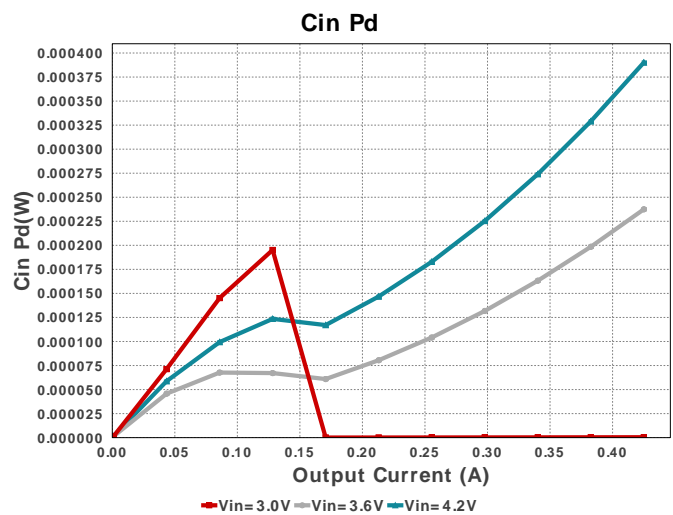
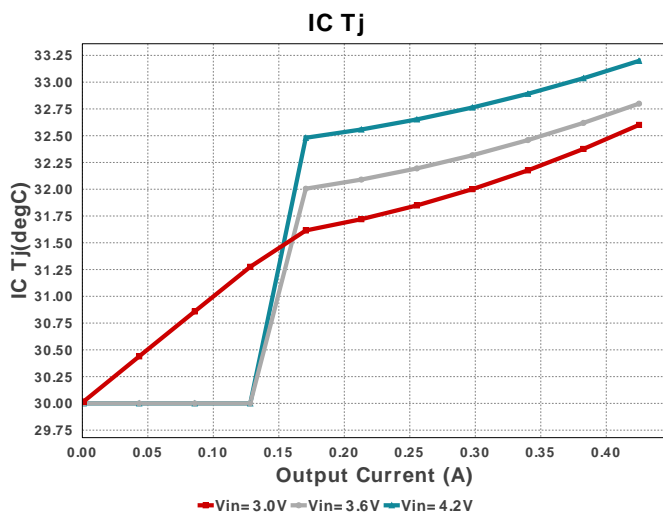
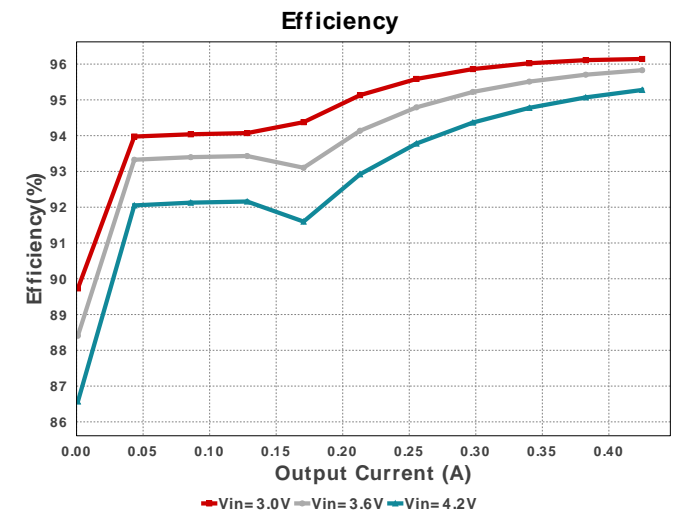
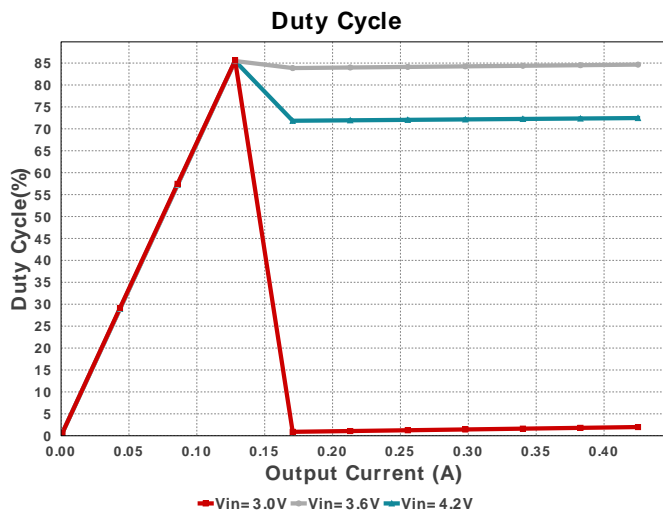
