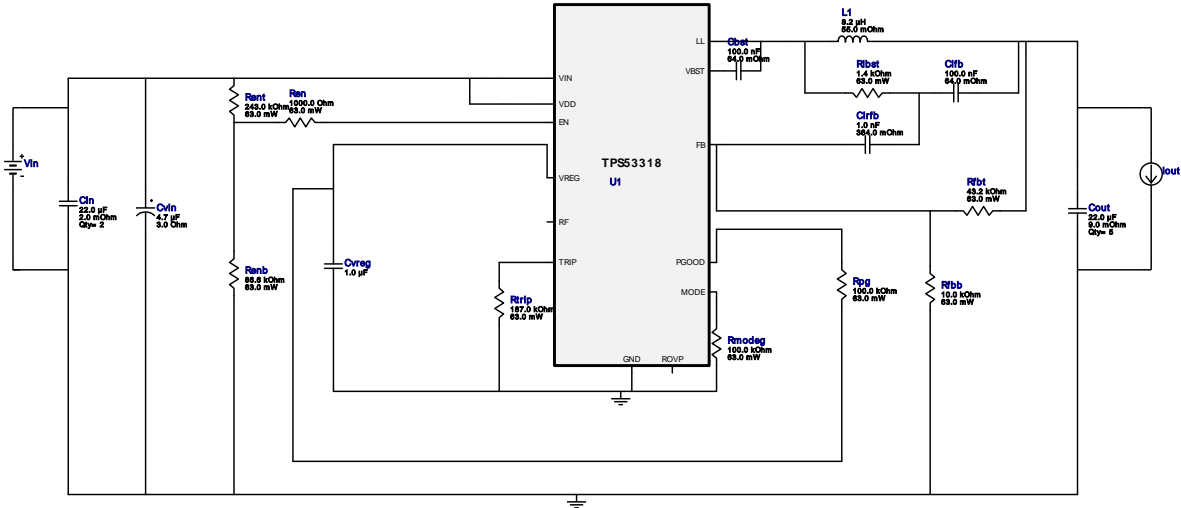

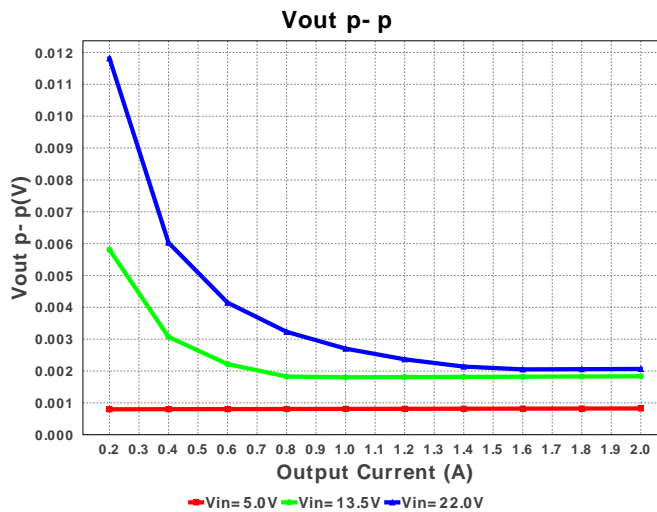
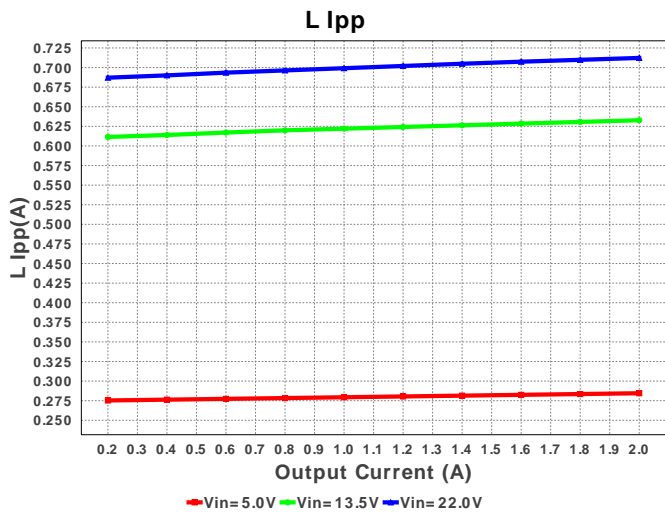


