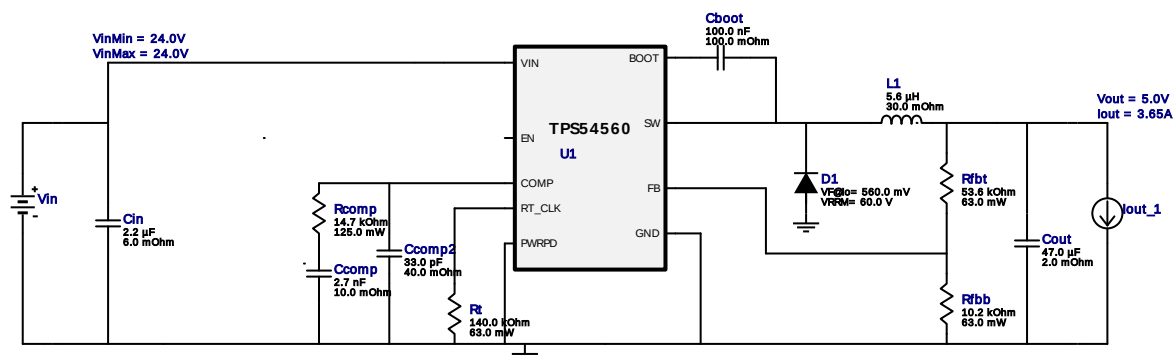




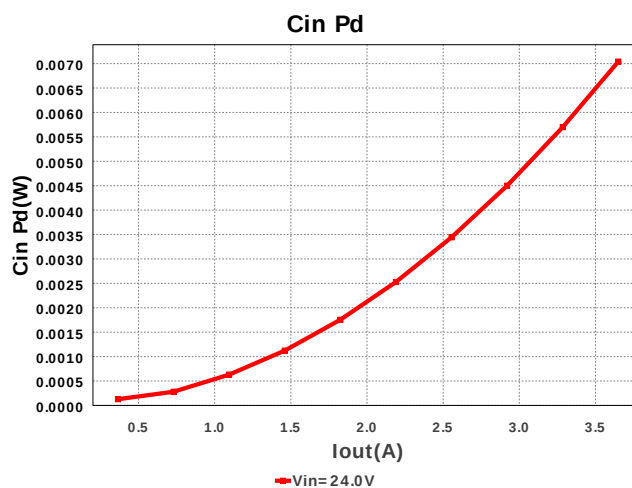
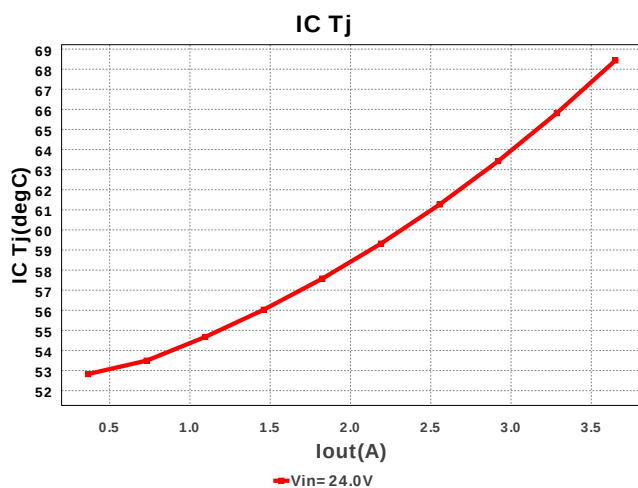
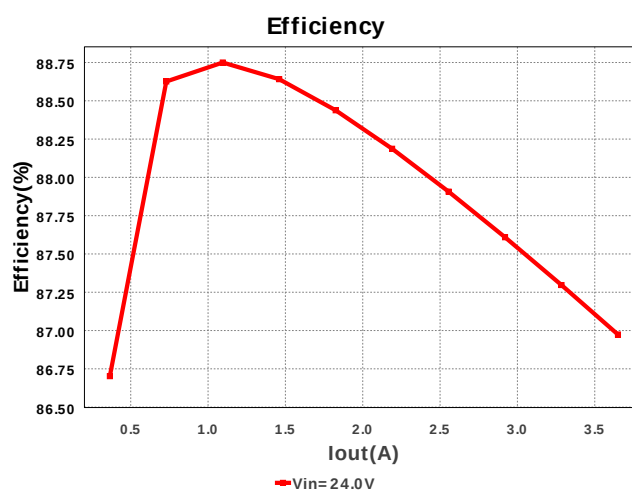
