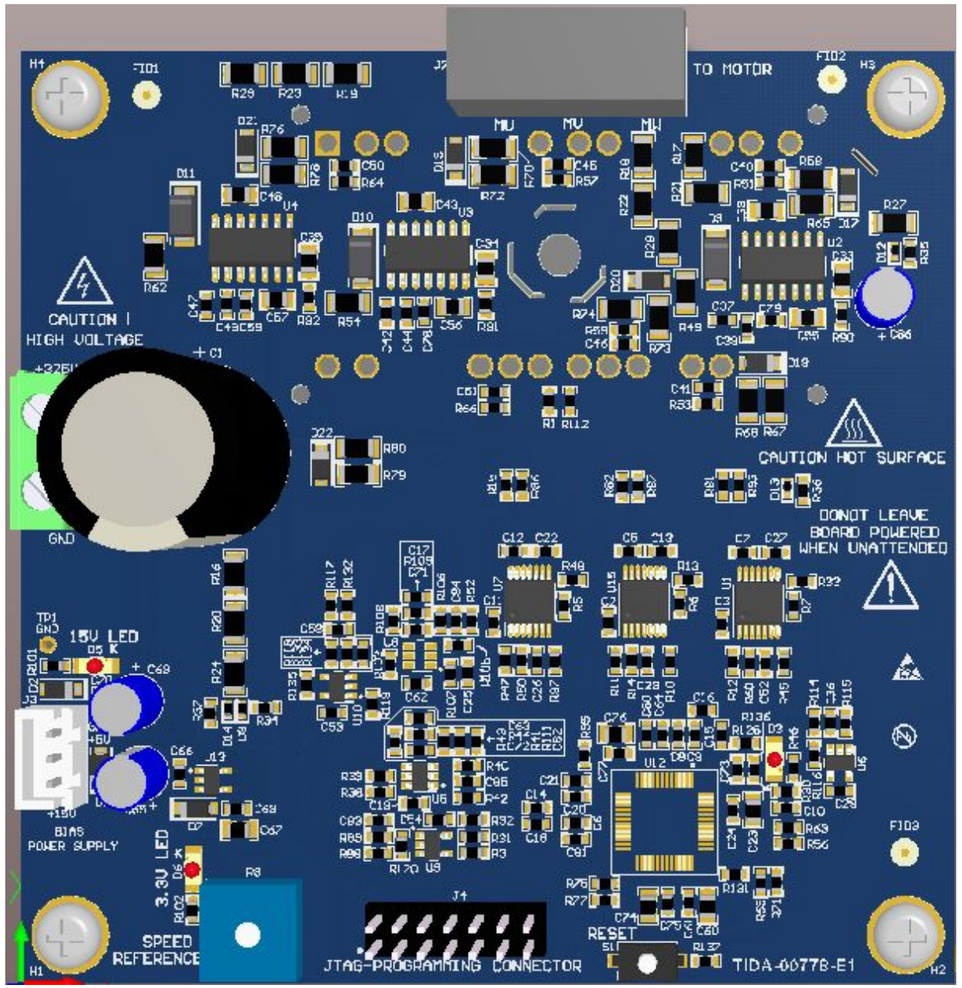

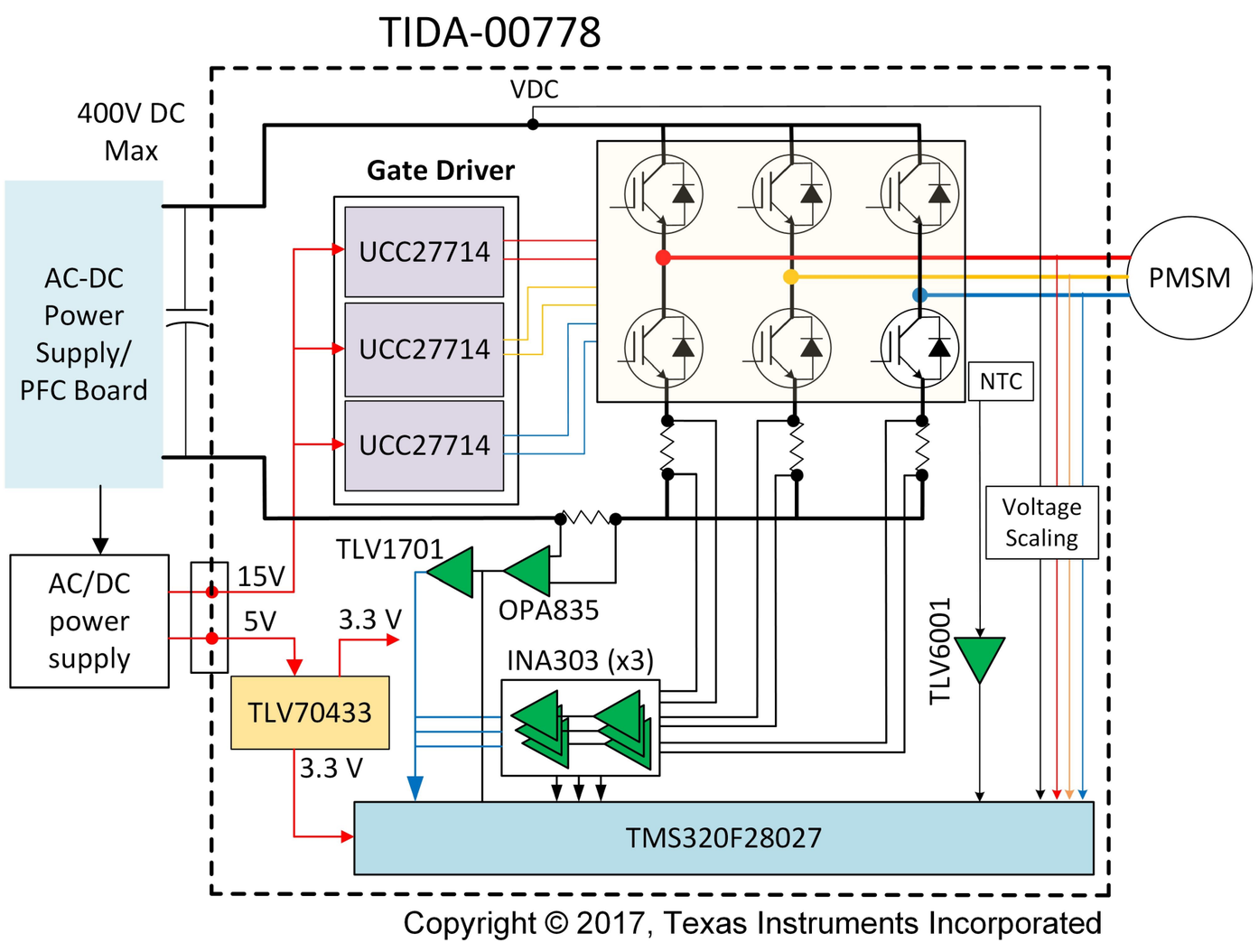

Orderable: N/A		Designed for: Public Release	Mod. Date: 3/16/2017
TID #: 00778		Project Title: 390V 3-Phase Inverter- 1, 2 & 3 Shunt FOC	
Number: TIDA-00778	Rev: E2	Sheet Title: Block Diagram	
SVN Rev: Version control disabled		Assembly Variant: 001	Sheet: 1 of 5
Drawn By: Manu Balakrishnan		File: TIDA-00778-CoverSheet.SchDoc	Size: B
Engineer: Manu Balakrishnan		Contact: http://www.ti.com/support	