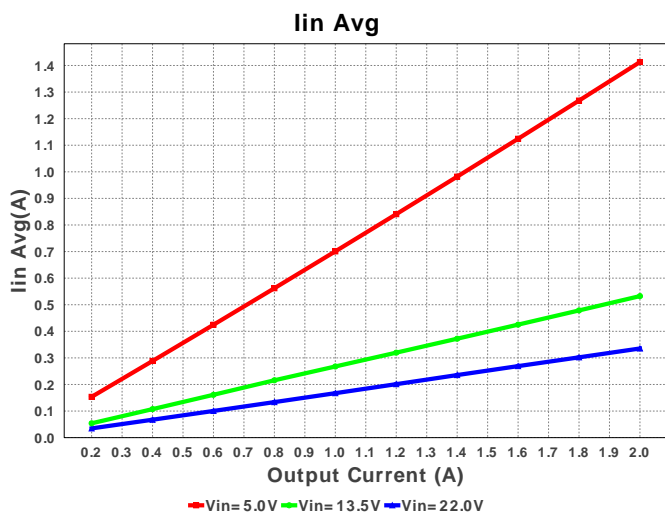
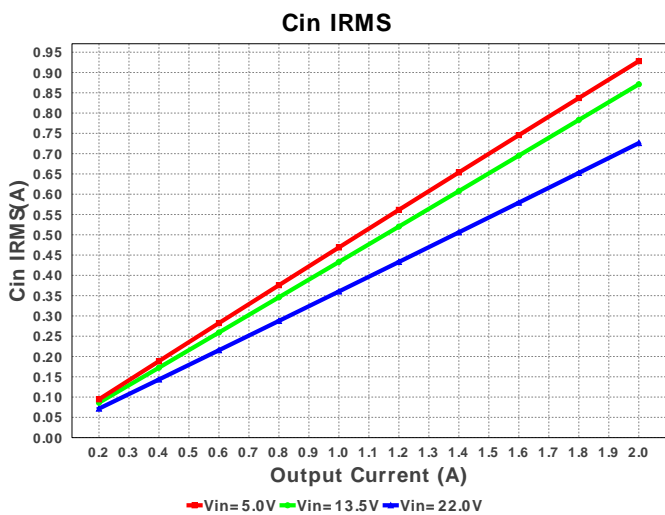
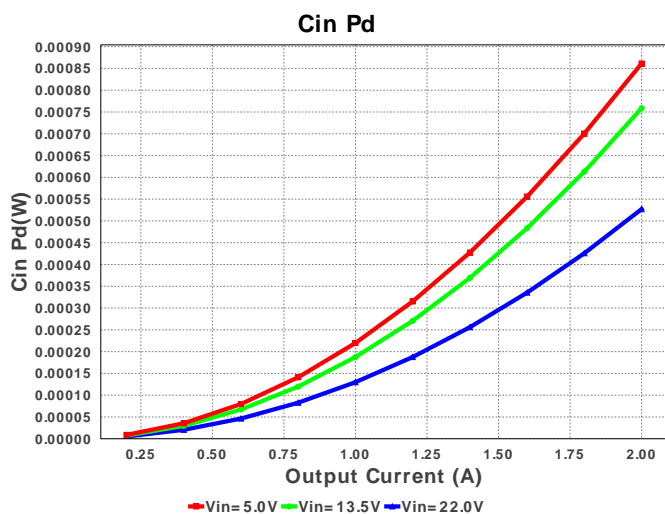
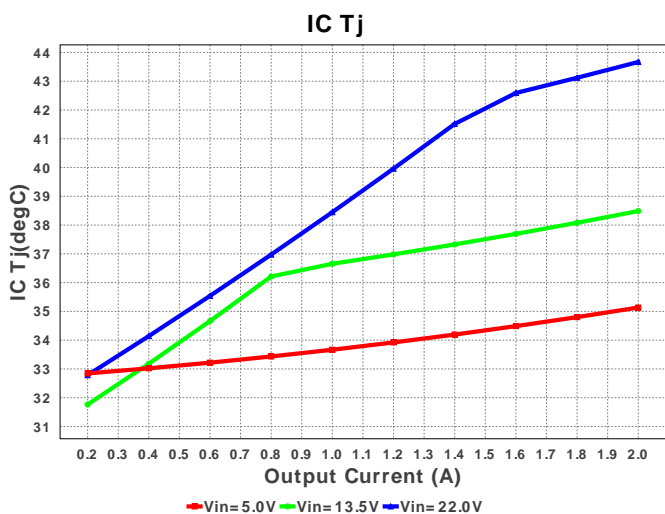
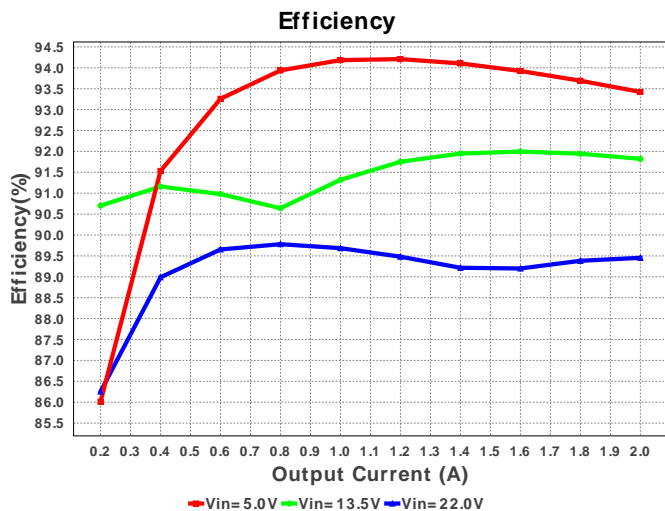
