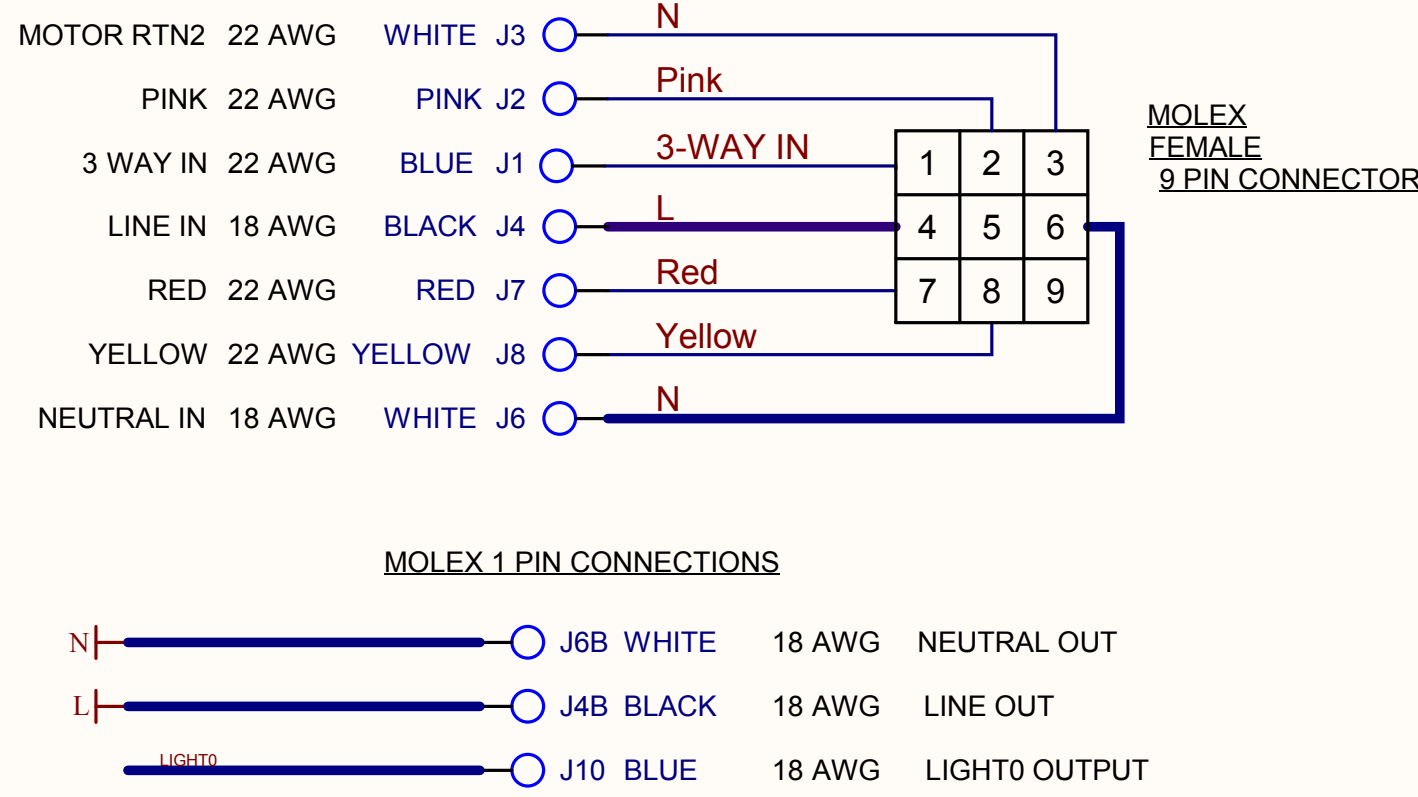
