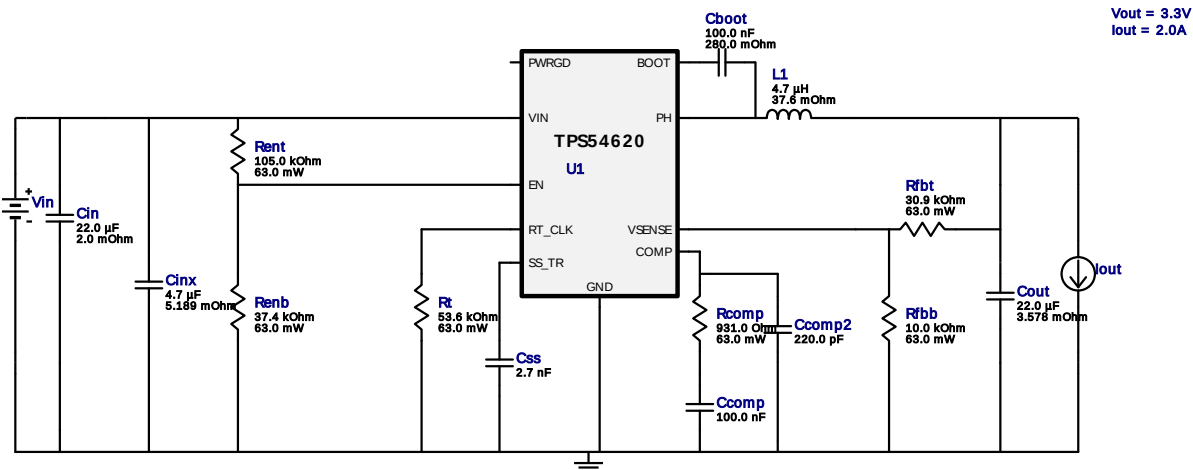


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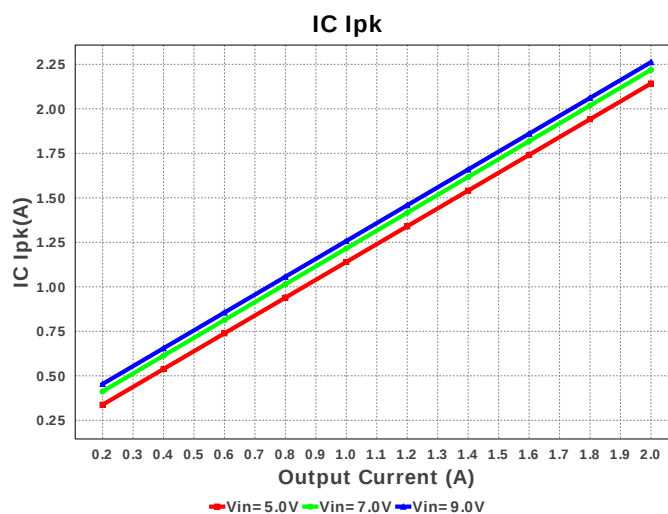
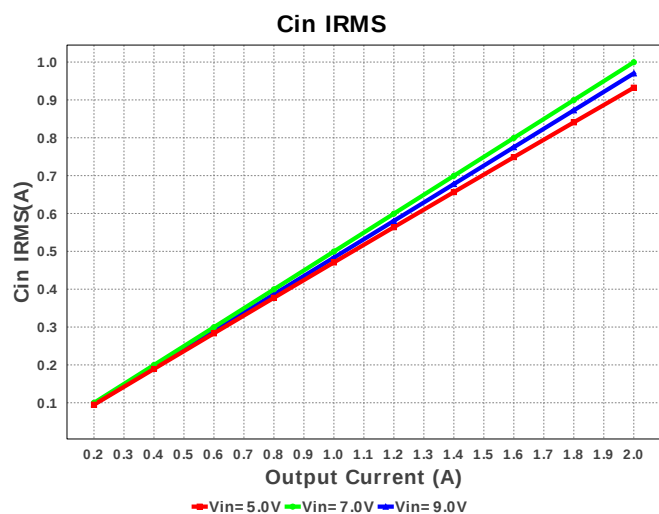
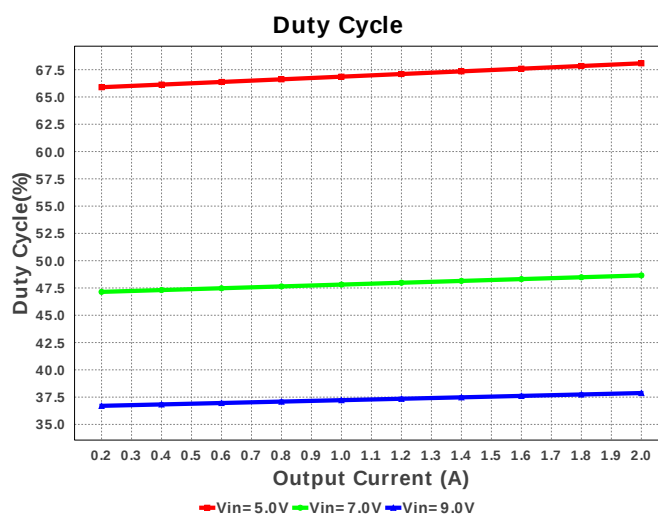
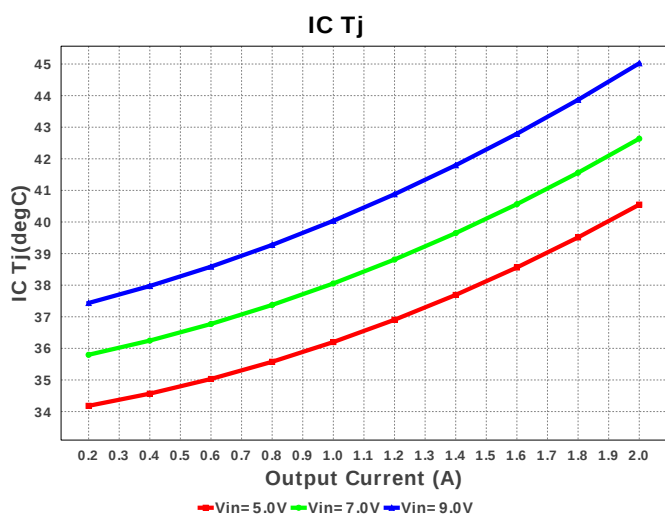
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TPS54620RHLLR 5.0V-9.0V to 3.30V @ 2.0A

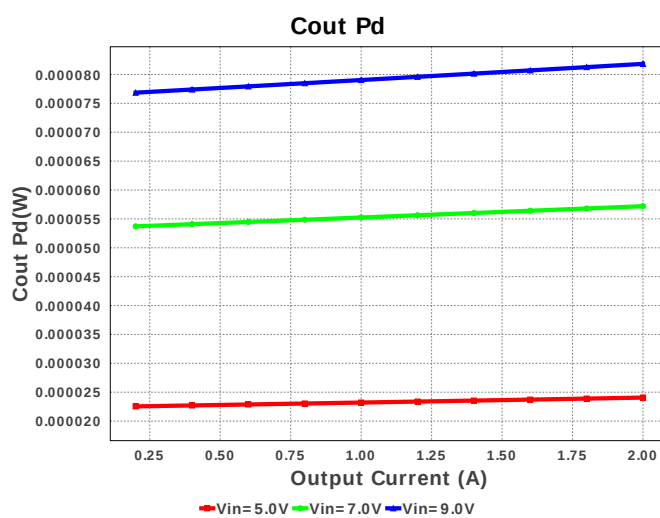
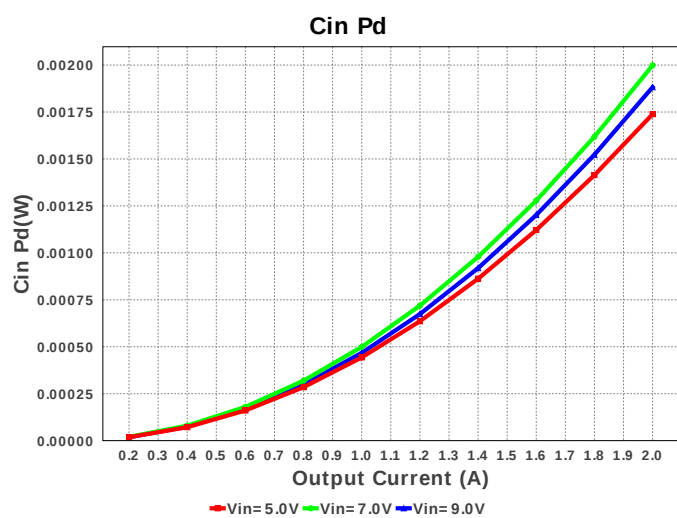
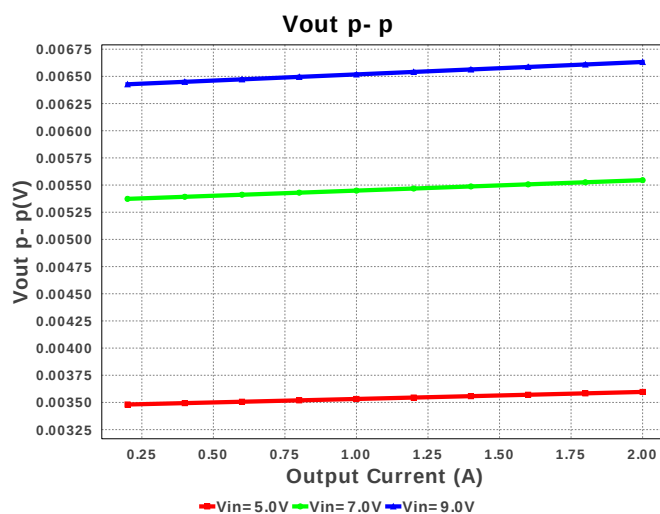
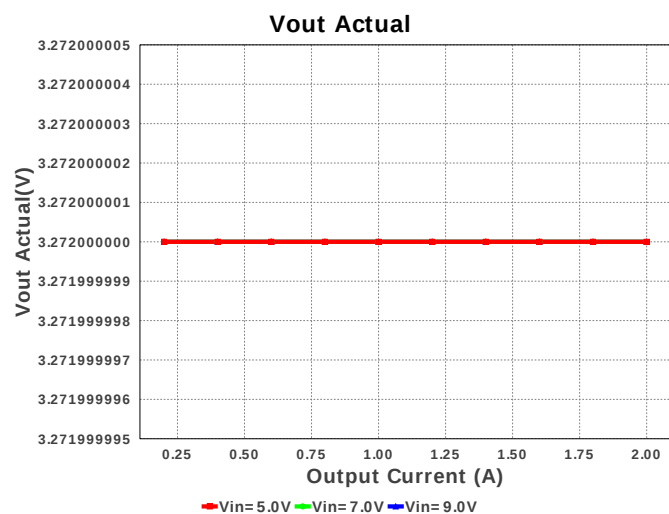
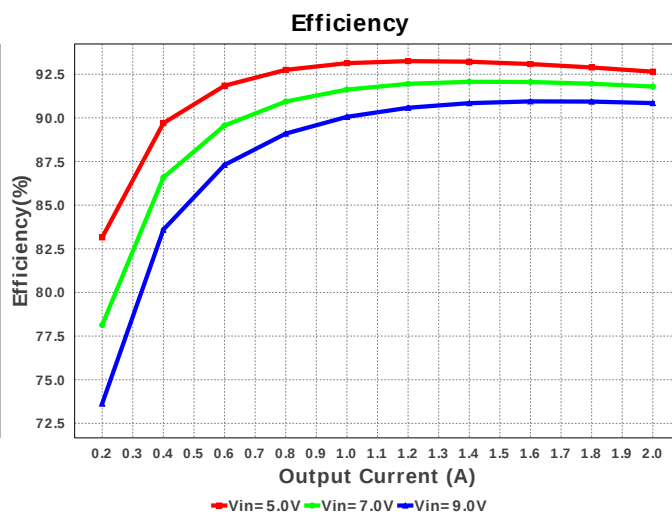
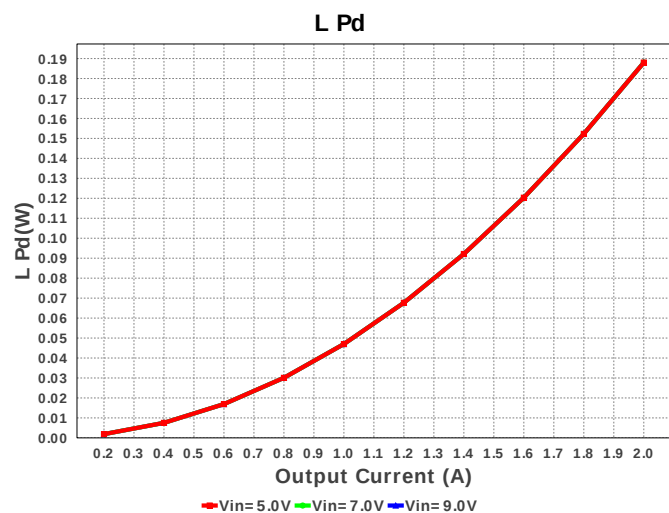


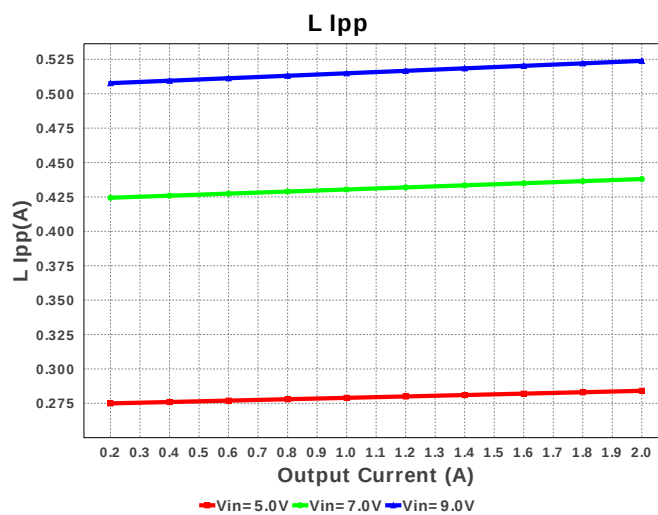
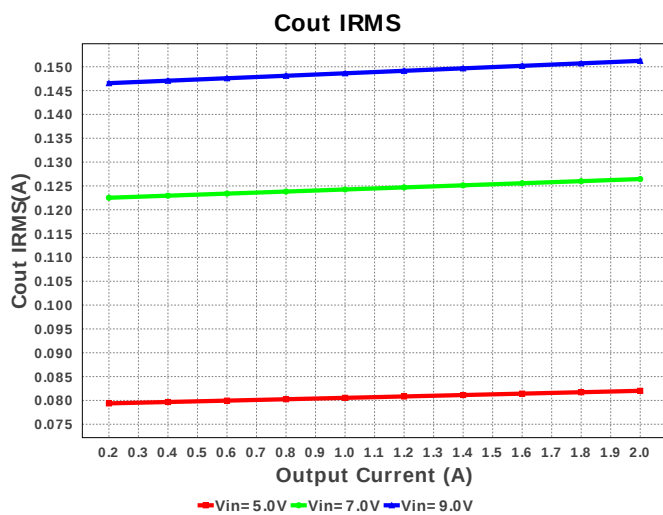
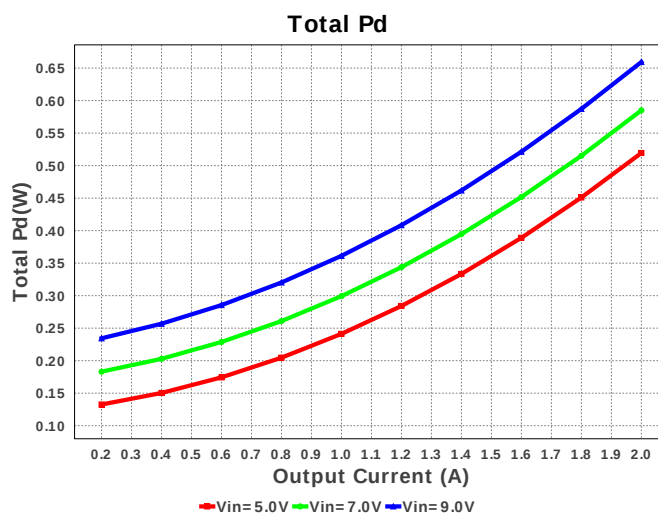
