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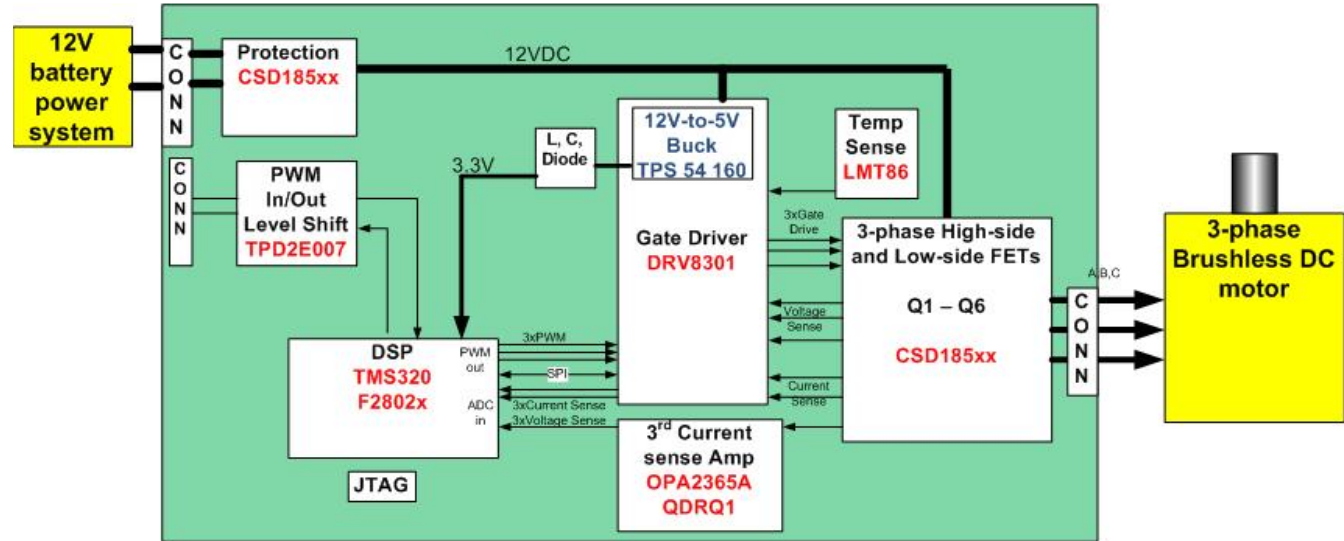
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Revision History	
Revision	Notes

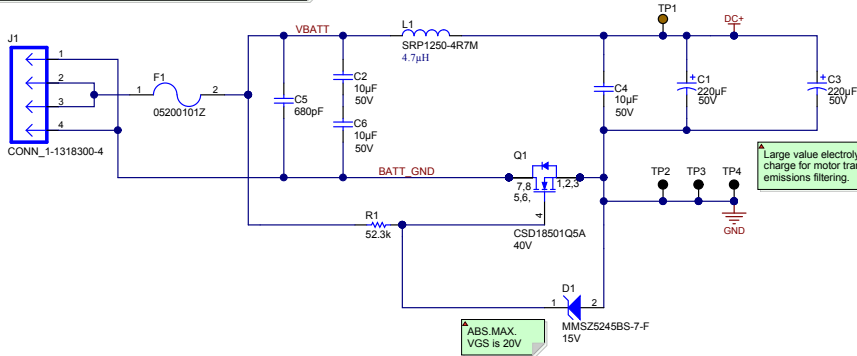


Designed for Public Release	Mod. Date: 2/6/2014
Project Title: Automotive BLDC Motor Drive	
Number: SAT0042	Rev: E5
SVN Rev: Not in version control	Assembly Variant: 001
Drawn By:	File: BLDC Standard sheet cover.SchDoc
Engineer: Clark Kinnaird	Contact: http://www.ti.com/support



