

Features

- AmP8D6QF65 platform 5x5 mm² package on board
- Demonstrates Power Components:
 - Single Phase economy DrMOS w/ DCR current sense
 - Dual Phase DrMOS w/ IMON current sense, 80A
 - Synch Buck
 - Asynch Buck 100% duty cycle with charge pump
 - COT Buck
 - DCM 100 mA Buck with tiny Inductor
 - Low Ripple Buck
 - LDO, high voltage output
 - Load Switch, Supervisor Functions
 - Slammer for transients up to 100A
- 6 pin and 12 pin connector interface to use AmPLink
- Integrated AmPLink USB adapter

Description

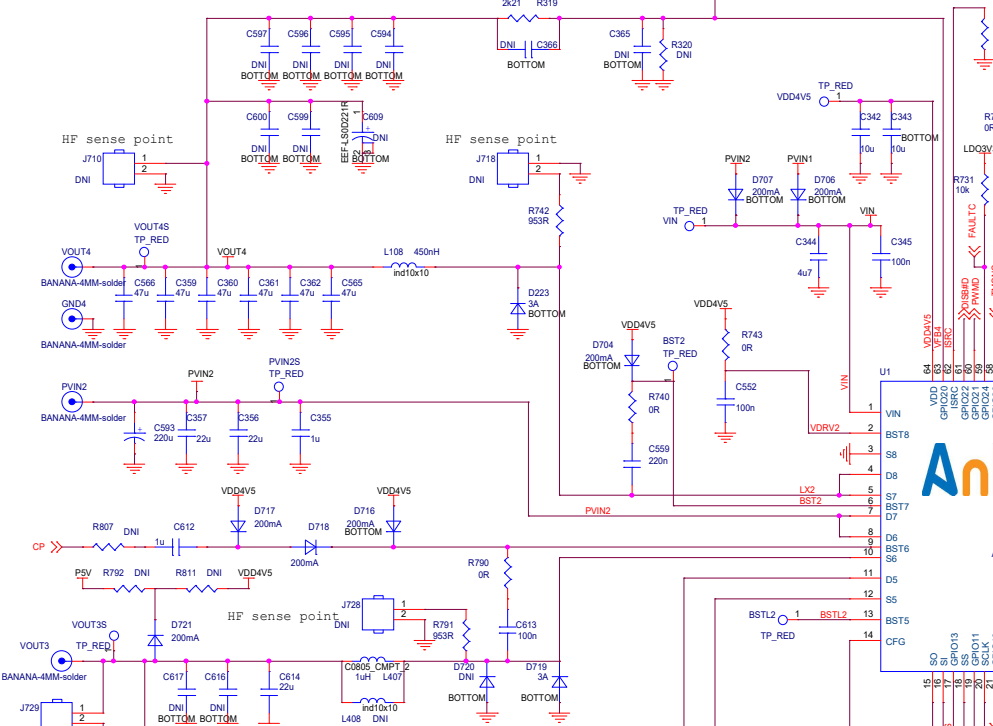
The AmP8DB3 is a ready to use Demonstration Board to evaluate Power Components on the AmP, Adaptive Multi-Rail Power Platform. Simply drag and drop Power Components in the WebAmP design tool and compile into a Configuration Bitstream File. In the AmPLink Control tab, download the file over the AmPLink USB adapter to the AmP8DB3 Demonstration Board. The WebAmP Tool downloads Configuration.HEX file (Intel HEX) to program the Flash memory while the .HAX file downloads directly to the AmP Platform. DrMOS Single Phase, DrMOS Dual Phase, Synchronous Buck, Async Buck, Async Boost, LDO, Load Switch and Supervisor Power Components may then be evaluated.