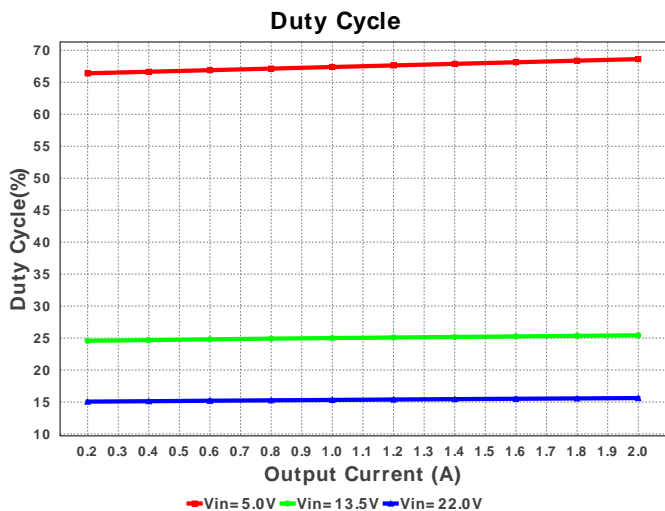
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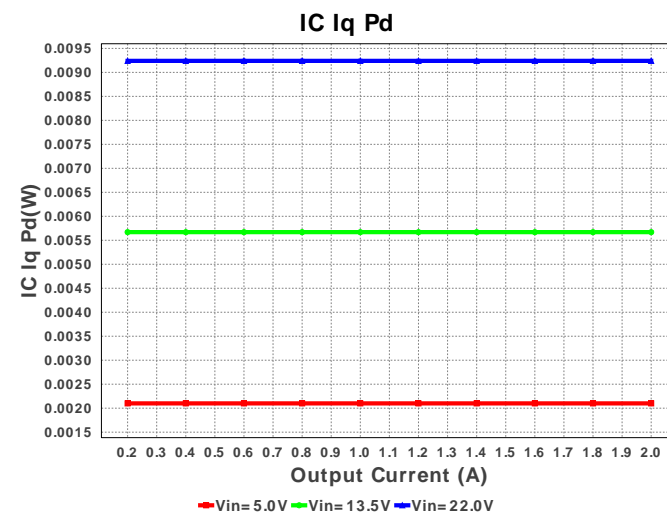
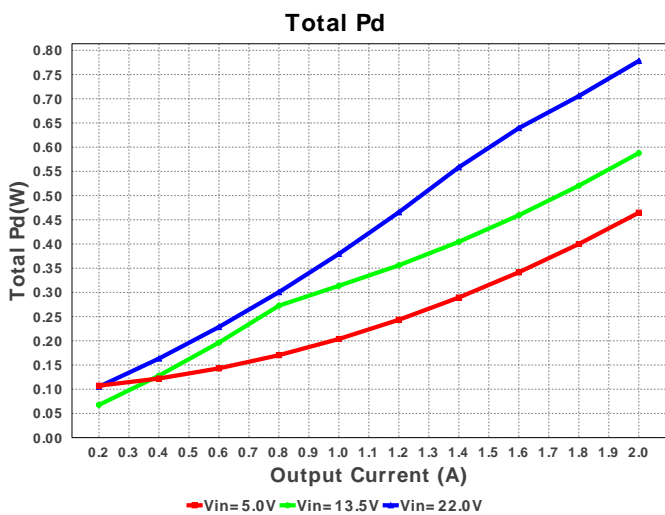
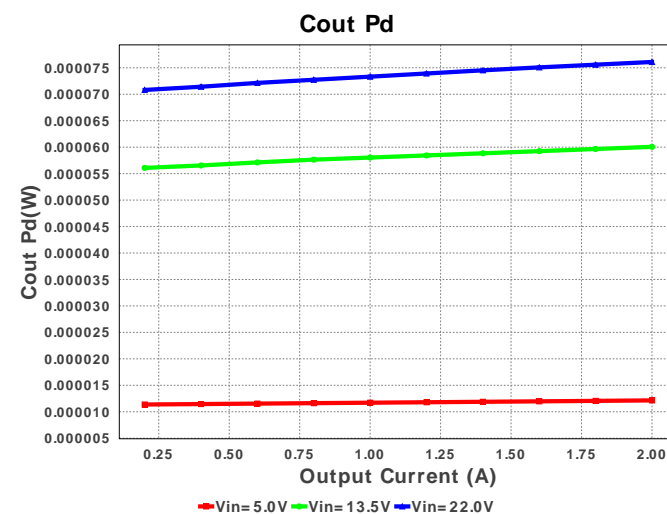