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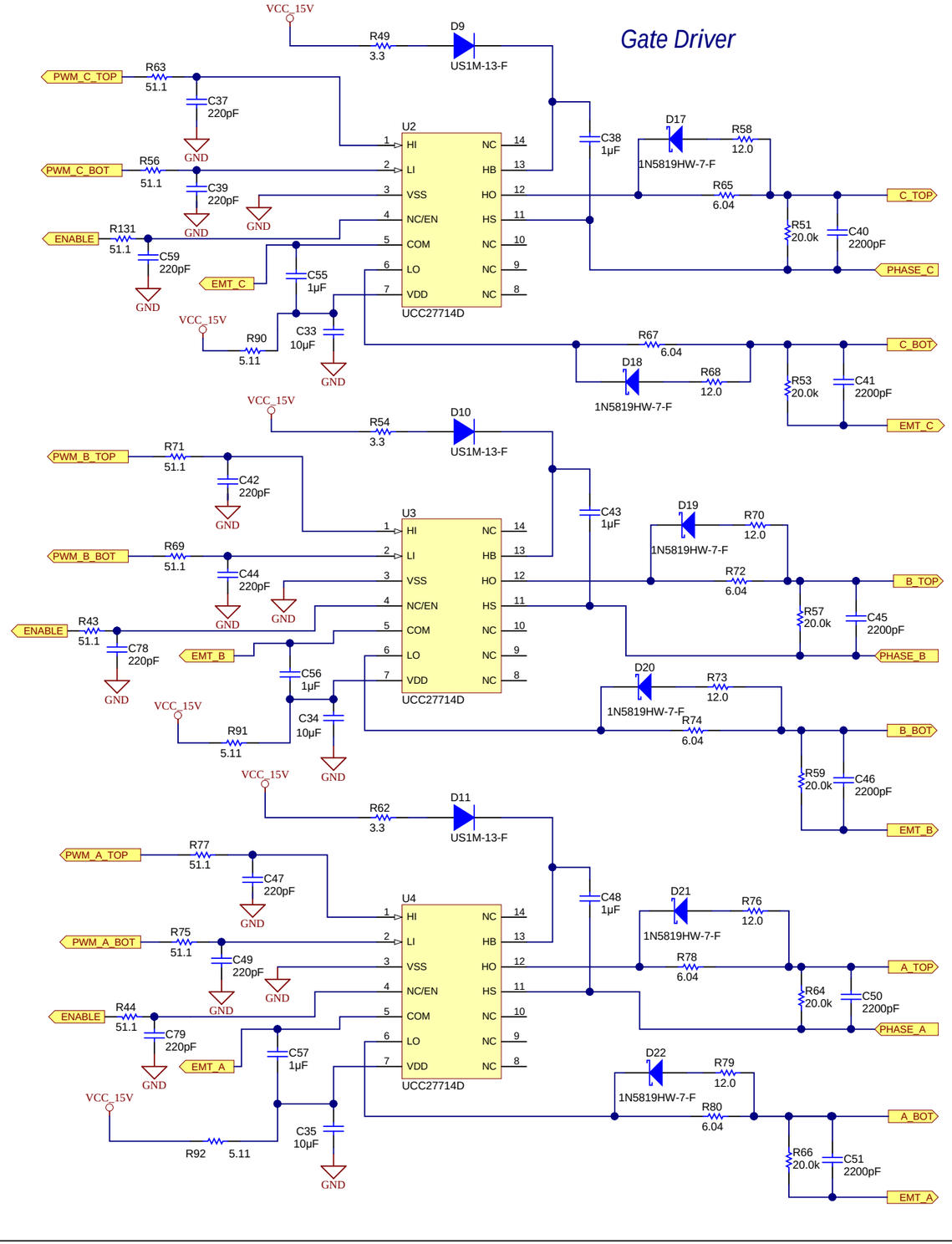
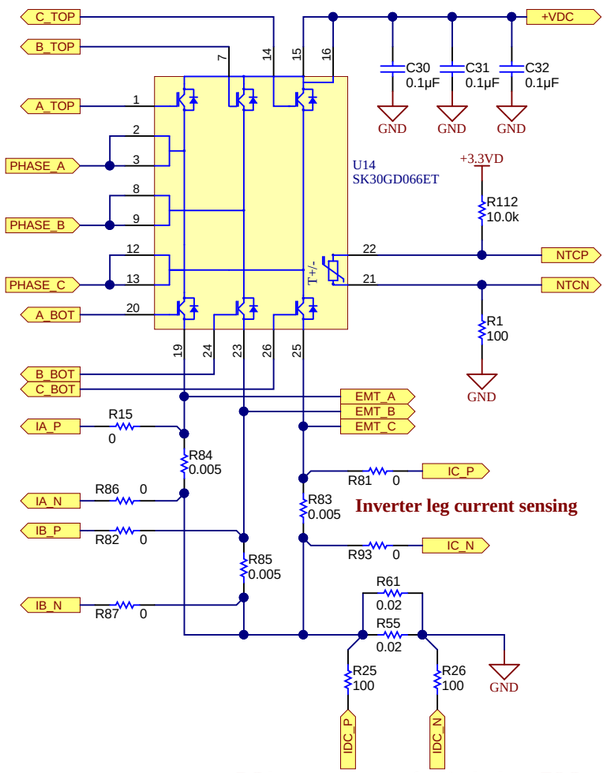
Gate Driver