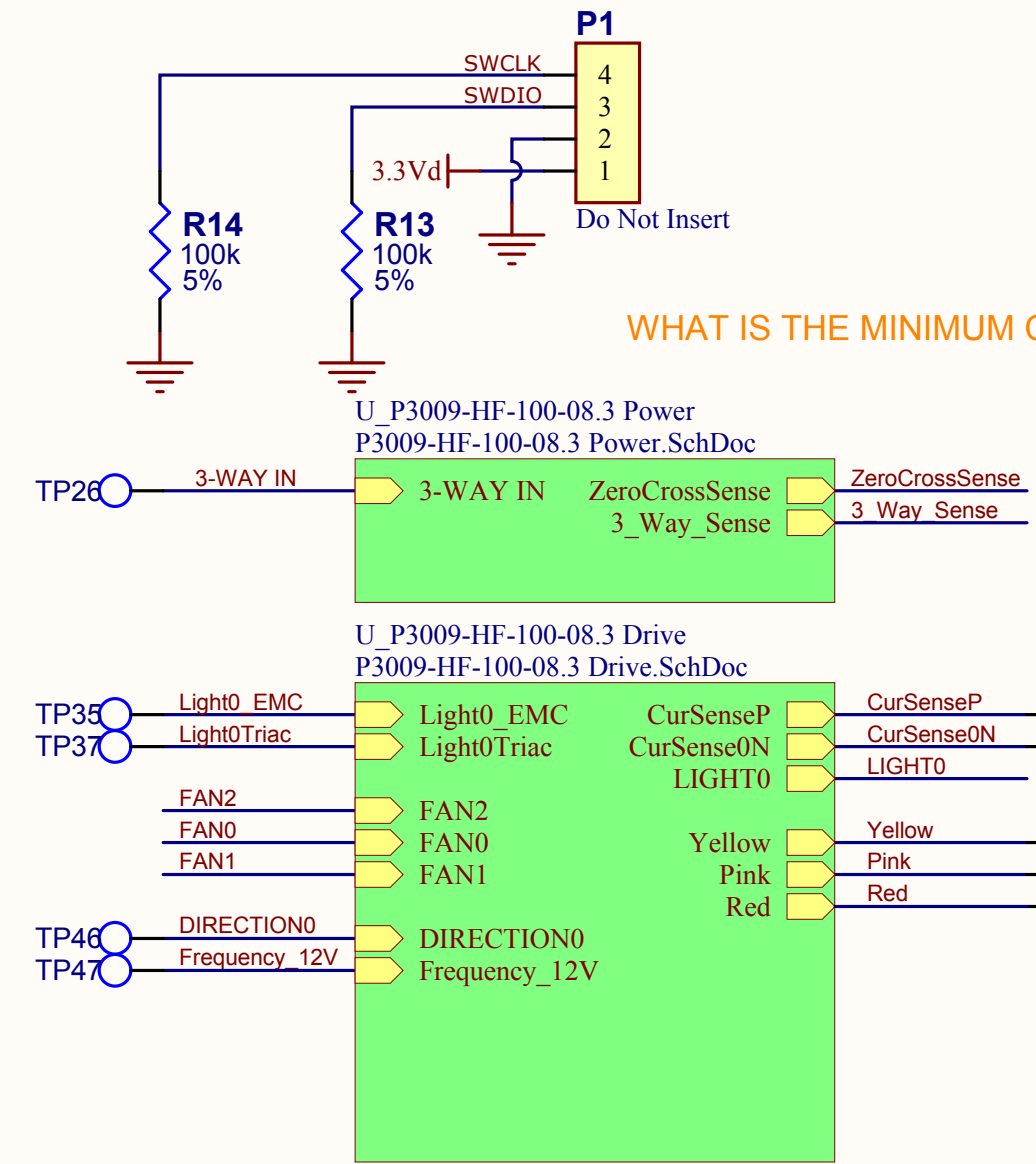