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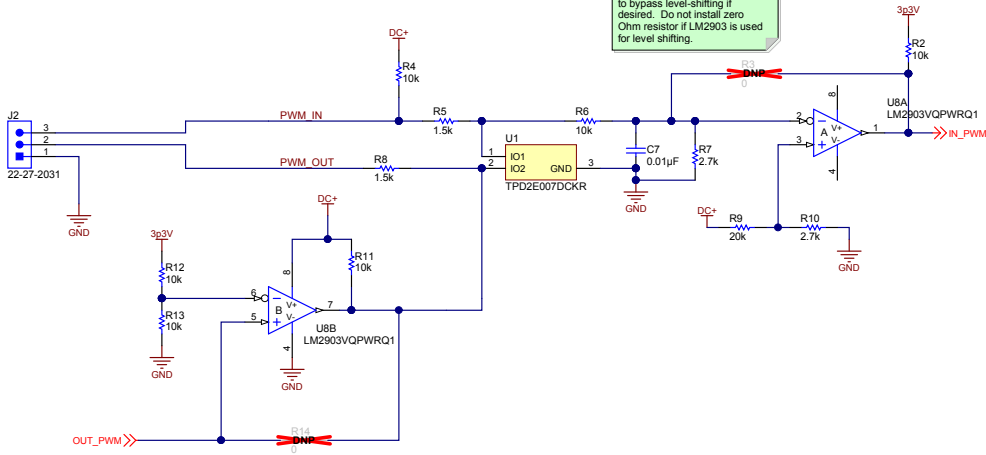
Input voltage is 12V automotive battery power
 Customer may have alternate supply protection circuit design.
 Need 3.3V for DSP and op amps, approx 140 mA for TMS320, 10 mA for
 op amps.



Large value electrolytic capacitors provide bulk
 charge for motor transitions as well as conducted
 emissions filtering.

ABS.MAX.
 VGS is 20V

Zero Ohm resistors can be used
 to bypass level-shifting if
 desired. Do not install zero
 Ohm resistor if LM2903 is used
 for level shifting.

