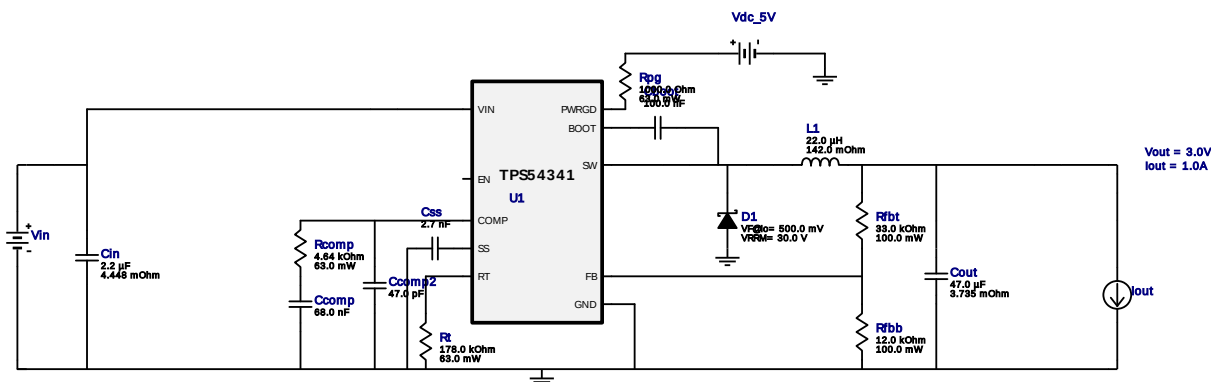


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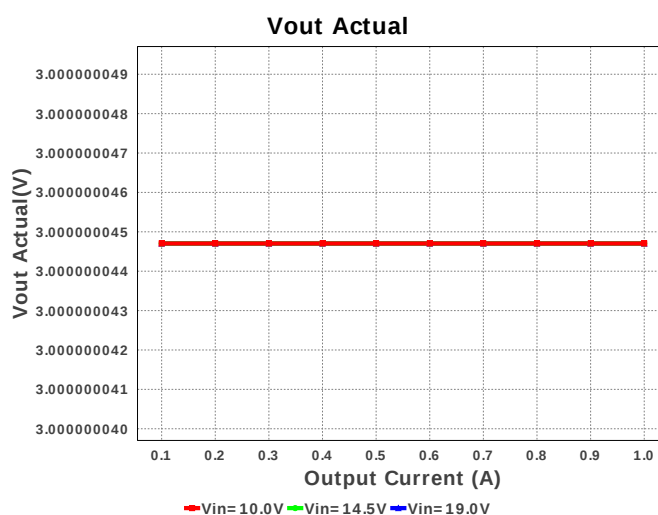
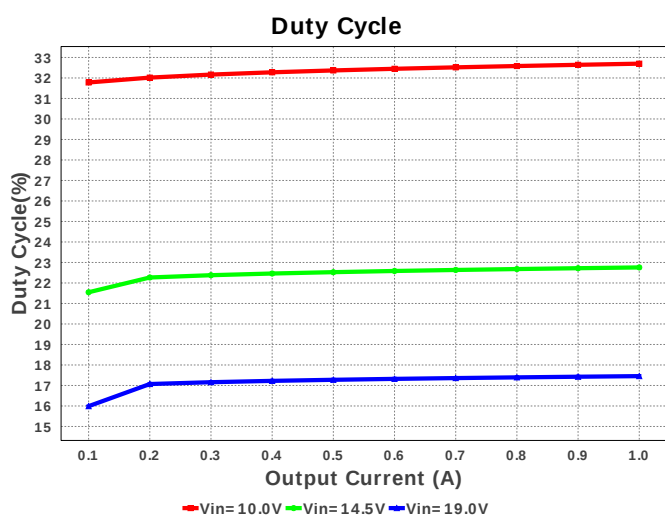
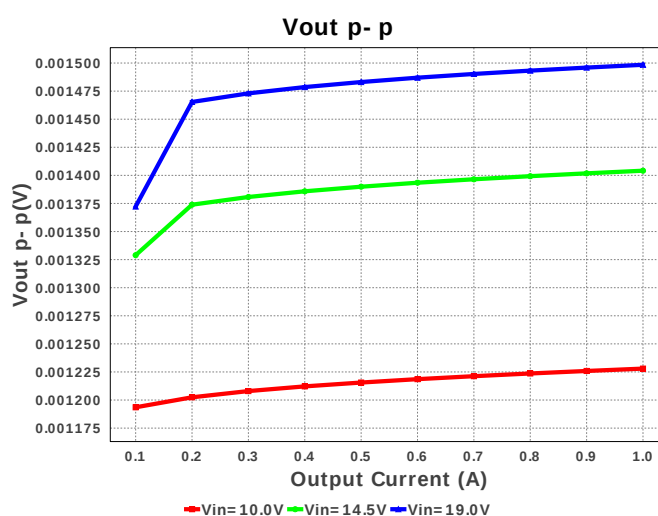
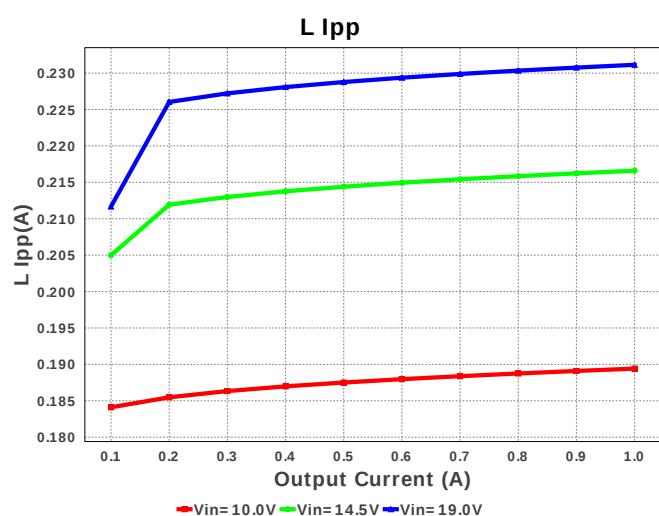
Design : 4728729/35 TPS54341DPRR
TPS54341DPRR 10.0V-19.0V to 3.00V @ 1.0A

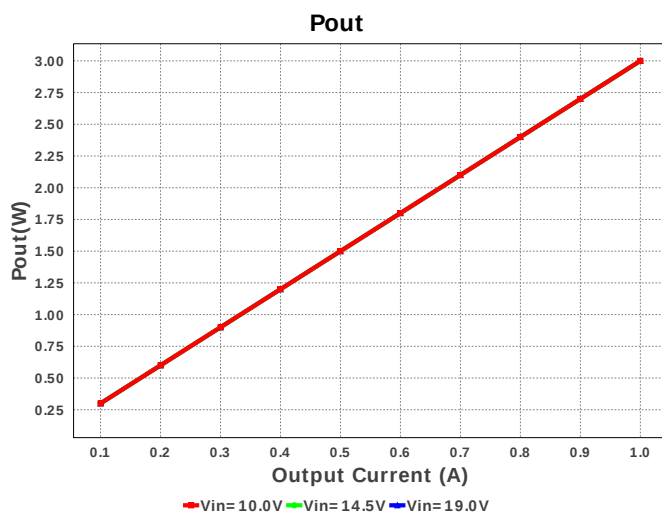
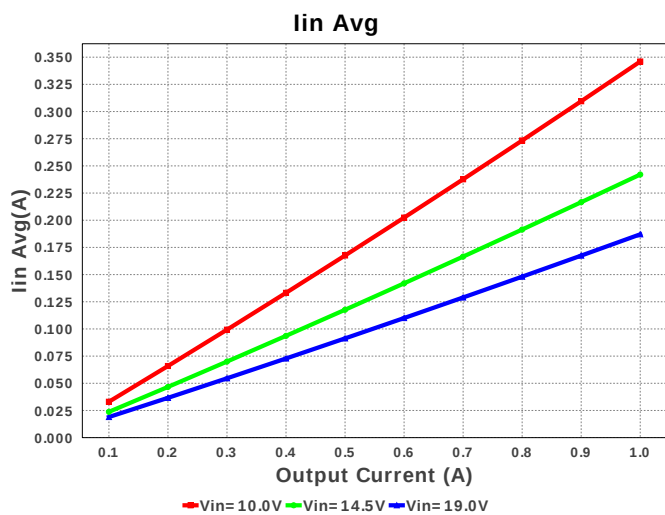
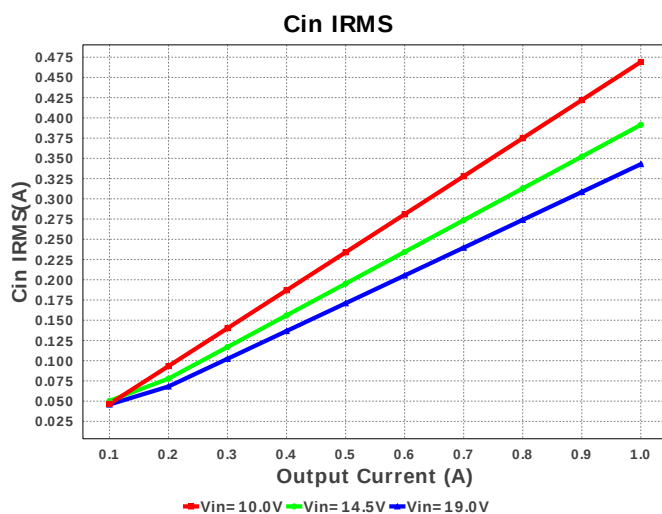
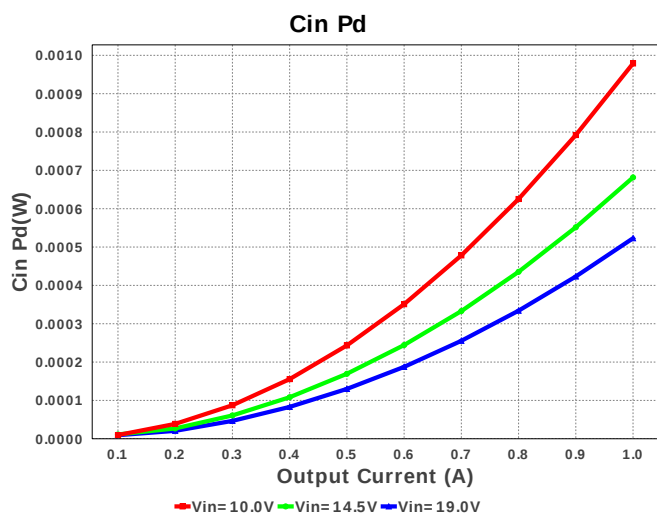
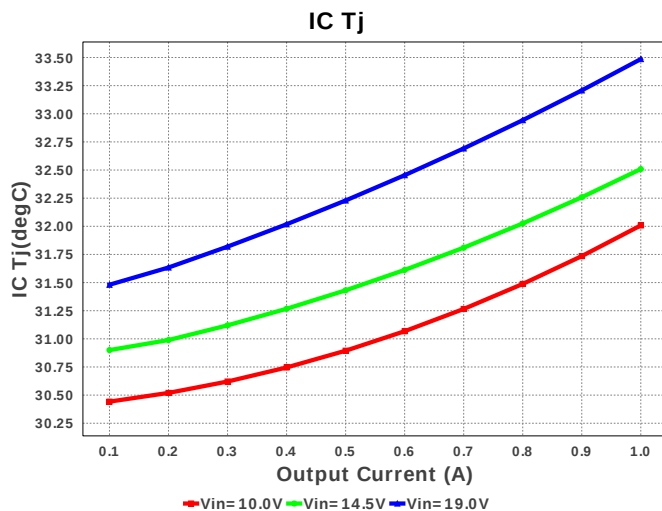
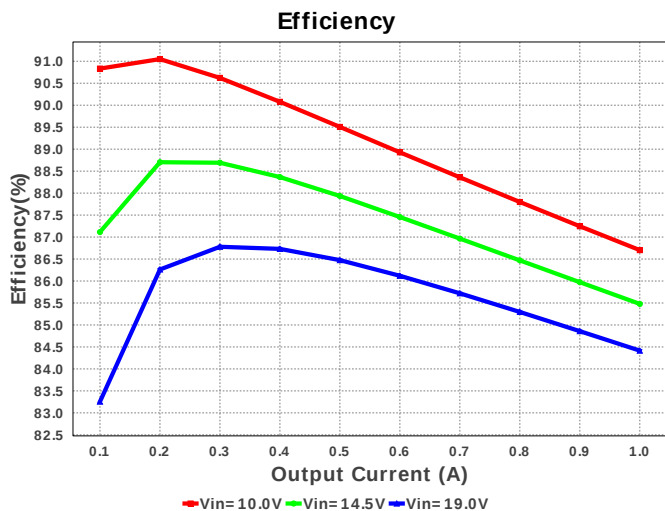


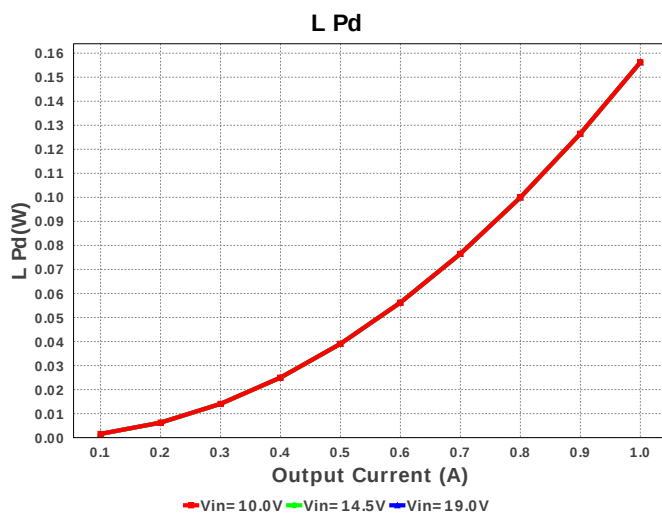
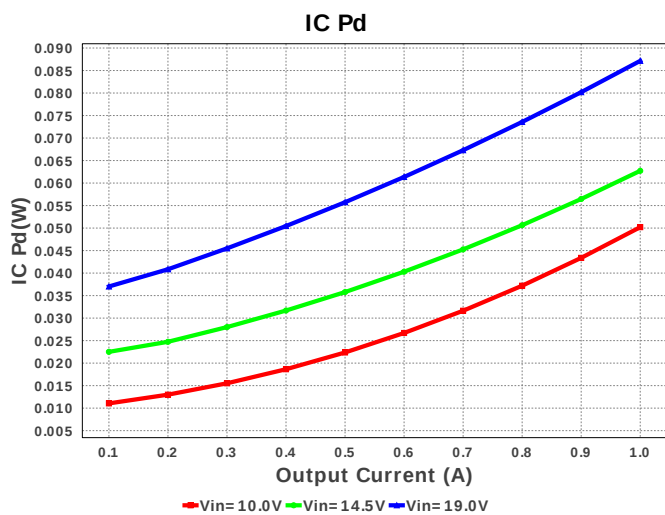
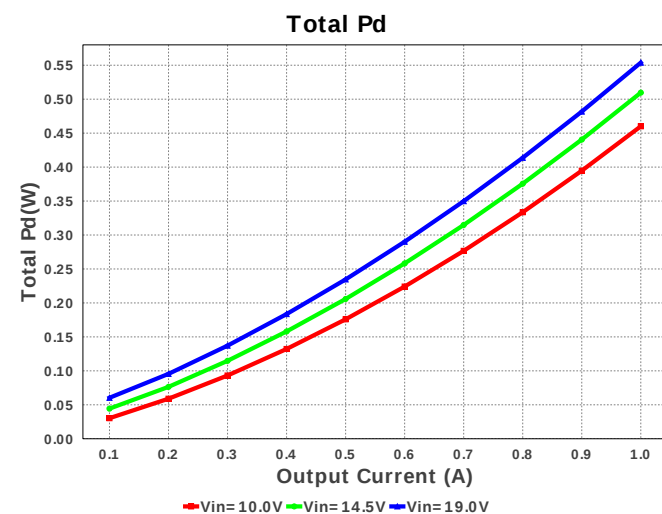