[Demonstration Board AmP8DB3 Schematic \(next page, searchable\)](#)

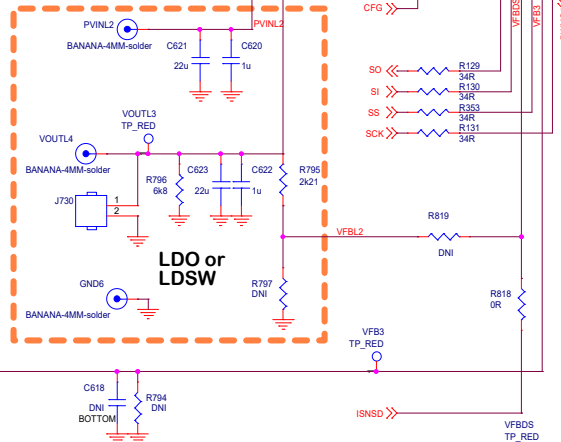
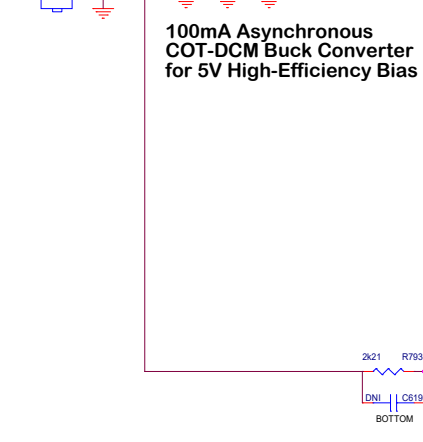
All resistors 0603
 All caps <47uF are X5R
 Caps <4.7uF: 0603 and >25V
 Caps 47uF: 0805 and >6.3V
 Caps 22uF: 0805 and >25V
 Caps 10uF: 0603 and >6.3V

Cu thickness is 20z
 6 layers - #2 and #5 is GND plane

6A Buck Converter with option for COT Operation



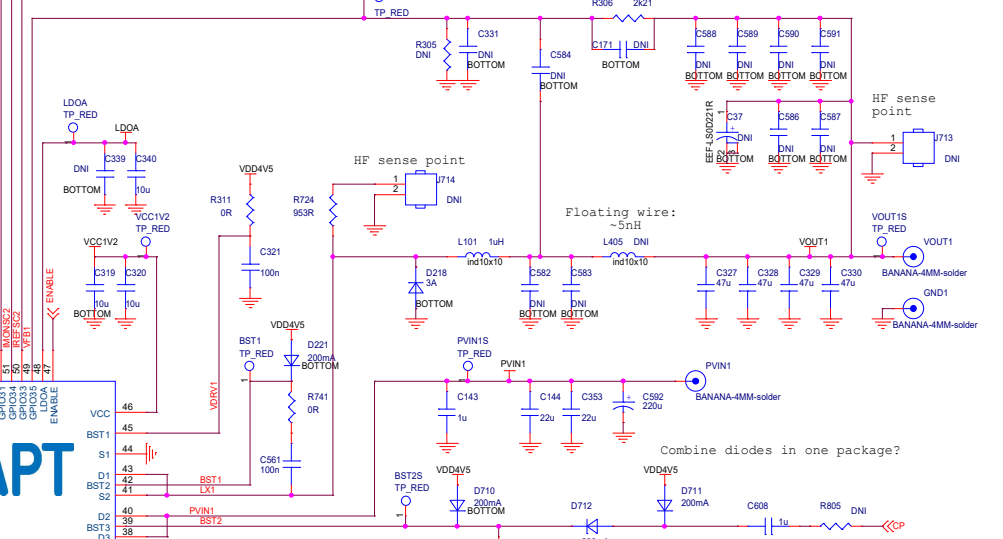
100mA Asynchronous COT-DCM Buck Converter for 5V High-Efficiency Bias