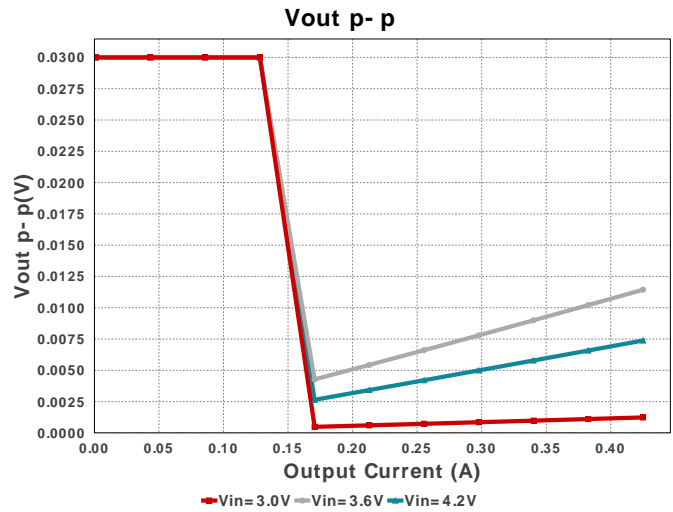
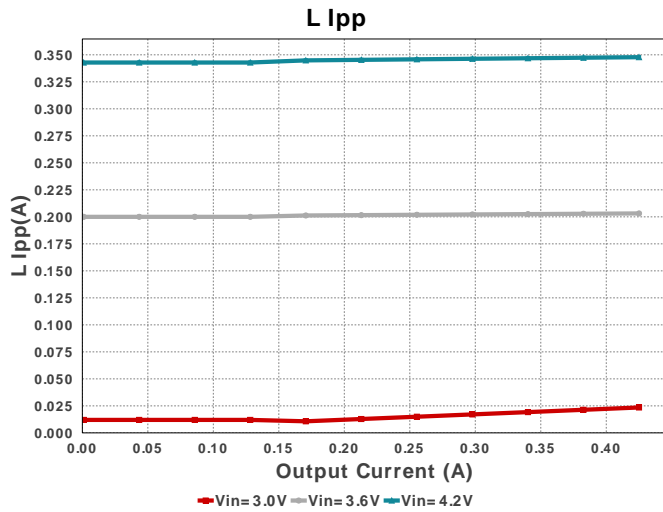
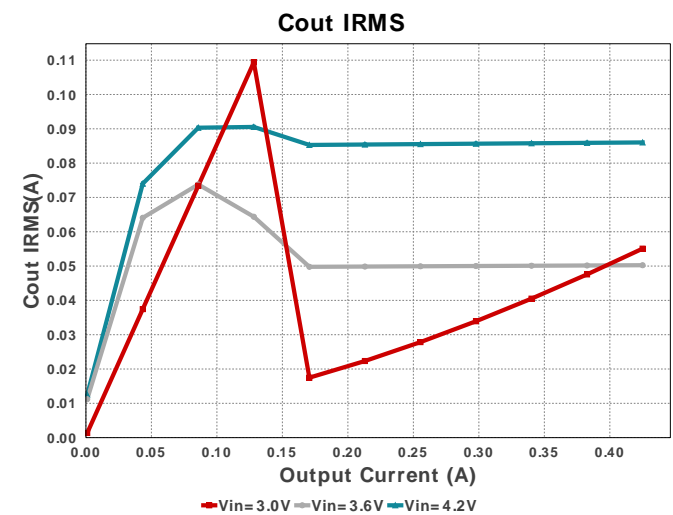
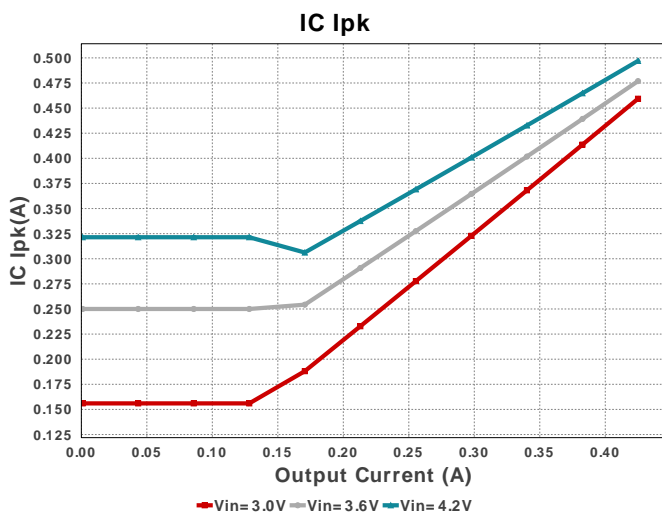
