


110/220V FlexMC PCB

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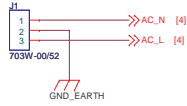
PAGE 1: COVER
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Revision History

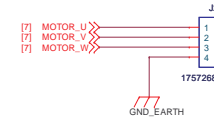
- Rev 1: Initial Draft
- Rev 2: Update refer to request on changes

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	LAST CHANGE			
	DRAWN BY	J. RODNEY		
	CHECKED BY			
	APPROVED BY			
COVER				
	SIZE	CAGE CODE	DWG NO	REV
	C	1NST2	3022G01	2
BARE PCB P/N			Thursday, February 14, 2013	SHEET 1 OF 8
ASSY PCB P/N				

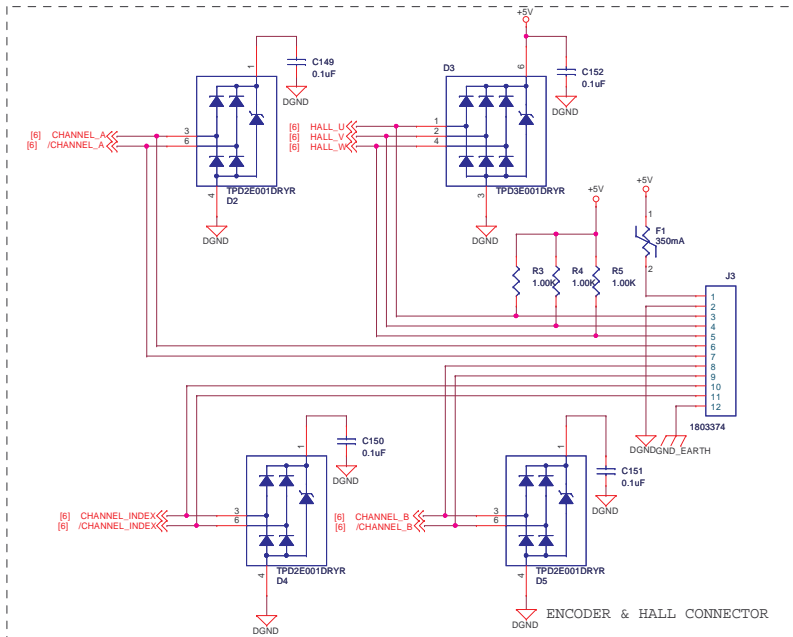
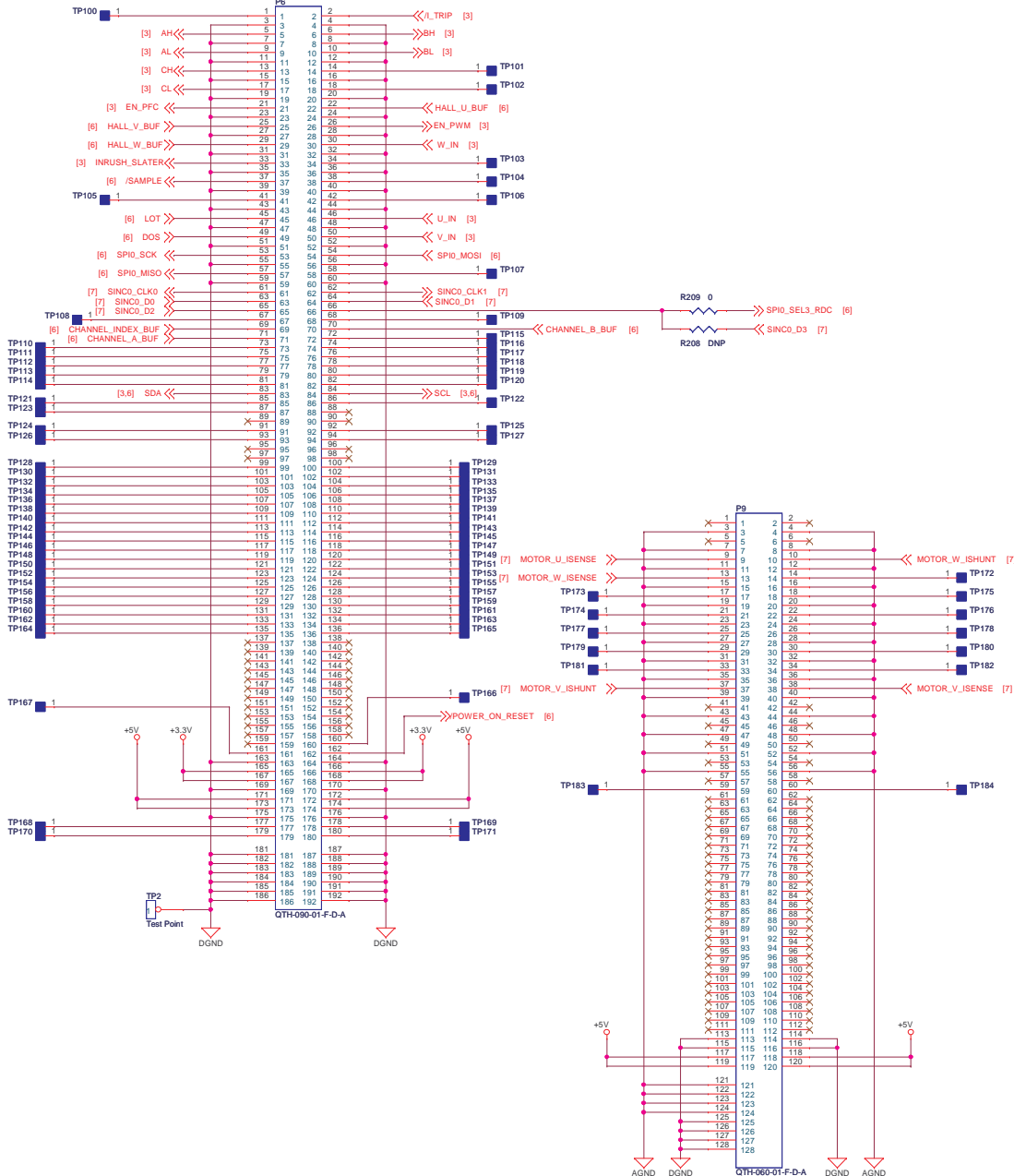
UNIVERSAL AC POWER INPUT



