

Power for TMS320C5514/15

April 7, 2010

C5514/15 Power Spec Table

	Pin Name	Voltage (V)	Max Current ⁶ (mA)	Tolerance	Sequencing Order	Comments
	LDOI ^{3,4}	1.8 - 3.6	70		1 ²	Supplying ANA LDO (supplies VDDA_ANA and VDDA_PLL) and USB LDO (supplies USB_VDD1P3 and USB_VDDA1P3) must make proper external connections
Core	CVDD ^{1,5}	1.05 / 1.30	500	-5%, +10%		Typical Core Power Consumption: - 0.22mW/MHz for 75% DMAC + 25% NOP (CVDD =1.3V @ 100MHz, Room Temp) - 0.14mW/MHz for 75% DMAC + 25% NOP (CVDD =1.05V @ 100MHz, Room Temp)
	CVDDRTC ^{1,5}	1.05 – 1.30	0.1	-5%, +10%		
	DVDDIO, DVDDRTC	1.8 / 2.5 / 2.8 / 3.3	300	±10%		
	DVDDMIF	1.8 / 2.5 / 2.8 / 3.3	245	±10%		
	USB_VDDOSC, USB_VDDA3P3, USB_VDDPLL	3.3V	55	±10%		

NOTES:

- CVDD can be 1.05V or 1.30V for ≤ 60MHz or 75MHz and 1.30V for operating ≤ 100MHz or 120MHz (depending device speed grade option). CVDDRTC can be 1.05V – 1.30V regardless of CVDD and regardless of operating frequency. CVDD and CVDDRTC are not required to be powered from the same source. For lowest standby power, CVDD power can be shut off while other supplies remain powered.
- Power Supply Sequencing: No sequencing is required (for further details, see section 5.3.1 of the data sheet)
- If GPAIN pins are used as general purpose outputs, the internal ANA_LDO must not be used as the max current capability of ANA_LDO can be exceeded. In this case use an external regulator to supply VDDA_ANA.
- If boot from USB is required an external regulator must be used instead of the internal USB_LDO. See the Silicon Errata document SPRZ308 for more details
- For lowest BOM cost solution the internal DSP_LDO can be used to supply CVDD, with LDOI then having a max of 570mA. When using DSP_LDO to power CVDD, CVDDRTC must be powered by a separate external source. See the C5514/15 data sheets for more detail.
- This column shows the maximum design current of each power domain. See the C5515/14 data sheets for actual current consumptions of some usage cases. See the data in the “Comments” column above.

Highest Efficiency, Low Cost Integrated PMIC

VIN: 3.6V - 5V

TPS65054
Multi-output
DCDC
Converter

- 2 DCDC + 4 LDO's in 4x4mm QFN
- 2.25MHz for Small Inductors
- 180° Out-of-Phase Operation

High-Efficiency, 2 Dual DCDC Converters

VIN: 3.6V - 6V

TPS62400
Dual
600mA/400mA
DCDC Converter

EN1 DCDC1
EN2 DCDC2

- Up to 95% Efficiency
- 2.25MHz for Small Inductors
- 180° Out-of-Phase Operation

Wide Input Voltage, DCDC Converters

VIN: 12V

TPS62111
1.5A
DCDC Converter
EN

TPS62400
Dual
600mA/400mA
DCDC Converter
EN2 DCDC1
EN1 DCDC2

TPS73401
250mA LDO
EN

- 2.8V - 5.5V input voltage
- High Efficiency DCDC Converters
- Small Packages and Passives

Low Cost, Single LDO @ 3.3V

VIN: 3.6-5.5V

TPS74801
1.5A
LDO
EN

- VOUT Range: 0.8V to 3.6V
- Programmable Soft Start
- Stable with Any Output Capacitor $\geq 2.2\mu\text{F}$
- Small SON and QFN packages

Low Cost, Single DCDC @ 3.3V

VIN: 3.3-5.5V

TPS62290
1.0A
DCDC Converter
EN

- 3.3 - 6V input voltage
- Efficiency up to 95%
- 2.25MHz for Small Inductors

Low Cost, High Input Voltage Single DCDC @ 3.3V

VIN: 3.8V - 17V

TPS62111
1.5A
DCDC Converter
EN

- Input voltage capable up to 17V
- Efficiency up to 95%
- PFM mode for high efficiency during light loads

