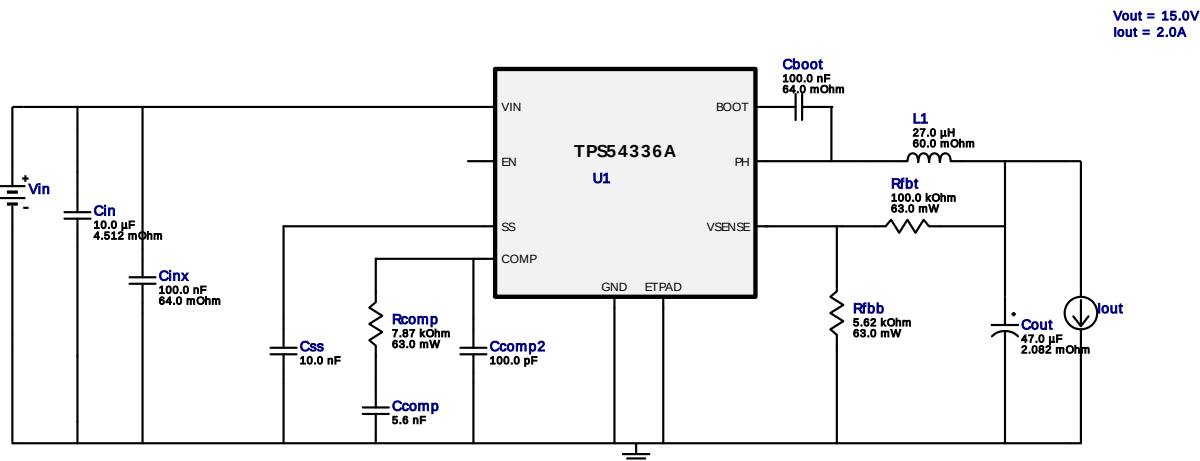


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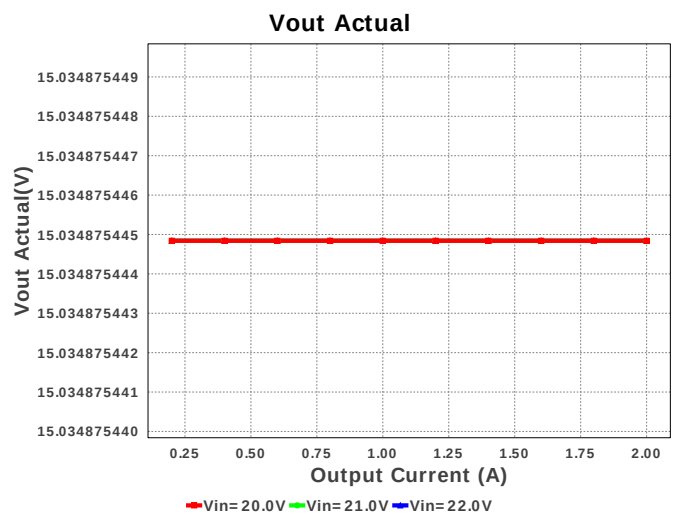
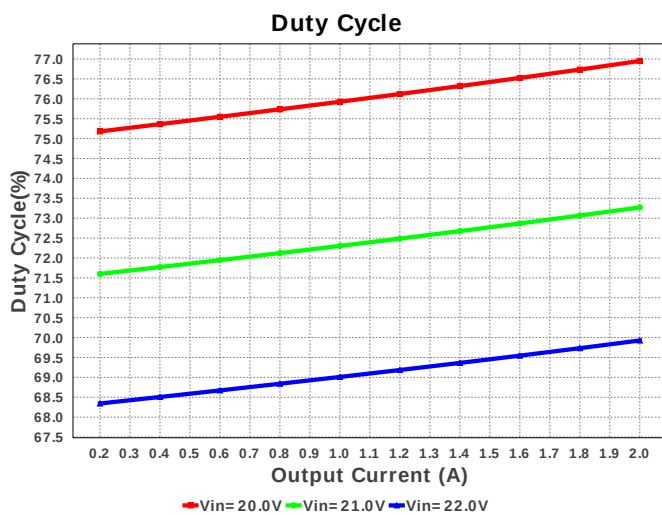
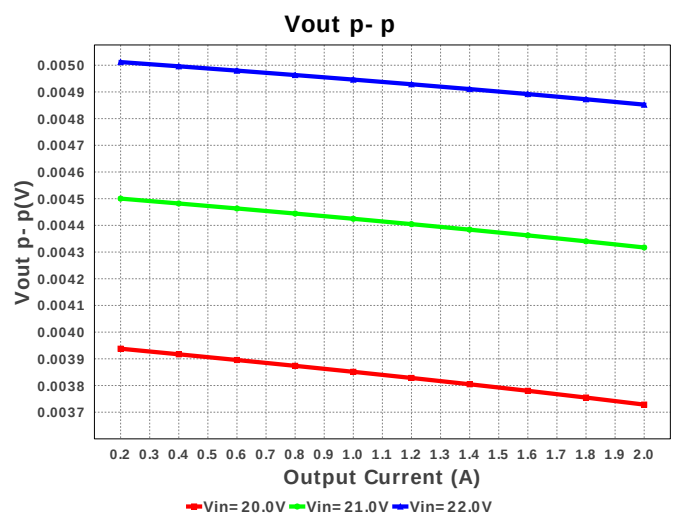
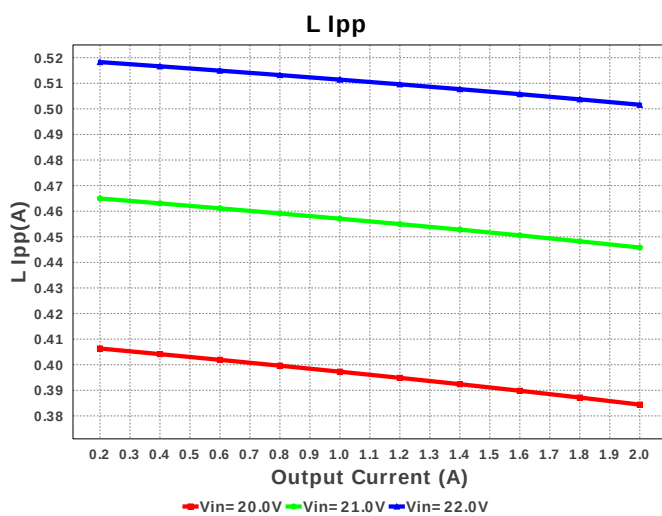
Design : 4763437/7 TPS54336ADDAR
TPS54336ADDAR 20.0V-22.0V to 15.00V @ 2.0A

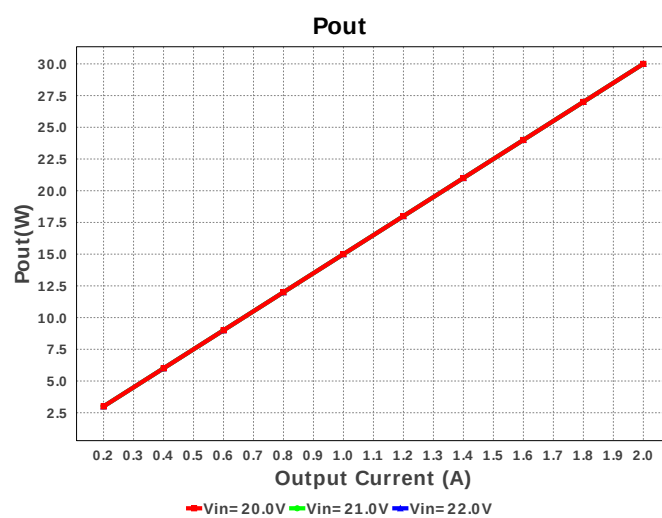
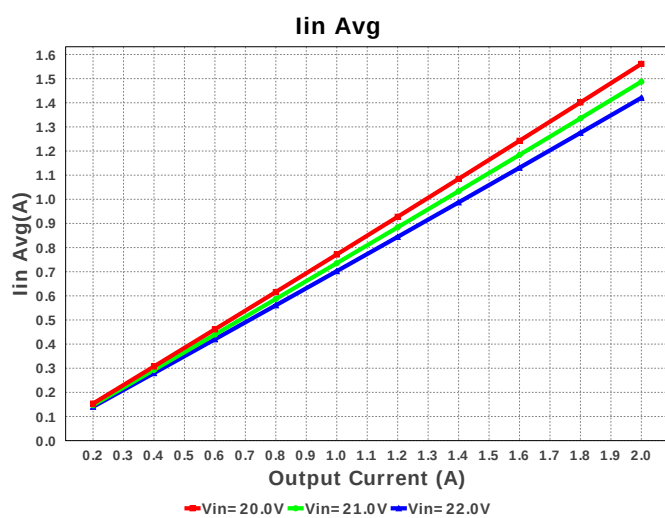
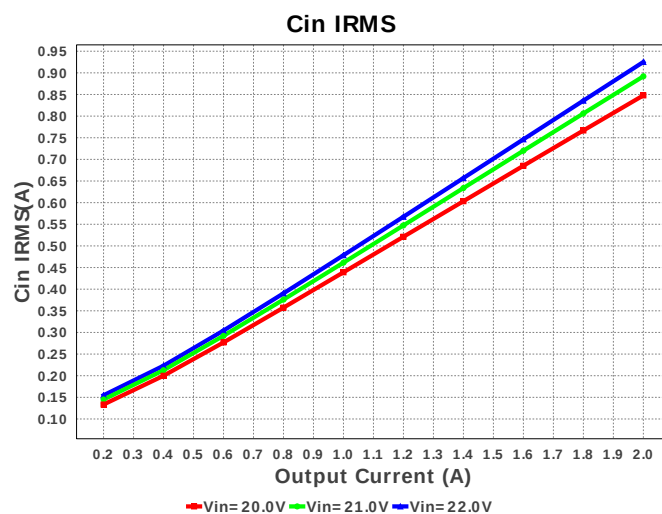
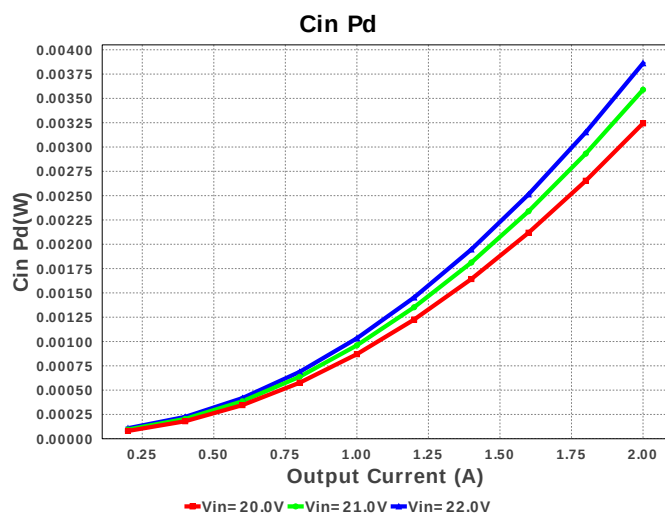
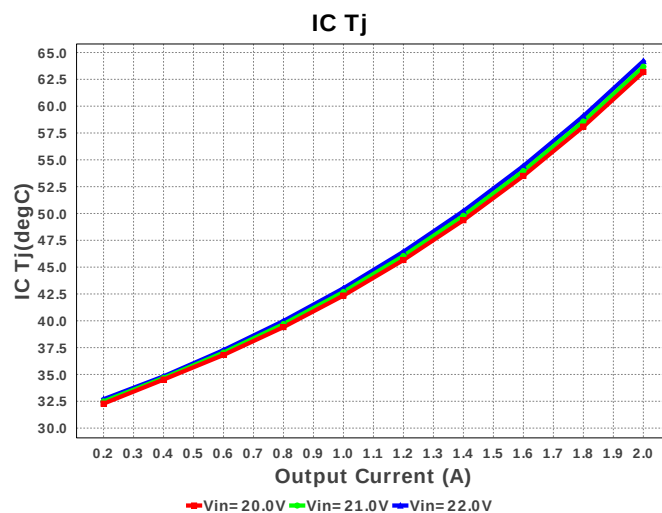
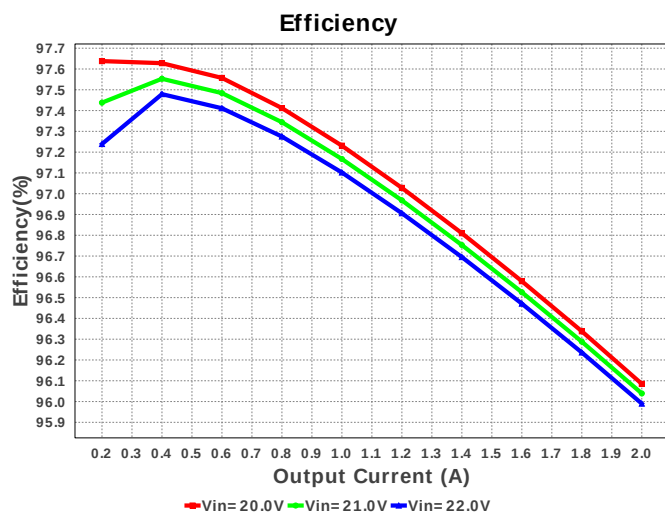


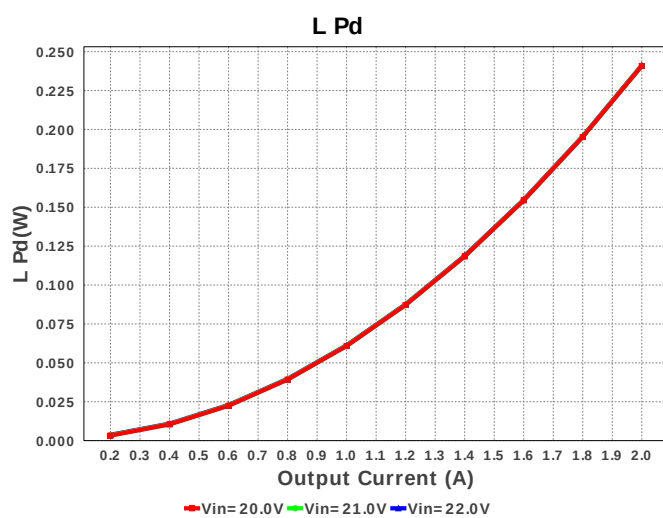
