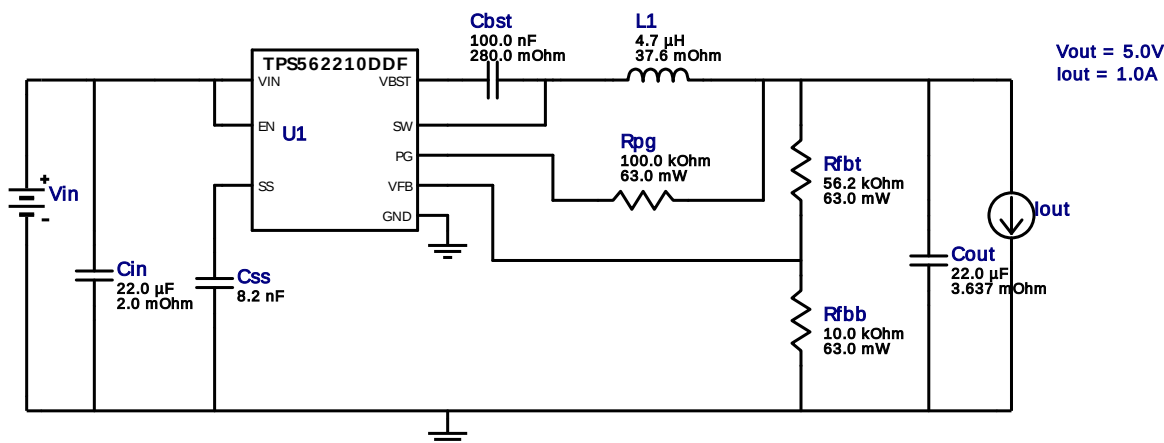


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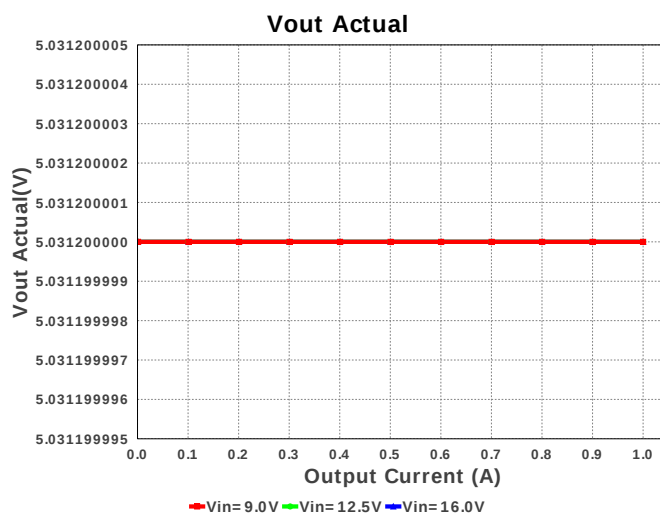
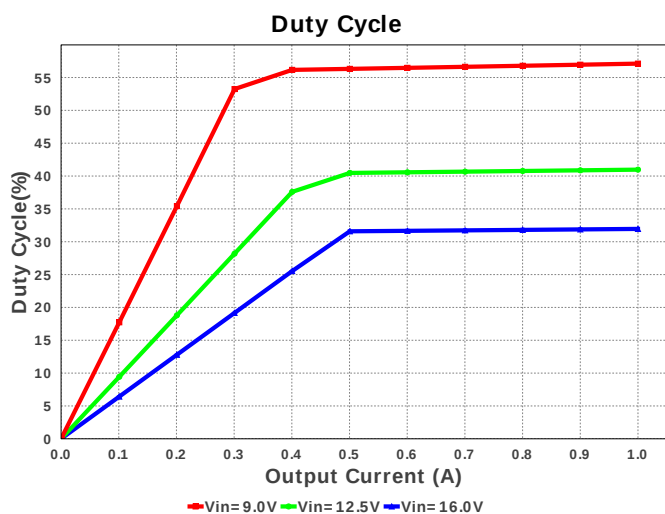
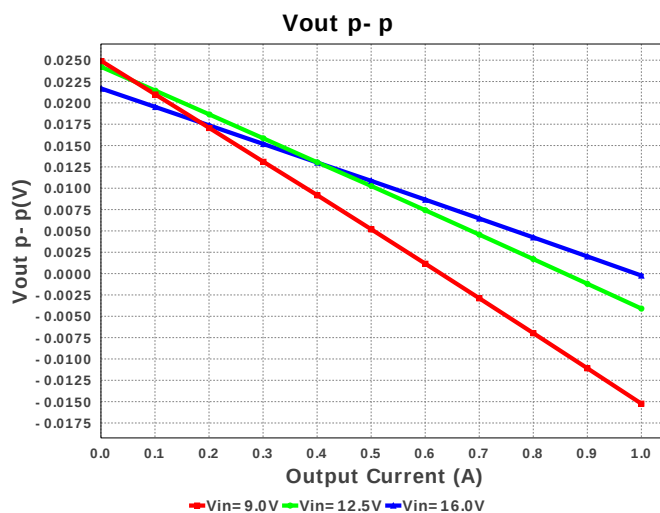
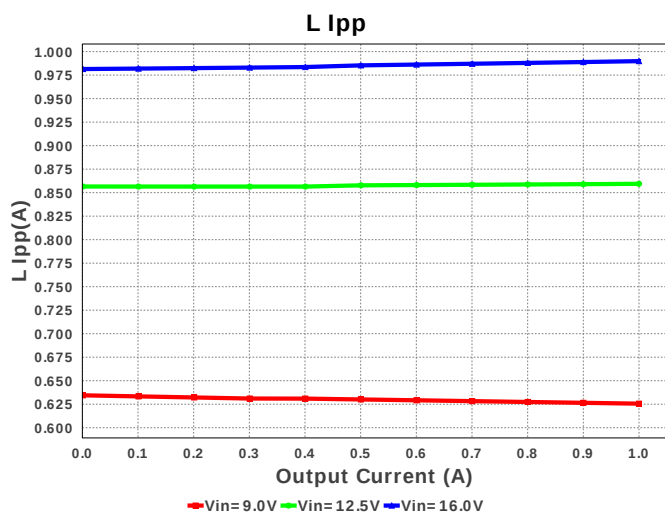
Design : 2412977/8 TPS562210DDFR
TPS562210DDFR 9.0V-16.0V to 5.00V @ 1.0A

