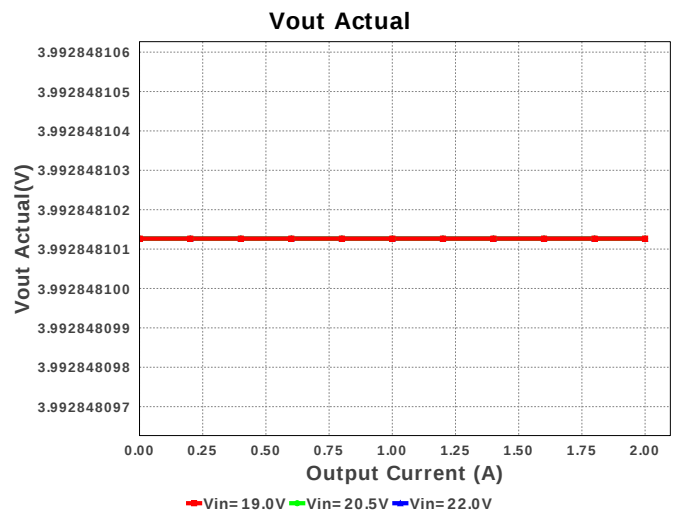
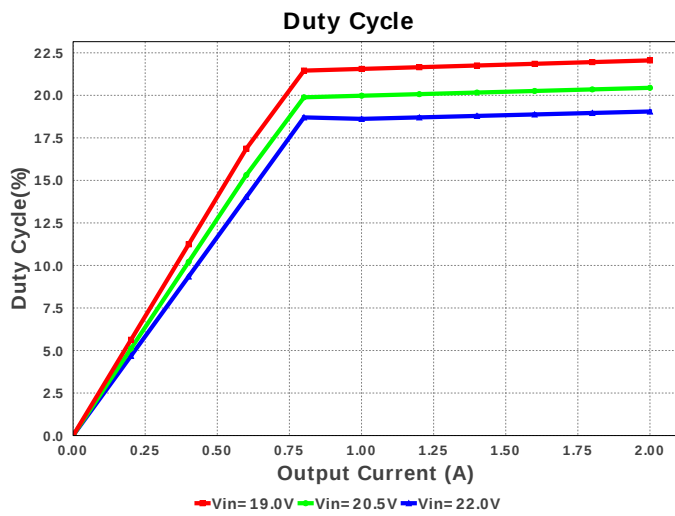
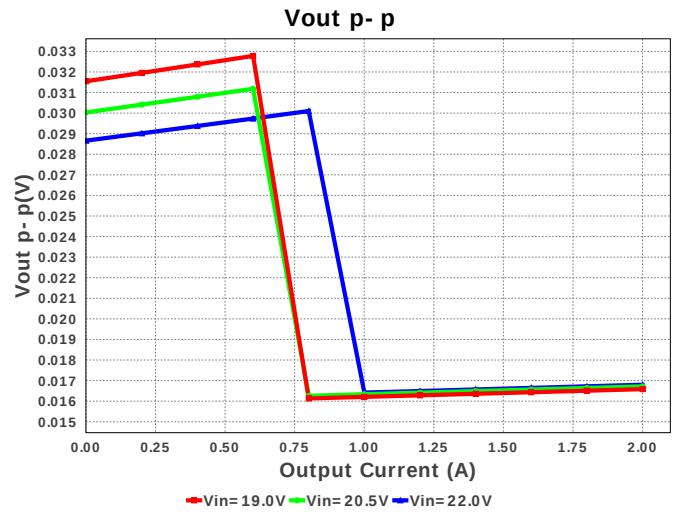
