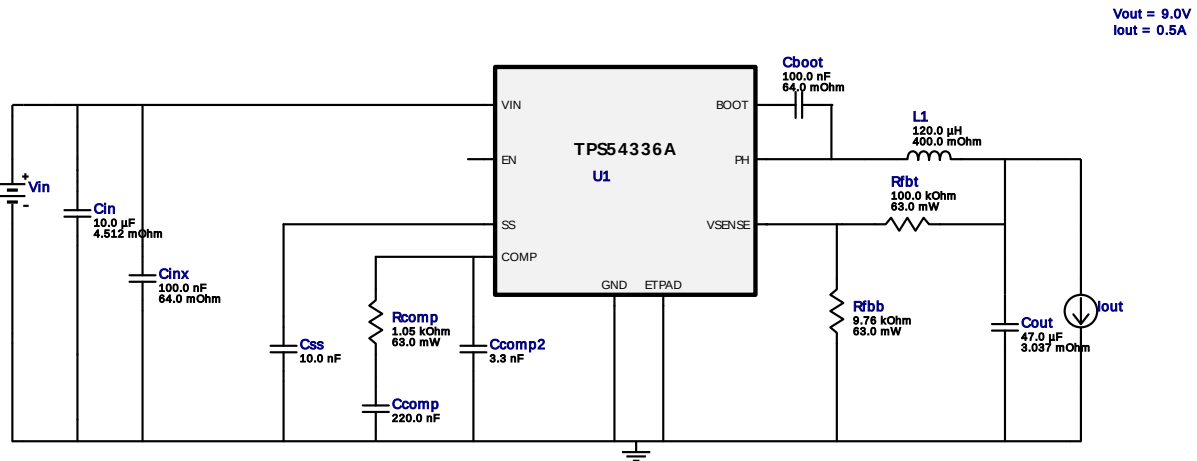
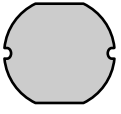


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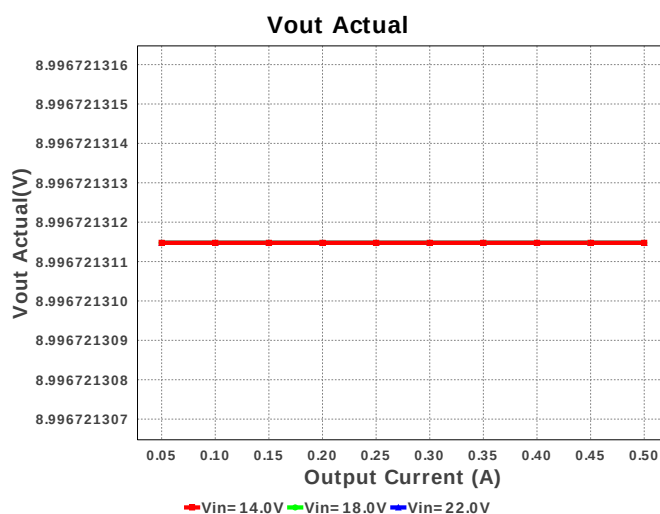
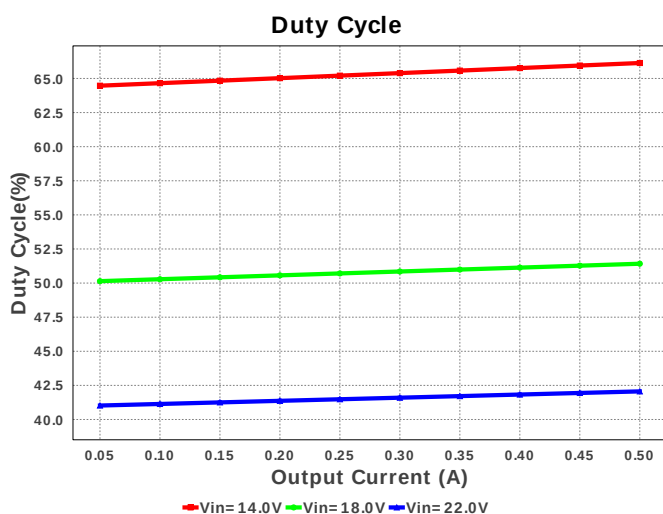
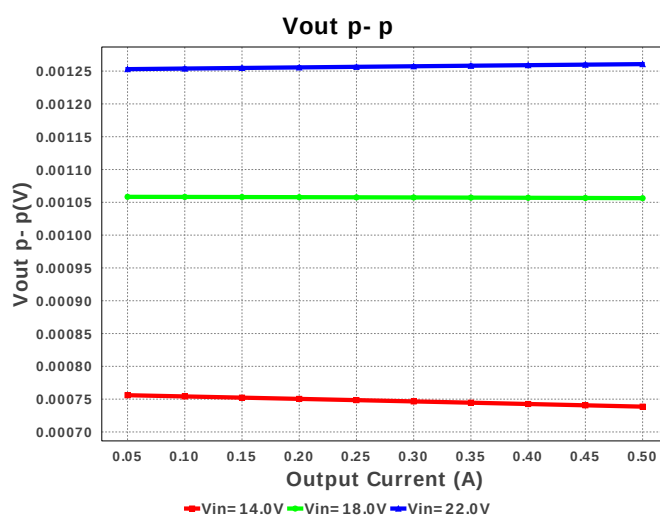
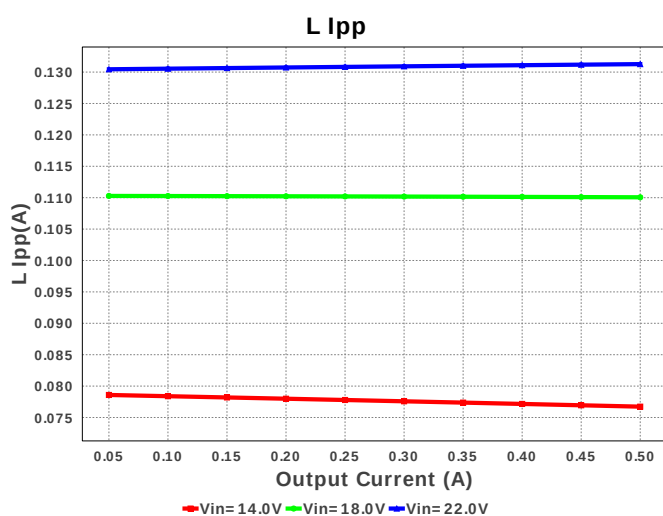
Design : 4743042/6 TPS54336ADDAR
TPS54336ADDAR 14.0V-22.0V to 9.00V @ 0.5A

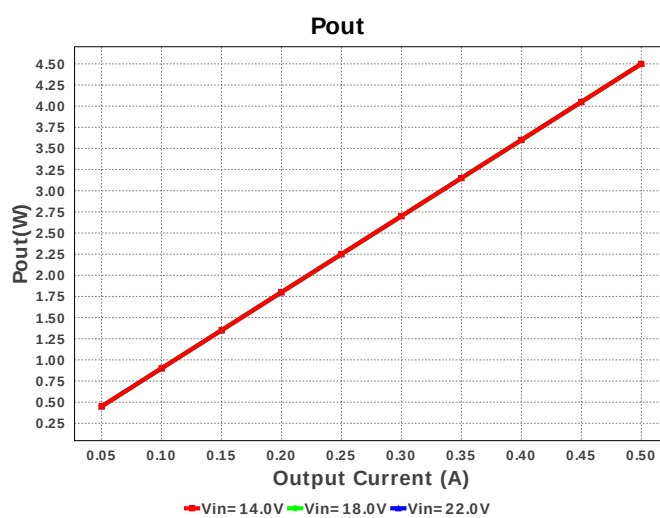
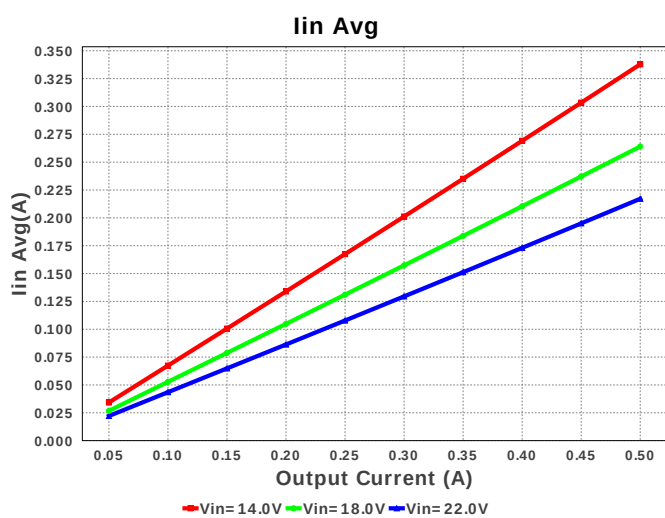
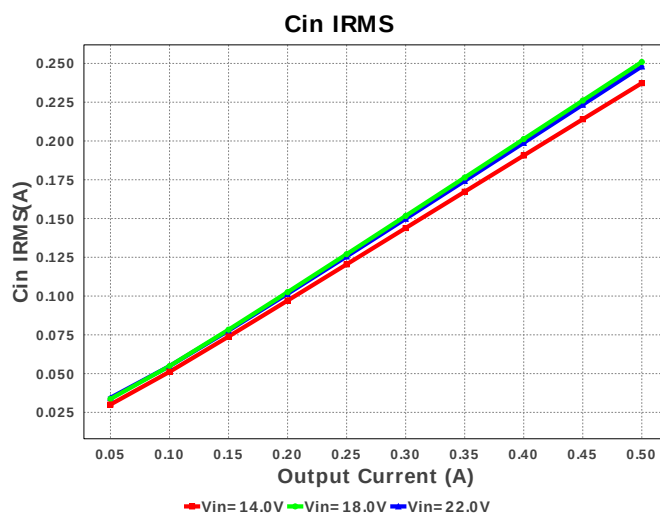
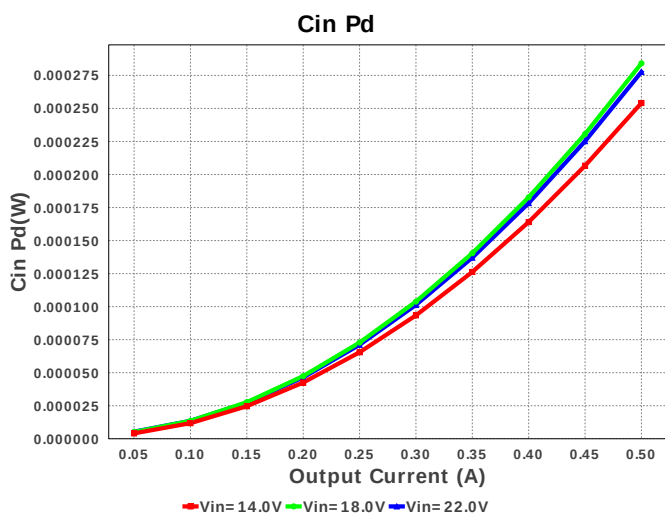
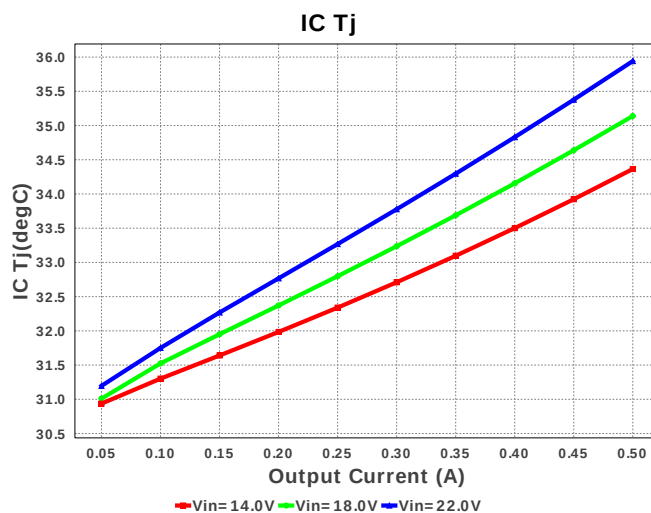
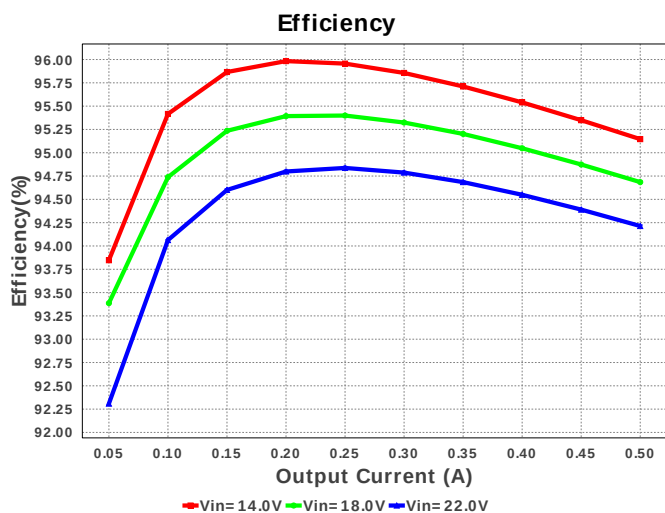


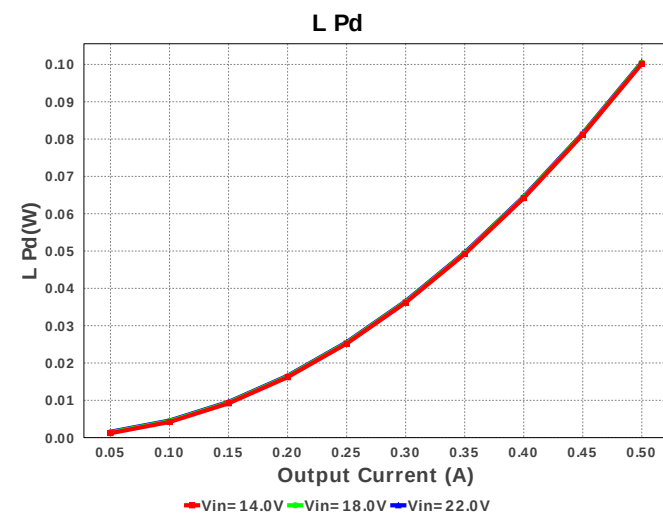