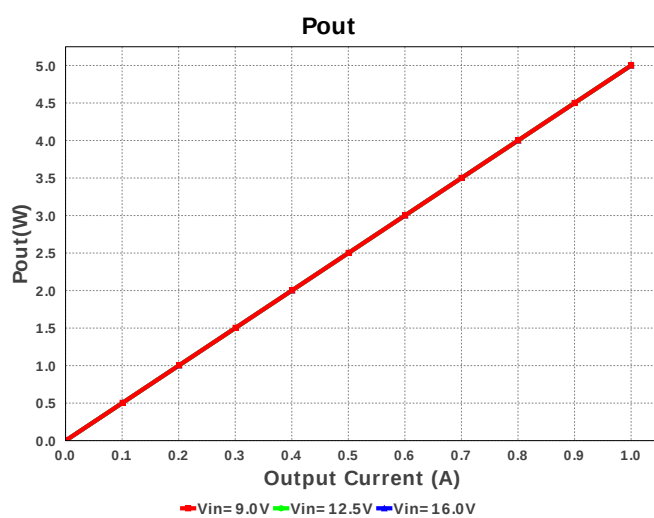
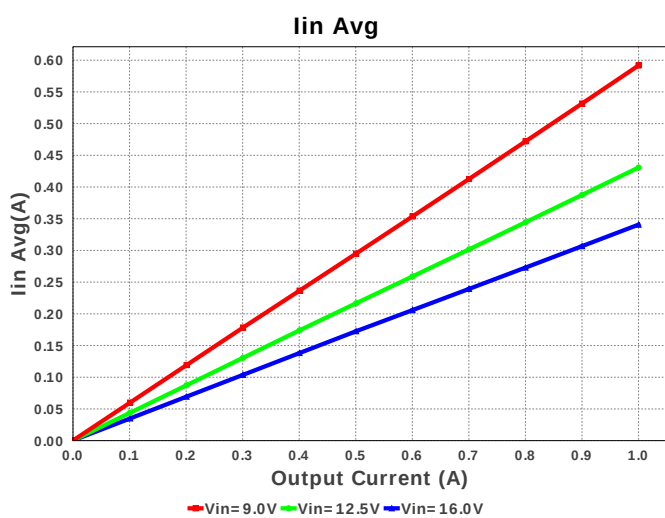
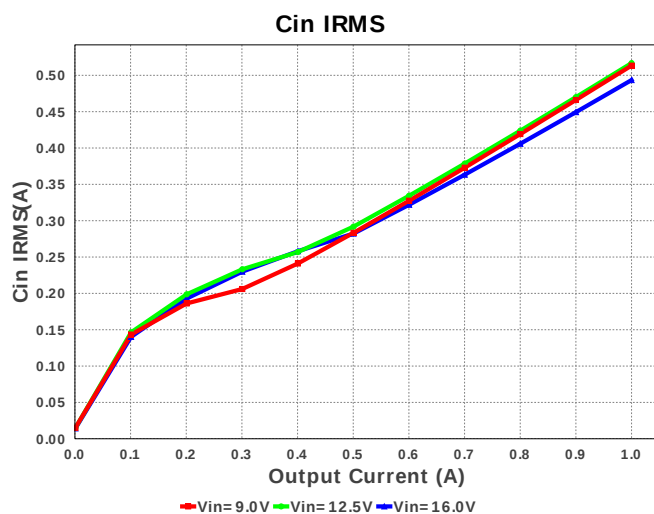
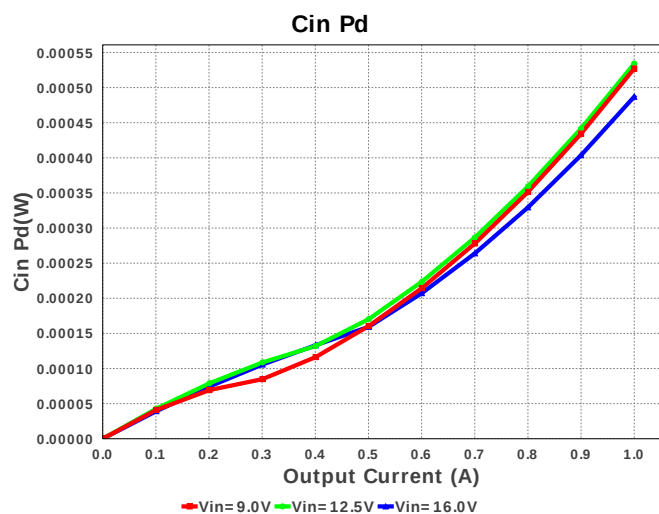
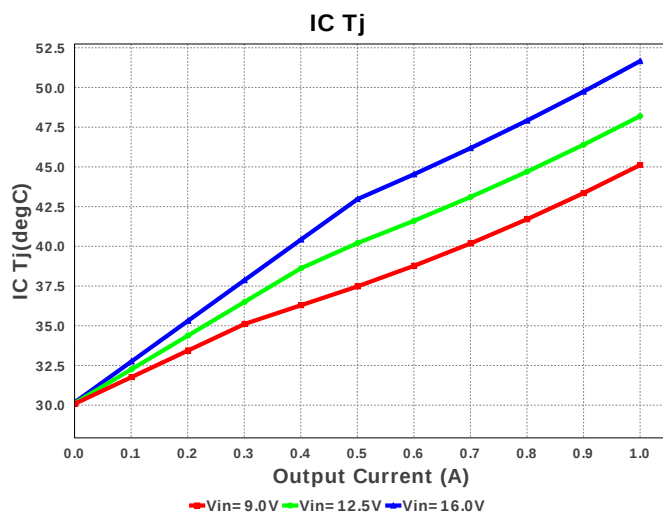
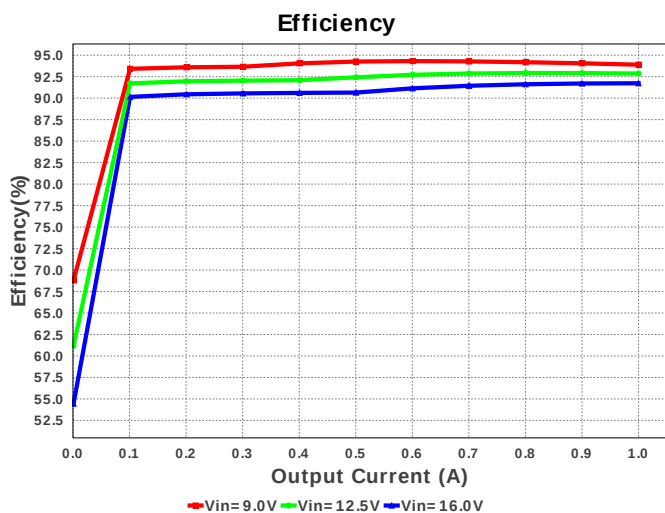