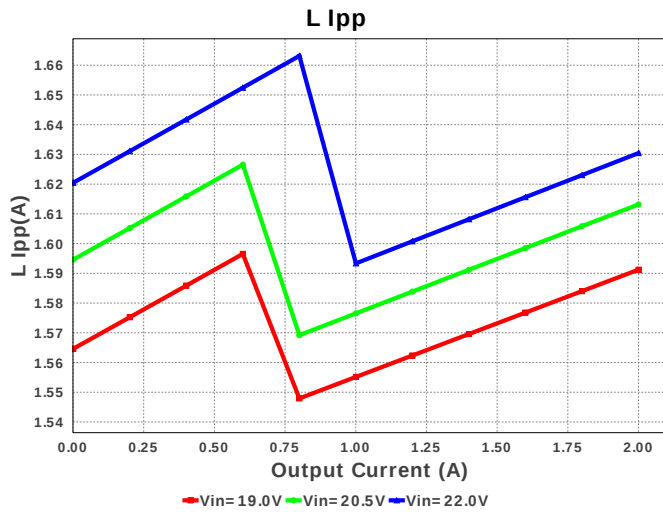
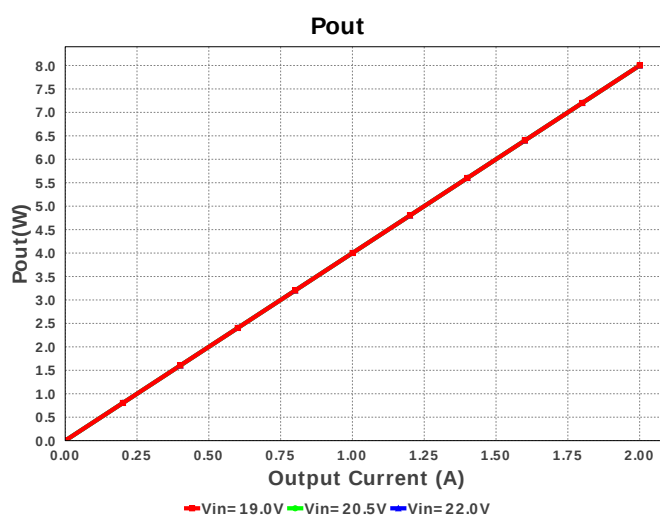
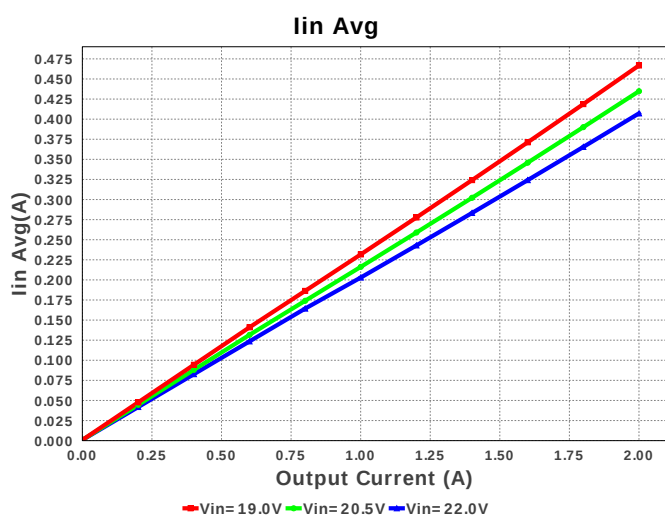
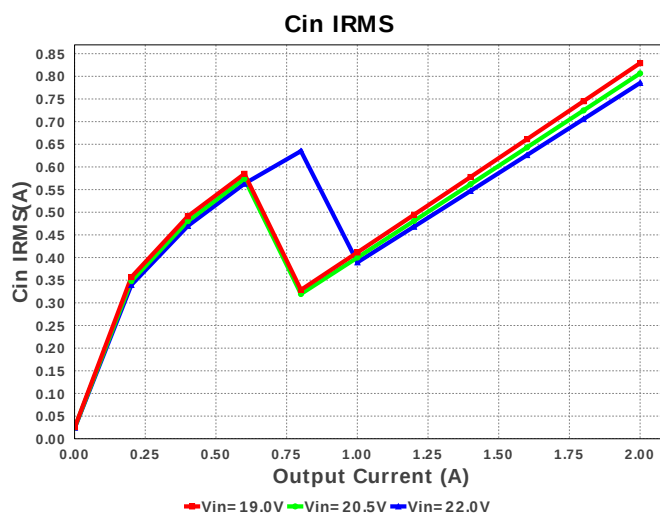