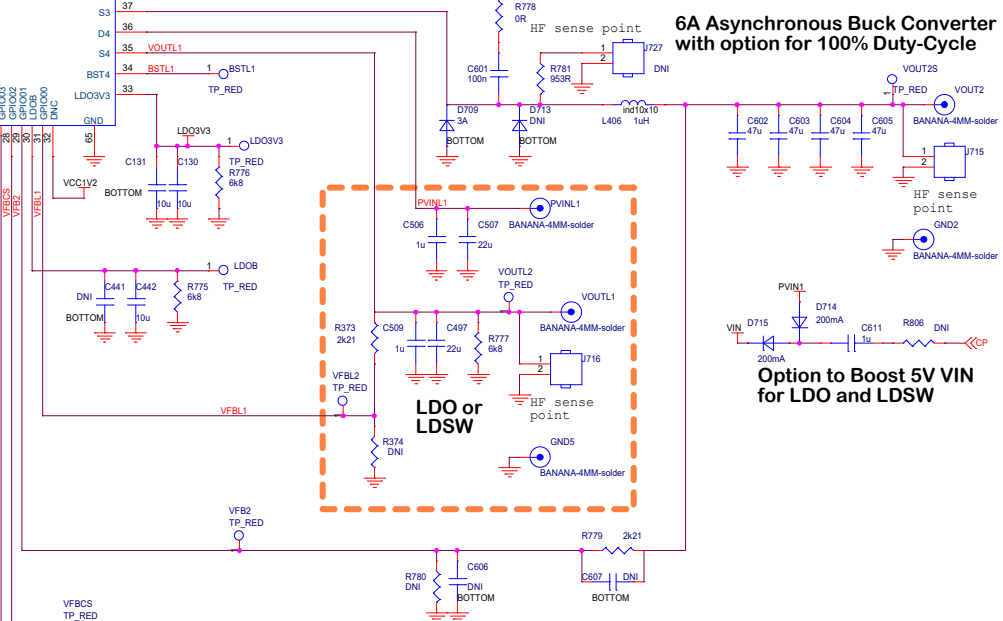
AMP8BDSQF65

IMON and IREF traces should be on layer 3 and have shielding

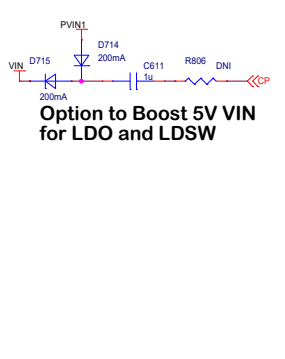
6A Buck Converter with option for 2LC ripple reduction



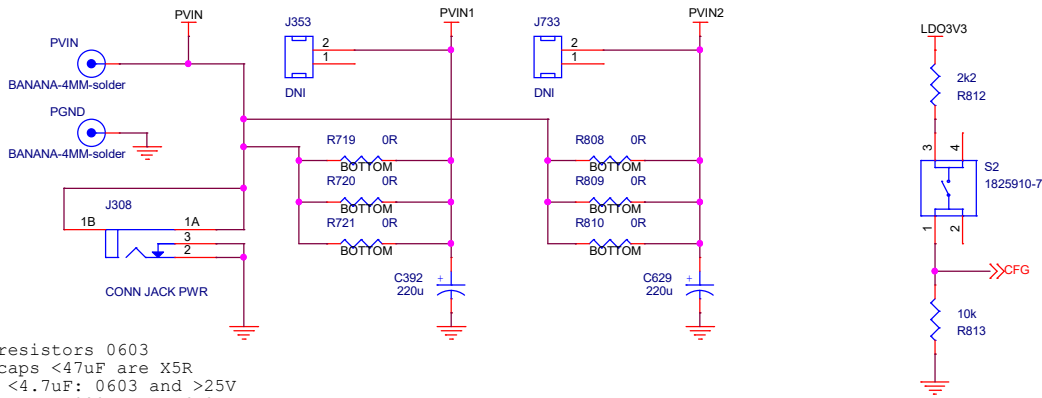
6A Asynchronous Buck Converter with option for 100% Duty-Cycle



