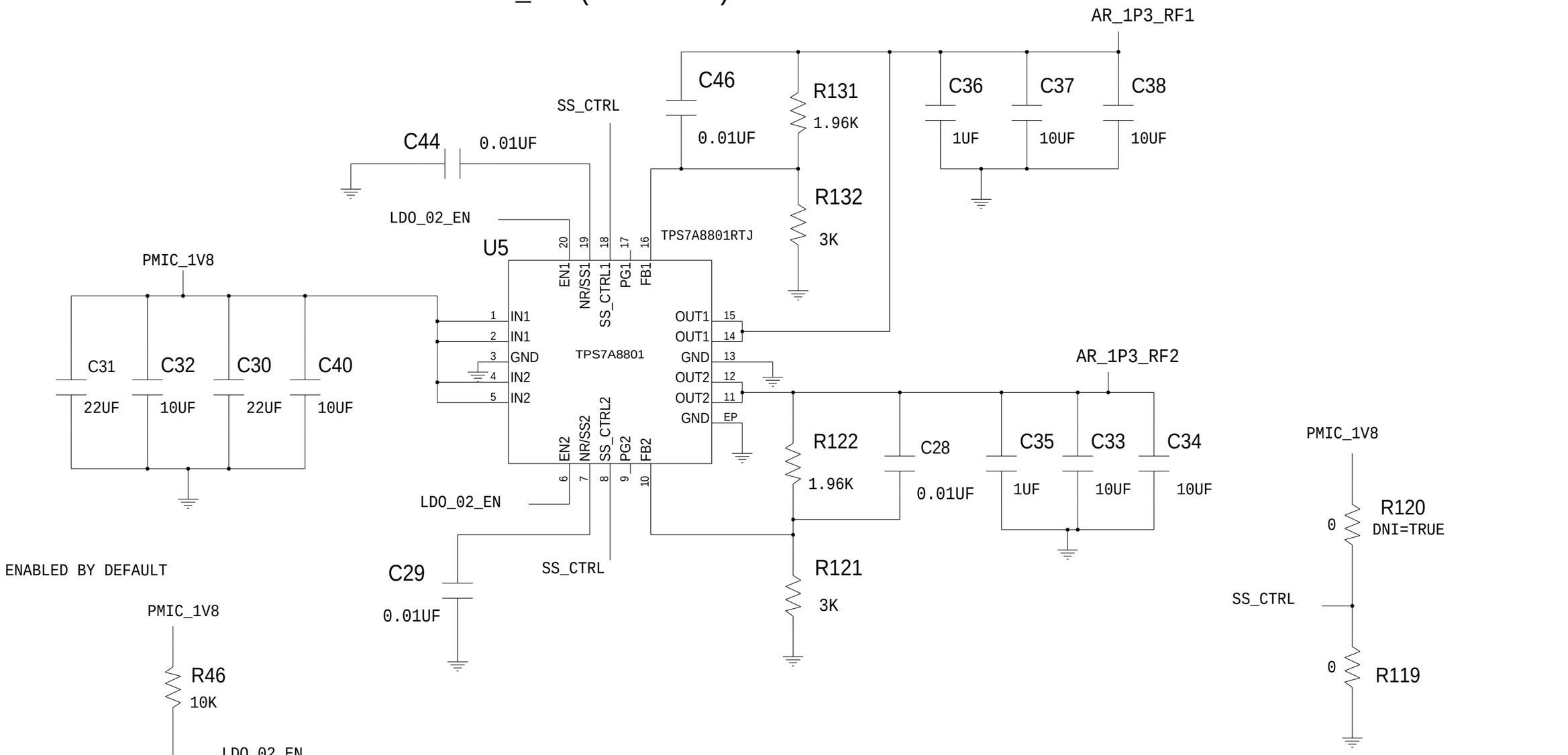

TEXAS INSTRUMENTS SEMICONDUCTOR OPERATIONS 10/08/2016		CODE IDENTITY NUMBER 01295
SIZE B	DRAWING NO. AWR1642BOOST	REV A
LDO_02 (1.3V Output)		SHEET 6 OF 19

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REVISIONS
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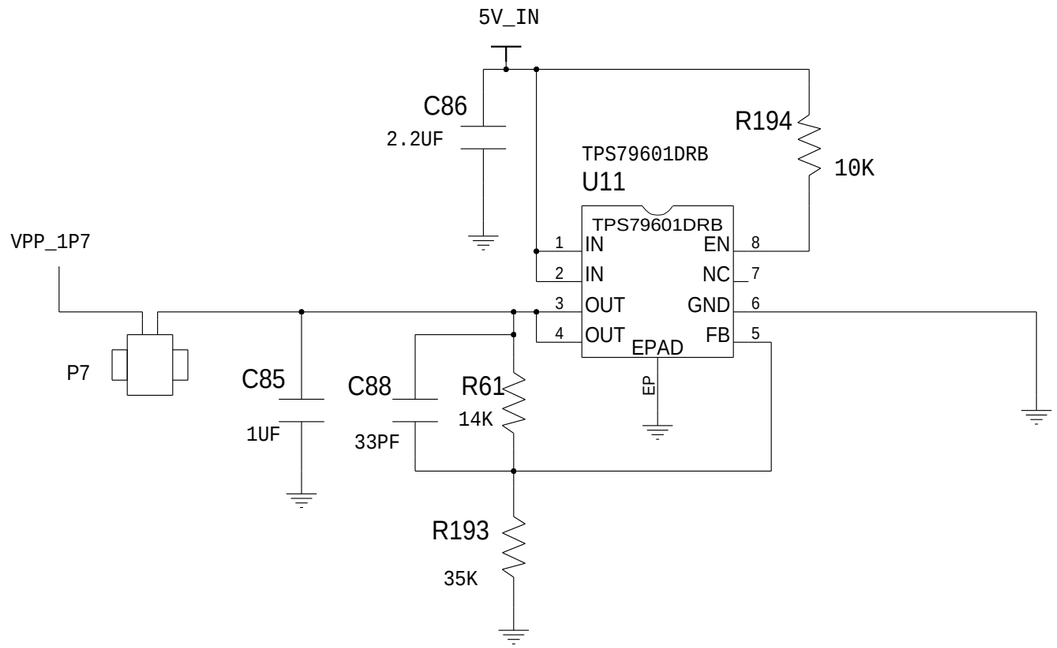
VPP SUPPLY LDO



TEXAS INSTRUMENTS SEMICONDUCTOR OPERATIONS 10/08/2016		CODE IDENTITY NUMBER 01295
SIZE B	DRAWING NO. AWR1642BOOST	REV A
VPP_Supply		SHEET 7 OF 19