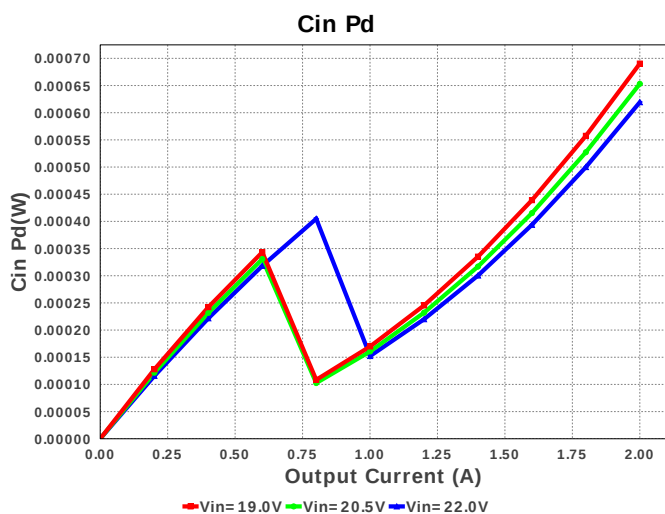
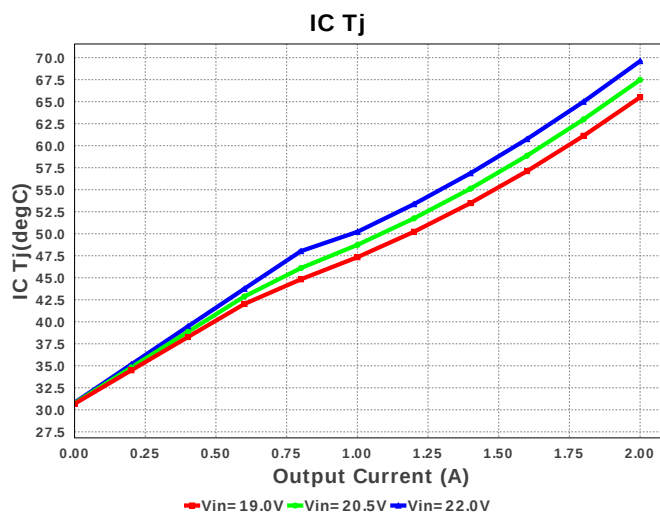
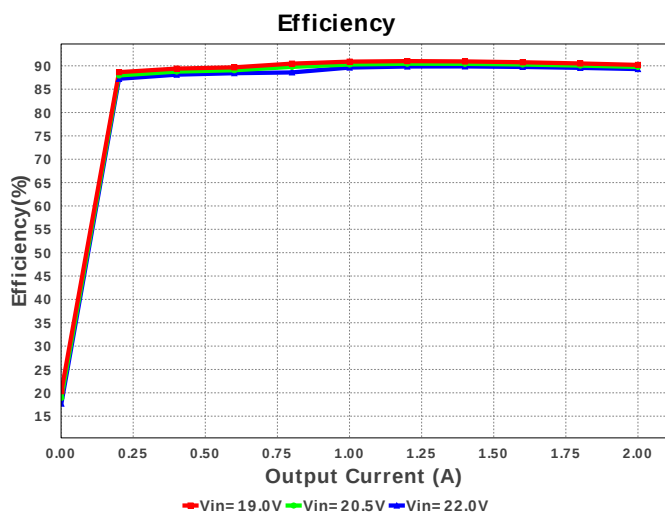