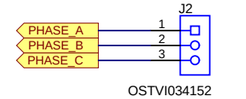
Three Phase Inverter Bridge



Inverter leg current sensing

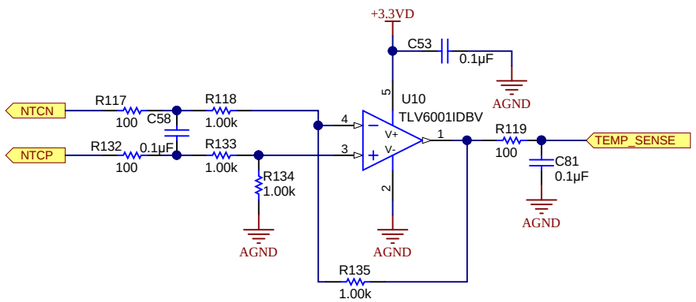
DC bus current sense for single shunt FOC

Motor Winding Connector



OSTVI034152

IGBT Temperature Sensing Signal Conditioning



Orderable: N/A		Designed for: Public Release	Mod. Date: 3/15/2017
TID #: 00778		Project Title: 390V 3-Phase Inverter- 1, 2 & 3 Shunt FOC	
Number: TIDA-00778	Rev: E2	Sheet Title: Inverter	
SVN Rev: Version control disabled		Assembly Variant: 001	Sheet: 2 of 5
Drawn By: Manu Balakrishnan		File: TIDA-00778-Inverter.SchDoc	Size: B
Engineer: Manu Balakrishnan		Contact: http://www.ti.com/support	

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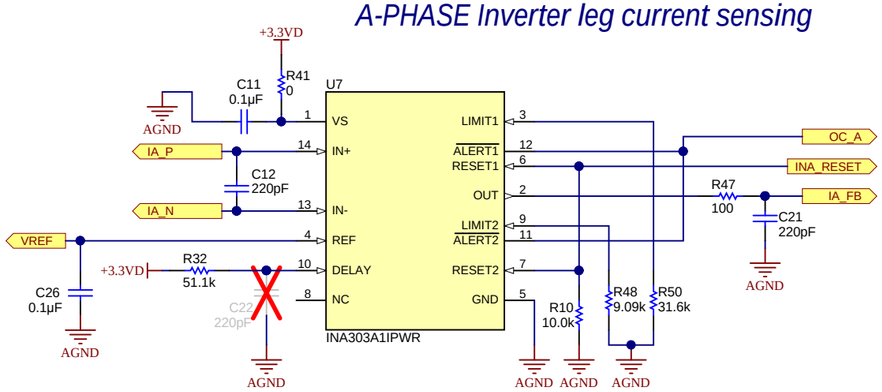
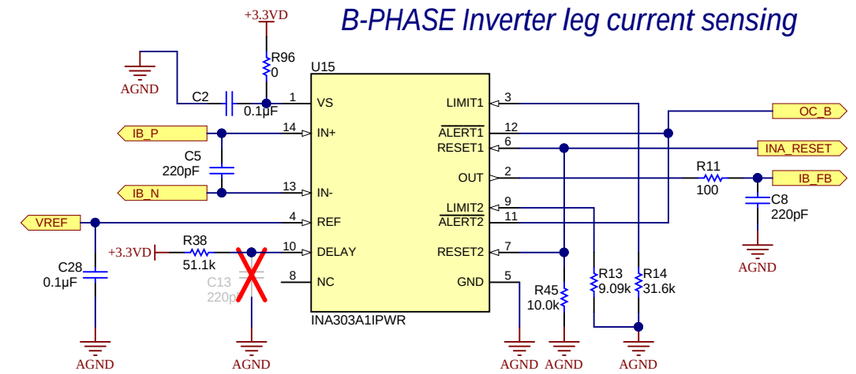
Current Sensing for 2-shunt or 3-Shunt FOC

