


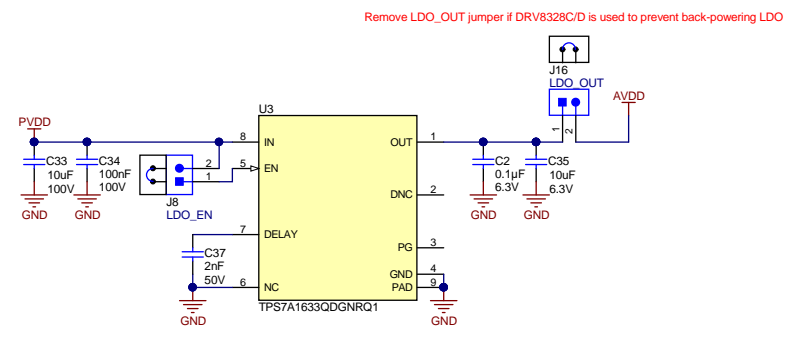
Revision History

Rev	ECN #	Approved Date	Approved by	Notes
N/A	N/A	N/A	N/A	N/A

Place Block Diagram here (if appropriate) or delete this text box.
 If using a block diagram from another tool, save the picture as a .bmp file.
 Then, use menu Place|Drawing Tools|Graphic to insert the .png/.svg/.bmp file on the schematic.

Orderable: ChangeMe in variant	Designed for: Public Release	Mod. Date: 5/6/2021	 TEXAS INSTRUMENTS http://www.ti.com © Texas Instruments 2021
TID #: N/A	Project Title: DRV8328AEVM		
Number: MD053	Rev: A	Sheet Title:	
SVN Rev: Not in version control	Assembly Variant: 001	Sheet: 1 of 5	
Drawn By: Aaron Barrera	File: MD053A_BlockDiagram.SchDoc	Size: B	
Engineer: Aaron Barrera	Contact: http://www.ti.com/support		

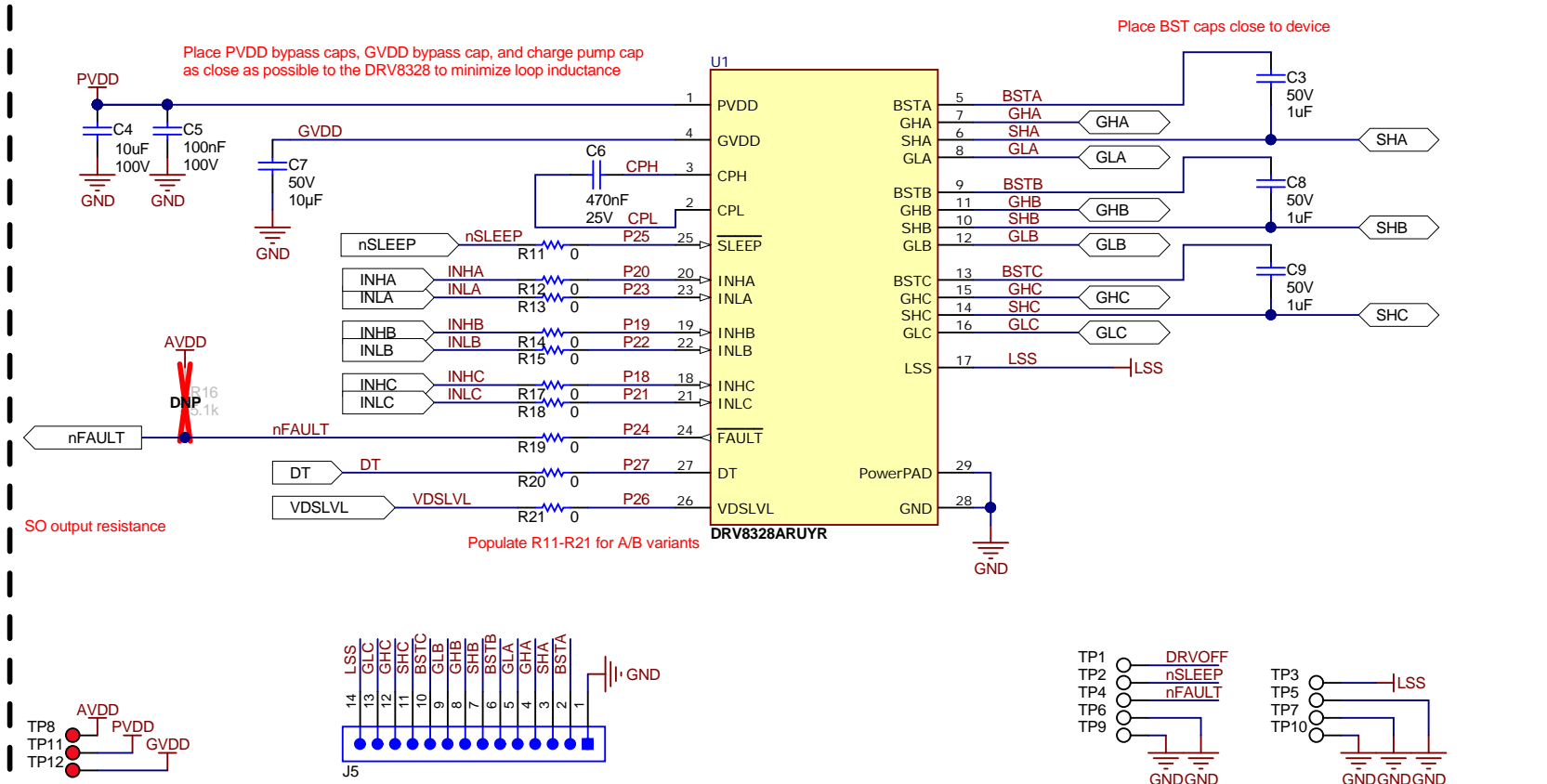
Texas Instruments and/or its licensors do not warrant the accuracy or completeness of this specification or any information contained therein. Texas Instruments and/or its licensors do not warrant that this design will meet the specifications, will be suitable for your application or fit for any particular purpose, or will operate in an implementation. Texas Instruments and/or its licensors do not warrant that the design is production worthy. You should completely validate and test your design implementation to confirm the system functionality for your application.