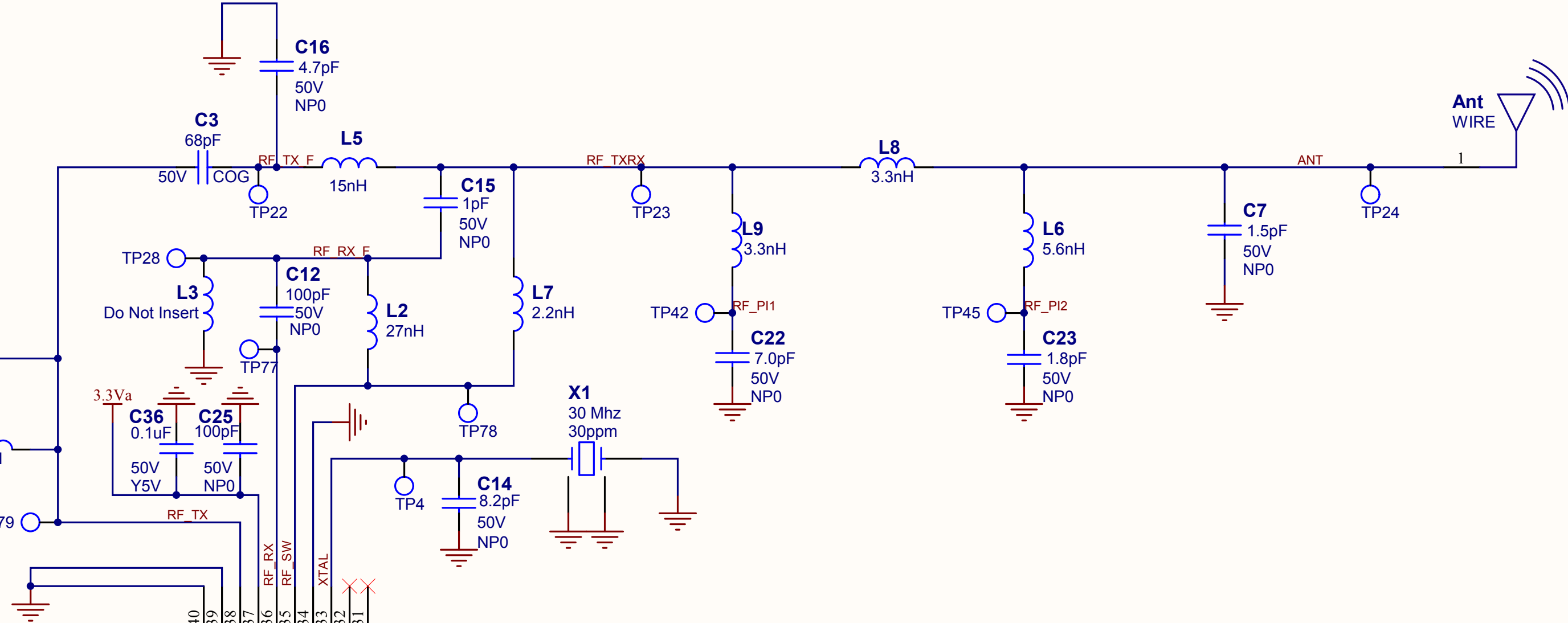
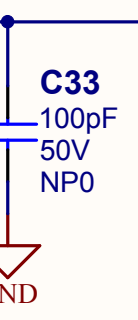
ECM WIRING