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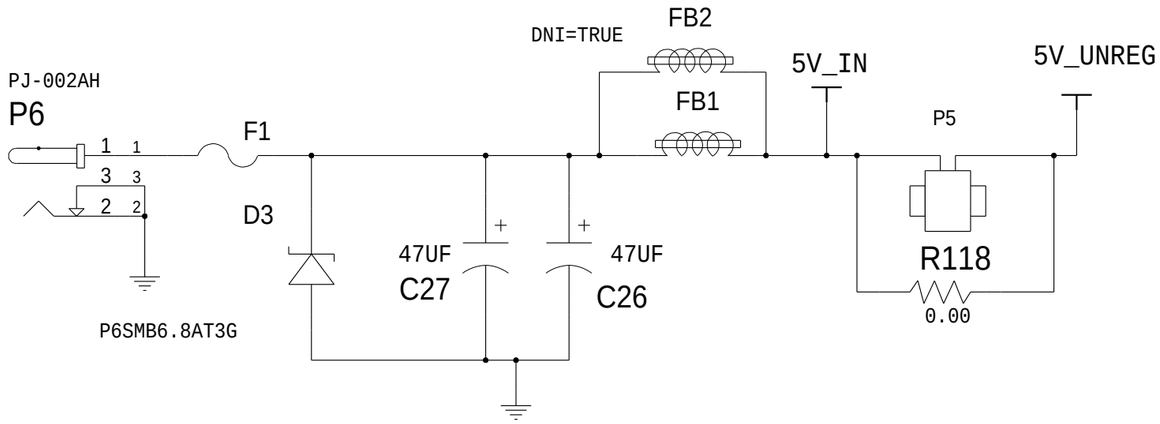
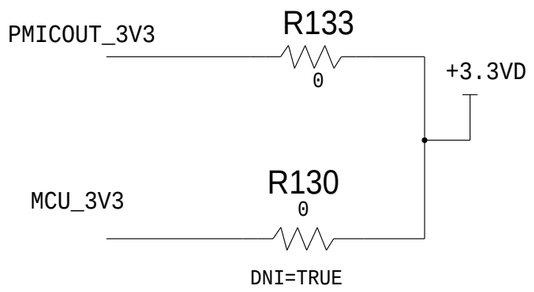
POWER SUPPLY CONNECTOR



3P3 SUPPLY FROM PMIC OR FROM THE MCU



REVISIONS
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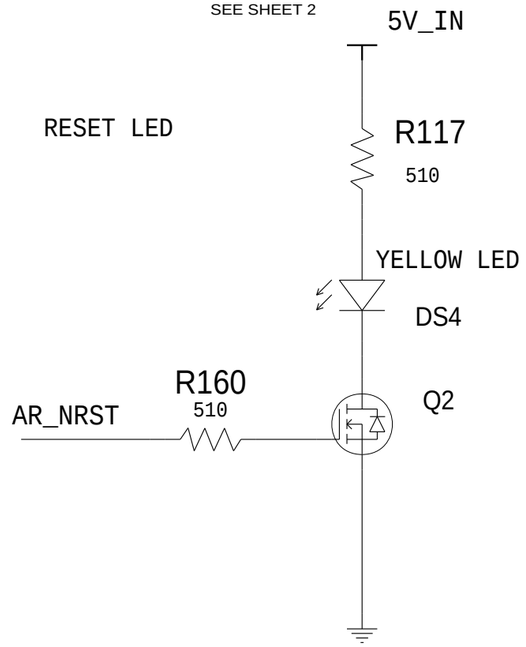
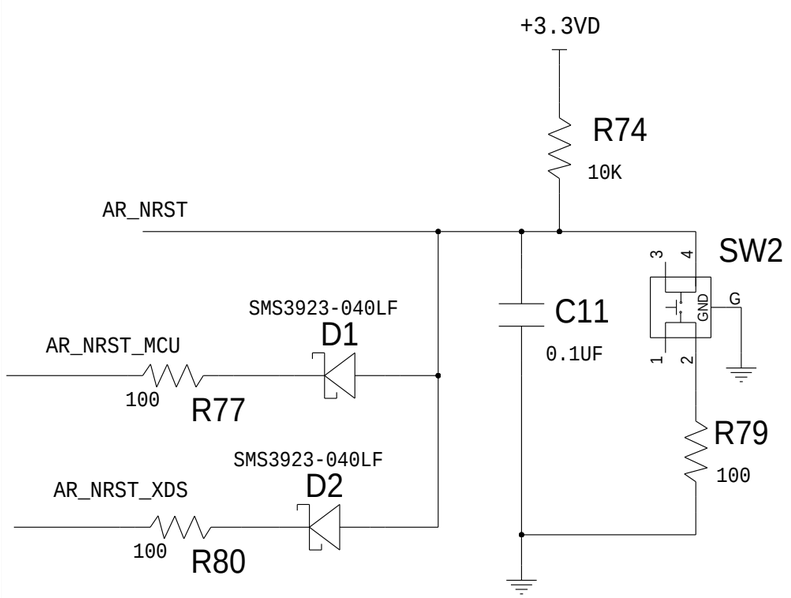
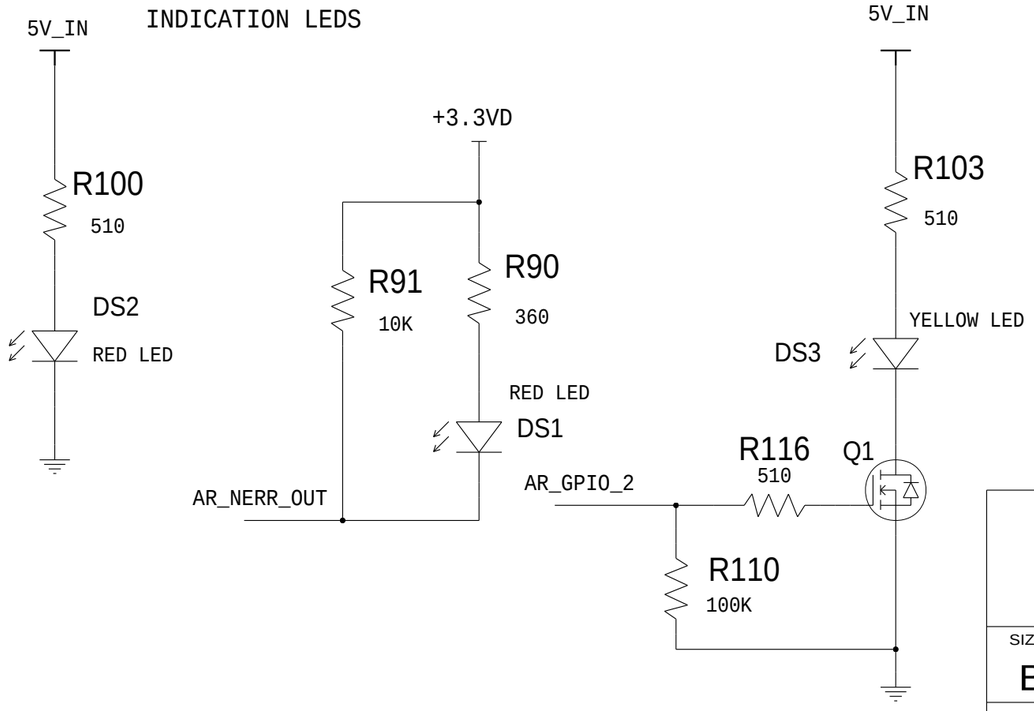


