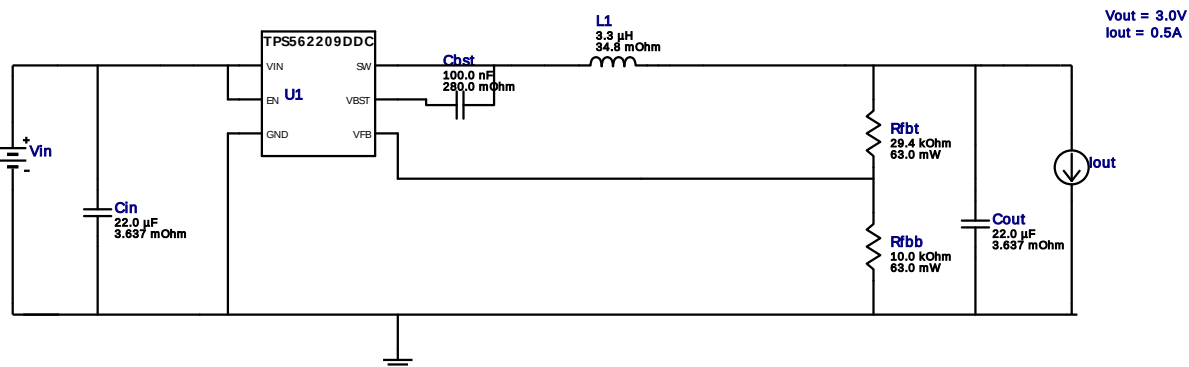


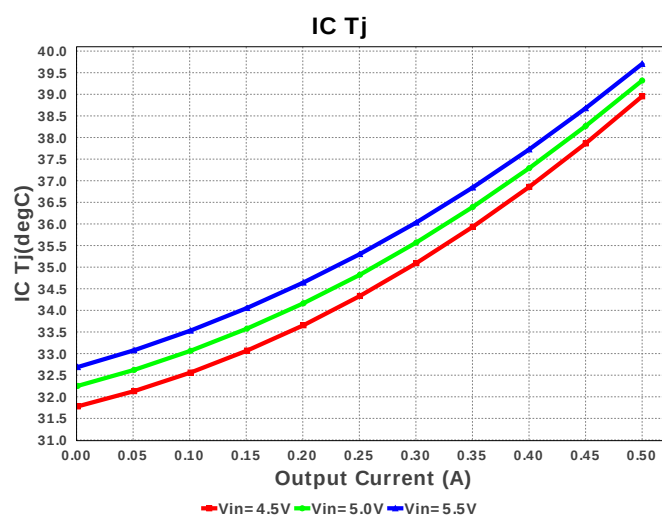
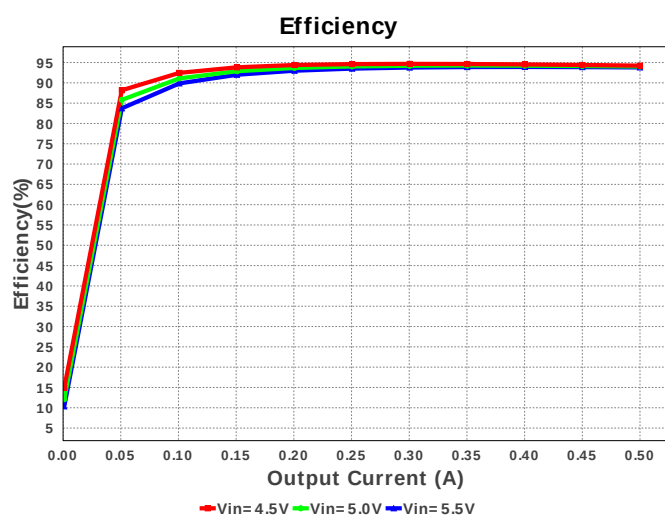
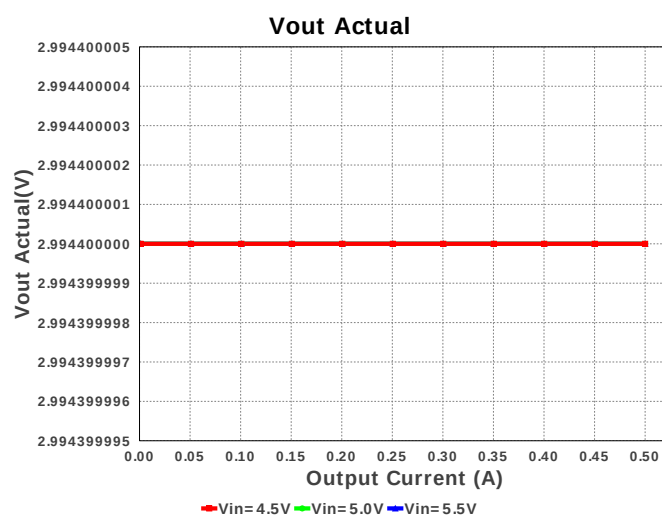
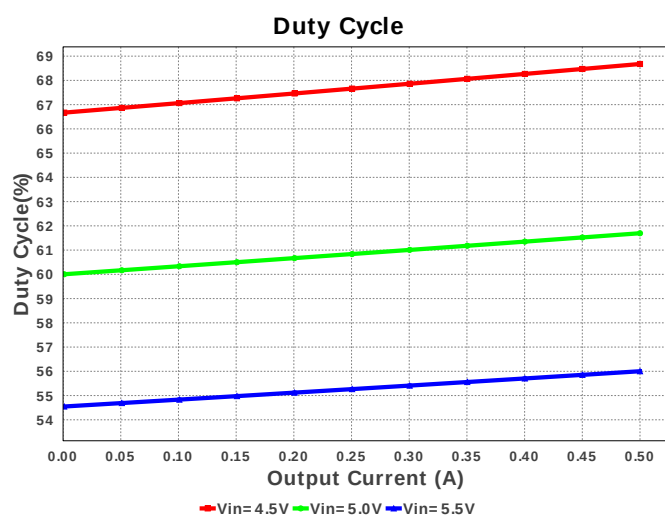
