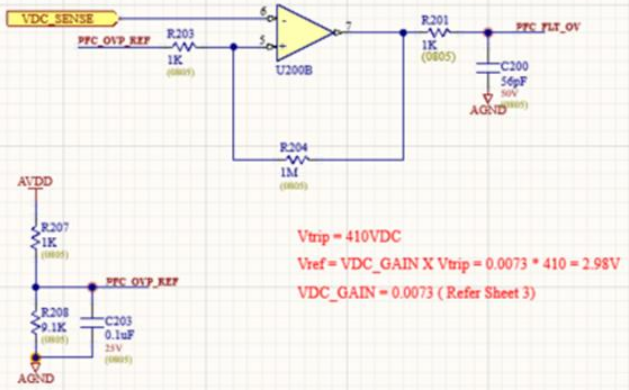


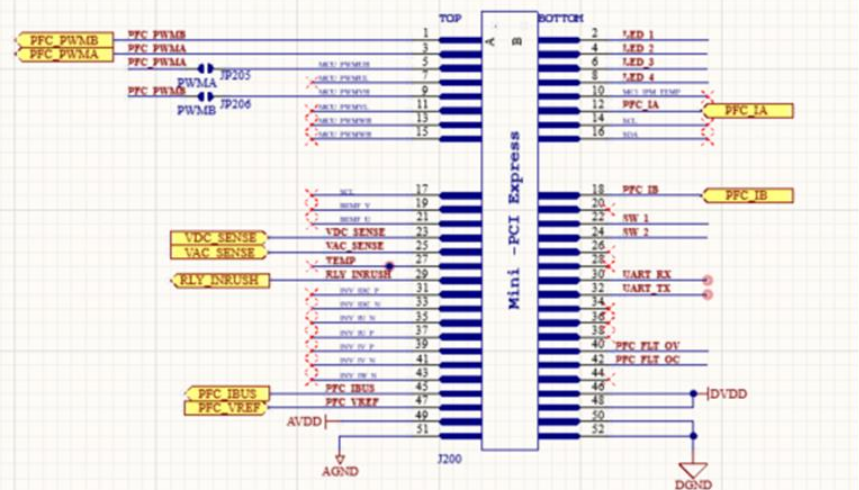
Power Board [PCB_3.6kW_IPFC_PCBA016-Rev.A] Schematics (2/3)

PFC Over Voltage Protection

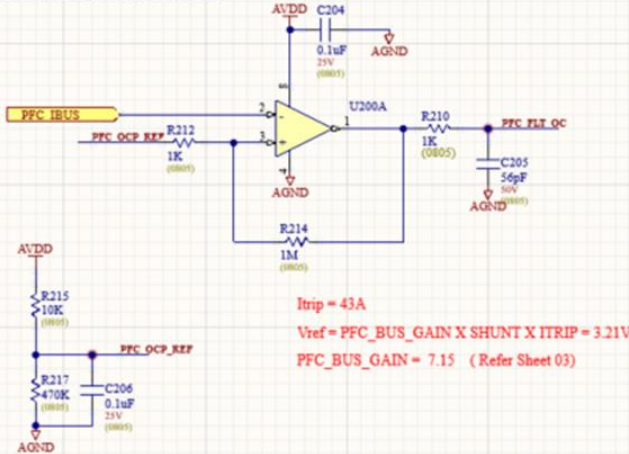


$V_{trip} = 410VDC$
 $V_{ref} = VDC_GAIN \times V_{trip} = 0.0073 \times 410 = 2.98V$
 $VDC_GAIN = 0.0073$ (Refer Sheet 3)

Board to Board connector : Main board

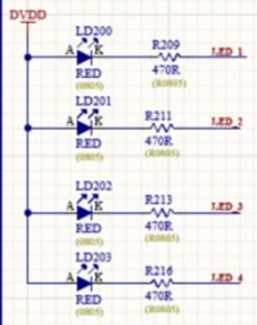


PFC Over Current Protection

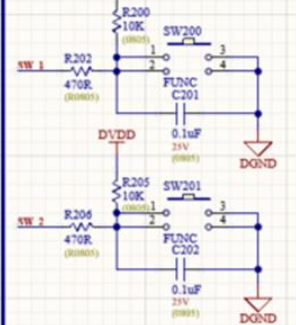


$I_{trip} = 43A$
 $V_{ref} = PFC_BUS_GAIN \times SHUNT \times I_{TRIP} = 3.21V$
 $PFC_BUS_GAIN = 7.15$ (Refer Sheet 03)