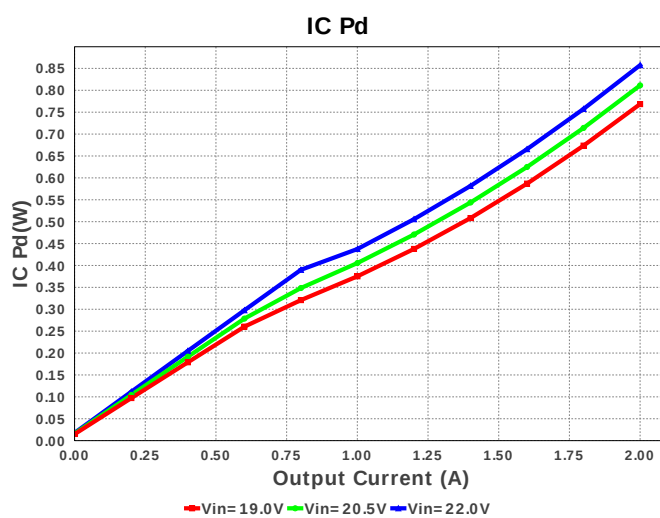
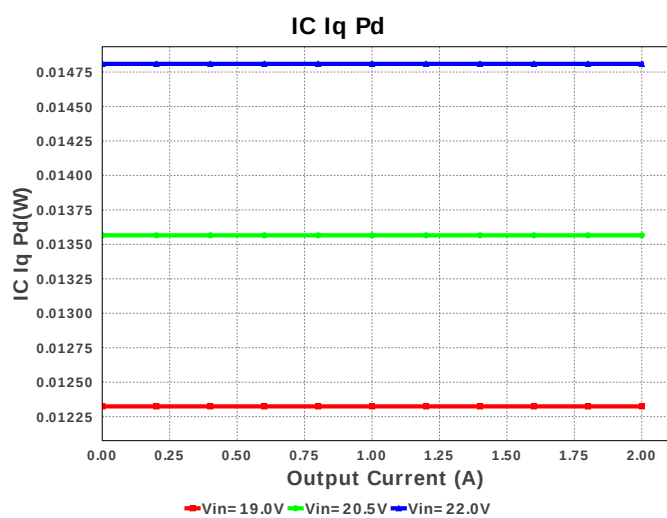
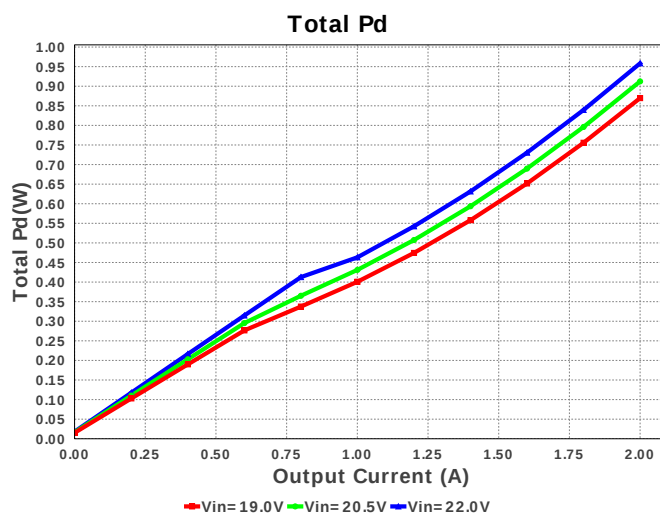
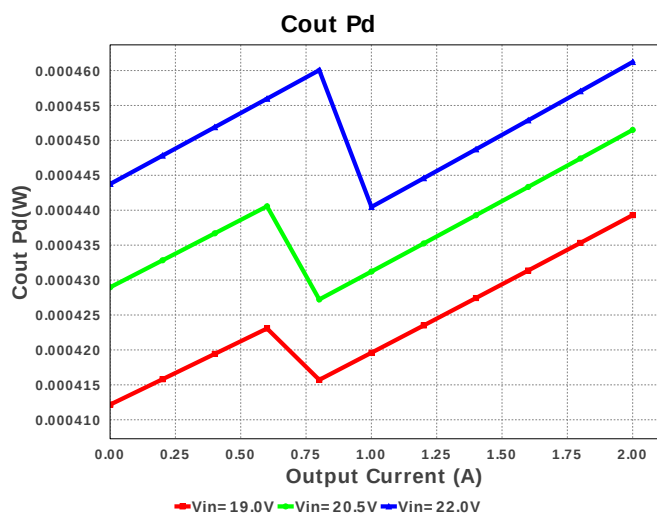
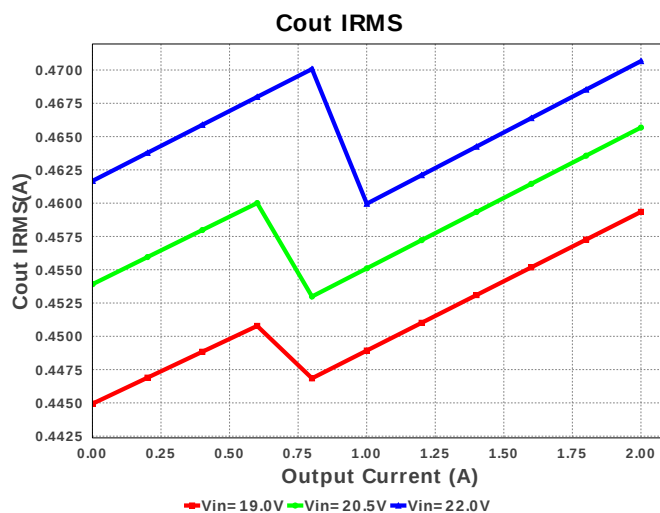
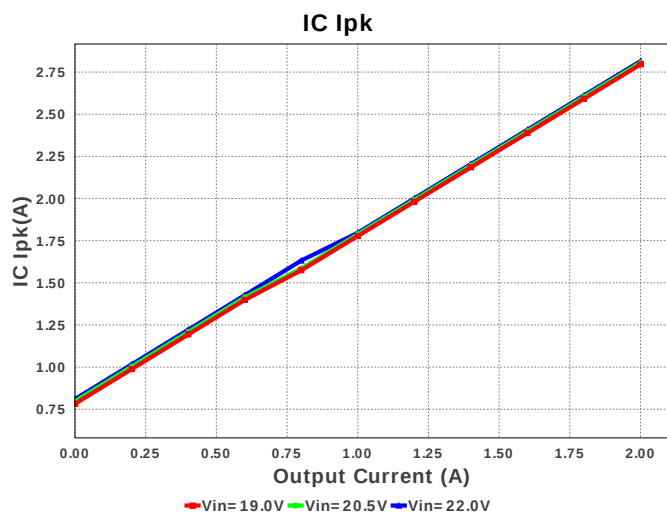