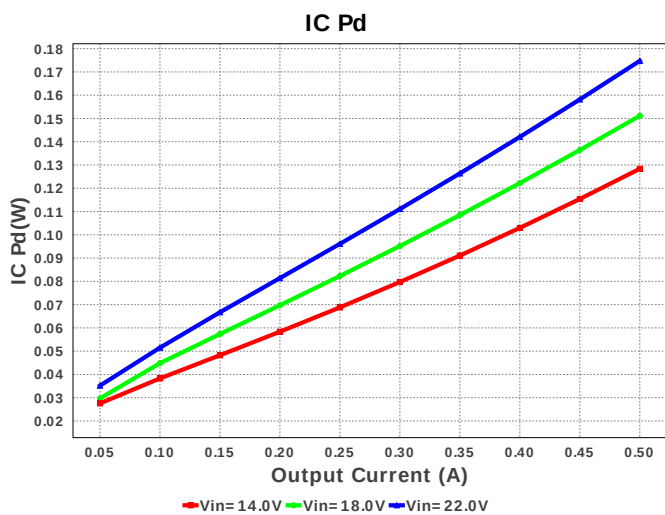
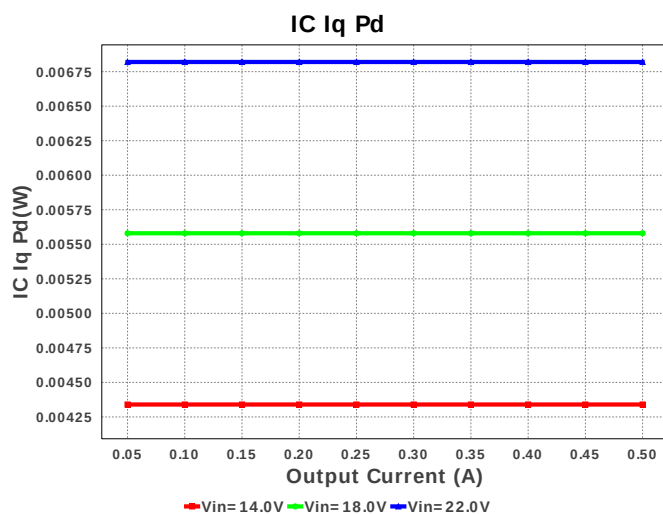
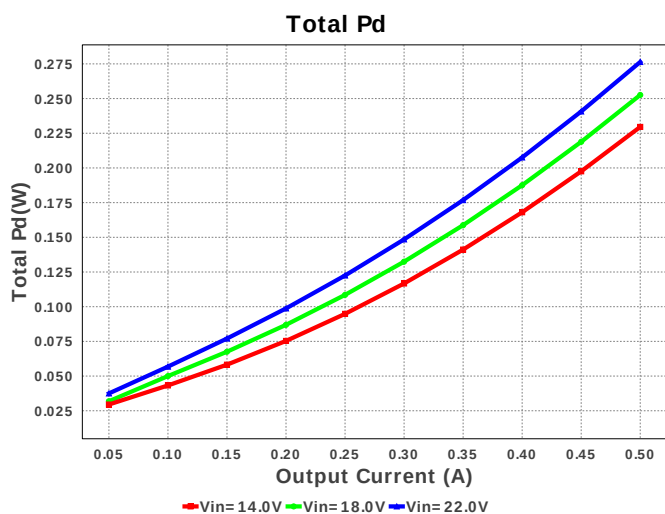
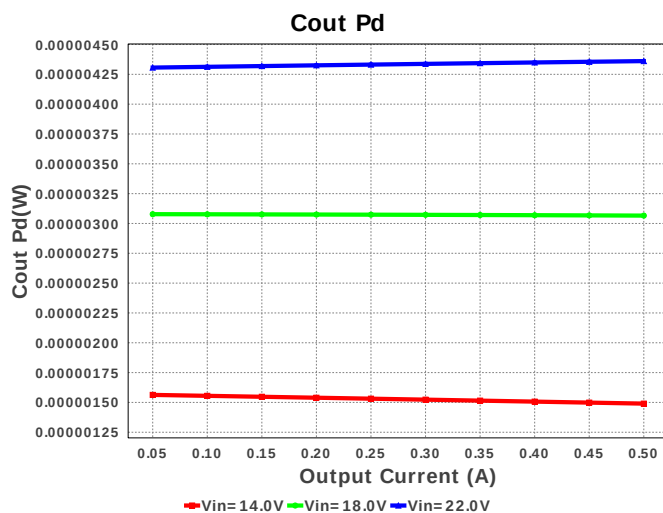
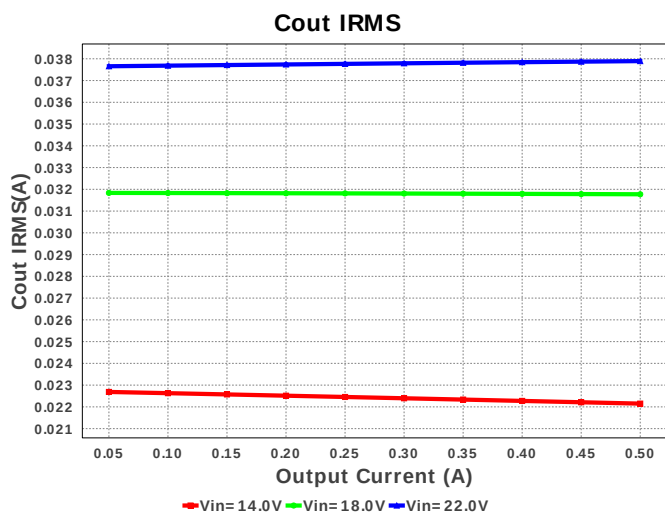
Electrical BOM

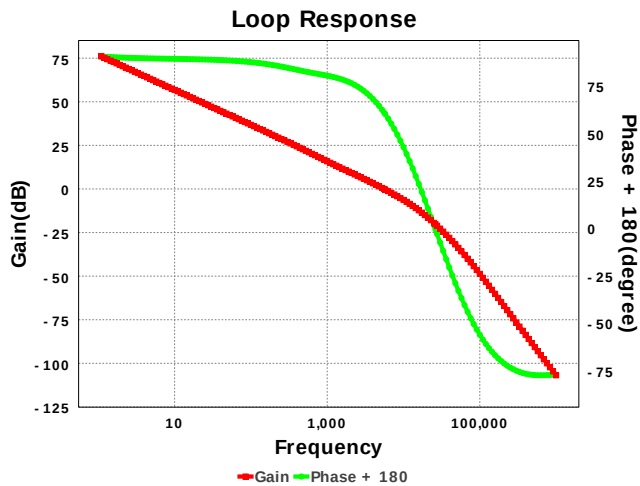
#	Name	Manufacturer	Part Number	Properties	Qty	Price	Footprint
1.	Cboot	Kemet	C0805C104K5RACTU Series= X7R	Cap= 100.0 nF ESR= 64.0 mOhm VDC= 50.0 V IRMS= 1.64 A	1	\$0.01	 0805 7 mm ²
2.	Ccomp	MuRata	GRM155C80G224KE01D Series= X6S	Cap= 220.0 nF VDC= 4.0 V IRMS= 0.0 A	1	\$0.01	 0402 3 mm ²
