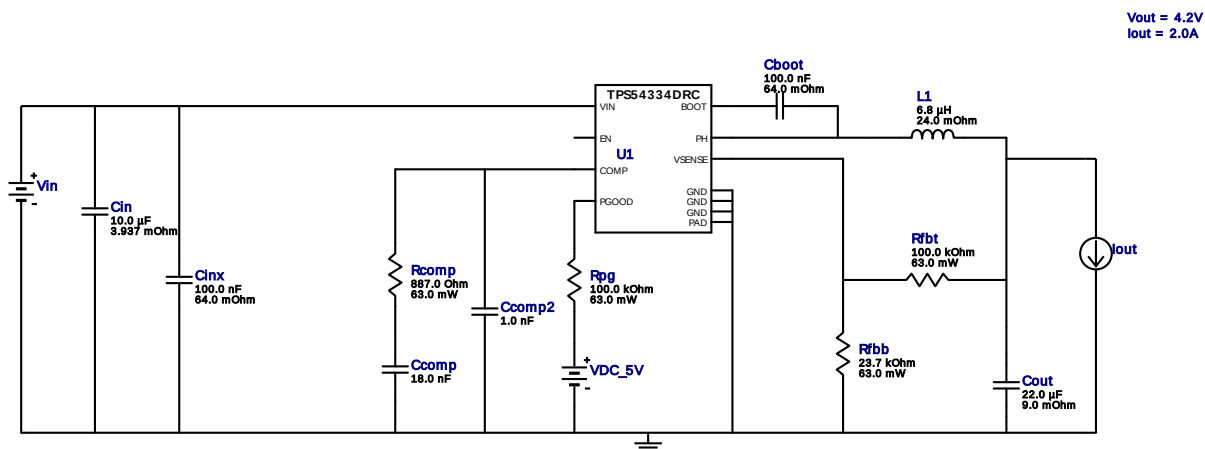


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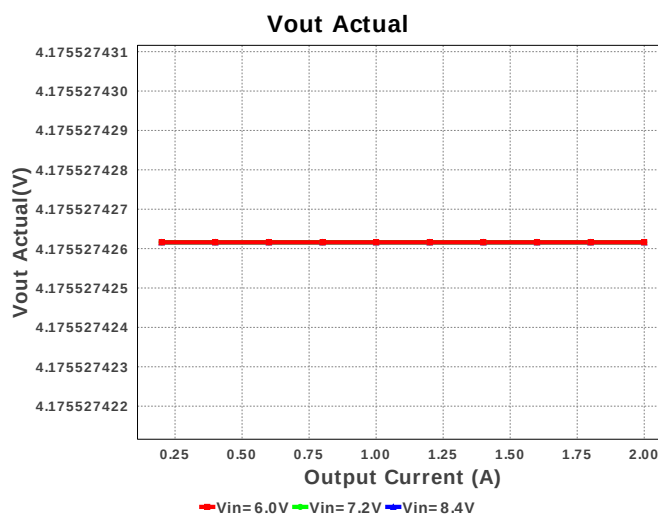
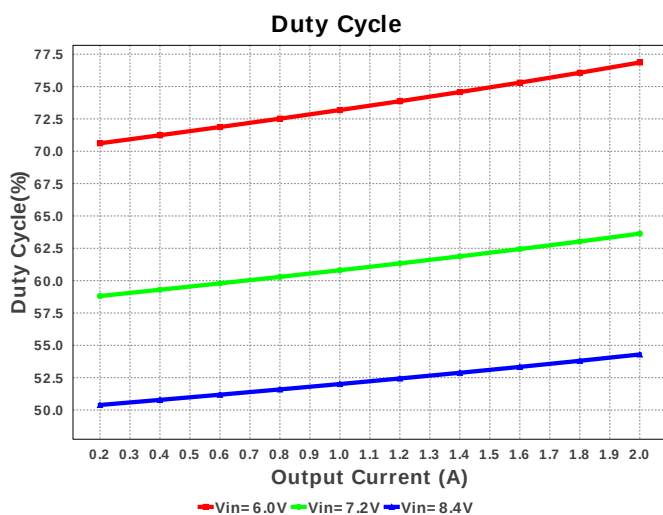
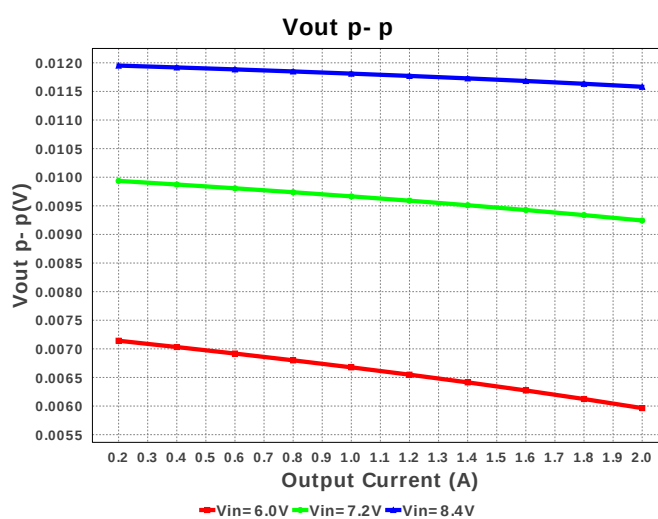
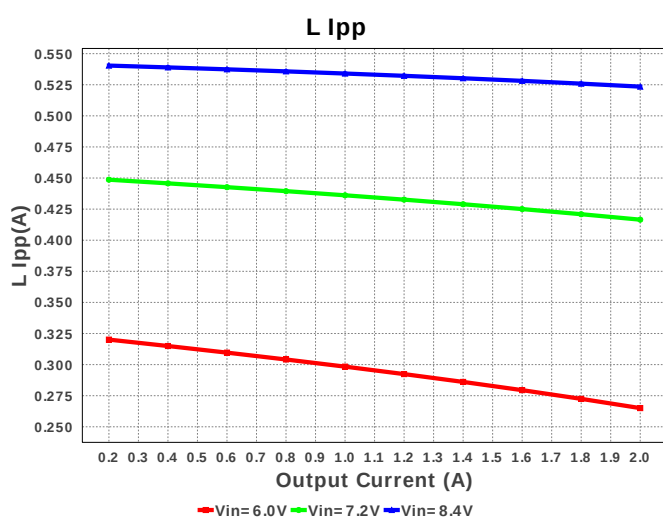
Design : 4743359/41 TPS54334DRCR
TPS54334DRCR 6.0V-8.4V to 4.20V @ 2.0A

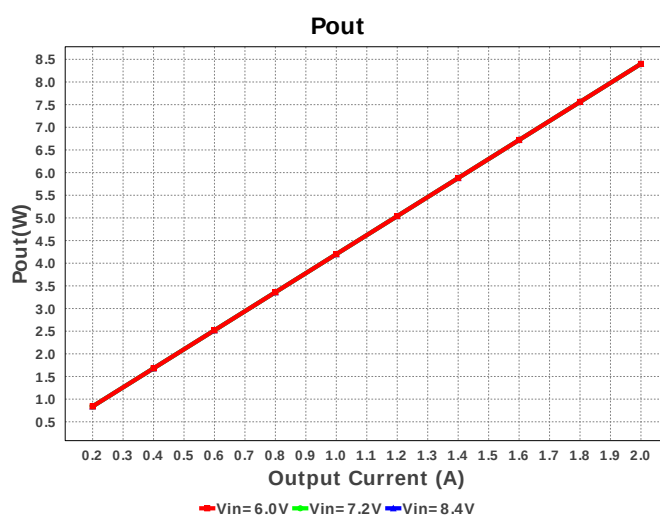
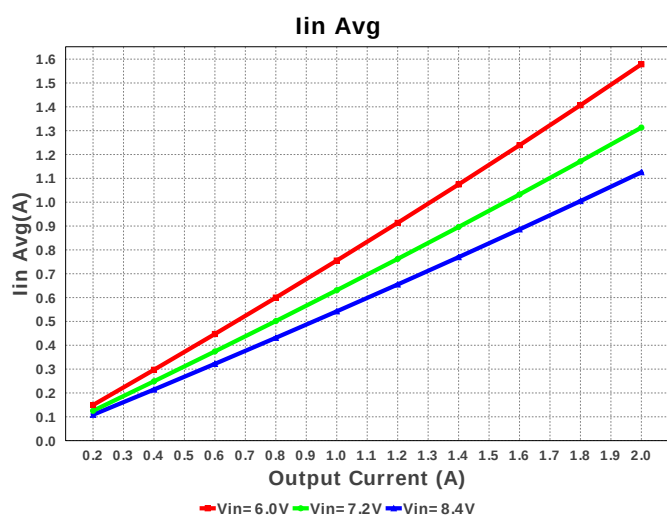
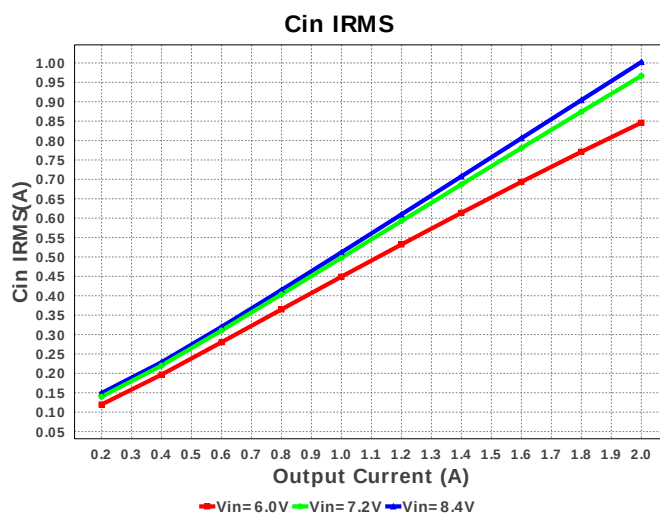
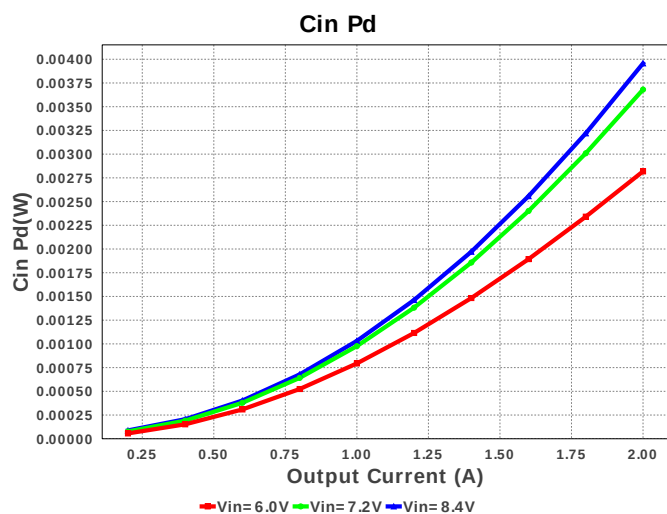
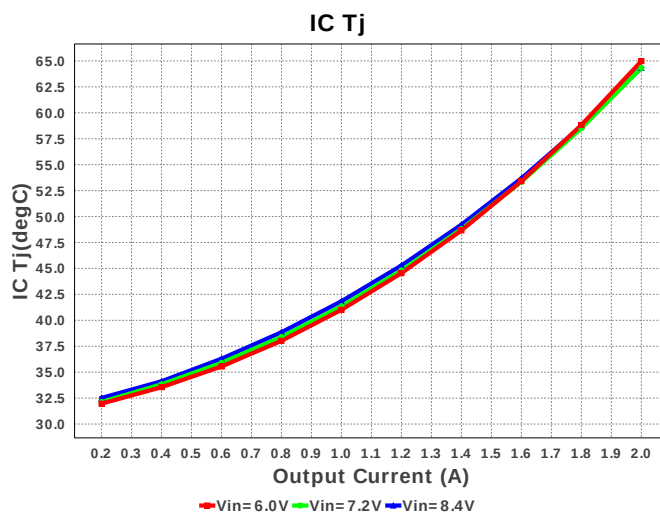
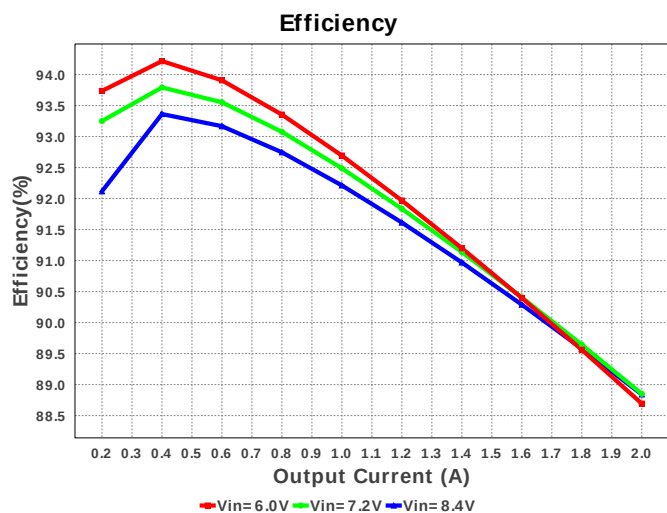


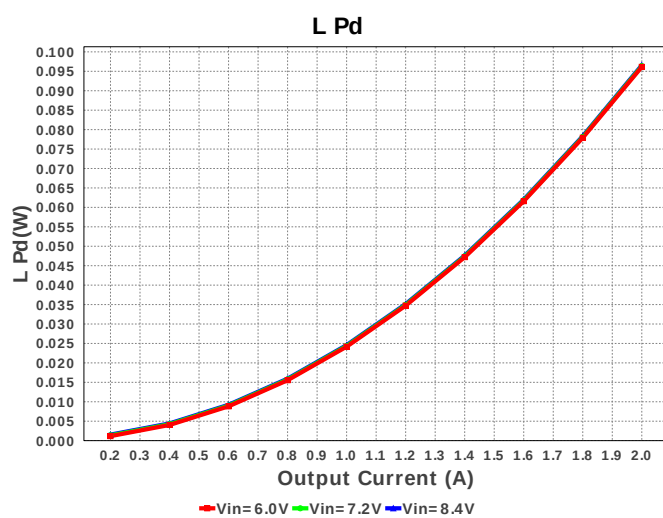
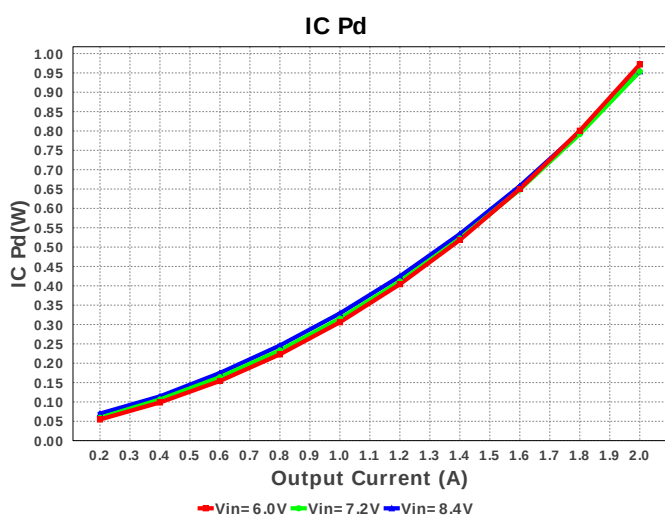
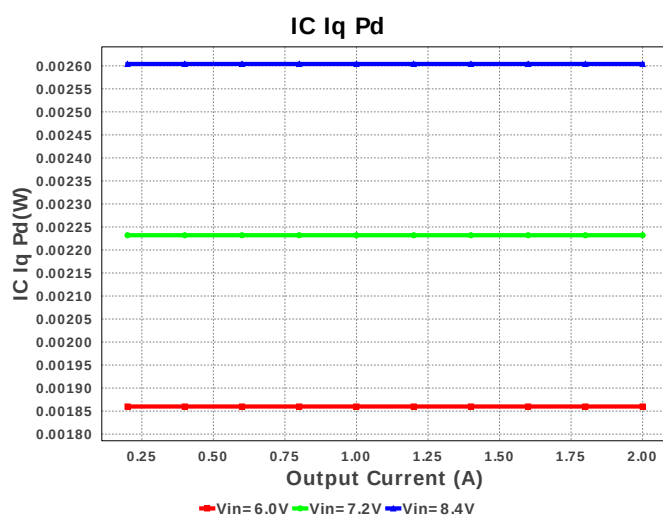
