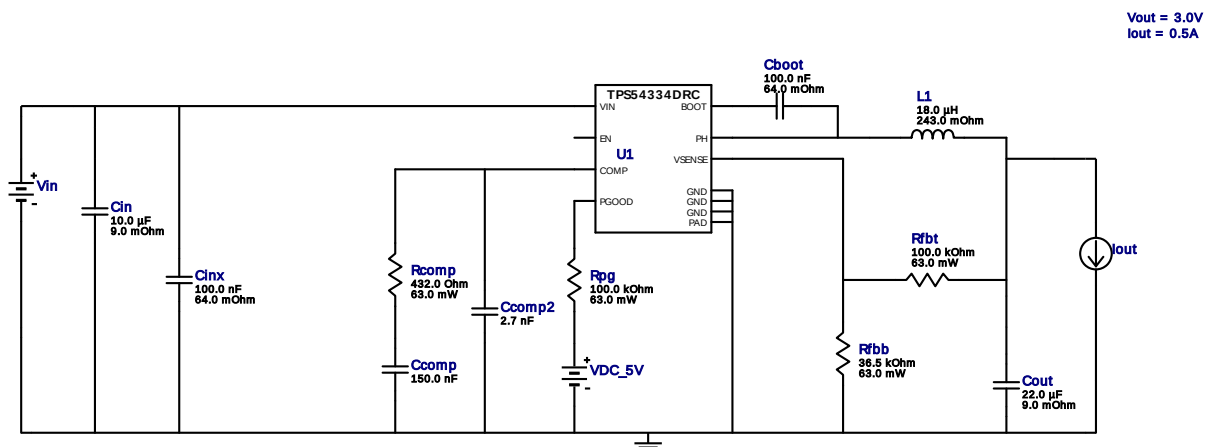


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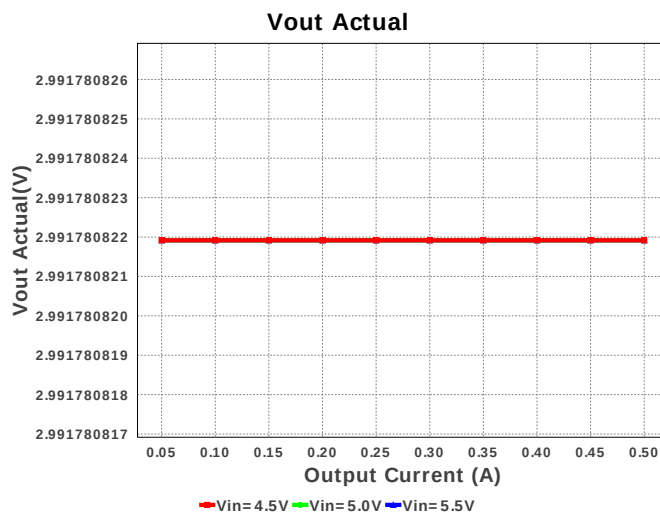
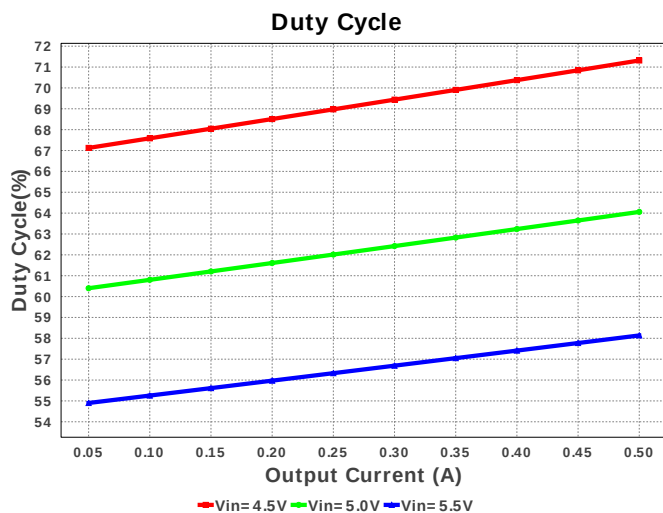
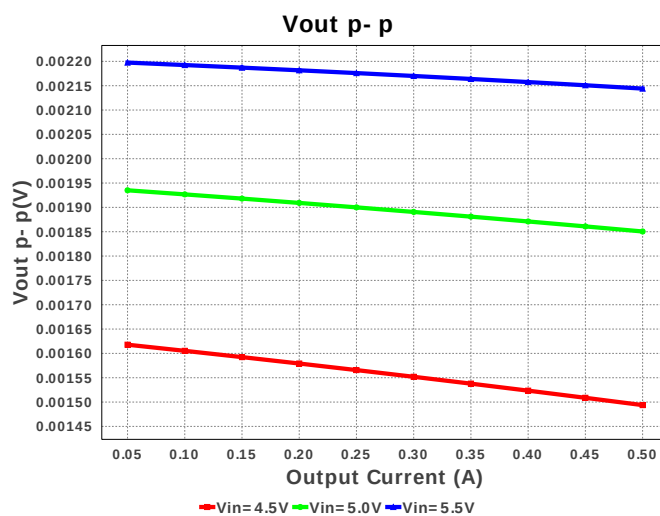
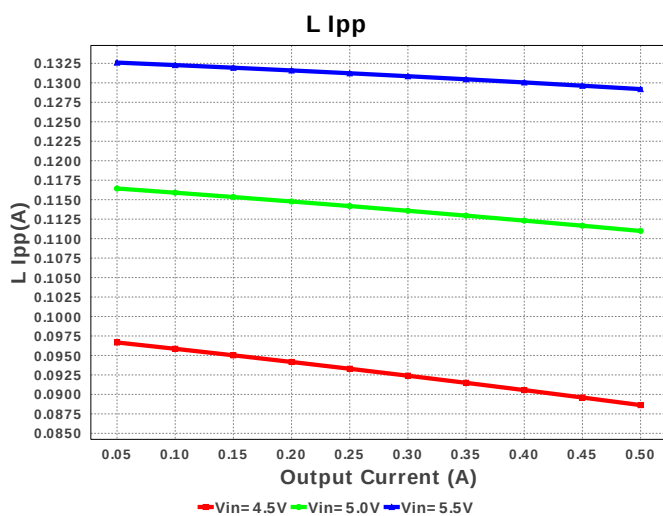
Design : 4742013/159 TPS54334DRCR
TPS54334DRCR 4.5V-5.5V to 3.00V @ 0.5A

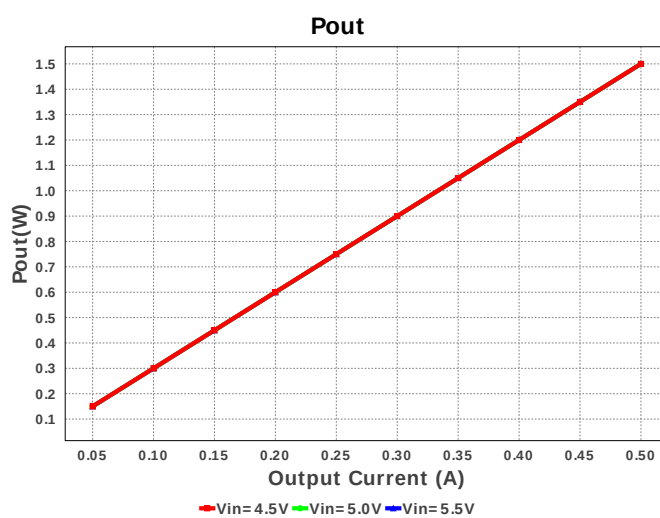
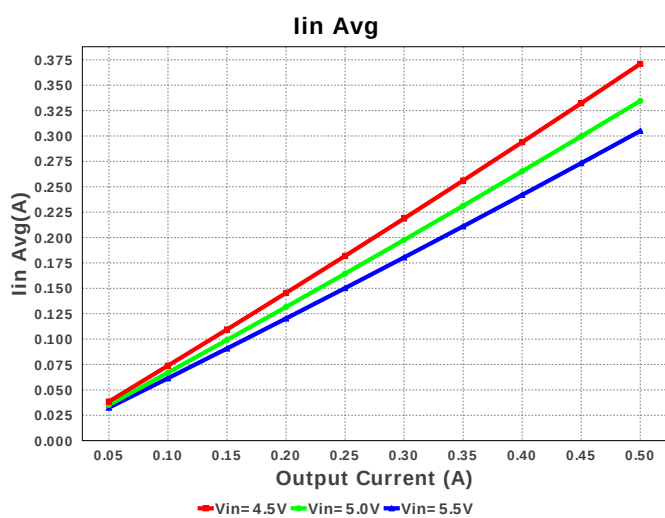
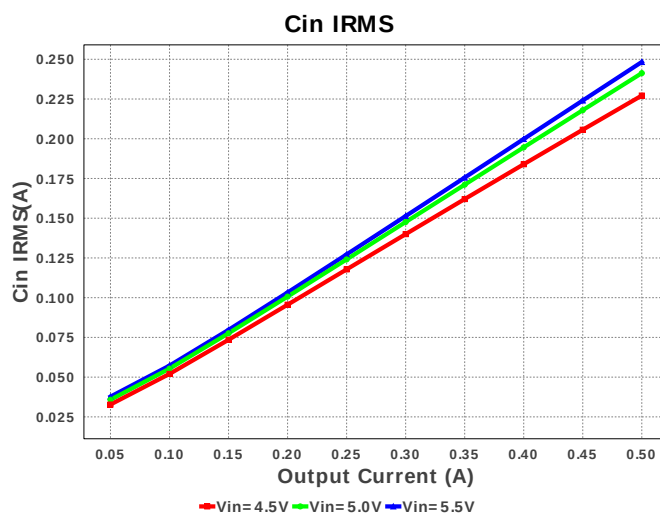
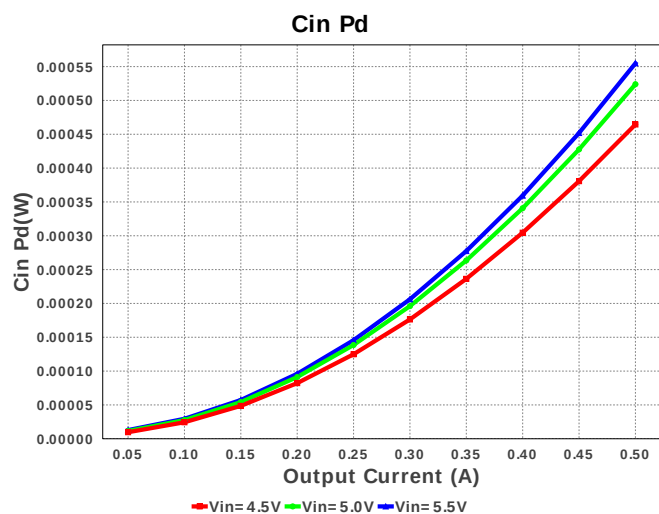
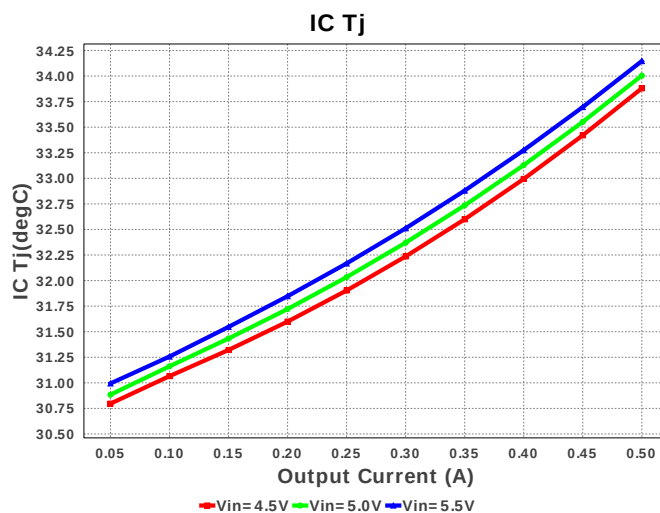
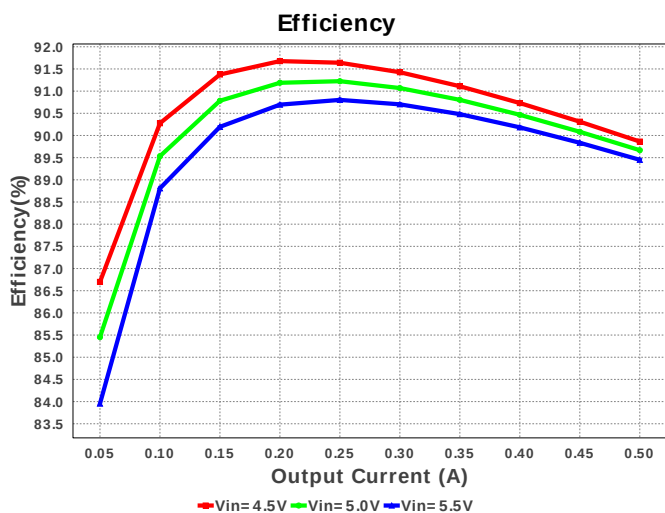


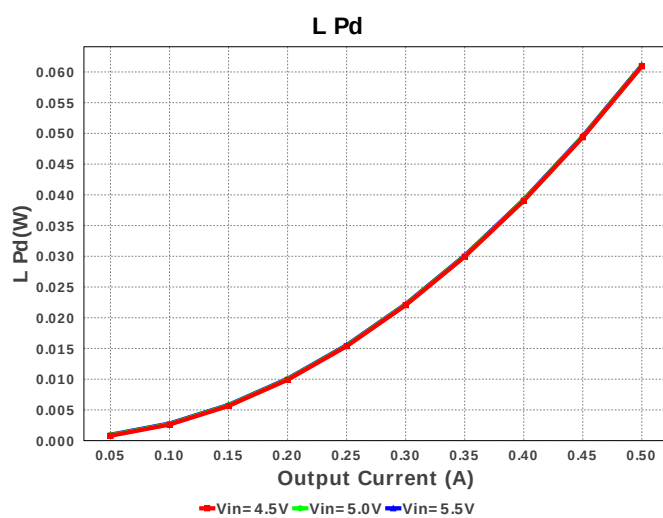
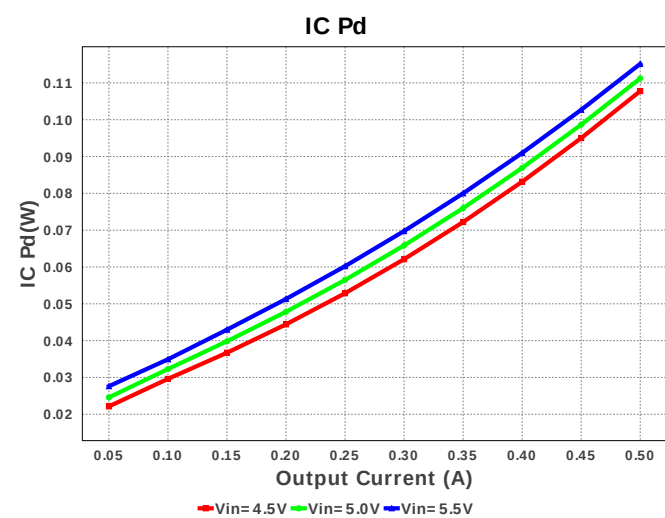