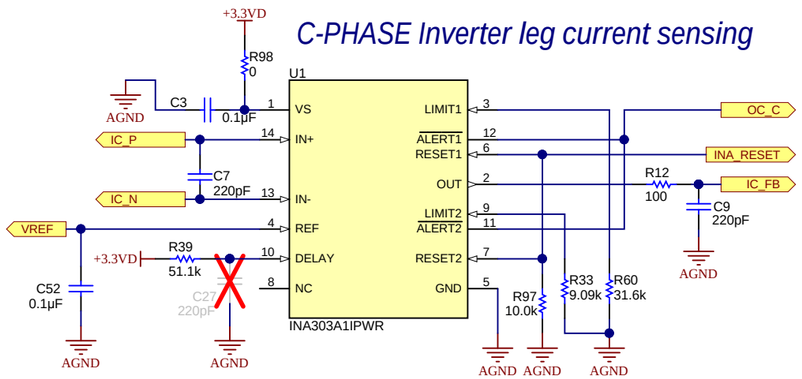
A-PHASE Inverter leg current sensing



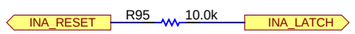
B-PHASE Inverter leg current sensing



C-PHASE Inverter leg current sensing



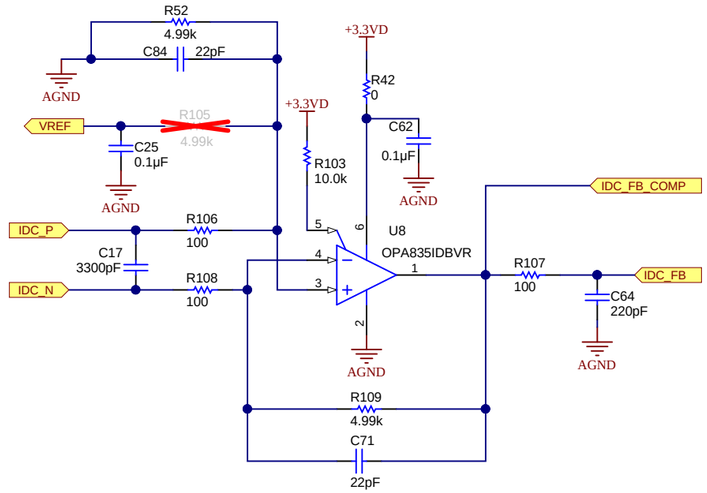
C22,C13, C27 to be DNP to get ,minimum delay in ALERT response



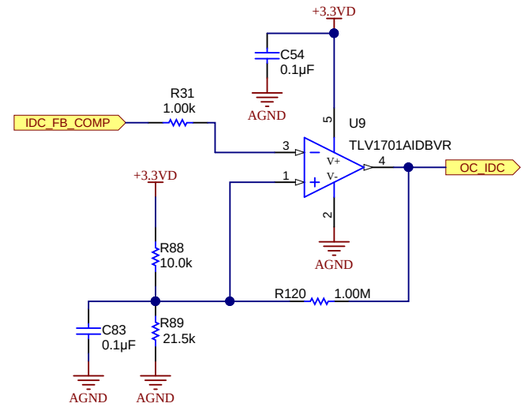
To MCU for the transparent or latch control of ALERT signal from INA303