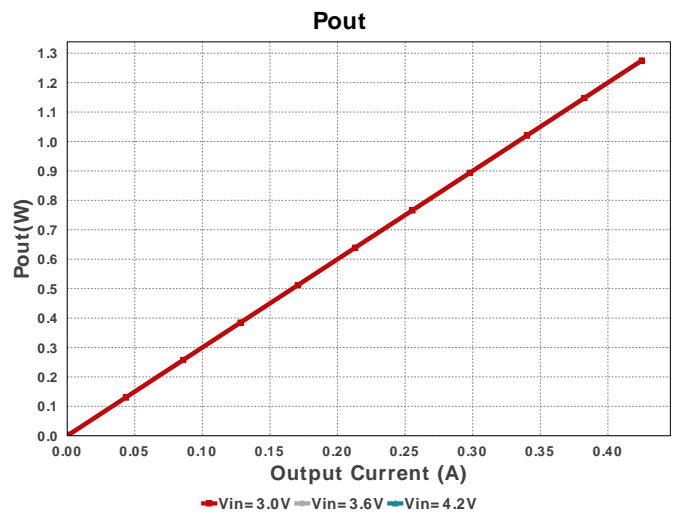
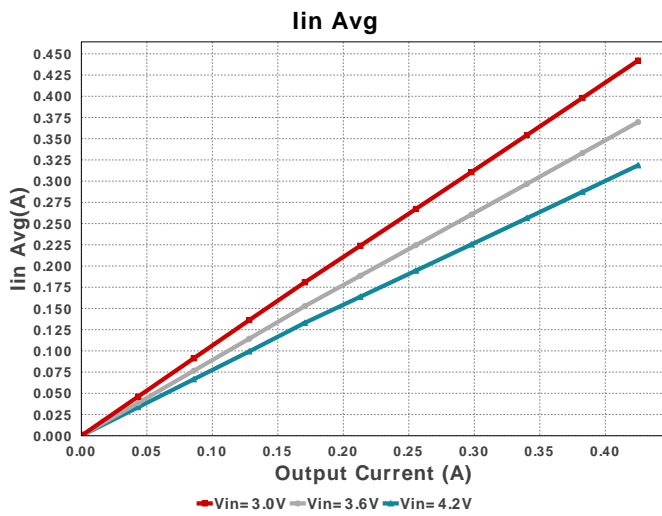
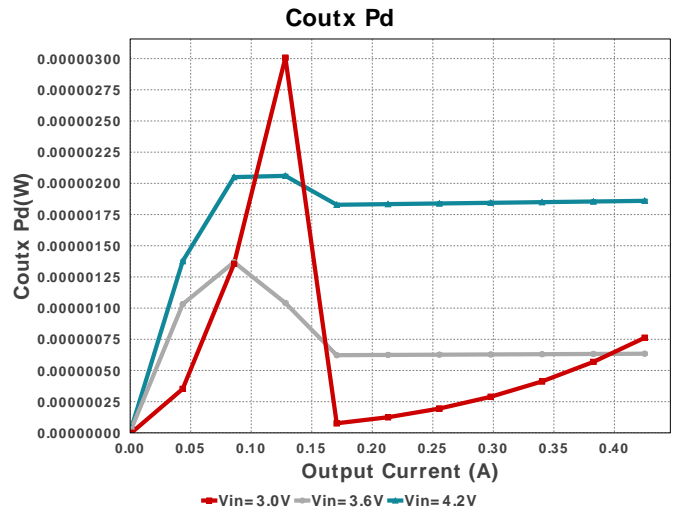
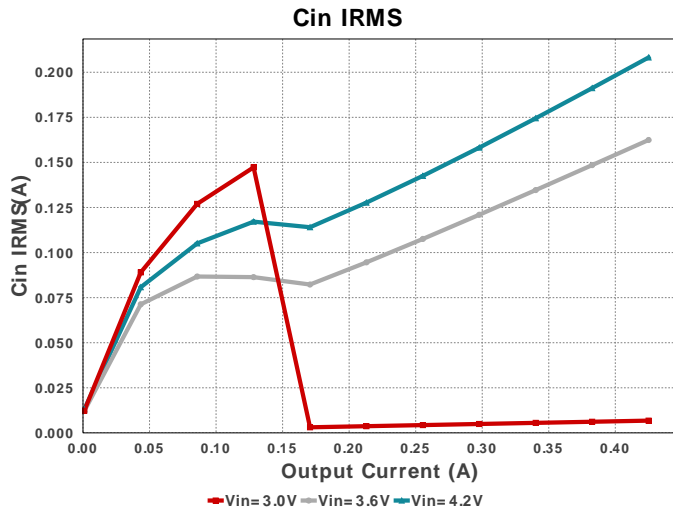


