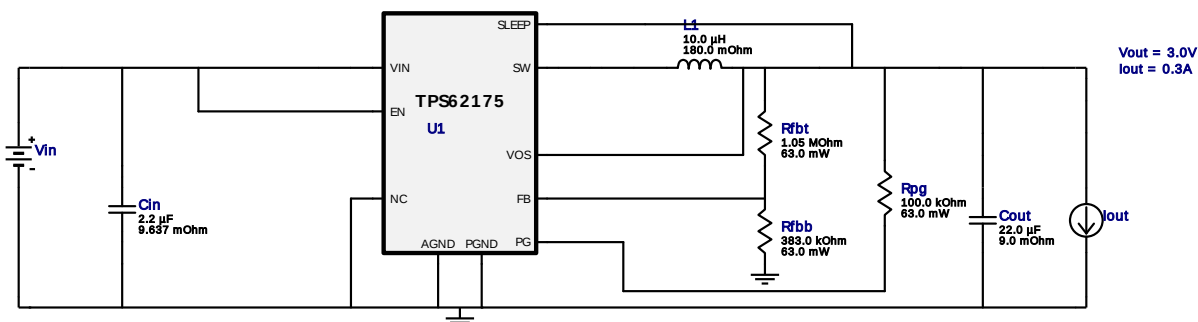


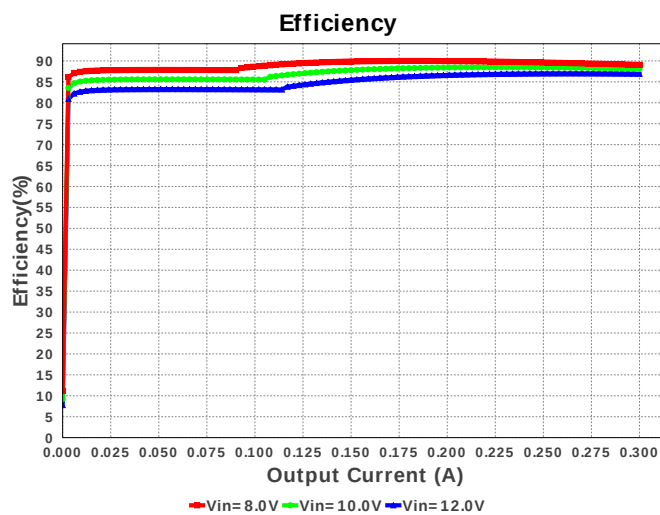
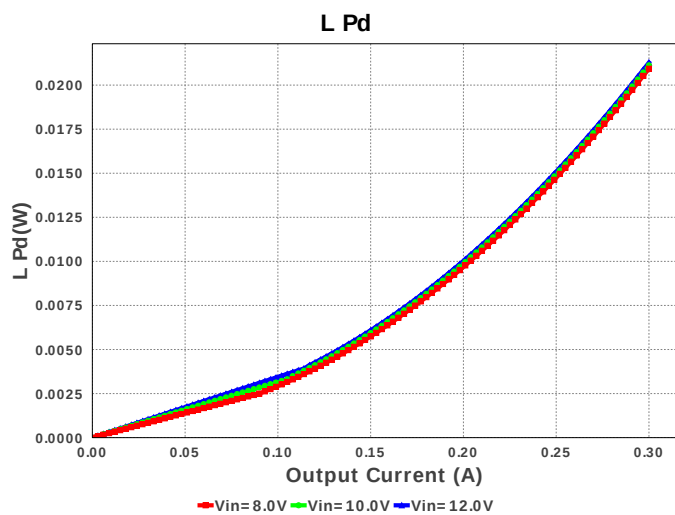
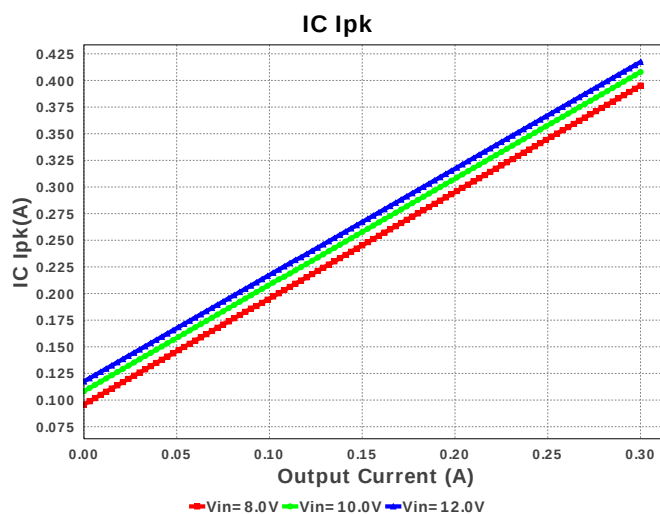
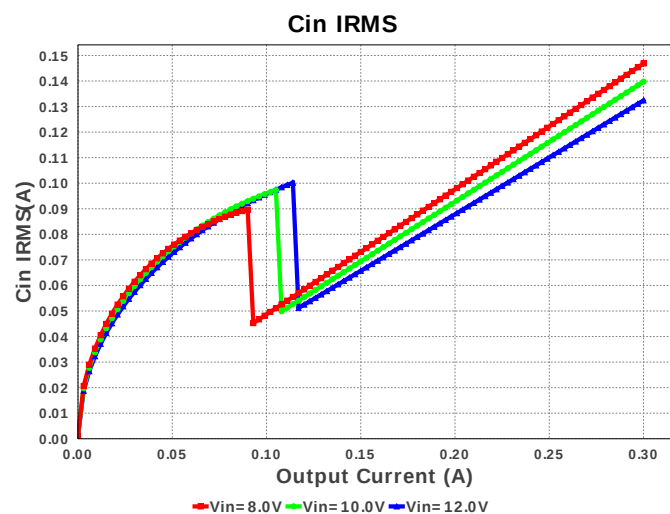
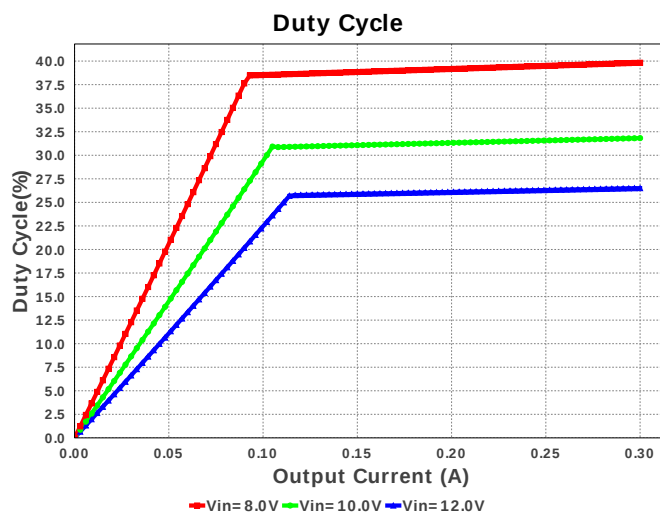
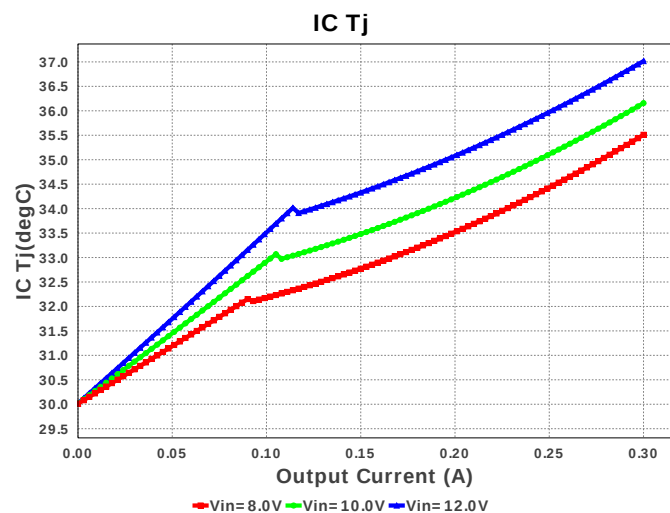
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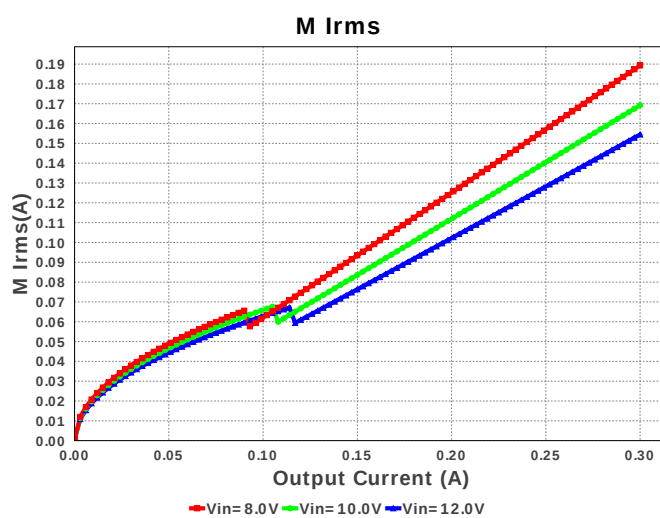
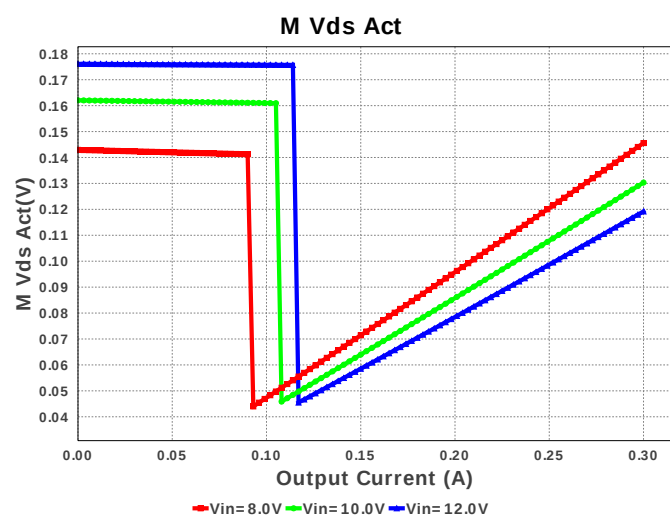
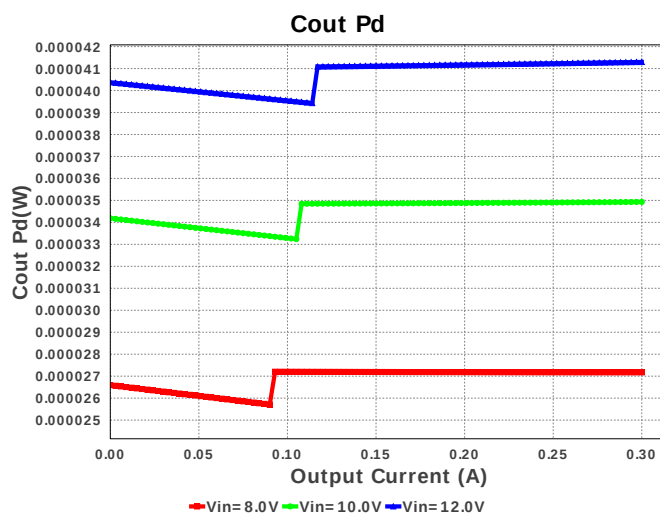
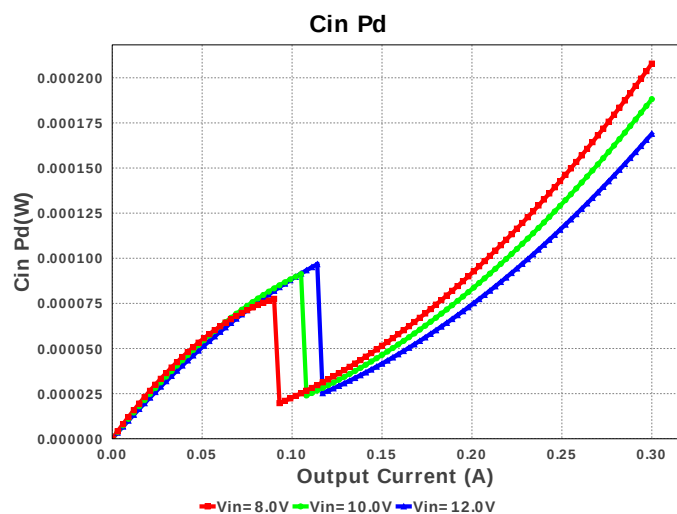
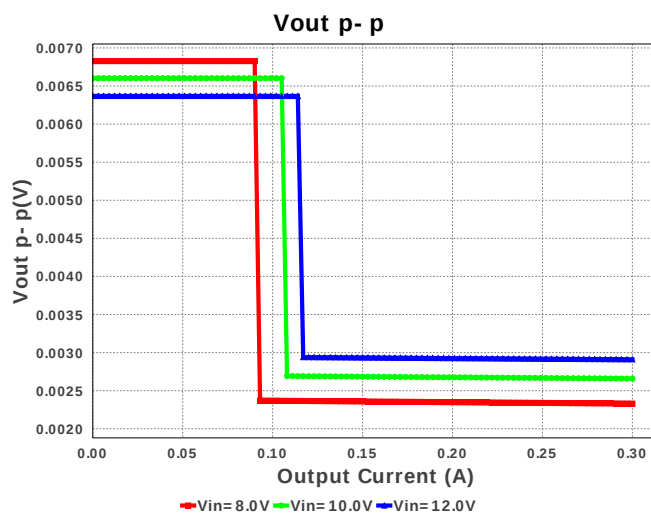