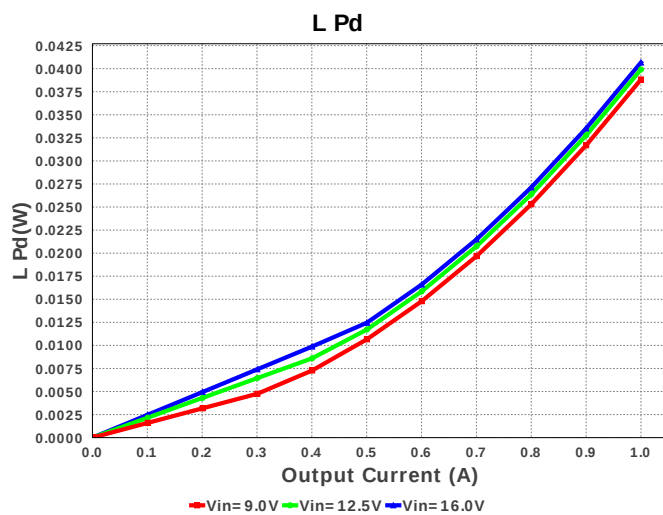
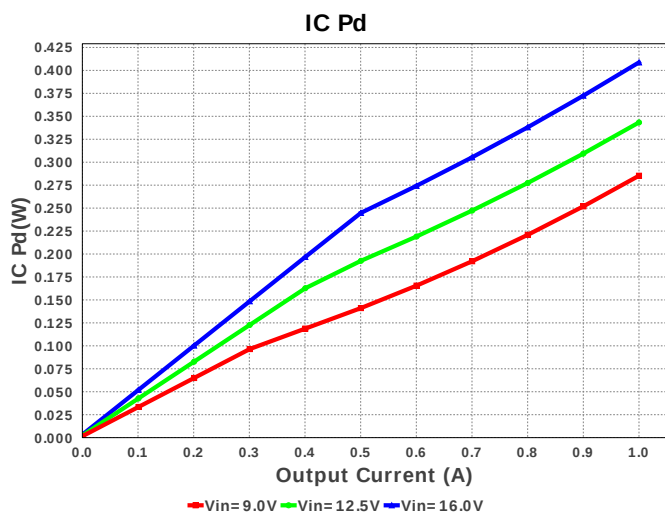
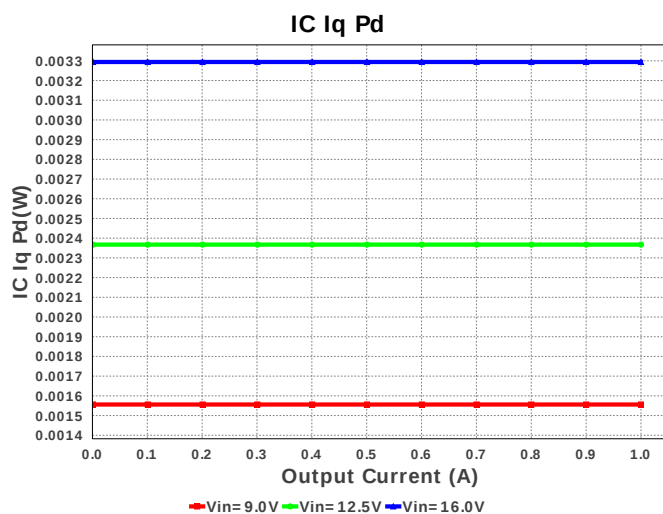