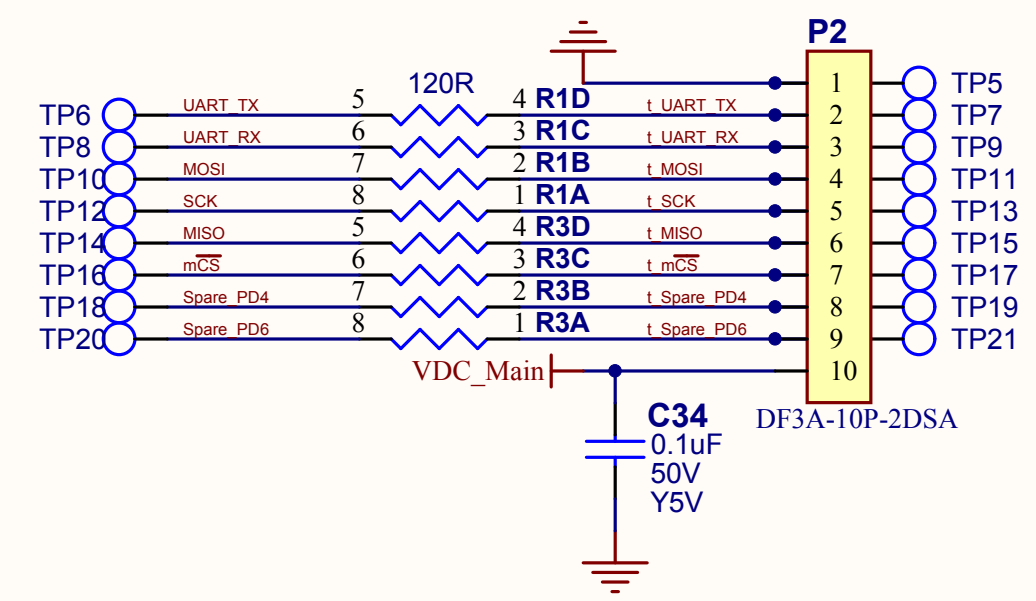
PROGRAMMING HEADER



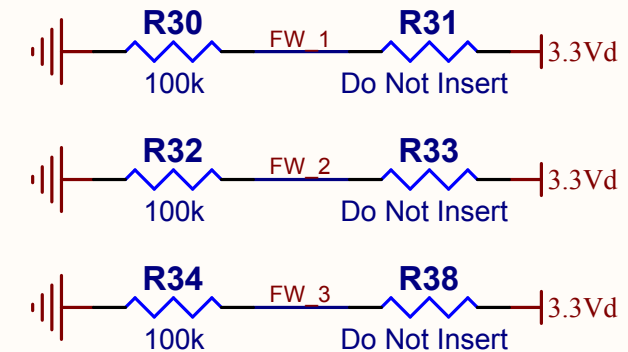
WHAT IS THE MINIMUM CURREN? MUST BE >3Ma



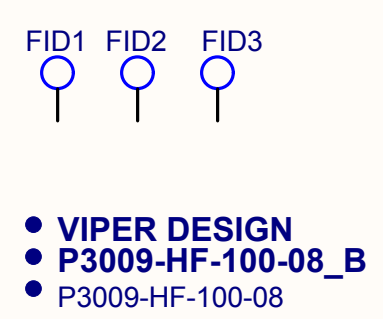
MODULE INTERFACE



FW CONFIGURATION



FIDUCIALS



UNLESS OTHERWISE SPECIFIED

Resistors
 Values are in Ohms
 Tolerance values are +-5%
 Power Rating is 1/10W

Capacitors
 Values are in Farads
 Voltage ratings are shown

Inductors
 Values are in Henries
 Tolerance values are +-5%

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 brian@viper-design.com

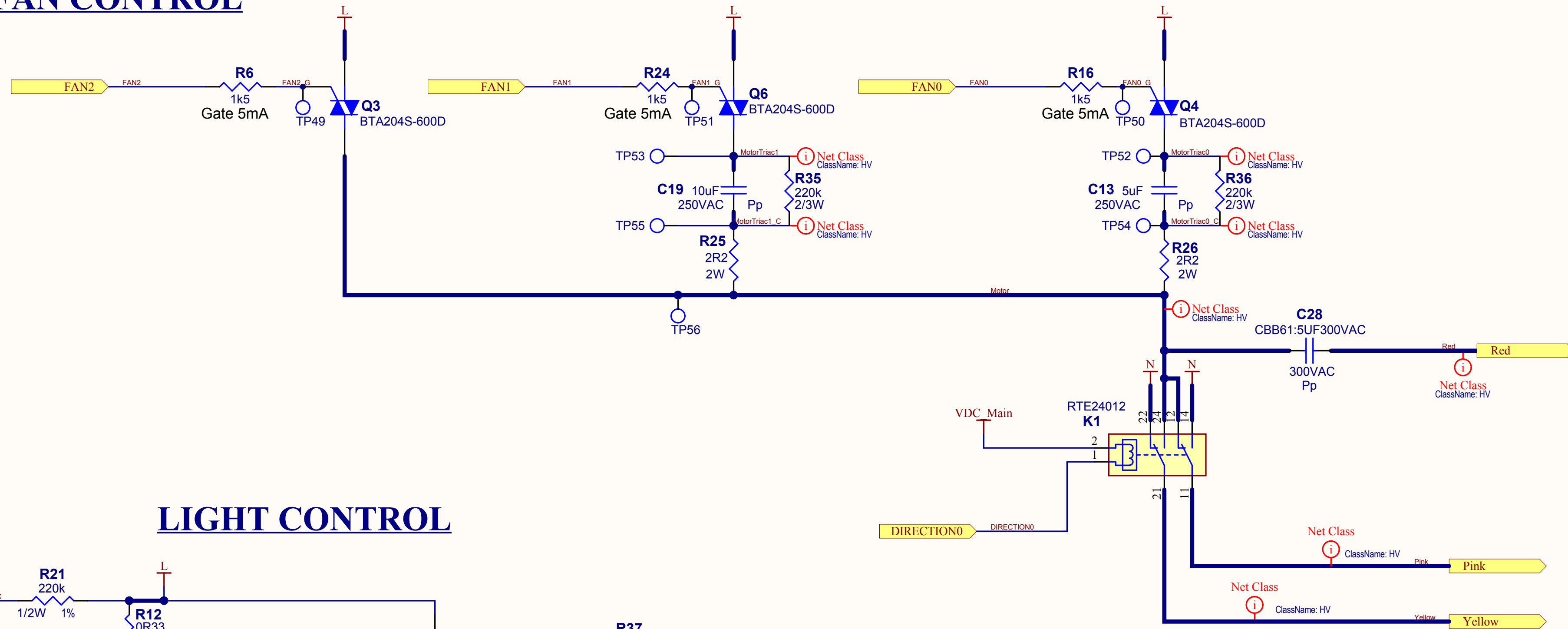
DESCRIPTION/PART NAME		
ECM Gen 2.0 - Controller PROTOTYPE		
DRAWNBY BKB	DATE 3/7/2016	SCALE B
DWG NO. P3009-HF-100	PAGE 1/3	