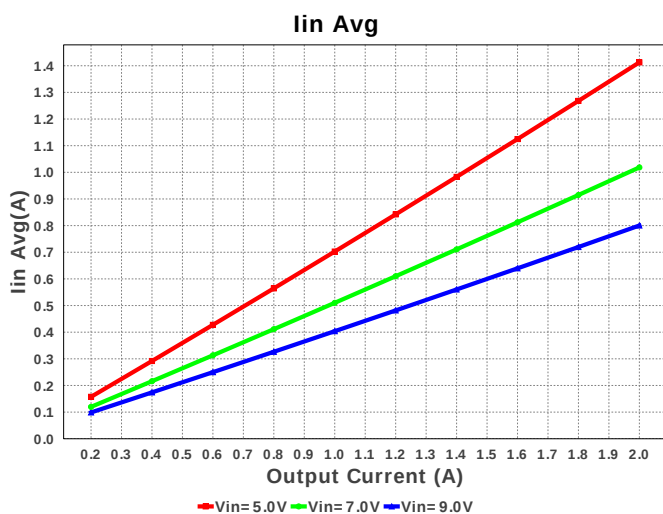
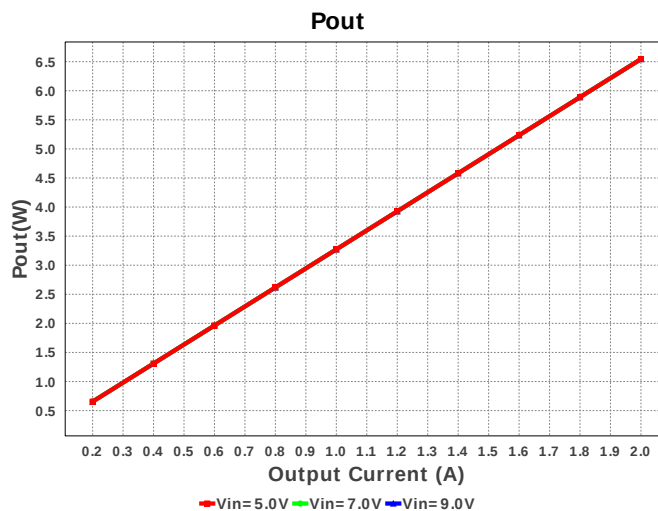
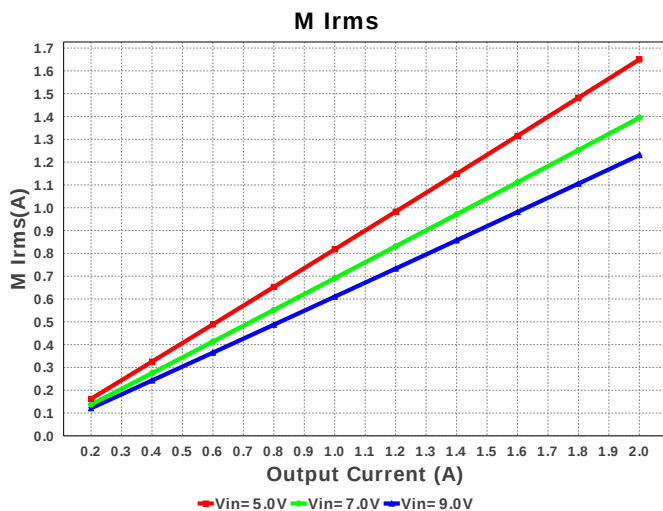
Electrical BOM

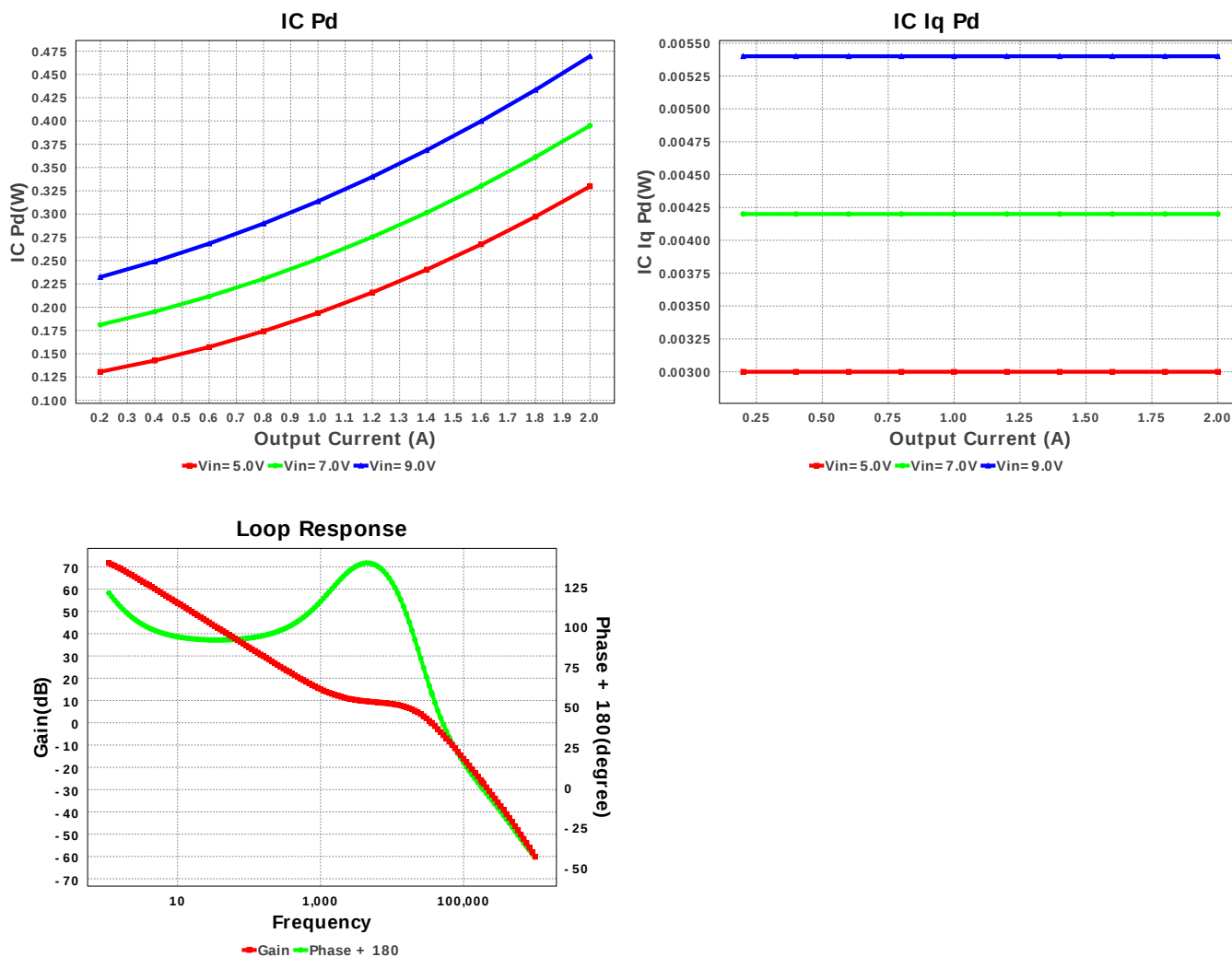
#	Name	Manufacturer	Part Number	Properties	Qty	Price	Footprint
1.	Cboot	AVX	08053C104KAT2A Series= X7R	Cap= 100.0 nF ESR= 280.0 mOhm VDC= 25.0 V IRMS= 0.0 A	1	\$0.01	0805 7 mm ²
2.	Ccomp	MuRata	GRM21BR71E104KA01L Series= X7R	Cap= 100.0 nF VDC= 25.0 V IRMS= 0.0 A	1	\$0.01	0805 7 mm ²
3.	Ccomp2	Yageo America	CC0805JRNPO9BN221 Series= C0G/NP0	Cap= 220.0 pF VDC= 50.0 V IRMS= 0.0 A	1	\$0.01	0805 7 mm ²
4.	Cin	MuRata	GRM32ER61C226ME20L Series= X5R	Cap= 22.0 uF ESR= 2.0 mOhm VDC= 16.0 V IRMS= 3.68 A	1	\$0.12	1210 15 mm ²