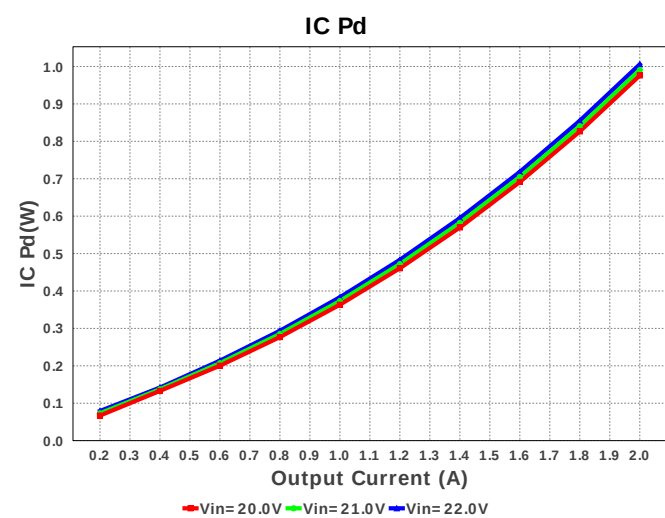
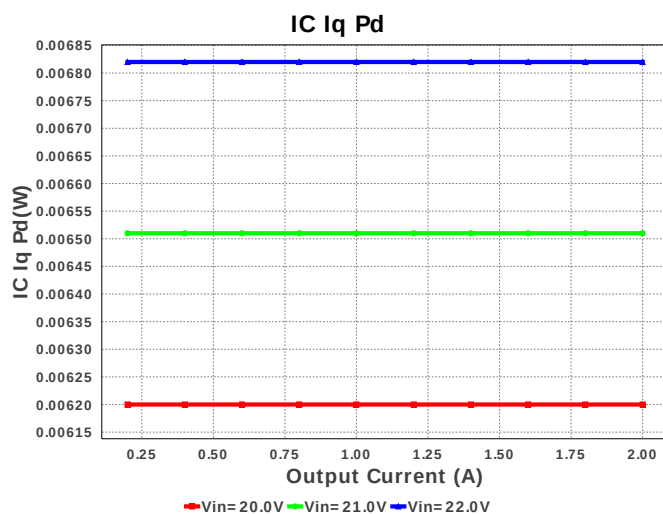
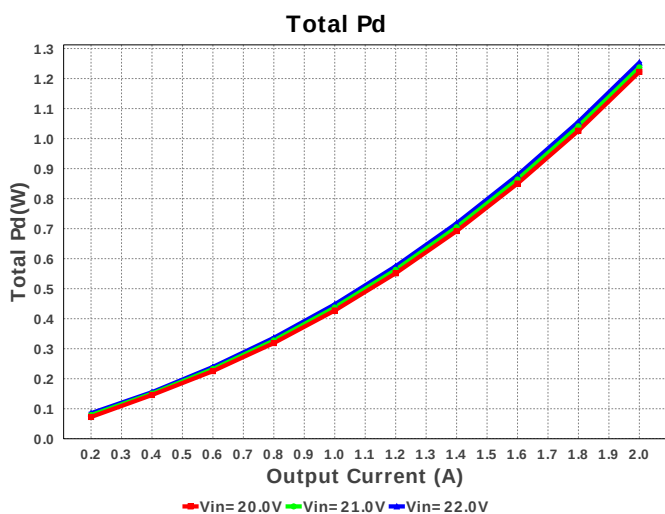
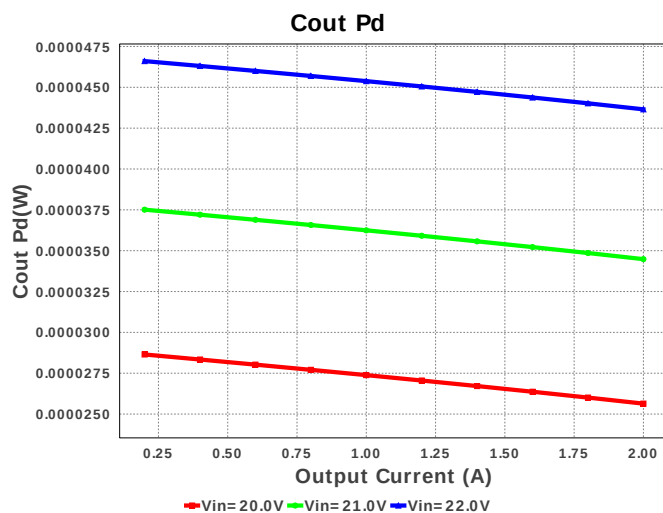
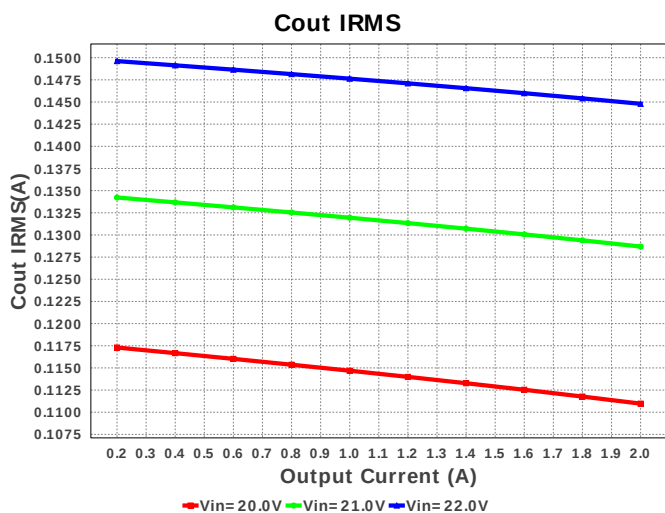
Electrical BOM

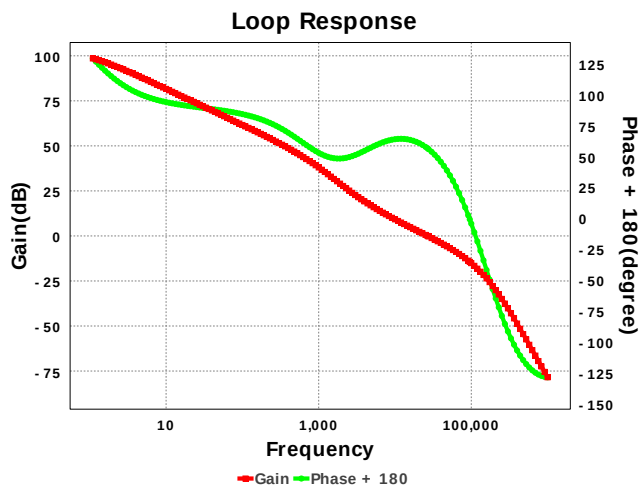
#	Name	Manufacturer	Part Number	Properties	Qty	Price	Footprint
1.	Cboot	Kemet	C0805C104K5RACTU Series= X7R	Cap= 100.0 nF ESR= 64.0 mOhm VDC= 50.0 V IRMS= 1.64 A	1	\$0.01	0805 7 mm ²
2.	Ccomp	Yageo America	CC0805KRX7R9BB562 Series= X7R	Cap= 5.6 nF VDC= 50.0 V IRMS= 0.0 A	1	\$0.01	0805 7 mm ²