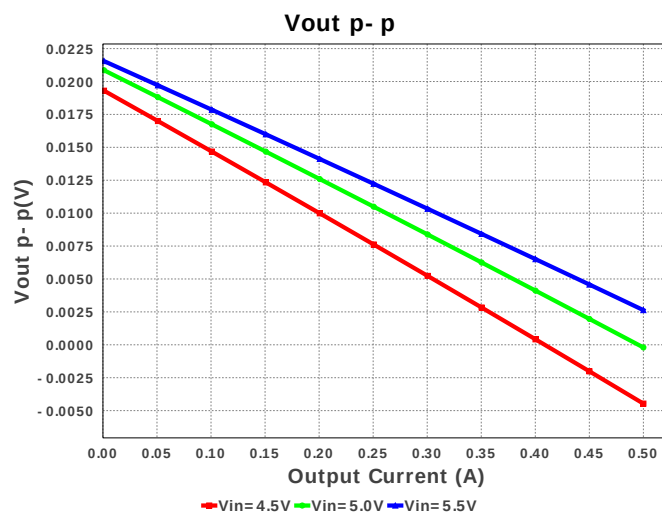
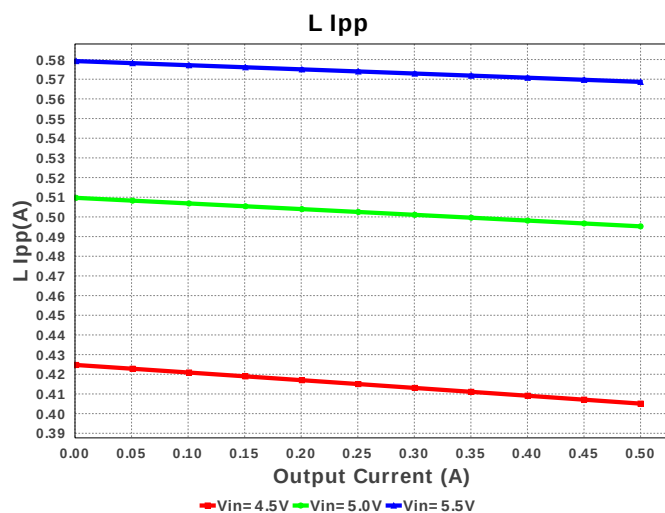
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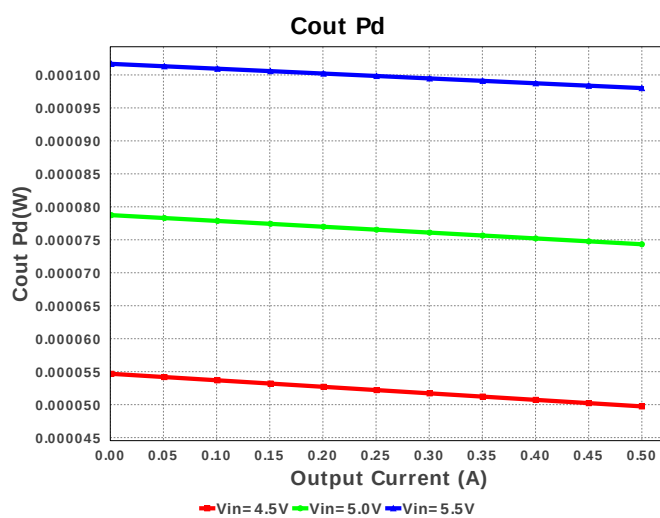
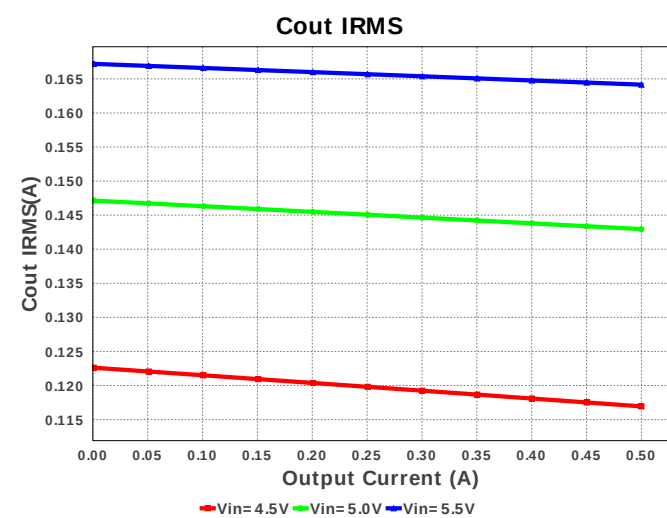
