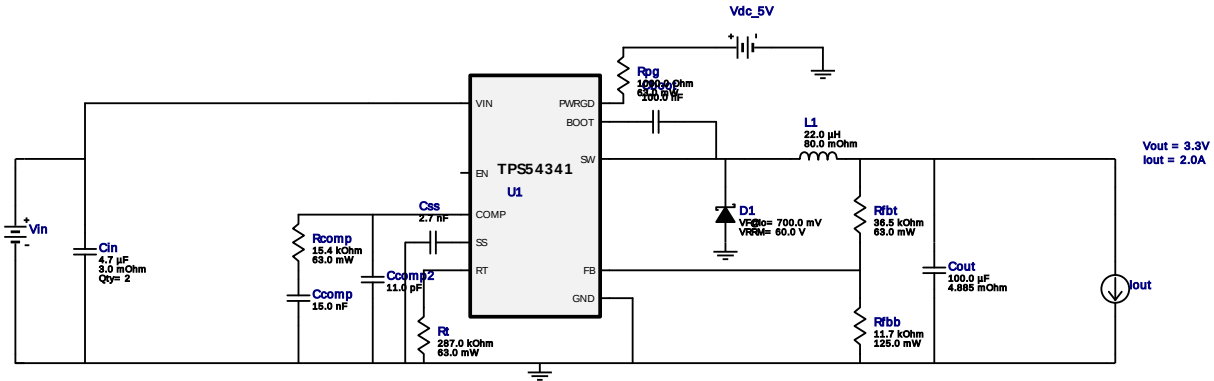


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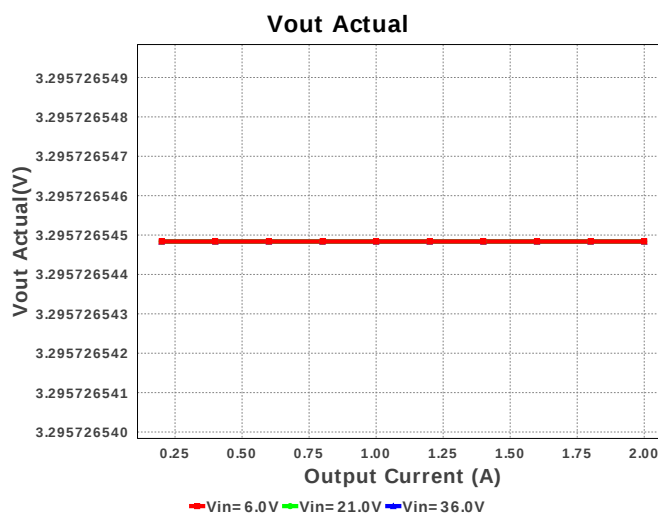
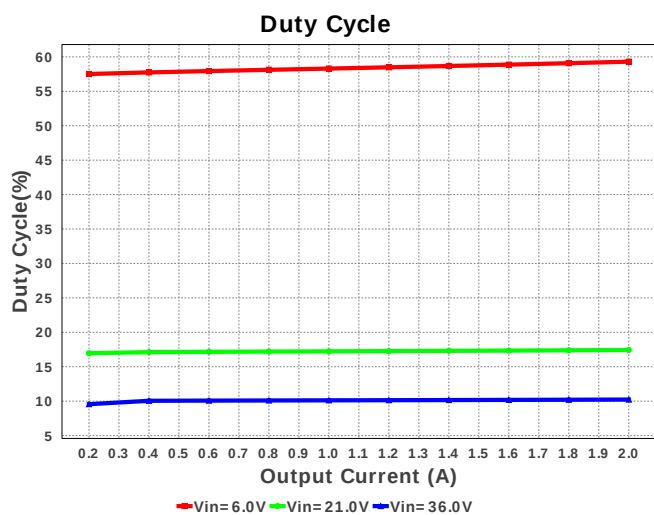
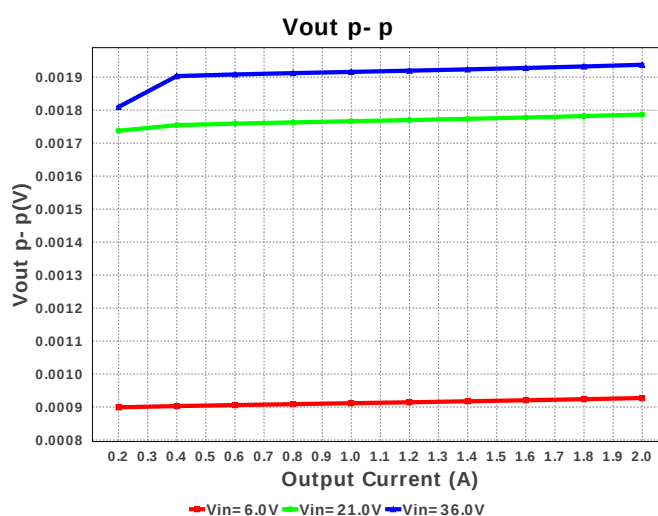
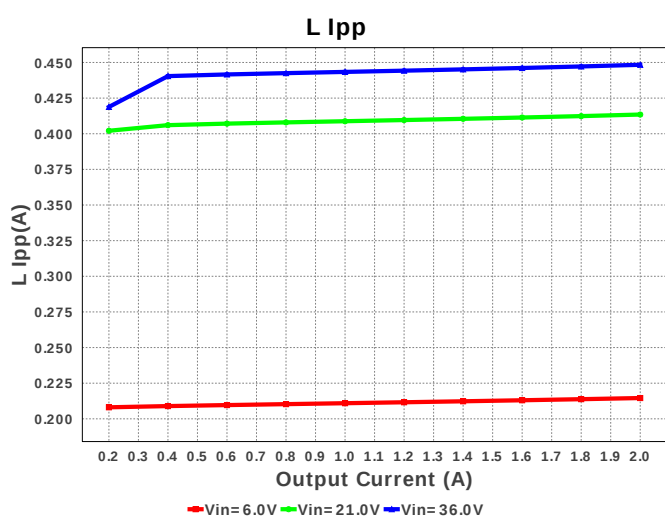
Design : 4085315/6 TPS54341DPRR
TPS54341DPRR 6.0V-36.0V to 3.30V @ 2.0A

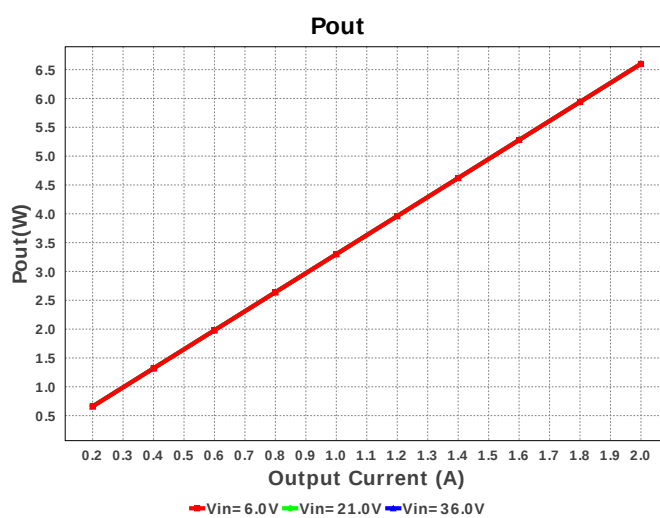
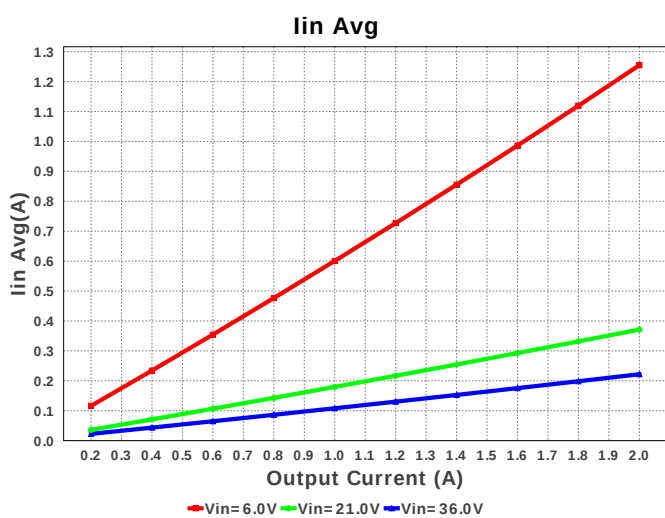
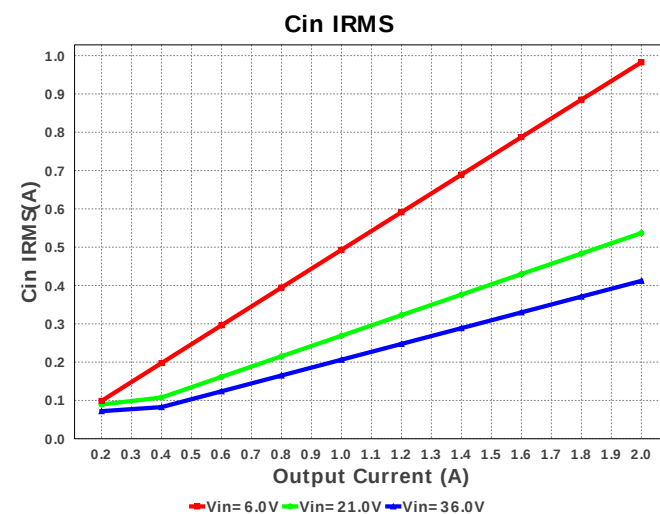
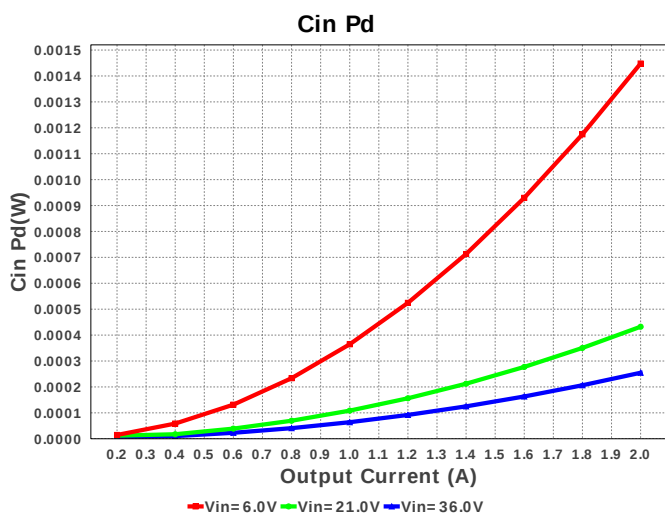
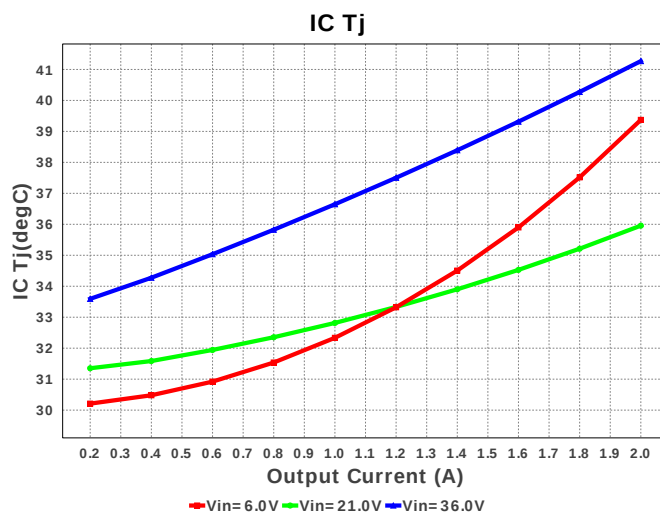
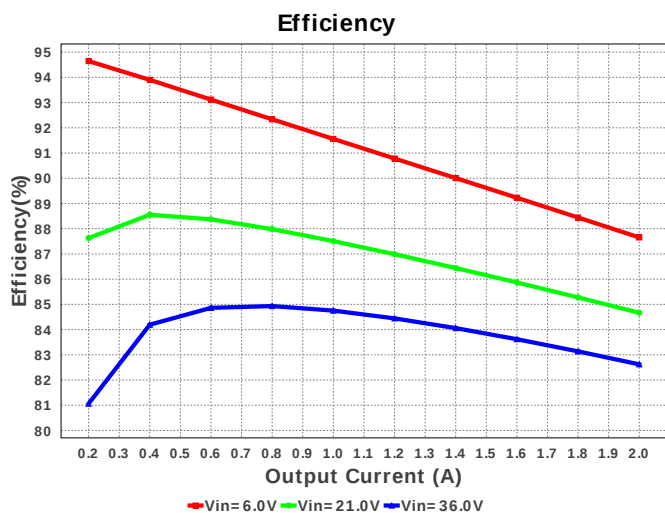


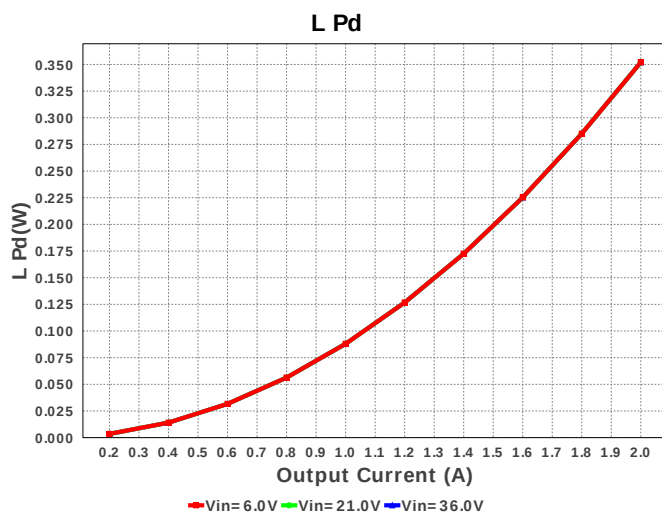
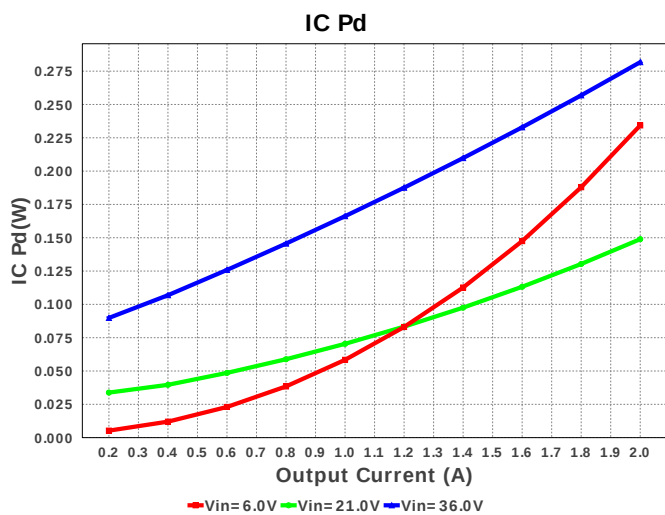
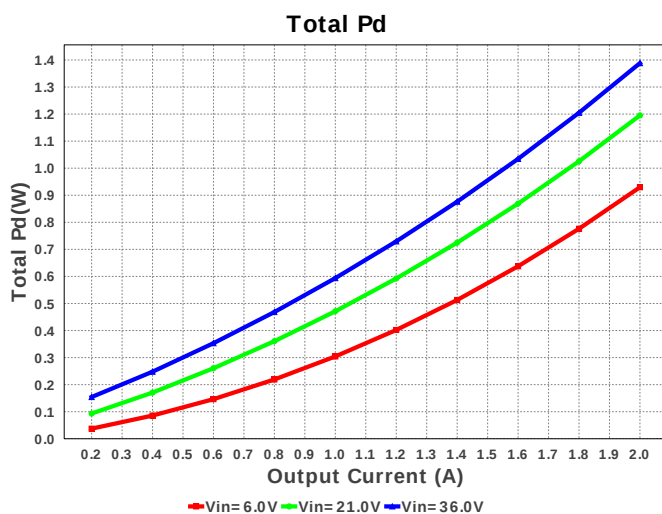