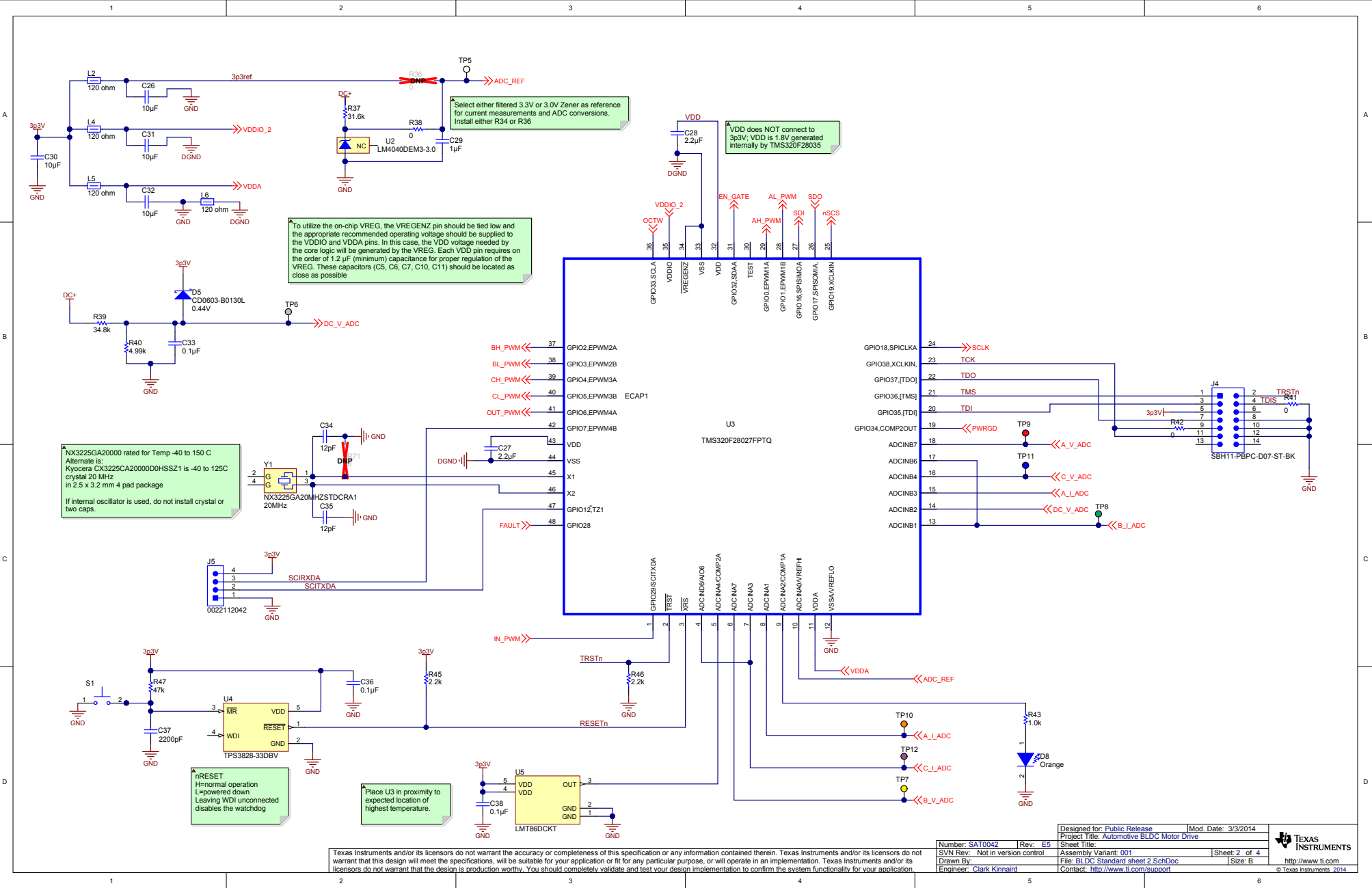


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Project Title: Automotive BLDC Motor Drive			
Number: SAT0042	Rev: E5	Sheet Title:	
SVN Rev: Not in version control		Assembly Variant: 001	Sheet: 1 of 4
Drawn By:		File: BLDC Standard sheet 1.SchDoc	Size: B
Engineer: Clark Kinnaird		Contact: http://www.ti.com/support	



