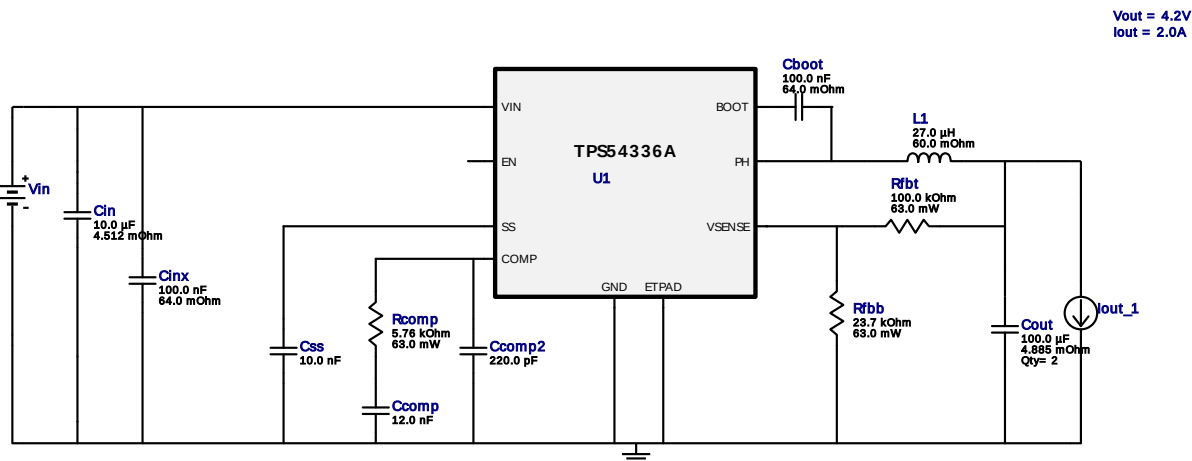
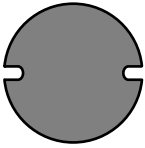


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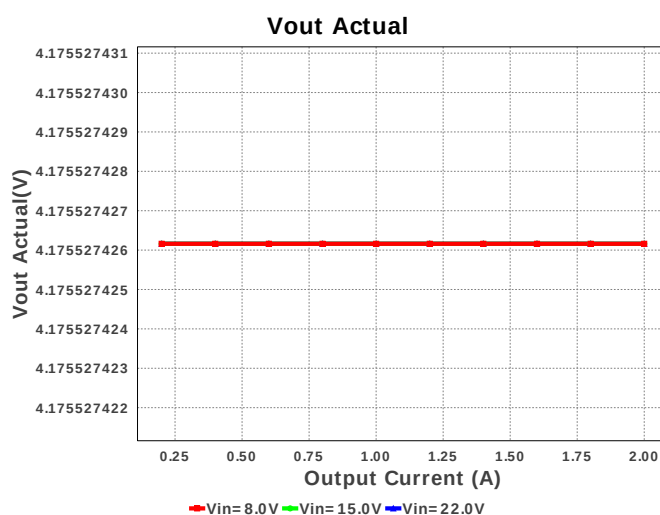
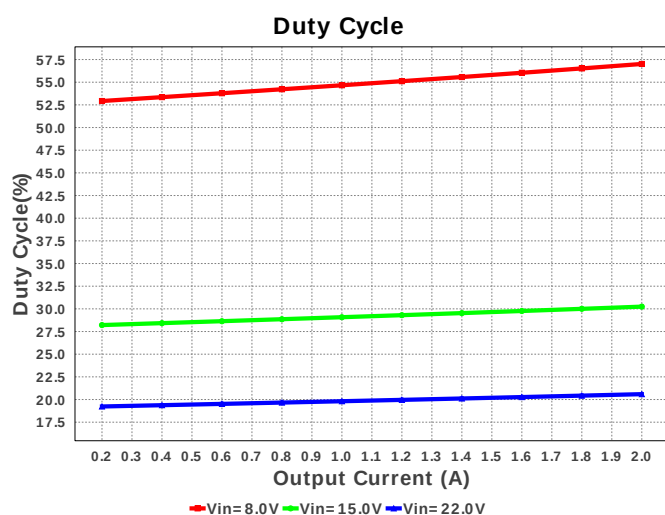
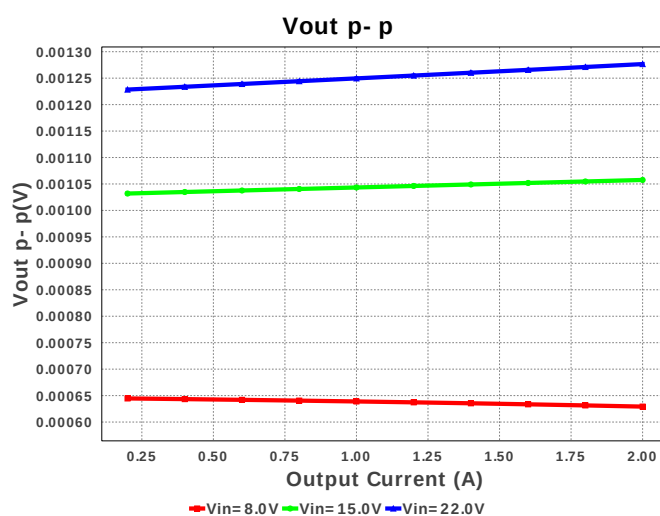
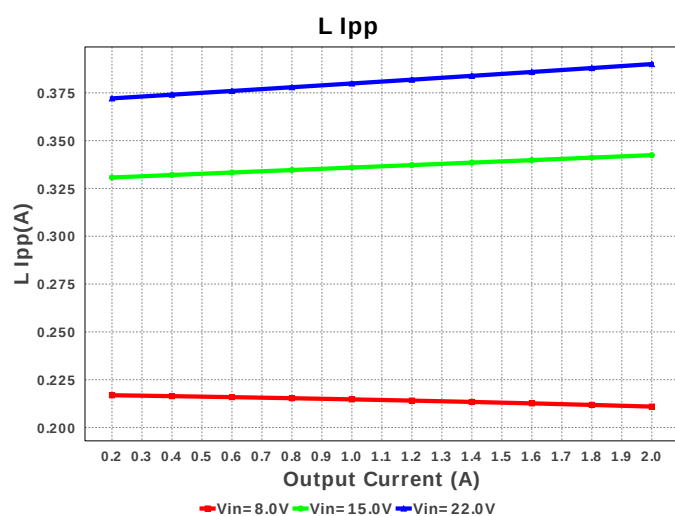
Design : 4743517/1 TPS54336ADDAR
TPS54336ADDAR 8.0V-22.0V to 4.20V @ 2.0A

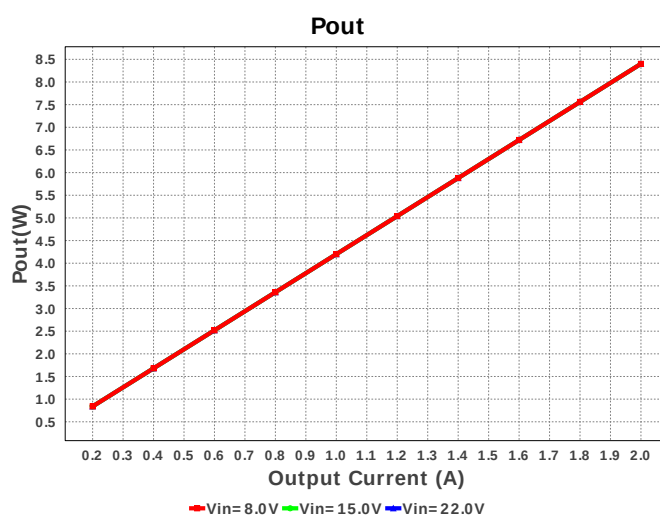
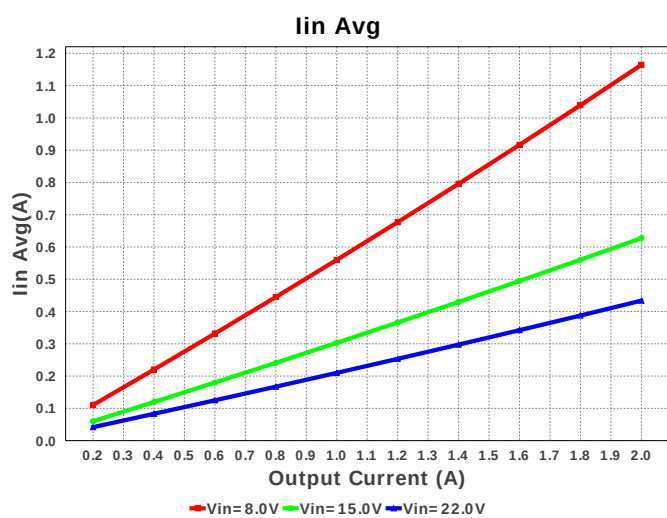
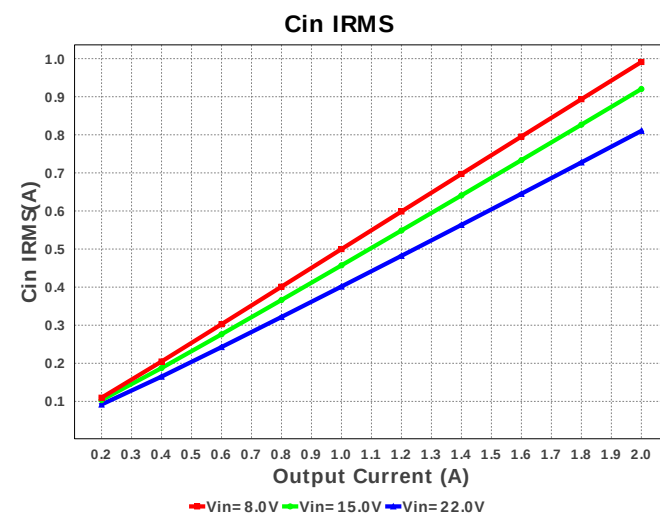
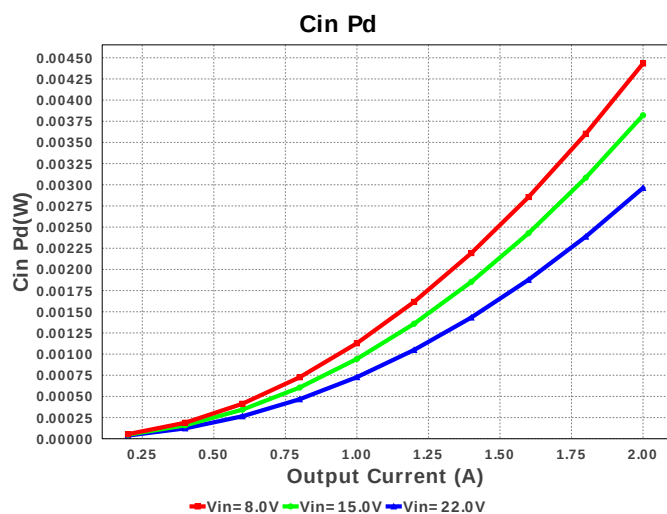
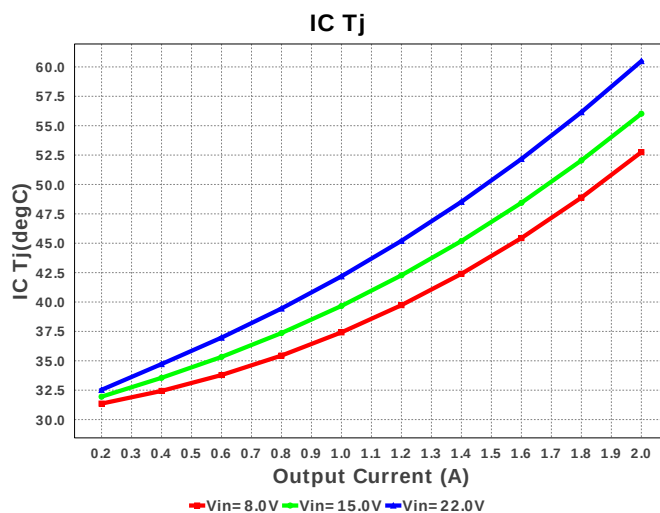
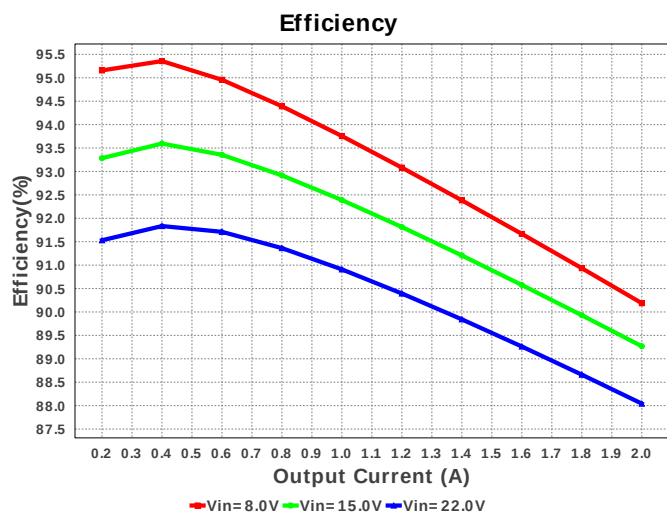


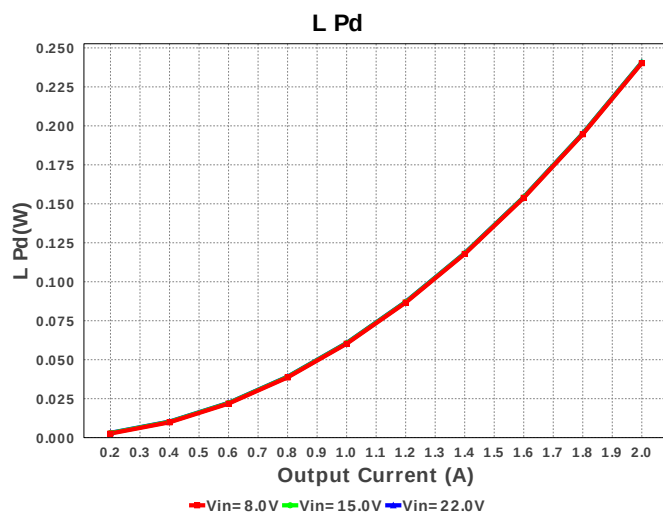