3.	Ccomp2	Yageo America	CC0805JRNPO9BN101 Series= C0G/NP0	Cap= 100.0 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	TDK	C3216X5R1E476M160AC Series= X5R	Cap= 47.0 uF ESR= 2.082 mOhm VDC= 25.0 V IRMS= 5.0279 A	1	\$0.35	1206 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	CRCW04027K87FKED Series= CRCW..e3	Res= 7.87 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	CRCW04025K62FKED Series= CRCW..e3	Res= 5.62 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	 0402 3 mm ²
11.	Rfbt	Vishay-Dale	CRCW0402100KFKED Series= CRCW..e3	Res= 100.0 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	 0402 3 mm ²
12.	U1	Texas Instruments	TPS54336ADDAR	Switcher	1	\$0.90	 R-PDSO-G8 55 mm ²









Operating Values

#	Name	Value	Category	Description
1.	Cin IRMS	925.113 mA	Current	Input capacitor RMS ripple current
2.	Cout IRMS	144.797 mA	Current	Output capacitor RMS ripple current
3.	Iin Avg	1.421 A	Current	Average input current
4.	L Ipp	501.59 mA	Current	Peak-to-peak inductor ripple current
5.	BOM Count	12	General	Total Design BOM count
6.	FootPrint	342.0 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.	Mode	CCM	General	Conduction Mode
10.	Pout	30.0 W	General	Total output power
11.	Total BOM	\$1.73	General	Total BOM Cost
12.	ICThetaJA Effective	34.0 degC/W	Op_Point	Effective IC Junction-to-Ambient Thermal Resistance
