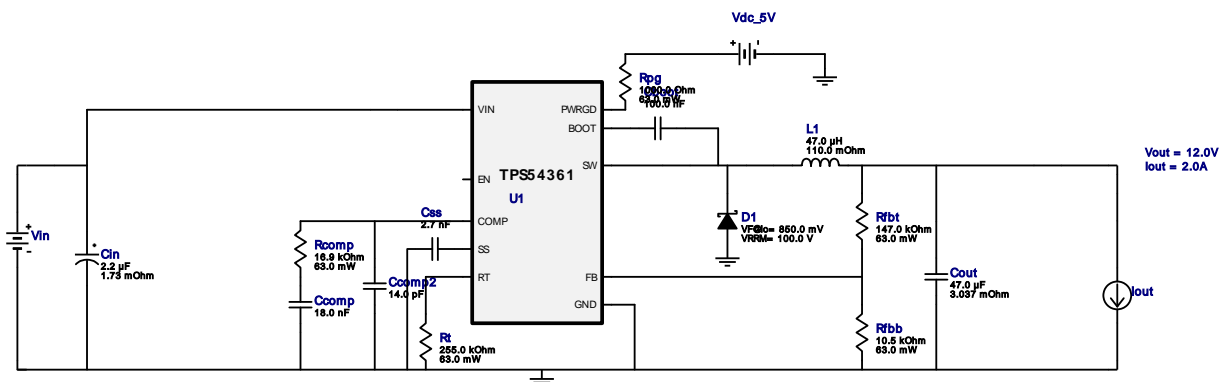





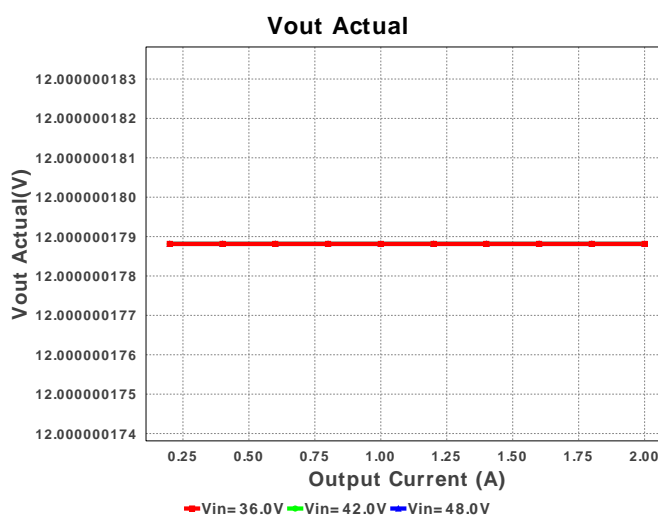
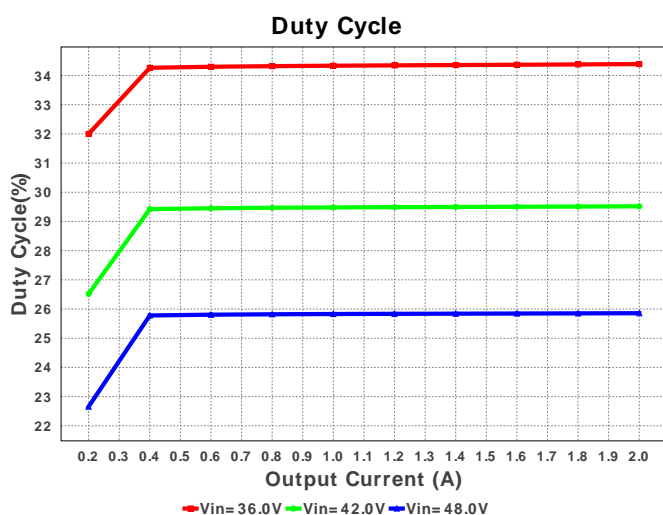
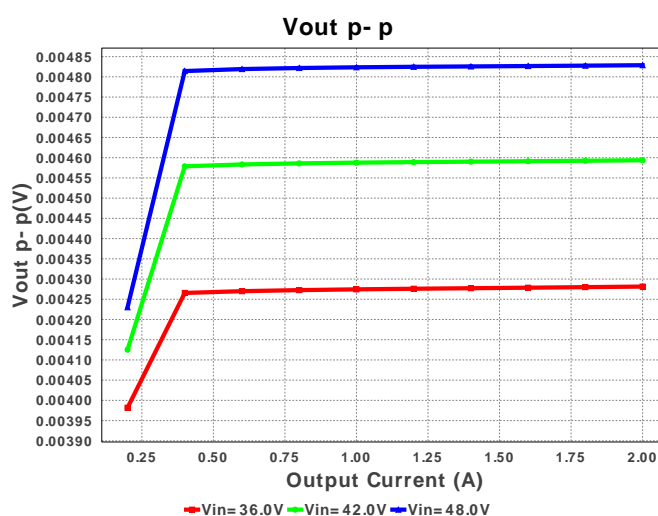
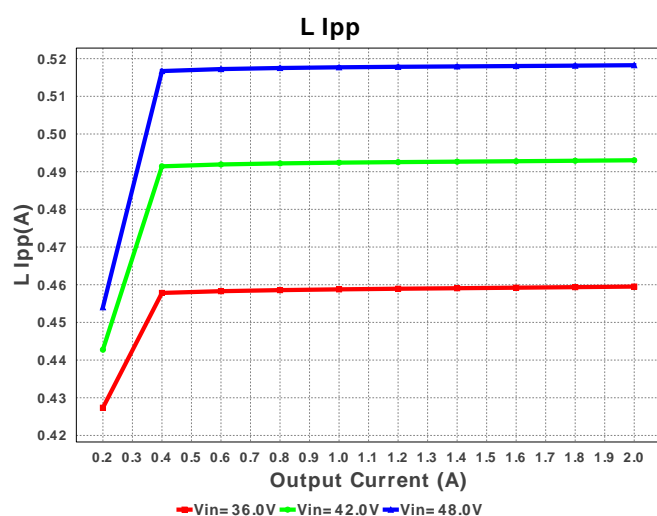


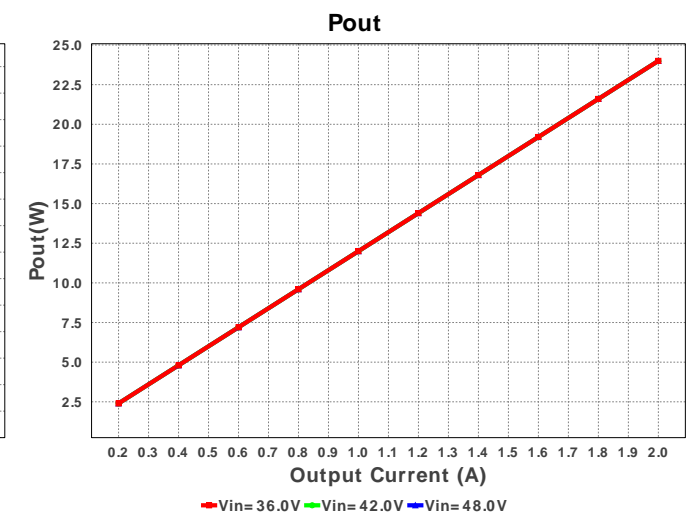
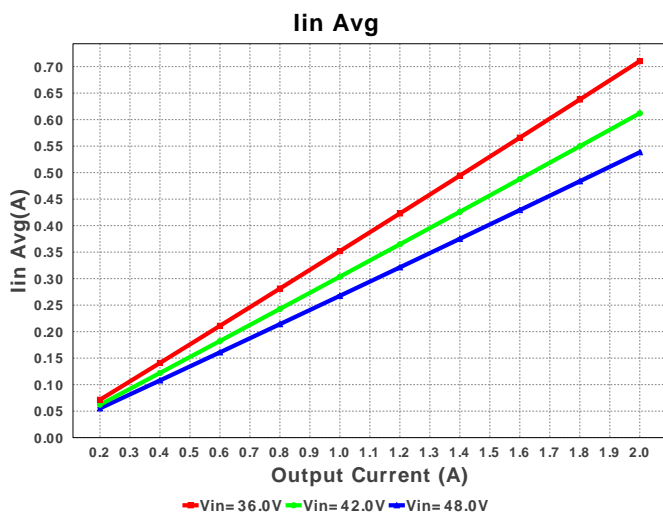
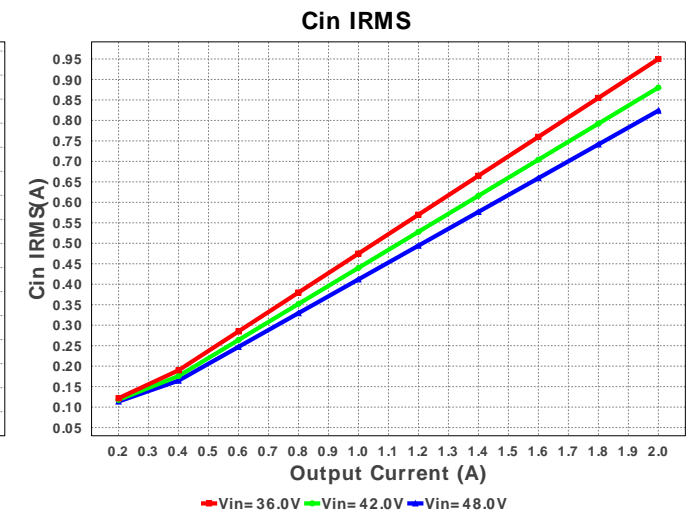
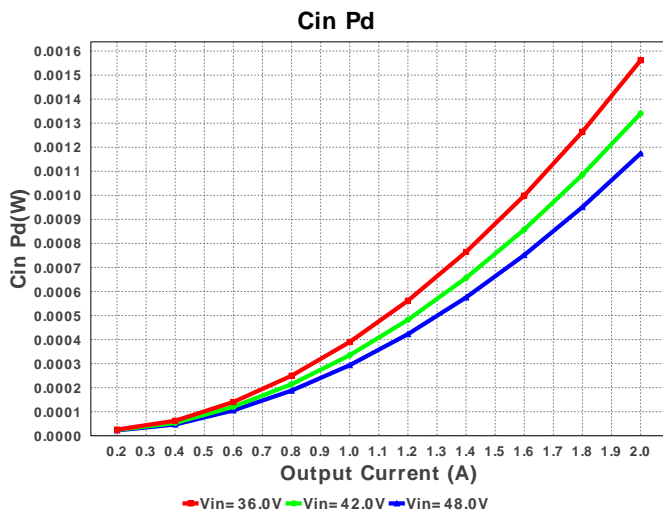
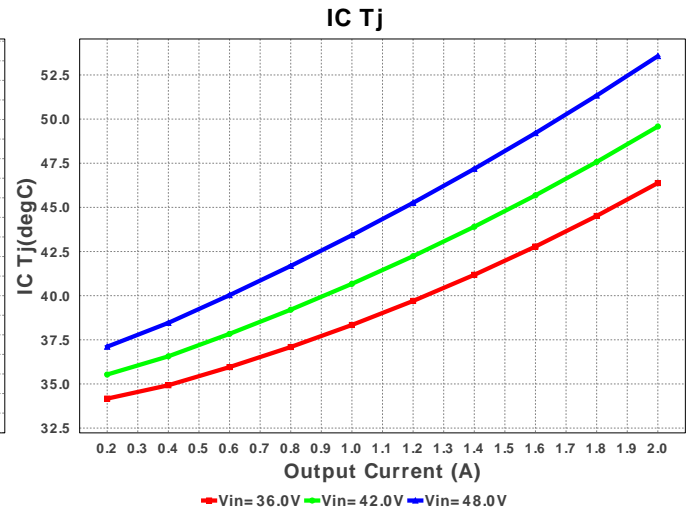
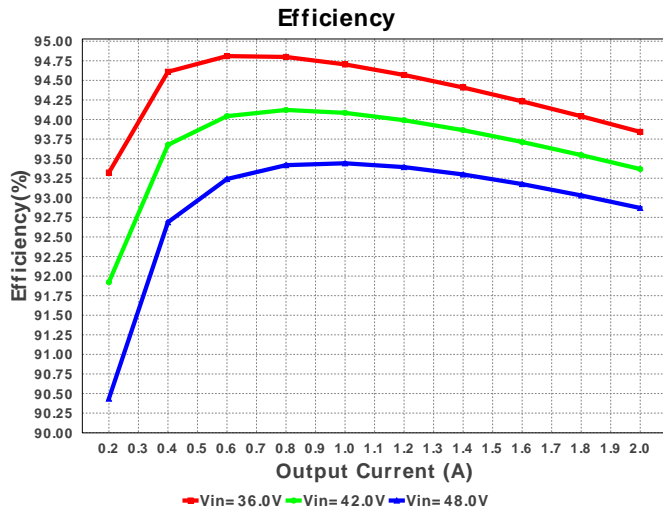
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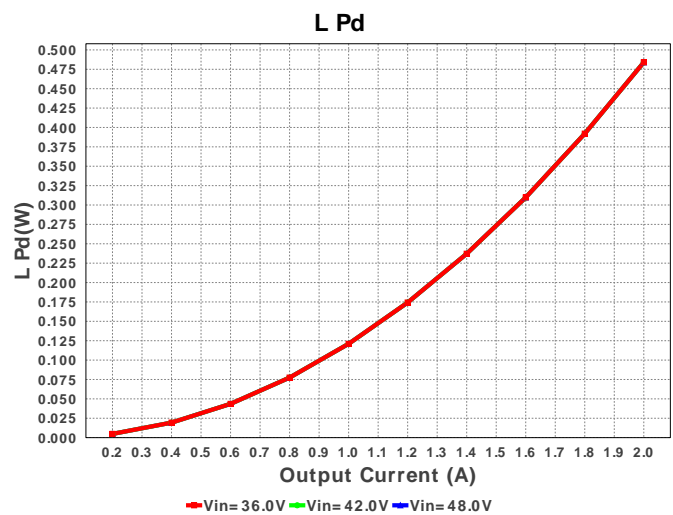
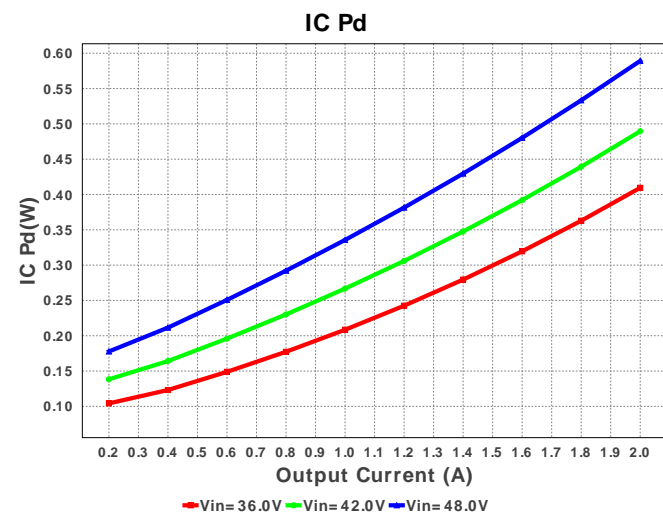
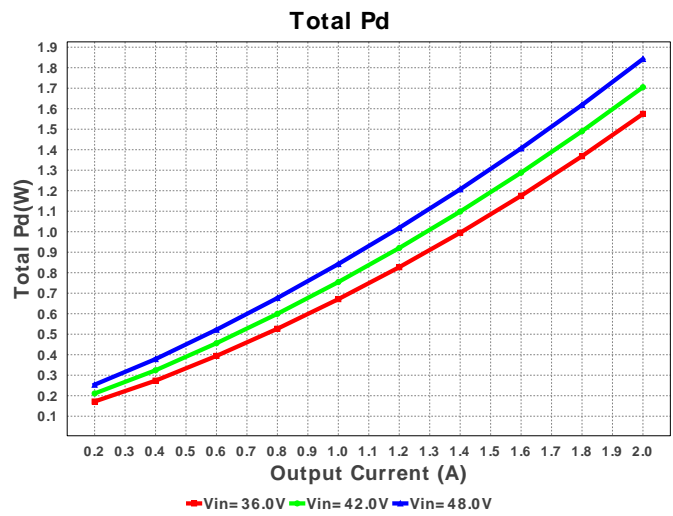
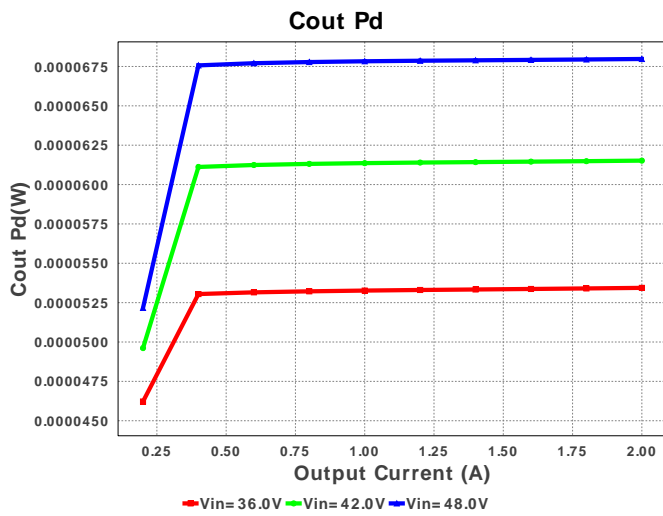
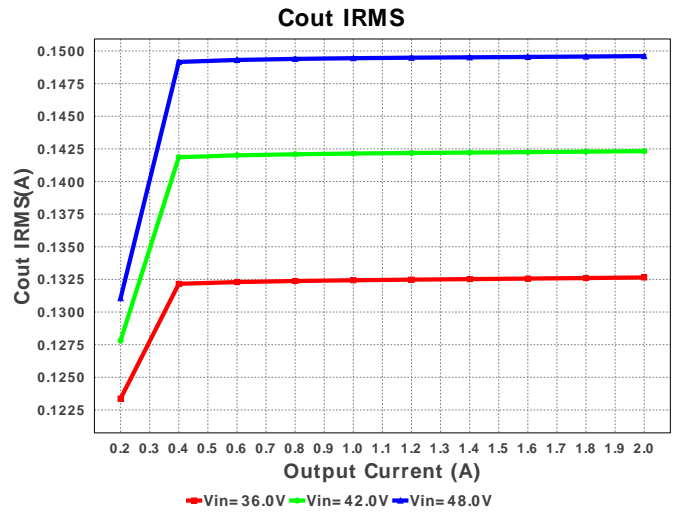
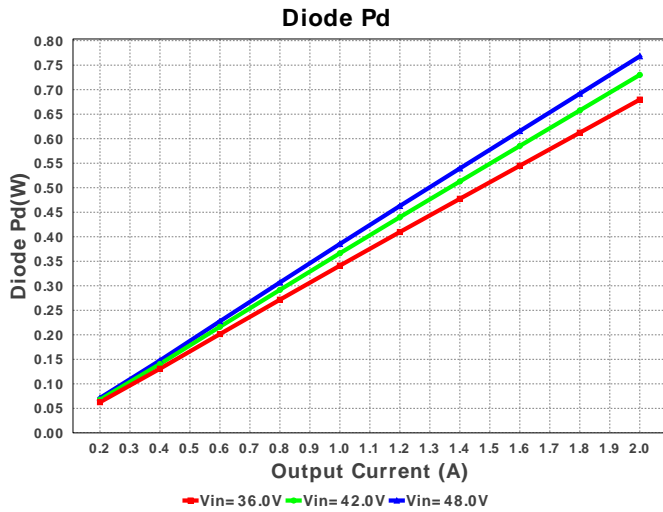


