LT8614 Supply Design Summary Report

Vin : 10.5V (min.), 13.8V (nom.), 18V (max.)

Output Rails : Vout1 = 4.96V / 2A (max.)

Project Name :

Project Date :

Designer :

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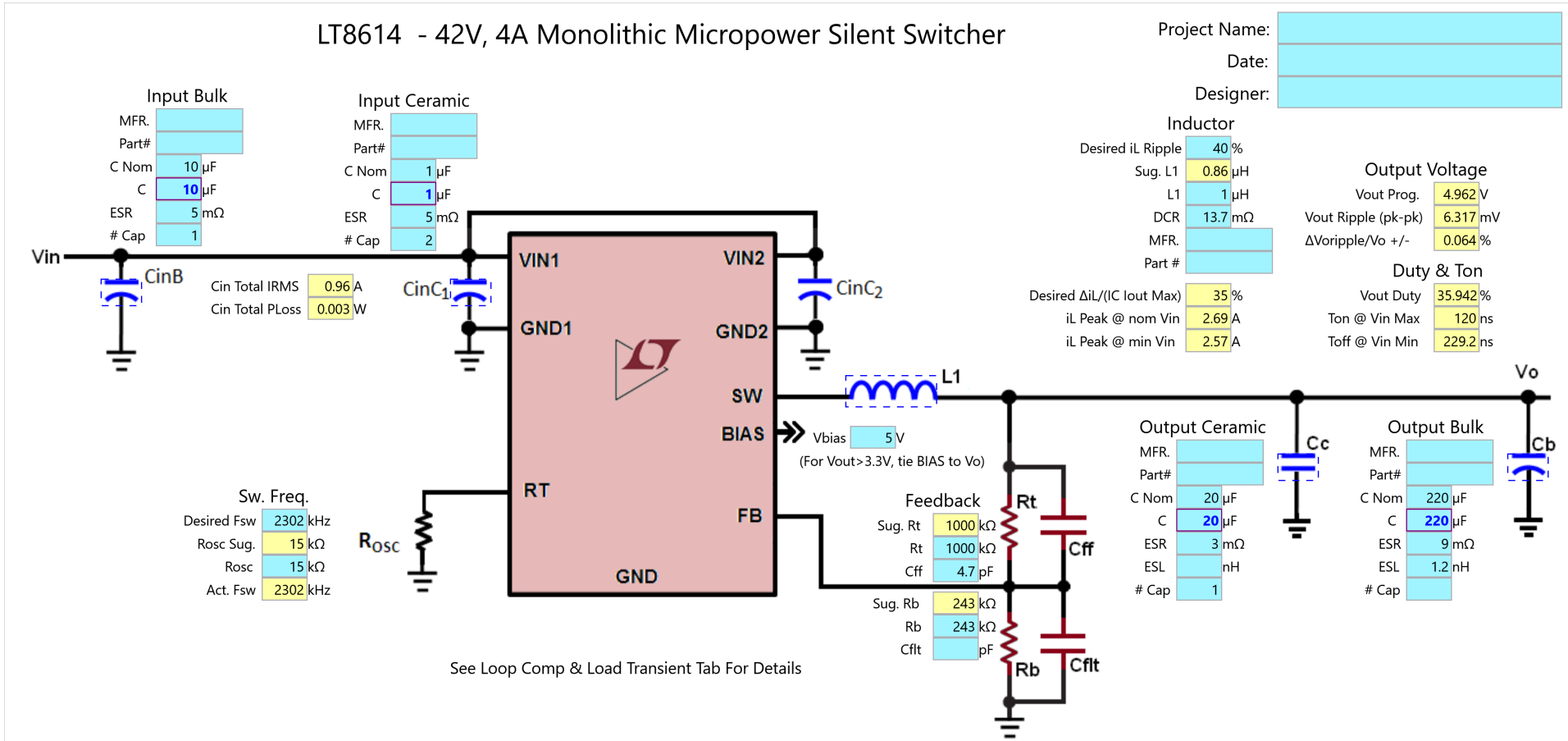
LT8614 Solution - Simplified Schematic

Vin : 10.5V (min.), 13.8V (nom.), 18V (max.)