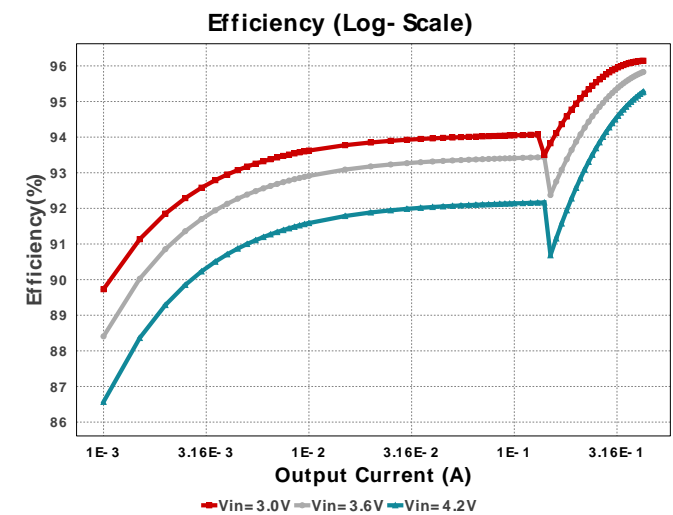
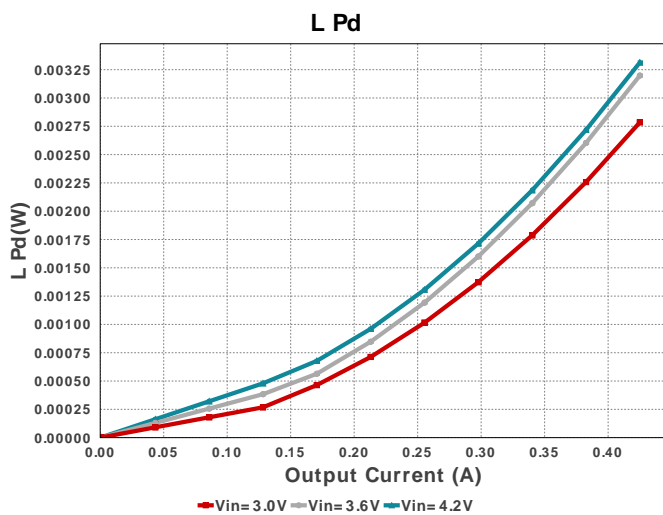
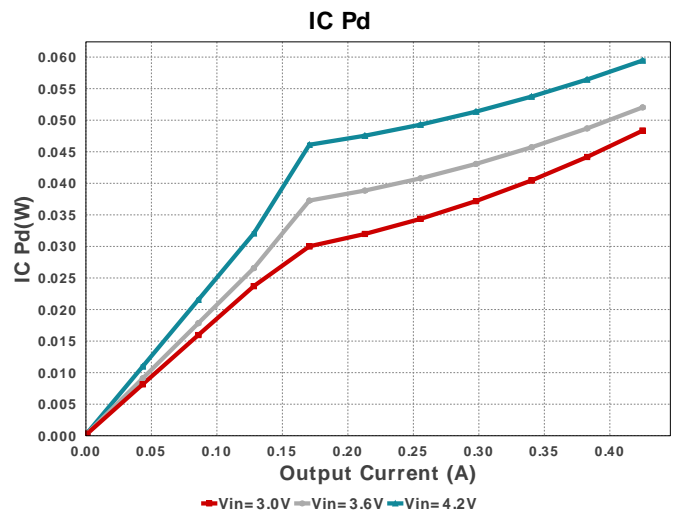