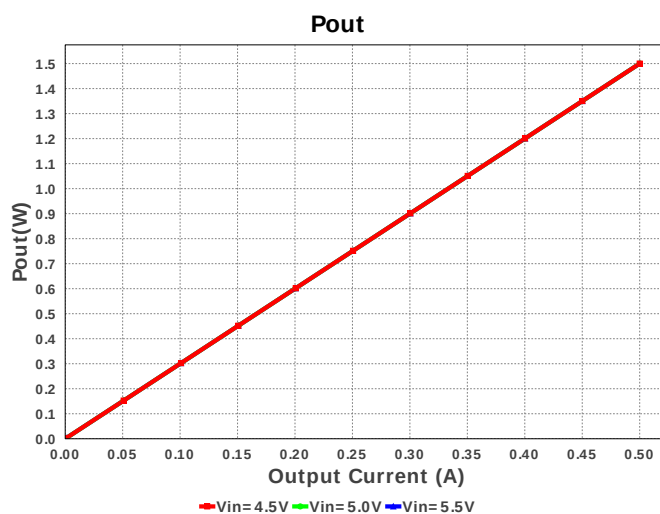
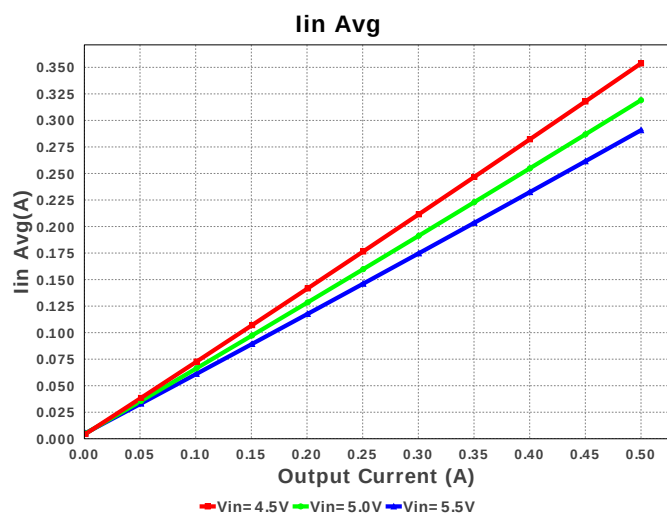
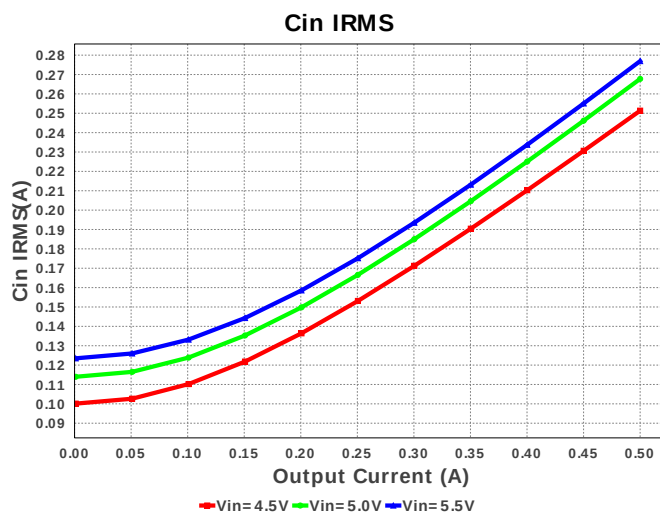
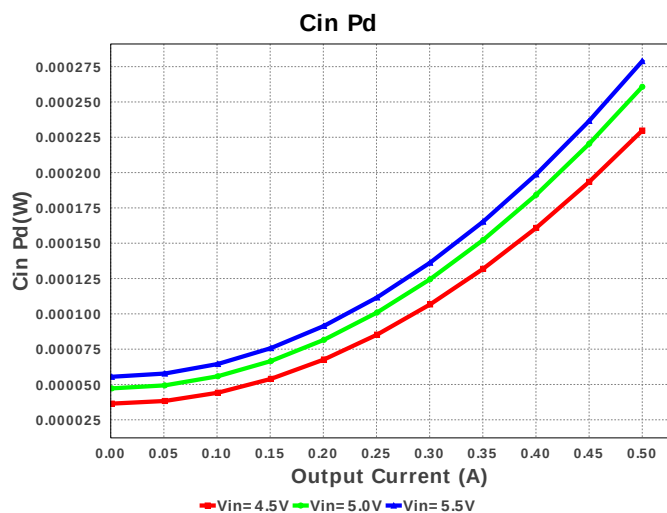
Design : 4742013/120 TPS562209DDCR
TPS562209DDCR 4.5V-5.5V to 3.00V @ 0.5A