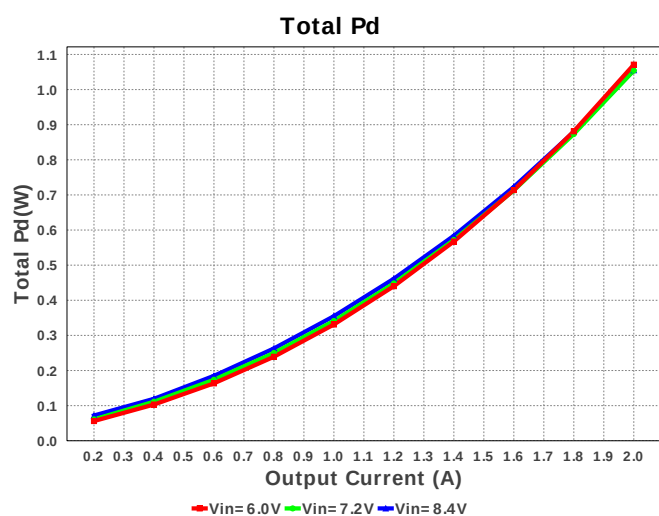
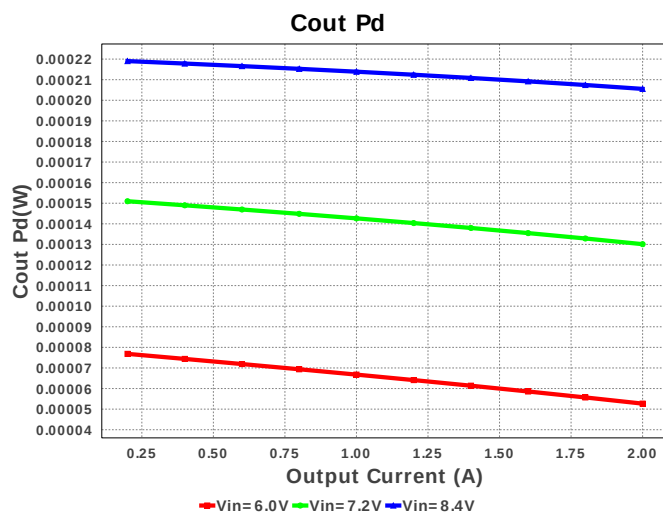
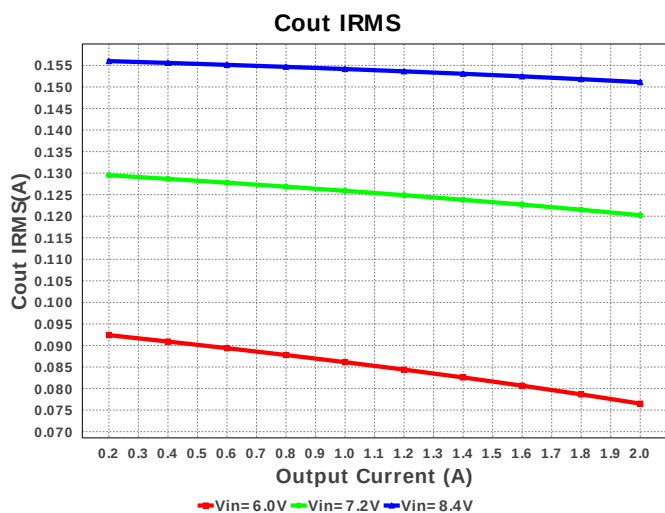
Electrical BOM

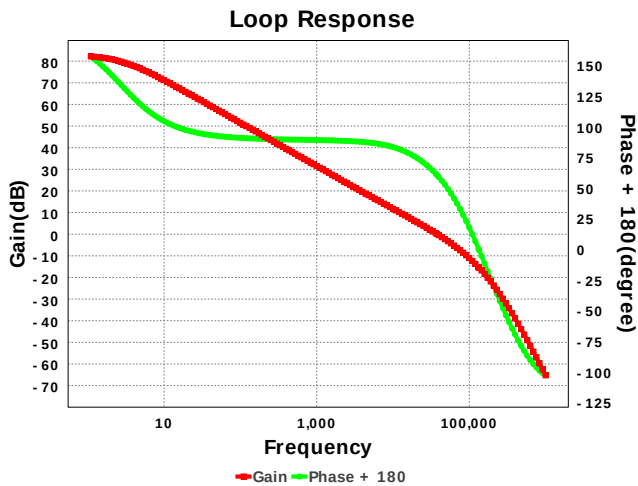
#	Name	Manufacturer	Part Number	Properties	Qty	Price	Footprint
1.	Cboot	Kemet	C0805C104K5RACTU Series= X7R	Cap= 100.0 nF ESR= 64.0 mOhm VDC= 50.0 V IRMS= 1.64 A	1	\$0.01	 0805 7 mm²
2.	Ccomp	Yageo America	CC0805KRX7R9BB183 Series= X7R	Cap= 18.0 nF VDC= 50.0 V IRMS= 0.0 A	1	\$0.01	 0805 7 mm²
3.	Ccomp2	Samsung Electro-Mechanics	CL21C102JBCNFNC Series= C0G/NP0	Cap= 1.0 nF VDC= 50.0 V IRMS= 0.0 A	1	\$0.01	 0805 7 mm²
4.	Cin	MuRata	GRM219R61A106KE44D Series= X5R	Cap= 10.0 uF ESR= 3.937 mOhm VDC= 10.0 V IRMS= 2.7713 A	1	\$0.03	 0805 7 mm²