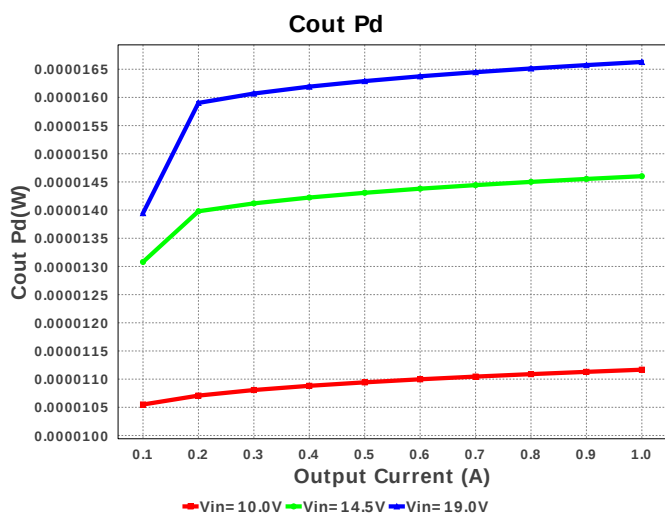
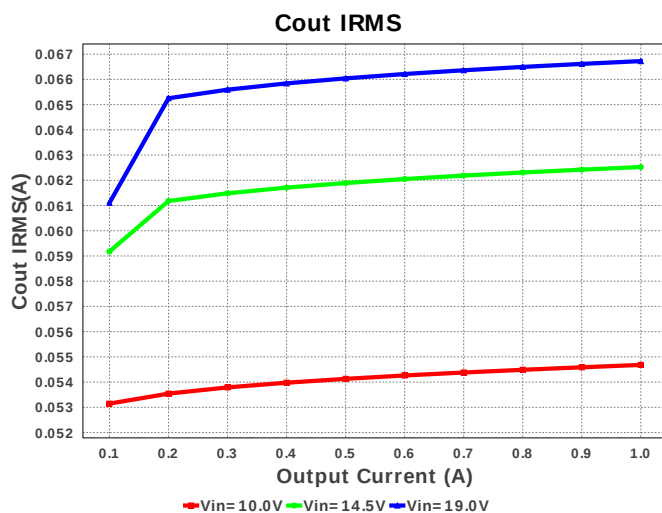
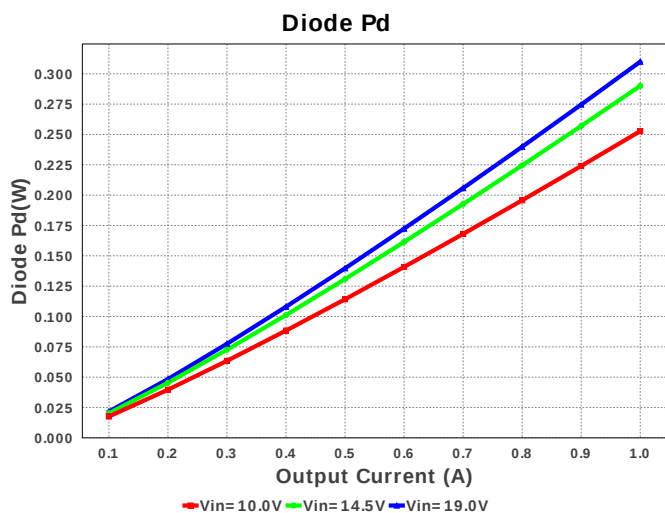
Electrical BOM

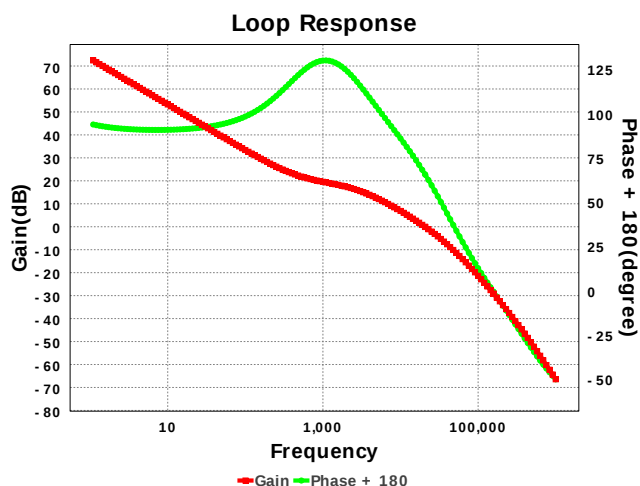
#	Name	Manufacturer	Part Number	Properties	Qty	Price	Footprint
1.	Cboot	MuRata	GRM155R61A104KA01D Series= X5R	Cap= 100.0 nF VDC= 10.0 V IRMS= 0.0 A	1	\$0.01	 0402 3 mm ²
2.	Ccomp	MuRata	GRM155R61A683KA01D Series= X5R	Cap= 68.0 nF VDC= 10.0 V IRMS= 0.0 A	1	\$0.01	 0402 3 mm ²
3.	Ccomp2	Kemet	C0805C470K5GACTU Series= C0G/NP0	Cap= 47.0 pF VDC= 50.0 V IRMS= 0.0 A	1	\$0.01	 0805 7 mm ²
4.	Cin	MuRata	GRM31CR71H225KA88L Series= X7R	Cap= 2.2 uF ESR= 4.448 mOhm VDC= 50.0 V IRMS= 2.2252 A	1	\$0.05	 1206_190 11 mm ²