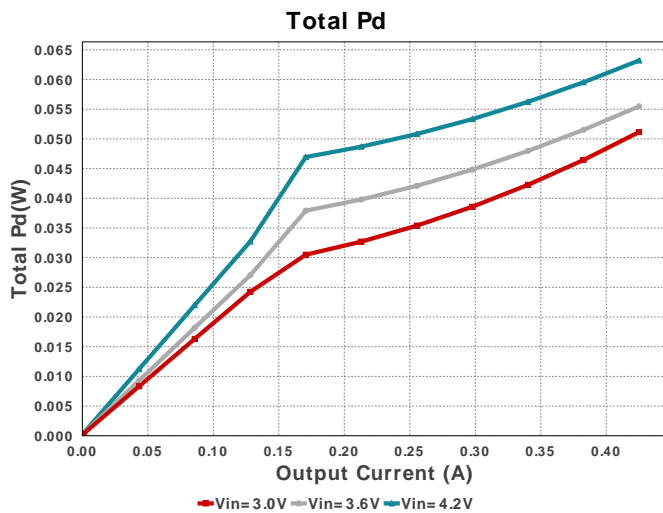
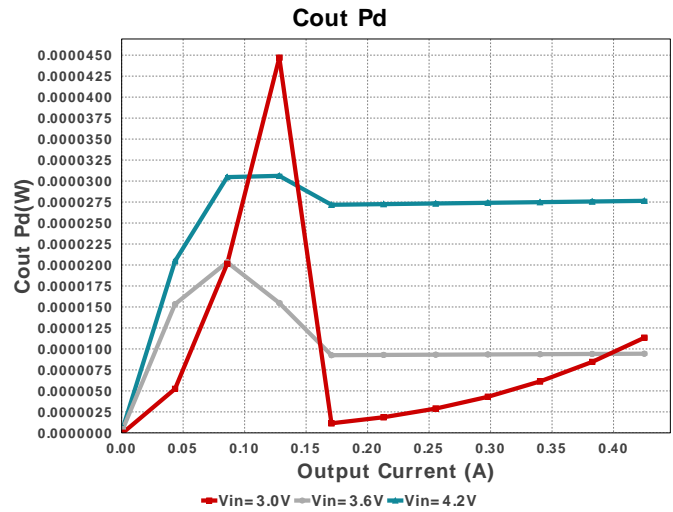
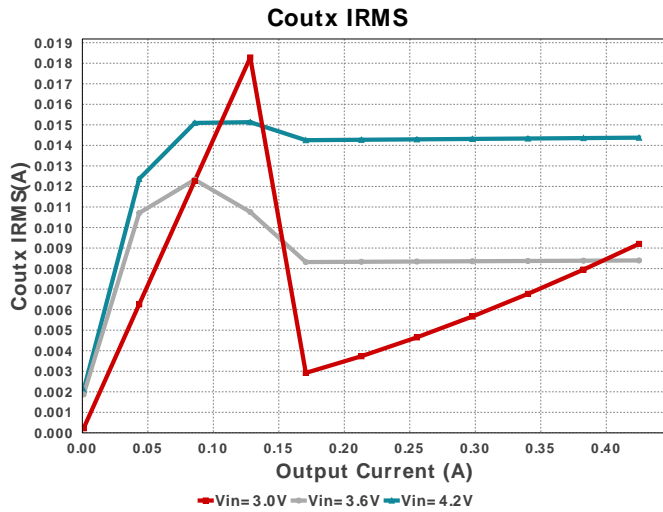