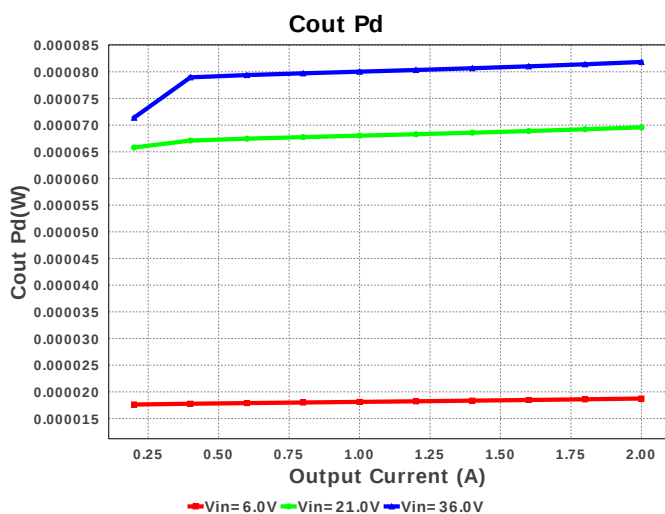
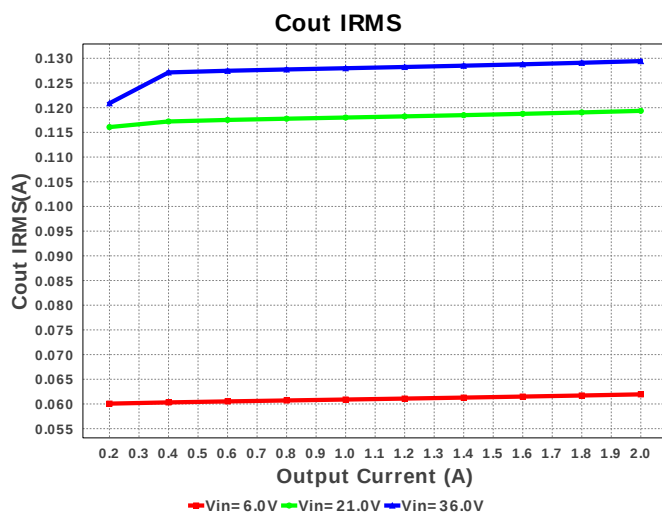
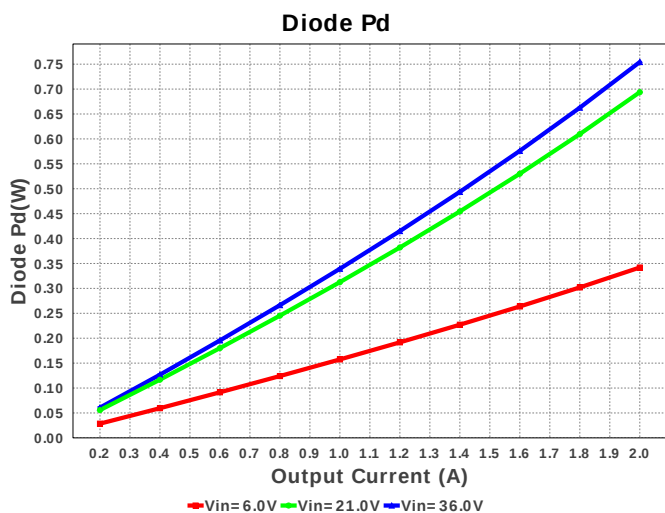
Electrical BOM

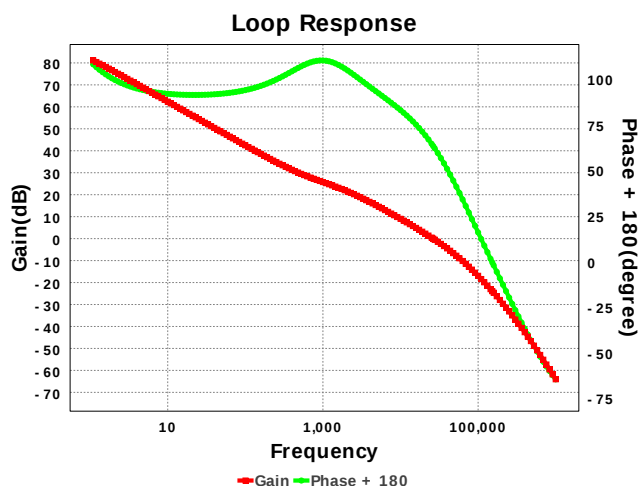
#	Name	Manufacturer	Part Number	Properties	Qty	Price	Footprint
1.	Cboot	MuRata	GRM155R61A104KA01D Series= X5R	Cap= 100.0 nF VDC= 10.0 V IRMS= 0.0 A	1	\$0.01	 0402 3 mm ²
2.	Ccomp	Yageo America	CC0805KRX7R9BB153 Series= X7R	Cap= 15.0 nF VDC= 50.0 V IRMS= 0.0 A	1	\$0.01	 0805 7 mm ²
3.	Ccomp2	TDK	C0603C0G1E110G Series= C0G/NP0	Cap= 11.0 pF VDC= 25.0 V IRMS= 0.0 A	1	\$0.01	 0201 2 mm ²
4.	Cin	MuRata	GRM31CR71H475KA12L Series= X7R	Cap= 4.7 uF ESR= 3.0 mOhm VDC= 50.0 V IRMS= 4.98 A	2	\$0.07	 1206 11 mm ²