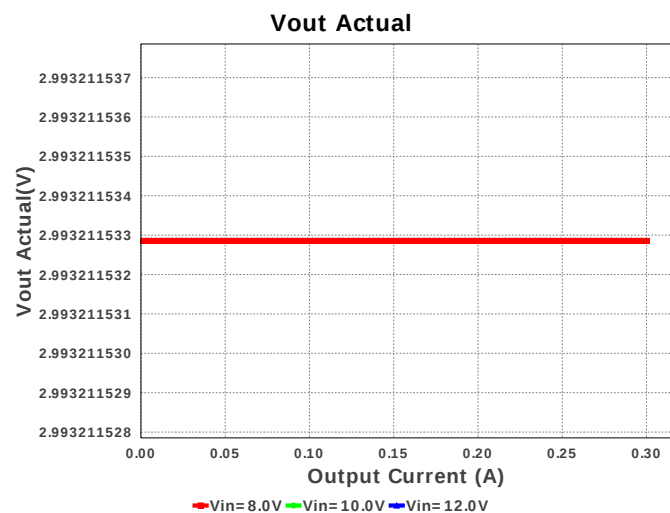
Design : 4743623/1 TPS62175DQCR
TPS62175DQCR 8.0V-12.0V to 3.00V @ 0.3A

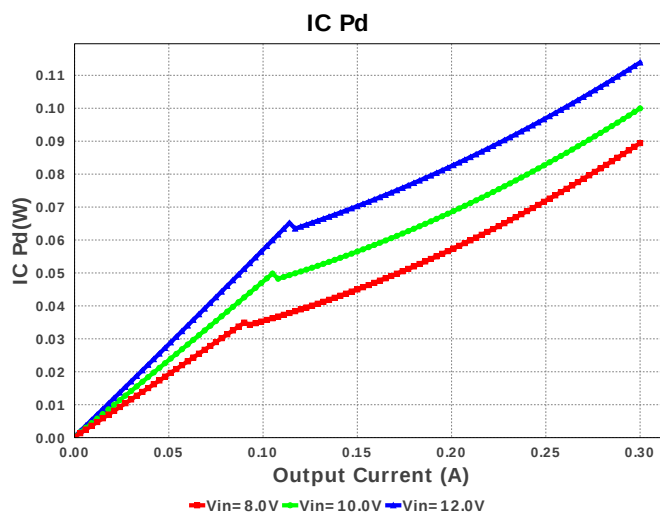
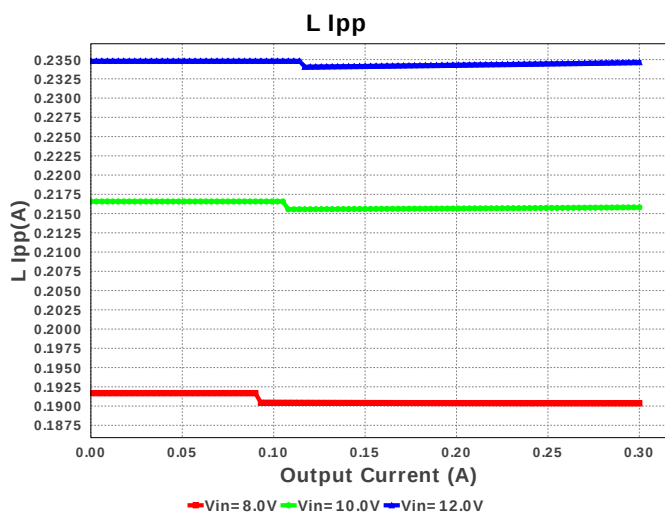
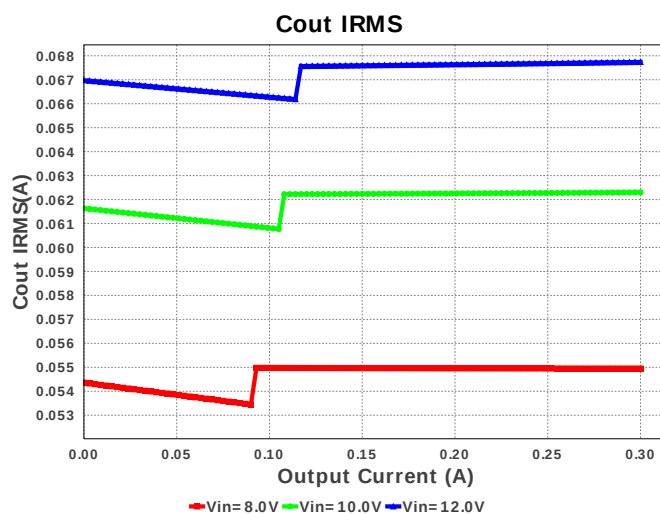
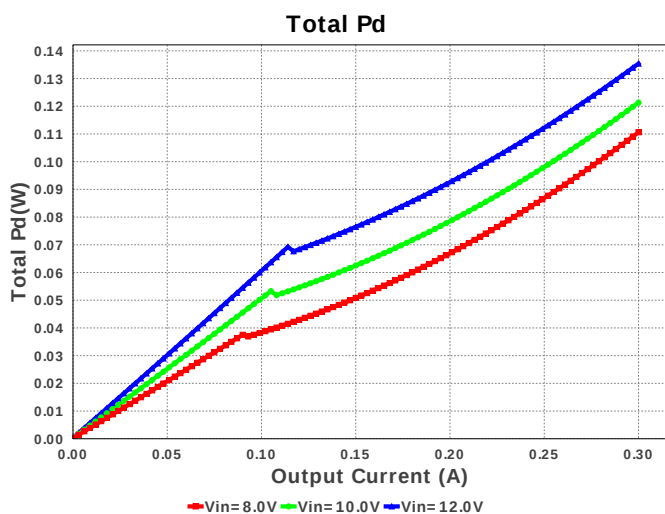
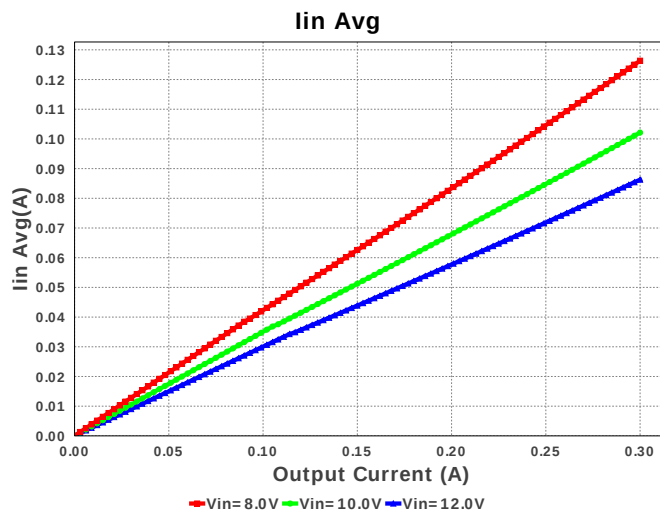
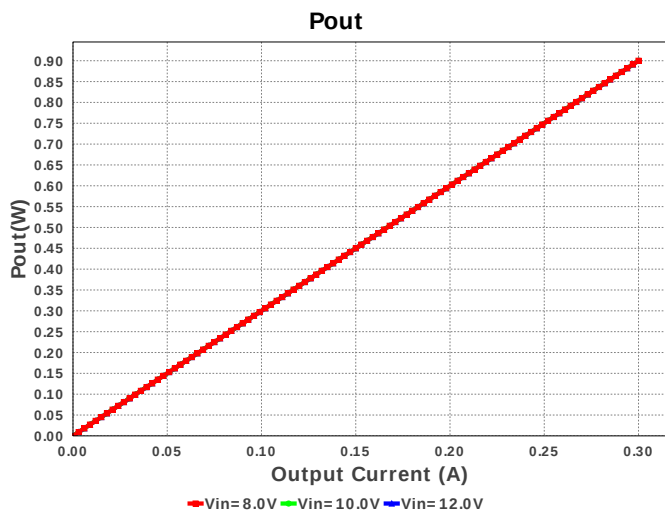


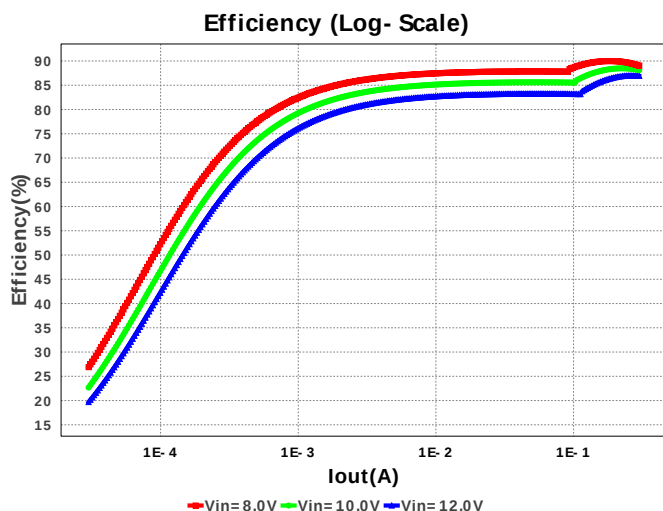
Electrical BOM

#	Name	Manufacturer	Part Number	Properties	Qty	Price	Footprint
1.	Cin	MuRata	GRM188R61C225KE15D Series= X5R	Cap= 2.2 uF ESR= 9.637 mOhm VDC= 16.0 V IRMS= 1.20373 A	1	\$0.02	0603 5 mm ²