Option to Boost 5V VIN for LDO and LDSW



Title		
AMP8BDS		
Size	Document Number	Rev
C	AMP8BDS-V1.0.pdf	1.0
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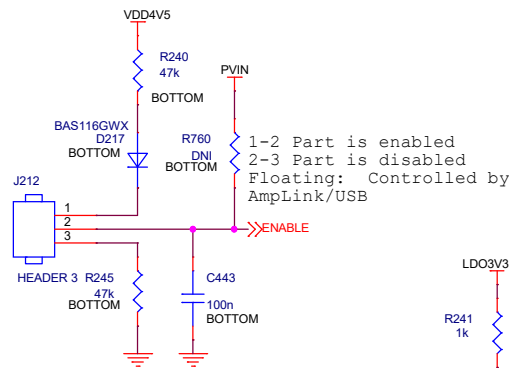
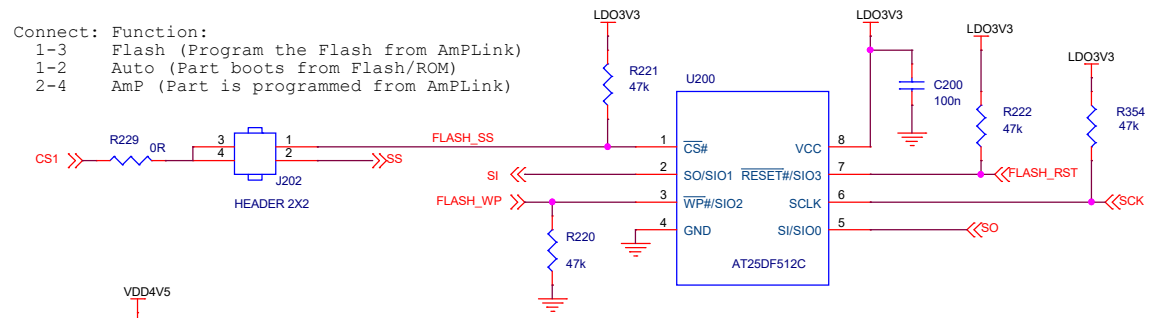
GPIO Assignments

GPIO#	Name	GPIO#	Name
00	VFBL1	20	VFB4
01	VFB2	21	PWMD
02	VFBCS	22	DISB#D
03	VFBDS	23	TMONC
04	PGOOD	24	FAULTC
05	THWND	25	SDA, GPIO25
10	PWMC1	30	SEQEN, SCL
11	VFB3	31	IREFC1
		32	IMONC1
13	ISNSD, VFBL2	33	IREFC2
14	PWMC2	34	IMONC2
15	CP	35	VFB1

Feedback from Schematic Review
 Add COT external components

Connect: Function:

- 1-3 Flash (Program the Flash from AmPLink)
- 1-2 Auto (Part boots from Flash/ROM)
- 2-4 AmP (Part is programmed from AmPLink)

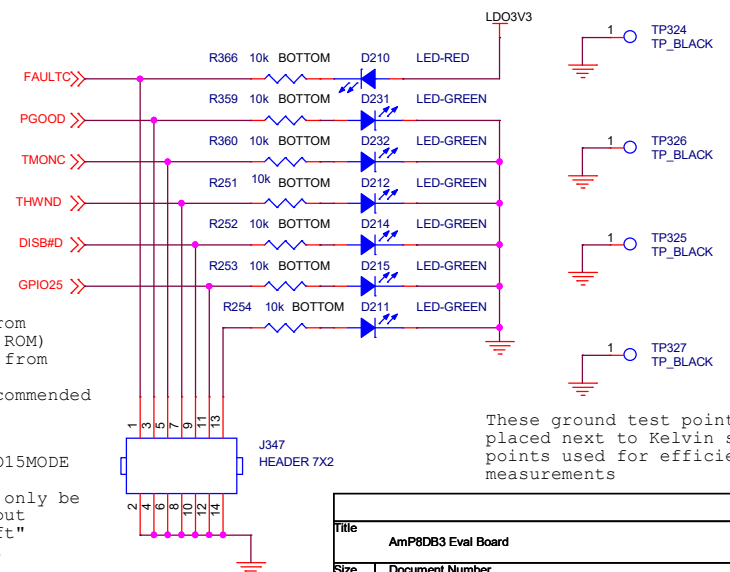


1-2 Part is enabled
 2-3 Part is disabled
 Floating: Controlled by AmpLink/USB

1-2 Sequencer input is "high"
 2-3 Sequencer input is "low"
 Floating: Sequencer input controlled by AmpLink/USB

1-2 AUTO (Boots from internal/external ROM)
 2-3 CLIENT (Boots from AmpLink/USB)
 Floating: Not recommended

CP is used as GPIO15MODE pin at startup.
 This GPIO pin can only be configured as output and should be "soft" driven at startup.