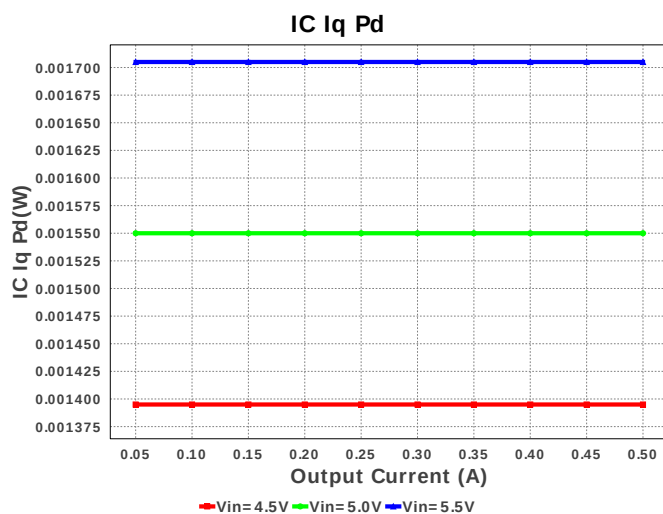
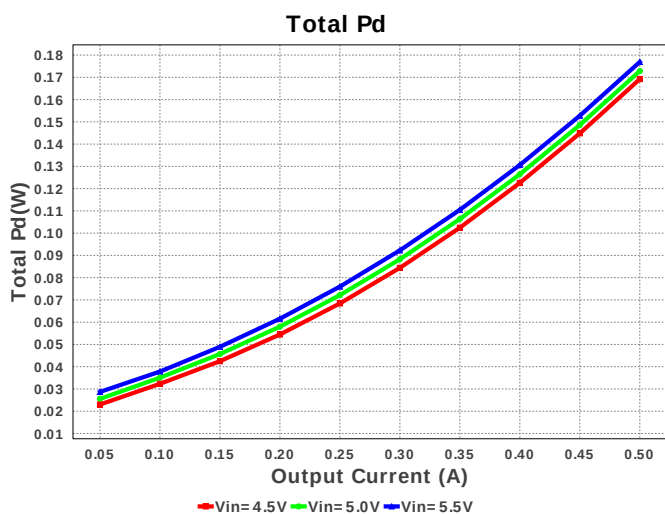
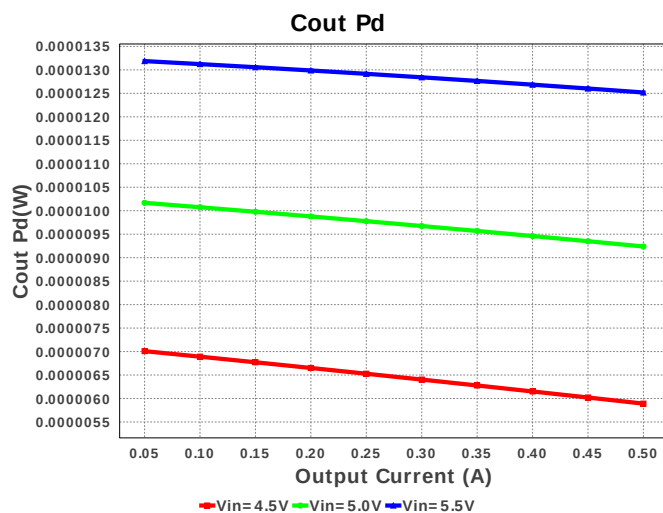
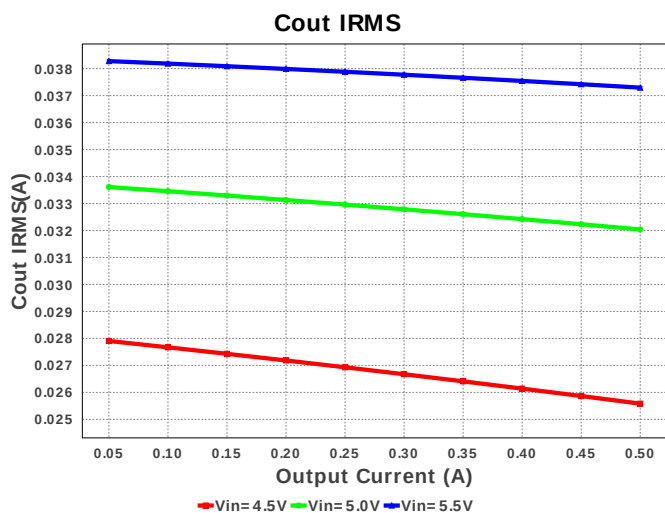
Electrical BOM

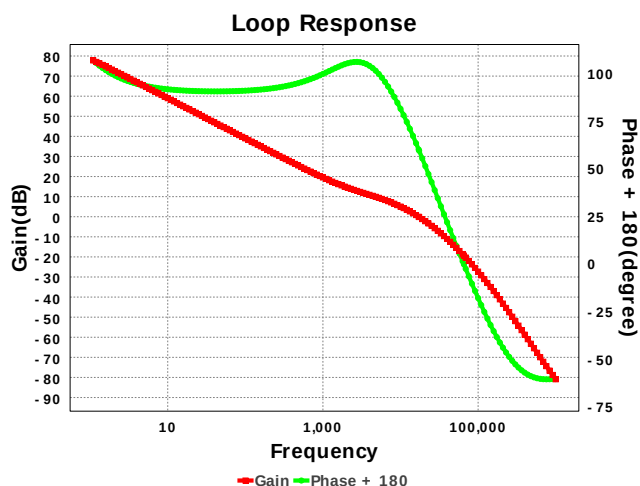
#	Name	Manufacturer	Part Number	Properties	Qty	Price	Footprint
1.	Cboot	Kemet	C0805C104K5RACTU Series= X7R	Cap= 100.0 nF ESR= 64.0 mOhm VDC= 50.0 V IRMS= 1.64 A	1	\$0.01	0805 7 mm ²
2.	Ccomp	MuRata	GRM155R60J154KE01D Series= X5R	Cap= 150.0 nF VDC= 6.3 V IRMS= 0.0 A	1	\$0.01	0402 3 mm ²
3.	Ccomp2	Yageo America	CC0805KRX7R9BB272 Series= X7R	Cap= 2.7 nF VDC= 50.0 V IRMS= 0.0 A	1	\$0.01	0805 7 mm ²