Rev	Date	By	Description
1.0	03/05/14	BKB	Initial Release
2.0	08/21/14	BKB	Updates from POC and ADK GEN 2.0 POC.
3.0	10/23/14	BKB	Initial Release
3.0	11/04/14	BKB	Updated the Stereo Jack to a 4 conductor Microphone Jack for better FanDangle Operation.
3.0	11/06/14	BKB	Swapped PC0 and PC1 pins.
3.0	11/06/14	BKB	Removed pz_frequency signal. Direct piezo drive from ASIC.
3.0	11/12/14	BKB	Added additional White Neutral wires for the external connections.
3.0	11/23/14	BKB	Changed the Module Connector to interlocking Molex.
3.0	12/10/14	BKB	Connected FanDangle Signals to Analog Inputs from digital inputs.
3.0	12/10/14	BKB	Changed Oscillator to smaller package
3.0	02/03/15	BKB	Change Fan0 and Fan1 positions.
3.0	02/03/15	BKB	Added Pass-through connections for power.
3.0	02/04/15	BKB	Changed the 3.5mm to the 4 conductor version ST-320A-RS. Still need a higher profile version.
3.0	02/05/15	BKB	Changed the pinout on the FanDangle section of Krankl.
4.0	03/04/15	BKB	Initial Release
5.0	04/18/15	BKB	Initial Release
5.0	05/11/15	BKB	Fixed the FanDangle Jack Pinout error: Pin 2 and Pin 4 were swapped.
6.0	05/25/15	BKB	Initial Release
6.0	05/25/15	BKB	Rewired 9 pin motor connector for conventional motor reversing.
6.1	06/11/15	JAC	Depopulated FanDangle circuit
7.0	8/31/15	BKB	Remove FanDangle Circuitry, Changed Module Connector, pinout change on module.
8.0	10/16/15	BKB	Initial Release
8.1	02/19/16	BKB	Initial Release, Transceiver Component Changes
8.2	02/29/16	BKB	Initial Release, More FCC Component Changes, CM Alternates
8.3	03/04/16	BKB	Initial Release.