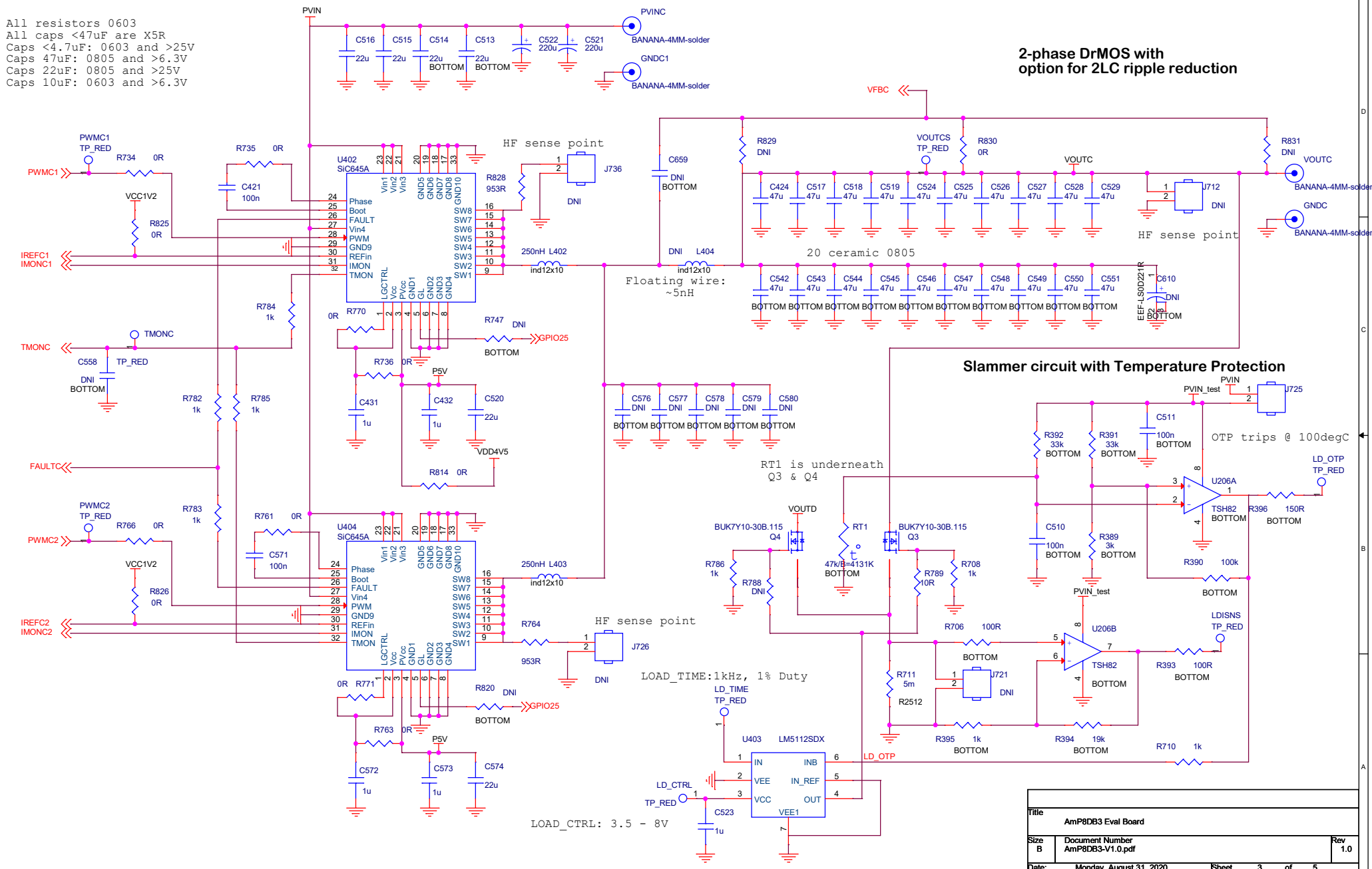


These ground test points are placed next to Kelvin sense points used for efficiency measurements