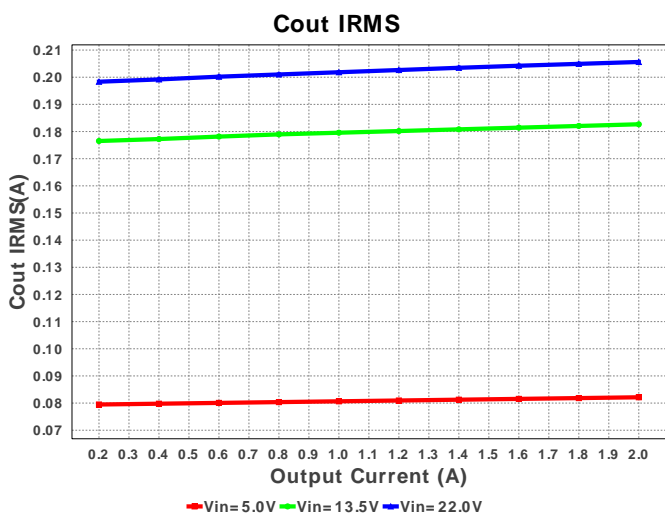
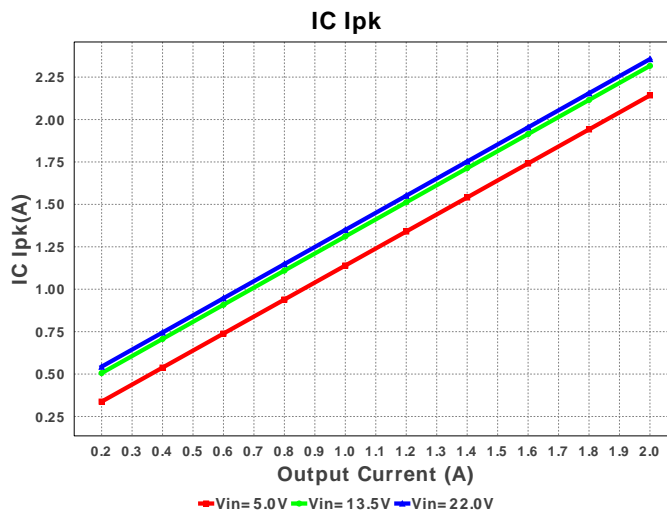
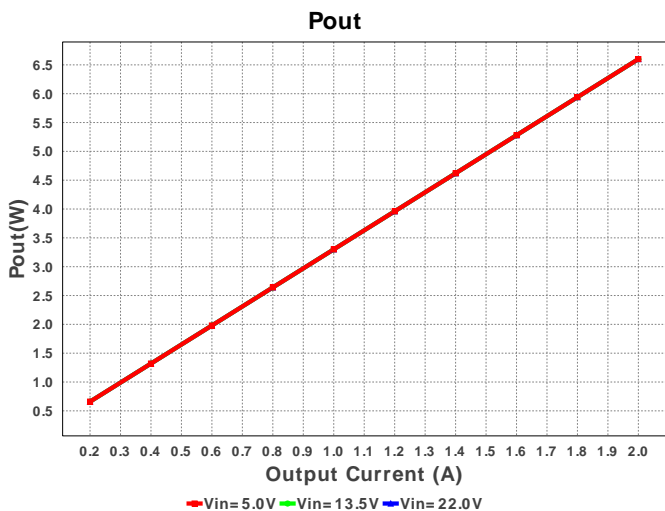
 Design : 4079482/1 TPS53318DQPR
 TPS53318DQPR 5.0V-22.0V to 3.30V @ 2.0A

