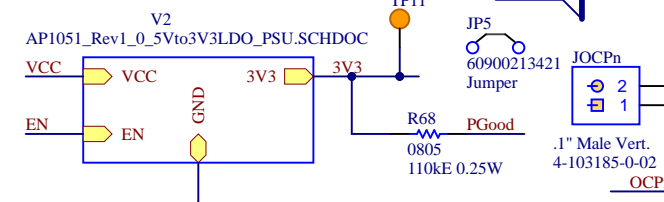
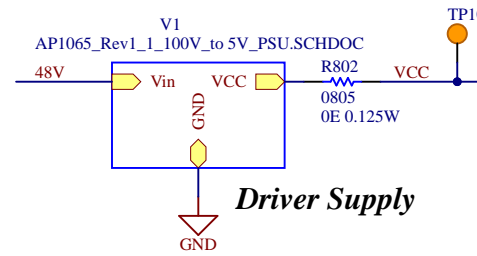
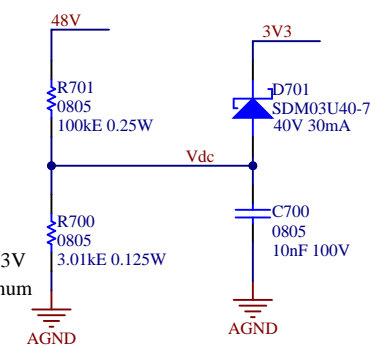
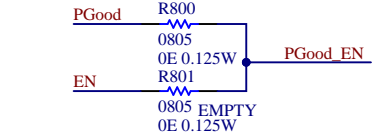
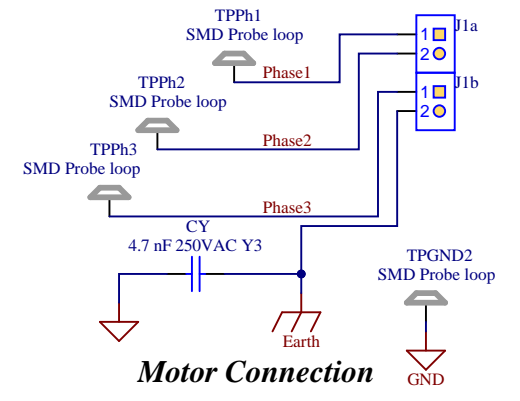
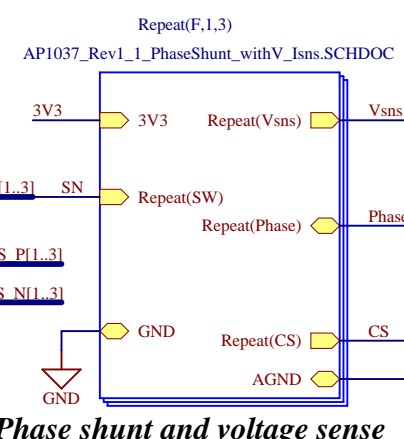
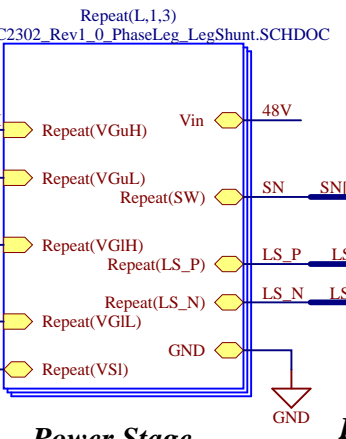
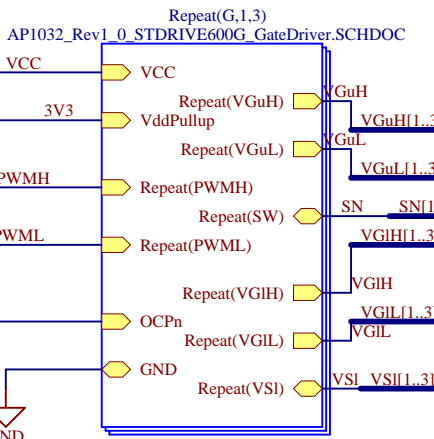


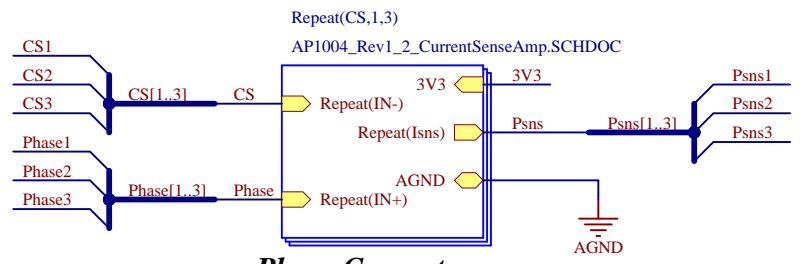
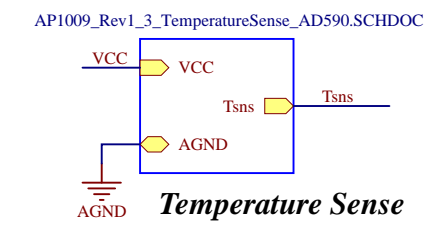
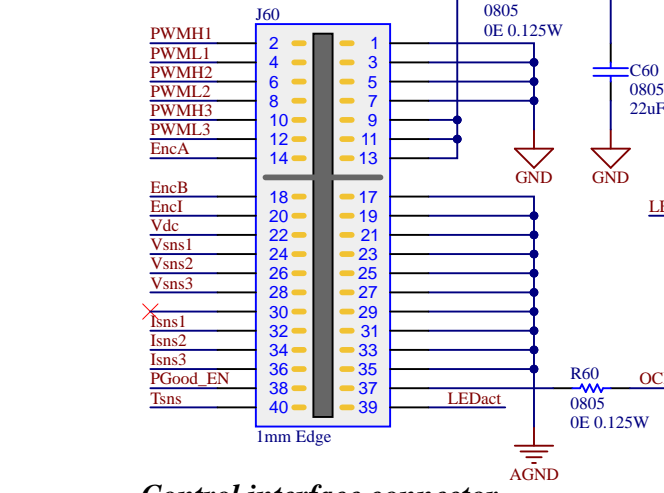
112.93V scale to 3.3V  
29.2 mv/V 112.93 V maximum



