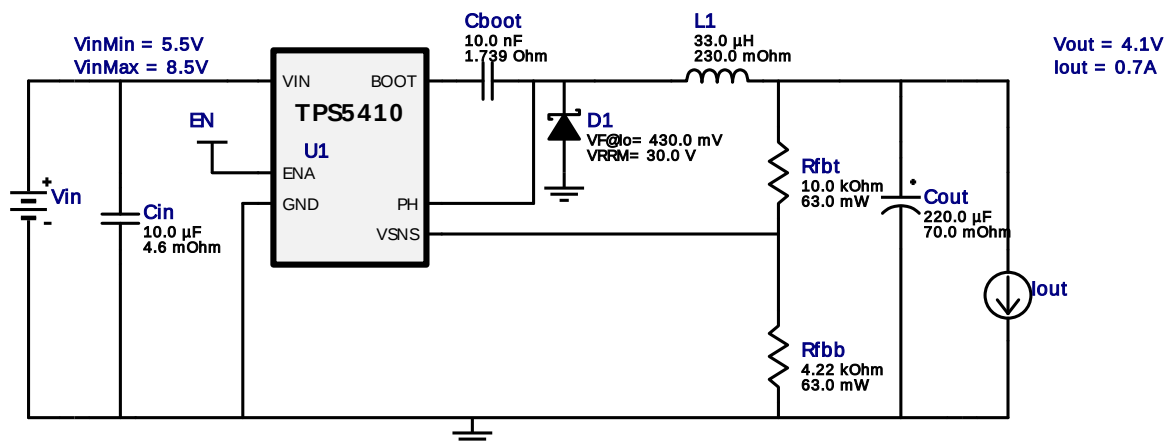


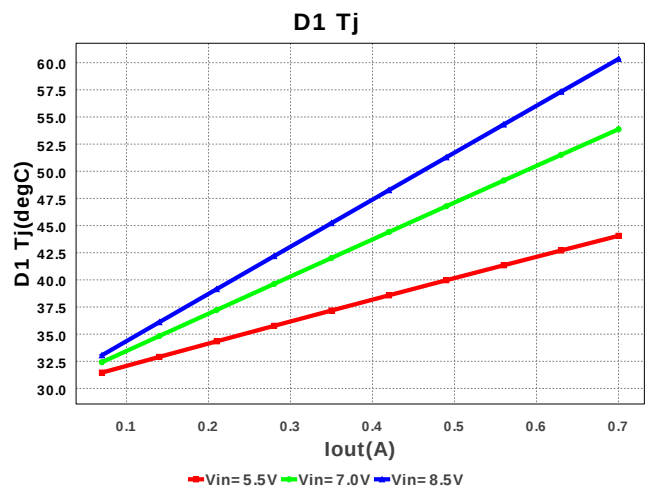
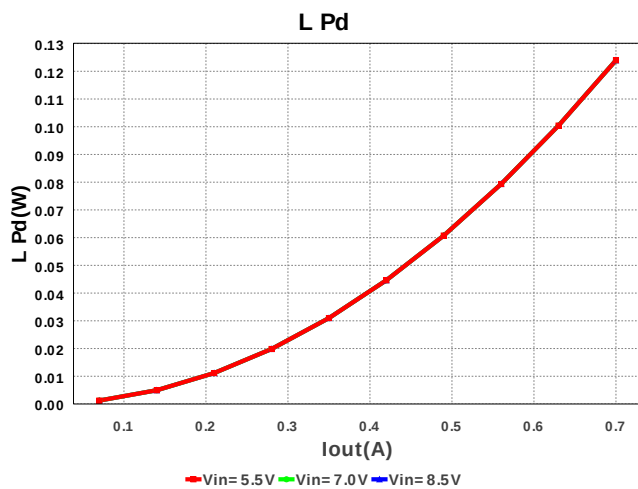
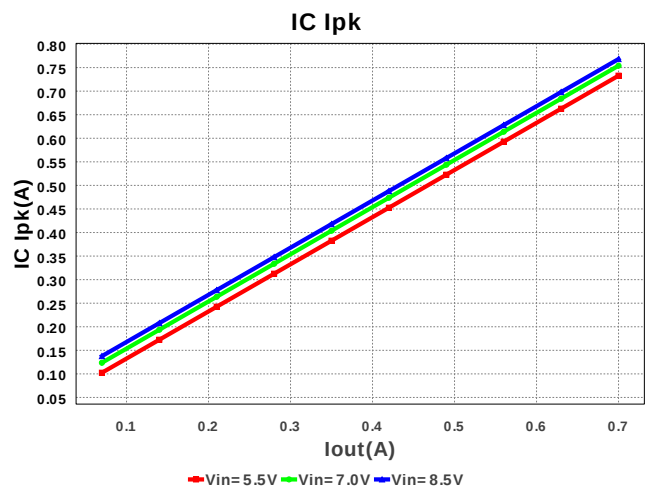
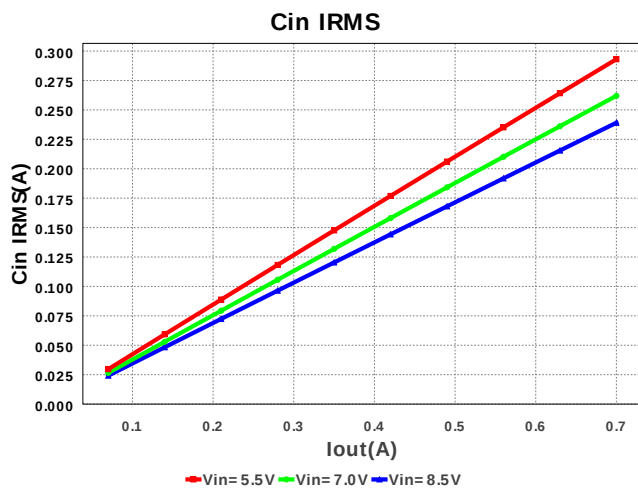
