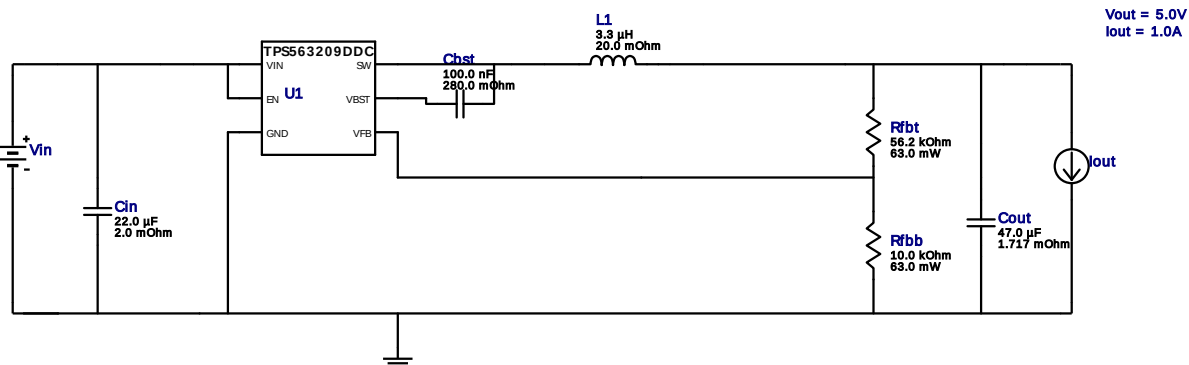
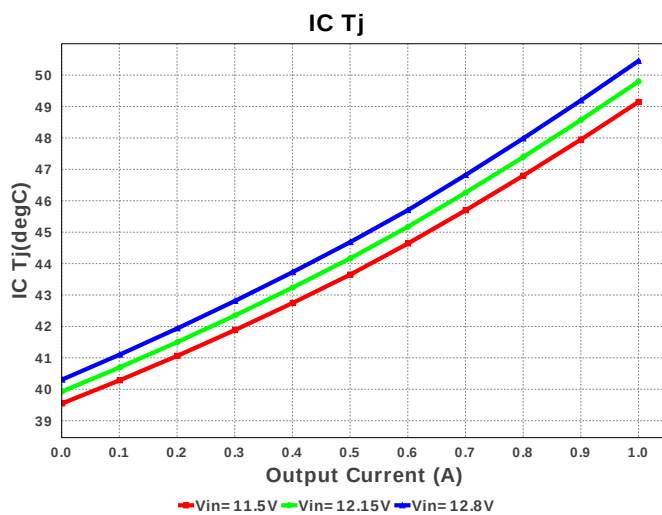
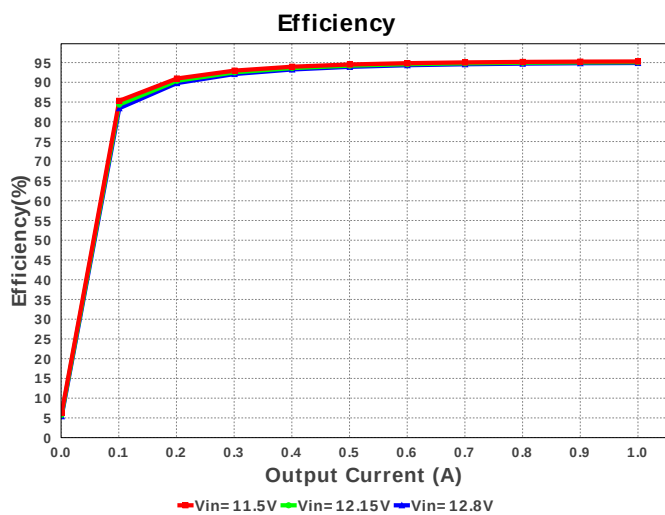
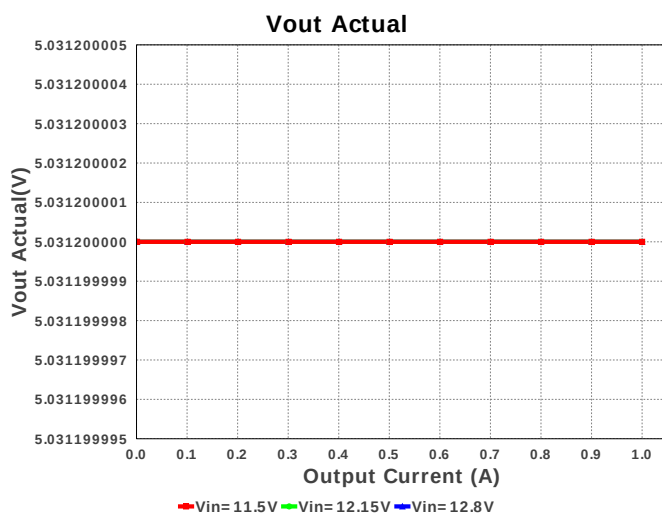
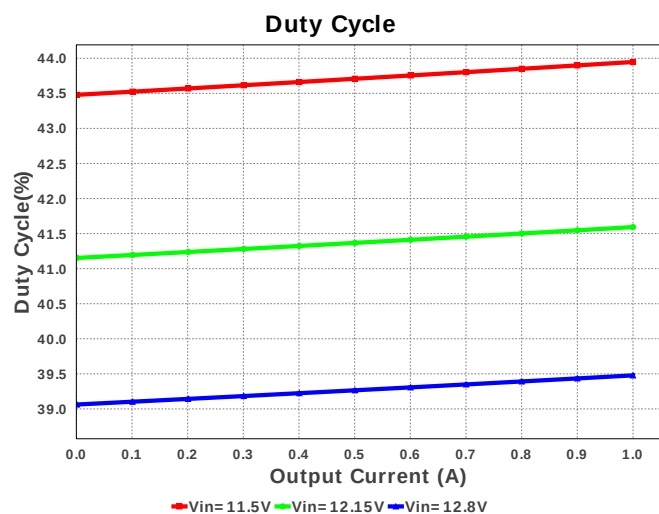
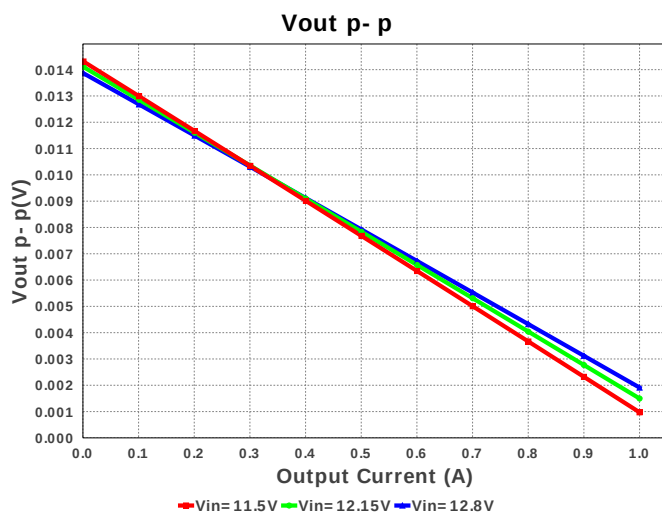
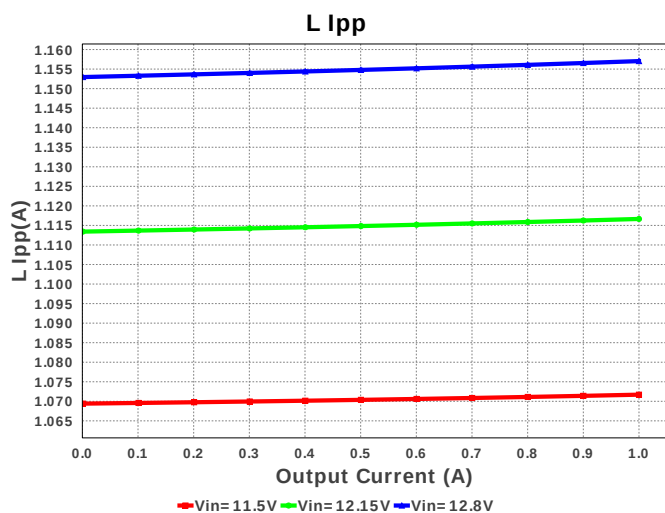


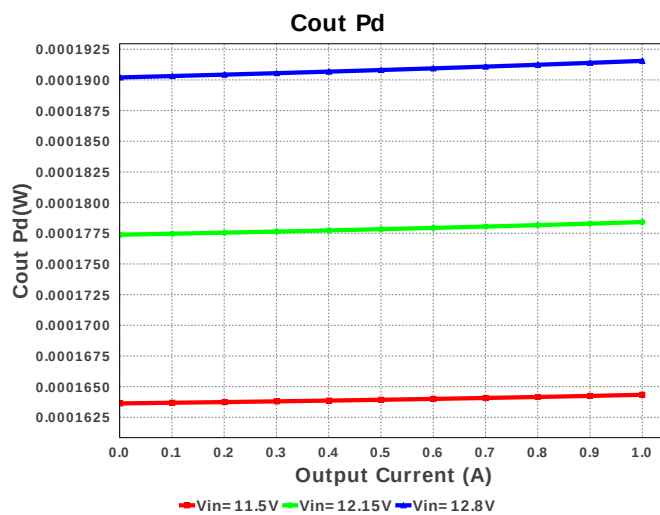
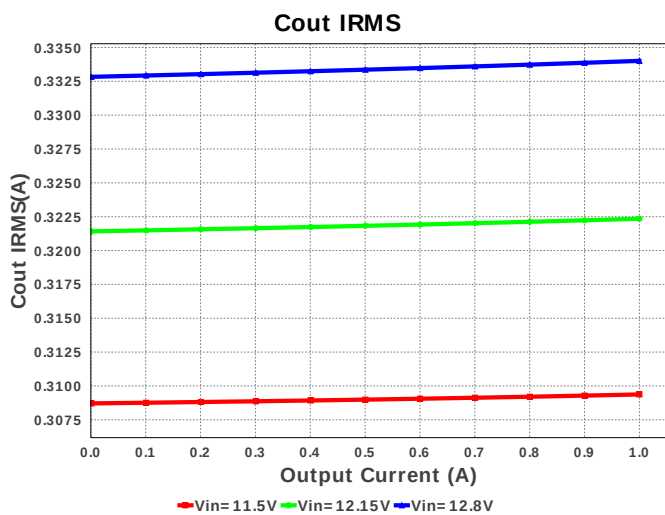
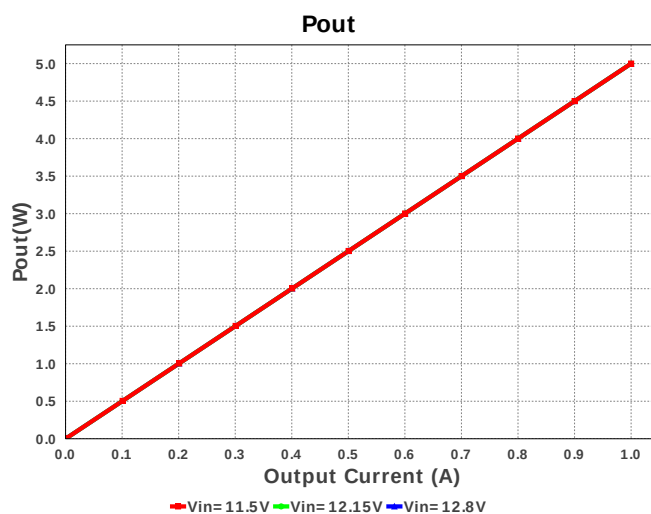
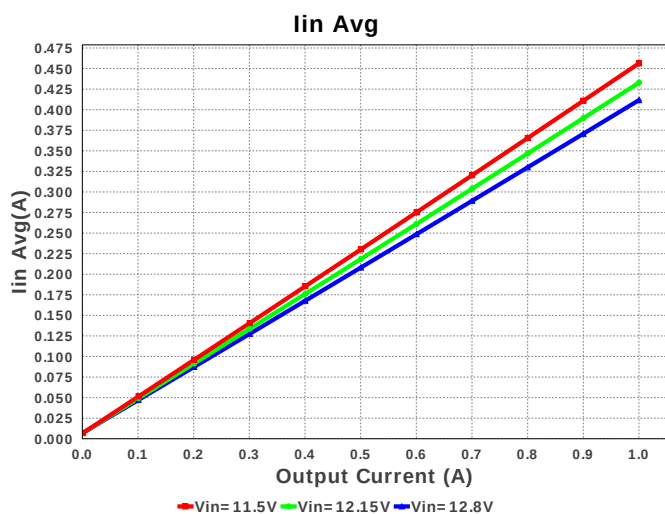
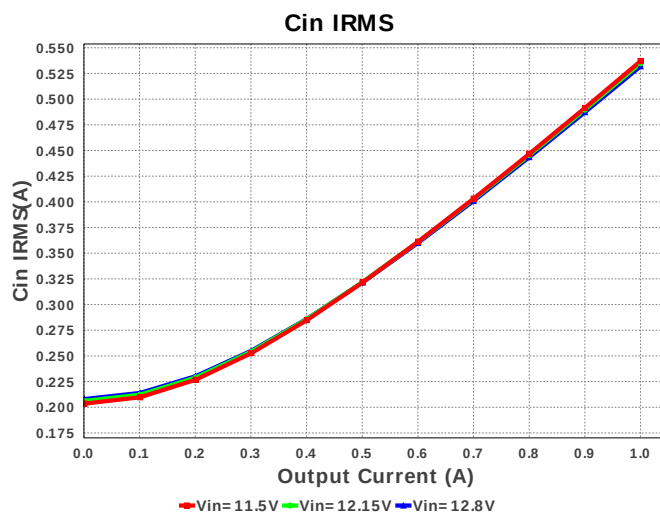
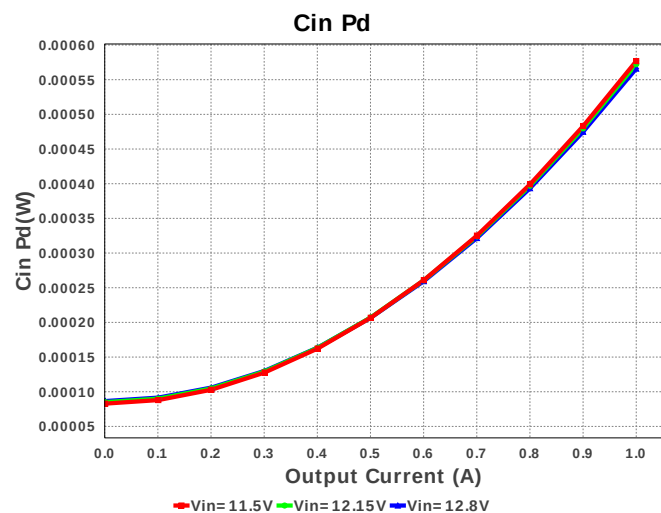


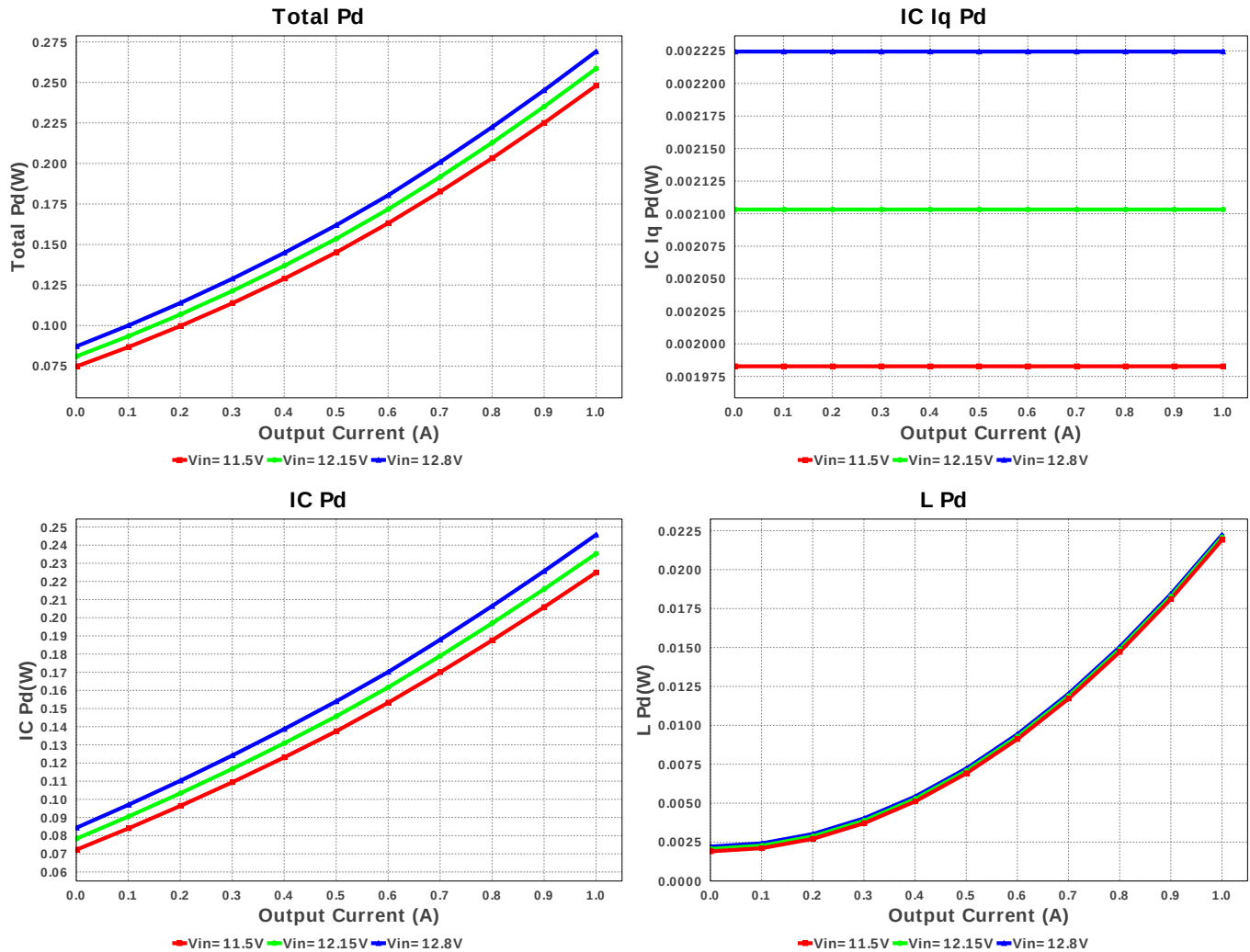