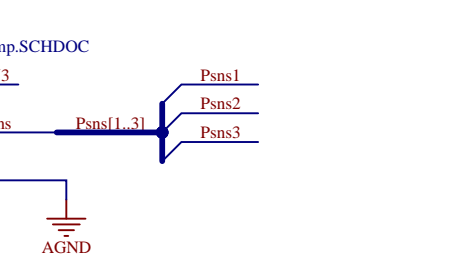
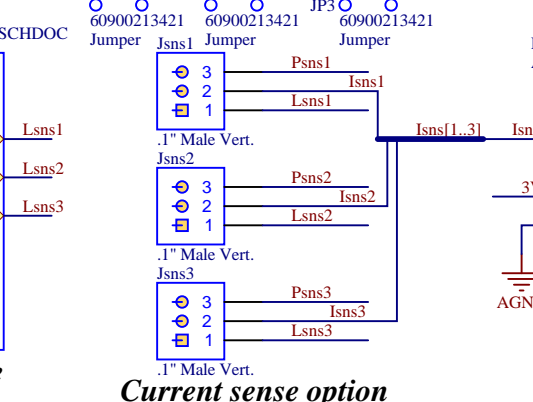
**Controller Analog Interface Power Supply**



**Option**

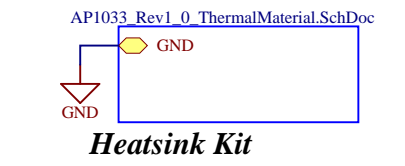
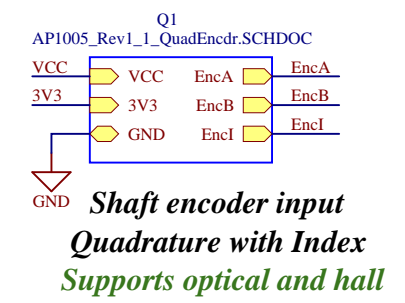


**Current sense option**



**Over Current Protection**

For evaluation only;  
not FCC approved for resale



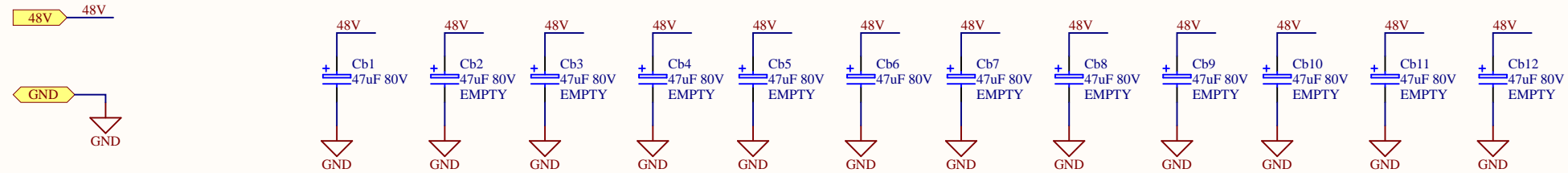
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**3-phase motor drive board using EPC2302 power stage**

Title EPC9194 B5469 Rev. 1.1		Efficient Power Conversion 909 N. Pacific Coast Hwy, Ste. 23 El Segundo, CA 90245 United States <a href="http://www.epc-co.com">www.epc-co.com</a>	
Size: A	Revision: 1		
Date: 7/14/2023	Sheet 1 of 1		
File: EPC9194_B5469_Rev1_1_Main.SCHDOC			