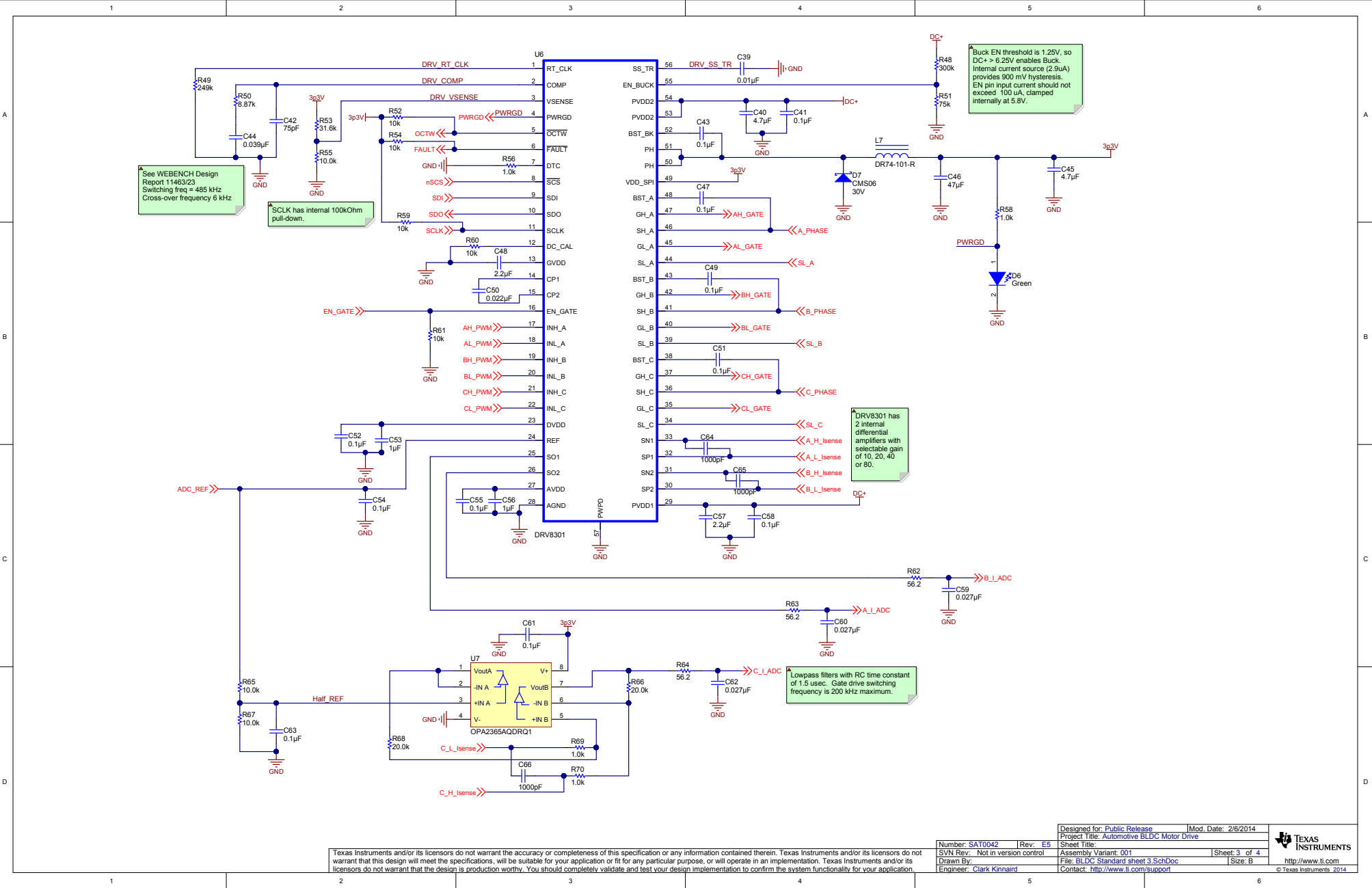
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Designed for Public Release		Mod. Date: 3/3/2014	
Project Title: Automotive BLDC Motor Drive		Sheet Title:	
Number: SAT0042	Rev: E5	Assembly Variant: 001	Sheet: 2 of 4
SVN Rev: Not in version control	Drawn By:	File: BLDC Standard sheet 2.SchDoc	Size: B
Engineer: Clark Kinnaid	Contact: http://www.ti.com/support	http://www.ti.com	

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See WEBENCH Design Report 11463/23
Switching freq = 485 kHz
Cross-over frequency 6 kHz

SCLK has internal 100kOhm pull-down.

Buck EN threshold is 1.25V, so DC+ > 6.25V enables Buck. Internal current source (2.9uA) provides 900 mV hysteresis. EN pin input current should not exceed 100 uA, clamped internally at 5.8V.

DRV8301 has 2 internal differential amplifiers with selectable gain of 10, 20, 40 or 80.

Lowpass filters with RC time constant of 1.5 usec. Gate drive switching frequency is 200 kHz maximum.

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Project Title: Automotive BLDC Motor Drive			
Number: SAT0042	Rev: E5	Sheet Title:	
SVN Rev: Not in version control		Assembly Variant: 001	Sheet: 3 of 4
Drawn By:		File: BLDC Standard sheet 3.SchDoc	Size: B
Engineer: Clark Kinnaird		Contact: http://www.ti.com/support	



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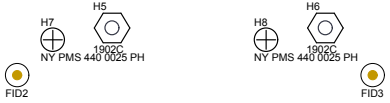
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PCB Number: SAT0042
PCB Rev: E5

PCB
LOGO
Texas Instruments



LBL1
PCB Label
Size: 0.65" x 0.20"

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.

