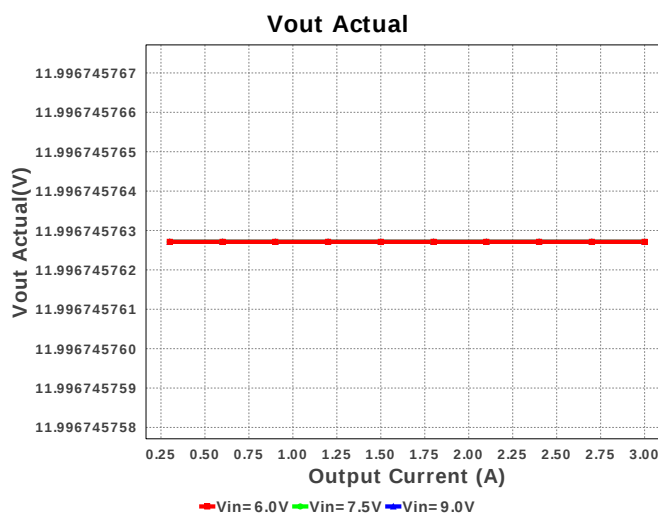
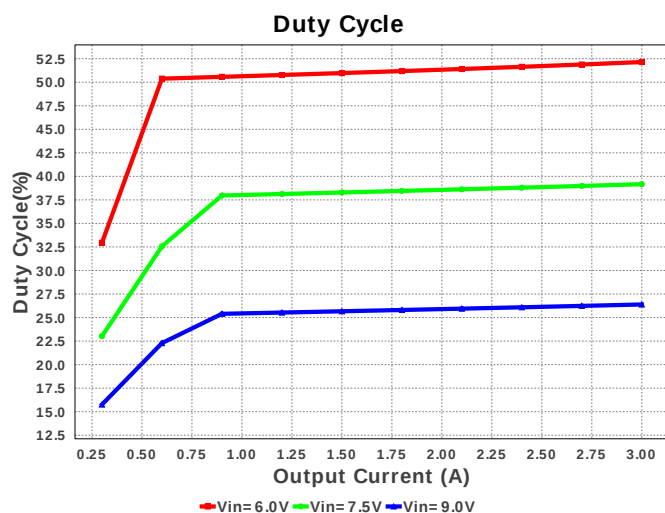
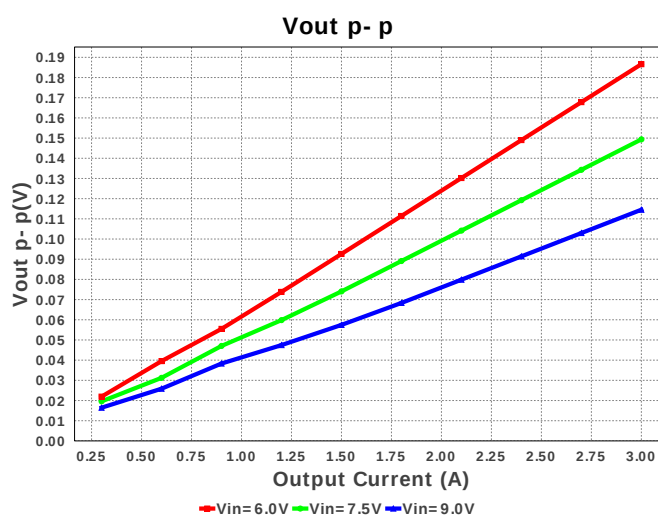
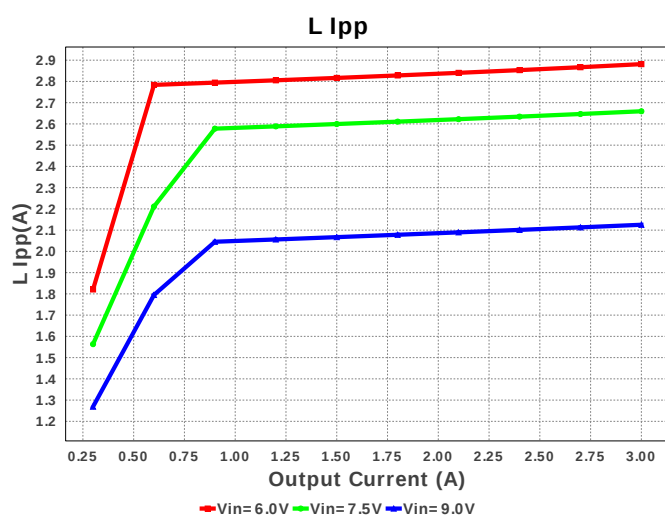
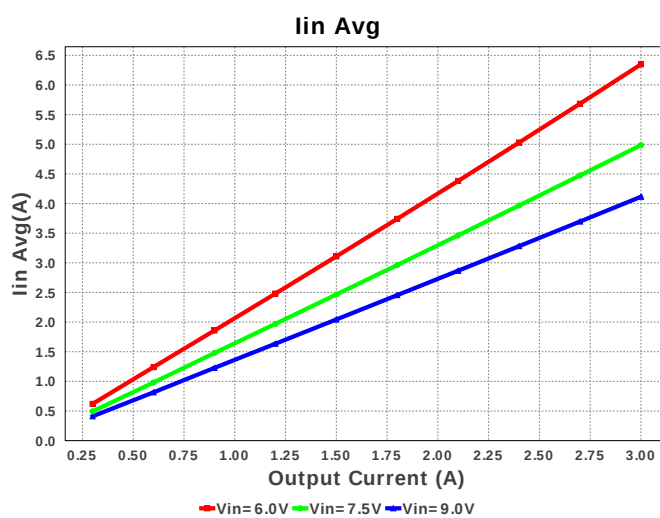
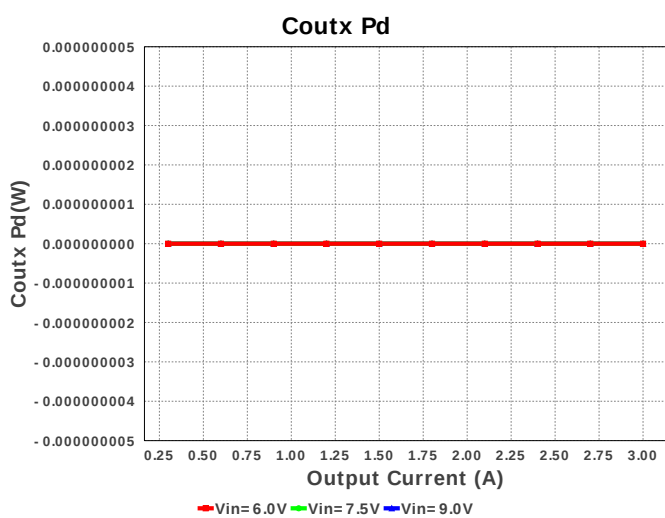
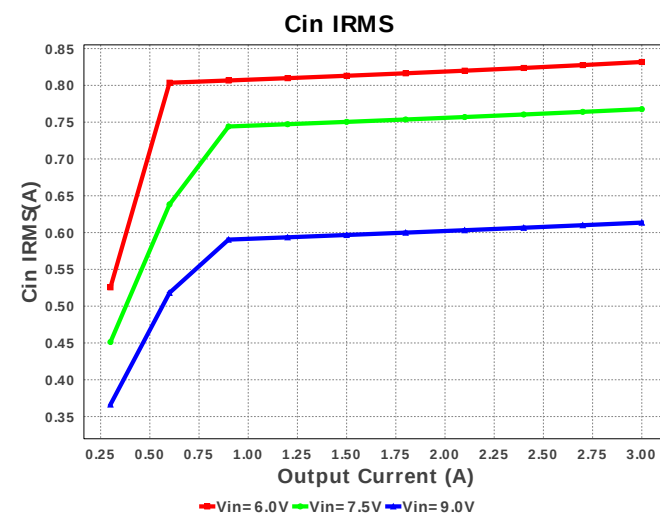
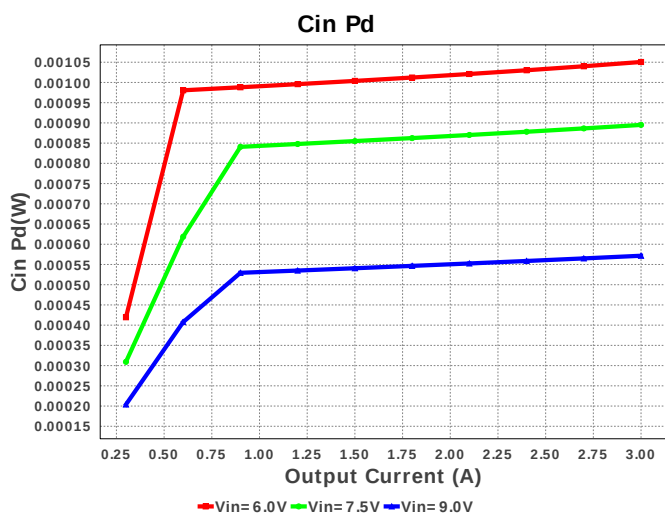
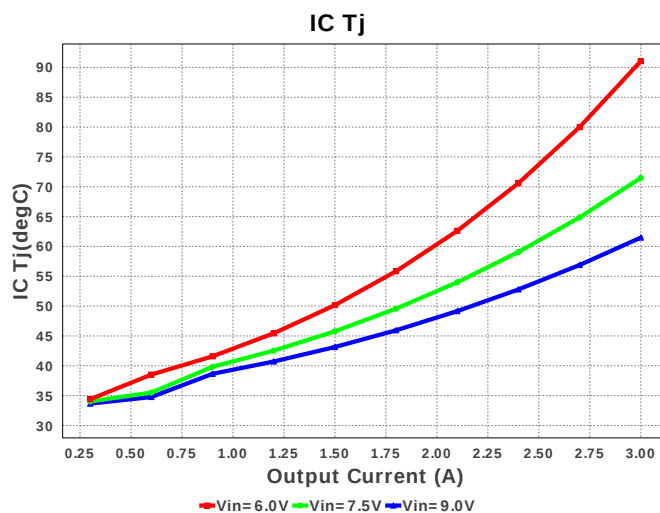
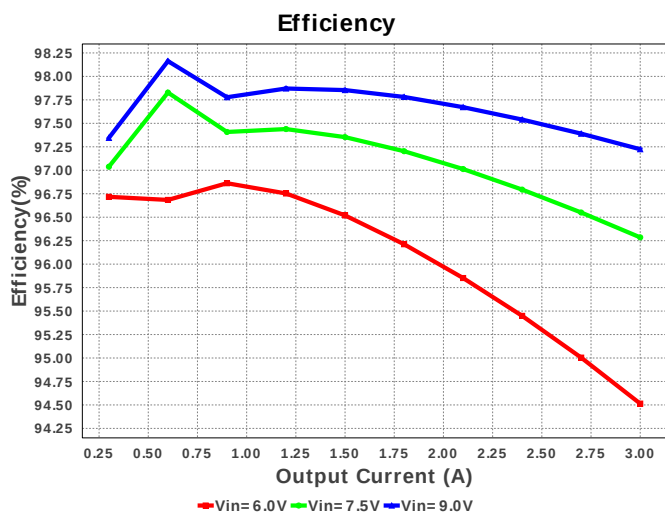


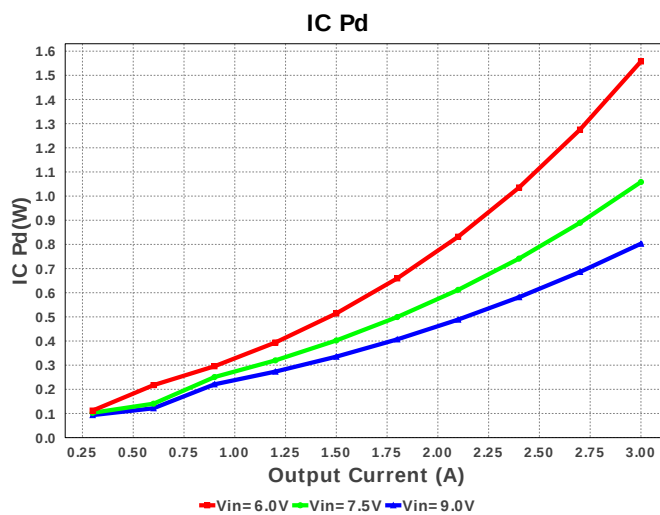
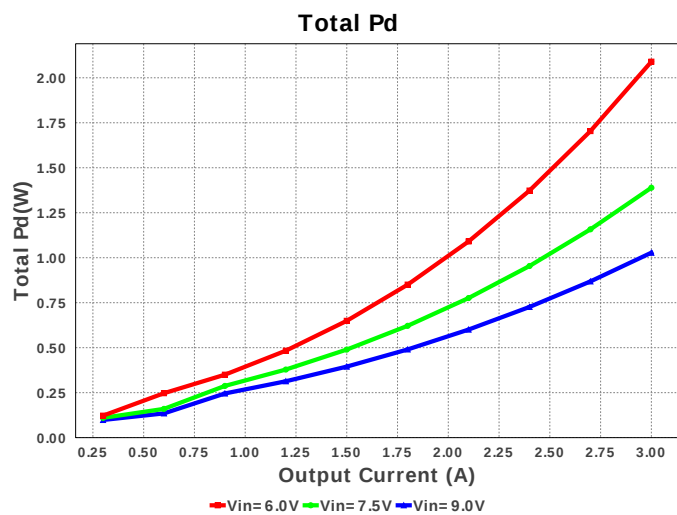
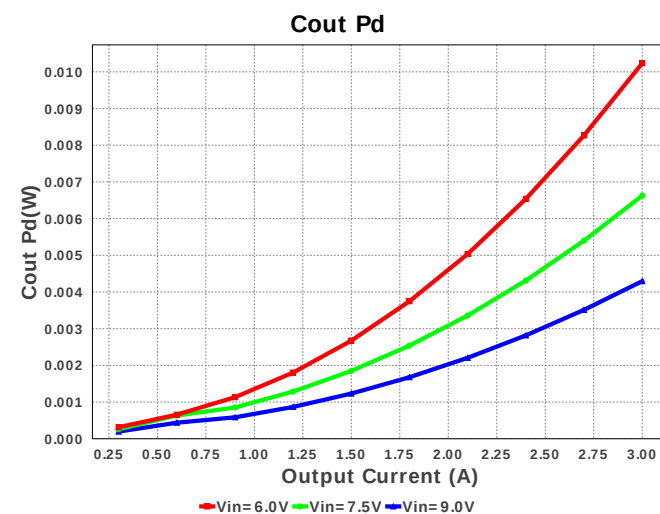
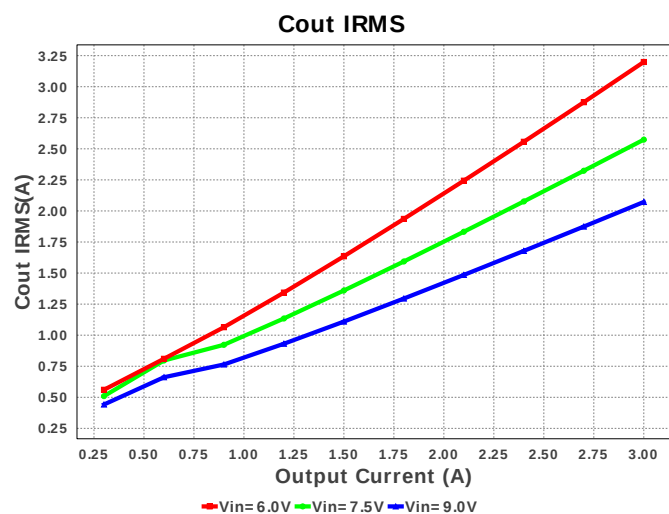