MOTOR CONNECTOR



RESOLVER SENSOR CONNECTOR

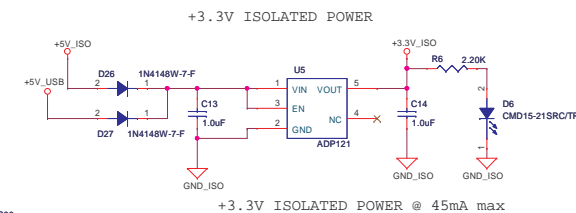
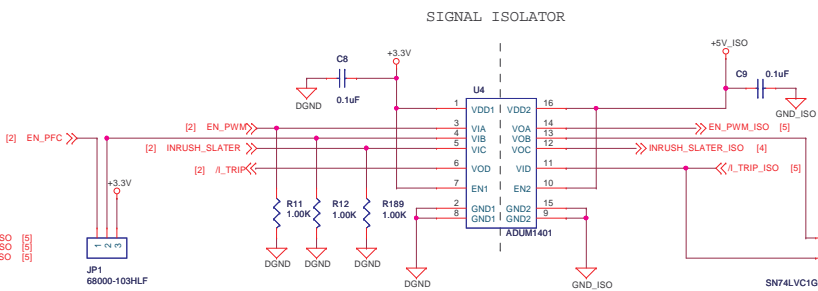
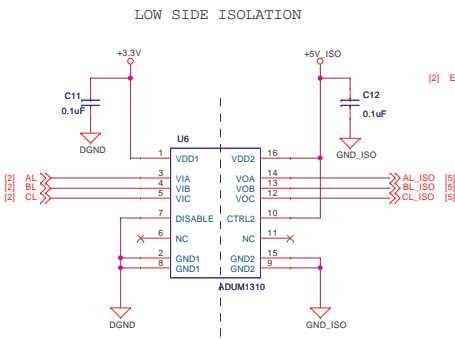
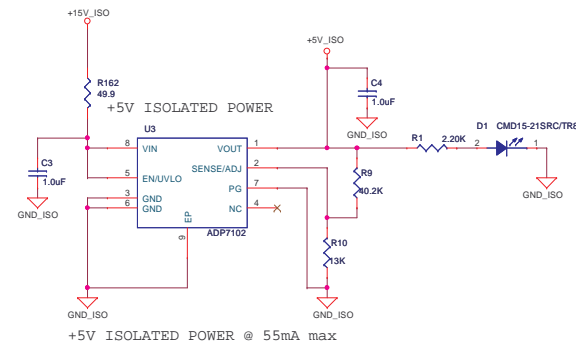
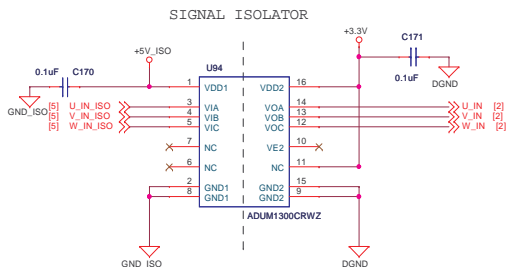
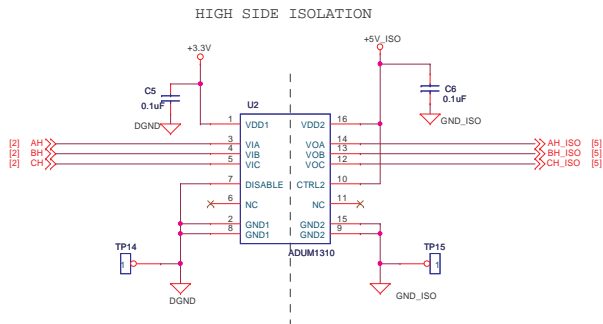