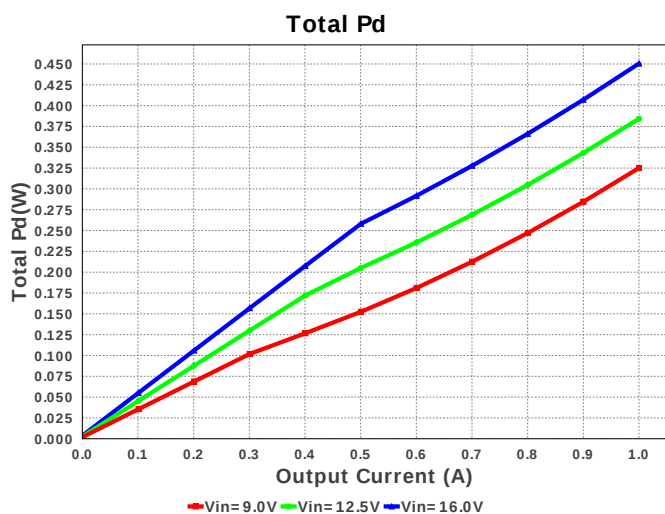
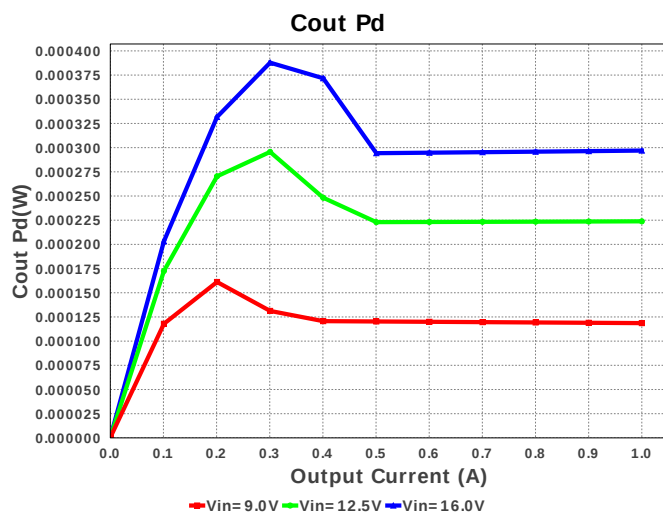
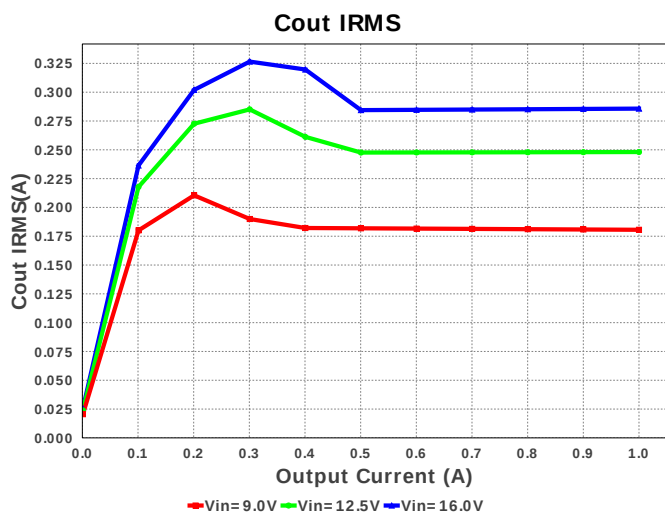
Electrical BOM

