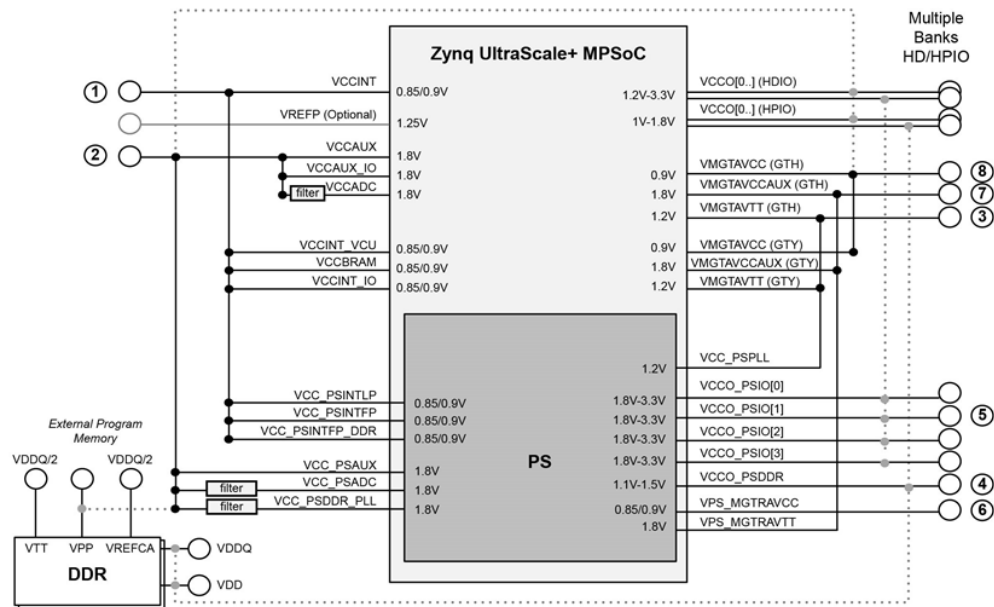
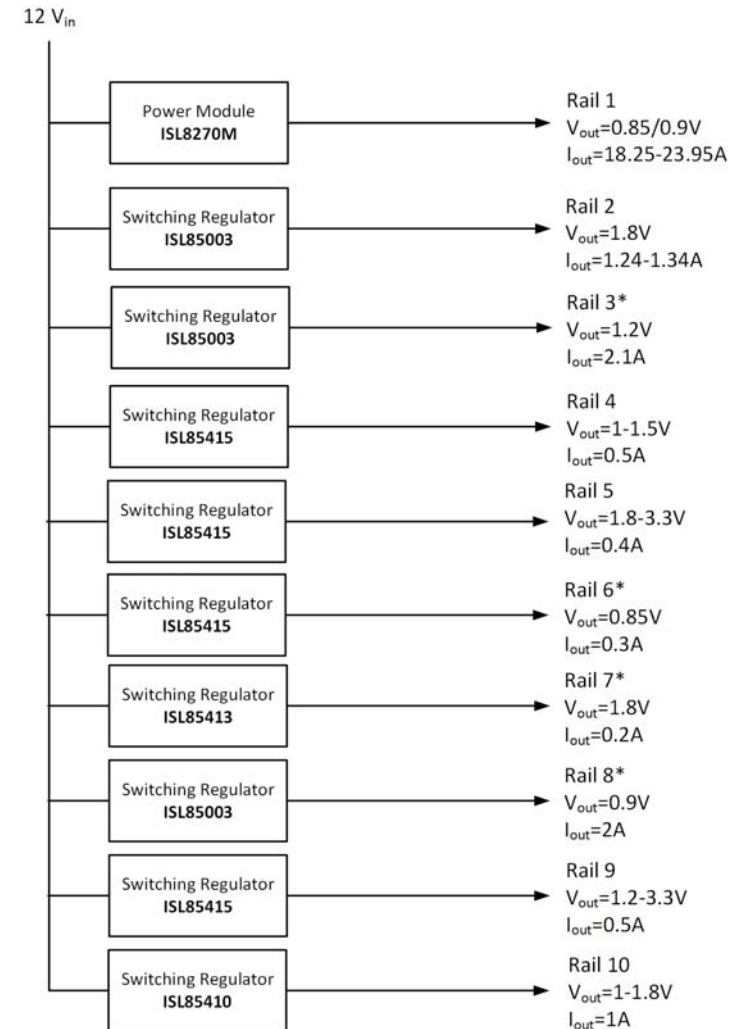