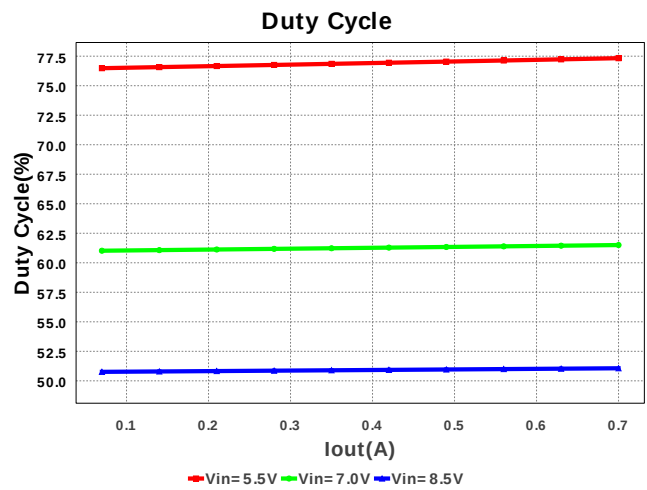
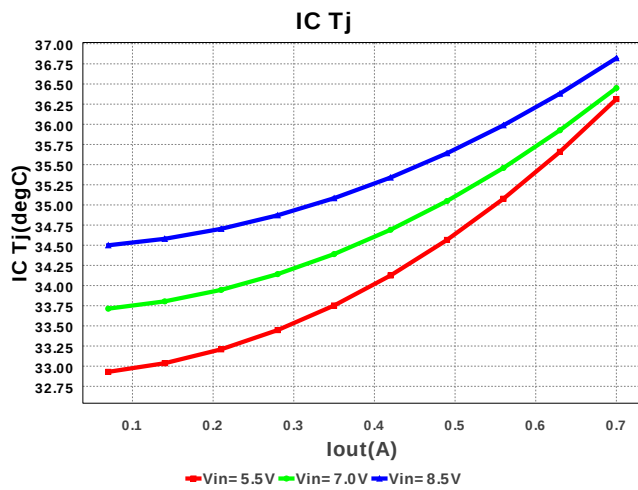
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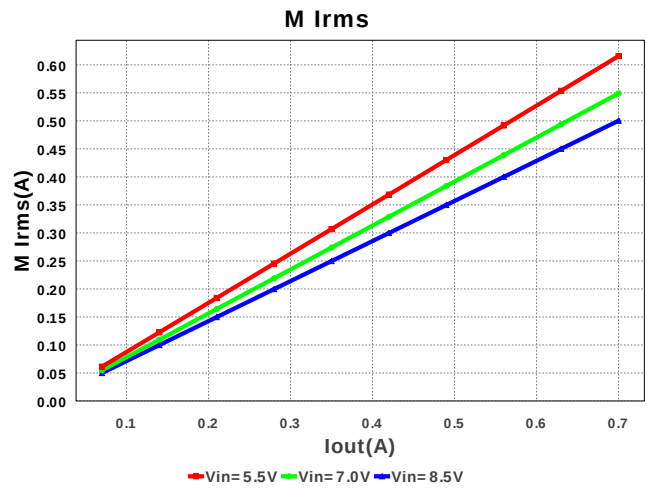
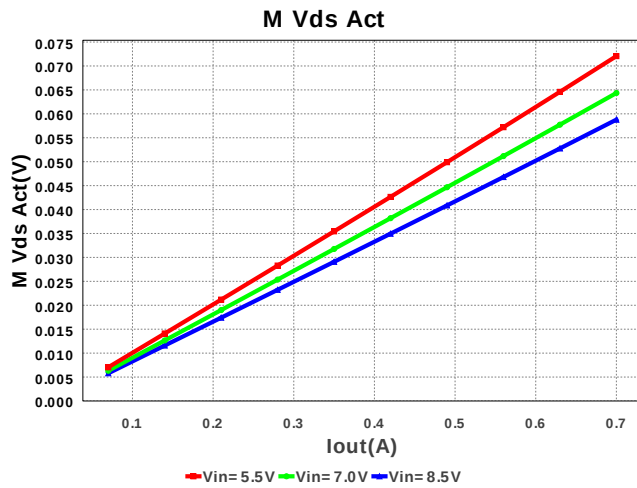