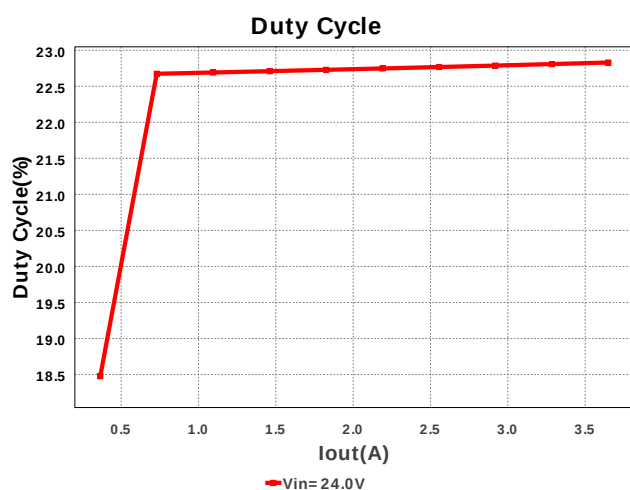
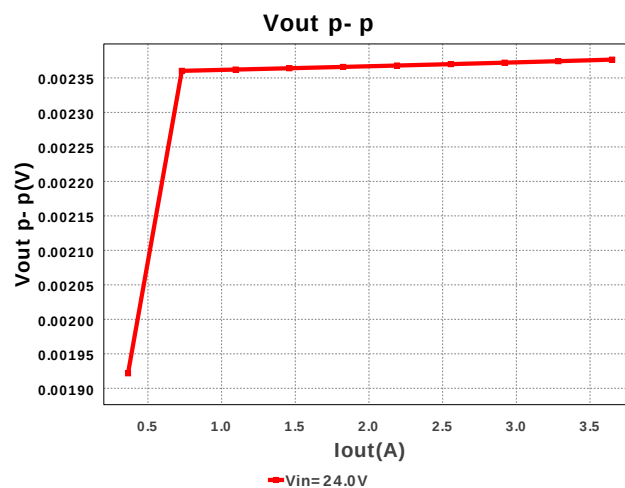
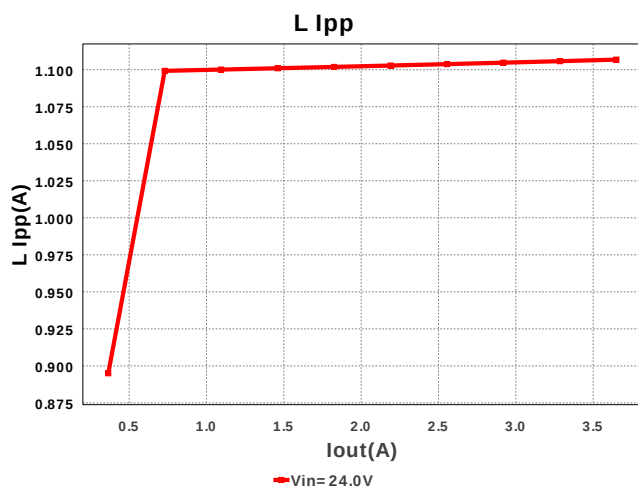
Electrical BOM