A

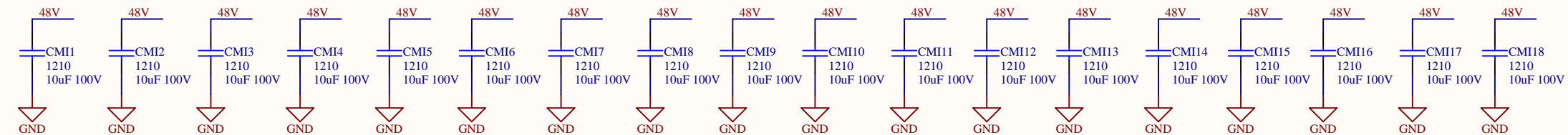
A



### 48 V Bulk Capacitors

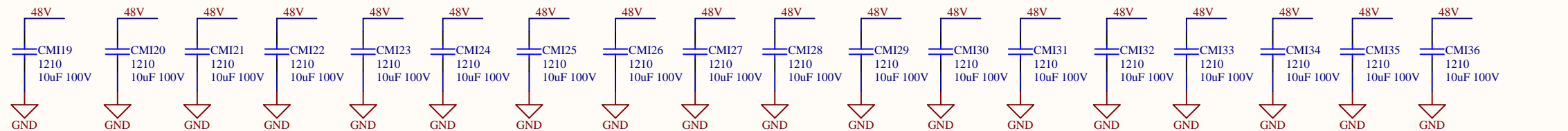
B

B



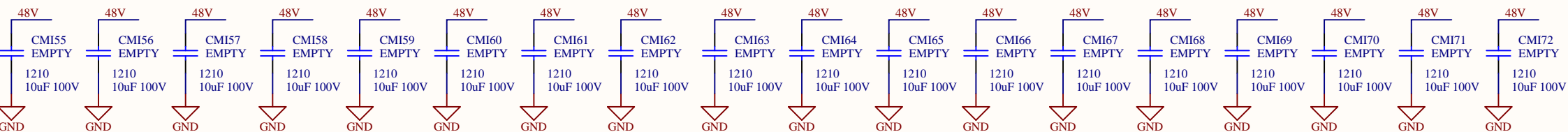
C

C




D

D



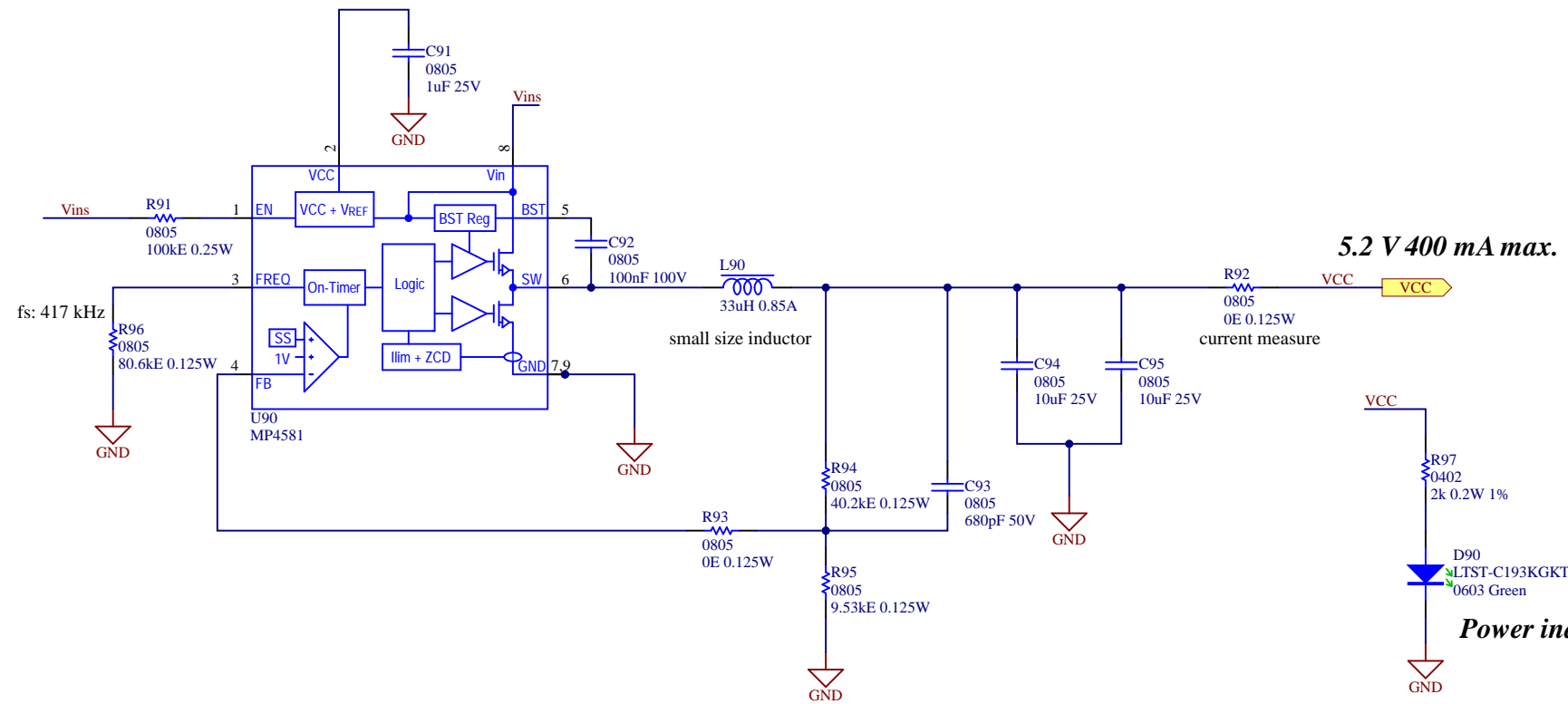
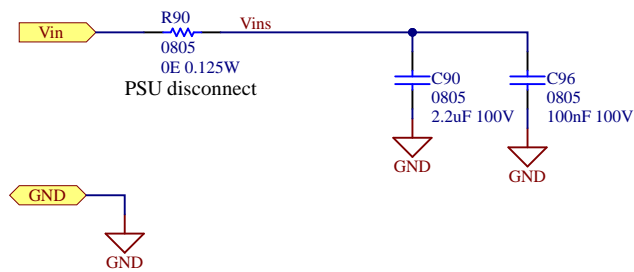
### 48 V Medium Frequency Capacitors

### High Power Motor Drive DcBus Capacitors

Title AP1052 Rev. 1.0		Efficient Power Conversion 909 N. Pacific Coast Hwy, Ste. 231 El Segundo, CA 90245 United States <a href="http://www.epc-co.com">www.epc-co.com</a>	
Size: A	* Revision: 1		
Date: 4/3/2023	Sheet 2 of 1		
File: AP1052_Rev1_0_DcBusCapacitors.SCHDOC			

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**10 Vmin. to 100 Vmax.**



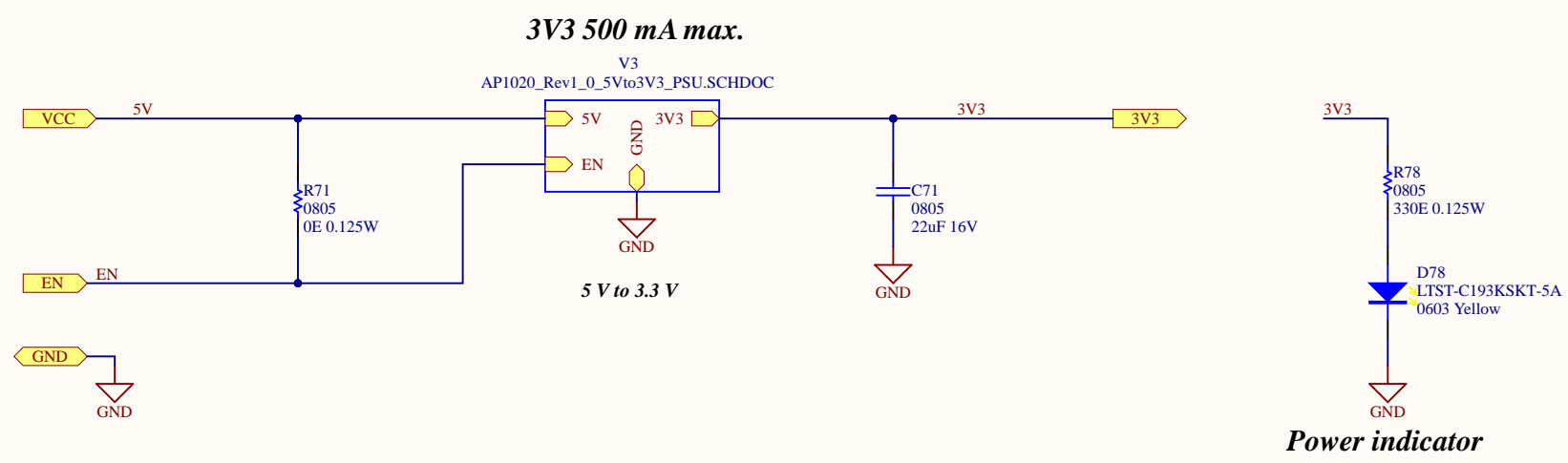
**5.2 V 400 mA max.**

**Power indicator**

**100 V to 5 V Housekeeping Power Supply**

Title AP1065 Rev. 1.1		Efficient Power Conversion 909 N. Pacific Coast Hwy, Ste. 23 El Segundo, CA 90245 United States <a href="http://www.epc-co.com">www.epc-co.com</a>	
Size: A	*	Revision: 1	
Date: 7/14/2023		Sheet 3 of 15	
File: AP1065_Rev1_1_100V_to_5V_PSU.SCHDOC			

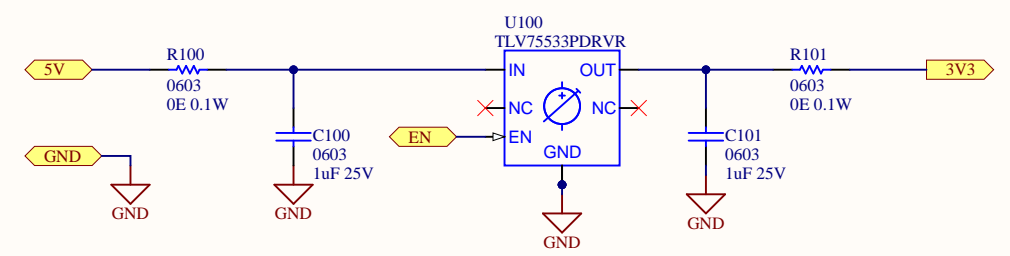
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5V to 3V3 LDO Housekeeping Power Supply