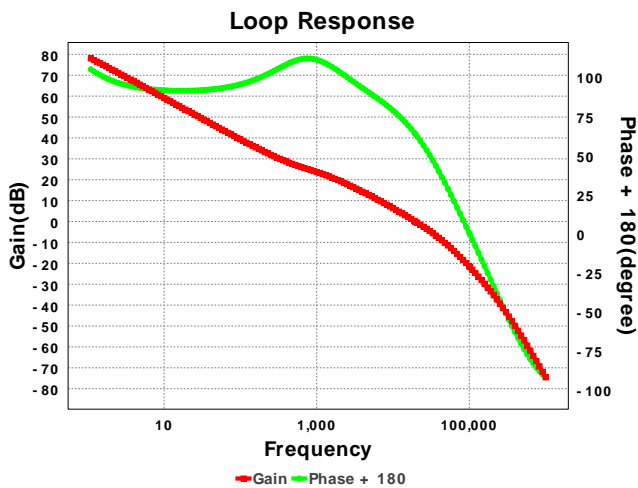
#	Name	Manufacturer	Part Number	Properties	Qty	Price	Footprint
1.	Cboot	MuRata	GRM155R61A104KA01D Series= X5R	Cap= 100.0 nF VDC= 10.0 V IRMS= 0.0 A	1	\$0.01	 0402 3 mm ²
2.	Ccomp	Yageo America	CC0805KRX7R9BB183 Series= X7R	Cap= 18.0 nF VDC= 50.0 V IRMS= 0.0 A	1	\$0.01	 0805 7 mm ²
3.	Ccomp2	Samsung Electro-Mechanics	CL21C140JBANNNC Series= C0G/NP0	Cap= 14.0 pF VDC= 50.0 V IRMS= 0.0 A	1	\$0.01	 0805 7 mm ²
4.	Cin	TDK	C3225X7R2A225K230AB Series= X7R	Cap= 2.2 uF ESR= 1.73 mOhm VDC= 100.0 V IRMS= 5.5932 A	1	\$0.19	 1210_250 15 mm ²
5.	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
6.	Css	Yageo America	CC0805KRX7R9BB272 Series= X7R	Cap= 2.7 nF VDC= 50.0 V IRMS= 0.0 A	1	\$0.01	 0805 7 mm ²