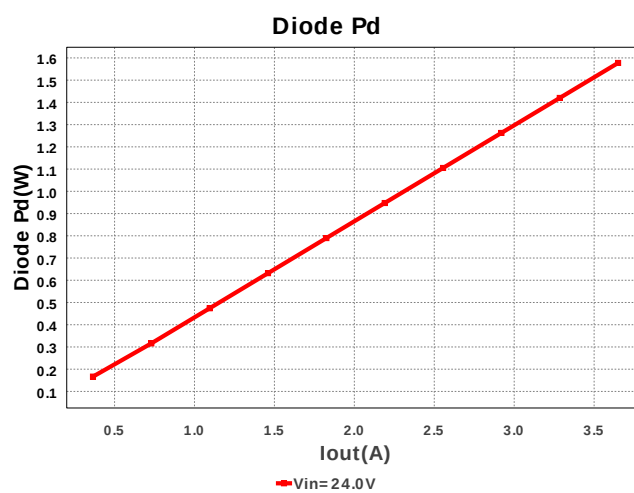
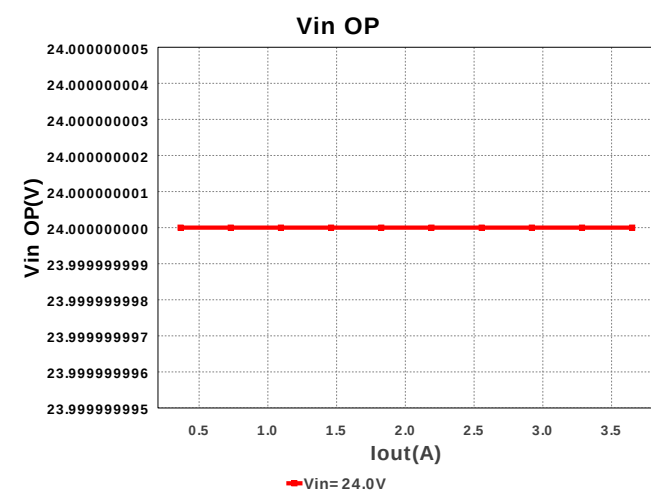
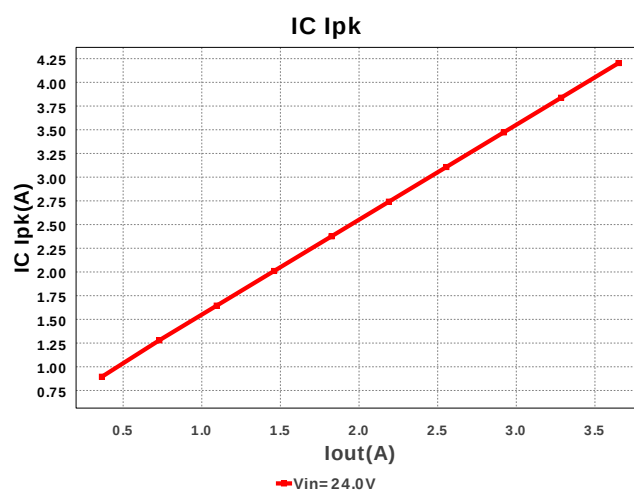
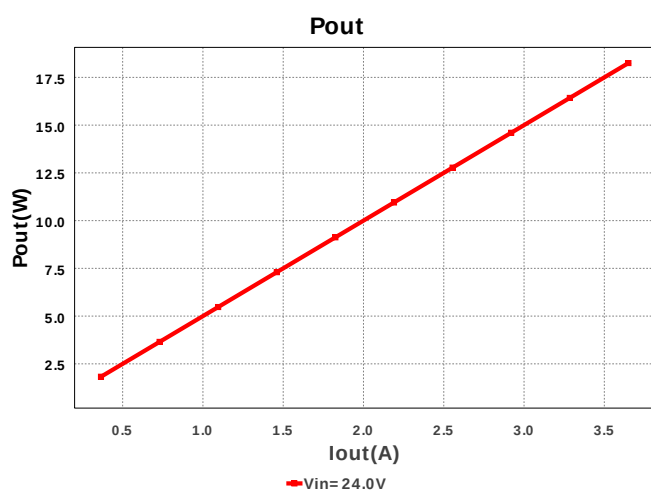
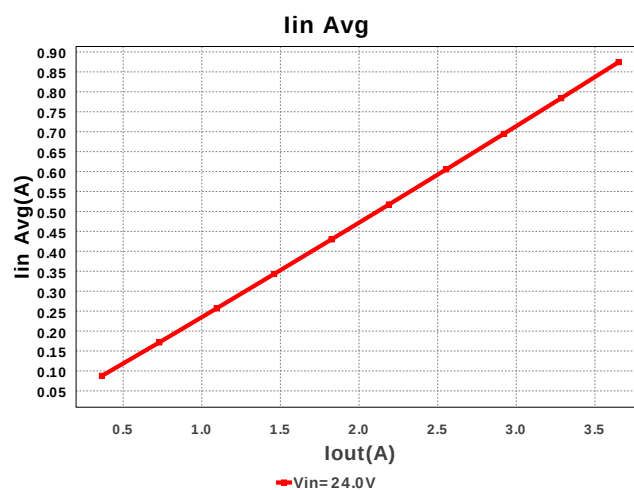
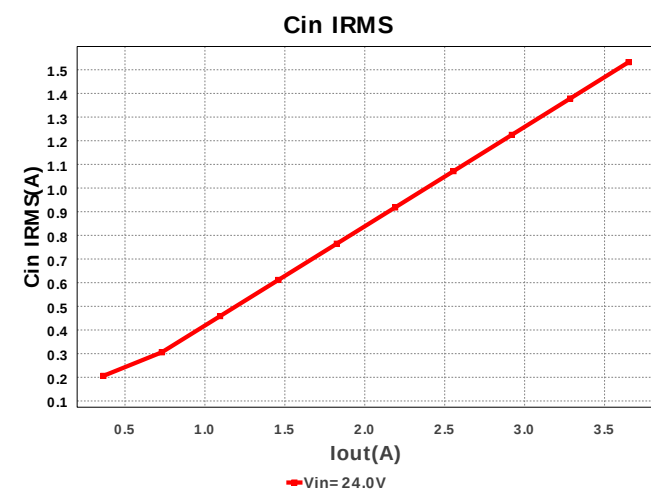
#	Name	Manufacturer	Part Number	Properties	Qty	Price	Footprint
1.	Cboot	MuRata	GRM155F11E104ZA01D Series= CUSTOM	Cap= 100.0 nF ESR= 100.0 mΩ VDC= 25.0 V IRMS= 3.65 A	1	\$0.10	CUSTOM 3mm2
2.	Ccomp	MuRata	GRM1885C1H272JA01 Series= CUSTOM	Cap= 2.7 nF ESR= 10.0 mΩ VDC= 50.0 V IRMS= 3.65 A	1	\$0.10	CUSTOM 3mm2
3.	Ccomp2	MuRata	GQM1885C1H330JB01 Series= CUSTOM	Cap= 33.0 pF ESR= 40.0 mΩ VDC= 50.0 V IRMS= 3.65 A	1	\$0.10	CUSTOM 3mm2
4.	Cin	MuRata	GRM31CR71H225KA88 Series= CUSTOM	Cap= 2.2 μF ESR= 6.0 mΩ VDC= 50.0 V IRMS= 3.65 A	2	\$0.10	CUSTOM 5mm2