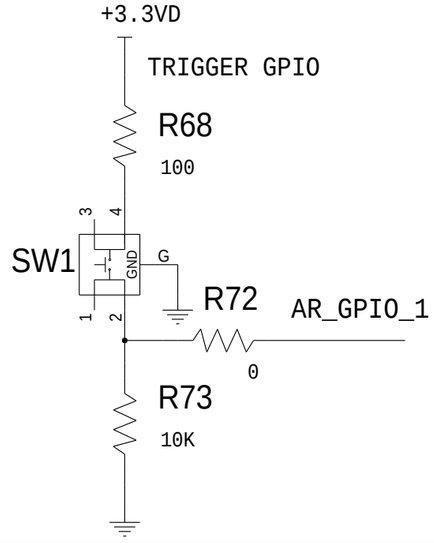
RESET AND LEDS

SW FOR MANUAL RESET



INDICATION LEDS





TEXAS INSTRUMENTS	CODE IDENTITY NUMBER
SEMICONDUCTOR OPERATIONS 10/08/2016	01295

SIZE	DRAWING NO.	REV
B	AWR1642BOOST	A
Pwr_RST_LEDs	SHEET 8 OF 19	

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PMIC (3.3V, 1.2V, 1.8V,2.3V OUTPUTS)

REVISIONS

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5V_UNREG

10UF 10UF 10UF 10UF

C59 C60 C73 C72

U8

P87524BRNFRQ1_ES2.2_PRELIMINARY

PMIC_CLK — R146 0 — 3 CLKIN

AR_SCL — 5 SCL

PMIC_NRST — 20 NRST

5V_UNREG — 9 VIN_B0; 13 VIN_B1; 26 VIN_B2; 22 VIN_B3

5V_UNREG — C68 0.22UF

PMICVIO_3V3 — 4.99K R143; 4.99K R147

VANA 18

SDA 6 — R144 0 — AR_SDA

PGOOD 16

NINT 19

FB_B0 8 — PMICOUT_3V3

FB_B1 14 — PMIC_1V2

FB_B2 1 — PMIC_1V8

FB_B3 21 — PMIC_2V3

AGND 4; AGND 17; AGND EP

PGND_B01 11; PGND_B23 24

PMICOUT_3V3

L2 0.47UH SW0 10 SW_B0

L1 0.47UH SW1 12 SW_B1

L4 0.47UH SW2 25 SW_B2

L3 0.47UH SW3 23 SW_B3

PMIC_EN1 7 EN1

PMIC_EN2 15 EN2

PMIC_EN3 2 EN3

PMIC_1V2 — C54 22UF

PMIC_1V8 — C81 22UF

PMIC_2V3 — C82 22UF

C55 22UF

SNUBBER ON SWITCHING NODES

SW0 — R202 3.83 — C93 390PF

SW1 — R203 3.83 — C94 390PF

SW2 — R204 3.83 — C95 390PF

SW3 — R205 3.83 — C96 390PF

5V_IN

CONTROLS FOR THE PMIC

1K R149

PMICVIO_3V3

1.96K R139

PMICVIO_3V3

R150 4.99K PMIC_NRST

R142 4.99K PMIC_EN1

R148 10K PMIC_EN2

R145 10K PMIC_EN3

THE 3V3 OUTPUT FROM PMIC IS USED AS PGOOD.

PMICOUT_3V3 — R141 0 — PGOOD

100K R138

TEXAS INSTRUMENTS

SEMICONDUCTOR OPERATIONS

10/08/2016

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SIZE	DRAWING NO.	REV
B	AWR1642BOOST	A
PMIC		SHEET 9 OF 19

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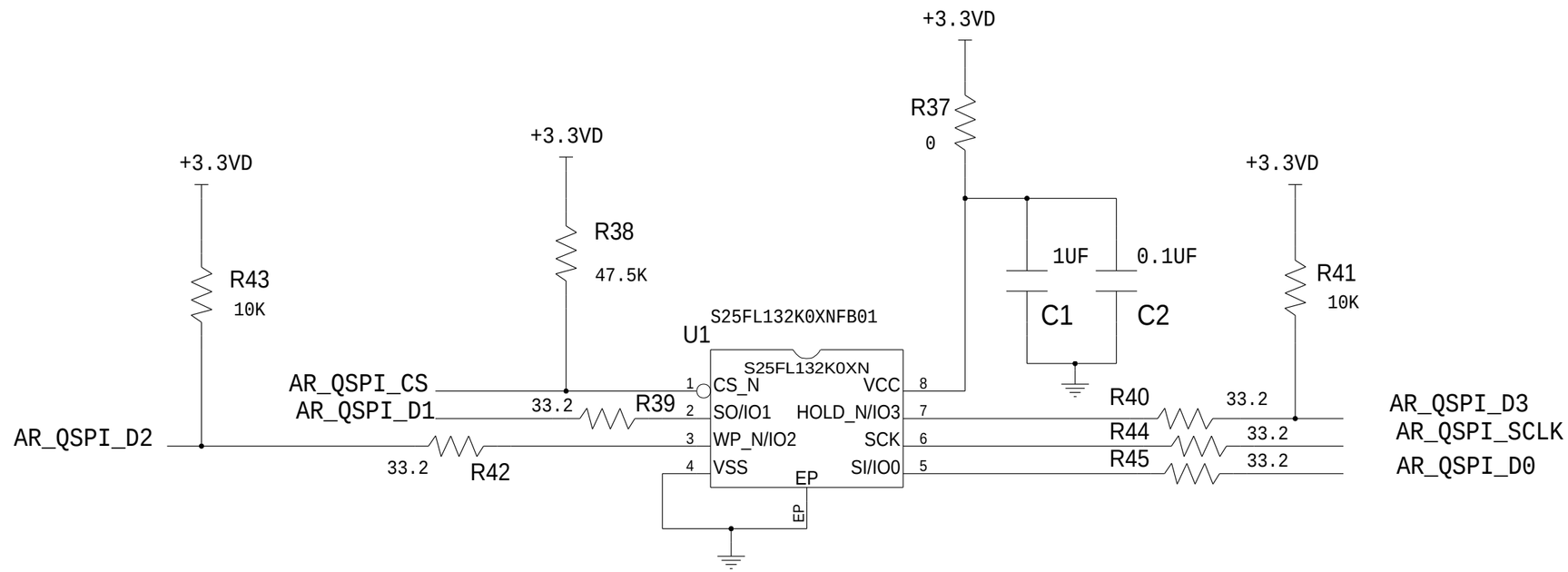
QSPI FLASH



TEXAS INSTRUMENTS

SEMICONDUCTOR OPERATIONS

10/08/2016

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SIZE	DRAWING NO.	REV
B	AWR1642BOOST	A