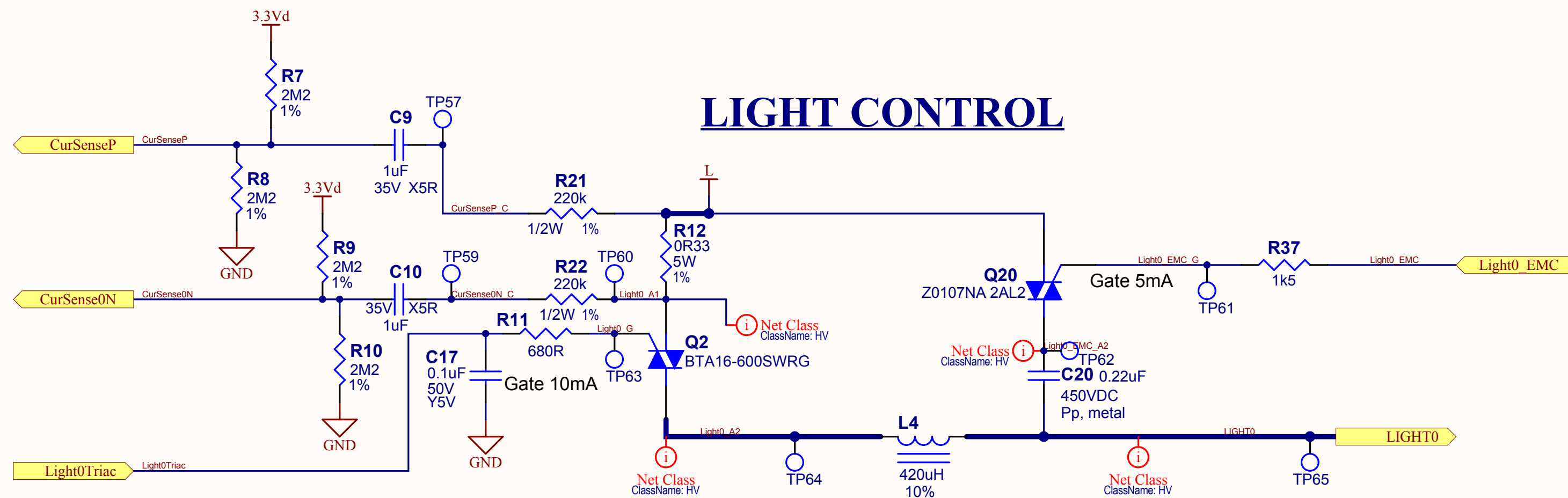
VIPER ACTION ITEMS
 NEEDS ADK INPUT
 NEEDS HF INPUT

PROPRIETARY AND CONFIDENTIAL MATERIAL
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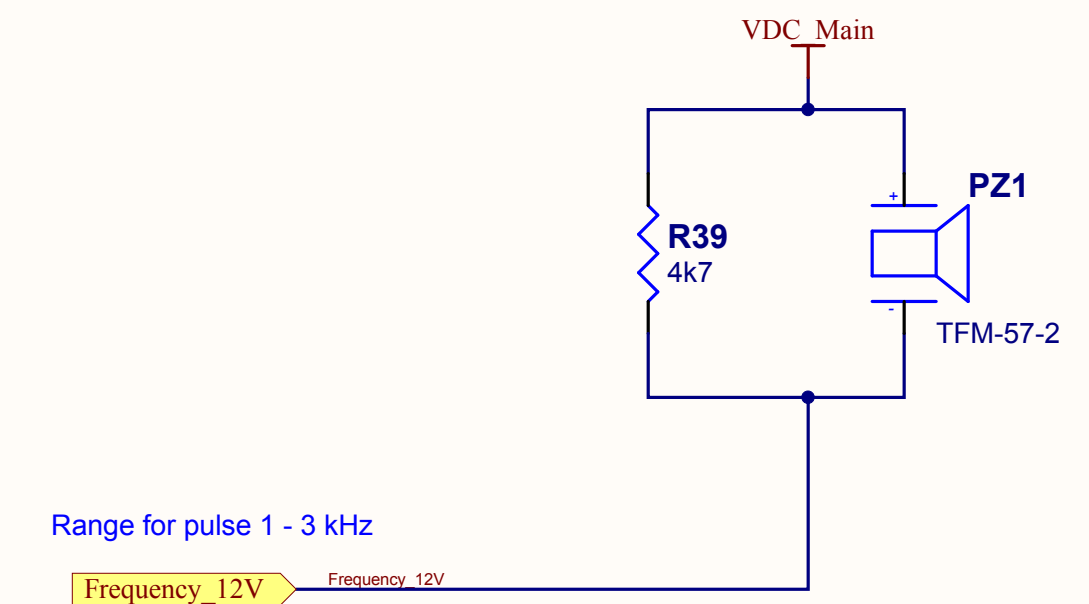
FAN CONTROL



LIGHT CONTROL



PIEZO CIRCUIT



Rev	Date	By	Description
1.0	03/05/14	BKB	Initial Release
2.0	08/21/14	BKB	Updates from POC and ADK GEN 2.0 POC.
3.0	10/23/14	BKB	Initial Release
3.0	11/06/14	BKB	Removed external piezo drive components (Q7, R45, R30). Direct ASIC drive of piezo.
3.0	02/03/15	BKB	Change Fan0 and Fan1 positions.
4.0	03/04/15	BKB	Initial Release
5.0	04/18/15	BKB	Initial Release
5.0	05/11/15	BKB	Changed the Normally Closed Position of the relay to the downdraft state.
6.0	05/25/15	BKB	Initial Release
6.0	05/25/15	BKB	Rewired 9 pin motor connector for conventional motor reversing.
7.0	08/31/15	BKB	Initial Release.
8.0	10/16/15	BKB	Initial Release
8.1	01/15/16	BKB	Initial Release, Improved performance of Light Power Detection
8.2	02/29/16	BKB	Initial Release, CM Alternates
8.3	03/04/16	BKB	Initial Release.