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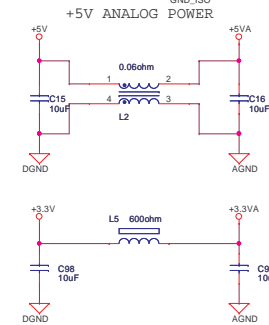
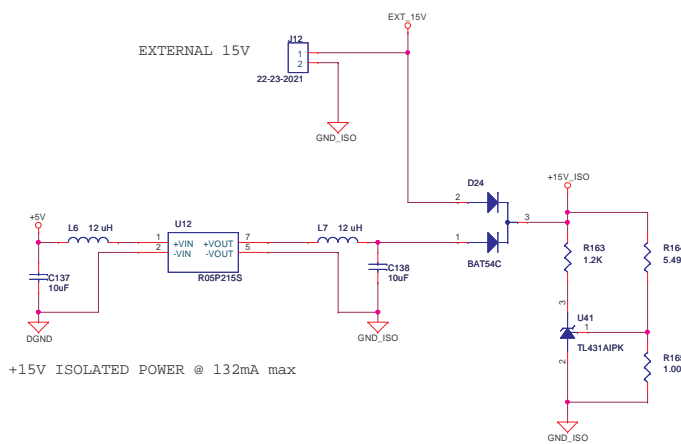
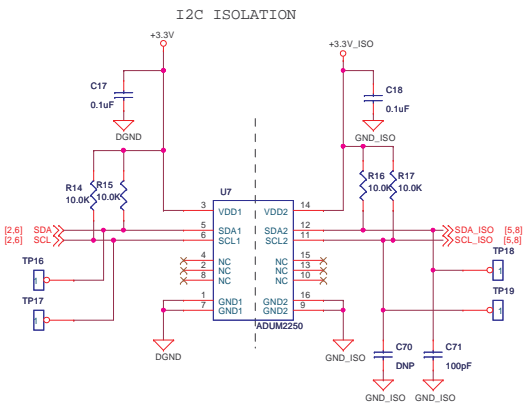
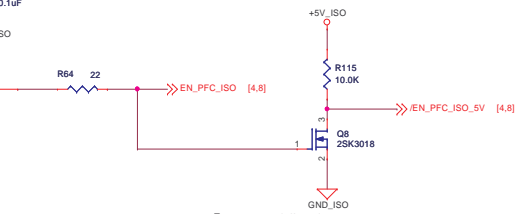
CONNECTOR INTERFACE

SIZE	CAGE CODE	DWG NO	REV
C	1INST2	3022G01	2

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JP1 PFC Bypass Setting
 1-2 - Software Control (High Enable, Low Disable)
 2-3 - Manual Control (Enable PFC)
 No Jumper - Manual Control (Disable PFC)



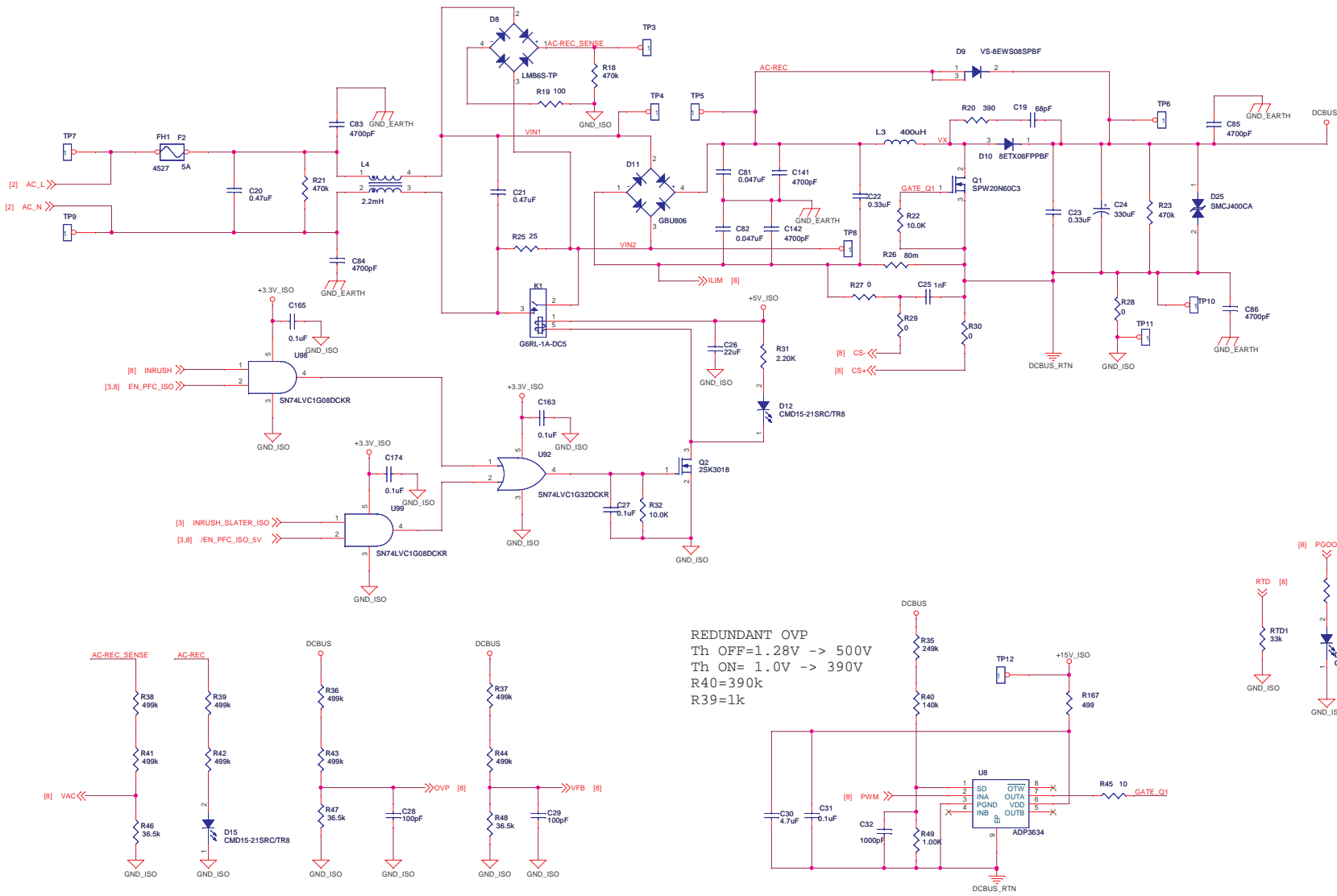
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POWER SUPPLIES, ISOLATION