4.	Cin	MuRata	GRM188R60J106ME47D Series= X5R	Cap= 10.0 uF ESR= 9.0 mOhm VDC= 6.3 V IRMS= 2.74 A	1	\$0.02	0603 5 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	GRM21BR60J226ME39L Series= X5R	Cap= 22.0 uF ESR= 9.0 mOhm VDC= 6.3 V IRMS= 3.5 A	1	\$0.04	0805 7 mm ²
7.	L1	Coilcraft	LPS4018-183MRB	L= 18.0 uH DCR= 243.0 mOhm	1	\$0.35	LPS4018 24 mm ²
8.	Rcomp	Vishay-Dale	CRCW0402432RKFED Series= CRCW..e3	Res= 432.0 Ohm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	0402 3 mm ²
9.	Rfbb	Vishay-Dale	CRCW040236K5FKED Series= CRCW..e3	Res= 36.5 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	0402 3 mm ²
10.	Rfht	Vishay-Dale	CRCW0402100KFKED Series= CRCW..e3	Res= 100.0 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	0402 3 mm ²

#	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 mm ²
12.	U1	Texas Instruments	TPS54334DRCR	Switcher	1	\$0.95	 DRC0010J 16 mm ²









Operating Values

#	Name	Value	Category	Description
1.	Cin IRMS	248.3 mA	Current	Input capacitor RMS ripple current
2.	Cout IRMS	37.295 mA	Current	Output capacitor RMS ripple current
3.	Iin Avg	304.89 mA	Current	Average input current
4.	L Ipp	129.19 mA	Current	Peak-to-peak inductor ripple current
5.	BOM Count	12	General	Total Design BOM count
6.	FootPrint	87.0 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	1.5 W	General	Total output power
10.	Total BOM	\$1.44	General	Total BOM Cost