QSPI flash section

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REVISIONS

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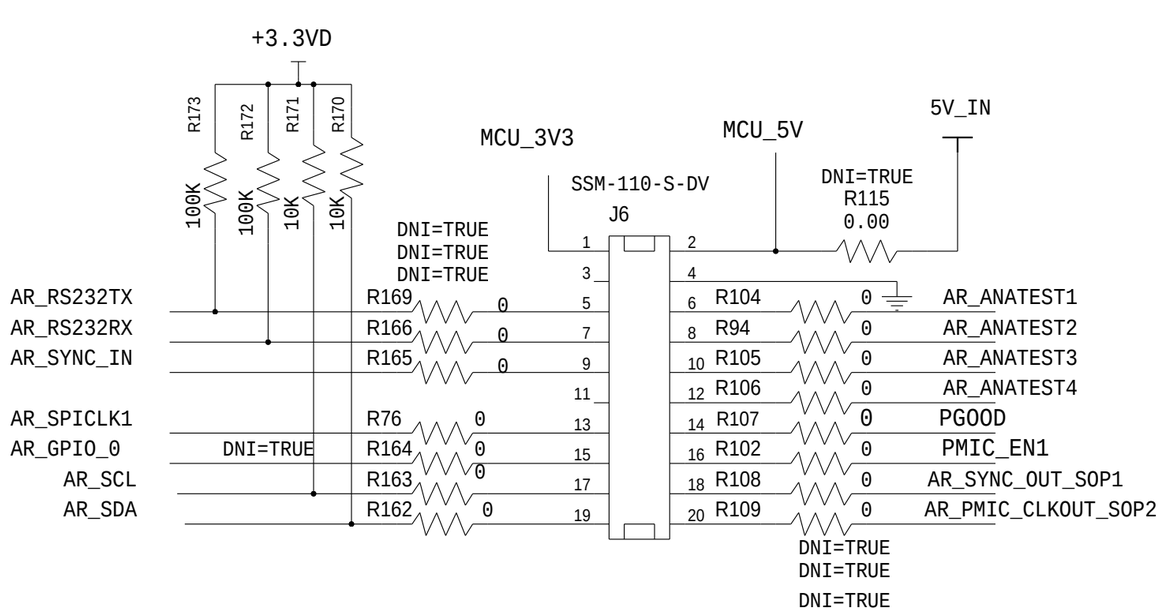
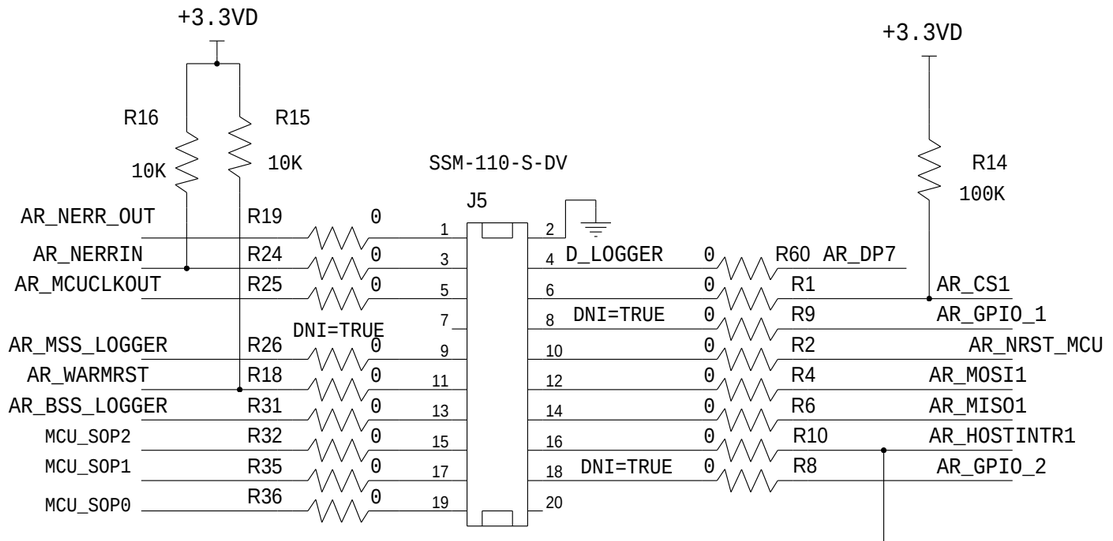
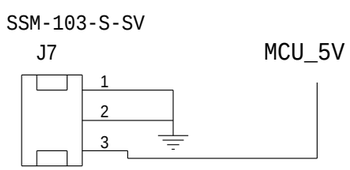
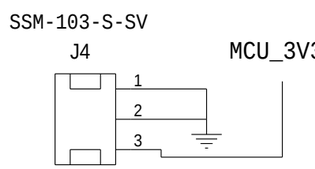
BP/LP CONNECTOR

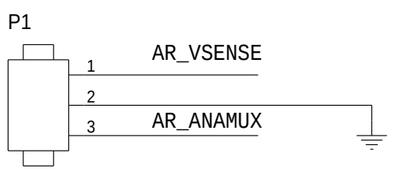








ANALOG SIGNALS



TEXAS INSTRUMENTS

SEMICONDUCTOR OPERATIONS

10/08/2016

CODE IDENTITY NUMBER 01295

SIZE	DRAWING NO.	REV
B	AWR1642BOOST	A
LP Connector		SHEET 11 OF 19

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HD CONNECTOR FOR LVDS/CSI AND JTAG