USECASE 1 #3



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Rail	Voltage	Power Supply Rails
Rail 1	0.85/0.9V	VCCINT, VCCINT_VCU, VCCBRAM, VCCINT_IO, VCC_PSINTLP, VCC_PSINTFP, VCC_PSINTFP_DDR
Rail 2*	1.8V*	VCCAUX, VCCAUX_IO, VCCADC, VCC_PSAUX, VCC_PSDDR_PLL, VCC_PSADC
Rail 3*	1.2V*	VMGTAVTT(GTH), VMGTAVCCAUX(GTY), VCC_PSPLL
Rail 4	1-1.5V	VCCO_PSDDR, DDR_VDD2, DDR_VDDQ
Rail 5	1.8-3.3V	VCCO_PSIQ
Rail 6*	0.85/0.9V	VPS_MGTRAVCC
Rail 7*	1.8V*	VMGTAVCCAUX(GTH), VMGTAVCCAUX(GTY), VPS_MGTRAVTT
Rail 8*	0.9V*	VMGTAVCC(GTH), VMGTAVCC(GTY)
Rail 9	1.2-3.3V	HDIO VCCO
Rail 10	1.0-1.8V	HPIO VCCO

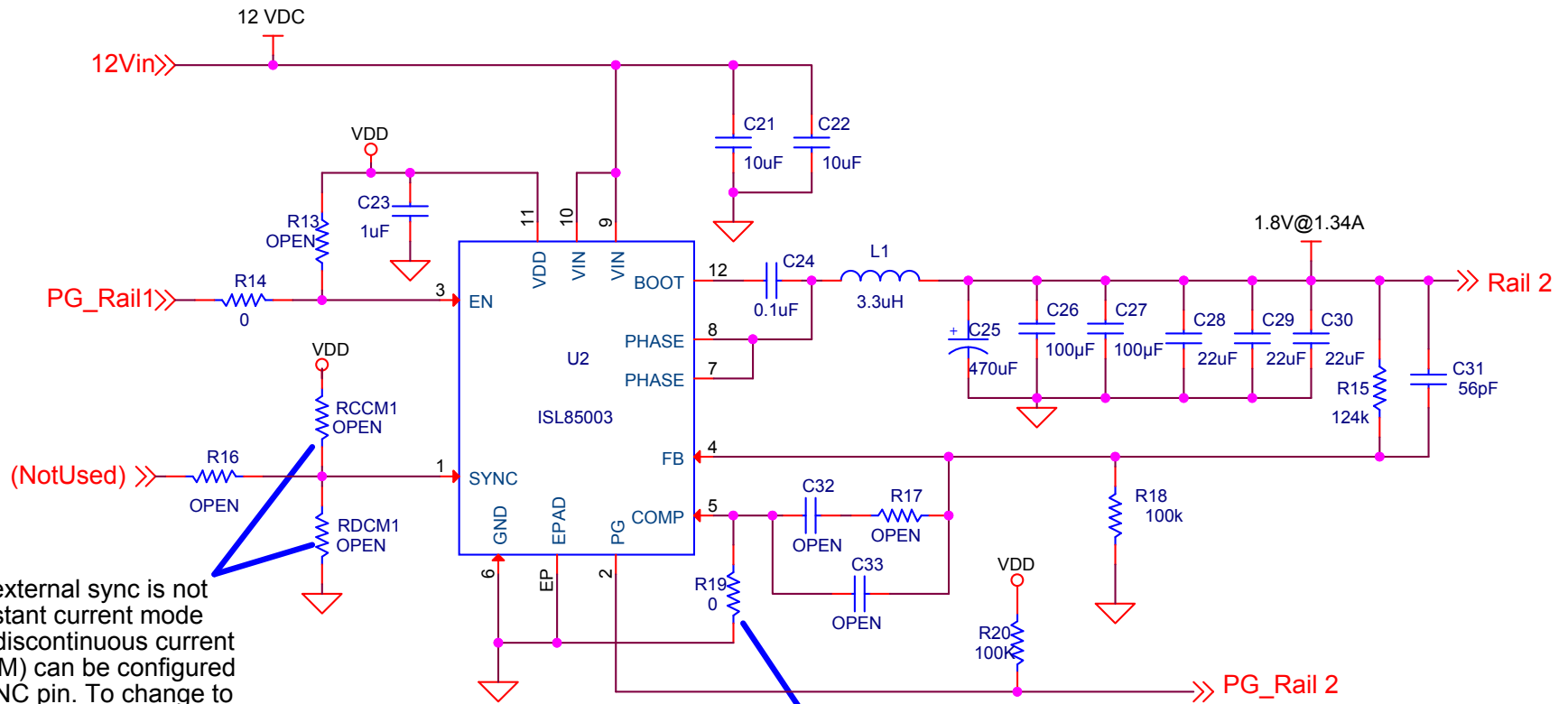


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Title ZYNQ US+ MPSoC Power Rails		
Size B	Document Number <Doc>	Rev A
Date: Thursday, March 09, 2017	Sheet 1	of 11

Title			
ISL8270M-SINGLE-1			
Size A	Document Number		Rev
Date:	Sheet	2	of 11

ISL85003 SINGLE OUTPUT (3A)



When an external sync is not used, constant current mode (CCM) or discontinuous current mode (DCM) can be configured on the SYNC pin. To change to DCM mode, remove RCCM, and change RDCM to 0 ohms.