5.	Cout	MuRata	GRM31CR60J107ME39L Series= X5R	Cap= 100.0 uF ESR= 4.885 mOhm VDC= 6.3 V IRMS= 4.4118 A	1	\$0.14	 1206_190 11 mm ²
6.	Css	Yageo America	CC0805KRX7R9BB272 Series= X7R	Cap= 2.7 nF VDC= 50.0 V IRMS= 0.0 A	1	\$0.01	 0805 7 mm ²
7.	D1	Diodes Inc.	B360A-13-F	VF@Io= 700.0 mV VRRM= 60.0 V	1	\$0.12	 SMA 37 mm ²
8.	L1	Bourns	SDR1105-220ML	L= 22.0 uH DCR= 80.0 mOhm	1	\$0.29	 SDR1105 157 mm ²
9.	Rcomp	Vishay-Dale	CRCW040215K4FKED Series= CRCW..e3	Res= 15.4 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	 0402 3 mm ²
10.	Rfbb	Yageo America	RT0805BRD0711K7L Series= RT0805	Res= 11.7 kOhm Power= 125.0 mW Tolerance= 0.1%	1	\$0.05	 0805 7 mm ²
11.	Rfbt	Vishay-Dale	CRCW040236K5FKED Series= CRCW..e3	Res= 36.5 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	 0402 3 mm ²

#	Name	Manufacturer	Part Number	Properties	Qty	Price	Footprint
12.	Rpg	Vishay-Dale	CRCW04021K00FKED Series= CRCW..e3	Res= 1000.0 Ohm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	 0402 3 mm ²
13.	Rt	Vishay-Dale	CRCW0402287KFKED Series= CRCW..e3	Res= 287.0 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	 0402 3 mm ²
14.	U1	Texas Instruments	TPS54341DPRR	Switcher	1	\$2.00	 DPR0010A 25 mm ²









Operating Values

#	Name	Value	Category	Description
1.	Cin IRMS	412.727 mA	Current	Input capacitor RMS ripple current
2.	Cout IRMS	130.63 mA	Current	Output capacitor RMS ripple current
3.	Iin Avg	223.79 mA	Current	Average input current
