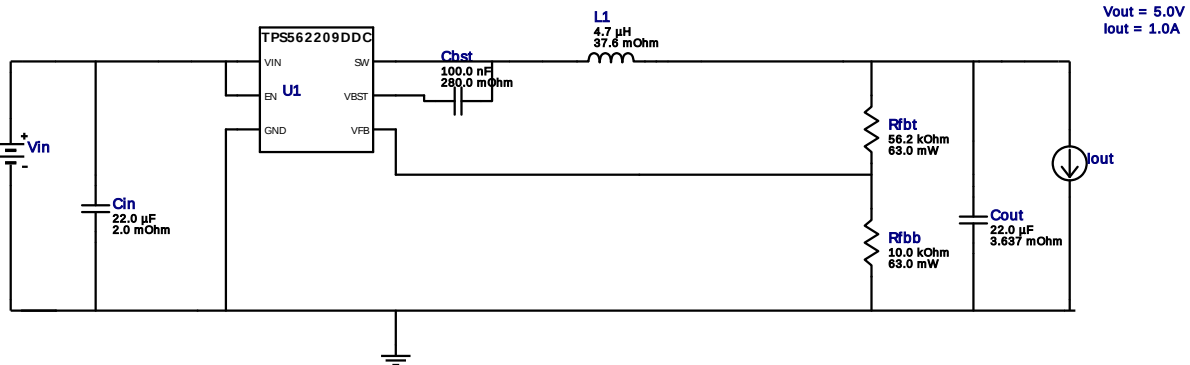


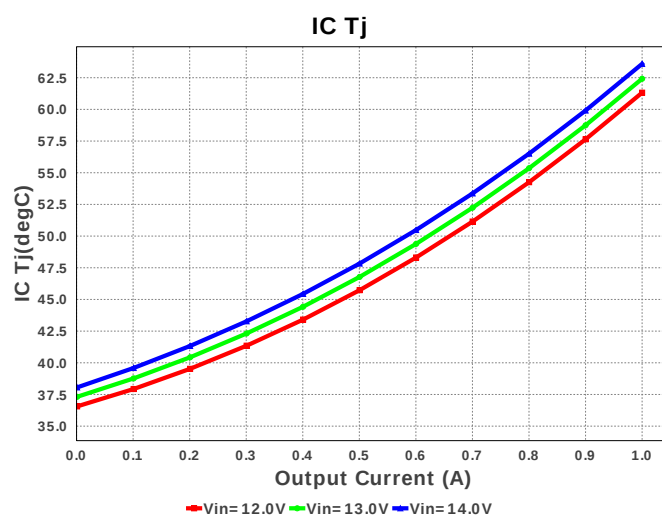
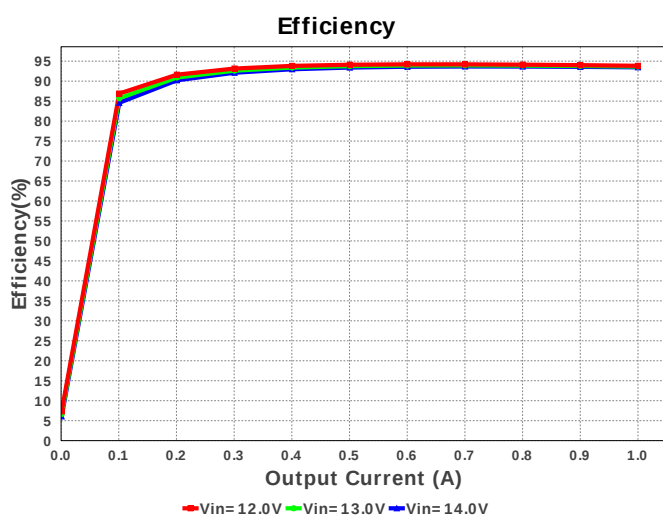
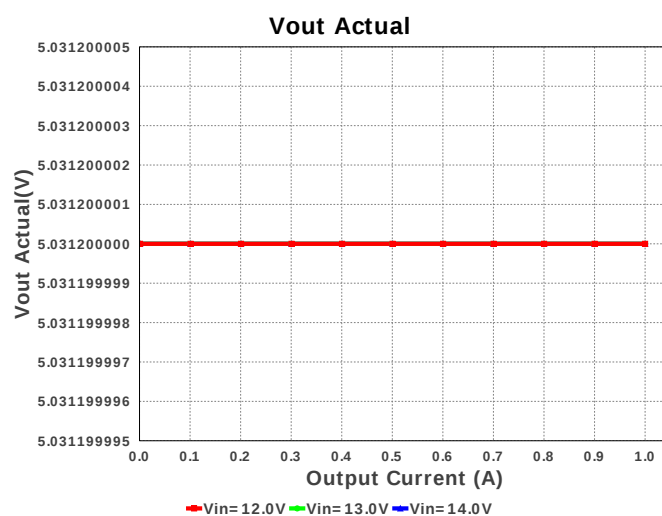
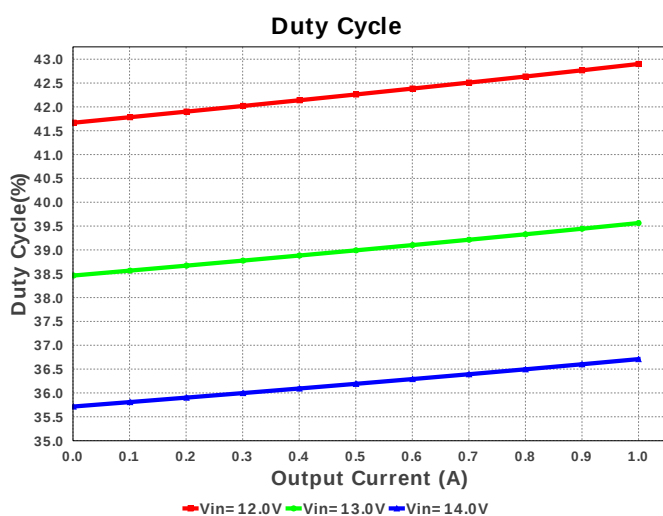
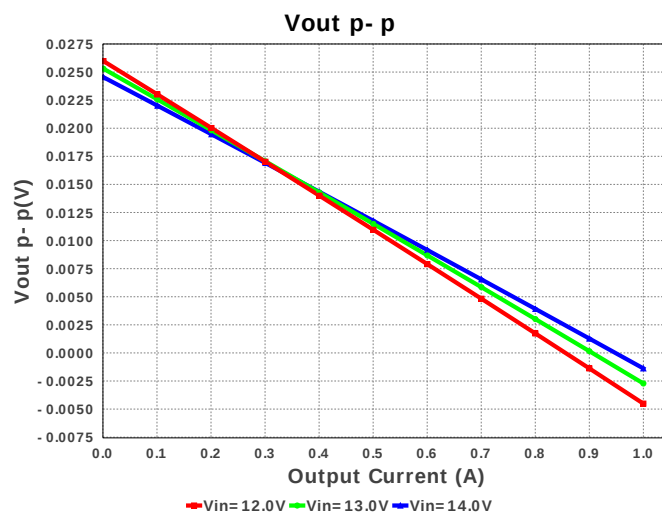
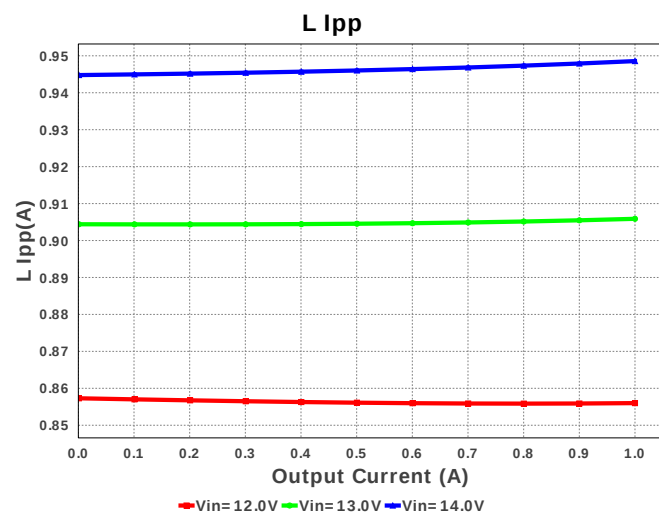
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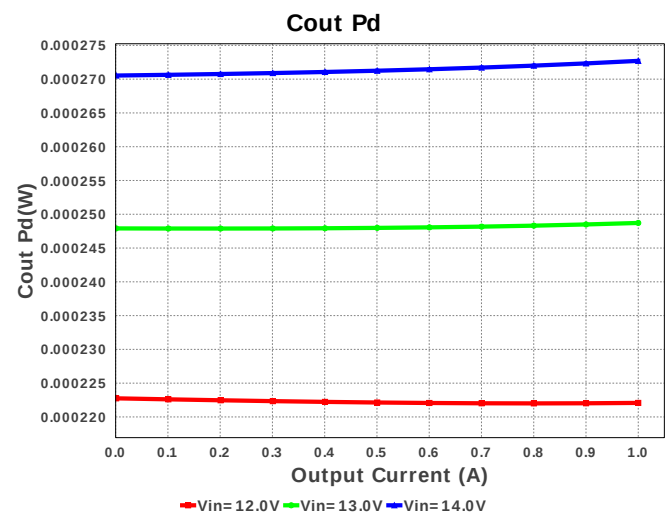
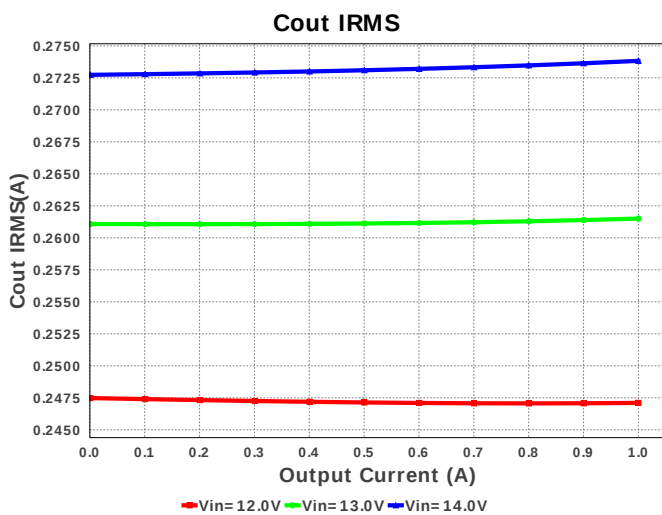
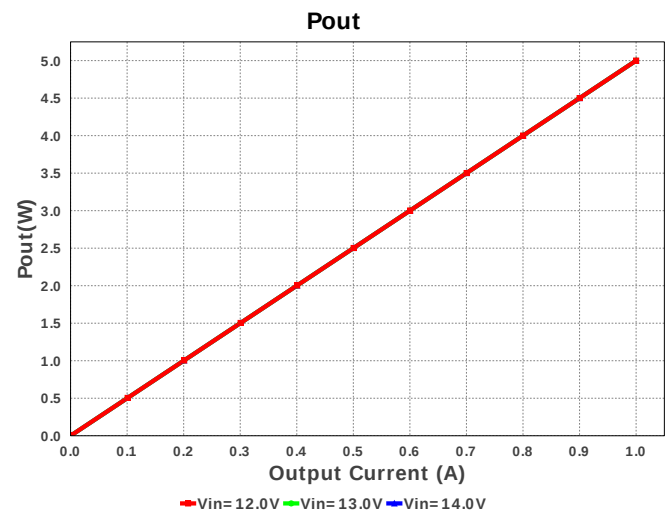
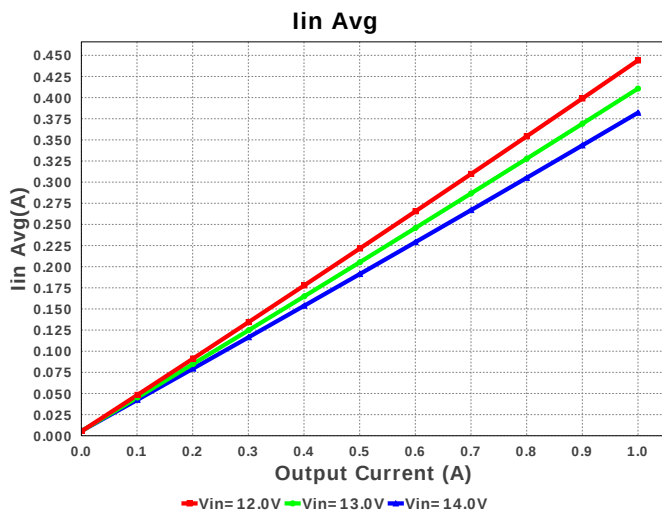
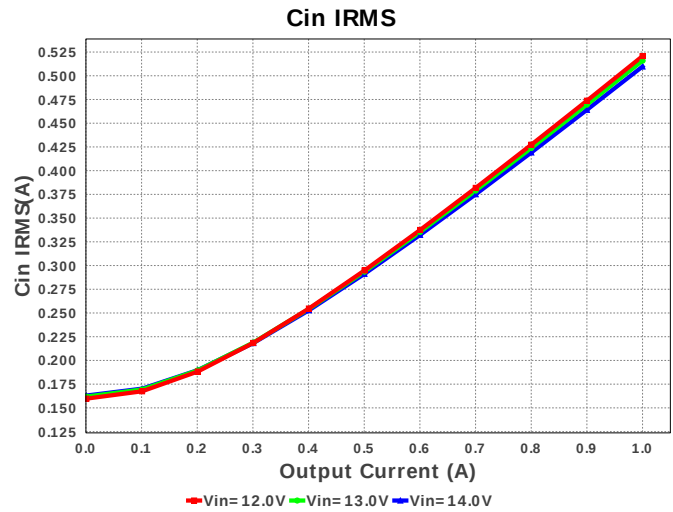
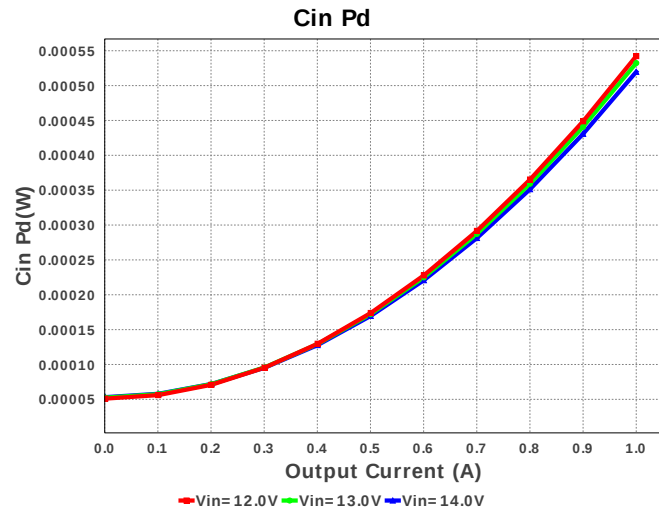