Title		
AmP8DB3 Eval Board		
Size B	Document Number	Rev
	AmP8DB3-V1.0.pdf	1.0
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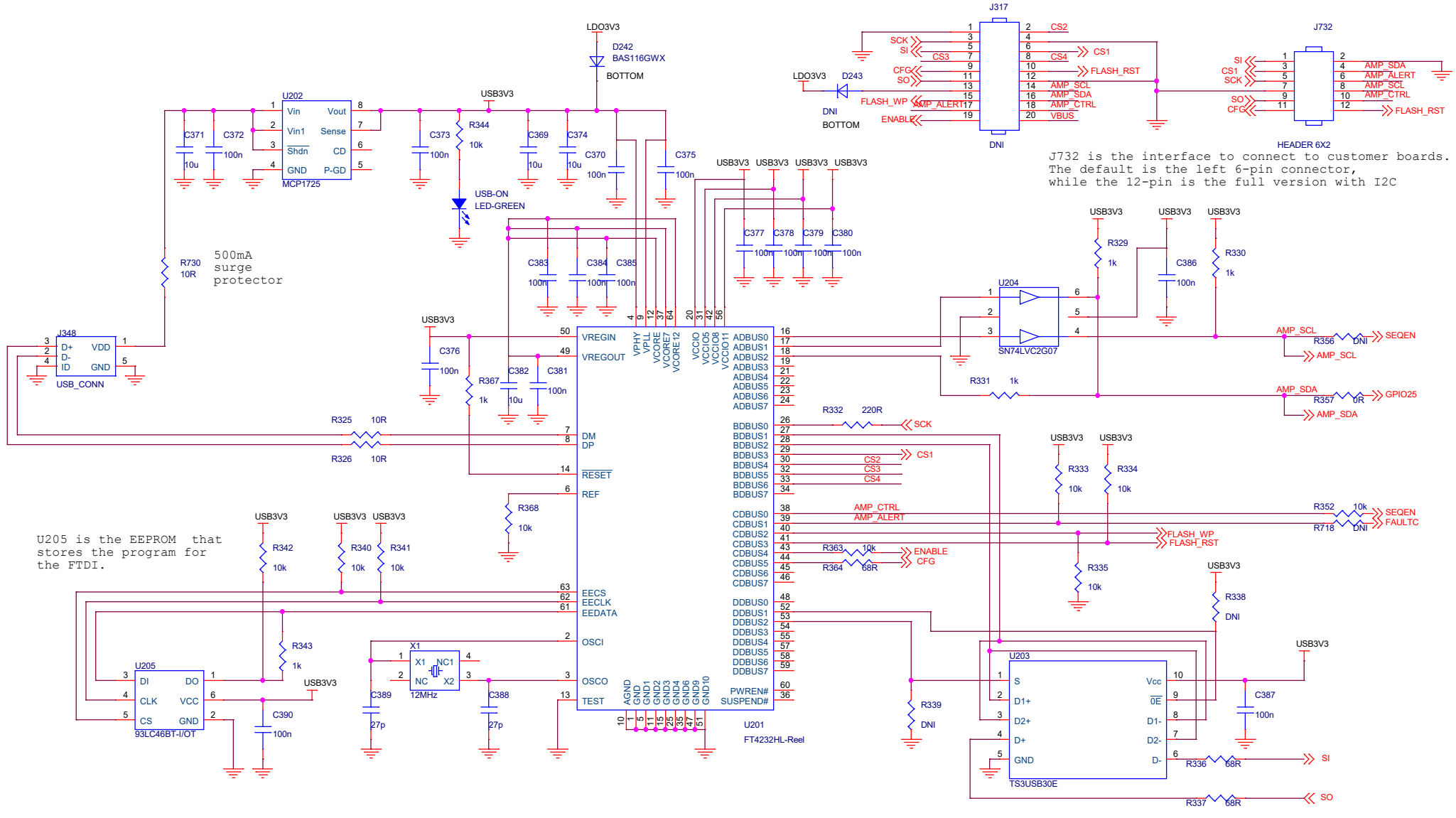
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2-phase DrMOS with option for 2LC ripple reduction



Slammer circuit with Temperature Protection

Title		
AmP8DB3 Eval Board		
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J732 is the interface to connect to customer boards. The default is the left 6-pin connector, while the 12-pin is the full version with I2C

U205 is the EEPROM that stores the program for the FTDI.

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AmP8DB3 Eval Board		
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