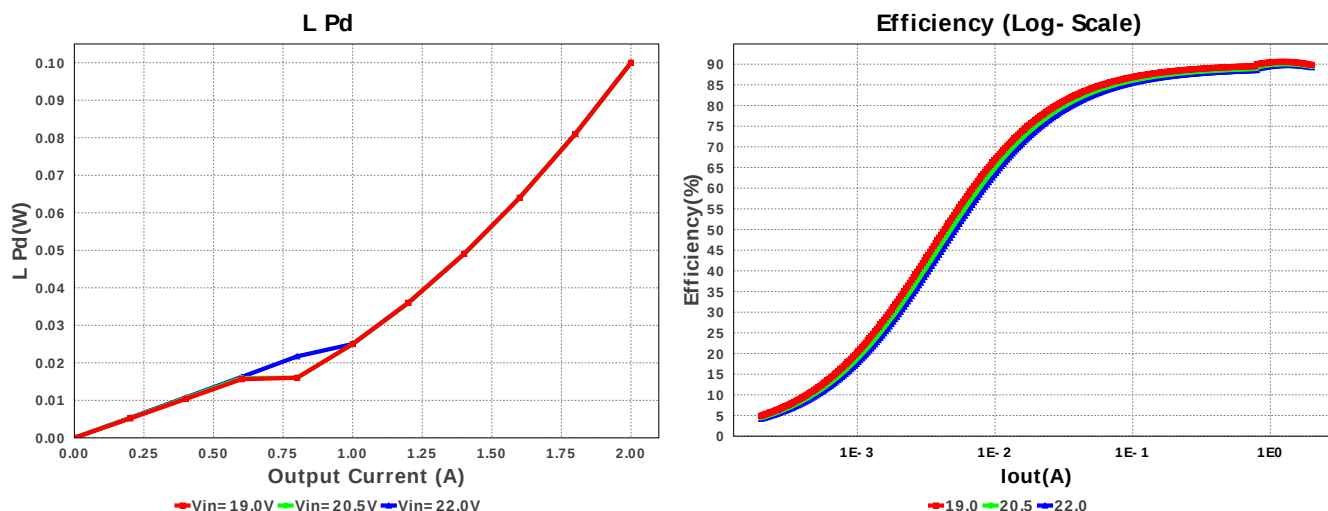
Device = TPS54239EDDAR
Topology = Buck
Created = 9/9/16 1:50:42 AM
BOM Cost = \$2.03
BOM Count = 12
Total Pd = 0.96W