SIZE	CAGE CODE	DWG NO	REV
C	1INST2	3022G01	2

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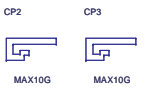
HEATSINK FOR Q1, D10, D11, U9



HEATSINK CLIP FOR D11



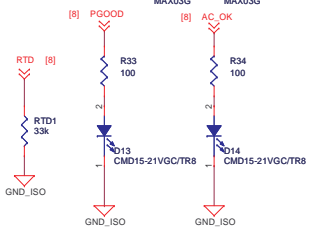
HEATSINK CLIP FOR Q1, D10



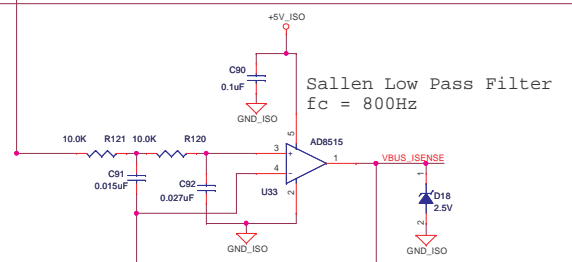
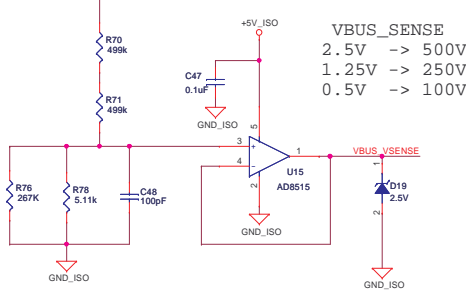
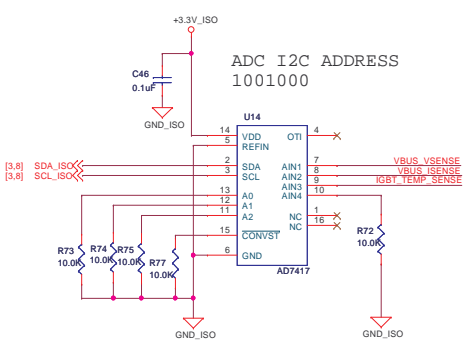
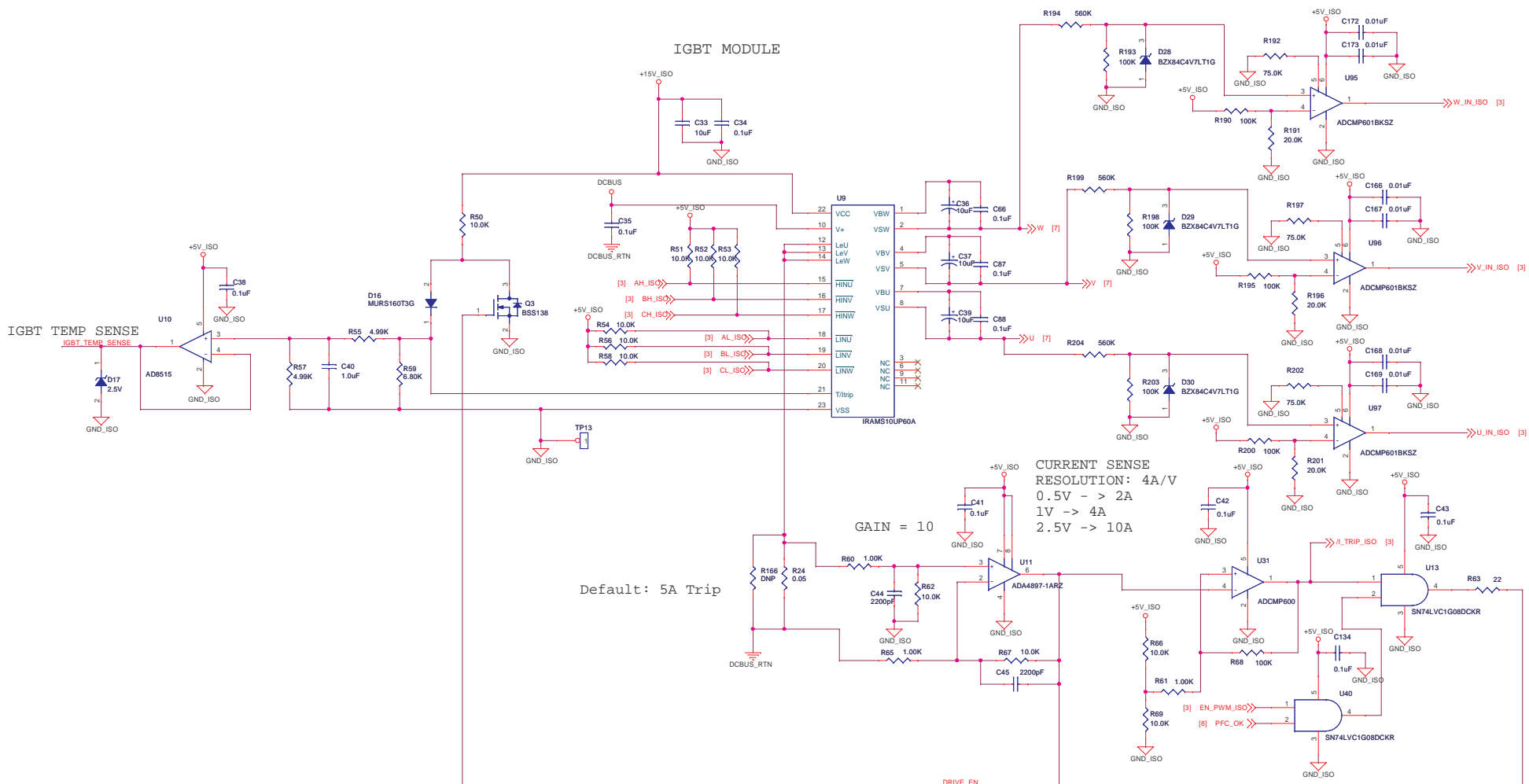
HEATSINK CLIP FOR U9