4.	L Ipp	452.51 mA	Current	Peak-to-peak inductor ripple current
5.	BOM Count	15	General	Total Design BOM count
6.	FootPrint	290.0 mm ²	General	Total Foot Print Area of BOM components
7.	Frequency	339.185 kHz	General	Switching frequency
8.	Mode	CCM	General	Conduction Mode
9.	Pout	6.6 W	General	Total output power
10.	Total BOM	\$2.82	General	Total BOM Cost
11.	ICThetaJA Effective	40.0 degC/W	Op_Point	Effective IC Junction-to-Ambient Thermal Resistance
12.	Low Freq Gain	81.125 dB	Op_Point	Gain at 10Hz
13.	Vout Actual	3.296 V	Op_Point	Vout Actual calculated based on selected voltage divider resistors
14.	Vout OP	3.3 V	Op_Point	Operational Output Voltage
15.	Cross Freq	26.355 kHz	Op_point	Bode plot crossover frequency
16.	Duty Cycle	10.326 %	Op_point	Duty cycle
17.	Efficiency	81.921 %	Op_point	Steady state efficiency
18.	Gain Marg	-23.932 dB	Op_point	Bode Plot Gain Margin
19.	IC Tj	41.285 degC	Op_point	IC junction temperature
20.	IOUT_OP	2.0 A	Op_point	Iout operating point
21.	Phase Marg	63.886 deg	Op_point	Bode Plot Phase Margin
22.	VIN_OP	36.0 V	Op_point	Vin operating point
23.	Vout p-p	1.955 mV	Op_point	Peak-to-peak output ripple voltage
24.	Cin Pd	255.516 μ W	Power	Input capacitor power dissipation
25.	Cout Pd	83.358 μ W	Power	Output capacitor power dissipation
26.	Diode Pd	822.08 mW	Power	Diode power dissipation
27.	IC Pd	282.114 mW	Power	IC power dissipation
28.	L Pd	352.0 mW	Power	Inductor power dissipation
29.	Total Pd	1.457 W	Power	Total Power Dissipation
30.	Vout Tolerance	1.842 %		Vout Tolerance based on IC Tolerance (no load) and voltage divider resistors if applicable

Design Inputs

#	Name	Value	Description
1.	Iout	2.0	Maximum Output Current
2.	VinMax	36.0	Maximum input voltage
3.	VinMin	6.0	Minimum input voltage
4.	Vout	3.3	Output Voltage
5.	base_pn	TPS54341	Texas Instruments Base Part Number
6.	source	DC	Input Source Type
7.	ta	30.0	Ambient temperature

Design Assistance

1. TPS54341 Product Folder : <http://www.ti.com/product/TPS54341> : contains the data sheet and other resources.

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