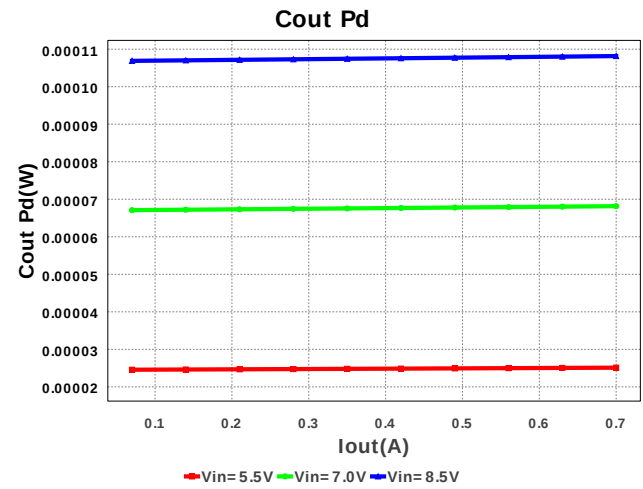
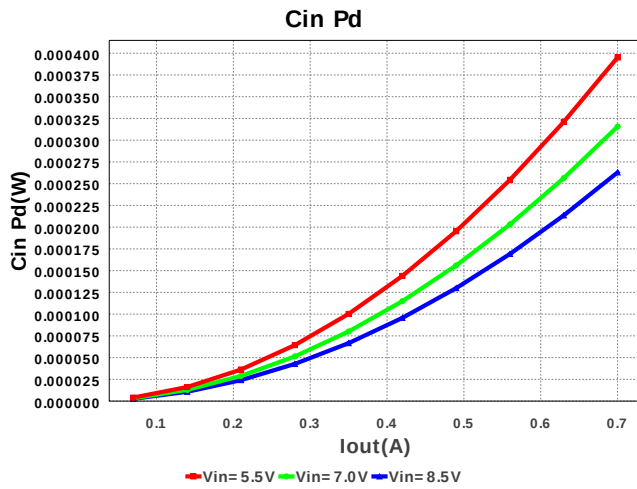
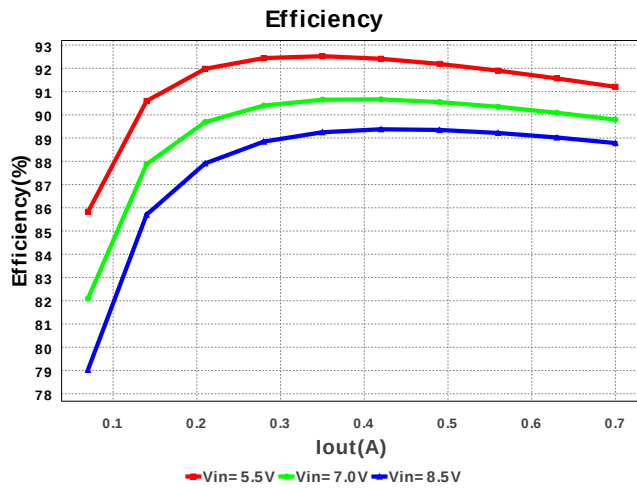
Design : 3528983/70 TPS5410DR
TPS5410DR 5.5V-8.5V to 4.1V @ 0.7A