High Input Voltage, DCDC Converters

VIN: 1.8V - 3.6V

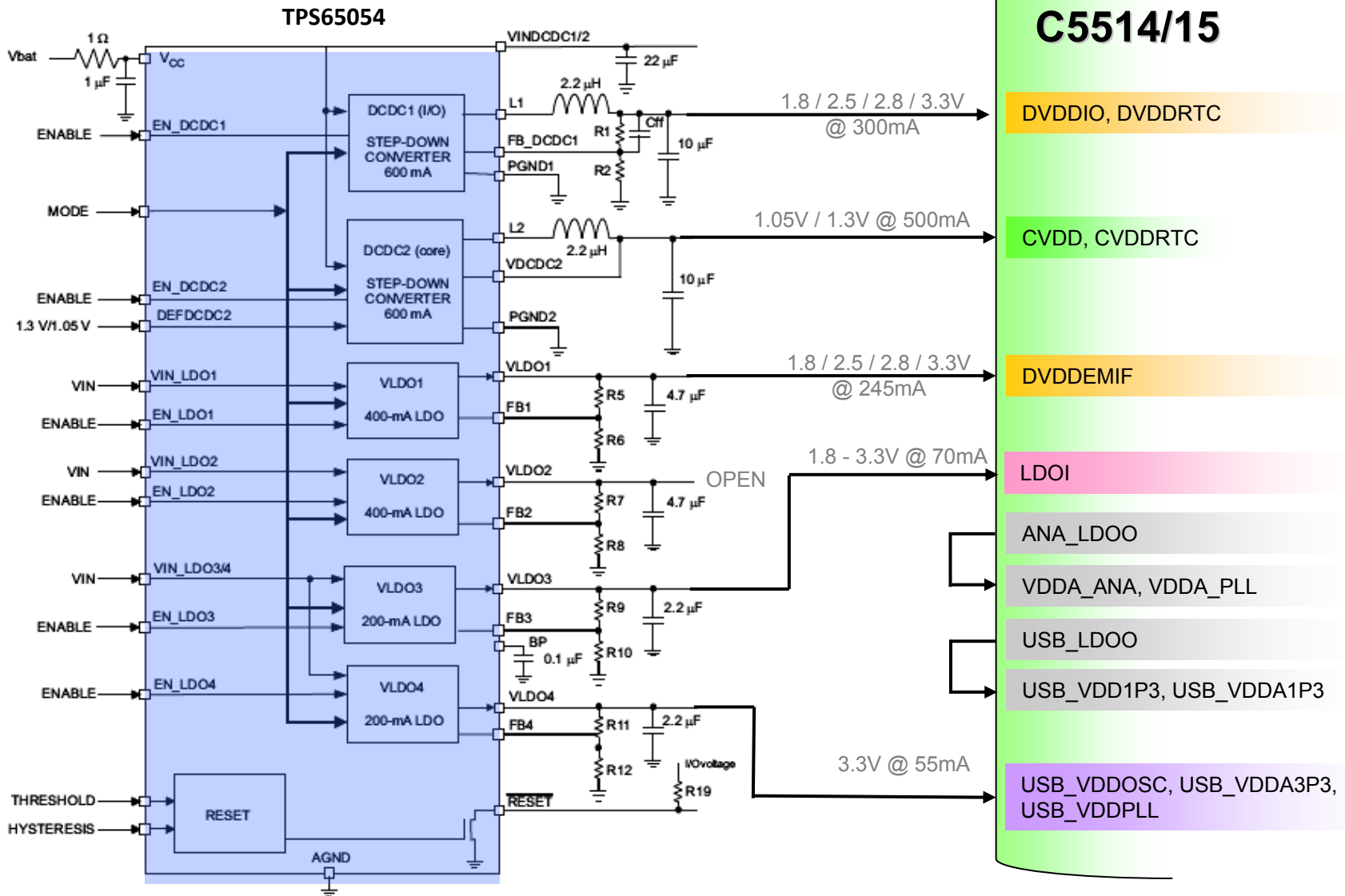
TPS63001
1.2A Buck/Boost
DCDC Converter
EN