Device = TPS563209DDCR
Topology = Buck
Created = 7/18/16 7:15:57 PM
BOM Cost = \$1.31
BOM Count = 7
Total Pd = 0.27W



#	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	TDK	C3216JB1A476M Series= JB	Cap= 47.0 uF ESR= 1.717 mOhm VDC= 10.0 V IRMS= 0.0 A	1	\$0.34	 1206 11 mm ²
4.	L1	Bourns	SRR6038-3R3Y	L= 3.3 uH DCR= 20.0 mOhm	1	\$0.26	 SRR6038 77 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	CRCW040256K2FKED Series= CRCW..e3	Res= 56.2 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	 0402 3 mm ²
7.	U1	Texas Instruments	TPS563209DDCR	Switcher	1	\$0.52	 DDC0006A 10 mm ²







Operating Values

#	Name	Value	Category	Description
1.	Cin IRMS	531.951 mA	Current	Input capacitor RMS ripple current
2.	Cout IRMS	334.009 mA	Current	Output capacitor RMS ripple current
3.	Iin Avg	411.64 mA	Current	Average input current
4.	L Ipp	1.157 A	Current	Peak-to-peak inductor ripple current
5.	BOM Count	7	General	Total Design BOM count
6.	FootPrint	126.0 mm ²	General	Total Foot Print Area of BOM components
7.	Frequency	799.596 kHz	General	Switching frequency
8.	Pout	5.0 W	General	Total output power
