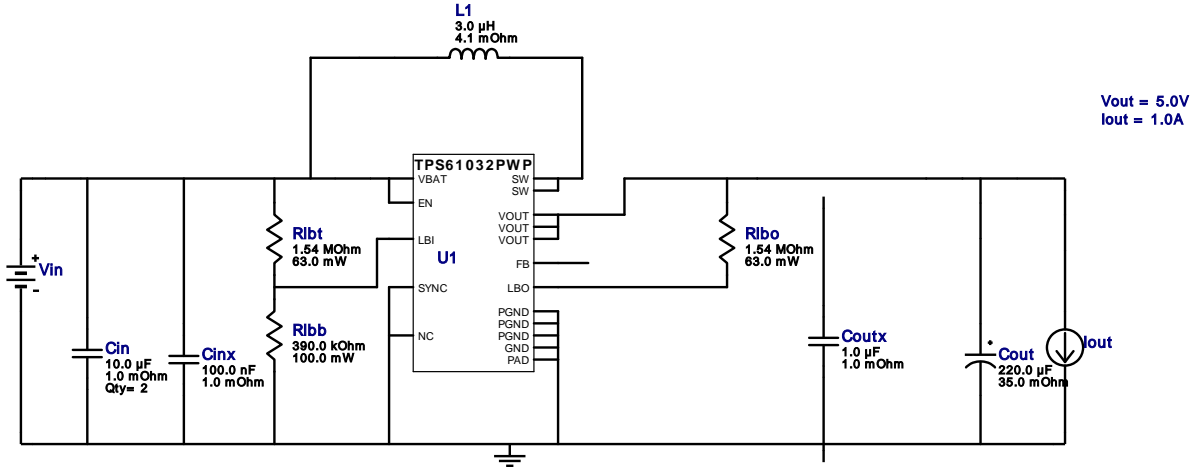


VinMin = 2.5V  
 VinMax = 4.2V  
 Vout = 5.0V  
 Iout = 1.0A

Device = TPS61032PWPR  
 Topology = Boost  
 Created = 2021-09-24 00:28:51.812  
 BOM Cost = \$2.67  
 BOM Count = 10  
 Total Pd = 0.38W