Current Sensing for 1-shunt FOC

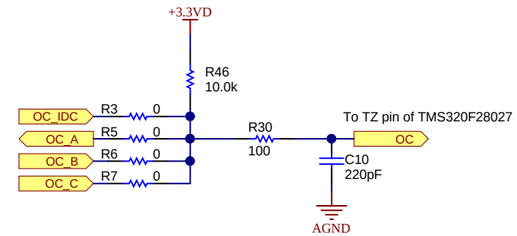
DC Bus- Current Senesing



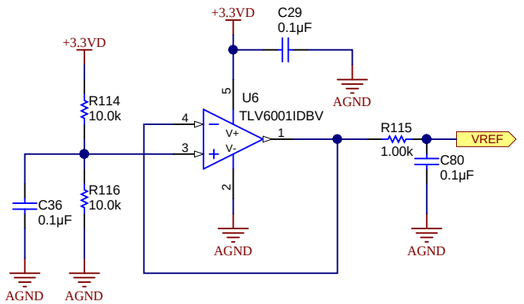
Over Current Protection- DC Bus Current



Wired OR of all the comparator outputs



VREF (1.65 V)



For more accurate VREF generation, a 1.65 V reference IC can be used.

Recommended part is REF2033

Orderable: N/A		Designed for: Public Release	Mod. Date: 3/15/2017
TID #: 00778		Project Title: 390V 3-Phase Inverter- 1, 2 & 3 Shunt FOC	
Number: TIDA-00778	Rev: E2	Sheet Title: Current Sense	
SVN Rev: Version control disabled		Assembly Variant: 001	Sheet: 3 of 5
Drawn By: Manu Balakrishnan		File: TIDA-00778-Current Sense.SchDoc	Size: B
Engineer: Manu Balakrishnan		Contact: http://www.ti.com/support	

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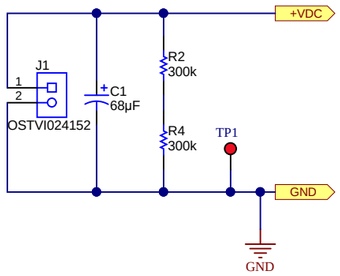
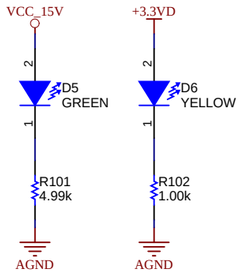
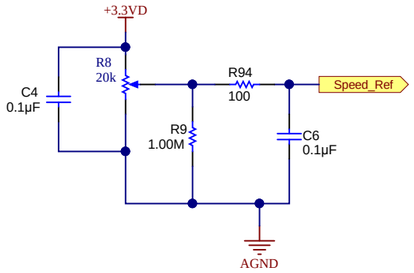
DC Voltage Input