Title AP1051 Rev. 1.0		Efficient Power Conversion 909 N. Pacific Coast Hwy, Ste. 231 El Segundo, CA 90245 United States <a href="http://www.epc-co.com">www.epc-co.com</a>	
Size: A	*	Revision: 1	
Date: 4/3/2023	Sheet 4 of 1		
File: AP1051_Rev1_0_5Vto3V3LDO_PSU.SCHDOC			

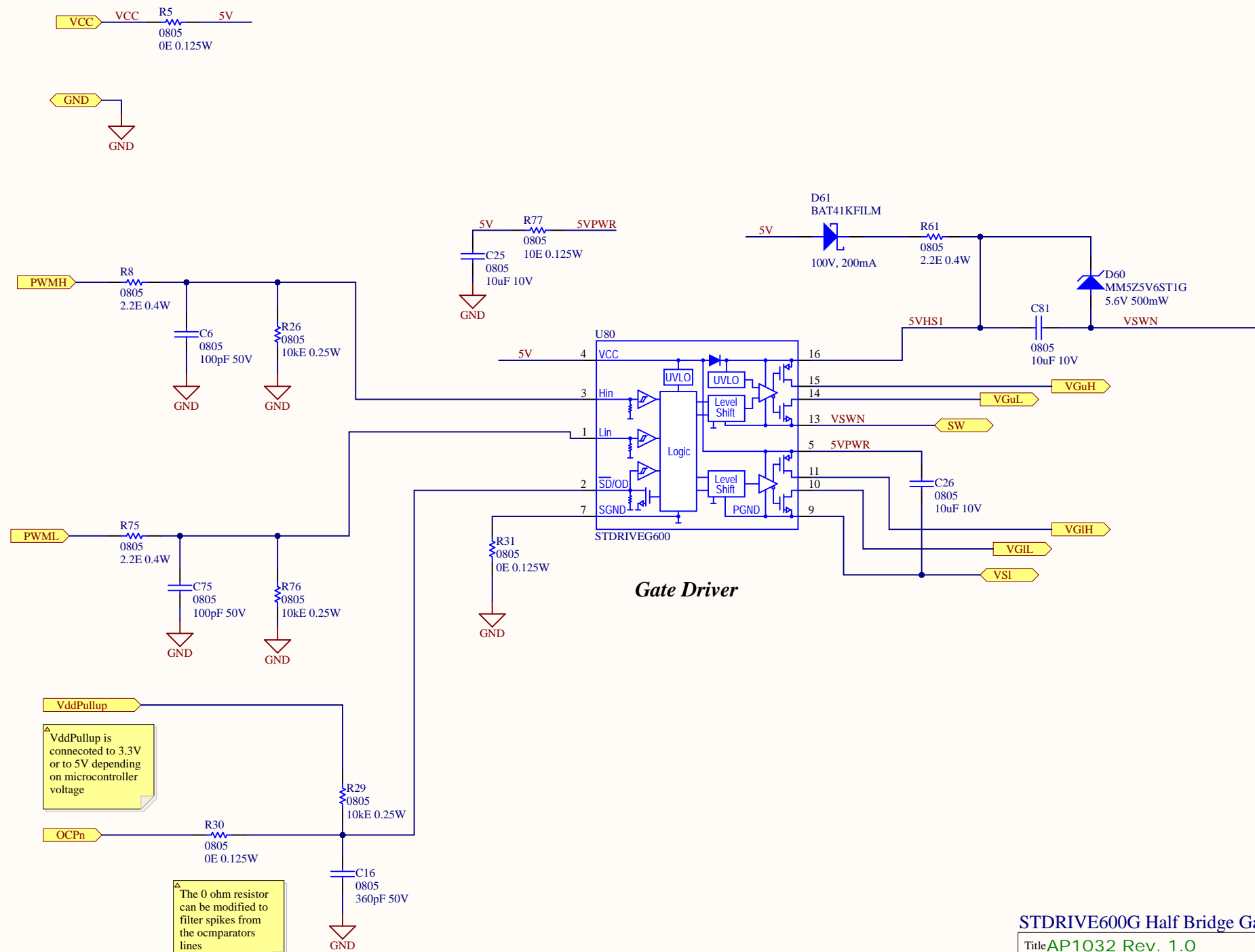




5 V to 3.3 V LDO power supply

Title AP1020 Rev. 1.0		Efficient Power Conversion 909 N. Pacific Coast Hwy, Ste. 231 El Segundo, CA 90245 United States <a href="http://www.epc-co.com">www.epc-co.com</a>	
Size: A	*	Revision: 1	
Date: 4/3/2023		Sheet 5 of 1	
File: AP1020_Rev1_0_5Vto3V3_PSU.SCHDOC			





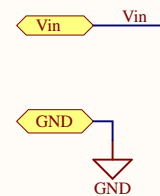
VddPullup is connected to 3.3V or to 5V depending on microcontroller voltage