REDUNDANT OVP
 Th OFF=1.28V -> 500V
 Th ON= 1.0V -> 390V
 R40=390k
 R39=1k



		300 Bear Hill Road Waltham, MA 02452 781-466-8010	
POWER FACTOR CORRECTION			
SIZE C	CAGE CODE 1INST2	DWG NO 3022G01	REV 2
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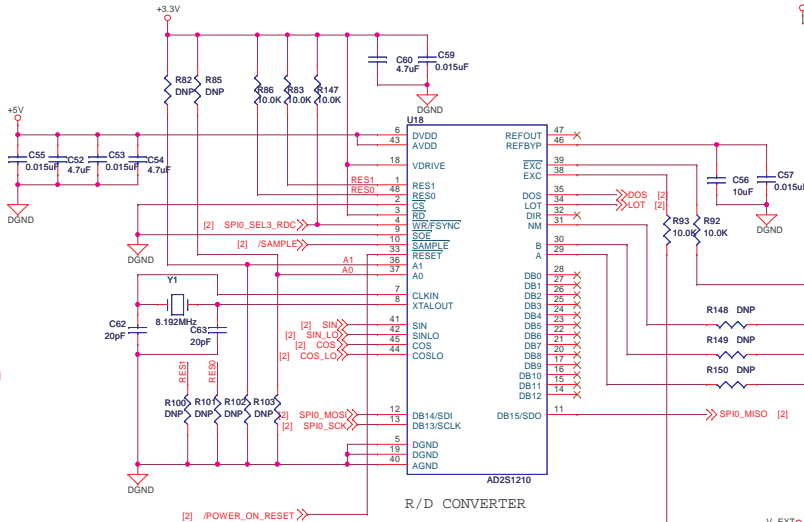
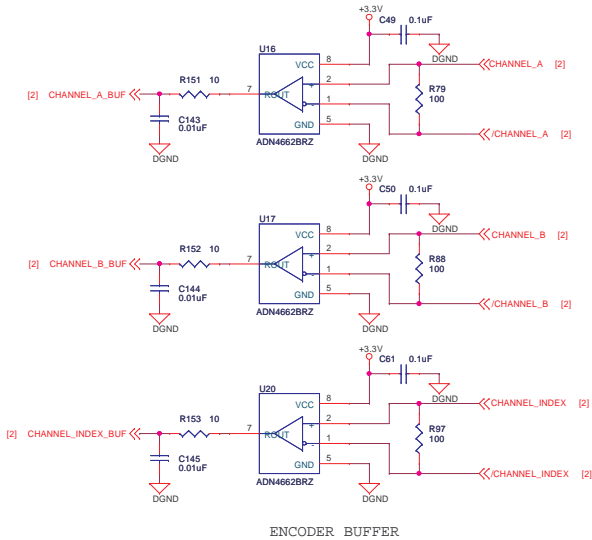
<Variant Name>