5.	Cout	MuRata	GRM32EB31C476ME15 Series= CUSTOM	Cap= 47.0 μF ESR= 2.0 mΩ VDC= 16.0 V IRMS= 3.65 A	2	\$0.10	CUSTOM 8mm2
6.	D1	Diodes Inc.	PDS760-13	Vf@Io= 560.0 mV VRRM= 60.0 V	1	NA	 PowerDI5 50mm2
7.	L1	Coilcraft	XAL5050-562MEB	L= 5.6 μH DCR= 30.0 mΩ	1	\$0.83	 XAL5050 54mm2
8.	Rcomp	Vishay-Dale	CRCW080514K7FKEA Series= CRCW..e3	Res= 14.7 kΩ Power= 125.0 mW Tolerance= 1.0%	1	\$0.01	 0805 13mm2
9.	Rfbb	Vishay-Dale	CRCW040210K2FKED Series= CRCW..e3	Res= 10.2 kΩ Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	 0402 8mm2
10.	Rfht	Vishay-Dale	CRCW040253K6FKED Series= CRCW..e3	Res= 53.6 kΩ Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	 0402 8mm2
11.	Rt	Vishay-Dale	CRCW0402140KFKED Series= CRCW..e3	Res= 140.0 kΩ Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	 0402 8mm2