TPS62400
Dual
600mA/400mA
DCDC Converter
EN2 DCDC1
EN1 DCDC2

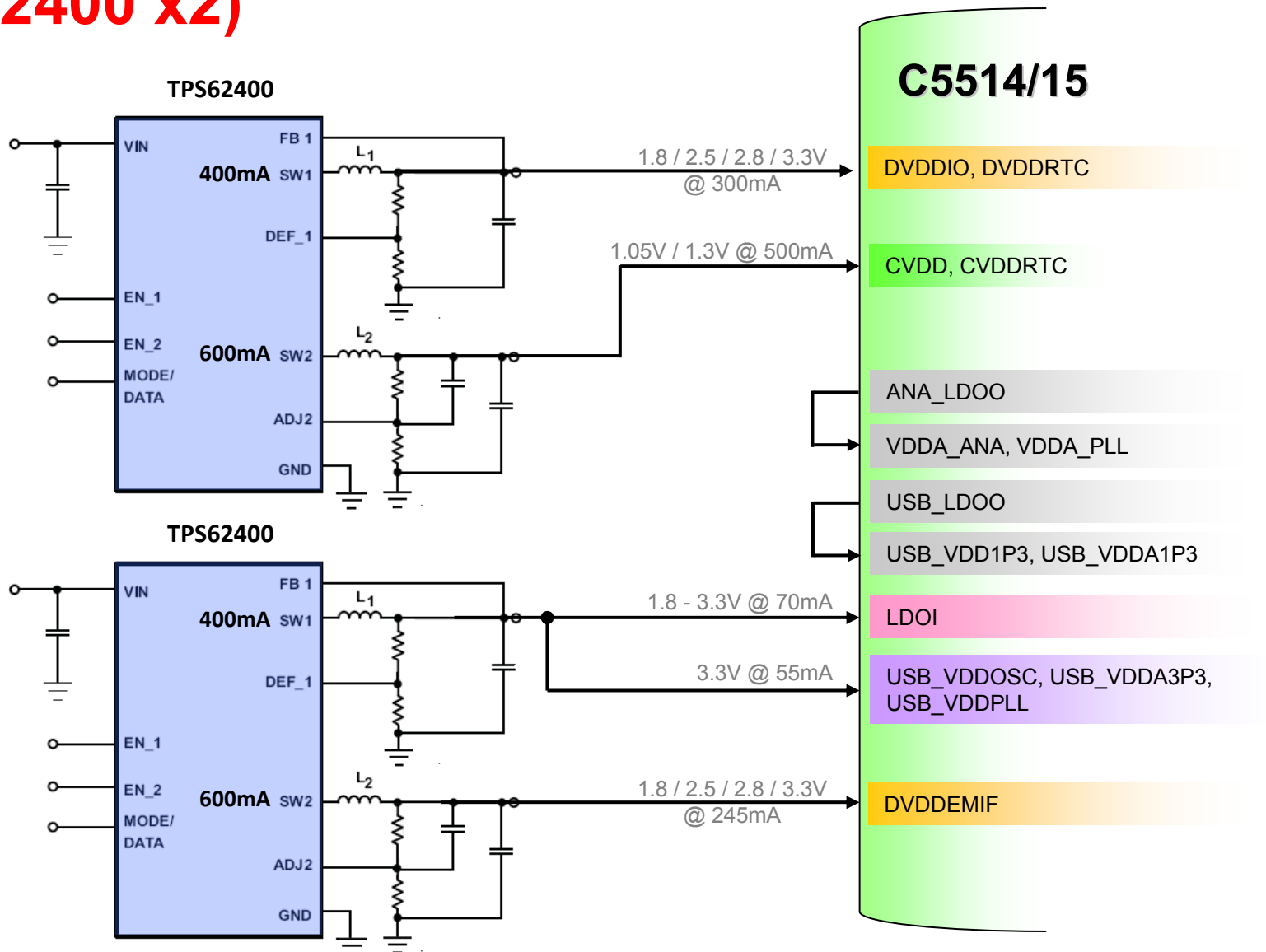
TPS62231
500mA
DCDC Converter

- Input voltage capable up to 17V
- PFM mode for high efficiency during light loads
- Low-Noise LDO (28uVrms)