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IGBT MOTOR DRIVER

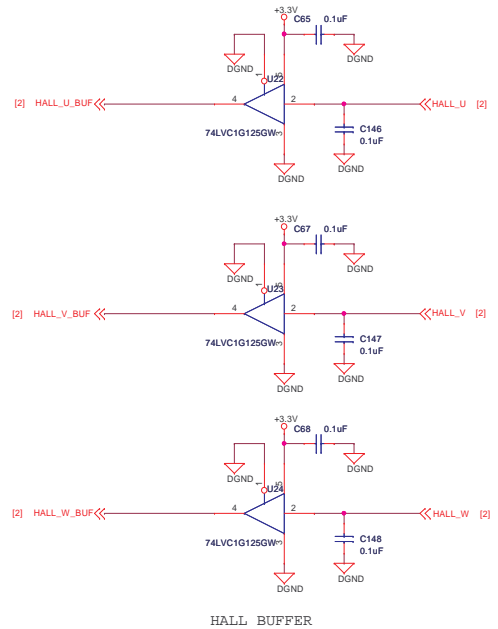
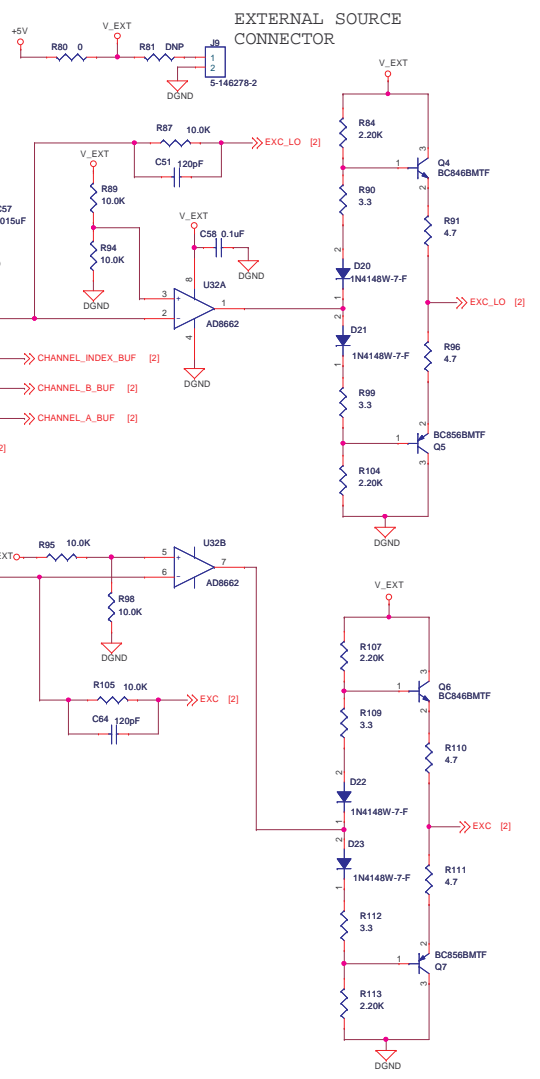
SIZE	CAGE CODE	DWG NO	REV
C	1INST2	3022G01	2

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DEFAULT: USING 5V
INSTALL R80, DNP R81

USING EXTERNAL 12V
DNP R80, INSTALL R81



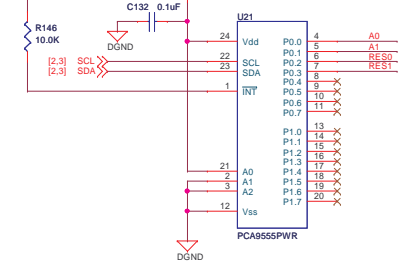
CONFIGURATION MODE SETTINGS

A0	A1	Mode
0	0	Normal mode - position output
0	1	Normal mode - velocity output
1	0	Reserved
1	1	Configuration mode

RESOLUTION SETTINGS

RES0	RES1	RESOLUTION (BITS)	POSITION LSB (Arc min)	VELOCITY LSB (rps)
0	0	10	21.1	4.88
0	1	12	5.3	0.488
1	0	14	1.3	0.06
1	1	16	0.3	0.004

I/O Expander I2C ADDRESS



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BUFFER, RESOLVER TO DIGITAL CONVERTER