If custom compensation is desired, remove the ground connection on the COMP pin to enable external compensation.

OPEN value components on the COMP pin are place holders if external compensation is used.

Programmable Soft Start is available in the ISL85003A (without synchronization)

Title		
ISL85003-SINGLE-1		
Size	Document Number	Rev
A	<Doc>	<RevCo>
Date:	Thursday, March 09, 2017	Sheet 3 of 11

5	4	3	2	1
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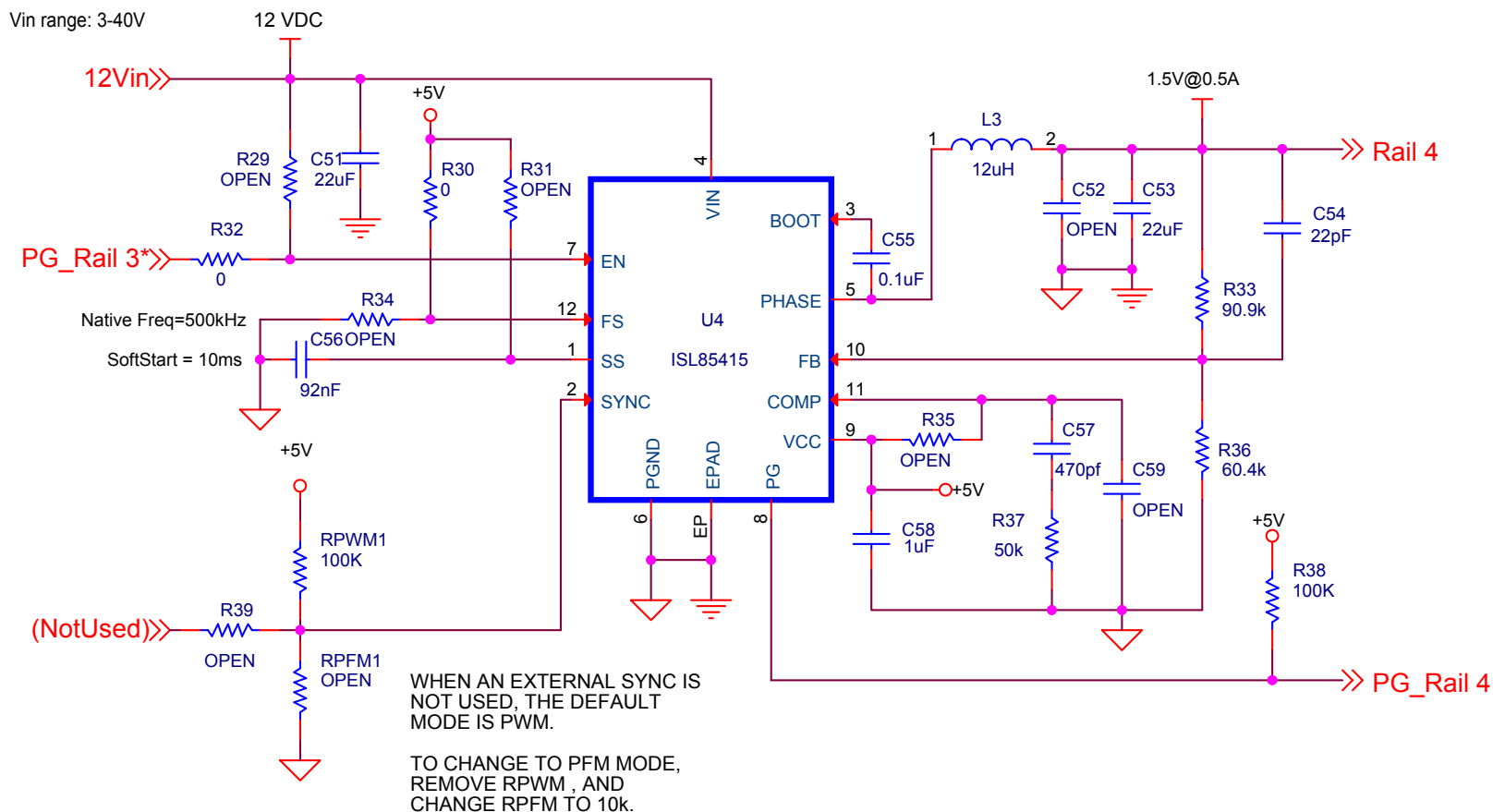