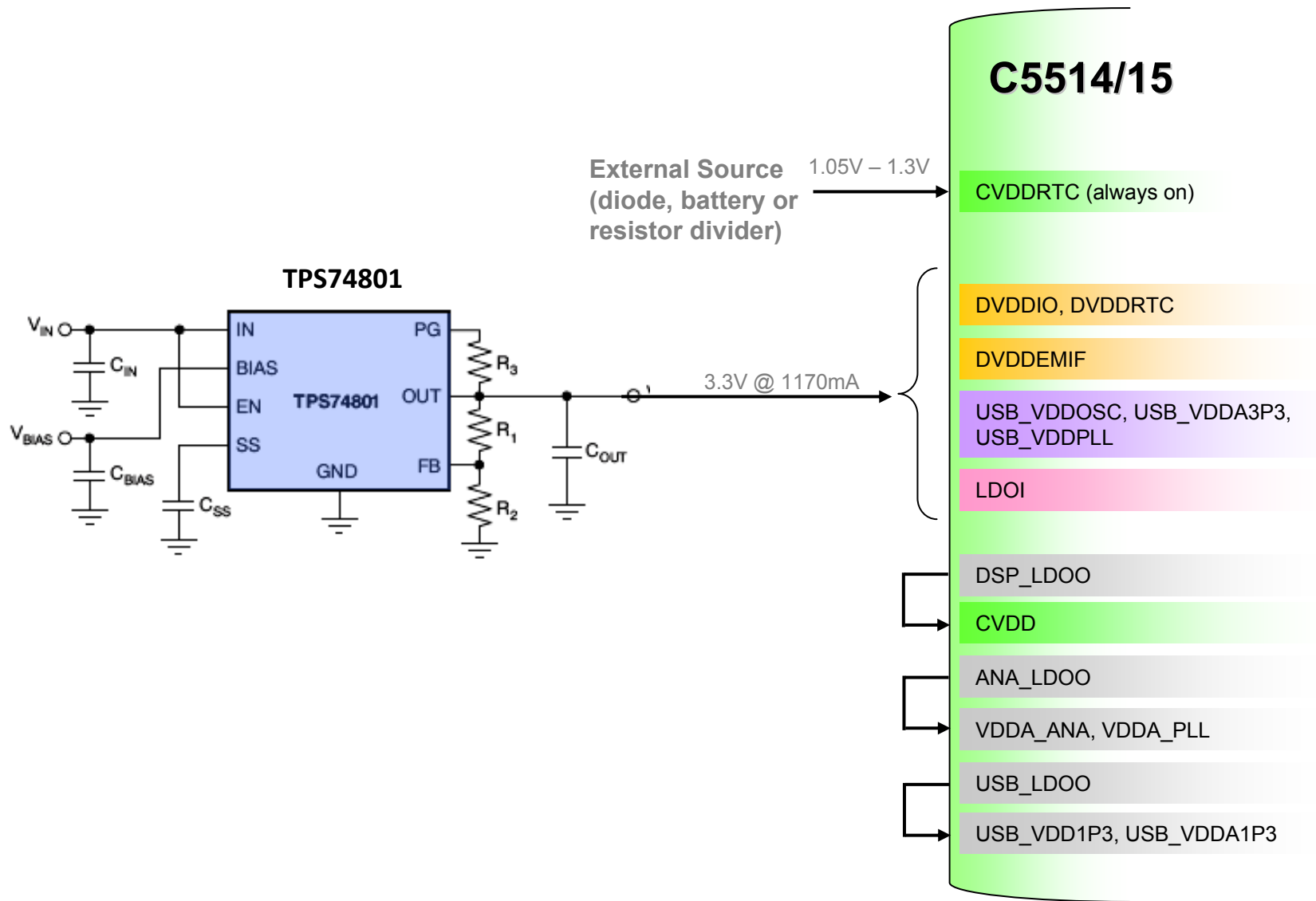
Highest Efficiency, Single PMIC (TPS65054)