The 0 ohm resistor can be modified to filter spikes from the comparators lines

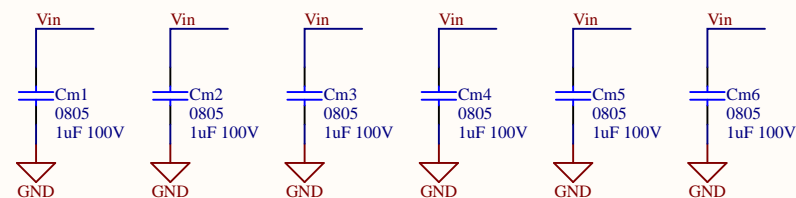
Gate Driver

STDRIVE600G Half Bridge Gate Driver

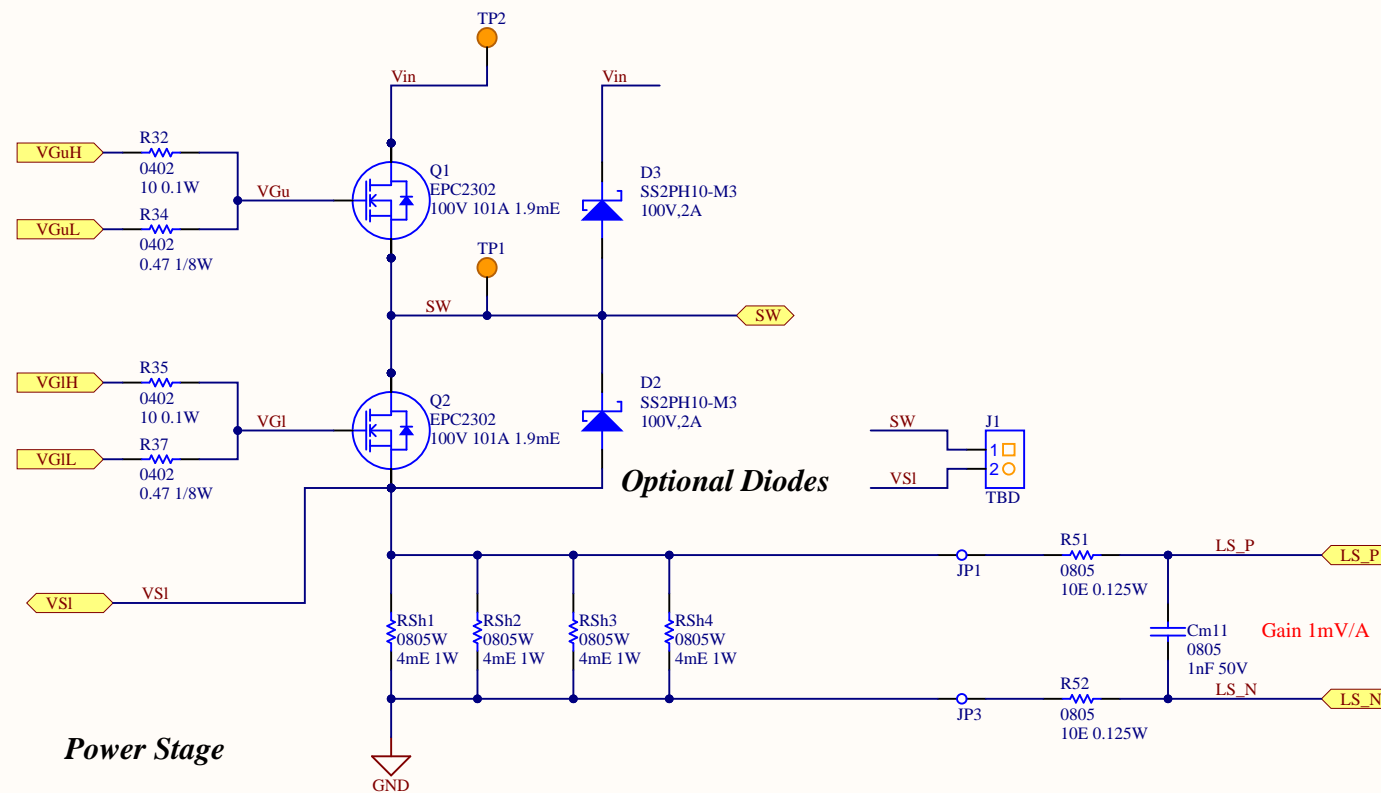
Title AP1032 Rev. 1.0		Efficient Power Conversion 909 N. Pacific Coast Hwy, Ste. 231 El Segundo, CA 90245 United States <a href="http://www.epc-co.com">www.epc-co.com</a>	
Size: A	Revision: 1		
Date: 4/3/2023	Sheet 6 of 1		
File: AP1032_Rev1_0_STDRIVE600G_GateDriver.SCHDOC			



**DC Input  
64 Vmax.**



**Decoupling Capacitors**

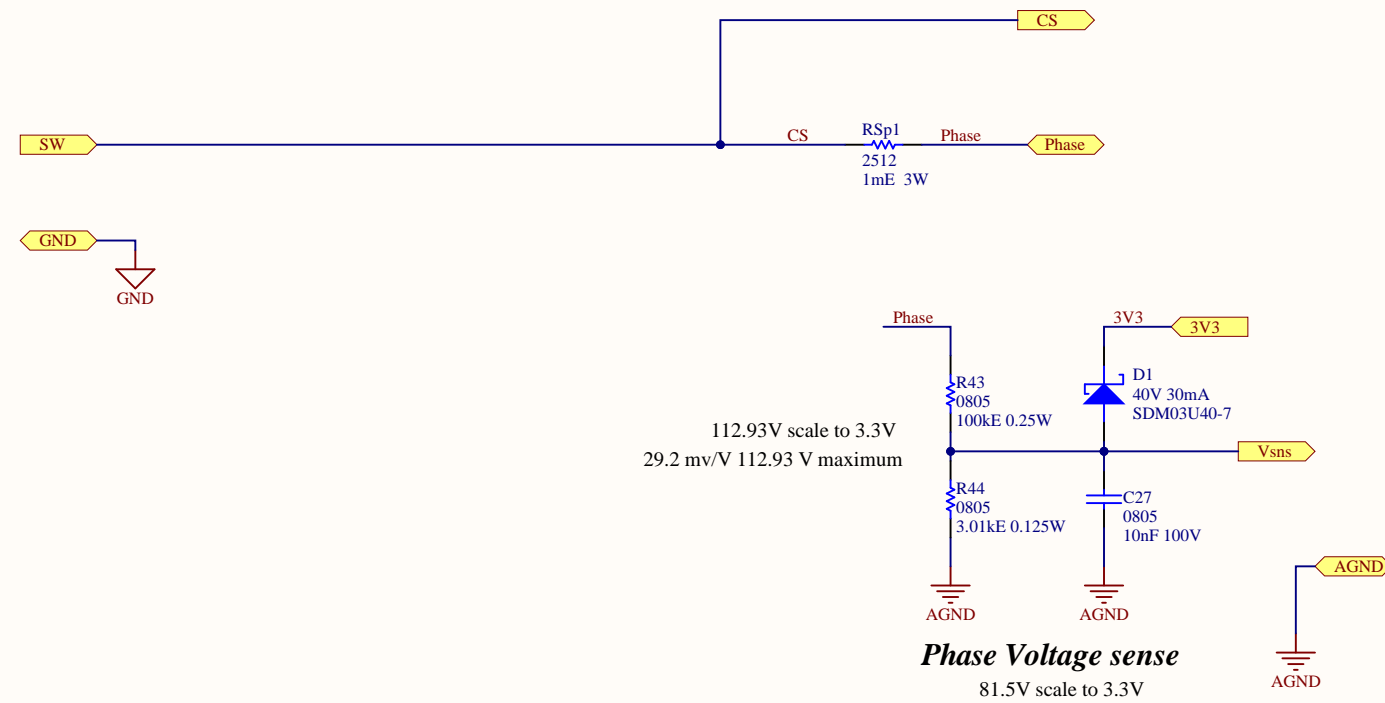


**Power Stage**

**Optional Diodes**

Title <b>EPC2302 PhaseLeg LegShunt Rev 1.0</b>		Efficient Power Conversion 909 N. Pacific Coast Hwy, Ste. 231 El Segundo, CA 90245 United States <a href="http://www.epc-co.com">www.epc-co.com</a>		
Size: A	*	Revision: 1		
Date: 4/3/2023		Sheet 7 of 1		
File: EPC2302_Rev1_0_PhaseLeg_LegShunt.SCHDOC				