13.	Low Freq Gain	98.538 dB	Op_Point	Gain at 10Hz
14.	Vout Actual	15.035 V	Op_Point	Vout Actual calculated based on selected voltage divider resistors
15.	Vout OP	15.0 V	Op_Point	Operational Output Voltage
16.	Cross Freq	26.685 kHz	Op_point	Bode plot crossover frequency
17.	Duty Cycle	69.927 %	Op_point	Duty cycle
18.	Efficiency	95.99 %	Op_point	Steady state efficiency
19.	Gain Marg	-14.402 dB	Op_point	Bode Plot Gain Margin
20.	IC Tj	64.2 degC	Op_point	IC junction temperature
21.	IOUT_OP	2.0 A	Op_point	Iout operating point
22.	Phase Marg	57.372 deg	Op_point	Bode Plot Phase Margin
23.	VIN_OP	22.0 V	Op_point	Vin operating point
24.	Vout p-p	4.852 mV	Op_point	Peak-to-peak output ripple voltage
25.	Cin Pd	3.862 mW	Power	Input capacitor power dissipation
26.	Cout Pd	43.652 μ W	Power	Output capacitor power dissipation
27.	IC Iq Pd	6.82 mW	Power	IC Iq Pd
28.	IC Pd	1.006 W	Power	IC power dissipation
29.	L Pd	241.258 mW	Power	Inductor power dissipation
30.	Total Pd	1.253 W	Power	Total Power Dissipation
31.	Vout Tolerance	3.441 %		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	20.0	Minimum input voltage
4.	Vout	15.0	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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