UNLESS OTHERWISE SPECIFIED
Resistors
 Values are in Ohms
 Tolerance values are +/-5%
 Power Rating is 1/10W
Capacitors
 Values are in Farads
 Voltage ratings are shown
Inductors
 Values are in Henries
 Tolerance values are +/-5%
DO NOT SCALE DRAWING

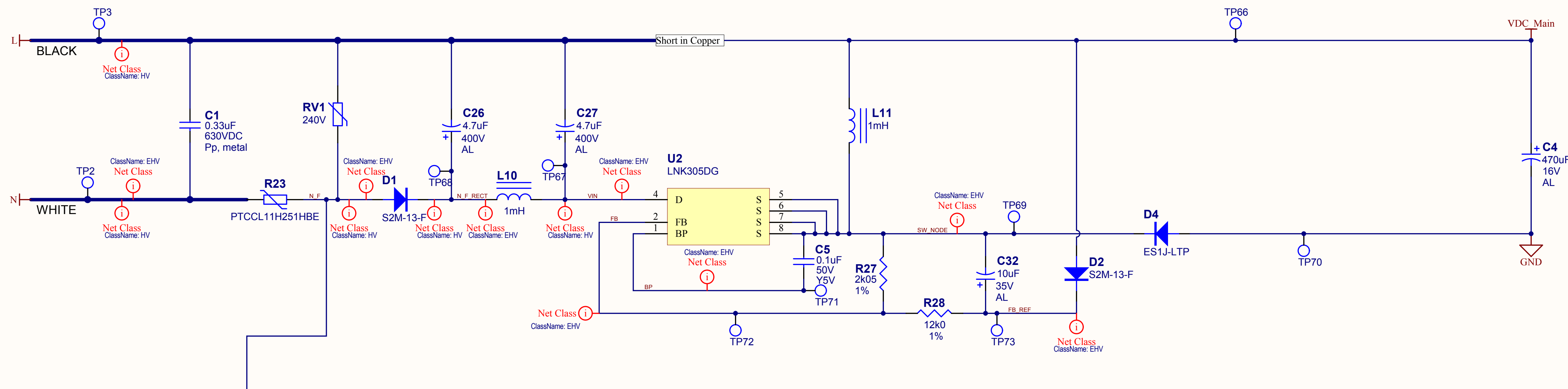
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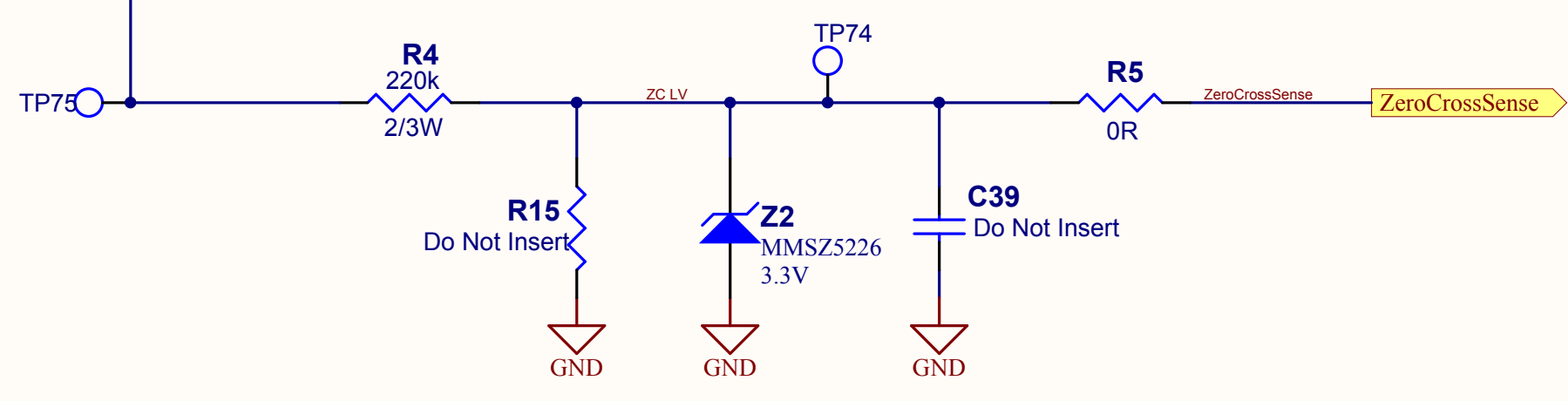
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DESCRIPTION/PART NAME		
ECM Gen 2.0 - Drive PROTOTYPE		
DRAWNBY BKB	DATE 3/7/2016	SCALE C
DWG NO. P3009-HF-100	PAGE 2 3	