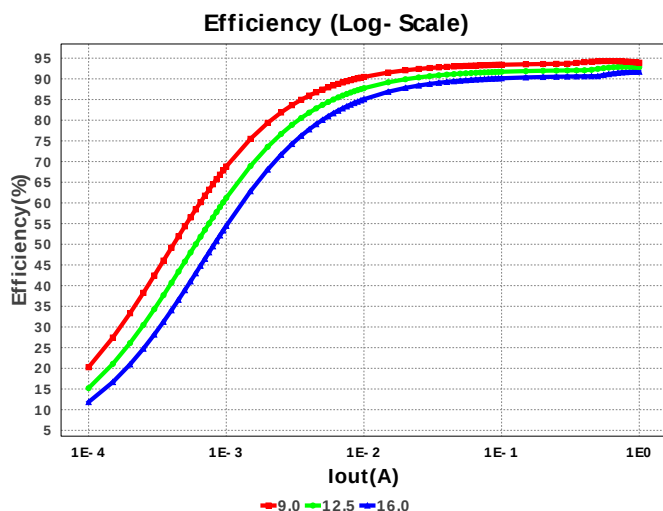
#	Name	Manufacturer	Part Number	Properties	Qty	Price	Footprint
1.	Cbst	AVX	08053C104KAT2A Series= X7R	Cap= 100.0 nF ESR= 280.0 mOhm VDC= 25.0 V IRMS= 0.0 A	1	\$0.01	0805 7 mm ²
2.	Cin	MuRata	GRM32ER61E226KE15L Series= X5R	Cap= 22.0 uF ESR= 2.0 mOhm VDC= 25.0 V IRMS= 3.67 A	1	\$0.16	1210 15 mm ²
3.	Cout	MuRata	GRM31CR61A226KE19L Series= X5R	Cap= 22.0 uF ESR= 3.637 mOhm VDC= 10.0 V IRMS= 3.56456 A	1	\$0.07	1206_190 11 mm ²
4.	Css	MuRata	GRM033R61A822KA01D Series= X5R	Cap= 8.2 nF VDC= 10.0 V IRMS= 0.0 A	1	\$0.01	0201 2 mm ²
5.	L1	Bourns	SRN6045-4R7Y	L= 4.7 uH DCR= 37.6 mOhm	1	\$0.16	SRN6045 64 mm ²
6.	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
7.	Rfbb	Vishay-Dale	CRCW040256K2FKED Series= CRCW..e3	Res= 56.2 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	0402 3 mm ²
8.	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