5.	Cinx	MuRata	GRM21BR61E475KA12L Series= X5R	Cap= 4.7 uF ESR= 5.189 mOhm VDC= 25.0 V IRMS= 2.03531 A	1	\$0.02	0805 7 mm ²
6.	Cout	MuRata	GRM21BC80G226ME39L Series= X6S	Cap= 22.0 uF ESR= 3.578 mOhm VDC= 4.0 V IRMS= 3.29633 A	1	\$0.04	0805 7 mm ²
7.	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
8.	L1	Bourns	SRN6045-4R7Y	L= 4.7 uH DCR= 37.6 mOhm	1	\$0.16	SRN6045 64 mm ²
9.	Rcomp	Vishay-Dale	CRCW0402931RFKED Series= CRCW..e3	Res= 931.0 Ohm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	0402 3 mm ²
10.	Renb	Vishay-Dale	CRCW040237K4FKED Series= CRCW..e3	Res= 37.4 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	0402 3 mm ²

#	Name	Manufacturer	Part Number	Properties	Qty	Price	Footprint
11.	Rent	Vishay-Dale	CRCW0402105KFKED Series= CRCW..e3	Res= 105.0 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	0402 3 mm ²
12.	Rfbb	Vishay-Dale	CRCW040210K0FKED Series= CRCW..e3	Res= 10.0 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	0402 3 mm ²
13.	Rfbt	Vishay-Dale	CRCW040230K9FKED Series= CRCW..e3	Res= 30.9 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	0402 3 mm ²
14.	Rt	Vishay-Dale	CRCW040253K6FKED Series= CRCW..e3	Res= 53.6 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	0402 3 mm ²
15.	U1	Texas Instruments	TPS54620RHLR	Switcher	1	\$2.50	S-PVQFN-N14 22 mm ²









Operating Values

#	Name	Value	Category	Description
1.	Cin IRMS	971.675 mA	Current	Input capacitor RMS ripple current