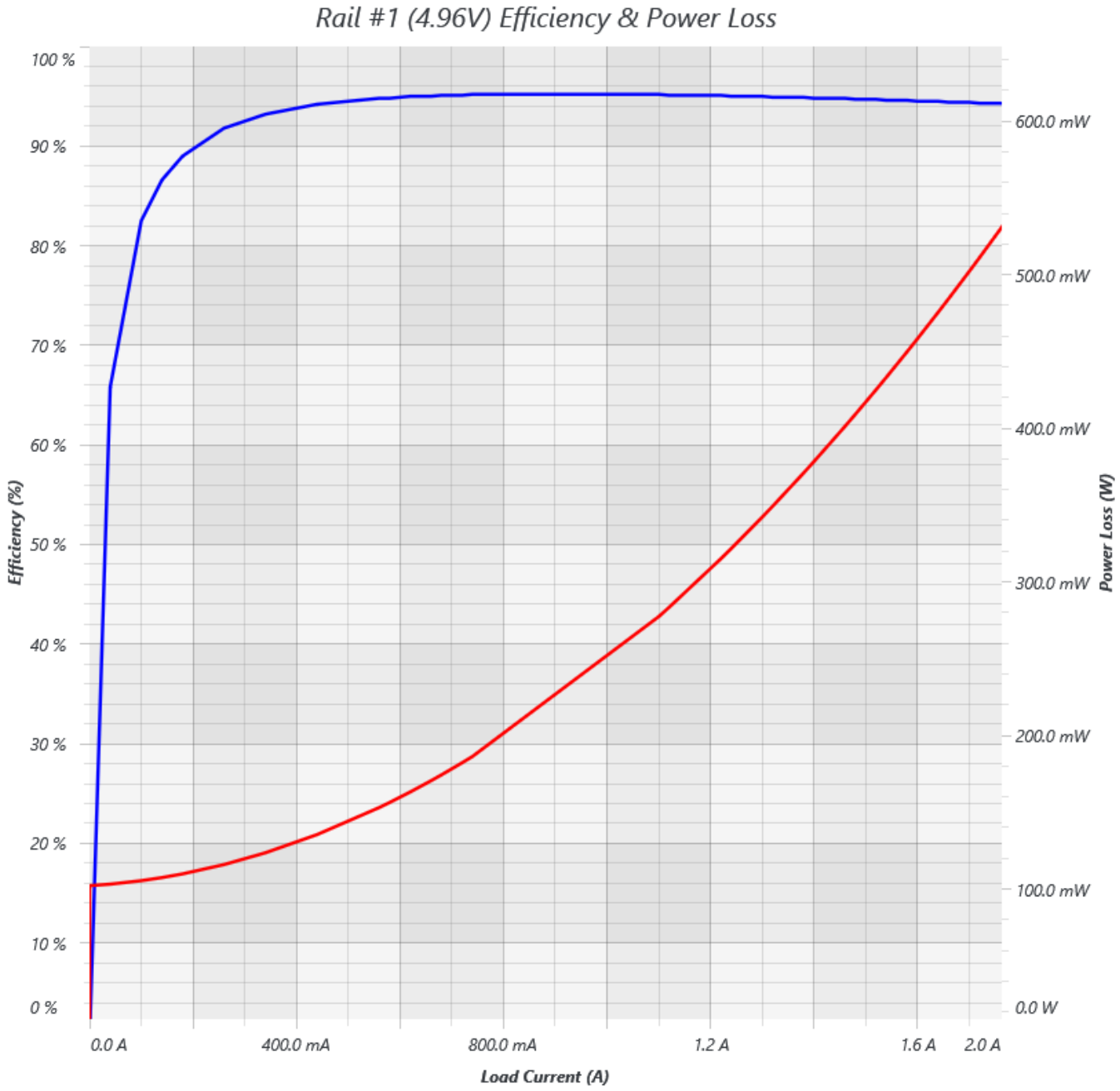
Output Rails : Vout1 = 4.96V / 2A (max.)



LT8614 Solution - Efficiency & Loss Estimations

Rail # 1 : Vin = 13.8V, Vout1 = 4.96V

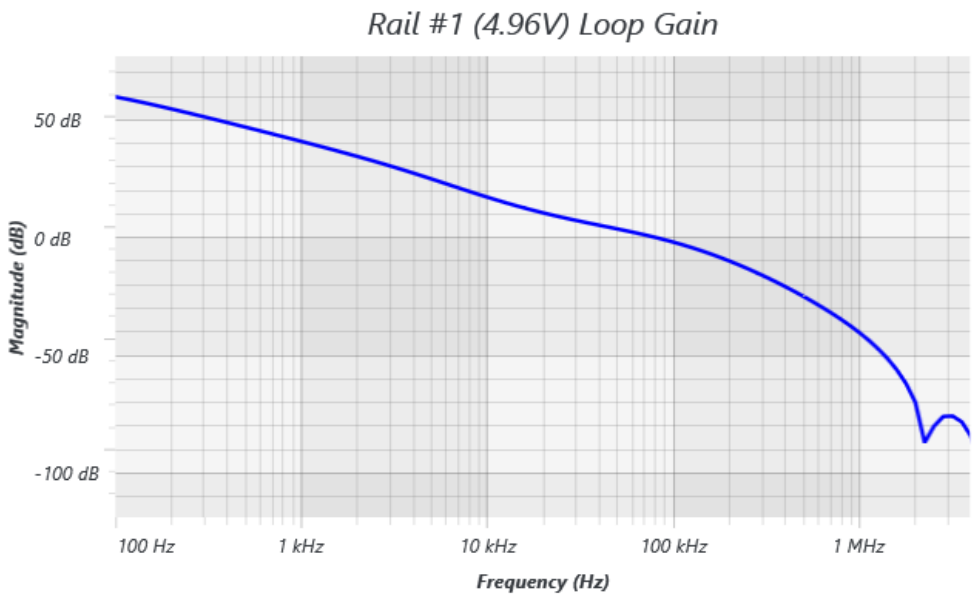
** Estimations For CCM Mode Only. Inductor AC Losses Entered by User*