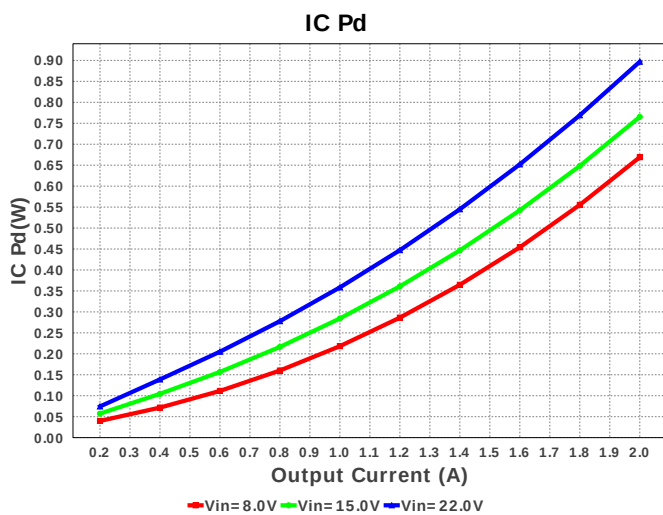
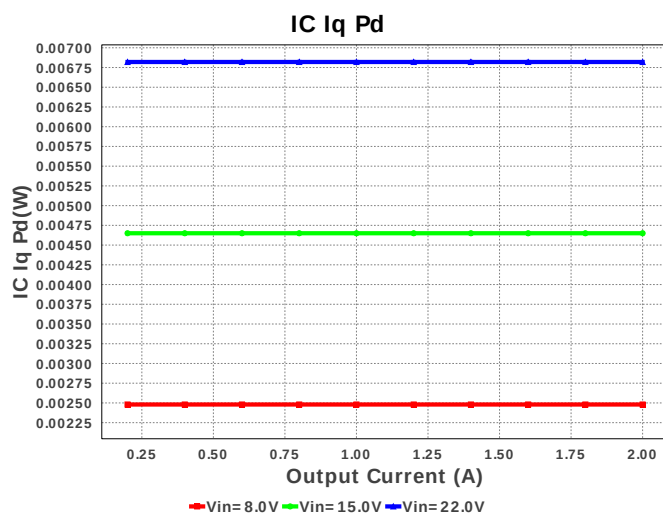
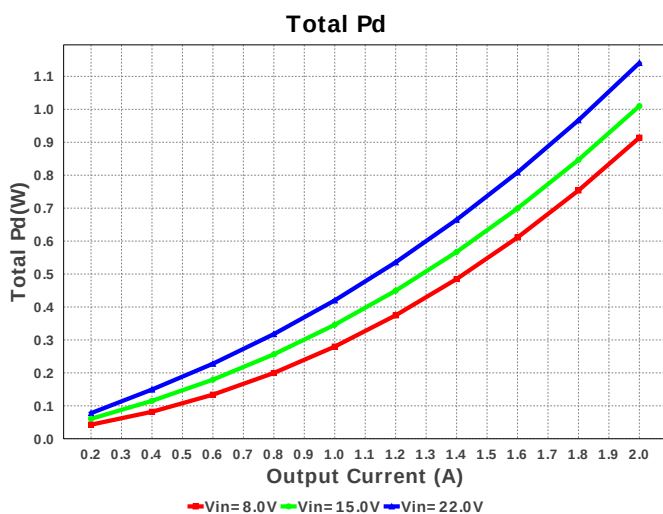
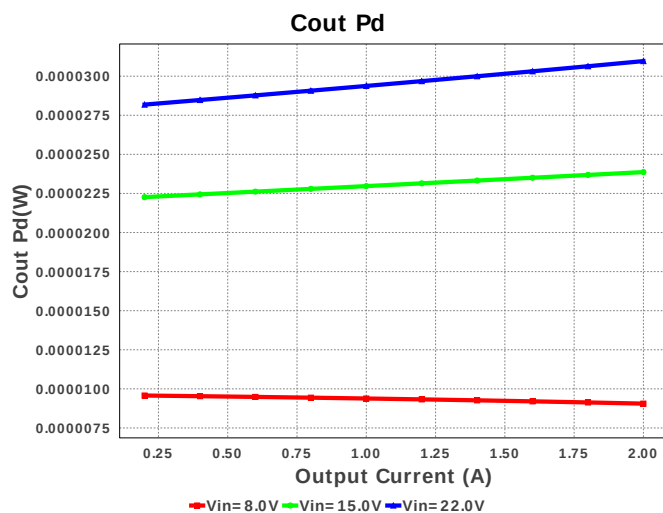
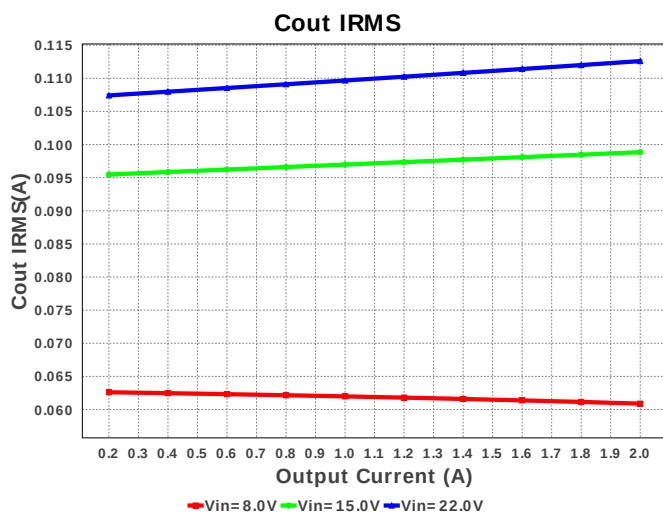
Electrical BOM

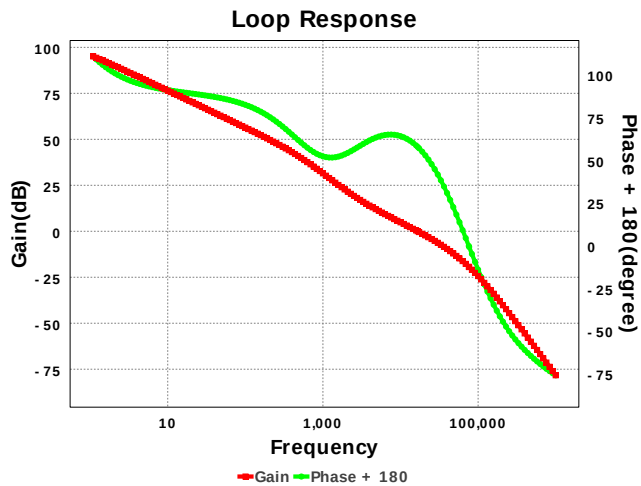
#	Name	Manufacturer	Part Number	Properties	Qty	Price	Footprint
1.	Cboot	Kemet	C0805C104K5RACTU Series= X7R	Cap= 100.0 nF ESR= 64.0 mOhm VDC= 50.0 V IRMS= 1.64 A	1	\$0.01	 0805 7 mm ²
2.	Ccomp	MuRata	GRM033C80J123KE01D Series= X6S	Cap= 12.0 nF VDC= 6.3 V IRMS= 0.0 A	1	\$0.01	 0201 2 mm ²
3.	Ccomp2	Yageo America	CC0805JRNPO9BN221 Series= C0G/NP0	Cap= 220.0 pF VDC= 50.0 V IRMS= 0.0 A	1	\$0.01	 0805 7 mm ²