Electrical BOM

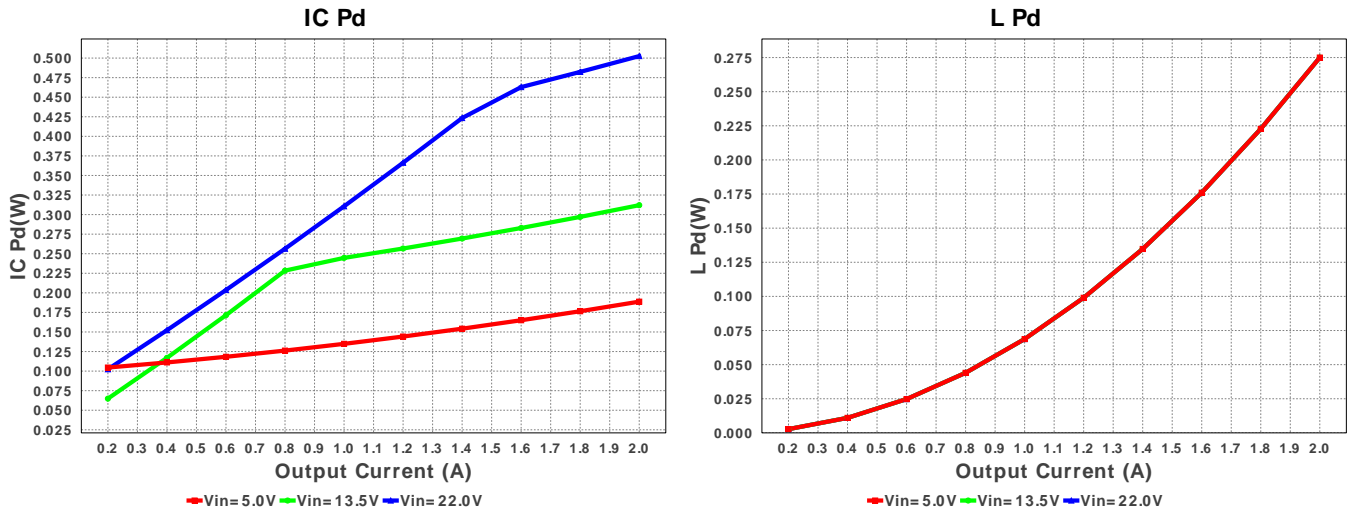
#	Name	Manufacturer	Part Number	Properties	Qty	Price	Footprint
1.	Cbst	Kemet	C0805C104K5RACTU Series= X7R	Cap= 100.0 nF ESR= 64.0 mOhm VDC= 50.0 V IRMS= 1.64 A	1	\$0.01	 0805 7 mm ²
2.	Cin	MuRata	GRM32ER61E226KE15L Series= X5R	Cap= 22.0 uF ESR= 2.0 mOhm VDC= 25.0 V IRMS= 3.67 A	2	\$0.16	 1210 15 mm ²
3.	Clfb	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
4.	Clrfb	Kemet	C0805C102K5RACTU Series= X7R	Cap= 1.0 nF ESR= 384.0 mOhm VDC= 50.0 V IRMS= 214.0 mA	1	\$0.01	 0805 7 mm ²
5.	Cout	MuRata	GRM21BR60J226ME39L Series= X5R	Cap= 22.0 uF ESR= 9.0 mOhm VDC= 6.3 V IRMS= 3.5 A	5	\$0.05	 0805 7 mm ²
6.	Cvin	Chemi-Con	EMVY350ADA4R7MD55G Series= MVY	Cap= 4.7 uF ESR= 3.0 Ohm VDC= 35.0 V IRMS= 60.0 mA	1	\$0.08	 CAPSMT_62_D55 28 mm ²
7.	Cvreg	MuRata	GRM188R61E105KA12D Series= X5R	Cap= 1.0 uF VDC= 25.0 V IRMS= 0.0 A	1	\$0.01	 0603 5 mm ²
8.	L1	Bourns	SRN6045-8R2Y	L= 8.2 uH DCR= 55.0 mOhm	1	\$0.16	 SRN6045 64 mm ²
9.	Ren	Vishay-Dale	CRCW04021K00FKED Series= CRCW..e3	Res= 1000.0 Ohm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	 0402 3 mm ²