#	Name	Manufacturer	Part Number	Properties	Qty	Price	Footprint
11. U1		Texas Instruments	TPS54239EDDAR	Switcher	1	\$0.75	 DDA0008E 57 mm ²









Operating Values

#	Name	Value	Category	Description
1.	Cin IRMS	785.391 mA	Current	Input capacitor RMS ripple current
2.	Cout IRMS	470.67 mA	Current	Output capacitor RMS ripple current
3.	IC Ipk	2.815 A	Current	Peak switch current in IC
4.	Iin Avg	407.2 mA	Current	Average input current
5.	L Ipp	1.63 A	Current	Peak-to-peak inductor ripple current
6.	BOM Count	12	General	Total Design BOM count
7.	FootPrint	209.0 mm ²	General	Total Foot Print Area of BOM components
8.	Frequency	637.304 kHz	General	Switching frequency
9.	Mode	CCM	General	Conduction Mode
10.	Pout	8.0 W	General	Total output power
11.	Total BOM	\$2.03	General	Total BOM Cost
12.	Vout Actual	3.993 V	Op_Point	Vout Actual calculated based on selected voltage divider resistors
13.	Vout OP	4.0 V	Op_Point	Operational Output Voltage
14.	Duty Cycle	19.05 %	Op_point	Duty cycle
15.	Efficiency	89.301 %	Op_point	Steady state efficiency
16.	IC Tj	69.609 degC	Op_point	IC junction temperature
17.	ICThetaJA	46.2 degC/W	Op_point	IC junction-to-ambient thermal resistance
18.	IOUT_OP	2.0 A	Op_point	Iout operating point
19.	VIN_OP	22.0 V	Op_point	Vin operating point
20.	Vout p-p	16.799 mV	Op_point	Peak-to-peak output ripple voltage
21.	Cin Pd	619.306 μW	Power	Input capacitor power dissipation
22.	Cout Pd	461.225 μW	Power	Output capacitor power dissipation
23.	IC Iq Pd	14.809 mW	Power	IC Iq Pd
24.	IC Pd	857.337 mW	Power	IC power dissipation
25.	L Pd	100.0 mW	Power	Inductor power dissipation
26.	Total Pd	958.459 mW	Power	Total Power Dissipation
27.	Vout Tolerance	3.493 %		Vout Tolerance based on IC Tolerance (no load) and voltage divider resistors if applicable

Design Inputs

#	Name	Value	Description
1.	Iout	2.0	Maximum Output Current
2.	VinMax	22.0	Maximum input voltage
3.	VinMin	19.0	Minimum input voltage
4.	Vout	4.0	Output Voltage
5.	base_pn	TPS54239E	Base Product Number
6.	source	DC	Input Source Type
7.	Ta	30.0	Ambient temperature

Design Assistance

1. **TPS54239E** Product Folder : <http://www.ti.com/product/TPS54239E> : contains the data sheet and other resources.

Texas Instruments' WEBENCH simulation tools attempt to recreate the performance of a substantially equivalent physical implementation of the design. Simulations are created using Texas Instruments' published specifications as well as the published specifications of other device manufacturers. While Texas Instruments does update this information periodically, this information may not be current at the time the simulation is built. Texas Instruments does not warrant the accuracy or completeness of the specifications or any information contained therein. Texas Instruments does not warrant that any designs or recommended parts will meet the specifications you entered, will be suitable for your application or fit for any particular purpose, or will operate as shown in the simulation in a physical implementation. Texas Instruments does not warrant that the designs are production worthy.

You should completely validate and test your design implementation to confirm the system functionality for your application prior to production.

Use of Texas Instruments' WEBENCH simulation tools is subject to [Texas Instruments' Site Terms and Conditions of Use](#). Prototype boards based on WEBENCH created designs are provided AS IS without warranty of any kind for evaluation and testing purposes and are subject to the terms of the [Evaluation License Agreement](#).