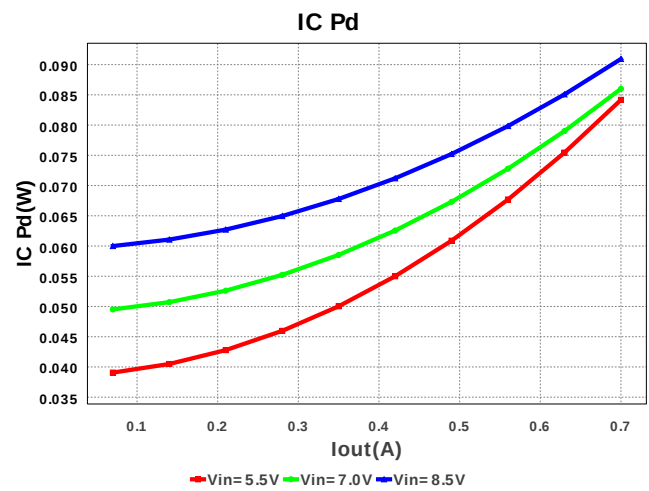
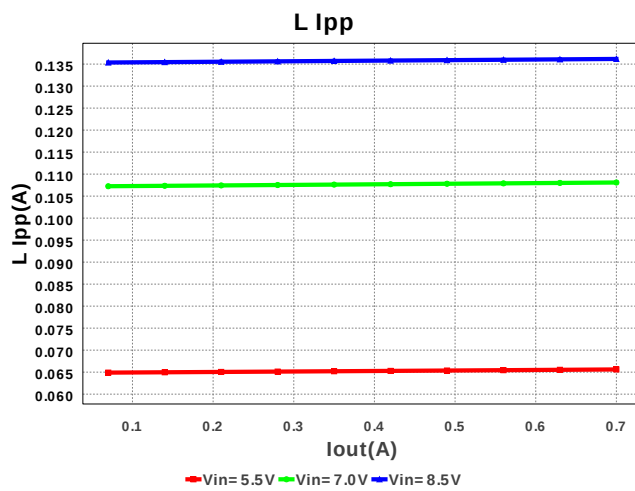
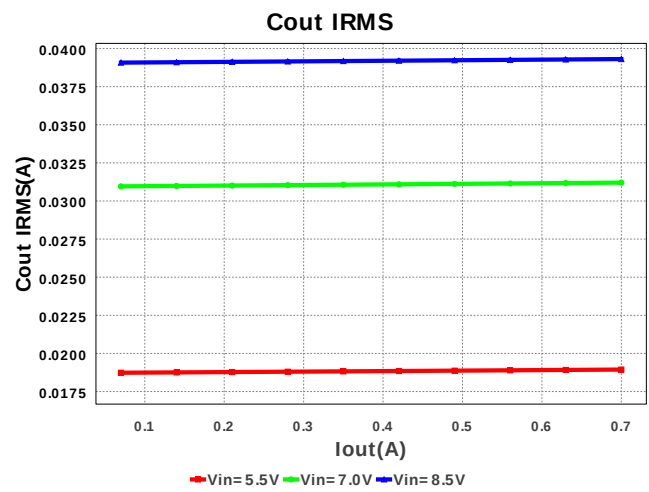
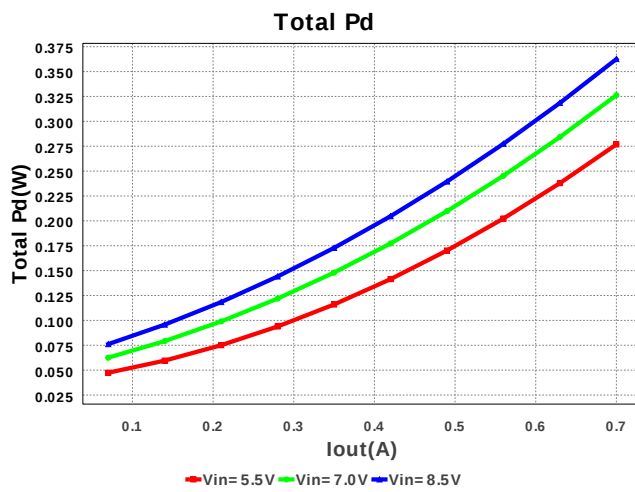
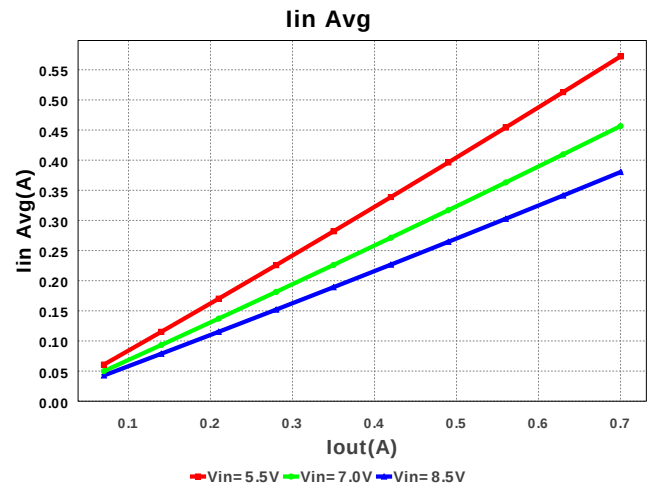
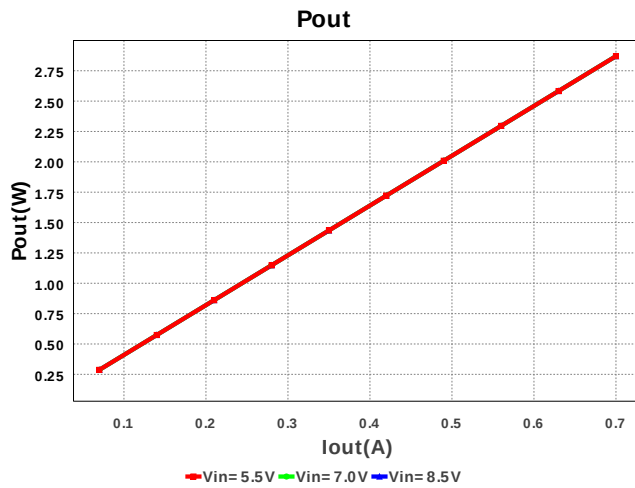