9.	Total BOM	\$1.31	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	39.478 %	Op_point	Duty cycle
13.	Efficiency	94.894 %	Op_point	Steady state efficiency
14.	IC Tj	50.454 degC	Op_point	IC junction temperature
15.	ICThetaJA	62.9 degC/W	Op_point	IC junction-to-ambient thermal resistance
16.	IOUT_OP	1.0 A	Op_point	Iout operating point
17.	VIN_OP	12.8 V	Op_point	Vin operating point
18.	Vout p-p	4.693 mV	Op_point	Peak-to-peak output ripple voltage
19.	Cin Pd	565.944 μW	Power	Input capacitor power dissipation
20.	Cout Pd	191.552 μW	Power	Output capacitor power dissipation
21.	IC Iq Pd	2.225 mW	Power	IC Iq Pd
22.	IC Pd	245.686 mW	Power	IC power dissipation
23.	L Pd	22.231 mW	Power	Inductor power dissipation
24.	Total Pd	269.035 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	12.8	Maximum input voltage
3.	VinMin	11.5	Minimum input voltage
4.	Vout	5.0	Output Voltage
5.	base_pn	TPS563209	Texas Instruments Base Part Number
6.	source	DC	Input Source Type
7.	ta	35.0	Ambient temperature

Design Assistance

1. TPS563209 Product Folder : <http://www.ti.com/product/TPS563209> : contains the data sheet and other resources.

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