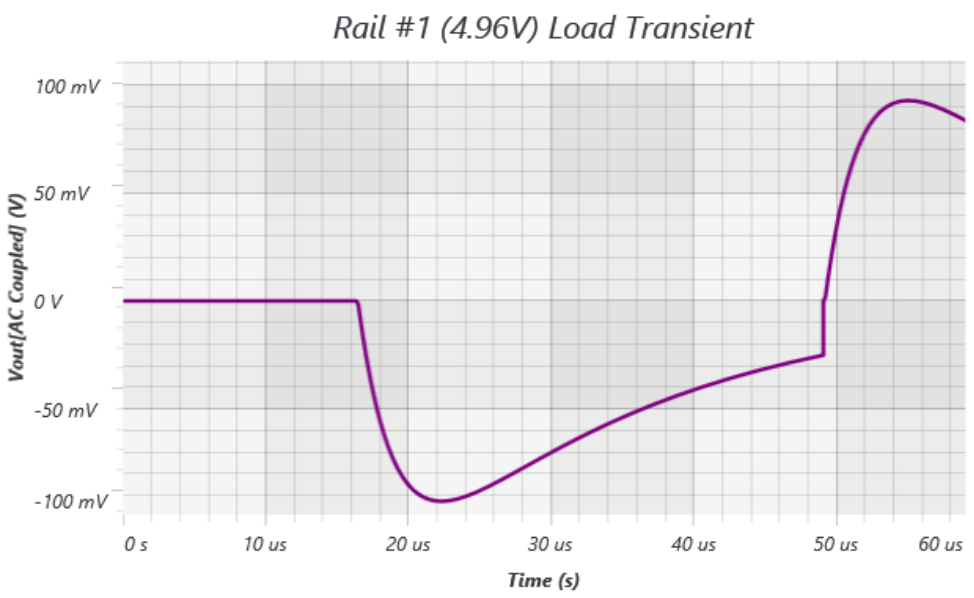


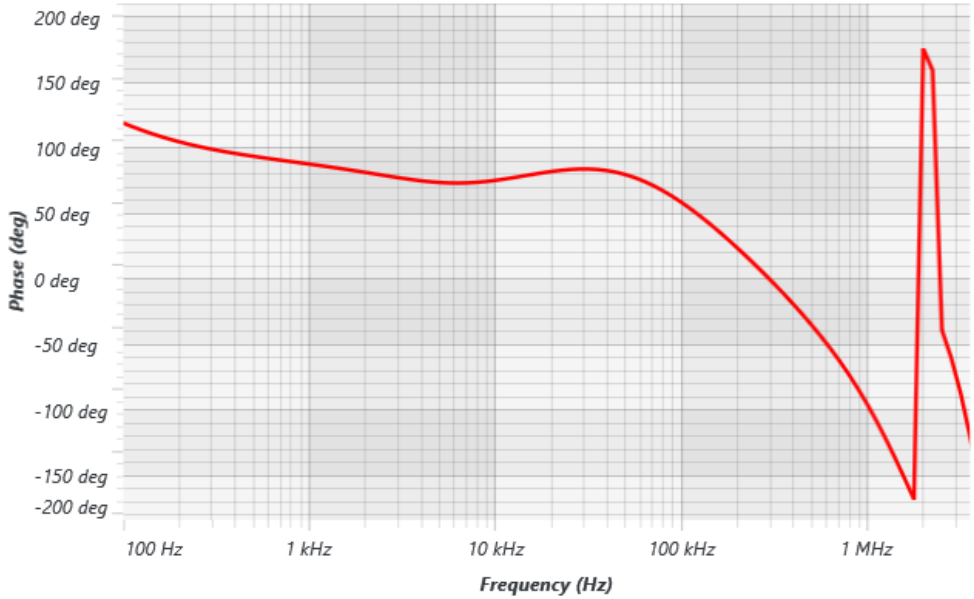
LT8614 Solution - Loop Gain & Load Transient Estimations