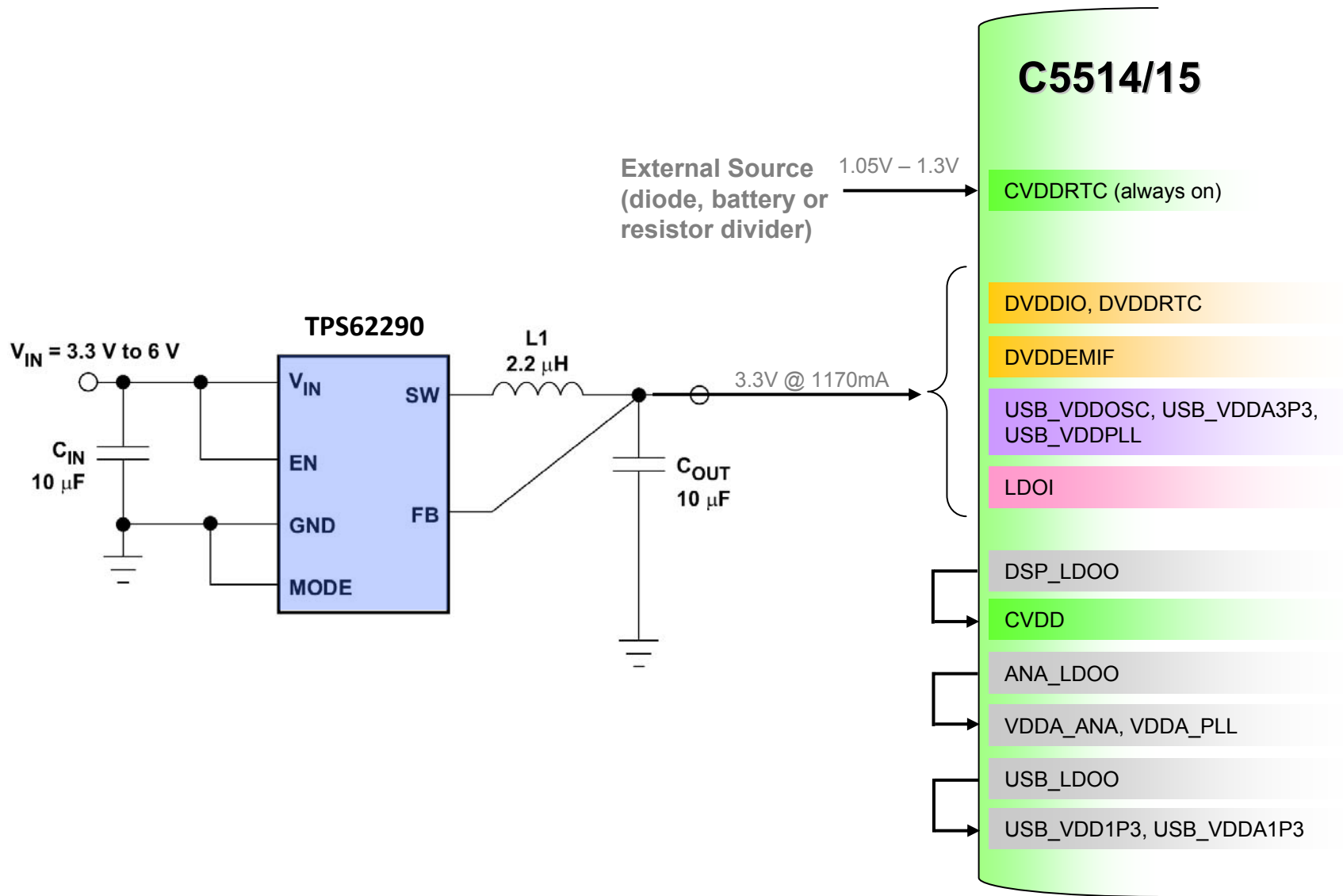
Highest Efficiency, Low part count (TPS62400 x2)