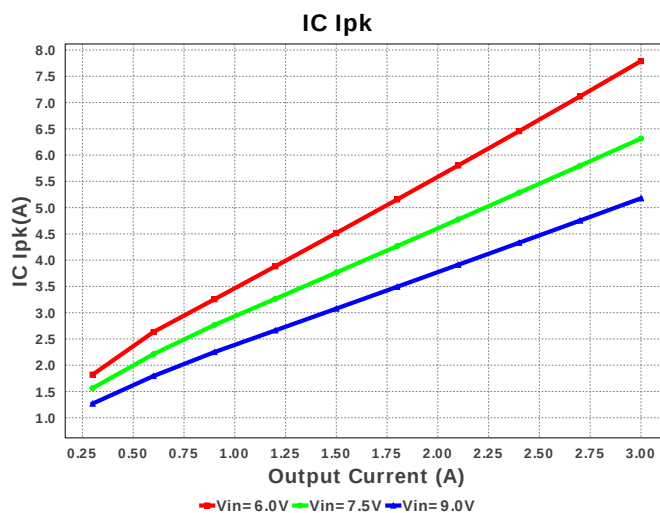
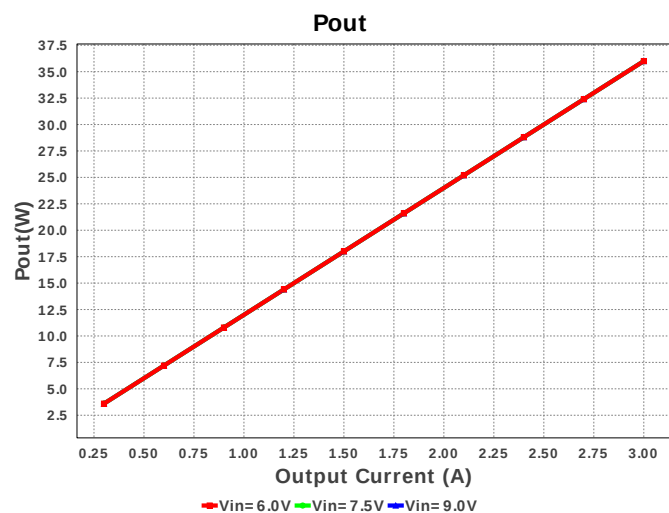


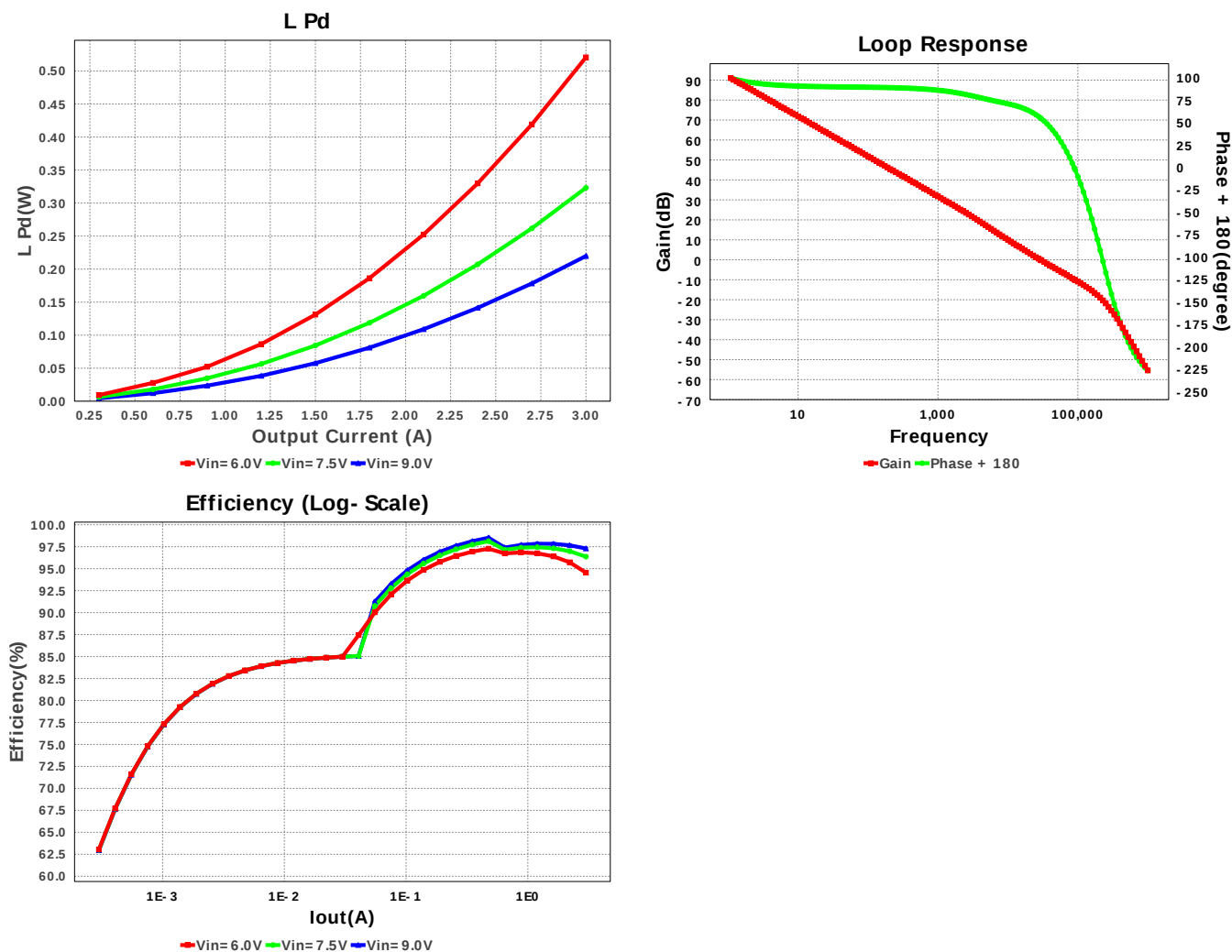
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Topology = Boost
Created = 7/28/16 11:04:36 PM
BOM Cost = \$3.36
BOM Count = 16
Total Pd = 2.09W

#	Name	Manufacturer	Part Number	Properties	Qty	Price	Footprint
12.	Rlim	Panasonic	ERJ-8ENF1103V Series= ERJ-8E	Res= 110.0 kOhm Power= 250.0 mW Tolerance= 1.0%	1	\$0.01	 1206 11 mm ²
13.	Rt	Panasonic	ERJ-8ENF3093V Series= ERJ-8E	Res= 309.0 kOhm Power= 250.0 mW Tolerance= 1.0%	1	\$0.01	 1206 11 mm ²