#	Name	Manufacturer	Part Number	Properties	Qty	Price	Footprint
9.	U1	Texas Instruments	TPS562210DDFR	Switcher	1	\$0.60	 DDF0008A 10 mm ²









Operating Values

#	Name	Value	Category	Description
1.	Cin IRMS	493.472 mA	Current	Input capacitor RMS ripple current
2.	Cout IRMS	285.748 mA	Current	Output capacitor RMS ripple current
3.	Iin Avg	340.66 mA	Current	Average input current
4.	L Ipp	989.86 mA	Current	Peak-to-peak inductor ripple current
5.	BOM Count	9	General	Total Design BOM count
6.	FootPrint	118.0 mm ²	General	Total Foot Print Area of BOM components
7.	Frequency	742.151 kHz	General	Switching frequency
8.	Pout	5.0 W	General	Total output power
9.	Total BOM	\$1.04	General	Total BOM Cost
10.	Vout Actual	5.031 V	Op_Point	Vout Actual calculated based on selected voltage divider resistors
11.	Vout OP	5.0 V	Op_Point	Operational Output Voltage
12.	Duty Cycle	31.952 %	Op_point	Duty cycle
13.	Efficiency	91.734 %	Op_point	Steady state efficiency
14.	IC Tj	51.661 degC	Op_point	IC junction temperature
15.	ICThetaJA	53.0 degC/W	Op_point	IC junction-to-ambient thermal resistance
16.	IOUT_OP	1.0 A	Op_point	Iout operating point
17.	VIN_OP	16.0 V	Op_point	Vin operating point
18.	Vout p-p	9.21 mV	Op_point	Peak-to-peak output ripple voltage
19.	Cin Pd	487.029 μW	Power	Input capacitor power dissipation
20.	Cout Pd	296.967 μW	Power	Output capacitor power dissipation
21.	IC Iq Pd	3.294 mW	Power	IC Iq Pd
22.	IC Pd	408.69 mW	Power	IC power dissipation
23.	L Pd	40.67 mW	Power	Inductor power dissipation
24.	Total Pd	450.543 mW	Power	Total Power Dissipation
25.	Vout Tolerance	3.053 %		Vout Tolerance based on IC Tolerance (no load) and voltage divider resistors if applicable

Design Inputs

#	Name	Value	Description
1.	Iout	1.0	Maximum Output Current
2.	VinMax	16.0	Maximum input voltage
3.	VinMin	9.0	Minimum input voltage
4.	Vout	5.0	Output Voltage
5.	base_pn	TPS562210	Texas Instruments Base Part Number
6.	source	DC	Input Source Type
7.	ta	30.0	Ambient temperature

Design Assistance

1. TPS562210 Product Folder : <http://www.ti.com/product/TPS562210> : contains the data sheet and other resources.

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