5.	Cout	MuRata	GRM31CE70G476ME15L Series= X7U	Cap= 47.0 uF ESR= 3.735 mOhm VDC= 4.0 V IRMS= 4.1841 A	1	\$0.10	 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.	B230A-13-F	VF@Io= 500.0 mV VRRM= 30.0 V	1	\$0.09	 SMA 37 mm ²
8.	L1	Bourns	SRN6045-220M	L= 22.0 uH DCR= 142.0 mOhm	1	\$0.16	 SRN6045 64 mm ²
9.	Rcomp	Vishay-Dale	CRCW04024K64FKED Series= CRCW..e3	Res= 4.64 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	 0402 3 mm ²
10.	Rfbb	Yageo America	RC0603FR-0712KL Series= ?	Res= 12.0 kOhm Power= 100.0 mW Tolerance= 1.0%	1	\$0.01	 0603 5 mm ²
11.	Rfbs	Yageo America	RC0603FR-0733KL Series= ?	Res= 33.0 kOhm Power= 100.0 mW Tolerance= 1.0%	1	\$0.01	 0603 5 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	CRCW0402178KFKED Series= CRCW..e3	Res= 178.0 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	343.261 mA	Current	Input capacitor RMS ripple current
2.	Cout IRMS	66.978 mA	Current	Output capacitor RMS ripple current
3.	Iin Avg	187.71 mA	Current	Average input current
4.	L Ipp	232.02 mA	Current	Peak-to-peak inductor ripple current
5.	BOM Count	14	General	Total Design BOM count
6.	FootPrint	186.0 mm ²	General	Total Foot Print Area of BOM components
7.	Frequency	549.245 kHz	General	Switching frequency
8.	Pout	3.0 W	General	Total output power
9.	Total BOM	\$2.49	General	Total BOM Cost
10.	ICThetaJA Effective	40.0 degC/W	Op_Point	Effective IC Junction-to-Ambient Thermal Resistance