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 mm²
6.	Cout	MuRata	GRM21BR60J226ME39L Series= X5R	Cap= 22.0 uF ESR= 9.0 mOhm VDC= 6.3 V IRMS= 3.5 A	1	\$0.04	 0805 7 mm²
7.	L1	TDK	VLP8040T-6R8M	L= 6.8 uH DCR= 24.0 mOhm	1	\$0.22	 VLP8040 113 mm²
8.	Rcomp	Vishay-Dale	CRCW0402887RFKED Series= CRCW..e3	Res= 887.0 Ohm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	 0402 3 mm²
9.	Rfbb	Vishay-Dale	CRCW040223K7FKED Series= CRCW..e3	Res= 23.7 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	 0402 3 mm²
10.	Rfbbt	Vishay-Dale	CRCW0402100KFKED Series= CRCW..e3	Res= 100.0 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	 0402 3 mm²

#	Name	Manufacturer	Part Number	Properties	Qty	Price	Footprint
11.	Rpg	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	TPS54334DRCR	Switcher	1	\$0.95	 DRC0010J 16 mm²









Operating Values

#	Name	Value	Category	Description
1.	Cin IRMS	1.003 A	Current	Input capacitor RMS ripple current
2.	Cout IRMS	151.117 mA	Current	Output capacitor RMS ripple current
3.	Iin Avg	1.126 A	Current	Average input current
4.	L Ipp	523.48 mA	Current	Peak-to-peak inductor ripple current
5.	BOM Count	12	General	Total Design BOM count
6.	FootPrint	182.0 mm ²	General	Total Foot Print Area of BOM components
7.	Frequency	570.0 kHz	General	Switching frequency
8.	IC Tolerance	10.0 mV	General	IC Feedback Tolerance
9.	Pout	8.4 W	General	Total output power
10.	Total BOM	\$1.32	General	Total BOM Cost