14.	U1	Texas Instruments	TPS61089RNR	Switcher	1	\$1.80	 RNR0011A 10 mm ²









Operating Values

#	Name	Value	Category	Description
1.	Cin IRMS	831.786 mA	Current	Input capacitor RMS ripple current
2.	Cout IRMS	3.199 A	Current	Output capacitor RMS ripple current
3.	IC Ipk	7.789 A	Current	Peak switch current in IC
4.	Iin Avg	6.348 A	Current	Average input current
5.	L Ipp	2.881 A	Current	Peak-to-peak inductor ripple current
6.	BOM Count	16	General	Total Design BOM count
7.	FootPrint	196.0 mm ²	General	Total Foot Print Area of BOM components
8.	Frequency	493.583 kHz	General	Switching frequency
9.	Pout	36.0 W	General	Total output power
10.	Total BOM	\$3.36	General	Total BOM Cost
11.	ICThetaJA Effective	39.2 degC/W	Op_Point	Effective IC Junction-to-Ambient Thermal Resistance
12.	Low Freq Gain	90.594 dB	Op_Point	Gain at 10Hz
13.	Vout Actual	11.997 V	Op_Point	Vout Actual calculated based on selected voltage divider resistors
14.	Cross Freq	28.947 kHz	Op_point	Bode plot crossover frequency
15.	Duty Cycle	52.148 %	Op_point	Duty cycle
16.	Efficiency	94.514 %	Op_point	Steady state efficiency
17.	Gain Marg	-9.739 dB	Op_point	Bode Plot Gain Margin