REVISIONS

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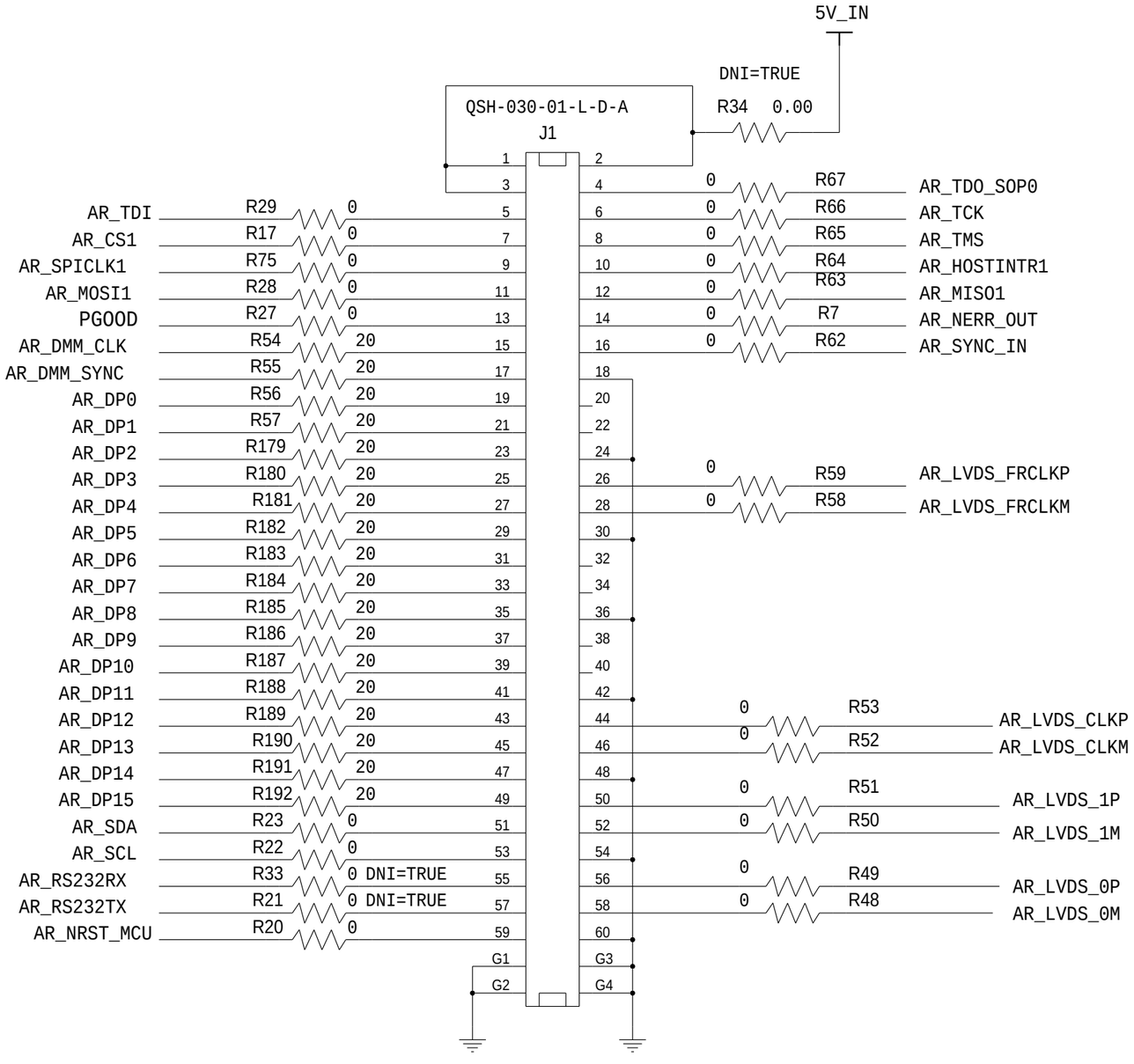

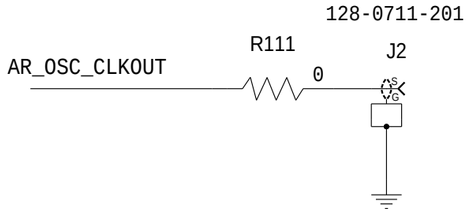

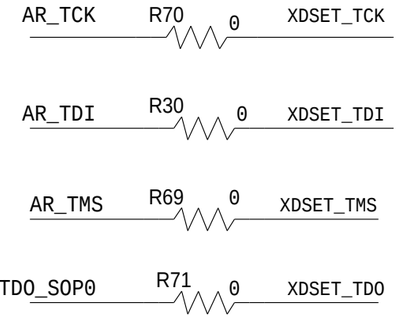

TEXAS INSTRUMENTS

SEMICONDUCTOR OPERATIONS

10/08/2016

CODE IDENTITY NUMBER 01295

SIZE	DRAWING NO.	REV
B	AWR1642BOOST	A

HD Connector | SHEET 12 OF 19

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XDS110(1/2)

REVISIONS

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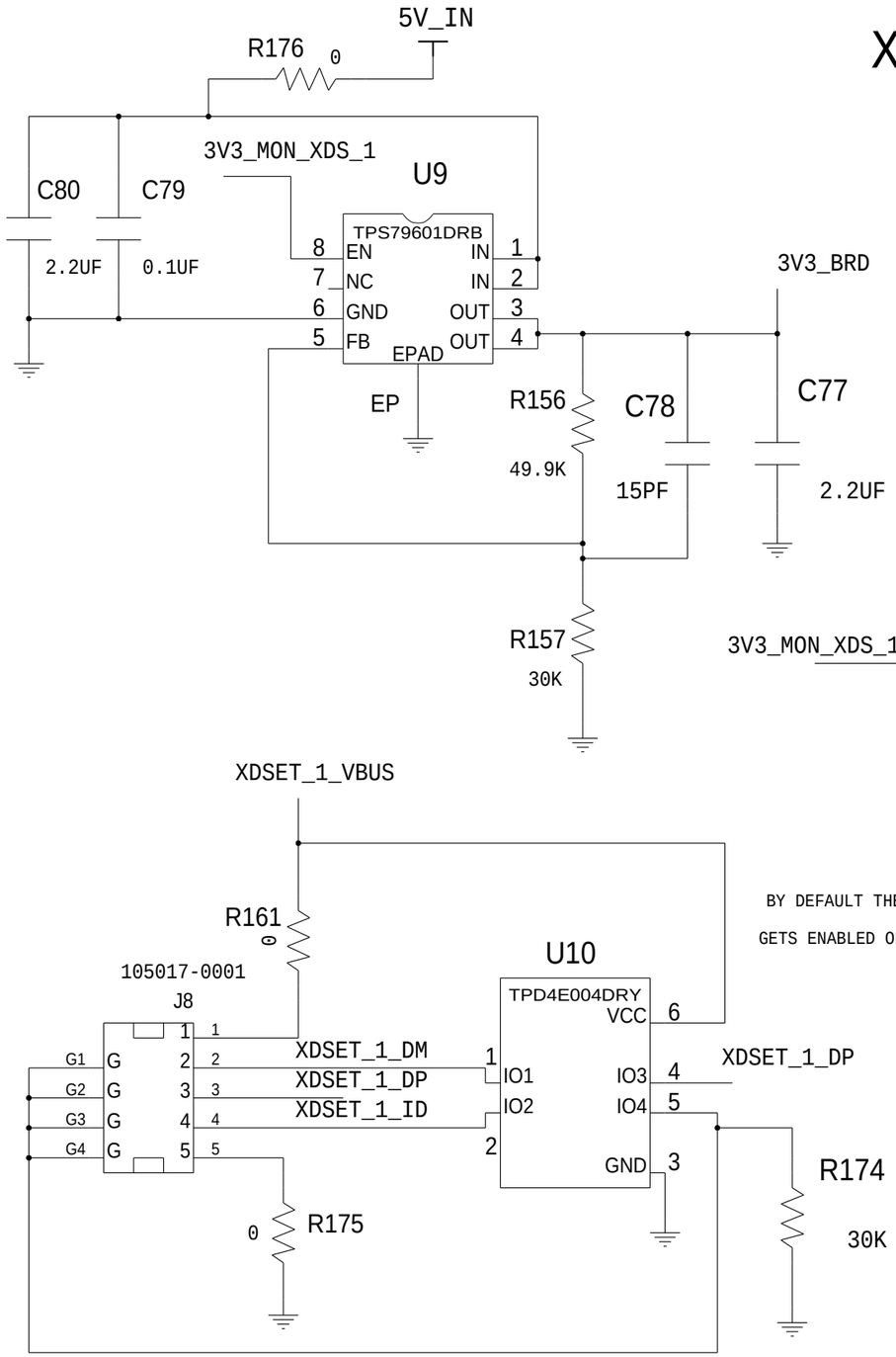
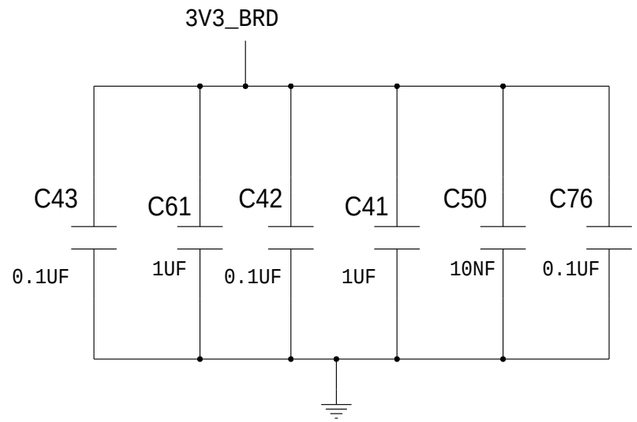
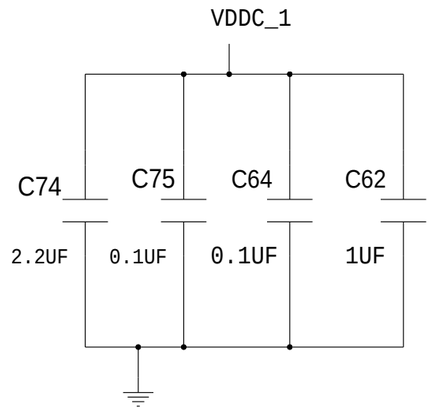
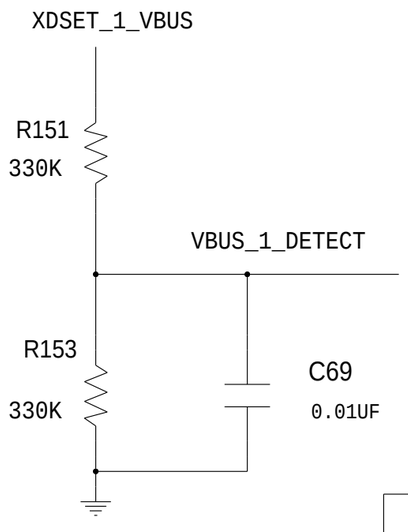