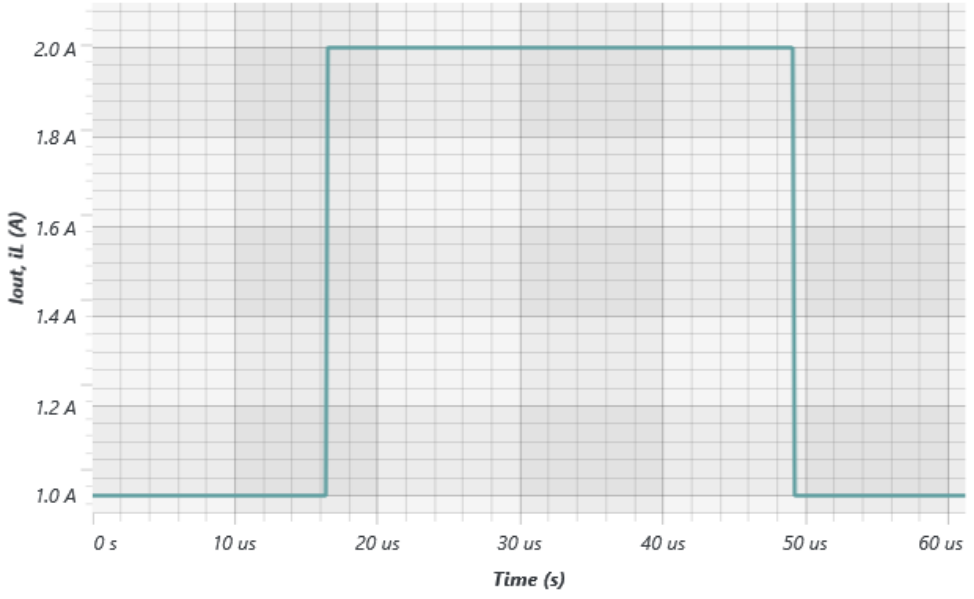
Rail # 1 : Vin = 13.8V, Vout1 = 4.96V, Iout1 = 2A

** Estimations For CCM Mode Only. Estimations Based On Small Signal Avg. Model*









Printed : 12/29/2020

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LT8614 Solution - Summary

LT8614 Supply Design Summary

Project Info:

Design Specifications

Steady State :

Rail #	Vin Min.	Vin Nom.	Vin Max.	Fsw	Vo	ΔVo	ΔVo%	Io Max	ΔiLp-p	ΔiL%	iLpk	Duty	Ton min.	Toff min.
1	10.5 V	13.8 V	18 V	2302 kHz	4.96 V	6.32 mV	0.1 %	2 A	1.38 A	35 %	2.69 A	35.94 %	120 ns	229 ns

Efficiency and Loop :

Rail #	Vo	Iomax	Eff.@Iomax	PLoss@Iomax	Loop BW	Loop PM	Step Low	Step High	Step Slew	ΔVo@Step	ΔVo@Step %
1	4.96 V	2 A	93.86 %	0.649 W	79.43 kHz	67.43 deg	1 A	2 A	100 A/µs	92.78 mV	+/-1.9 %

Recommendations and Warnings :

Message
Rail #1 Capacitance value is not de-rated. Inadequate information provided to estimate de-rated value. Please check the capacitor's entries in library.
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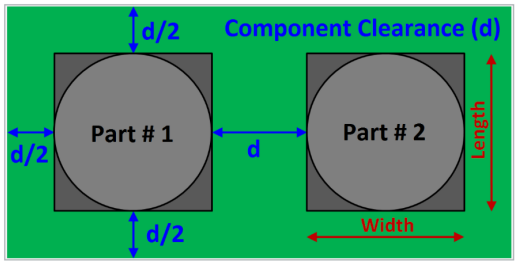
Power Components

Power Components Bill Of Materials : Export BOM

Ref. Des.	Value	Quantity	Description	Mfr. Name	Mfr. Part #	Pkg. (Imperial)	L(mm)	W(mm)	H(mm)	User Note
U1		1	IC	LINEAR TECH	LT8614		4	3	0.75	
Lo1	1µH	1	IND				0	0	0	
Cinb1	10µF	1	CAP				0	0	0	
Cinc1 Cinc2	1µF	2	CAP				0	0	0	
	220µF	0	CAP				0	0	0	
Coc1	20µF	1	CAP				0	0	0	

Power Components Footprint :

# Components	6	
Max. Height	0.75	mm
Component Clearance (d)	1.5	mm
* Power Components Area (Excludes ICs)	0	mm^2
	0	in^2
* Power Components Area (Includes ICs)	24.8	mm^2
	0.038	in^2



**** Notes :***

1. ***The calculated power component area is only the simple sum of component footprint areas with given clearance, assuming all power components are on the same side of PCB. It is NOT the final PCB size with layout design.***
2. ***Component count should change with the number of paralleled phases.***