Device = TPS63024YFFR
Topology = Buck_Boost
Created = 2021-07-26 17:41:18.508
BOM Cost = \$1.42
BOM Count = 7
Total Pd = 0.05W

WEBENCH® Design Report TPS63024YFFR : TPS63024YFFR 3V-4.2V to 3.00V @ 0.425A July 26, 2021 17:48:50 GMT-07:00







Operating Values

#	Name	Value	Category	Description
1.	Cin IRMS	6.789 mA	Capacitor	Input capacitor RMS ripple current
2.	Cin Pd	414.8 nW	Capacitor	Input capacitor power dissipation
3.	Cout IRMS	55.075 mA	Capacitor	Output capacitor RMS ripple current
4.	Cout Pd	0.0 W	Capacitor	Output capacitor power dissipation
5.	Coutx IRMS	9.203 mA	Capacitor	Output capacitor_x RMS ripple current
6.	Coutx Pd	0.0 W	Capacitor	Output capacitor_x power loss
7.	IC Ipk	459.321 mA	IC	Peak switch current in IC
8.	IC Pd	48.343 mW	IC	IC power dissipation
9.	IC Tj	32.601 degC	IC	IC junction temperature
10.	ICThetaJA	53.8 degC/W	IC	IC junction-to-ambient thermal resistance
11.	Iin Avg	442.05 mA	IC	Average input current

#	Name	Value	Category	Description
12.	L lpp	23.517 mA	Inductor	Peak-to-peak inductor ripple current
13.	L Pd	2.785 mW	Inductor	Inductor power dissipation
14.	Cin Pd	414.8 nW	Power	Input capacitor power dissipation
15.	Cout Pd	0.0 W	Power	Output capacitor power dissipation
16.	Coutx Pd	0.0 W	Power	Output capacitor_x power loss
17.	IC Pd	48.343 mW	Power	IC power dissipation
18.	L Pd	2.785 mW	Power	Inductor power dissipation
19.	Total Pd	51.136 mW	Power	Total Power Dissipation
20.	BOM Count	7	System Information	Total Design BOM count
21.	Duty Cycle	1.986 %	System Information	Duty cycle
22.	Efficiency	96.144 %	System Information	Steady state efficiency
23.	FootPrint	102.0 mm ²	System Information	Total Foot Print Area of BOM components
24.	Frequency	2.5 MHz	System Information	Switching frequency
25.	Iout	425.0 mA	System Information	Iout operating point
26.	Mode	BOOST PWM CCM	System Information	PWM/PFM Mode
27.	Pout	1.275 W	System Information	Total output power
28.	Total BOM	\$1.42	System Information	Total BOM Cost
29.	Vin	3.0 V	System Information	Vin operating point
30.	Vout Actual	2.993 V	System Information	Vout Actual calculated based on selected voltage divider resistors
31.	Vout Tolerance	1.48 %	System Information	Vout Tolerance based on IC Tolerance (no load) and voltage divider resistors if applicable
32.	Vout p-p	105.758 μ V	System Information	Peak-to-peak output ripple voltage

Design Inputs

#	Name	Value	Description
1.	Iout	425.0 m	Maximum Output Current
2.	VinMax	4.2	Maximum input voltage
3.	VinMin	3.0	Minimum input voltage
4.	VinTyp	3.7	Typical input voltage
5.	Vout	3.0	Output Voltage
6.	acFrequency	60.0	AC Frequency
7.	base_pn	TPS63024	Base Product Number
8.	source	DC	Input Source Type
9.	Ta	30.0	Ambient temperature

Design Assistance

1. **TPS63024** Product Folder : <http://www.ti.com/product/TPS63024> : contains the data sheet and other resources.

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