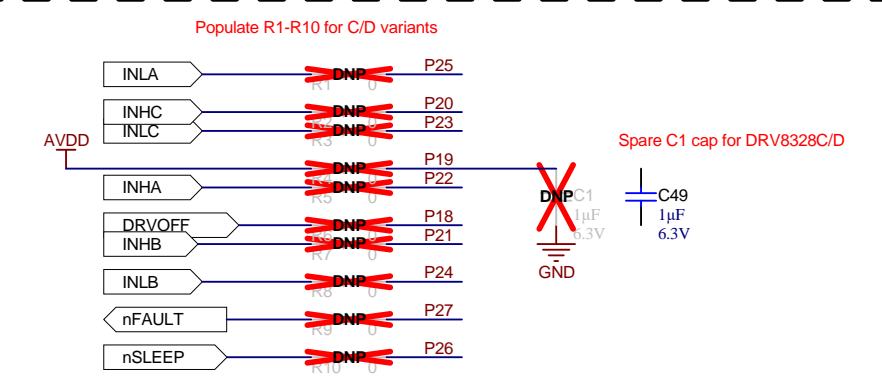
Texas Instruments and/or its licensors do not warrant the accuracy or completeness of this specification or any information contained therein. Texas Instruments and/or its licensors do not warrant that this design will meet the specifications, will be suitable for your application or fit for any particular purpose, or will operate in an implementation. Texas Instruments and/or its licensors do not warrant that the design is production worthy. You should completely validate and test your design implementation to confirm the system functionality for your application.