BY DEFAULT THE XDS SUPPLY IS DISABLED..

GETS ENABLED ONLY ONCE THE PMIC IS POWERED UP.







TEXAS INSTRUMENTS

SEMICONDUCTOR OPERATIONS

10/08/2016

CODE IDENTITY NUMBER 01295

SIZE	DRAWING NO.	REV
B	AWR1642BOOST	A

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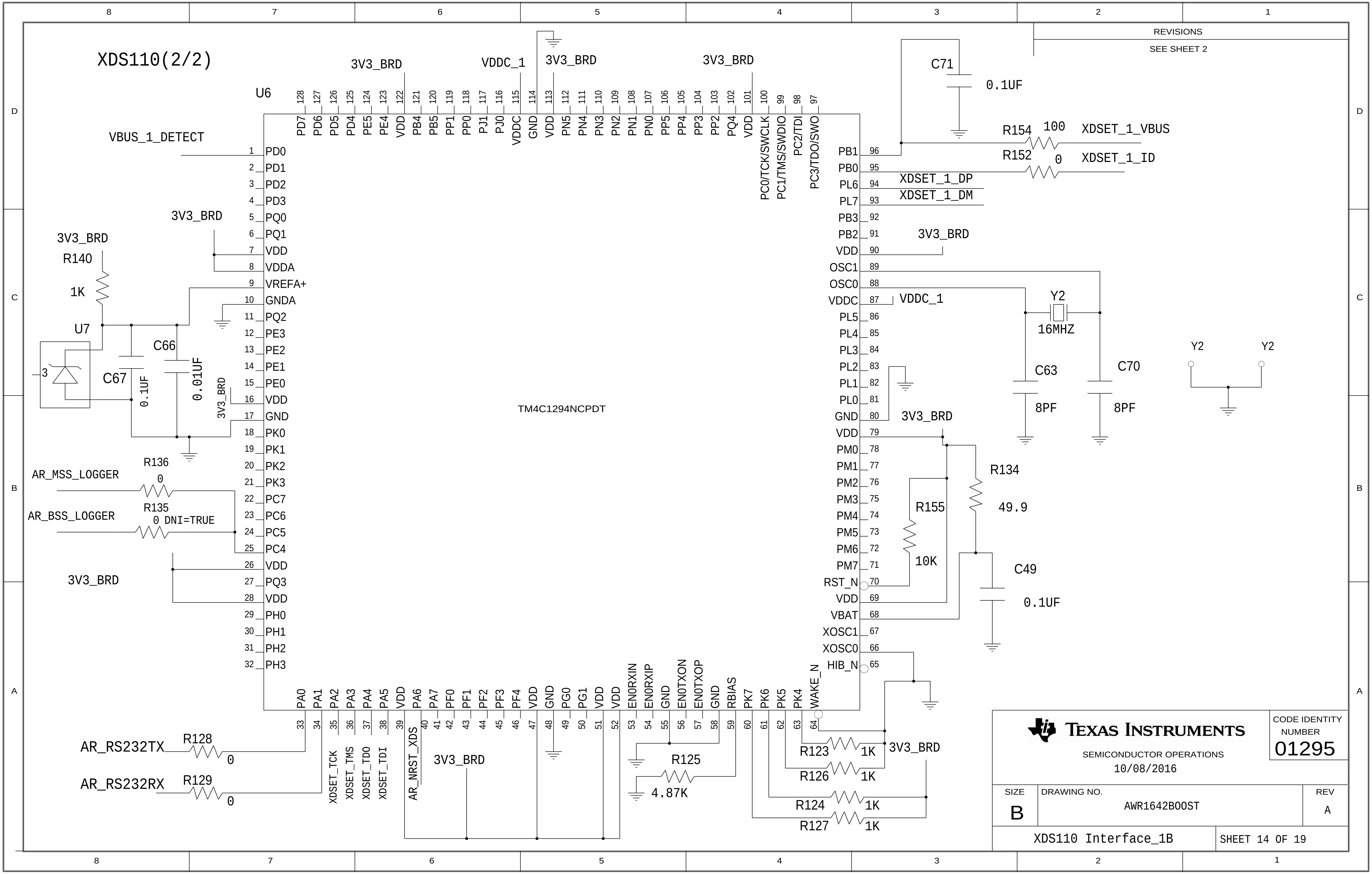