#	Name	Manufacturer	Part Number	Properties	Qty	Price	Footprint
10.	Renb	Vishay-Dale	CRCW040286K6FKED Series= CRCW..e3	Res= 86.6 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	0402 3 mm ²
11.	Rent	Vishay-Dale	CRCW0402243KFKED Series= CRCW..e3	Res= 243.0 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	CRCW040243K2FKED Series= CRCW..e3	Res= 43.2 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	0402 3 mm ²
14.	Rlbt	Vishay-Dale	CRCW04021K40FKED Series= CRCW..e3	Res= 1.4 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	0402 3 mm ²
15.	Rmodeg	Vishay-Dale	CRCW0402100KFKED Series= CRCW..e3	Res= 100.0 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	0402 3 mm ²
16.	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
17.	Rtrip	Vishay-Dale	CRCW0402187KFKED Series= CRCW..e3	Res= 187.0 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	0402 3 mm ²
18.	U1	Texas Instruments	TPS53318DQPR	Switcher	1	\$3.05	 DQP0022A 56 mm ²









Operating Values

#	Name	Value	Category	Description
1.	Cin IRMS	726.022 mA	Current	Input capacitor RMS ripple current
2.	Cout IRMS	205.612 mA	Current	Output capacitor RMS ripple current
3.	IC Ipk	2.356 A	Current	Peak switch current in IC
4.	Iin Avg	335.37 mA	Current	Average input current
5.	L Ipp	712.26 mA	Current	Peak-to-peak inductor ripple current
6.	BOM Count	23	General	Total Design BOM count
7.	FootPrint	263.0 mm ²	General	Total Foot Print Area of BOM components
8.	Frequency	500.0 kHz	General	Switching frequency
9.	Pout	6.6 W	General	Total output power
10.	Total BOM	\$3.99	General	Total BOM Cost
11.	Vout OP	3.3 V	Op_point	Operational Output Voltage
12.	Duty Cycle	15.616 %	Op_point	Duty cycle
13.	Efficiency	89.454 %	Op_point	Steady state efficiency
14.	IC Tj	43.669 degC	Op_point	IC junction temperature
15.	ICThetaJA	27.2 degC/W	Op_point	IC junction-to-ambient thermal resistance
16.	IOUT_OP	2.0 A	Op_point	Iout operating point
17.	VIN_OP	22.0 V	Op_point	Vin operating point
18.	Vout p-p	2.968 mV	Op_point	Peak-to-peak output ripple voltage
19.	Cin Pd	527.108 μW	Power	Input capacitor power dissipation
20.	Cout Pd	76.097 μW	Power	Output capacitor power dissipation
21.	IC Iq Pd	9.24 mW	Power	IC Iq Pd
22.	IC Pd	502.526 mW	Power	IC power dissipation
23.	L Pd	275.0 mW	Power	Inductor power dissipation
24.	Total Pd	778.099 mW	Power	Total Power Dissipation

Design Inputs

#	Name	Value	Description
1.	Iout	2.0	Maximum Output Current
2.	Iout1	2.0	Output Current #1
3.	VinMax	22.0	Maximum input voltage
4.	VinMin	5.0	Minimum input voltage
5.	Vout	3.3	Output Voltage
6.	Vout1	3.3	Output Voltage #1
7.	base_pn	TPS53318	Texas Instruments Base Part Number
8.	source	DC	Input Source Type
9.	ta	30.0	Ambient temperature

Design Assistance

1. TPS53318 Product Folder : <http://www.ti.com/product/TPS53318> : contains the data sheet and other resources.

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