Orderable: ChangeMe in variant	Designed for: Public Release	Mod. Date: 10/27/2021	
TID #: N/A	Project Title: DRV8328AEVM		
Number: MD053	Rev: A	Sheet Title:	
SVN Rev: Not in version control	Assembly Variant: 001	Sheet: 2 of 3	
Drawn By: Aaron Barrera	File: MD053A_LDO_SchDoc	Size: A2	
Engineer: Aaron Barrera	Contact: http://www.ti.com/support		http://www.ti.com

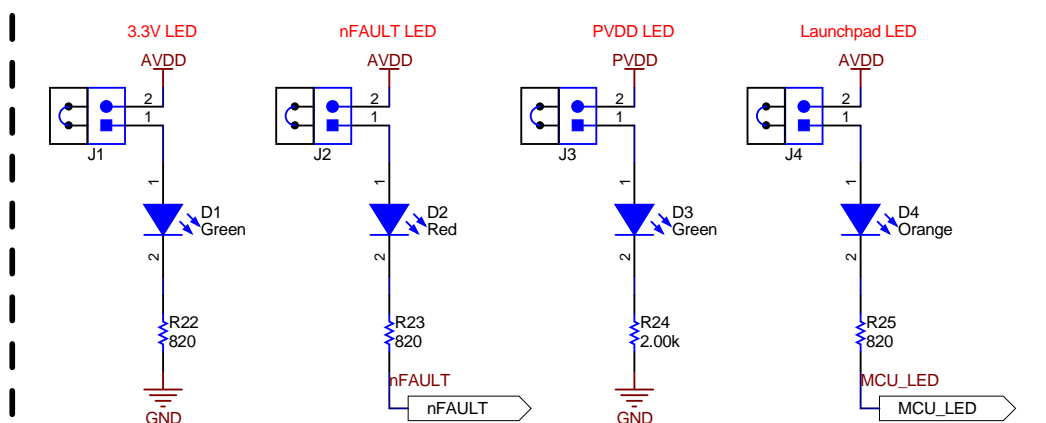
DRV8328A/B/C/D



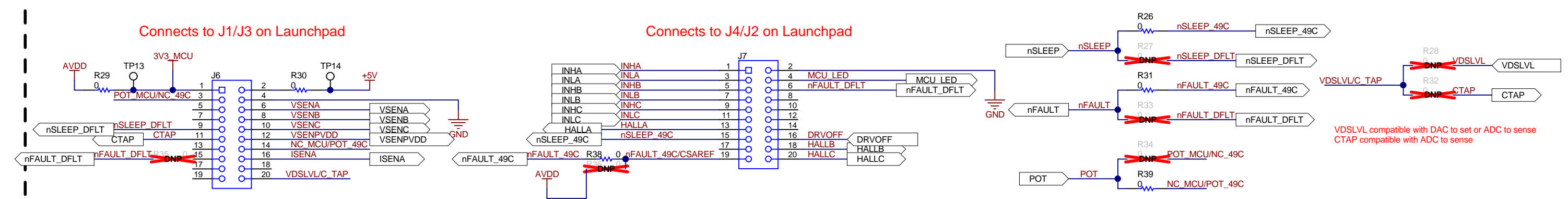
DRV8328C/D VARIANT PIN SELECT



STATUS LEDs



LAUNCHPAD CONNECTORS AND CONNECTIONS



Mates to LAUNCHXL-F280049C headers J1/J3 and J4/J2
Specifically analyzed compatibility with: MSP4302355, LAUNCHXL-F280025C, LAUNCHXL-F280049C, LAUNCHXL-F28069M, LAUNCHXL-F28027F, EK-TM4C123GXL, and MSPM0G350x microcontrollers

Orderable: ChangeMe in variant	Designed for: Public Release	Mod. Date: 10/27/2021
TID #: N/A	Project Title: DRV8328AEVM	
Number: MD053	Rev: A	Sheet Title:
SVN Rev: Not in version control	Assembly Variant: 001	Sheet: 2 of 5
Drawn By: Aaron Barrera	File: MD053A_DRIVER.SchDoc	Size: B
Engineer: Aaron Barrera	Contact: http://www.ti.com/support	

TEXAS INSTRUMENTS
<http://www.ti.com>
© Texas Instruments 2021

Texas Instruments and/or its licensors do not warrant the accuracy or completeness of this specification or any information contained therein. Texas Instruments and/or its licensors do not warrant that this design will meet the specifications, will be suitable for your application or fit for any particular purpose, or will operate in an implementation. Texas Instruments and/or its licensors do not warrant that the design is production worthy. You should completely validate and test your design implementation to confirm the system functionality for your application.