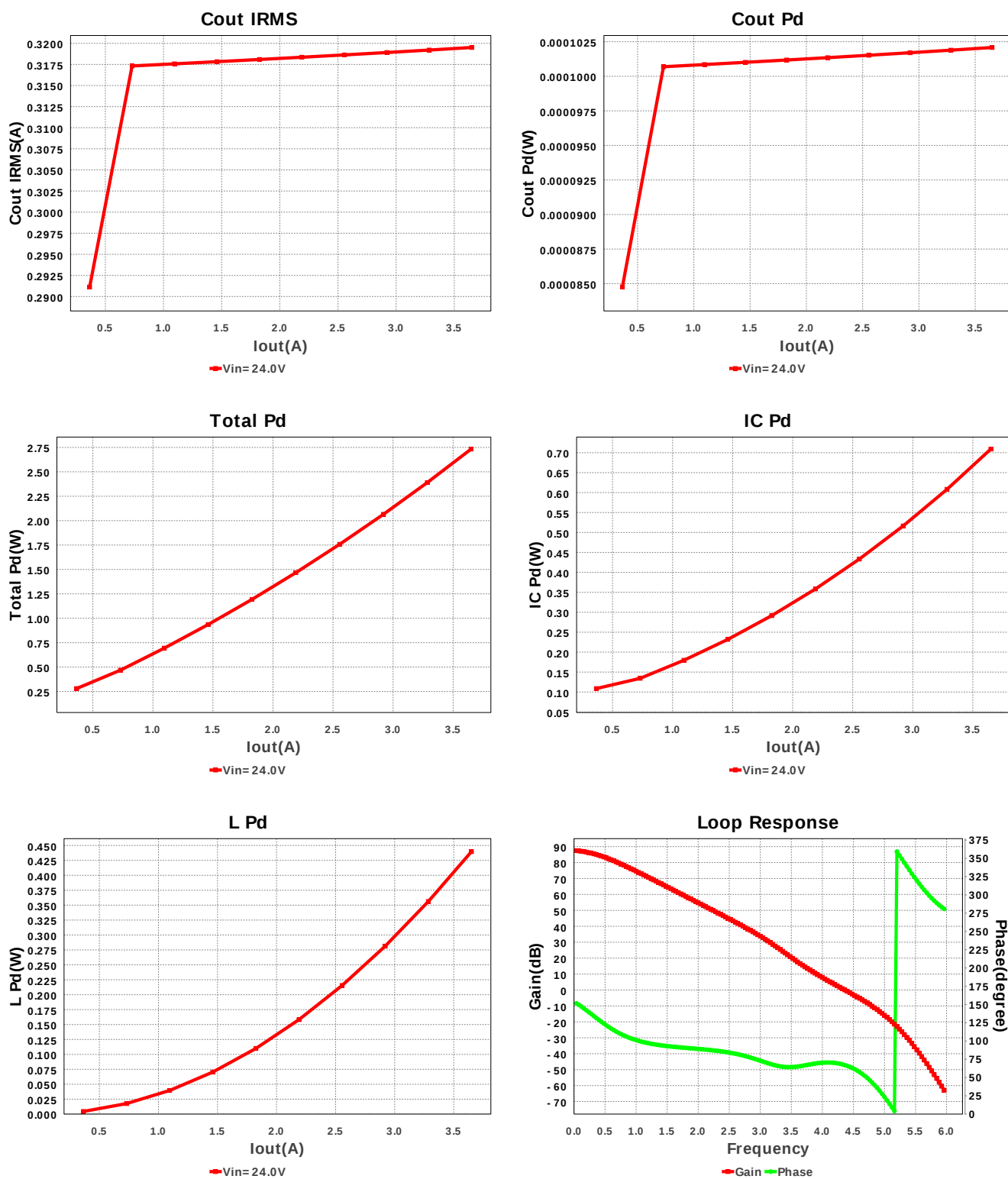
#	Name	Manufacturer	Part Number	Properties	Qty	Price	Footprint
12.	U1	Texas Instruments	TPS54560DDAR	Switcher	1	\$2.30	