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C

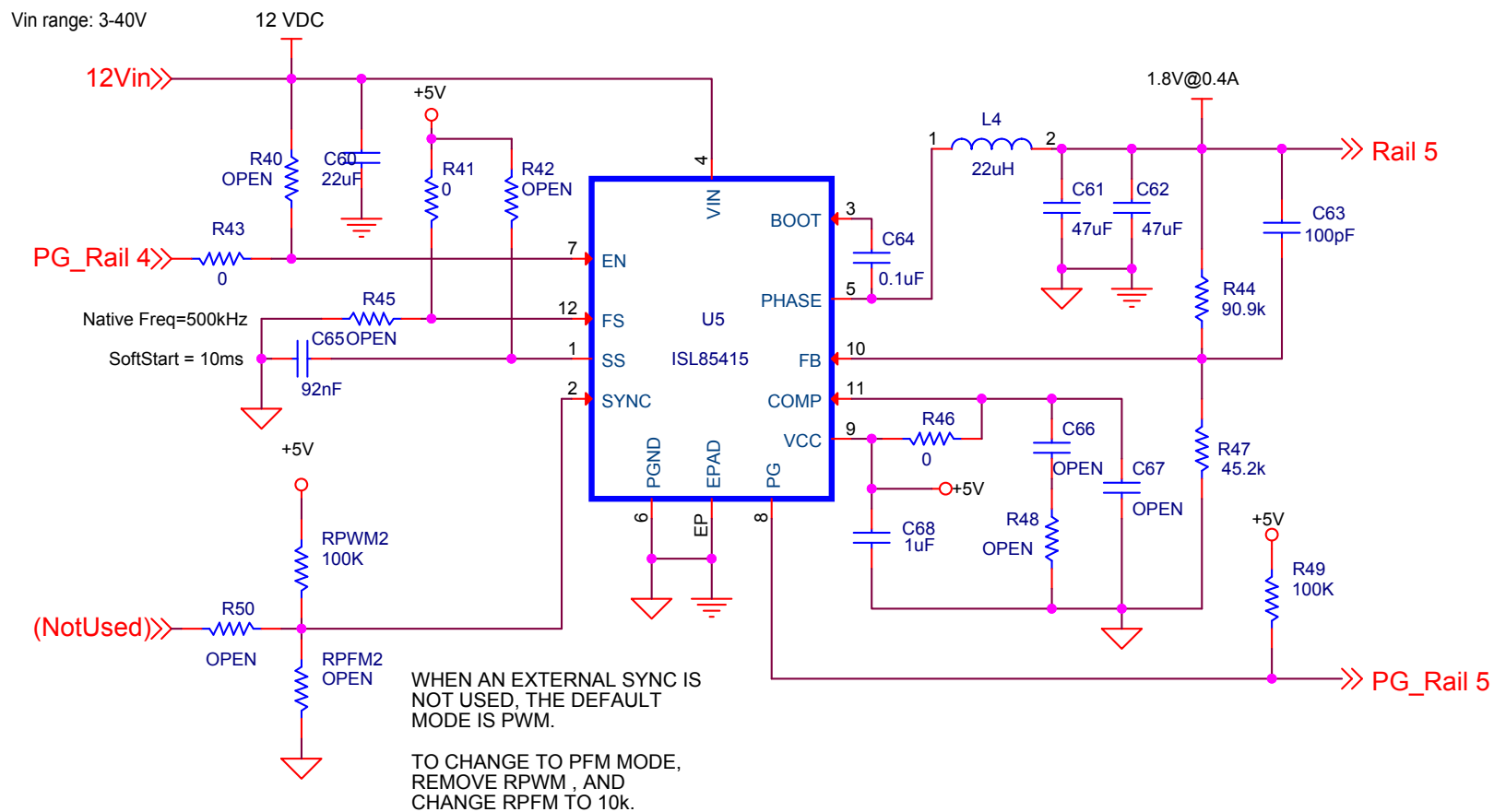
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ISL85415 SINGLE OUTPUT (500mA)



Title		
ISL85415-SINGLE-1		
Size A	Document Number	Rev
Date:	Thursday, March 09, 2017	Sheet 5 of 11

ISL85415 SINGLE OUTPUT (500mA)



Title ISL85415-SINGLE-1

Size A Document Number

Rev

Date: Thursday, March 09, 2017

Sheet 6 of 11

ISL85415 SINGLE OUTPUT (500mA)

Vin range: 3-40V

12 VDC

12Vin>>

PG_Rail 2>>

Native Freq=500kHz

SoftStart = 10ms

+5V

RPWM3 100K

R61 OPEN

RPFM3 OPEN

WHEN AN EXTERNAL SYNC IS NOT USED, THE DEFAULT MODE IS PWM.