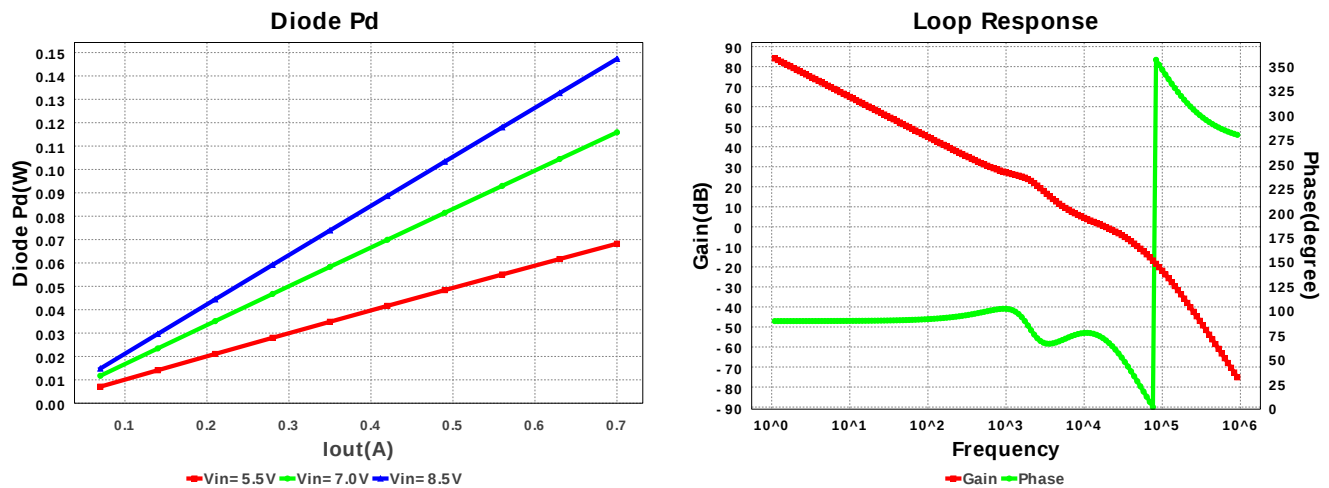
Electrical BOM

#	Name	Manufacturer	Part Number	Properties	Qty	Price	Footprint
1.	Cboot	Kemet	C0805C103K5RACTU Series= X7R	Cap= 10.0 nF ESR= 1.739 Ohm VDC= 50.0 V IRMS= 411.0 mA	1	\$0.01	 0805 13mm2
2.	Cin	TDK	C3216X5R1C106M Series= X5R	Cap= 10.0 µF ESR= 4.6 mOhm VDC= 16.0 V IRMS= 2.7 A	1	\$0.06	 1206 19mm2
3.	Cout	AVX	TPSC227K006R0070 Series= TPS	Cap= 220.0 µF ESR= 70.0 mOhm VDC= 6.3 V IRMS= 1.128 A	1	\$0.65	 6032-28 42mm2
4.	D1	ON Semiconductor	MBR0530T1G	VF@Io= 430.0 mV VRRM= 30.0 V	1	\$0.06	 SOD-123 22mm2
5.	L1	TDK	VLC5045T-330M	L= 33.0 µH DCR= 230.0 mOhm	1	\$0.18	 VLC5045 49mm2
6.	Rfbb	Vishay-Dale	CRCW04024K22FKED Series= CRCW..e3	Res= 4.22 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	 0402 8mm2
7.	Rfbt	Vishay-Dale	CRCW040210K0FKED Series= CRCW..e3	Res= 10.0 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	 0402 8mm2
8.	U1	Texas Instruments	TPS5410DR	Switcher	1	\$1.60	 R-PDSO-G8 57mm2









Operating Values

#	Name	Value	Category	Description
1.	Cin IRMS	239.079 mA	Current	Input capacitor RMS ripple current
2.	Cout IRMS	39.309 mA	Current	Output capacitor RMS ripple current
3.	IC Ipk	768.085 mA	Current	Peak switch current in IC
4.	Iin Avg	380.3 mA	Current	Average input current
5.	L Ipp	136.171 mA	Current	Peak-to-peak inductor ripple current
6.	M1 Irms	500.214 mA	Current	Q Iavg
7.	BOM Count	8	General	Total Design BOM count
8.	FootPrint	216.0 mm2	General	Total Foot Print Area of BOM components
9.	Frequency	500.0 kHz	General	Switching frequency
10.	IC Tolerance	18.315 mV	General	IC Feedback Tolerance
11.	M Vds Act	58.782 mV	General	Voltage drop across the MosFET
12.	Mode	CCM	General	Conduction Mode