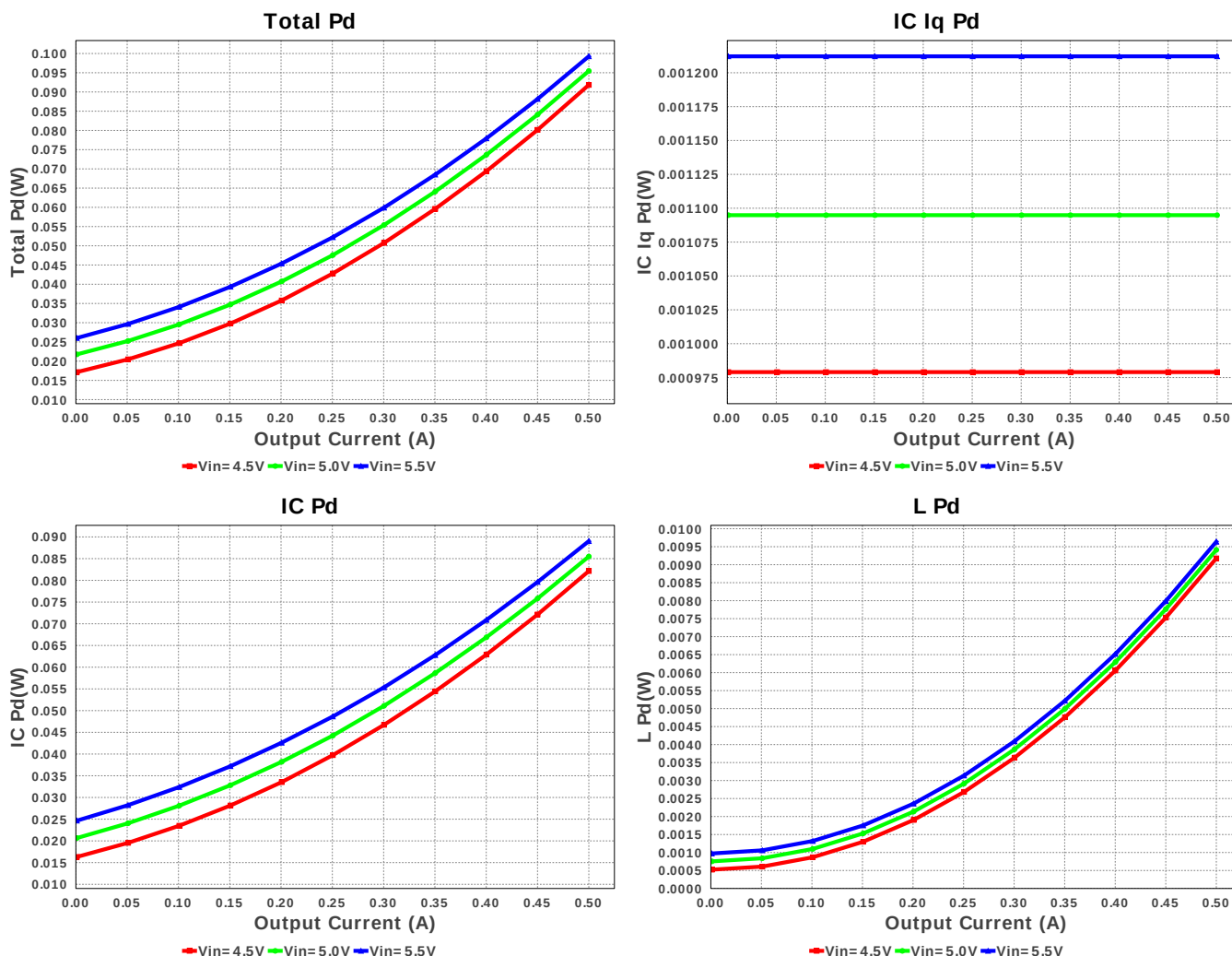


Electrical BOM

#	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	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
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.	L1	Coilcraft	XFL4020-332MEB	L= 3.3 uH DCR= 34.8 mOhm	1	\$0.55	XFL4020 25 mm ²
5.	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
6.	Rfbt	Vishay-Dale	CRCW040229K4FKED Series= CRCW..e3	Res= 29.4 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	0402 3 mm ²
7.	U1	Texas Instruments	TPS562209DDCR	Switcher	1	\$0.47	DDC0006A 10 mm ²







Operating Values

#	Name	Value	Category	Description
1.	Cin IRMS	276.929 mA	Current	Input capacitor RMS ripple current
2.	Cout IRMS	164.152 mA	Current	Output capacitor RMS ripple current
3.	Iin Avg	290.78 mA	Current	Average input current
4.	L Ipp	568.64 mA	Current	Peak-to-peak inductor ripple current
5.	BOM Count	7	General	Total Design BOM count
6.	FootPrint	70.0 mm ²	General	Total Foot Print Area of BOM components
7.	Frequency	711.457 kHz	General	Switching frequency
8.	Pout	1.5 W	General	Total output power
9.	Total BOM	\$1.19	General	Total BOM Cost
10.	Vout Actual	2.994 V	Op_Point	Vout Actual calculated based on selected voltage divider resistors
11.	Vout OP	3.0 V	Op_Point	Operational Output Voltage
12.	Duty Cycle	56.003 %	Op_point	Duty cycle