POWER STAGE AND FETS

PHASE A

PHASE B

PHASE C

RC Snubber, HS Drain to LS Source cap, and GS Cap or Res are all recommended, but optional, protection circuits

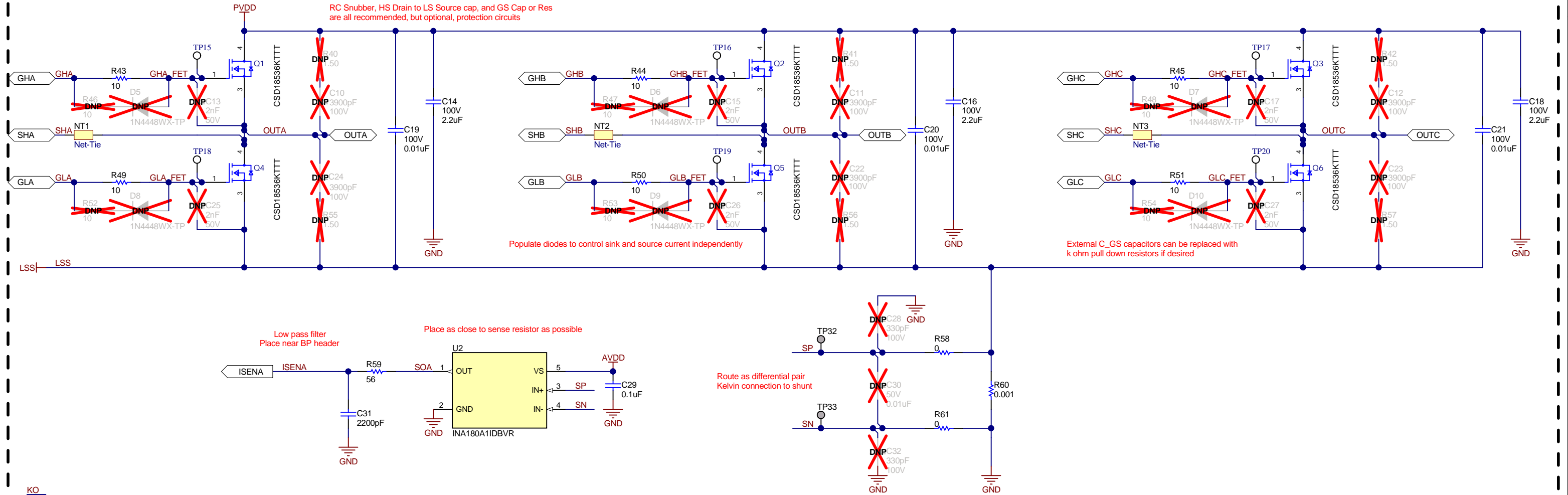
Populate diodes to control sink and source current independently

External C_{GS} capacitors can be replaced with k ohm pull down resistors if desired

Low pass filter
Place near BP header

Place as close to sense resistor as possible

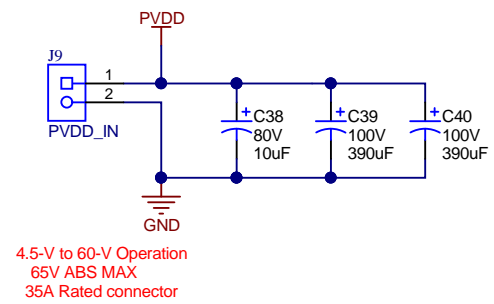
Route as differential pair
Kelvin connection to shunt



Texas Instruments and/or its licensors do not warrant the accuracy or completeness of this specification or any information contained therein. Texas Instruments and/or its licensors do not warrant that this design will meet the specifications, will be suitable for your application or fit for any particular purpose, or will operate in an implementation. Texas Instruments and/or its licensors do not warrant that the design is production worthy. You should completely validate and test your design implementation to confirm the system functionality for your application.