13.	Pout	2.87 W	General	Total output power
14.	Total BOM	\$2.58	General	Total BOM Cost
15.	D1 Tj	60.343 degC	Op_Point	D1 junction temperature
16.	Vout OP	4.1 V	Op_Point	Operational Output Voltage
17.	Cross Freq	18.713 kHz	Op_point	Bode plot crossover frequency
18.	Duty Cycle	51.064 %	Op_point	Duty cycle
19.	Efficiency	88.784 %	Op_point	Steady state efficiency
20.	IC Tj	36.82 degC	Op_point	IC junction temperature
21.	ICThetaJA	75.0 degC/W	Op_point	IC junction-to-ambient thermal resistance
22.	IOUT_OP	700.0 mA	Op_point	Iout operating point
23.	Phase Marg	70.748 deg	Op_point	Bode Plot Phase Margin
24.	VIN_OP	8.5 V	Op_point	Vin operating point
25.	Vout p-p	9.533 mV	Op_point	Peak-to-peak output ripple voltage
26.	Cin Pd	262.93 μW	Power	Input capacitor power dissipation
27.	Cout Pd	108.164 μW	Power	Output capacitor power dissipation
28.	Diode Pd	147.297 mW	Power	Diode power dissipation
29.	IC Pd	90.936 mW	Power	IC power dissipation
30.	L Pd	123.97 mW	Power	Inductor power dissipation
31.	Total Pd	362.563 mW	Power	Total Power Dissipation

Design Inputs

#	Name	Value	Description
1.	Iout	700.0 mA	Maximum Output Current
2.	Iout1	700.0 mAmps	Output Current #1
3.	VinMax	8.5 V	Maximum input voltage
4.	VinMin	5.5 V	Minimum input voltage
5.	Vout	4.1 V	Output Voltage
6.	Vout1	4.1 Volt	Output Voltage #1
7.	base_pn	TPS5410	Base Product Number
8.	source	DC	Input Source Type
9.	Ta	30.0 degC	Ambient temperature

Design Assistance

1. Feature Highlights: 1A, 500kHz Fixed Switching Frequency, Internal Compensation
2. **TPS5410** Product Folder : <http://www.ti.com/product/tps5410> : contains the data sheet and other resources.

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