3.	Ccomp2	MuRata	GRM216R71E332KA01D Series= X7R	Cap= 3.3 nF VDC= 25.0 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	GRM32ER61C476ME15L Series= X5R	Cap= 47.0 uF ESR= 3.037 mOhm VDC= 16.0 V IRMS= 4.59346 A	1	\$0.24	 1210_280 15 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	NIC Components	NPI105C121MTRF	L= 120.0 uH DCR= 400.0 mOhm	1	\$0.14	 IND_NPI105C 141 mm ²
9.	Rcomp	Vishay-Dale	CRCW04021K05FKED Series= CRCW..e3	Res= 1.05 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	 0402 3 mm ²
10.	Rfbb	Vishay-Dale	CRCW04029K76FKED Series= CRCW..e3	Res= 9.76 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	 0402 3 mm ²

#	Name	Manufacturer	Part Number	Properties	Qty	Price	Footprint
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	248.048 mA	Current	Input capacitor RMS ripple current
2.	Cout IRMS	37.893 mA	Current	Output capacitor RMS ripple current
3.	Iin Avg	217.11 mA	Current	Average input current
4.	L Ipp	131.27 mA	Current	Peak-to-peak inductor ripple current
5.	BOM Count	12	General	Total Design BOM count
6.	FootPrint	257.0 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	4.5 W	General	Total output power
10.	Total BOM	\$1.41	General	Total BOM Cost
11.	ICThetaJA Effective	34.0 degC/W	Op_Point	Effective IC Junction-to-Ambient Thermal Resistance
12.	Low Freq Gain	76.004 dB	Op_Point	Gain at 10Hz
13.	Vout Actual	8.997 V	Op_Point	Vout Actual calculated based on selected voltage divider resistors