11.	ICThetaJA Effective	36.0 degC/W	Op_Point	Effective IC Junction-to-Ambient Thermal Resistance
12.	Low Freq Gain	82.185 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	37.911 kHz	Op_point	Bode plot crossover frequency
16.	Duty Cycle	54.294 %	Op_point	Duty cycle
17.	Efficiency	88.841 %	Op_point	Steady state efficiency
18.	Gain Marg	-15.498 dB	Op_point	Bode Plot Gain Margin
19.	IC Tj	64.353 degC	Op_point	IC junction temperature
20.	IOUT_OP	2.0 A	Op_point	Iout operating point
21.	Phase Marg	61.02 deg	Op_point	Bode Plot Phase Margin
22.	VIN_OP	8.4 V	Op_point	Vin operating point
23.	Vout p-p	11.581 mV	Op_point	Peak-to-peak output ripple voltage
24.	Cin Pd	3.957 mW	Power	Input capacitor power dissipation
25.	Cout Pd	205.527 μ W	Power	Output capacitor power dissipation
26.	IC Iq Pd	2.604 mW	Power	IC Iq Pd
27.	IC Pd	954.248 mW	Power	IC power dissipation
28.	L Pd	96.548 mW	Power	Inductor power dissipation
29.	Total Pd	1.055 W	Power	Total Power Dissipation
30.	Vout Tolerance	2.904 %		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	8.4	Maximum input voltage
3.	VinMin	6.0	Minimum input voltage
4.	Vout	4.2	Output Voltage
5.	base_pn	TPS54334	Base Product Number
6.	source	DC	Input Source Type
7.	Ta	30.0	Ambient temperature

Design Assistance

1. **TPS54334** Product Folder : <http://www.ti.com/product/TPS54334> : contains the data sheet and other resources.

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