2.	Cout IRMS	151.728 mA	Current	Output capacitor RMS ripple current
3.	IC IpK	2.263 A	Current	Peak switch current in IC
4.	Iin Avg	806.61 mA	Current	Average input current
5.	L Ipp	525.6 mA	Current	Peak-to-peak inductor ripple current
6.	M1 Irms	1.236 A	Current	Q Iavg
7.	BOM Count	15	General	Total Design BOM count
8.	FootPrint	159.0 mm ²	General	Total Foot Print Area of BOM components
9.	Frequency	881.052 kHz	General	Switching frequency
10.	IC Tolerance	10.0 mV	General	IC Feedback Tolerance
11.	Pout	6.6 W	General	Total output power
12.	Total BOM	\$2.94	General	Total BOM Cost
13.	Low Freq Gain	71.636 dB	Op_Point	Gain at 10Hz
14.	Vout Actual	3.272 V	Op_Point	Vout Actual calculated based on selected voltage divider resistors
15.	Vout OP	3.3 V	Op_Point	Operational Output Voltage
16.	Cross Freq	35.45 kHz	Op_point	Bode plot crossover frequency
17.	Duty Cycle	38.184 %	Op_point	Duty cycle
18.	Efficiency	90.915 %	Op_point	Steady state efficiency
19.	Gain Marg	-26.548 dB	Op_point	Bode Plot Gain Margin
20.	IC Tj	45.025 degC	Op_point	IC junction temperature
21.	ICThetaJA	32.0 degC/W	Op_point	IC junction-to-ambient thermal resistance
22.	IOUT_OP	2.0 A	Op_point	Iout operating point
23.	Phase Marg	59.581 deg	Op_point	Bode Plot Phase Margin
24.	VIN_OP	9.0 V	Op_point	Vin operating point
25.	Vout p-p	6.681 mV	Op_point	Peak-to-peak output ripple voltage
26.	Cin Pd	1.888 mW	Power	Input capacitor power dissipation
27.	Cout Pd	82.371 μW	Power	Output capacitor power dissipation
28.	IC Iq Pd	5.4 mW	Power	IC Iq Pd
29.	IC Pd	469.53 mW	Power	IC power dissipation
30.	L Pd	188.0 mW	Power	Inductor power dissipation
31.	Total Pd	659.525 mW	Power	Total Power Dissipation

#	Name	Value	Category	Description
32.	Vout Tolerance	2.795 %		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	9.0	Maximum input voltage
3.	VinMin	5.0	Minimum input voltage
4.	Vout	3.3	Output Voltage
5.	base_pn	TPS54620	Base Product Number
6.	source	DC	Input Source Type
7.	Ta	30.0	Ambient temperature

Design Assistance

1. **TPS54620** Product Folder : <http://www.ti.com/product/TPS54620> : contains the data sheet and other resources.

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