Design : 4743458/11 TPS562209DDCR
TPS562209DDCR 12.0V-14.0V to 5.00V @ 1.0A

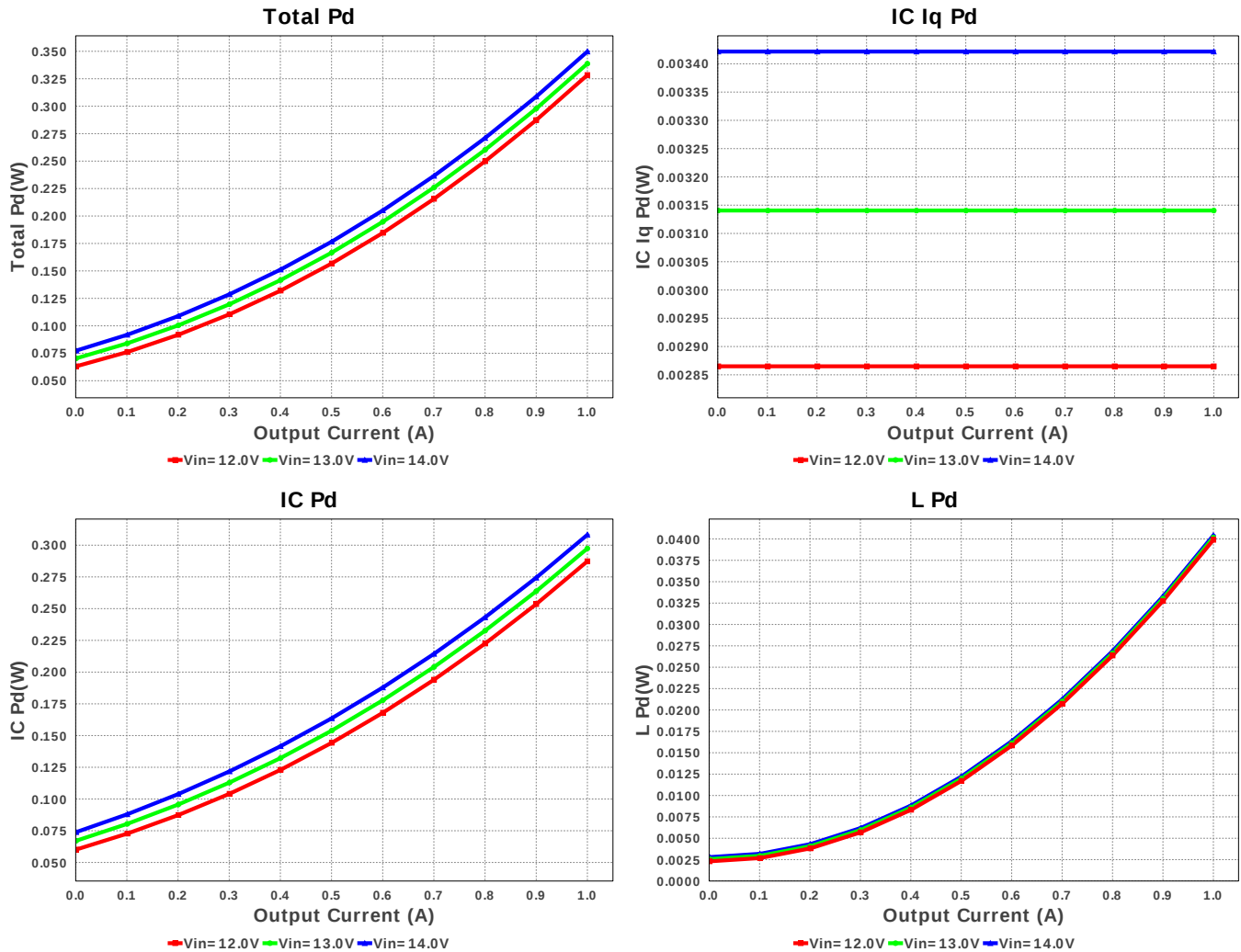


Electrical BOM

#	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 mm²
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 mm²
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 mm²
4.	L1	Bourns	SRN6045-4R7Y	L= 4.7 uH DCR= 37.6 mOhm	1	\$0.16	 SRN6045 64 mm²
5.	Rfbb	Vishay-Dale	CRCW040210K0FKED Series= CRCW..e3	Res= 10.0 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	 0402 3 mm²