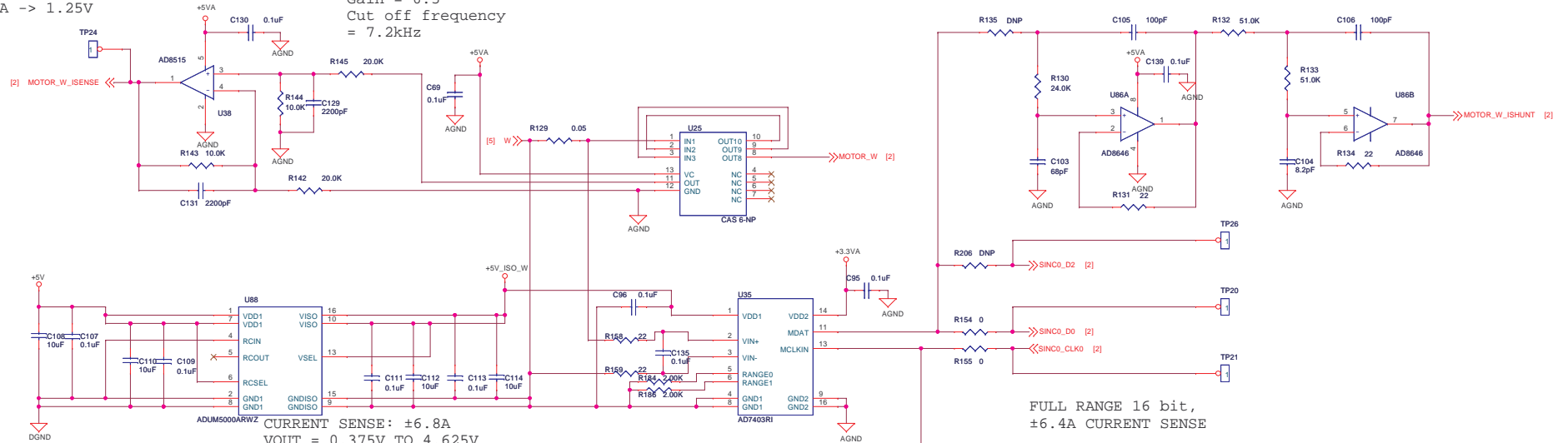
SIZE	CAGE CODE	DWG NO	REV
C	1INST2	3022G01	2

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CURRENT SENSE: $\pm 6.8A$
 VOUT = 0.375V TO 4.625V
 CENTER AT 1.25V
 -6A -> 0.3125V
 -4A -> 0.625V
 -2A -> 0.9375V
 0A -> 1.25V

6A -> 2.1875V
 4A -> 1.875V
 2A -> 1.5625V

Gain = 0.5
 Cut off frequency = 7.2kHz



FULL RANGE 16 bit,
 $\pm 6.4A$ CURRENT SENSE

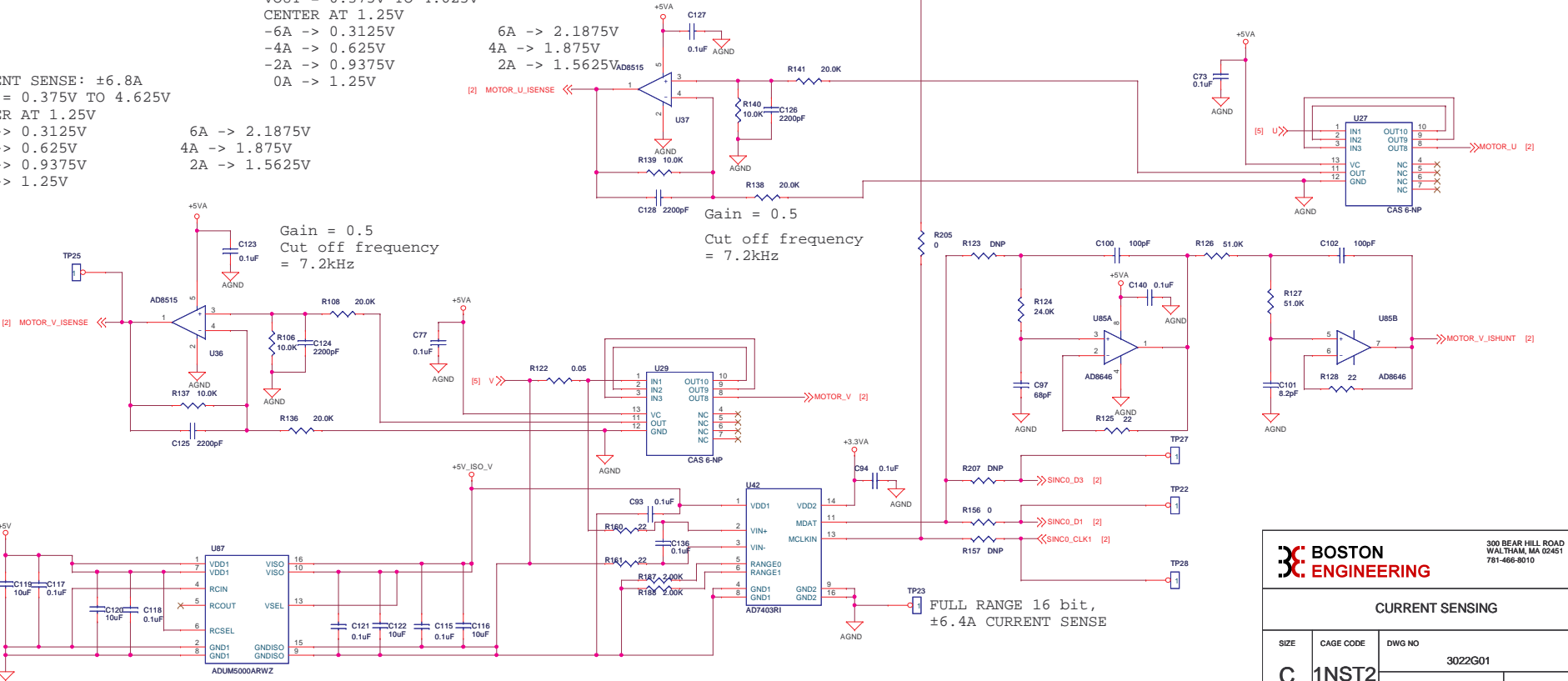
CURRENT SENSE: $\pm 6.8A$
 VOUT = 0.375V TO 4.625V
 CENTER AT 1.25V
 -6A -> 0.3125V
 -4A -> 0.625V
 -2A -> 0.9375V
 0A -> 1.25V