2.	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
3.	L1	Coilcraft	LPS4018-103MRB	L= 10.0 uH DCR= 180.0 mOhm	1	\$0.35	LPS4018 24 mm ²
4.	Rfbb	Vishay-Dale	CRCW0402383KFKED Series= CRCW..e3	Res= 383.0 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	0402 3 mm ²
5.	Rf1	Vishay-Dale	CRCW04021M05FKED Series= CRCW..e3	Res= 1.05 MOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	0402 3 mm ²
6.	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
7.	U1	Texas Instruments	TPS62175DQCR	Switcher	1	\$0.58	R-PWSON-N10 12 mm ²









Operating Values

#	Name	Value	Category	Description
1.	Cin IRMS	132.417 mA	Current	Input capacitor RMS ripple current
2.	Cout IRMS	67.741 mA	Current	Output capacitor RMS ripple current
3.	IC Ipk	417.331 mA	Current	Peak switch current in IC
4.	Iin Avg	86.283 mA	Current	Average input current
5.	L Ipp	234.66 mA	Current	Peak-to-peak inductor ripple current
6.	M1 Irms	154.465 mA	Current	Q lavg
7.	BOM Count	7	General	Total Design BOM count
8.	FootPrint	56.0 mm ²	General	Total Foot Print Area of BOM components