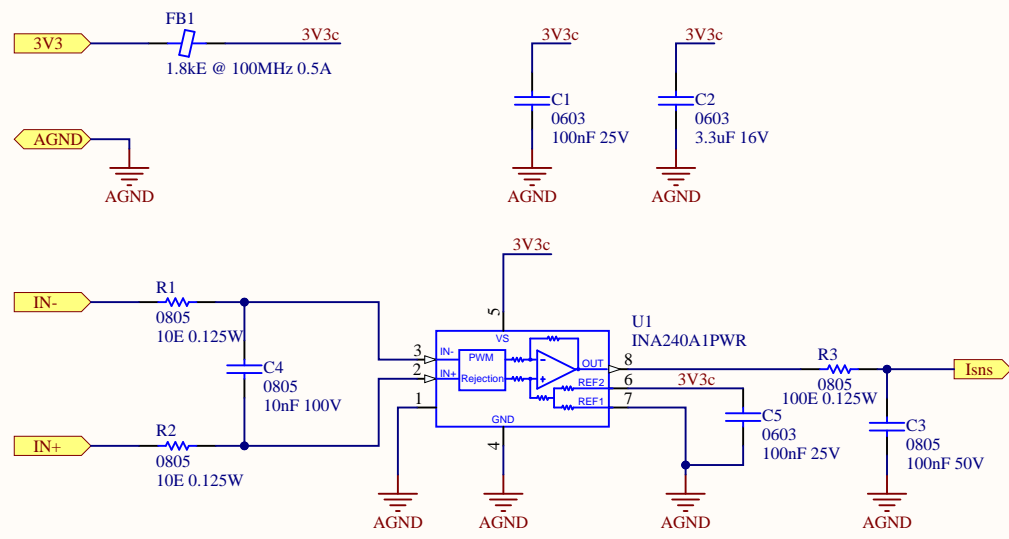
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Phase Shunt and phase voltage sense

Title AP1037 Rev. 1.1		Efficient Power Conversion 909 N. Pacific Coast Hwy, Ste. 231 El Segundo, CA 90245 United States <a href="http://www.epc-co.com">www.epc-co.com</a>	
Size: A	*	Revision: 1	
Date: 7/12/2023	Sheet 8 of 1		
File: AP1037_Rev1_1_PhaseShunt_withV_Isns.SCHDOC			



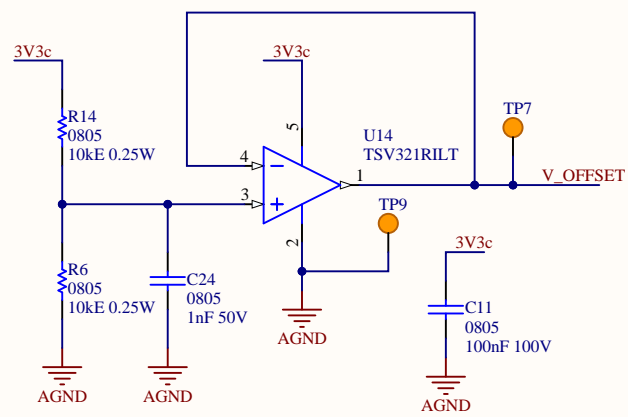
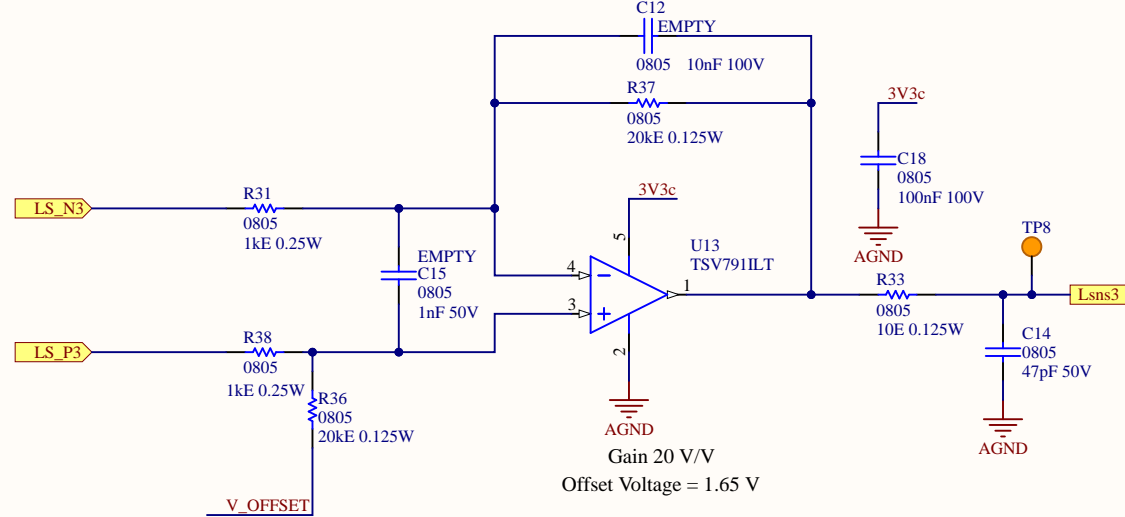
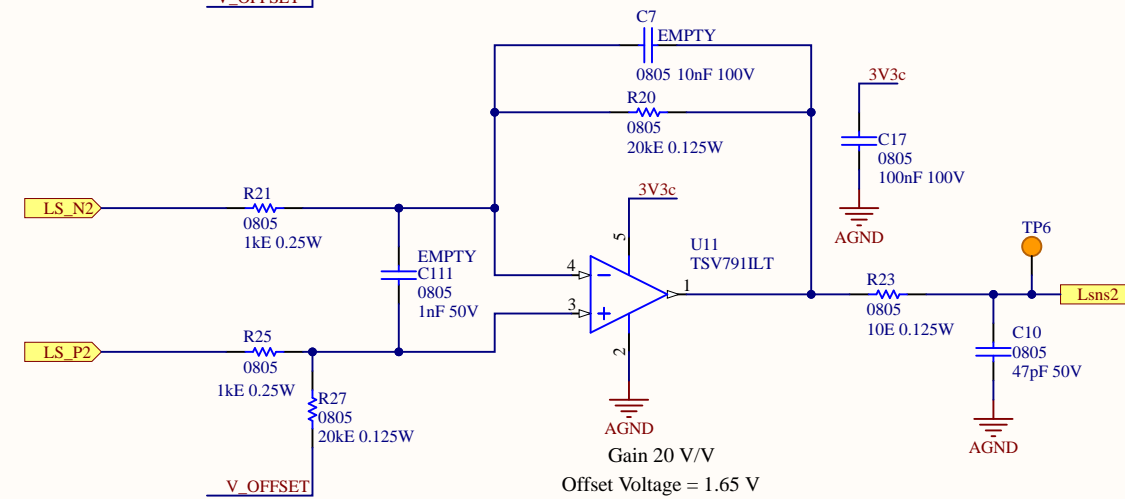
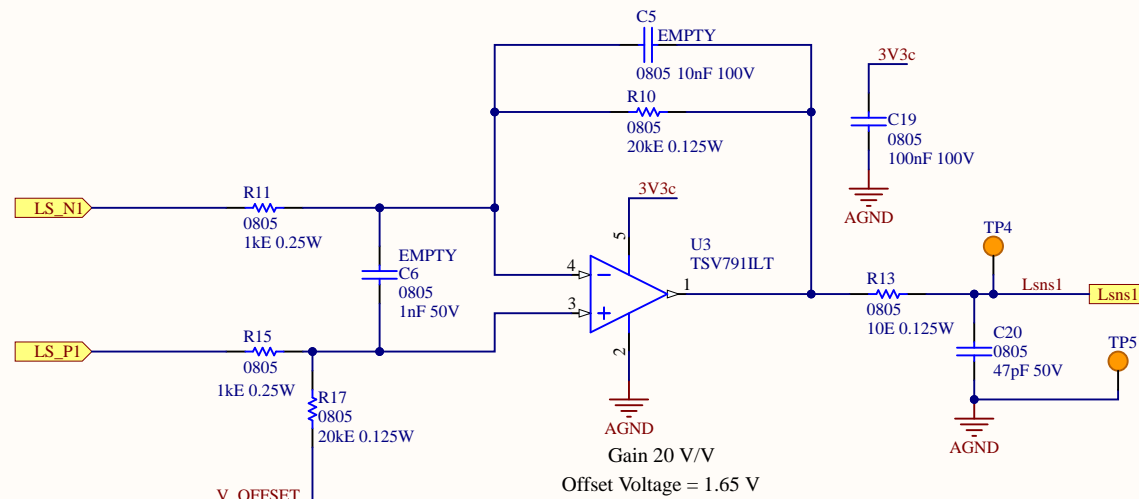
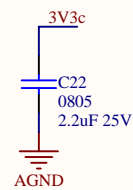
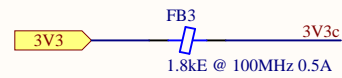