14.	Vout OP	9.0 V	Op_Point	Operational Output Voltage
15.	Cross Freq	5.572 kHz	Op_point	Bode plot crossover frequency
16.	Duty Cycle	42.06 %	Op_point	Duty cycle
17.	Efficiency	94.214 %	Op_point	Steady state efficiency
18.	Gain Marg	-20.216 dB	Op_point	Bode Plot Gain Margin
19.	IC Tj	35.941 degC	Op_point	IC junction temperature
20.	IOUT_OP	500.0 mA	Op_point	Iout operating point
21.	Phase Marg	61.63 deg	Op_point	Bode Plot Phase Margin
22.	VIN_OP	22.0 V	Op_point	Vin operating point
23.	Vout p-p	1.261 mV	Op_point	Peak-to-peak output ripple voltage
24.	Cin Pd	277.615 μW	Power	Input capacitor power dissipation
25.	Cout Pd	4.361 μW	Power	Output capacitor power dissipation
26.	IC Iq Pd	6.82 mW	Power	IC Iq Pd
27.	IC Pd	174.747 mW	Power	IC power dissipation
28.	L Pd	100.574 mW	Power	Inductor power dissipation
29.	Total Pd	276.364 mW	Power	Total Power Dissipation
30.	Vout Tolerance	3.368 %		Vout Tolerance based on IC Tolerance (no load) and voltage divider resistors if applicable

Design Inputs

#	Name	Value	Description
1.	Iout	500.0 m	Maximum Output Current
2.	VinMax	22.0	Maximum input voltage
3.	VinMin	14.0	Minimum input voltage
4.	Vout	9.0	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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