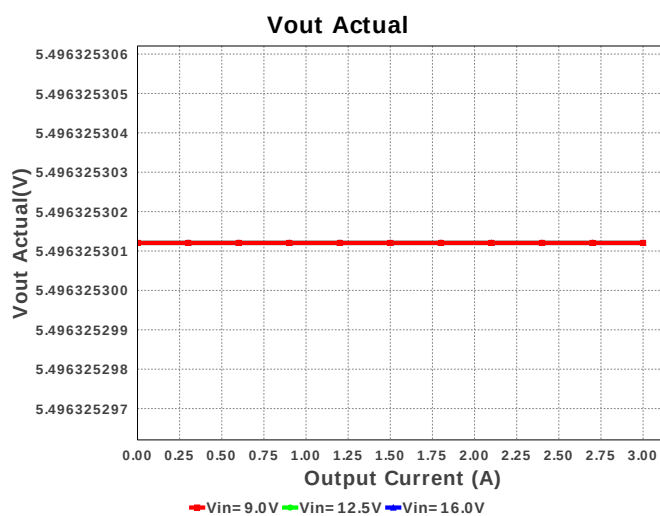
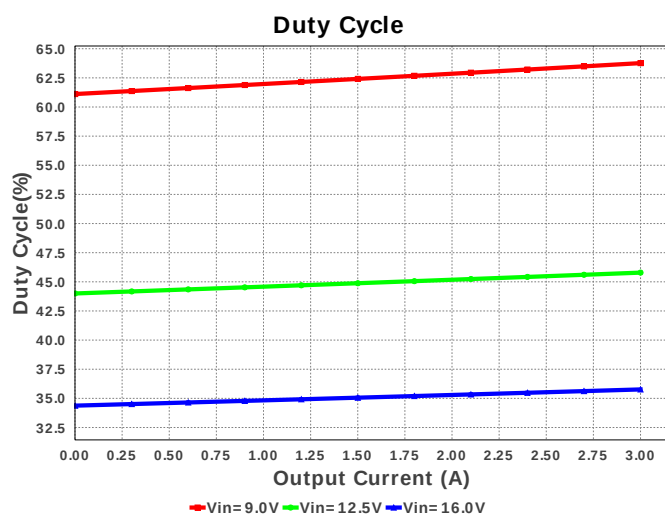
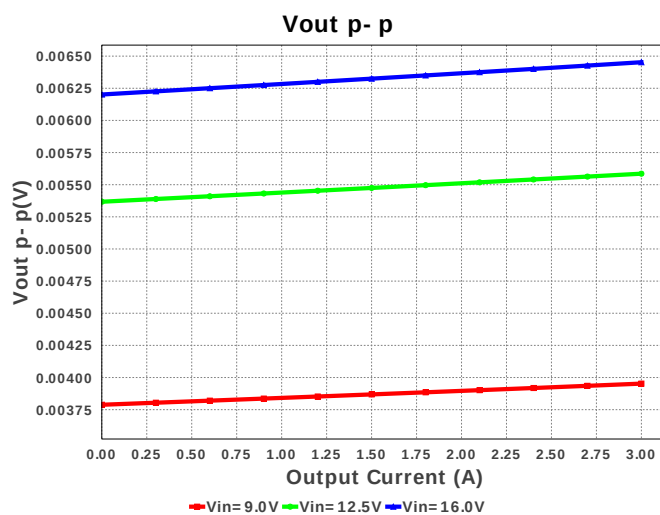
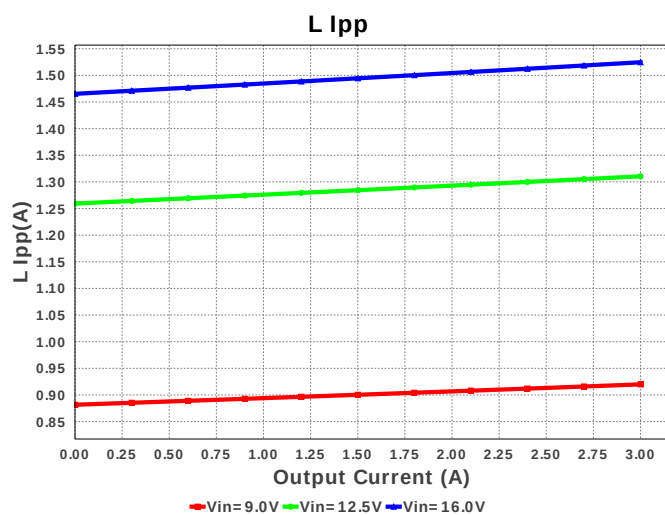
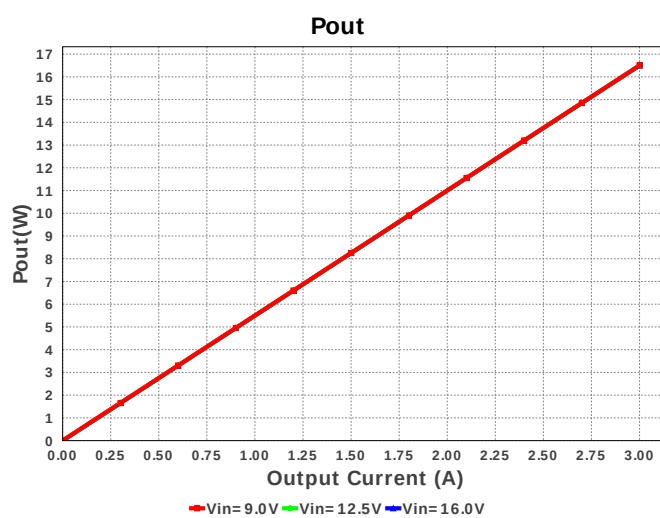
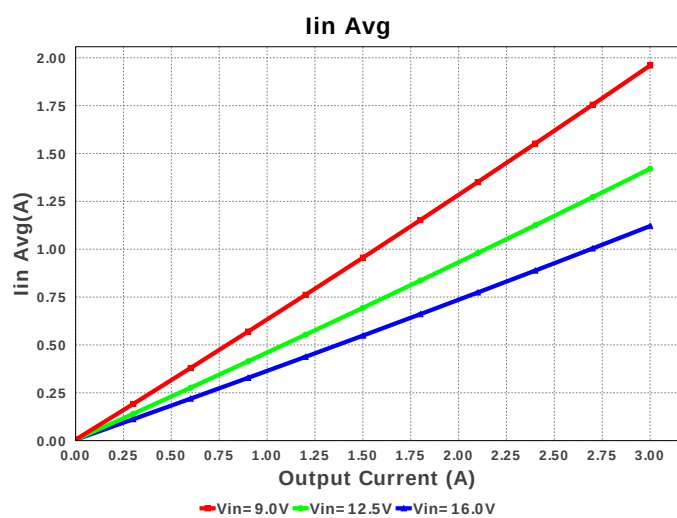
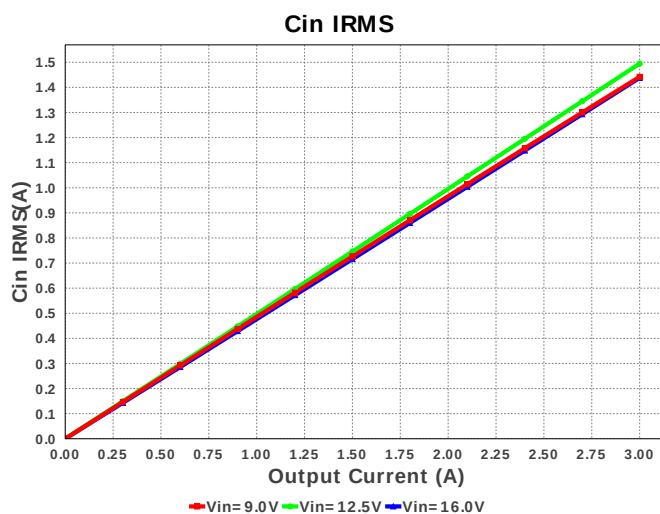
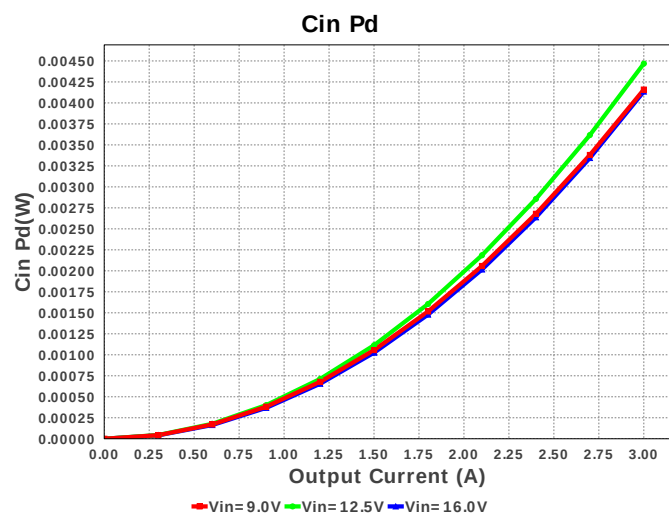
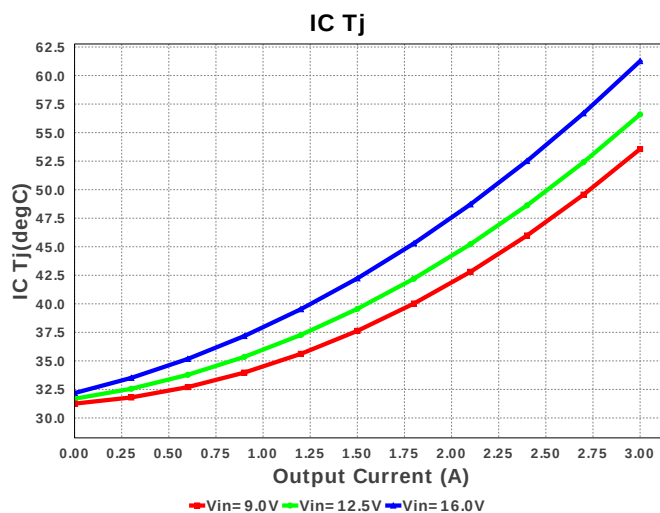
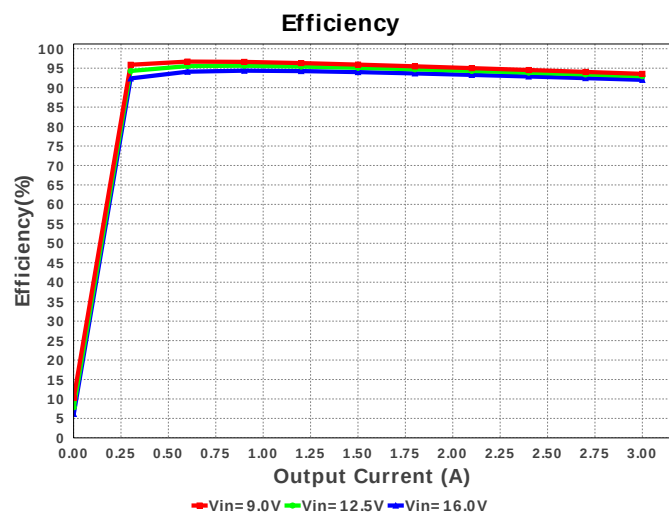


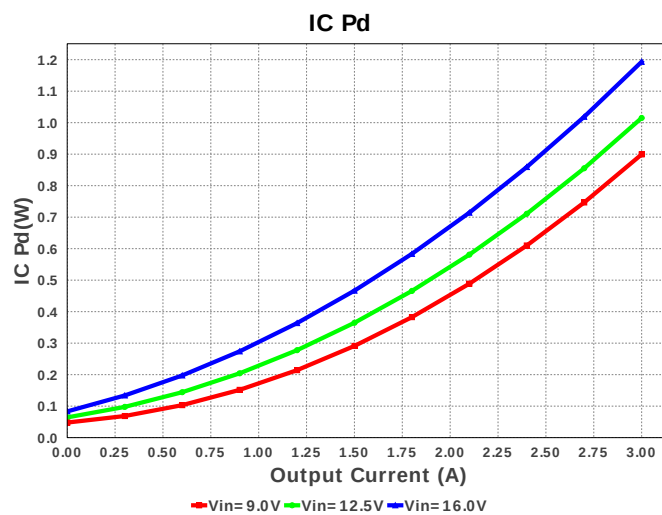
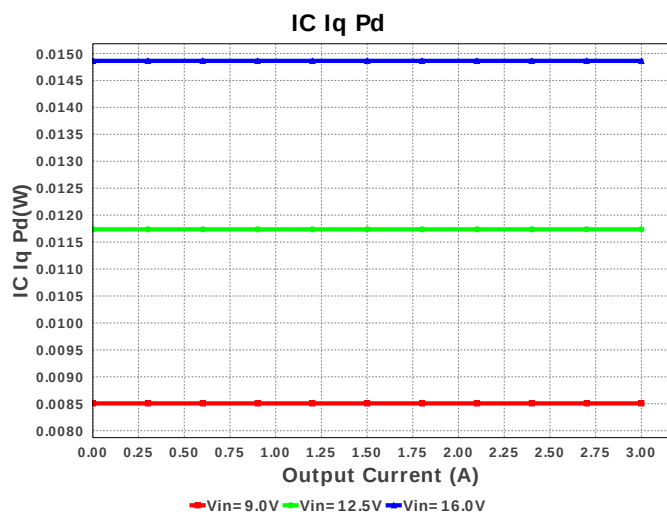
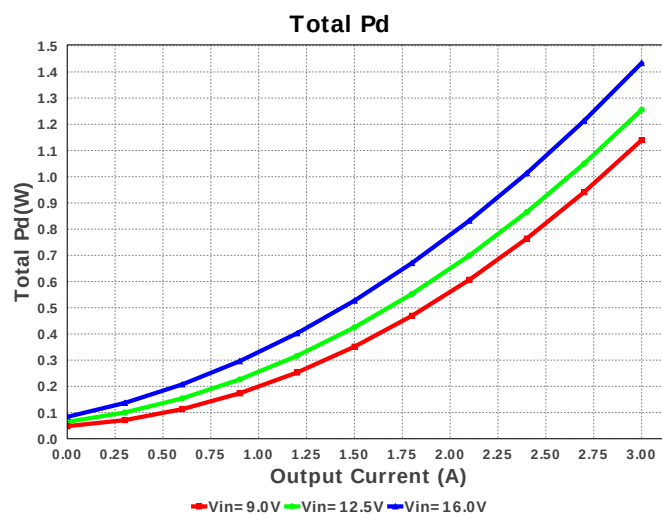
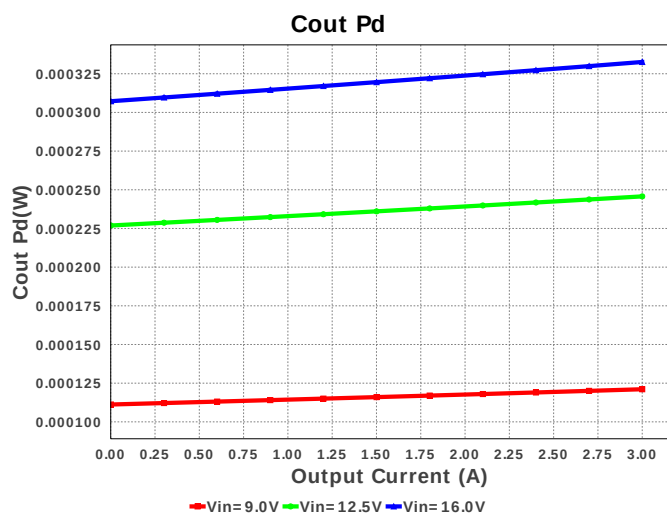