Low Cost, Single LDO

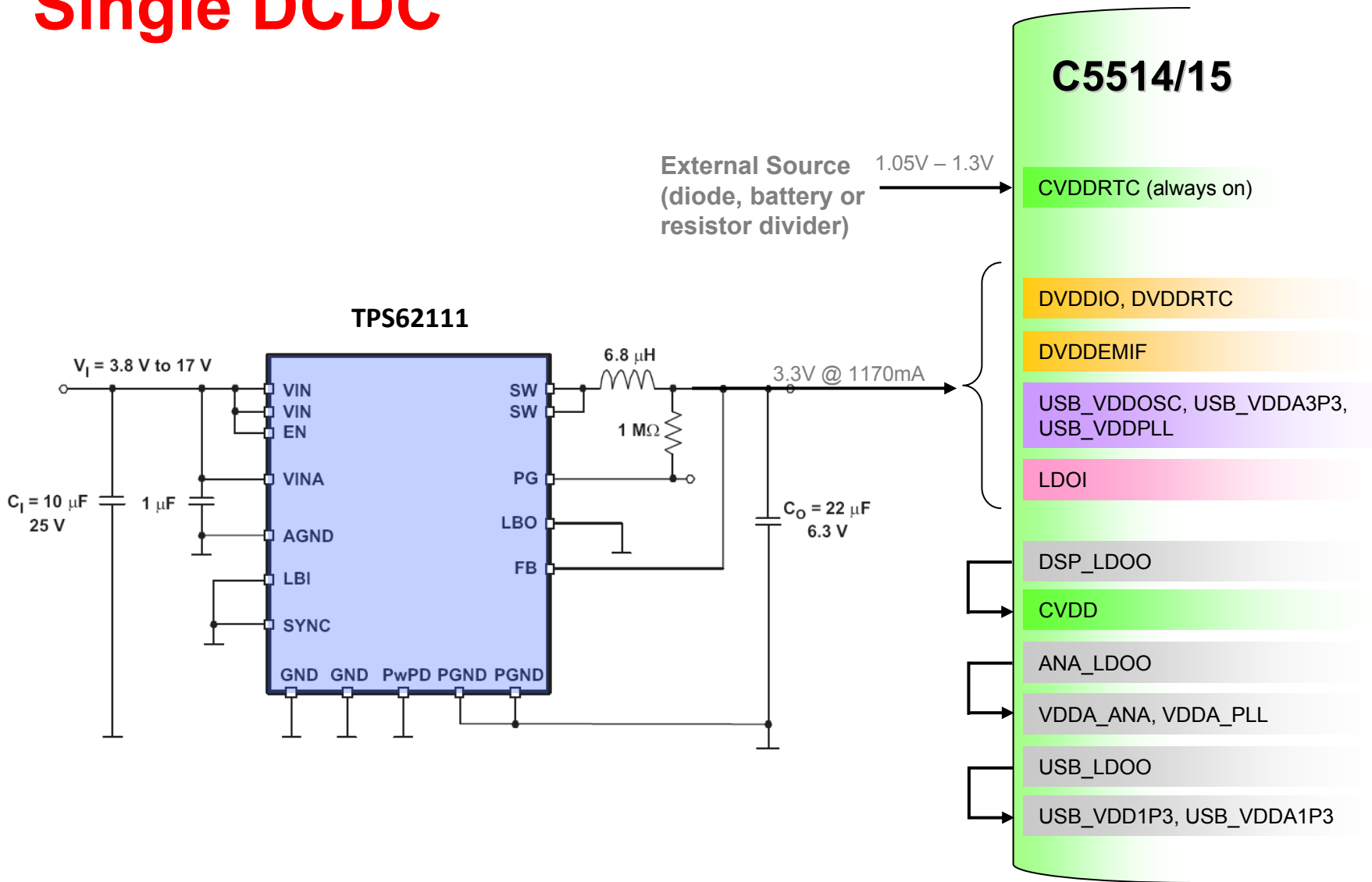


Low Cost, Single DCDC

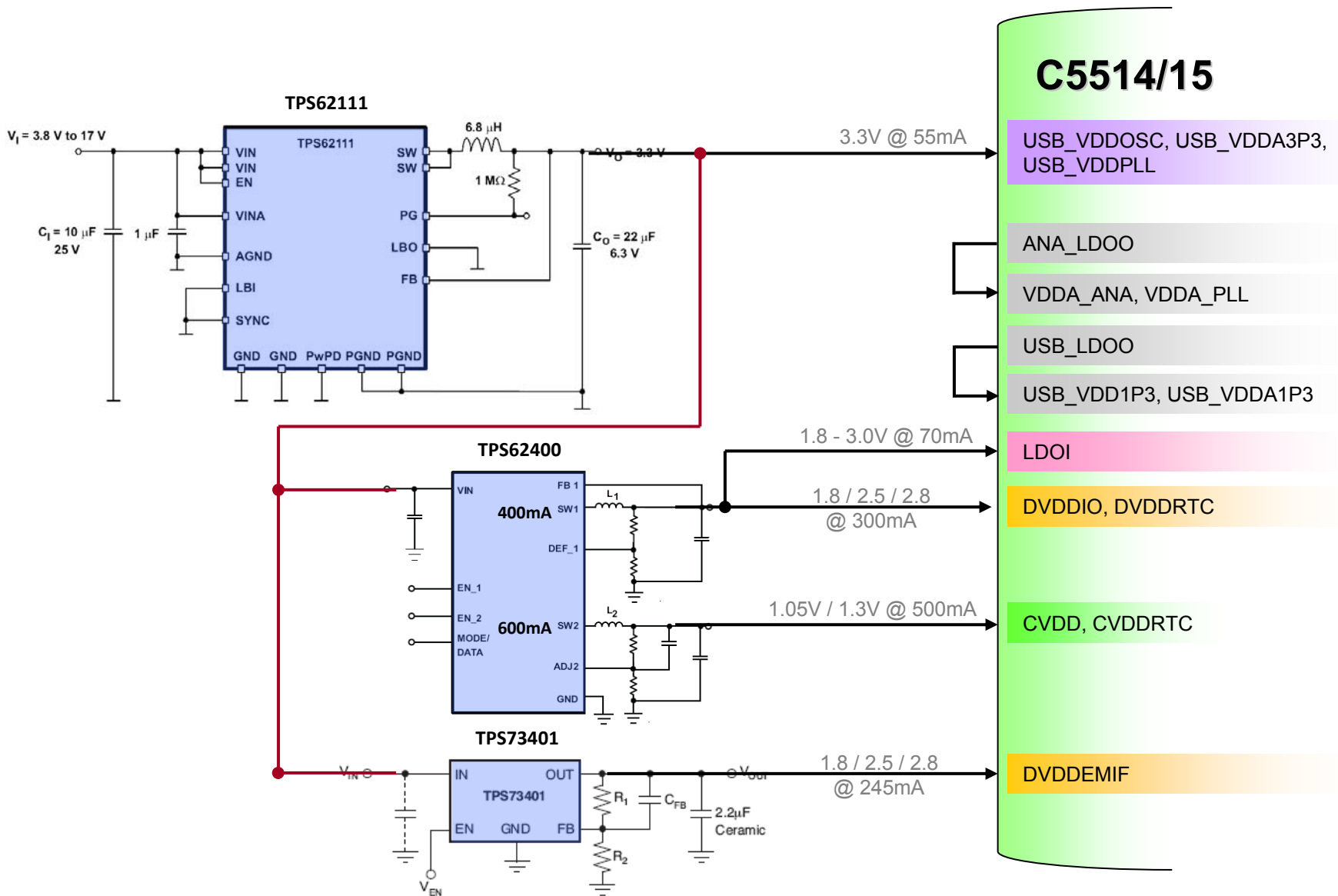


Note: The TPS62290 is rated to 1000mA continuously, but can handle currents up to 1.19A (the minimum level of current limit).