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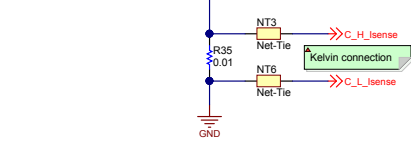
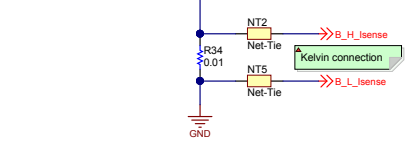
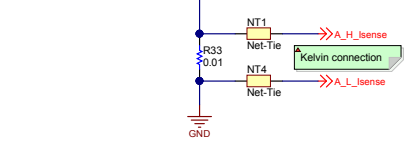
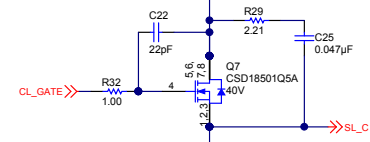
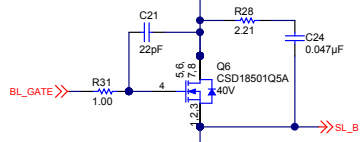
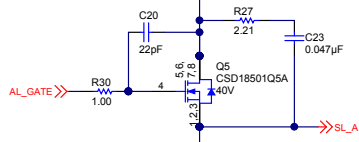
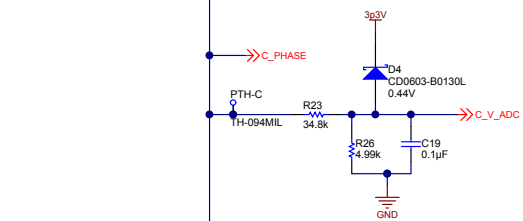
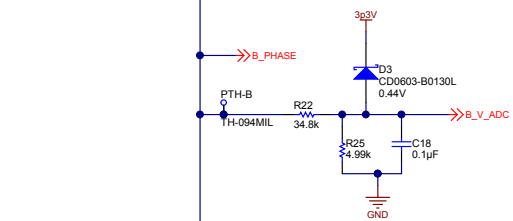
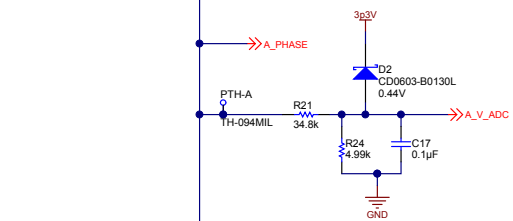
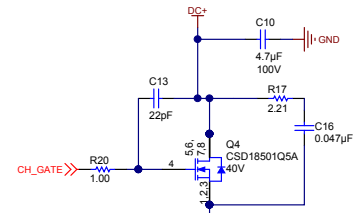
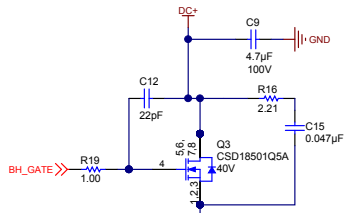
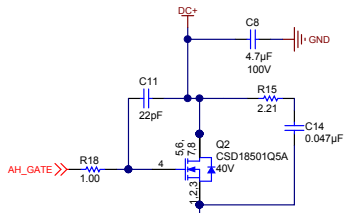
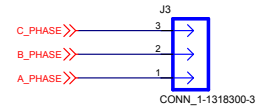
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Designed for Public Release		Mod. Date: 2/6/2014	
Number: SAT0042		Rev: E5	
SUN Rev: Not in version control		Assembly Variant: 001	
Drawn By:		File: Hardware_ANSI-B_SchDoc	
Engineer: Clark Kinnaird		Contact: http://www.ti.com/support	
Sheet Title: Hardware		Sheet: 4 of 4	
Size: B		http://www.ti.com	
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Keep trace distance between Source pins of High-side FET and Drain pins of Low-side FET as short as possible.



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Project Title: Automotive BLDC Motor Drive			
Number: SAT0042	Rev: E5	Sheet Title:	
S/N Rev: Not in version control		Assembly Variant: 001	Sheet: 4 of 4
Drawn By:		File: BLDC Standard sheet 4.SchDoc	Size: B
Engineer: Clark Kinnaid		Contact: http://www.ti.com/support	



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