4.	Cin	MuRata	GRM31CR61E106KA12L Series= X5R	Cap= 10.0 uF ESR= 4.512 mOhm VDC= 25.0 V IRMS= 2.447 A	1	\$0.05	 1206_190 11 mm ²
5.	Cinx	Kemet	C0805C104K5RACTU Series= X7R	Cap= 100.0 nF ESR= 64.0 mOhm VDC= 50.0 V IRMS= 1.64 A	1	\$0.01	 0805 7 mm ²
6.	Cout	MuRata	GRM31CR60J107ME39L Series= X5R	Cap= 100.0 uF ESR= 4.885 mOhm VDC= 6.3 V IRMS= 4.4118 A	2	\$0.14	 1206_190 11 mm ²
7.	Css	MuRata	GRM033R61A103KA01D Series= X5R	Cap= 10.0 nF VDC= 10.0 V IRMS= 0.0 A	1	\$0.01	 0201 2 mm ²
8.	L1	Bourns	SDR1307-270ML	L= 27.0 uH DCR= 60.0 mOhm	1	\$0.35	 SDR1307 227 mm ²
9.	Rcomp	Vishay-Dale	CRCW04025K76FKED Series= CRCW..e3	Res= 5.76 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	 0402 3 mm ²

#	Name	Manufacturer	Part Number	Properties	Qty	Price	Footprint
10.	Rfbb	Vishay-Dale	CRCW040223K7FKED Series= CRCW..e3	Res= 23.7 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	 0402 3 mm²
11.	Rfbt	Vishay-Dale	CRCW0402100KFKED Series= CRCW..e3	Res= 100.0 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	 0402 3 mm²
12.	U1	Texas Instruments	TPS54336ADDAR	Switcher	1	\$0.90	 R-PDSO-G8 55 mm²









Operating Values

#	Name	Value	Category	Description
1.	Cin IRMS	810.348 mA	Current	Input capacitor RMS ripple current
2.	Cout IRMS	112.595 mA	Current	Output capacitor RMS ripple current