6.	Rfbb	Vishay-Dale	CRCW040256K2FKED Series= CRCW..e3	Res= 56.2 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	 0402 3 mm²
7.	U1	Texas Instruments	TPS562209DDCR	Switcher	1	\$0.47	 DDC0006A 10 mm²







Operating Values

#	Name	Value	Category	Description
1.	Cin IRMS	509.765 mA	Current	Input capacitor RMS ripple current
2.	Cout IRMS	273.827 mA	Current	Output capacitor RMS ripple current
3.	Iin Avg	382.13 mA	Current	Average input current
4.	L Ipp	948.56 mA	Current	Peak-to-peak inductor ripple current
5.	BOM Count	7	General	Total Design BOM count
6.	FootPrint	113.0 mm ²	General	Total Foot Print Area of BOM components
7.	Frequency	721.711 kHz	General	Switching frequency
8.	Pout	5.0 W	General	Total output power
9.	Total BOM	\$0.89	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	36.709 %	Op_point	Duty cycle
13.	Efficiency	93.462 %	Op_point	Steady state efficiency
14.	IC Tj	63.592 degC	Op_point	IC junction temperature
15.	ICThetaJA	109.0 degC/W	Op_point	IC junction-to-ambient thermal resistance
16.	IOUT_OP	1.0 A	Op_point	Iout operating point
17.	VIN_OP	14.0 V	Op_point	Vin operating point
18.	Vout p-p	9.028 mV	Op_point	Peak-to-peak output ripple voltage
19.	Cin Pd	519.721 μW	Power	Input capacitor power dissipation
20.	Cout Pd	272.706 μW	Power	Output capacitor power dissipation
21.	IC Iq Pd	3.422 mW	Power	IC Iq Pd
22.	IC Pd	308.186 mW	Power	IC power dissipation
23.	L Pd	40.419 mW	Power	Inductor power dissipation
24.	Total Pd	349.771 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

#	Name	Value	Description
2.	VinMax	14.0	Maximum input voltage
3.	VinMin	12.0	Minimum input voltage
4.	Vout	5.0	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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