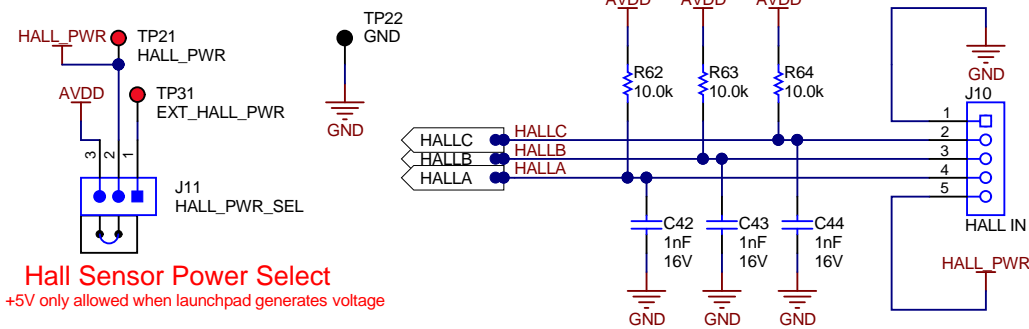
Orderable: ChangeMe in variant	Designed for: Public Release	Mod. Date: 10/24/2021
TID #: N/A	Project Title: DRV8328AEVM	
Number: MD053	Rev: A	Sheet Title:
SVN Rev: Not in version control	Assembly Variant: 001	Sheet: 3 of 5
Drawn By:	File: MD053A_FETS_AND_POWER_STAGE.SchDoc	Size: B
Engineer: Aaron Barrera	Contact: http://www.ti.com/support	

MAIN SUPPLY INPUT



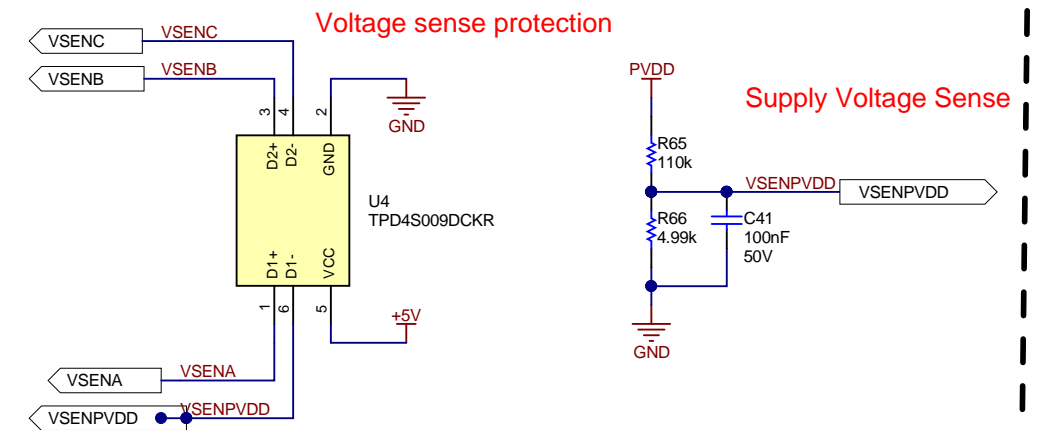
4.5-V to 60-V Operation
65V ABS MAX
35A Rated connector