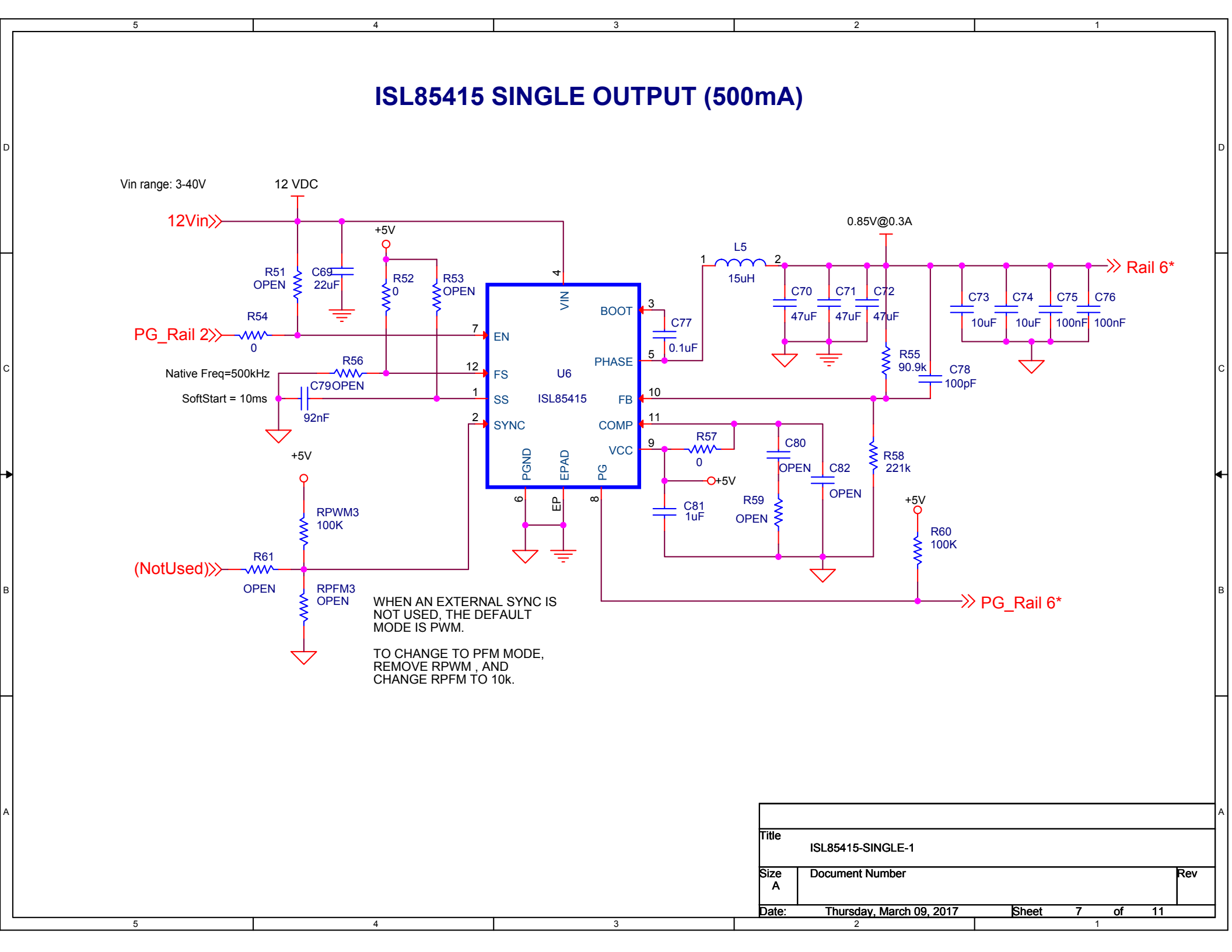
TO CHANGE TO PFM MODE, REMOVE RPWM, AND CHANGE RPFM TO 10k.