11.	Low Freq Gain	72.428 dB	Op_Point	Gain at 10Hz
12.	Vout Actual	3.0 V	Op_Point	Vout Actual calculated based on selected voltage divider resistors
13.	Vout OP	3.0 V	Op_Point	Operational Output Voltage
14.	Cross Freq	20.671 kHz	Op_point	Bode plot crossover frequency
15.	Duty Cycle	17.522 %	Op_point	Duty cycle
16.	Efficiency	84.117 %	Op_point	Steady state efficiency
17.	Gain Marg	-29.114 dB	Op_point	Bode Plot Gain Margin
18.	IC Tj	33.488 degC	Op_point	IC junction temperature
19.	IOUT_OP	1.0 A	Op_point	Iout operating point
20.	Phase Marg	66.287 deg	Op_point	Bode Plot Phase Margin
21.	VIN_OP	19.0 V	Op_point	Vin operating point
22.	Vout p-p	1.504 mV	Op_point	Peak-to-peak output ripple voltage
23.	Cin Pd	524.101 μW	Power	Input capacitor power dissipation
24.	Cout Pd	16.756 μW	Power	Output capacitor power dissipation
25.	Diode Pd	322.509 mW	Power	Diode power dissipation
26.	IC Pd	87.206 mW	Power	IC power dissipation
27.	L Pd	156.2 mW	Power	Inductor power dissipation
28.	Total Pd	566.466 mW	Power	Total Power Dissipation
29.	Vout Tolerance	2.496 %		Vout Tolerance based on IC Tolerance (no load) and voltage divider resistors if applicable

Design Inputs

#	Name	Value	Description
1.	Iout	1.0	Maximum Output Current
2.	VinMax	19.0	Maximum input voltage
3.	VinMin	10.0	Minimum input voltage
4.	Vout	3.0	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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