LED

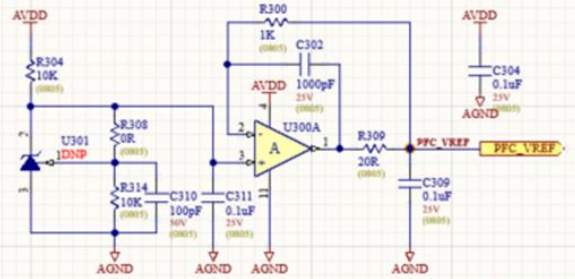


Push Button



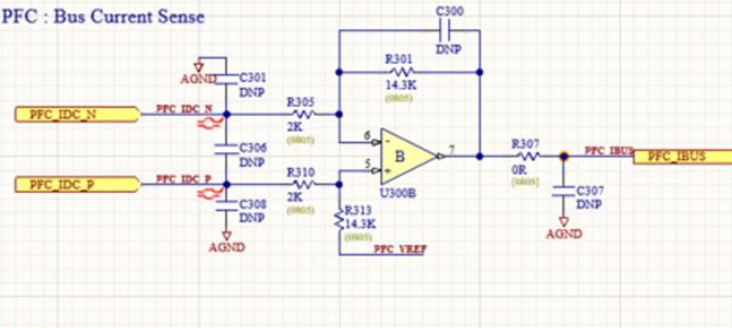
Power Board [PCB_3.6kW_IPFC_PCBA016-Rev.A] Schematics (3/3)

PFC Voltage Reference



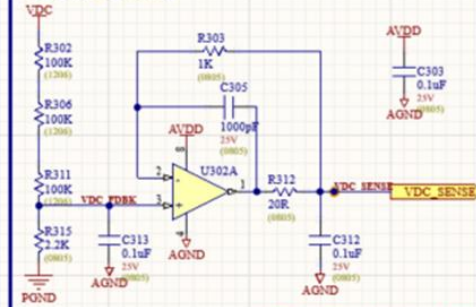
Vref = 1.65V

PFC : Bus Current Sense



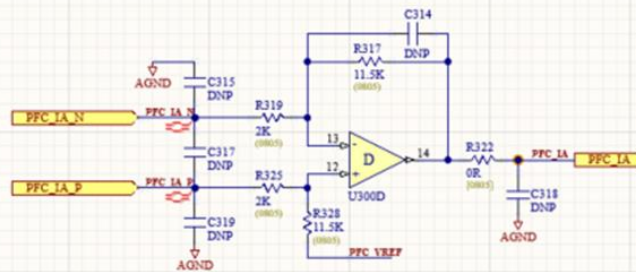
PFC_BUS_GAIN = 14.3/2 = 7.15

PFC :VDC Sense



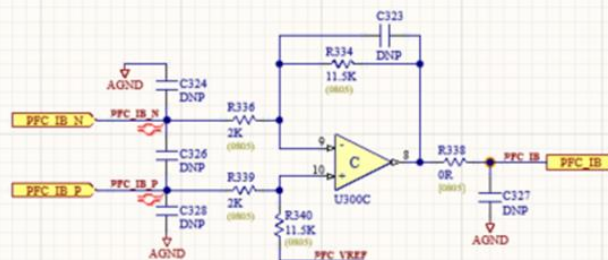
VDC_GAIN = 2.2/302.2 = 0.0073

PFC : Phase Current Sense



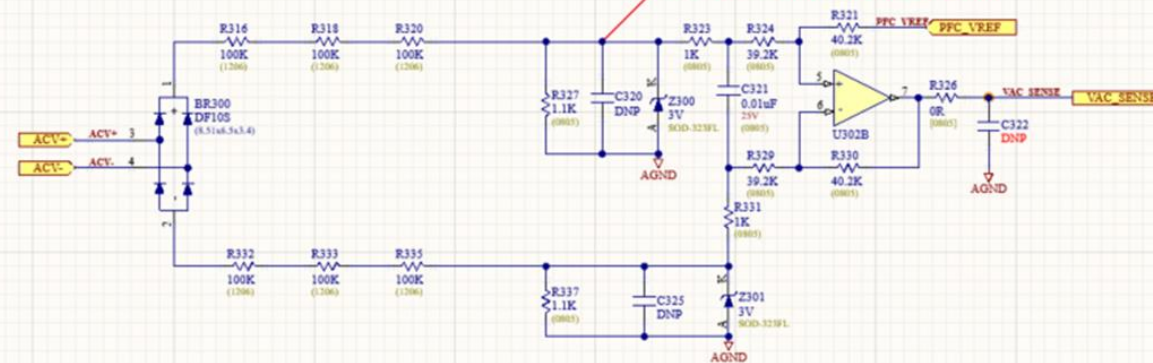
Rshunt = 25mohm

PFC_Phase_GAIN = 11.5/2 = 5.75



Reference Generator for PFC

VDC @ 280Vac >> 396Vdc



Vac_sense = Gain X Vac_Vol2 = 1.447V + 1.65V = 3.097V

Gain = (40.2/40.2K)

Vac_vol2 = (396 * 1.1K) / (100K x3 + 1.1K) = 1.447V

Project : 3.6kW IPFC

Title : 03_SCH_Analog_Sense_PFC.SchDoc

Approved by: Makoto Terada

Size: B

Number: PCBA016

REV.A

Checked by: Makoto Terada

Size: B

Number: PCBA016

REV.A

Drawn by: Sudheendra

Size: B

Number: PCBA016

REV.A

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