0.85V@0.3A

Rail 6*

PG_Rail 6*

Title		
ISL85415-SINGLE-1		
Size A	Document Number	Rev
Date:	Thursday, March 09, 2017	Sheet 7 of 11



ISL85415 SINGLE OUTPUT (500mA)

The circuit diagram shows the ISL85415 regulator configured as a single-output buck converter. The input voltage (V_{in}) ranges from 3V to 40V, with a nominal 12VDC source connected to pin 4 (VIN). A +5V reference is connected to pin 7 (EN), pin 12 (FS), and pin 1 (SS). Pin 12 (FS) is also connected to a feedback network consisting of R52 (0Ω) and R53 (OPEN). Pin 1 (SS) is connected to a soft-start capacitor C79 (92nF). Pin 2 (SYNC) is connected to a divider network of RPWM3 (100K) and RPFM3 (OPEN), which is also connected to a +5V source via R61 (OPEN). The output stage includes an inductor L5 (15μH) connected between pins 1 and 2, followed by a series combination of capacitors C70 (47μF), C71 (47μF), and C72 (47μF). The output voltage is regulated at 0.85V @ 0.3A, labeled as Rail 6*. The feedback network consists of R55 (90.9k) and C78 (100pF) connected to the FB pin (pin 10). The COMP pin (pin 11) is connected to a compensation network of R57 (0Ω), C80 (OPEN), C82 (OPEN), and R59 (OPEN). The VCC pin (pin 9) is connected to a +5V source via R58 (221k) and C81 (1μF). The PGND pin (pin 6) is connected to ground. The EPAD pin (pin 8) is connected to ground. The PHASE pin (pin 5) is connected to ground via C77 (0.1μF).

Component Values:

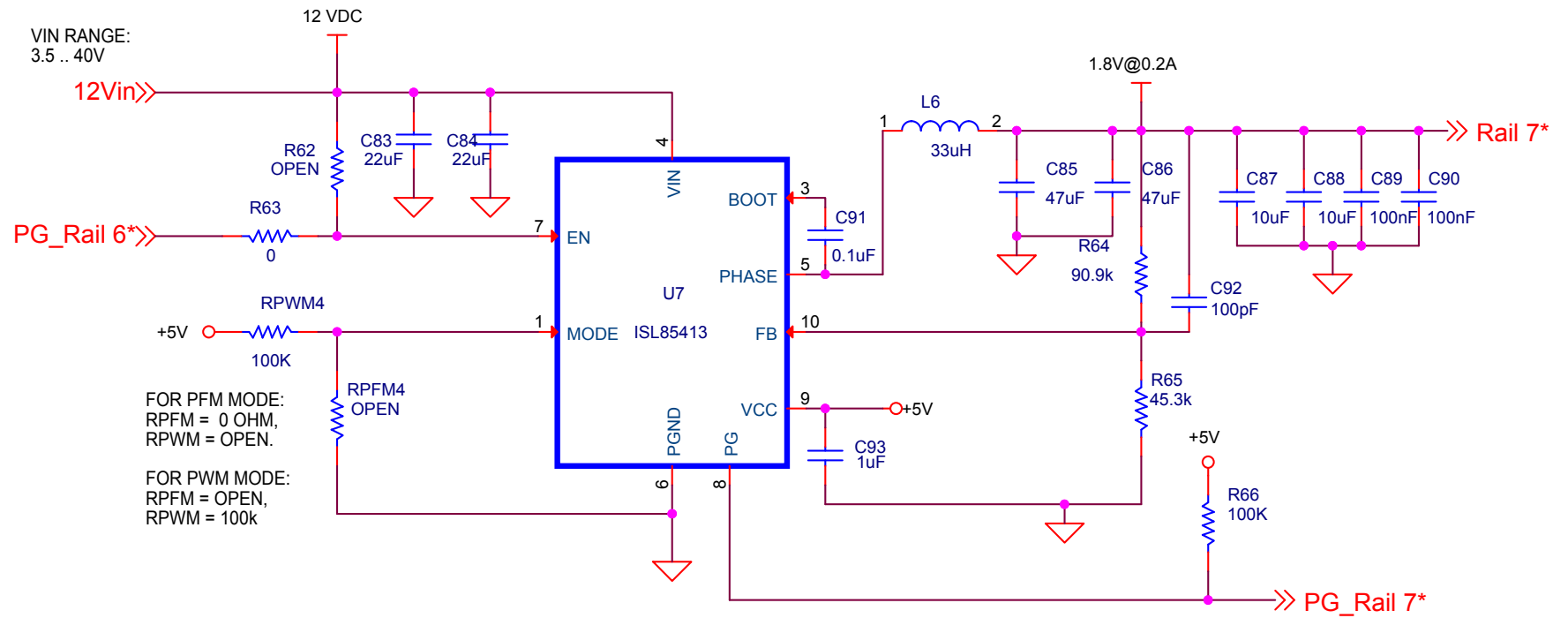
- R51: OPEN
- C69: 22μF
- R52: 0
- R53: OPEN
- R54: 0
- R56: 0
- C79: 92nF
- +5V
- RPWM3: 100K
- RPFM3: OPEN
- (NotUsed)
- R61: OPEN
- L5: 15μH
- C70: 47μF
- C71: 47μF
- C72: 47μF
- C73: 10μF
- C74: 10μF
- C75: 100nF
- C76: 100nF
- R55: 90.9k
- C78: 100pF
- R57: 0
- C80: OPEN
- C82: OPEN
- R59: OPEN
- R58: 221k
- C81: 1μF
- +5V
- R60: 100K