R-PDS0-G8 57mm2







Operating Values

#	Name	Value	Category	Description
1.	BOM Count	14		Total Design BOM count
2.	Total BOM	\$0.0		Total BOM Cost
3.	Cin IRMS	1.532 A	Current	Input capacitor RMS ripple current
4.	Cout IRMS	319.507 mA	Current	Output capacitor RMS ripple current
5.	IC Ipk	4.203 A	Current	Peak switch current in IC
6.	Iin Avg	874.3 mA	Current	Average input current
7.	L Ipp	1.107 A	Current	Peak-to-peak inductor ripple current
8.	FootPrint	320.0 mm ²	General	Total Foot Print Area of BOM components
9.	Frequency	699.837 kHz	General	Switching frequency
10.	Mode	CCM	General	Conduction Mode
11.	Pout	18.25 W	General	Total output power

#	Name	Value	Category	Description
12.	Vout OP	5.0 V	Op_Point	Operational Output Voltage
13.	Cross Freq	23.002 kHz	Op_point	Bode plot crossover frequency
14.	Duty Cycle	22.83 %	Op_point	Duty cycle
15.	Efficiency	86.974 %	Op_point	Steady state efficiency
16.	IC Tj	68.438 degC	Op_point	IC junction temperature
17.	ICThetaJA	26.0 degC/W	Op_point	IC junction-to-ambient thermal resistance
18.	IOUT_OP	3.65 A	Op_point	Iout operating point
19.	Phase Marg	67.075 deg	Op_point	Bode Plot Phase Margin
20.	VIN_OP	24.0 V	Op_point	Vin operating point
21.	Vout p-p	2.377 mV	Op_point	Peak-to-peak output ripple voltage
22.	Cin Pd	7.041 mW	Power	Input capacitor power dissipation
23.	Cout Pd	102.085 μ W	Power	Output capacitor power dissipation
24.	Diode Pd	1.577 W	Power	Diode power dissipation
25.	IC Pd	709.152 mW	Power	IC power dissipation
26.	L Pd	439.643 mW	Power	Inductor power dissipation
27.	Total Pd	2.733 W	Power	Total Power Dissipation

Design Inputs

#	Name	Value	Description
1.	Iout	3.65 A	Maximum Output Current
2.	Iout1	3.65 Amps	Output Current #1
3.	VinMax	24.0 V	Maximum input voltage
4.	VinMin	24.0 V	Minimum input voltage
5.	Vout	5.0 V	Output Voltage
6.	Vout1	5.0 Volt	Output Voltage #1
7.	base_pn	TPS54560	Texas Instruments Base Part Number
8.	source	DC	Input Source Type
9.	ta	50.0 degC	Ambient temperature

Design Assistance

1. TPS54560 Product Folder : <http://www.ti.com/product/TPS54560> : contains the data sheet and other resources.

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