13.	Efficiency	93.793 %	Op_point	Steady state efficiency
14.	IC Tj	39.704 degC	Op_point	IC junction temperature
15.	ICThetaJA	109.0 degC/W	Op_point	IC junction-to-ambient thermal resistance
16.	IOUT_OP	500.0 mA	Op_point	Iout operating point
17.	VIN_OP	5.5 V	Op_point	Vin operating point
18.	Vout p-p	5.093 mV	Op_point	Peak-to-peak output ripple voltage
19.	Cin Pd	278.92 μW	Power	Input capacitor power dissipation
20.	Cout Pd	98.002 μW	Power	Output capacitor power dissipation
21.	IC Iq Pd	1.212 mW	Power	IC Iq Pd
22.	IC Pd	89.031 mW	Power	IC power dissipation
23.	L Pd	9.638 mW	Power	Inductor power dissipation
24.	Total Pd	99.268 mW	Power	Total Power Dissipation
25.	Vout Tolerance	2.843 %		Vout Tolerance based on IC Tolerance (no load) and voltage divider resistors if applicable

Design Inputs

#	Name	Value	Description
1.	Iout	500.0 m	Maximum Output Current

#	Name	Value	Description
2.	VinMax	5.5	Maximum input voltage
3.	VinMin	4.5	Minimum input voltage
4.	Vout	3.0	Output Voltage
5.	base_pn	TPS562209	Base Product Number
6.	source	DC	Input Source Type
7.	Ta	30.0	Ambient temperature

Design Assistance

1. **TPS562209** Product Folder : <http://www.ti.com/product/TPS562209> : contains the data sheet and other resources.

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