11.	ICThetaJA Effective	36.0 degC/W	Op_Point	Effective IC Junction-to-Ambient Thermal Resistance
12.	Low Freq Gain	77.794 dB	Op_Point	Gain at 10Hz
13.	Vout Actual	2.992 V	Op_Point	Vout Actual calculated based on selected voltage divider resistors
14.	Vout OP	3.0 V	Op_Point	Operational Output Voltage
15.	Cross Freq	17.126 kHz	Op_point	Bode plot crossover frequency
16.	Duty Cycle	58.138 %	Op_point	Duty cycle
17.	Efficiency	89.451 %	Op_point	Steady state efficiency
18.	Gain Marg	-19.364 dB	Op_point	Bode Plot Gain Margin
19.	IC Tj	34.146 degC	Op_point	IC junction temperature
20.	IOUT_OP	500.0 mA	Op_point	Iout operating point
21.	Phase Marg	60.386 deg	Op_point	Bode Plot Phase Margin
22.	VIN_OP	5.5 V	Op_point	Vin operating point
23.	Vout p-p	2.144 mV	Op_point	Peak-to-peak output ripple voltage
24.	Cin Pd	554.878 μ W	Power	Input capacitor power dissipation
25.	Cout Pd	12.518 μ W	Power	Output capacitor power dissipation
26.	IC Iq Pd	1.705 mW	Power	IC Iq Pd
27.	IC Pd	115.172 mW	Power	IC power dissipation
28.	L Pd	61.088 mW	Power	Inductor power dissipation
29.	Total Pd	176.896 mW	Power	Total Power Dissipation
30.	Vout Tolerance	2.749 %		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	5.5	Maximum input voltage
3.	VinMin	4.5	Minimum input voltage
4.	Vout	3.0	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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