6A -> 2.1875V
 4A -> 1.875V
 2A -> 1.5625V

Gain = 0.5
 Cut off frequency = 7.2kHz

6A -> 2.1875V
 4A -> 1.875V
 2A -> 1.5625V

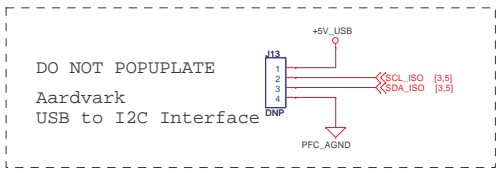
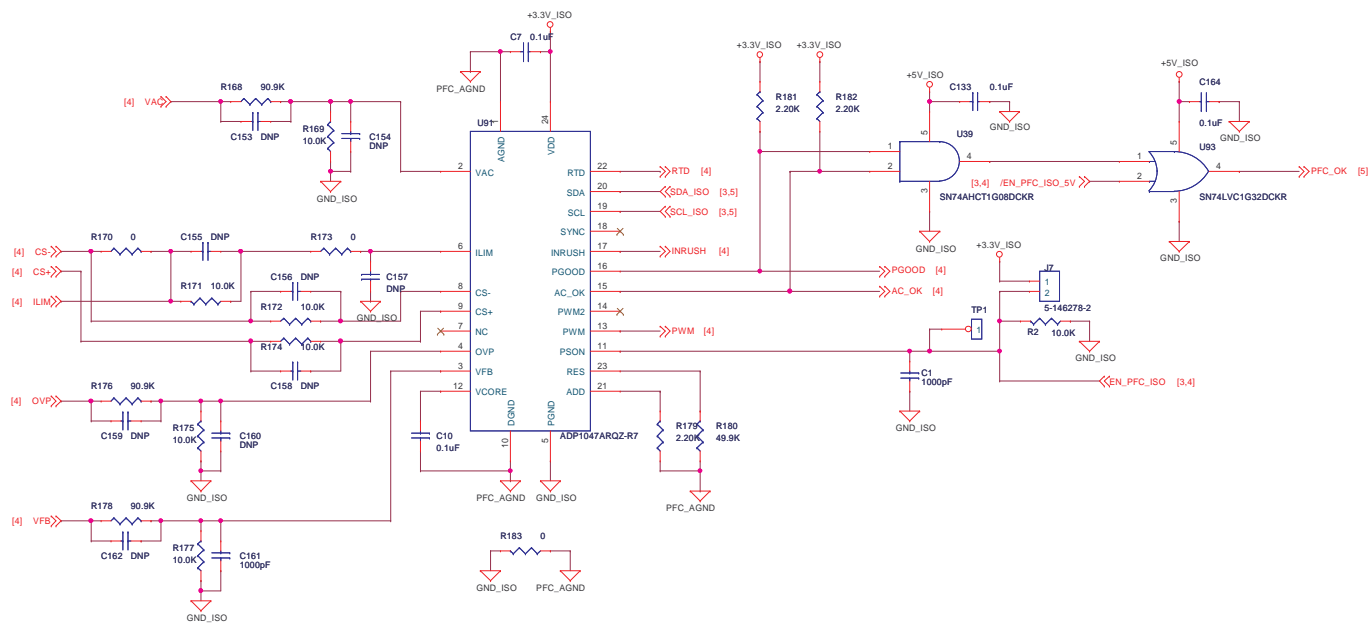
Gain = 0.5
 Cut off frequency = 7.2kHz



FULL RANGE 16 bit,
 $\pm 6.4A$ CURRENT SENSE

		300 BEAR HILL ROAD WALTHAM, MA 02451 781-466-8010	
CURRENT SENSING			
SIZE	CAGE CODE	DWG NO	REV
C	1INST2	3022G01	2
Wednesday, March 13, 2013		SHEET 7 OF 8	

PFC CONTROLLER I2C ADDRESS
1011000



		300 Bear Hill Road Waltham, MA 02452 781-466-8010	
PFC CONTROLLER			
SIZE	CAGE CODE	DWG NO	REV
C	1INST2	3022G01	2
		Monday, March 18, 2013	SHEET 8 OF 8