7.	D1	Micro Commercial Components	SK310A-TP	VF@Io= 850.0 mV VRRM= 100.0 V	1	\$0.10	 SMA 37 mm ²
8.	L1	Bourns	SRR1208-470YL	L= 47.0 uH DCR= 110.0 mOhm	1	\$0.37	 SRR1208 216 mm ²
9.	Rcomp	Vishay-Dale	CRCW040216K9FKED Series= CRCW..e3	Res= 16.9 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	 0402 3 mm ²
10.	Rfbb	Vishay-Dale	CRCW040210K5FKED Series= CRCW..e3	Res= 10.5 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	 0402 3 mm ²
11.	Rfbt	Vishay-Dale	CRCW0402147KFKED Series= CRCW..e3	Res= 147.0 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	 0402 3 mm ²

#	Name	Manufacturer	Part Number	Properties	Qty	Price	Footprint
12.	Rpg	Vishay-Dale	CRCW04021K00FKED Series= CRCW..e3	Res= 1000.0 Ohm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	 0402 3 mm ²
13.	Rt	Vishay-Dale	CRCW0402255KFKED Series= CRCW..e3	Res= 255.0 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	 0402 3 mm ²
14.	U1	Texas Instruments	TPS54361DPRR	Switcher	1	\$2.60	 DPR0010A 25 mm ²









Operating Values

#	Name	Value	Category	Description
1.	Cin IRMS	828.082 mA	Current	Input capacitor RMS ripple current
2.	Cout IRMS	152.533 mA	Current	Output capacitor RMS ripple current
3.	Iin Avg	548.51 mA	Current	Average input current
4.	L Ipp	528.39 mA	Current	Peak-to-peak inductor ripple current
5.	BOM Count	14	General	Total Design BOM count
6.	FootPrint	346.0 mm ²	General	Total Foot Print Area of BOM components
7.	Frequency	382.156 kHz	General	Switching frequency
8.	Pout	24.0 W	General	Total output power
9.	Total BOM	\$3.59	General	Total BOM Cost