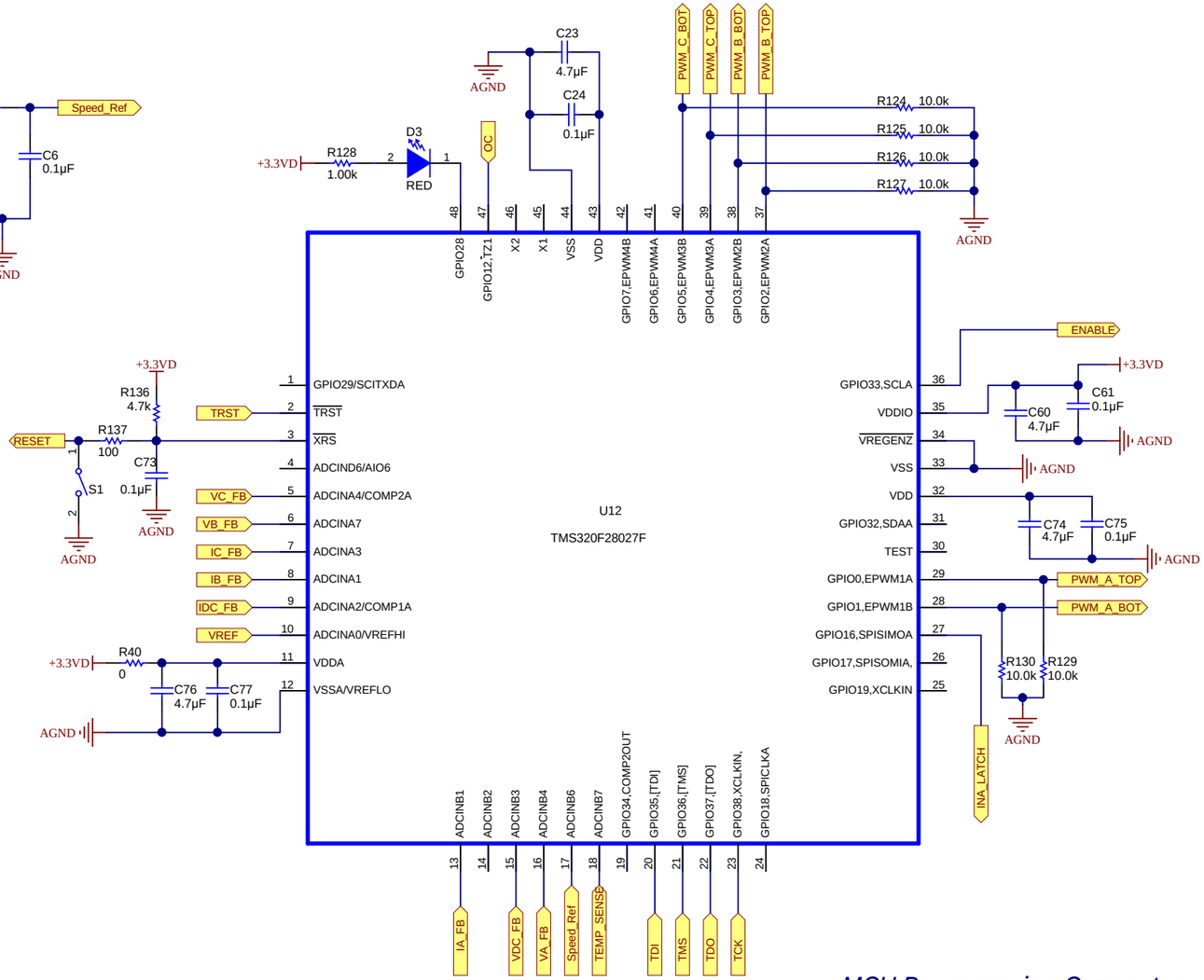
LED Indications



Speed Reference POT

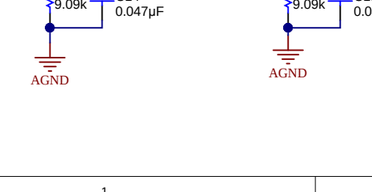


MCU schematic and peripheral connections

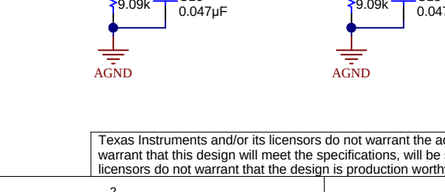


External Bias power supply connection and on-board LDO

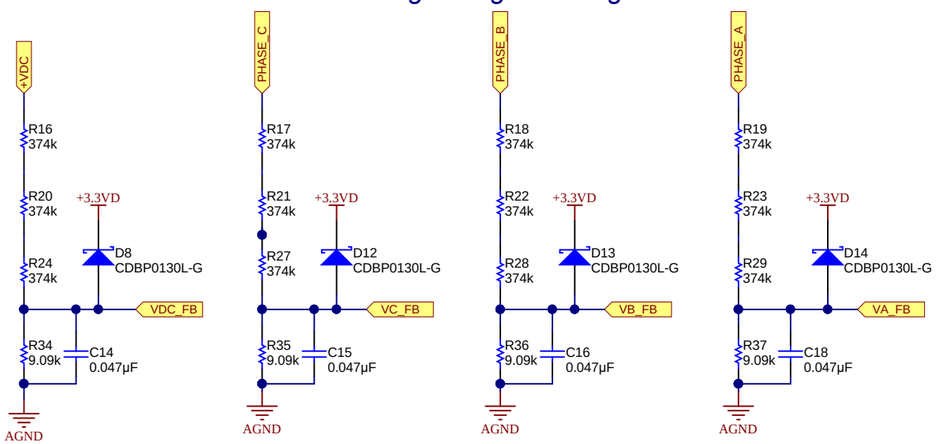
Bias Power Supply Input

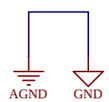


3.3V LDO

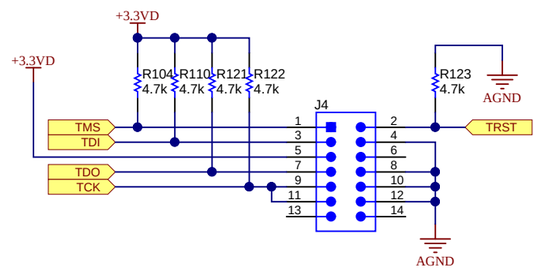


DC bus and winding voltage sensing





MCU Programming Connector



Orderable: N/A		Designed for: Public Release	Mod. Date: 3/16/2017
TID #: 00778		Project Title: 390V 3-Phase Inverter- 1, 2 & 3 Shunt FOC	
Number: TIDA-00778	Rev: E2	Sheet Title: MCU	
SVN Rev: Version control disabled		Assembly Variant: 001	Sheet: 4 of 5
Drawn By: Manu Balakrishnan		File: TIDA-00778-MCU.SchDoc	Size: B
Engineer: Manu Balakrishnan		Contact: http://www.ti.com/support	

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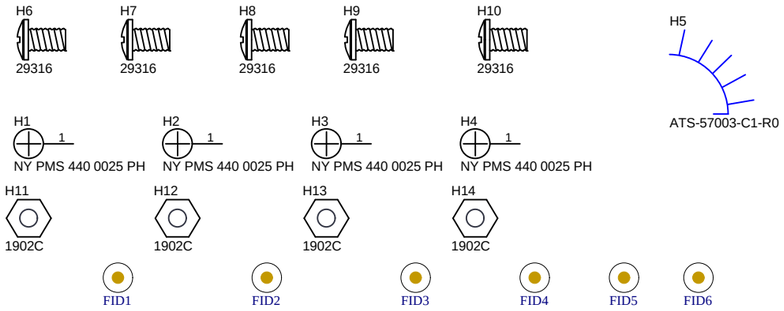

PCB Number: TIDA-00778
PCB Rev: E2

PCB LOGO
Pb-Free Symbol

PCB LOGO
Pb_Free

PCB LOGO
Caution

HIGH VOLTAGE

CAUTION HOT SURFACE

HIGH VOLTAGE

CAUTION HOT SURFACE

ZZ1
Label Assembly Note
This Assembly Note is for PCB labels only

ZZ2
Assembly Note
These assemblies are ESD sensitive, ESD precautions shall be observed.

ZZ3
Assembly Note
These assemblies must be clean and free from flux and all contaminants. Use of no clean flux is not acceptable.

ZZ4
Assembly Note
These assemblies must comply with workmanship standards IPC-A-610 Class 2, unless otherwise specified.

Orderable: N/A	Designed for: Public Release	Mod. Date: 3/15/2017
TID #: 00778	Project Title: 390V 3-Phase Inverter- 1, 2 & 3 Shunt FOC	
Number: TIDA-00778 Rev: E2	Sheet Title: Hardware	
SVN Rev: Version control disabled	Assembly Variant: 001	Sheet: 5 of 5
Drawn By: Manu Balakrishnan	File: TIDA-00778-EVM_Hardware.SchDoc	Size: B
Engineer: Manu Balakrishnan	Contact: http://www.ti.com/support	

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