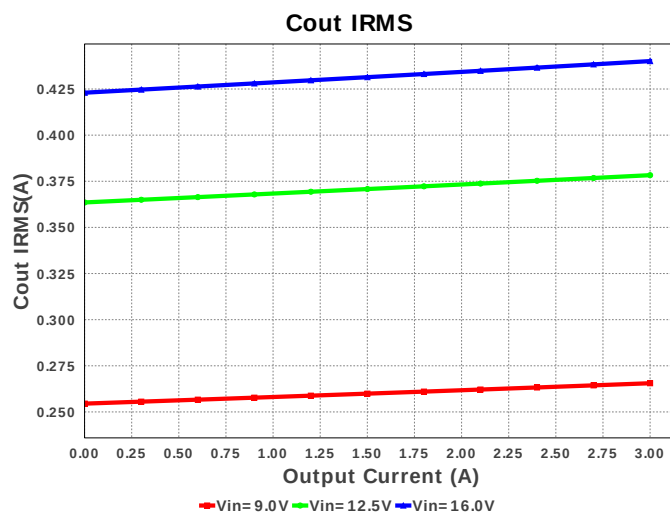
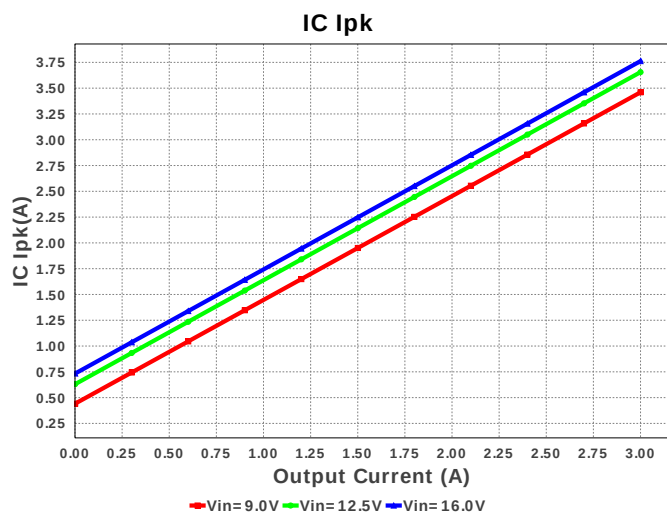


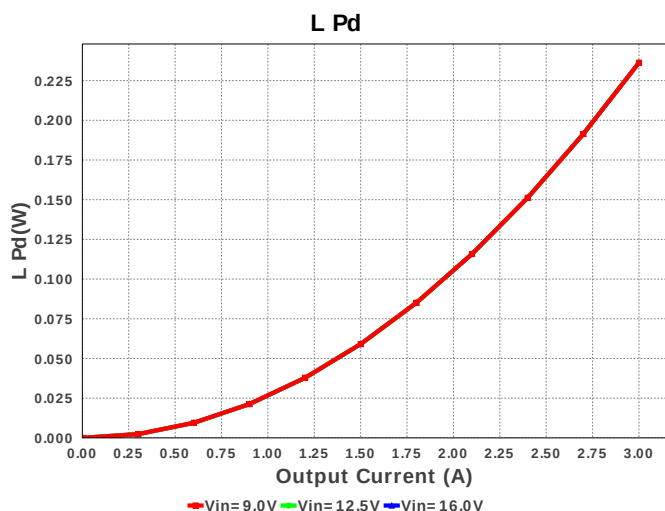
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Topology = Buck
Created = 8/2/16 7:14:43 PM
BOM Cost = \$1.59
BOM Count = 11
Total Pd = 1.43W

#	Name	Manufacturer	Part Number	Properties	Qty	Price	Footprint
11.	U1	Texas Instruments	TPS54427DDAR	Switcher	1	\$0.80	 R-PDSO-G8 55 mm ²









Operating Values

#	Name	Value	Category	Description
1.	Cin IRMS	1.438 A	Current	Input capacitor RMS ripple current
2.	Cout IRMS	440.126 mA	Current	Output capacitor RMS ripple current