Low Cost, High-input Voltage Single DCDC

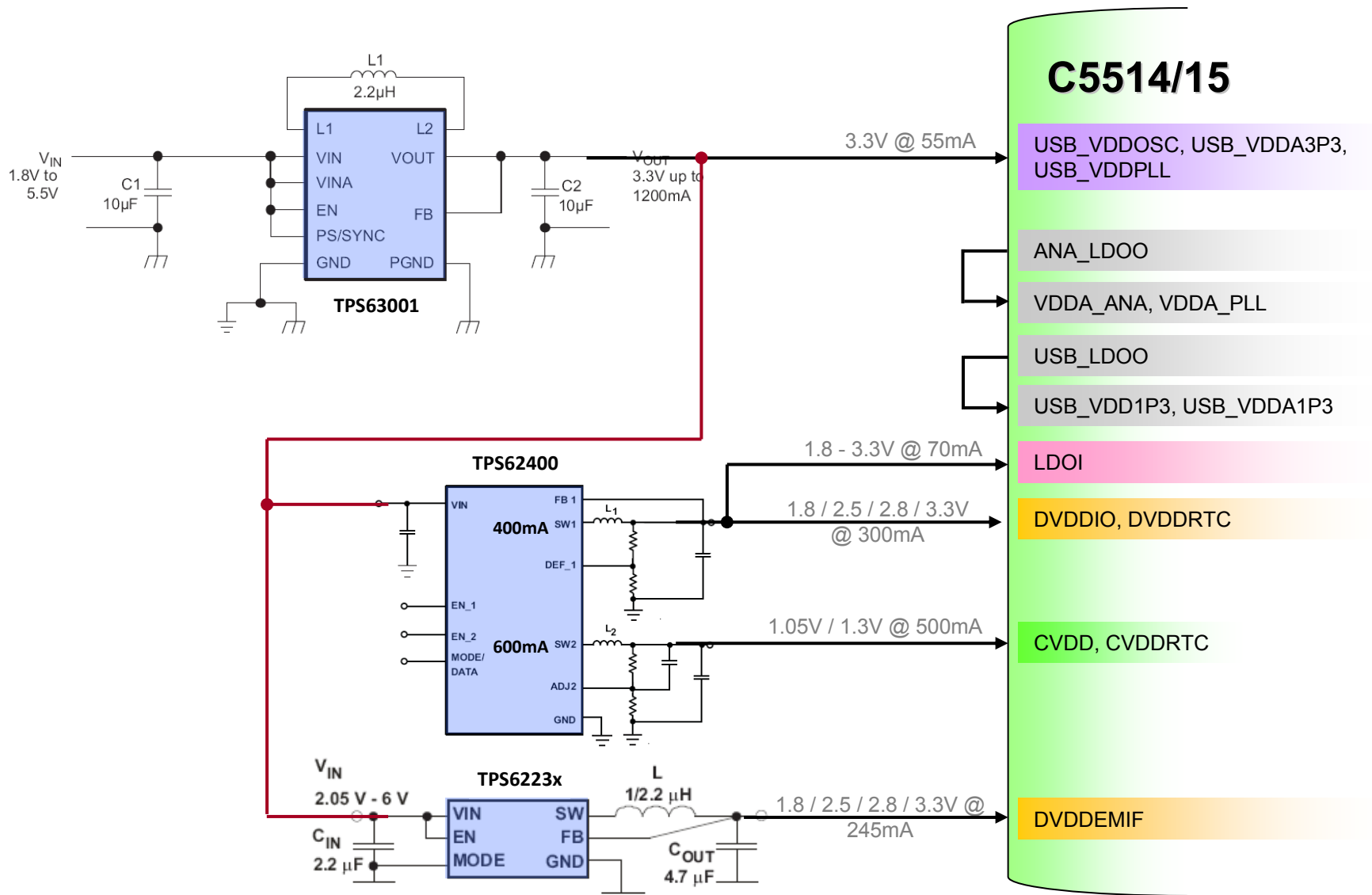


High Input Voltage



Note: If DVDDIO, DVDDRTC, DVDDDEMIF, LDOI are 3.3V, connect directly to 3.3V

Wide Input Voltage, High Efficiency



Notes: 1) If DVDDIO, DVDDRRTC, DVDDMIF are 3.3V, connect directly to 3.3V
 2) The TPS6223x is a fixed output device, so device will vary depending on output voltage

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