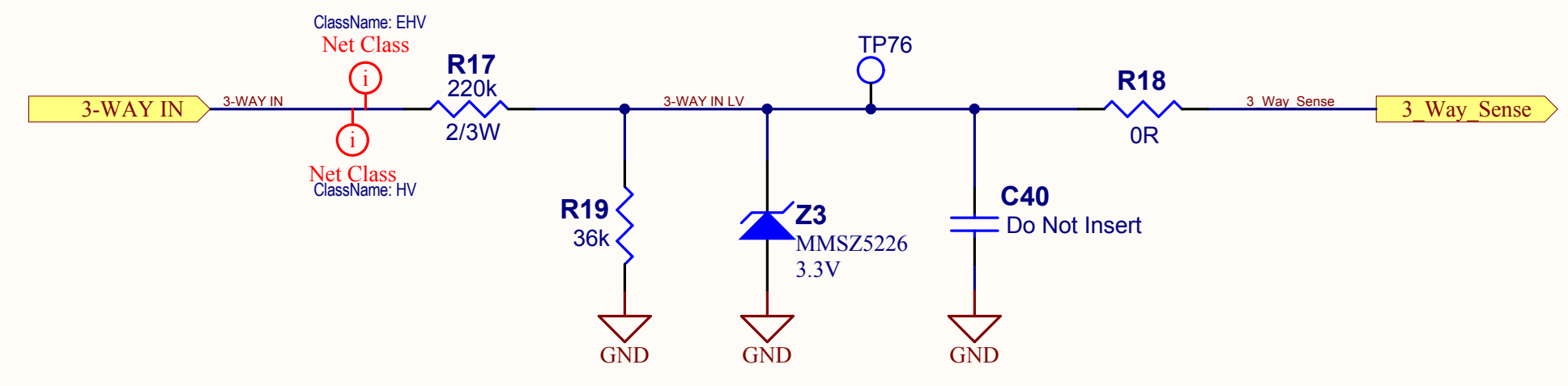
OFFLINE POWER SUPPLY



ZERO CROSS DETECTOR



3 WAY SWITCH MONITOR



Rev	Date	By	Description
1.0	03/05/14	BKB	Initial Release
2.0	08/21/14	BKB	Updates from POC and ADK GEN 2.0 POC.
3.0	10/23/14	BKB	Initial Release
3.0	11/04/14	BKB	Added capacitors in parallel with zeners for noise filtering on ZCDs.
4.0	03/04/15	BKB	Initial Release
5.0	04/18/15	BKB	Initial Release
5.0	04/21/15	BKB	Increased Varistor Voltage of RV1
5.0	05/11/15	BKB	Updated the Zero Cross and 3 Way Switch circuitry.
6.0	05/25/15	BKB	Initial Release
6.0	05/25/15	BKB	Updated 3 Way Switch Circuitry to detect a Line Voltage Input.
7.0	08/31/15	BKB	Initial Release.
8.0	10/16/15	BKB	Initial Release
8.1	01/15/16	BKB	Initial Release
8.2	02/29/16	BKB	Initial Release, Increased Temperature rating of C26,C27 to 105 C
8.3	03/04/16	BKB	Initial Release, Changed voltage rating of Varistor RV1.

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 Tolerance values are +-5%
 Power Rating is 1/10W
Capacitors
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Inductors
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DESCRIPTION/PART NAME		
ECM Gen 2.0 - Power PROTOTYPE		
DRAWNBY BKB	DATE 3/7/2016	SCALE C
DWG NO. P3009-HF-100		PAGE 3 3