3.	IC Ipk	3.762 A	Current	Peak switch current in IC
4.	Iin Avg	1.121 A	Current	Average input current
5.	L Ipp	1.525 A	Current	Peak-to-peak inductor ripple current
6.	BOM Count	11	General	Total Design BOM count
7.	FootPrint	210.0 mm ²	General	Total Foot Print Area of BOM components
8.	Frequency	746.424 kHz	General	Switching frequency
9.	Pout	16.5 W	General	Total output power
10.	Total BOM	\$1.59	General	Total BOM Cost
11.	ICThetaJA Effective	26.2 degC/W	Op_Point	Effective IC Junction-to-Ambient Thermal Resistance
12.	Vout Actual	5.496 V	Op_Point	Vout Actual calculated based on selected voltage divider resistors
13.	Vout OP	5.5 V	Op_Point	Operational Output Voltage
14.	Duty Cycle	35.767 %	Op_point	Duty cycle
15.	Efficiency	92.004 %	Op_point	Steady state efficiency
16.	IC Tj	61.265 degC	Op_point	IC junction temperature
17.	IOUT_OP	3.0 A	Op_point	Iout operating point
18.	VIN_OP	16.0 V	Op_point	Vin operating point
19.	Vout p-p	6.453 mV	Op_point	Peak-to-peak output ripple voltage
20.	Cin Pd	4.135 mW	Power	Input capacitor power dissipation
21.	Cout Pd	332.601 μ W	Power	Output capacitor power dissipation
22.	IC Iq Pd	14.863 mW	Power	IC Iq Pd
23.	IC Pd	1.193 W	Power	IC power dissipation
24.	L Pd	236.25 mW	Power	Inductor power dissipation
25.	Total Pd	1.434 W	Power	Total Power Dissipation
26.	Vout Tolerance	3.601 %		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	16.0	Maximum input voltage
3.	VinMin	9.0	Minimum input voltage
4.	Vout	5.5	Output Voltage
5.	base_pn	TPS54427	Base Product Number
6.	source	DC	Input Source Type
7.	Ta	30.0	Ambient temperature

Design Assistance

1. **TPS54427** Product Folder : <http://www.ti.com/product/TPS54427> : contains the data sheet and other resources.

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