10.	ICThetaJA Effective	40.0 degC/W	Op_Point	Effective IC Junction-to-Ambient Thermal Resistance
11.	Low Freq Gain	78.037 dB	Op_Point	Gain at 10Hz
12.	Vout Actual	12.0 V	Op_Point	Vout Actual calculated based on selected voltage divider resistors
13.	Vout OP	12.0 V	Op_Point	Operational Output Voltage
14.	Cross Freq	19.711 kHz	Op_point	Bode plot crossover frequency
15.	Duty Cycle	26.363 %	Op_point	Duty cycle
16.	Efficiency	91.156 %	Op_point	Steady state efficiency
17.	Gain Marg	-21.861 dB	Op_point	Bode Plot Gain Margin
18.	IC Tj	53.655 degC	Op_point	IC junction temperature
19.	IOUT_OP	2.0 A	Op_point	Iout operating point
20.	Phase Marg	64.316 deg	Op_point	Bode Plot Phase Margin
21.	VIN_OP	48.0 V	Op_point	Vin operating point
22.	Vout p-p	4.923 mV	Op_point	Peak-to-peak output ripple voltage
23.	Cin Pd	1.186 mW	Power	Input capacitor power dissipation
24.	Cout Pd	70.66 μW	Power	Output capacitor power dissipation
25.	Diode Pd	1.252 W	Power	Diode power dissipation
26.	IC Pd	591.365 mW	Power	IC power dissipation
27.	L Pd	484.0 mW	Power	Inductor power dissipation
28.	Total Pd	2.328 W	Power	Total Power Dissipation
29.	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	48.0	Maximum input voltage
3.	VinMin	36.0	Minimum input voltage
4.	Vout	12.0	Output Voltage
5.	base_pn	TPS54361	Base Product Number
6.	source	DC	Input Source Type
7.	Ta	30.0	Ambient temperature

Design Assistance

1. **TPS54361** Product Folder : <http://www.ti.com/product/TPS54361> : contains the data sheet and other resources.

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