INA240A1PWR Gain 20V/V  
Offset Voltage = 1.65 V

Bi-Directional 80 V Current Sense Amplifier

Title AP1004 Rev. 1.2		Efficient Power Conversion 909 N. Pacific Coast Hwy, Ste. 231 El Segundo, CA 90245 United States <a href="http://www.epc-co.com">www.epc-co.com</a>	
Size: A	*	Revision: 1	
Date: 4/3/2023		Sheet 9 of 1	
File: AP1004_Rev1_2_CurrentSenseAmp.SCHDOC			

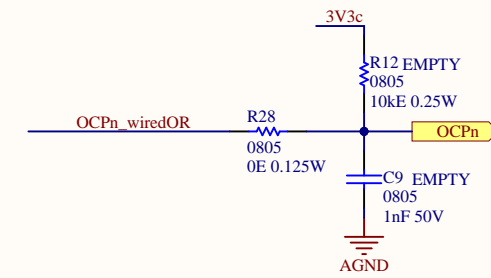
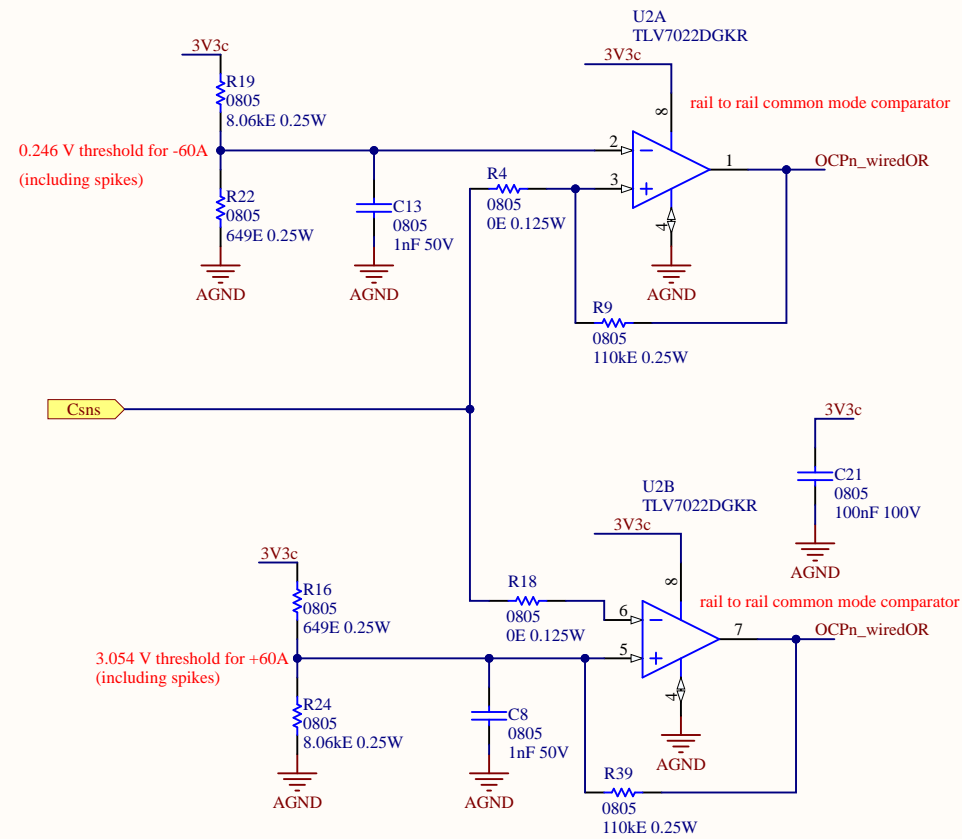
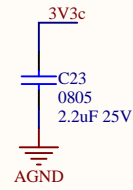
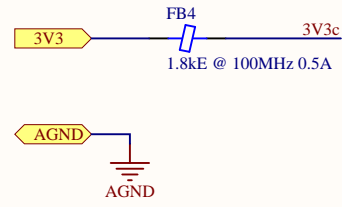