9.	Frequency	1.017 MHz	General	Switching frequency
10.	IC Tolerance	24.0 mV	General	IC Feedback Tolerance
11.	M Vds Act	119.189 mV	General	Voltage drop across the MosFET
12.	Pout	900.0 mW	General	Total output power
13.	Total BOM	\$1.02	General	Total BOM Cost
14.	Vout Actual	2.993 V	Op_Point	Vout Actual calculated based on selected voltage divider resistors
15.	Vout OP	3.0 V	Op_Point	Operational Output Voltage
16.	Duty Cycle	26.51 %	Op_point	Duty cycle
17.	Efficiency	86.923 %	Op_point	Steady state efficiency
18.	IC Tj	37.016 degC	Op_point	IC junction temperature
19.	ICThetaJA	61.6 degC/W	Op_point	IC junction-to-ambient thermal resistance
20.	IOUT_OP	300.0 mA	Op_point	Iout operating point
21.	VIN_OP	12.0 V	Op_point	Vin operating point
22.	Vout p-p	2.911 mV	Op_point	Peak-to-peak output ripple voltage
23.	Cin Pd	168.977 μ W	Power	Input capacitor power dissipation
24.	Cout Pd	41.3 μ W	Power	Output capacitor power dissipation
25.	IC Pd	113.902 mW	Power	IC power dissipation
26.	L Pd	21.282 mW	Power	Inductor power dissipation
27.	Total Pd	135.399 mW	Power	Total Power Dissipation
28.	Vout Tolerance	4.525 %		Vout Tolerance based on IC Tolerance (no load) and voltage divider resistors if applicable

Design Inputs

#	Name	Value	Description
1.	Iout	300.0 m	Maximum Output Current
2.	VinMax	12.0	Maximum input voltage
3.	VinMin	8.0	Minimum input voltage
4.	Vout	3.0	Output Voltage
5.	base_pn	TPS62175	Base Product Number
6.	source	DC	Input Source Type
7.	Ta	30.0	Ambient temperature

Design Assistance

1. **TPS62175** Product Folder : <http://www.ti.com/product/TPS62175> : contains the data sheet and other resources.

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