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REVISIONS
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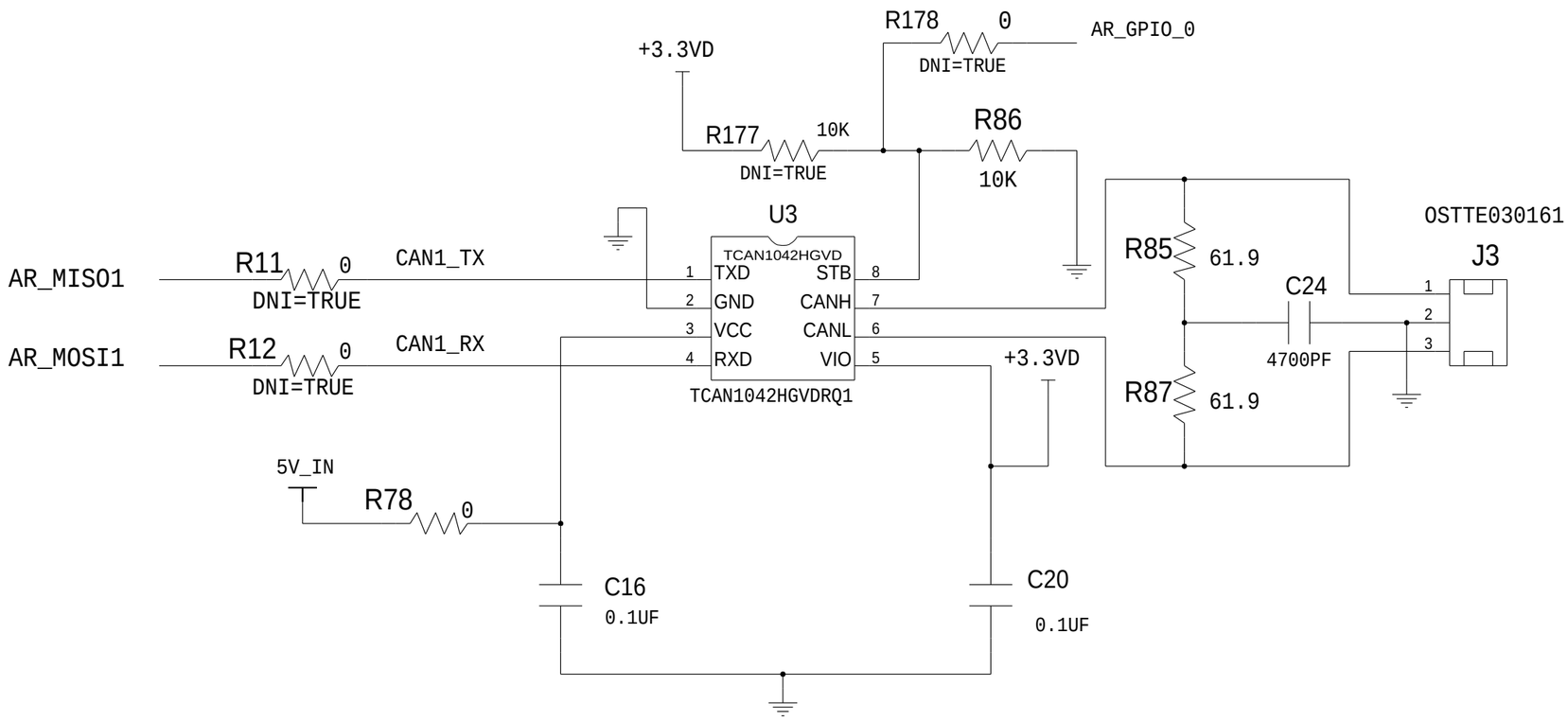
CAN INTERFACE



TEXAS INSTRUMENTS SEMICONDUCTOR OPERATIONS 10/08/2016		CODE IDENTITY NUMBER 01295
SIZE B	DRAWING NO. AWR1642BOOST	REV A
CAN Interface		SHEET 15 OF 19

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SOP HEADERS

REVISIONS
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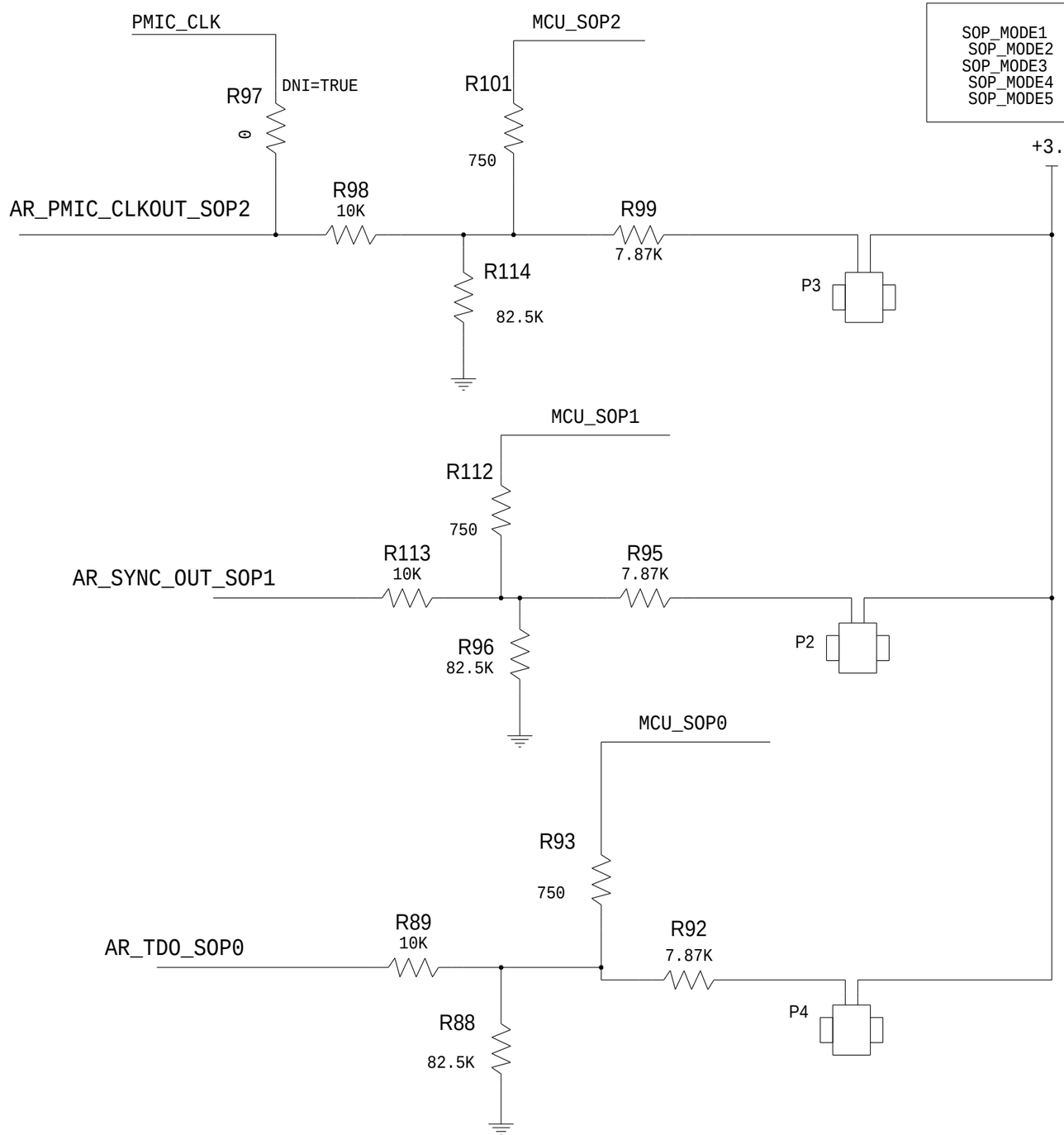
SOP_MODE1	"010"	SCAN/ATPG
SOP_MODE2	"011"	DEV/FLED/ORBIT
SOP_MODE3	"000"	THB
SOP_MODE4	"001"	FUNC - > DEFAULT VALUE FOR OUTPUTS
SOP_MODE5	"101"	DEV MANAGEMENT -> FOR FLASHING