Bi-Directional Leg Current Sense Amplifier

Title AP1035 Rev. 1.0		Efficient Power Conversion 909 N. Pacific Coast Hwy, Ste. 231 El Segundo, CA 90245 United States <a href="http://www.epc-co.com">www.epc-co.com</a>	
Size: A	*	Revision: 1	
Date: 4/3/2023		Sheet 10 of 1	
File: AP1035_Rev1_0_LegSenseAmp.SCHDOC			

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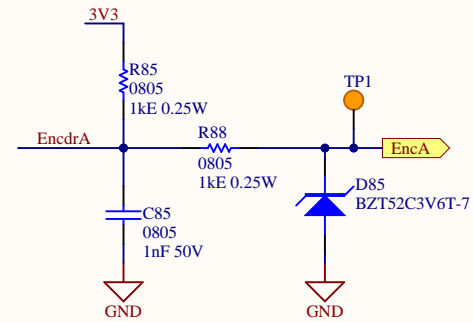
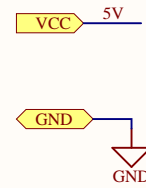


R12 and C9 are not mounted because they are mounted in front of the gate driver.

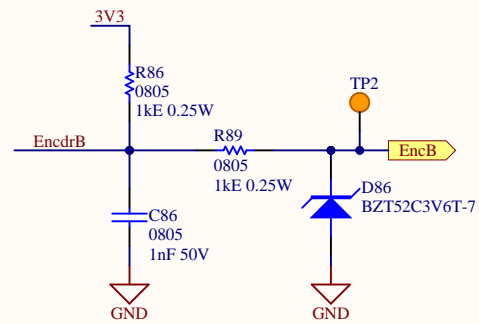
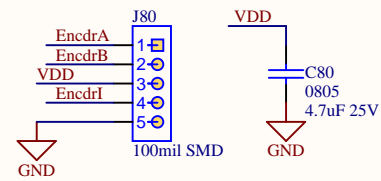
### Bi-Directional Over Current Detection

Title AP1034 Rev. 1.1		Efficient Power Conversion 909 N. Pacific Coast Hwy, Ste. 231 El Segundo, CA 90245 United States <a href="http://www.epc-co.com">www.epc-co.com</a>	
Size: A	*	Revision: 1	
Date: 7/12/2023		Sheet 11 of 1	
File: AP1034_Rev1_2_OverCurrentProtection.SCHDOC			

A

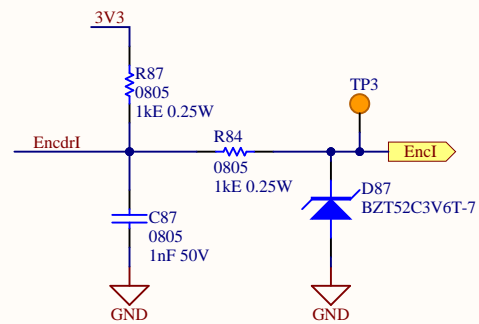
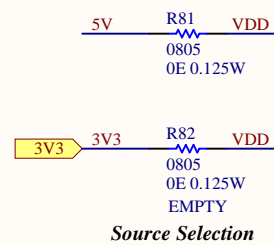


B



**Shaft encoder connection**  
**Quadrature with Index**  
**Supports optical and hall**

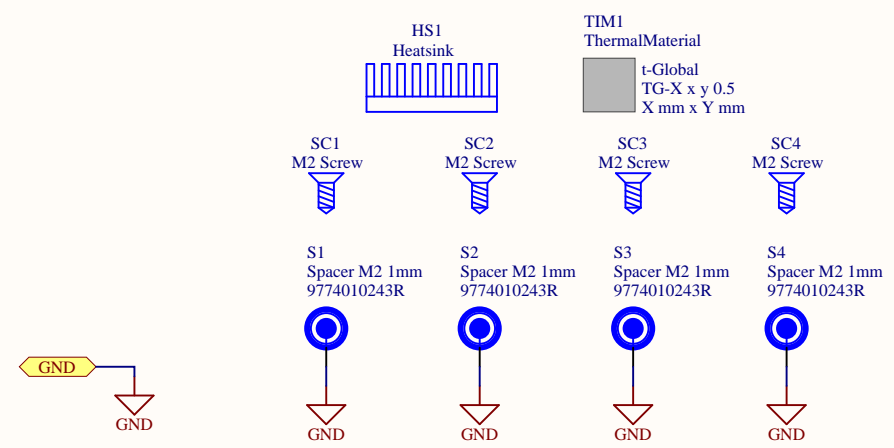
C

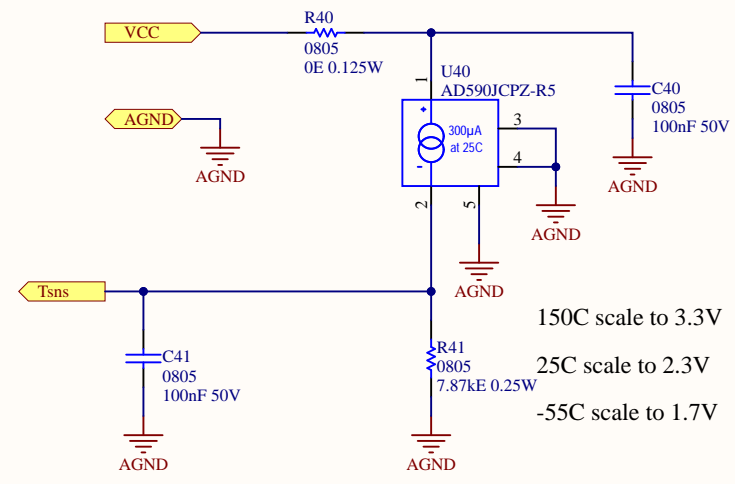


D

**Quadrature Encoder Interface without 5V regulator**

Title AP1005 Rev. 1.1		Efficient Power Conversion 909 N. Pacific Coast Hwy, Ste. 231 El Segundo, CA 90245 United States <a href="http://www.epc-co.com">www.epc-co.com</a>	
Size: A	*	Revision: 1	
Date: 4/3/2023		Sheet 12 of 1	
File: AP1005_Rev1_1_QuadEncdr.SCHDOC			





Temperature sense using AD590 with separate AGND

Title AP1009 Rev. 1.3		Efficient Power Conversion 909 N. Pacific Coast Hwy, Ste. 231 El Segundo, CA 90245 United States <a href="http://www.epc-co.com">www.epc-co.com</a>	
Size: A	*	Revision: 1	
Date: 4/3/2023	Sheet 14 of 15		
File: AP1009_Rev1_3_TemperatureSense_AD590.SCHDOC			