3.	Iin Avg	433.67 mA	Current	Average input current
4.	L Ipp	390.04 mA	Current	Peak-to-peak inductor ripple current
5.	BOM Count	13	General	Total Design BOM count
6.	FootPrint	348.0 mm ²	General	Total Foot Print Area of BOM components
7.	Frequency	340.0 kHz	General	Switching frequency
8.	IC Tolerance	12.0 mV	General	IC Feedback Tolerance
9.	Pout	8.4 W	General	Total output power
10.	Total BOM	\$1.66	General	Total BOM Cost
11.	ICThetaJA Effective	34.0 degC/W	Op_Point	Effective IC Junction-to-Ambient Thermal Resistance
12.	Low Freq Gain	95.068 dB	Op_Point	Gain at 10Hz
13.	Vout Actual	4.176 V	Op_Point	Vout Actual calculated based on selected voltage divider resistors
14.	Vout OP	4.2 V	Op_Point	Operational Output Voltage
15.	Cross Freq	16.654 kHz	Op_point	Bode plot crossover frequency
16.	Duty Cycle	20.591 %	Op_point	Duty cycle
17.	Efficiency	88.043 %	Op_point	Steady state efficiency
18.	Gain Marg	-19.468 dB	Op_point	Bode Plot Gain Margin
19.	IC Tj	60.494 degC	Op_point	IC junction temperature
20.	IOUT_OP	2.0 A	Op_point	Iout operating point
21.	Phase Marg	58.496 deg	Op_point	Bode Plot Phase Margin
22.	VIN_OP	22.0 V	Op_point	Vin operating point
23.	Vout p-p	1.277 mV	Op_point	Peak-to-peak output ripple voltage
24.	Cin Pd	2.963 mW	Power	Input capacitor power dissipation
25.	Cout Pd	30.965 μ W	Power	Output capacitor power dissipation
26.	IC Iq Pd	6.82 mW	Power	IC Iq Pd
27.	IC Pd	896.895 mW	Power	IC power dissipation
28.	L Pd	240.761 mW	Power	Inductor power dissipation
29.	Total Pd	1.141 W	Power	Total Power Dissipation
30.	Vout Tolerance	3.158 %		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	22.0	Maximum input voltage
3.	VinMin	8.0	Minimum input voltage
4.	Vout	4.2	Output Voltage
5.	base_pn	TPS54336A	Base Product Number
6.	source	DC	Input Source Type
7.	Ta	30.0	Ambient temperature

Design Assistance

1. **TPS54336A** Product Folder : <http://www.ti.com/product/TPS54336A> : contains the data sheet and other resources.

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