HALL SENSOR INPUT AND POWER



Hall Sensor Power Select
+5V only allowed when launchpad generates voltage

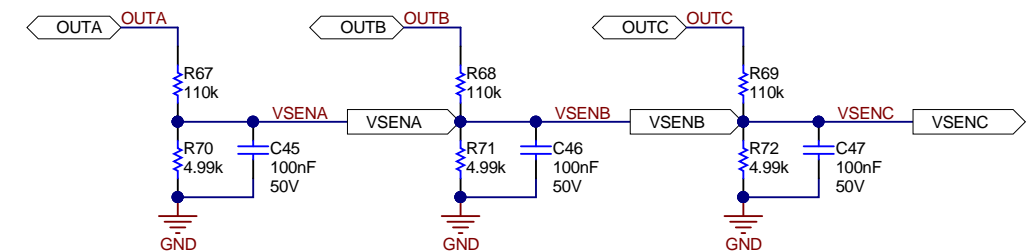
VOLTAGE SENSE & PROTECTION



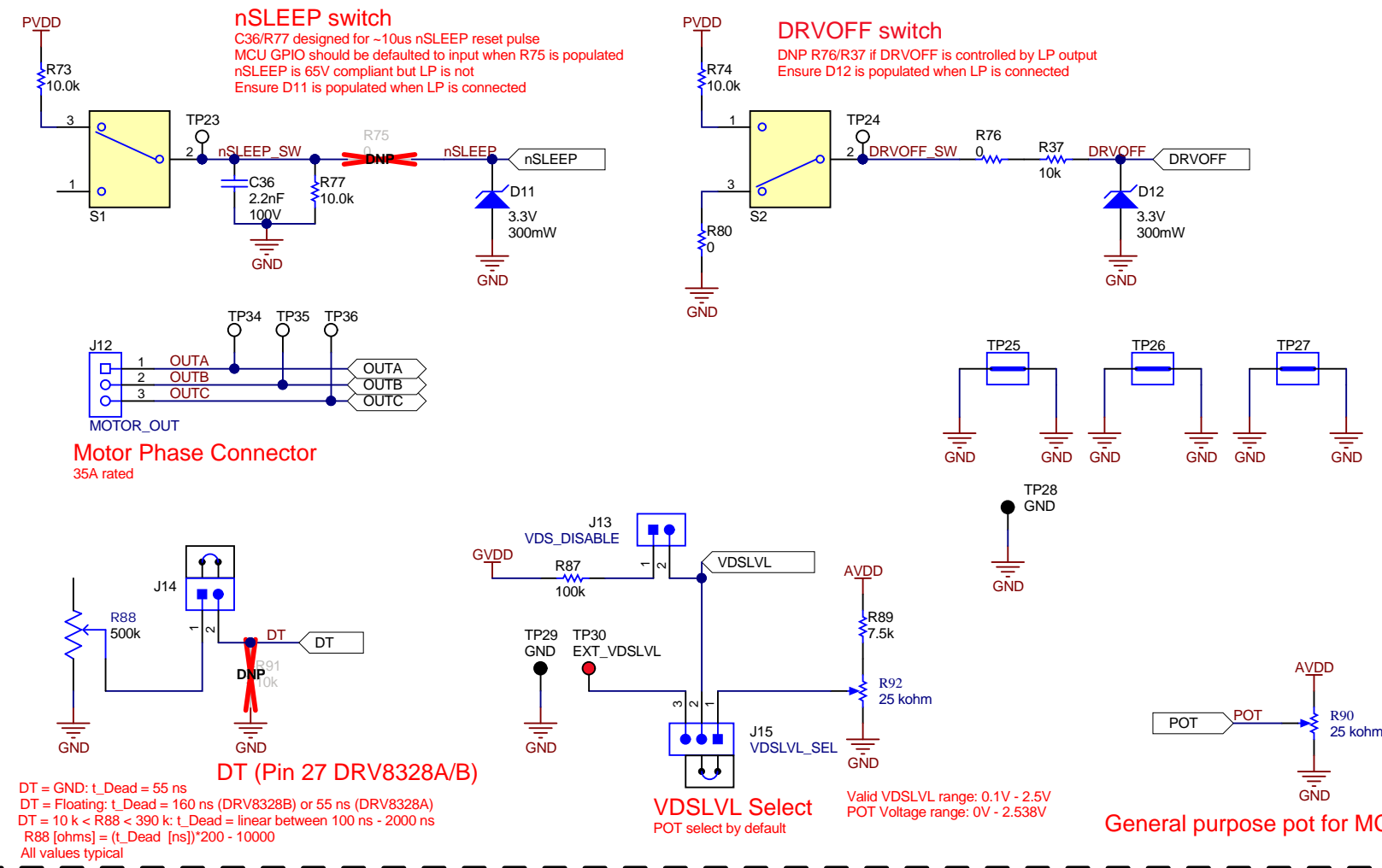
Voltage sense protection

Supply Voltage Sense

Phase Voltage Sense



CONNECTORS, SELECTORS, & ANALOG CONTROL INTERFACE



nSLEEP switch
C36/R77 designed for ~10us nSLEEP reset pulse
MCU GPIO should be defaulted to input when R75 is populated
nSLEEP is 65V compliant but LP is not
Ensure D11 is populated when LP is connected