TEXAS INSTRUMENTS SEMICONDUCTOR OPERATIONS 10/08/2016		CODE IDENTITY NUMBER 01295
SIZE B	DRAWING NO. AWR1642BOOST	REV A
SOP selection		SHEET 16 OF 19

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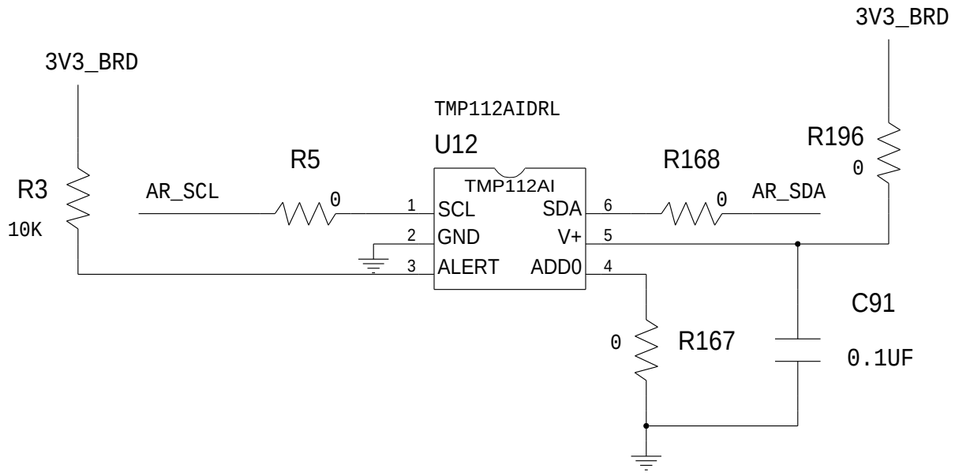
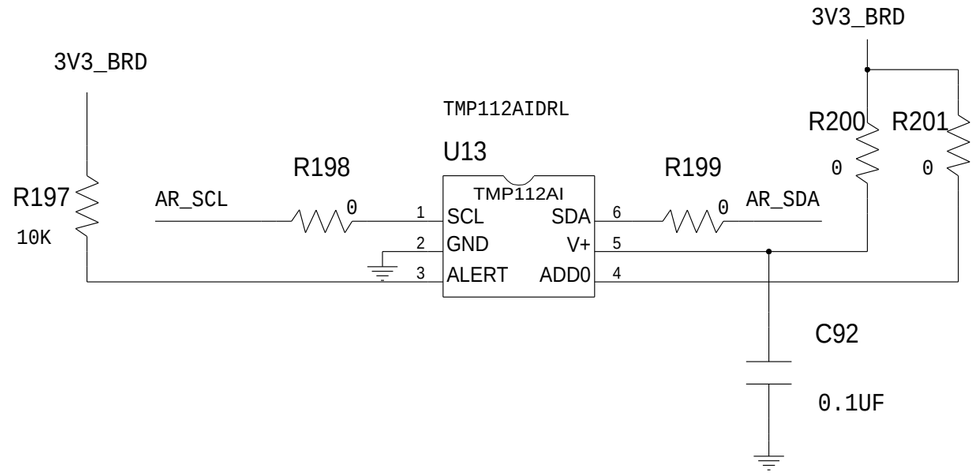
ONBOARD TEMP SENSORS



TEMP SENSOR CLOSE TO PMIC

DEFAULT I2C ADDRESS 0X48



TEMP SENSOR AWAY FROM PMIC
AND MMWAVE DEVICE

DEFAULT I2C ADDRESS 0X49

Texas Instruments SEMICONDUCTOR OPERATIONS 10/08/2016		CODE IDENTITY NUMBER 01295
SIZE B	DRAWING NO. AWR1642BOOST	REV A
Tempsensor		SHEET 17 OF 19

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REVISIONS
SEE SHEET 2

REVISION HISTORY

CHANGES IN REV A

1) ADDED ZENER DIODE ON 5V INPUT TO PROTECT FROM HIGH VOLTAGES.

2) ONBOARD TEMPERATURE SENSORS.

3) FERRITE BEAD ON 5V SUPPLY.

TEXAS INSTRUMENTS SEMICONDUCTOR OPERATIONS 10/08/2016		CODE IDENTITY NUMBER 01295
SIZE B	DRAWING NO. AWR1642BOOST	REV A
Revision History		SHEET 18 OF 19

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REVISIONS
SEE SHEET 2

- ○ FD1
- ○ FD2
- ○ FD3
- ○ FD4
- ○ FD5
- ○ FD6

PCB LOGO

TEXAS INSTRUMENTS

PCB LOGO

ESD SENSITIVE

PCB LOGO

FCC DISCLAIMER

PCB LOGO

LAUNCHPAD COMPATIBLE

PCB LOGO

ROHS EXEMPT

PCB LABELS : THESE LABELS NEED TO BE PUT ON THE ASSEMBLED PCB

1) TOP SIDE OF THE PCB -> AWR1642BOOST
REV A

2) BOTTOM SIDE OF THE PCB -> AWR1642BOOST
REV A

ASSEMBLY NOTES:

ASSEMBLIES MUST BE CLEAN AND FREE FROM FLUX AND ALL CONTAMINANTS. USE OF NO CLEAN FLUX IS NOT ACCEPTABLE
ASSEMBLIES MUST COMPLY WITH WORKMANSHIP STANDARDS IPC-A-610 CLASS 2, UNLESS OTHERWISE SPECIFIED
COMPONENTS MARKED "DNI = TRUE" WILL NOT BE ASSEMBLED

TEXAS INSTRUMENTS SEMICONDUCTOR OPERATIONS 10/08/2016		CODE IDENTITY NUMBER 01295
SIZE B	DRAWING NO. AWR1642BOOST	REV A
Hardware		SHEET 19 OF 19

Wed Mar 22 14:17:13 2017

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