Notes:

- Native Freq=500kHz
- SoftStart = 10ms
- WHEN AN EXTERNAL SYNC IS NOT USED, THE DEFAULT MODE IS PWM.
- TO CHANGE TO PFM MODE, REMOVE RPWM , AND CHANGE RPFM TO 10k.

Title		
ISL85415-SINGLE-1		
Size	Document Number	Rev
A		
Date:	Thursday, March 09, 2017	Sheet 7 of 11

ISL85413 SINGLE OUTPUT (300mA)



Title ISL85413-SINGLE-1

Size
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Document Number
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Rev

Date: Thursday, March 09, 2017

Sheet 8 of 11

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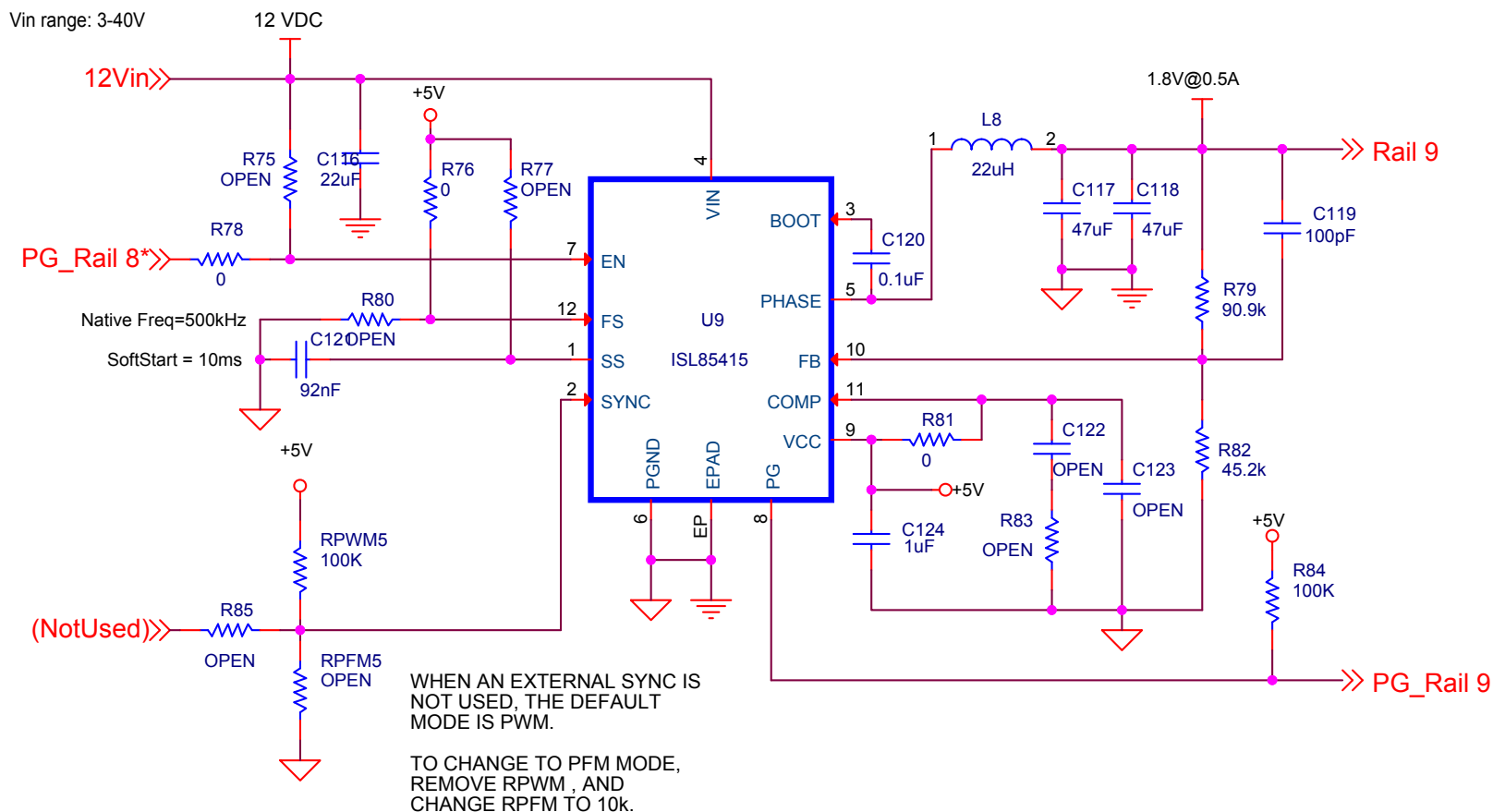
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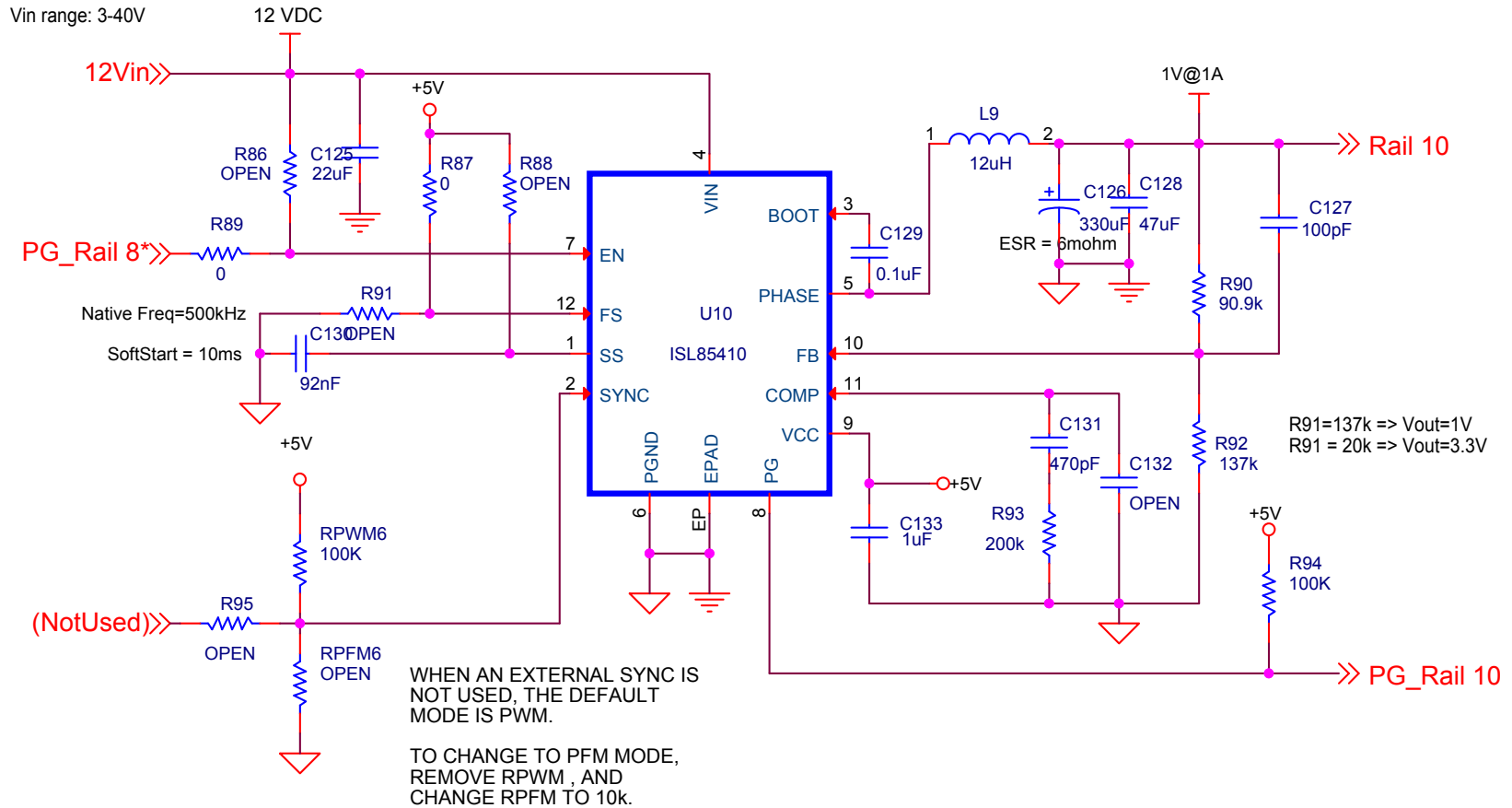
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ISL85415 SINGLE OUTPUT (500mA)



Title		
ISL85415-SINGLE-1		
Size A	Document Number	Rev
Date:	Thursday, March 09, 2017	Sheet 10 of 11

ISL85410 SINGLE OUTPUT (1A)



Title		
ISL85410-SINGLE-1		
Size A	Document Number	Rev
Date:	Thursday, March 09, 2017	Sheet 11 of 11