18.	IC Tj	91.057 degC	Op_point	IC junction temperature
19.	IOUT_OP	3.0 A	Op_point	Iout operating point
20.	Phase Marg	55.468 deg	Op_point	Bode Plot Phase Margin
21.	VIN_OP	6.0 V	Op_point	Vin operating point
22.	Vout p-p	186.613 mV	Op_point	Peak-to-peak output ripple voltage
23.	Cin Pd	1.051 mW	Power	Input capacitor power dissipation
24.	Cout Pd	10.233 mW	Power	Output capacitor power dissipation
25.	Coutx Pd	0.0 W	Power	Output capacitor_x power loss
26.	IC Pd	1.558 W	Power	IC power dissipation
27.	L Pd	520.606 mW	Power	Inductor power dissipation
28.	Total Pd	2.09 W	Power	Total Power Dissipation
29.	Vout Tolerance	4.462 %		Vout Tolerance based on IC Tolerance (no load) and voltage divider resistors if applicable

Design Inputs

#	Name	Value	Description
1.	Iout	3.0	Maximum Output Current
2.	VinMax	9.0	Maximum input voltage
3.	VinMin	6.0	Minimum input voltage
4.	Vout	12.0	Output Voltage
5.	base_pn	TPS61089	Base Product Number
6.	source	DC	Input Source Type
7.	Ta	30.0	Ambient temperature

Design Assistance

1. **TPS61089** Product Folder : <http://www.ti.com/product/TPS61089> : contains the data sheet and other resources.

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