DRVOFF switch
DNP R76/R37 if DRVOFF is controlled by LP output
Ensure D12 is populated when LP is connected

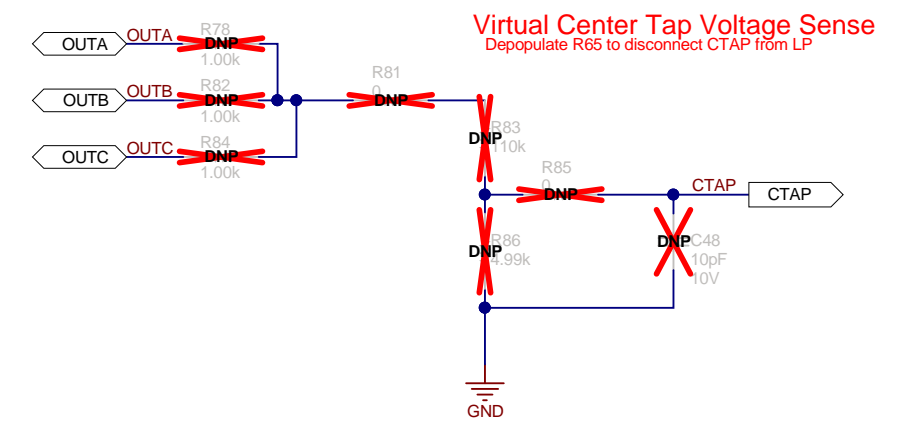
Motor Phase Connector
35A rated

DT (Pin 27 DRV8328A/B)

VDSLVL Select
POT select by default

Valid VDSLVL range: 0.1V - 2.5V
POT Voltage range: 0V - 2.538V

General purpose pot for MCU



Virtual Center Tap Voltage Sense
Depopulate R65 to disconnect CTAP from LP

Orderable: ChangeMe in variant	Designed for: Public Release	Mod. Date: 10/28/2021
TID #: N/A	Project Title: DRV8328AEVM	
Number: MD053	Rev: A	Sheet Title:
SVN Rev: Not in version control	Assembly Variant: 001	Sheet: 4 of 5
Drawn By:	File: MD053A_POWER_AND_CONNECTORS.SchDoc	Size: B
Engineer: Aaron Barrera	Contact: http://www.ti.com/support	

H1 NY PMS 440 0025 PH
 H2 NY PMS 440 0025 PH
 H3 NY PMS 440 0025 PH
 H4 NY PMS 440 0025 PH

H5 1902C
 H6 1902C
 H7 1902C
 H8 1902C

~~DNP~~ FID1
~~DNP~~ FID2
~~DNP~~ FID3

PCB Number: MD053
 PCB Rev: A

PCB LOGO
 Texas Instruments

CE Mark

PCB LOGO
 FCC disclaimer

PCB LOGO
 WEEE logo

CAUTION HOT SURFACE
 CAUTION HOT SURFACE
 CAUTION HOT SURFACE

LBL1
PCB Label
 THT-14-423-10
 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.

Variant/Label Table	
Variant	Label Text
001	DRV8328AEVM
002	DRV8328BEVM
003	DRV8328CEVM
004	DRV8328CEVM

Texas Instruments and/or its licensors do not warrant the accuracy or completeness of this specification or any information contained therein. Texas Instruments and/or its licensors do not warrant that this design will meet the specifications, will be suitable for your application or fit for any particular purpose, or will operate in an implementation. Texas Instruments and/or its licensors do not warrant that the design is production worthy. You should completely validate and test your design implementation to confirm the system functionality for your application.

Orderable: ChangeMe in variant	Designed for: Public Release	Mod. Date: 10/28/2021
TID #: N/A	Project Title: DRV8328AEVM	
Number: MD053	Rev: A	Sheet Title:
SVN Rev: Not in version control	Assembly Variant: 001	Sheet: 5 of 5
Drawn By: Aaron Barrera	File: MD053A_Hardware.SchDoc	Size: B
Engineer: Aaron Barrera	Contact: http://www.ti.com/support	