# WEBENCH® Design Report

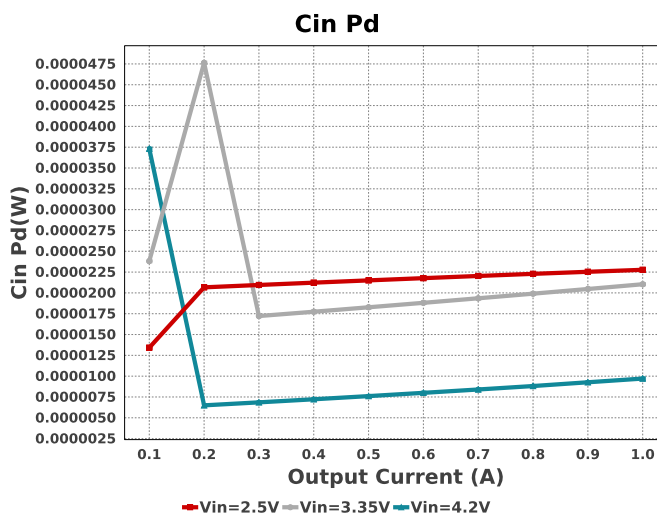
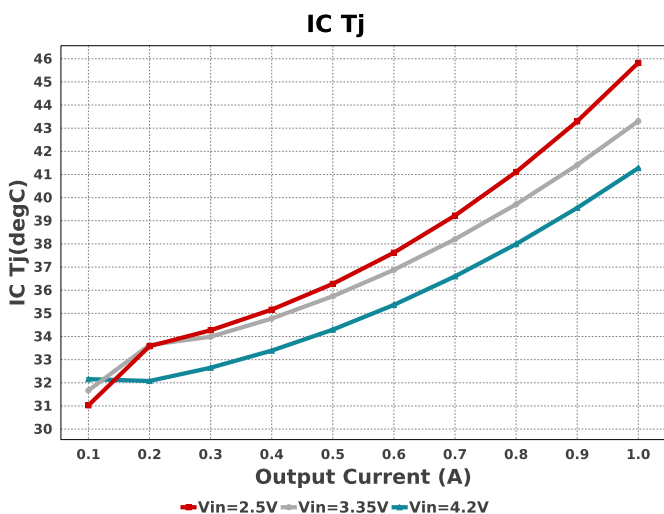
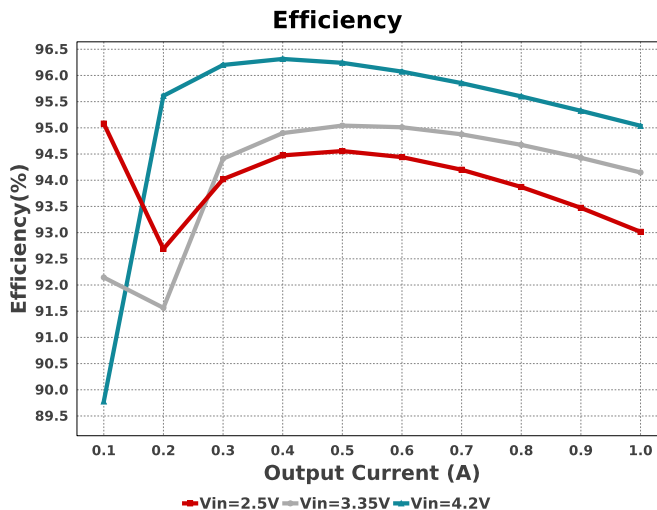
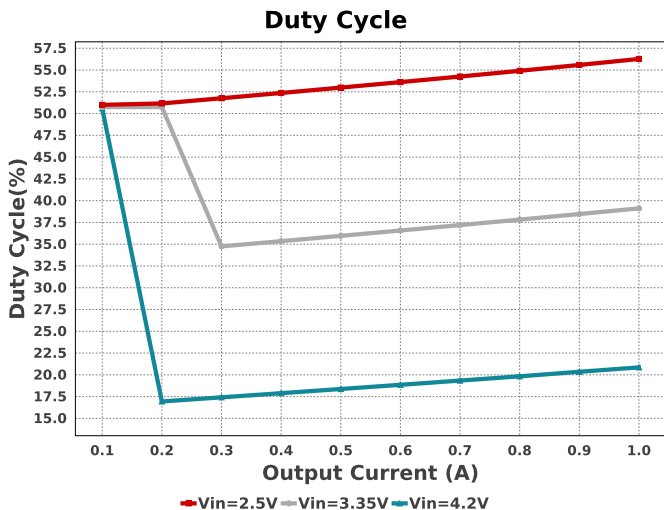
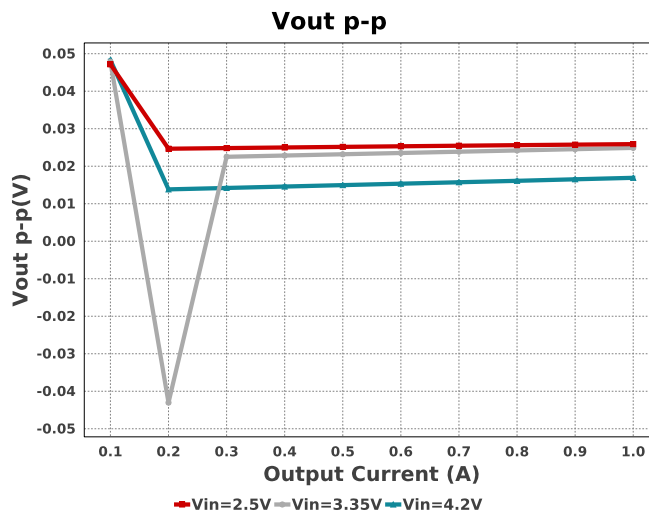
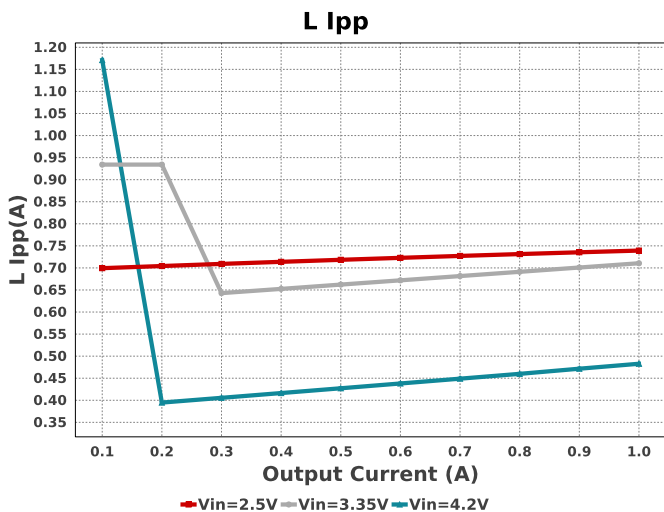
Design : 194 TPS61032PWPR  
 TPS61032PWPR 2.5V-4.2V to 5.00V @ 1A

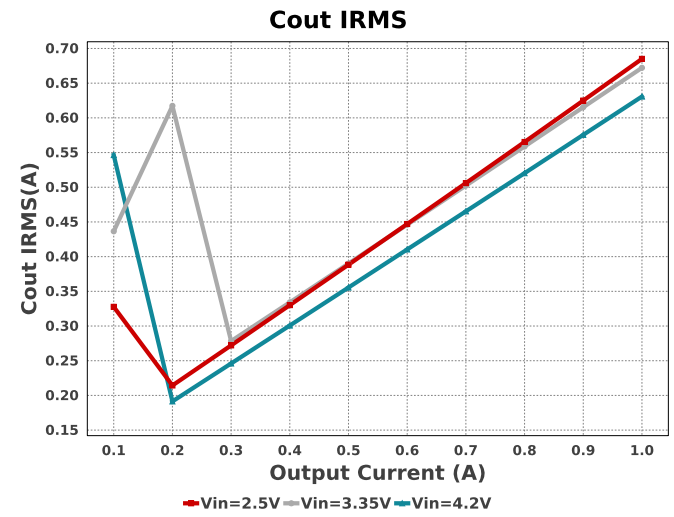
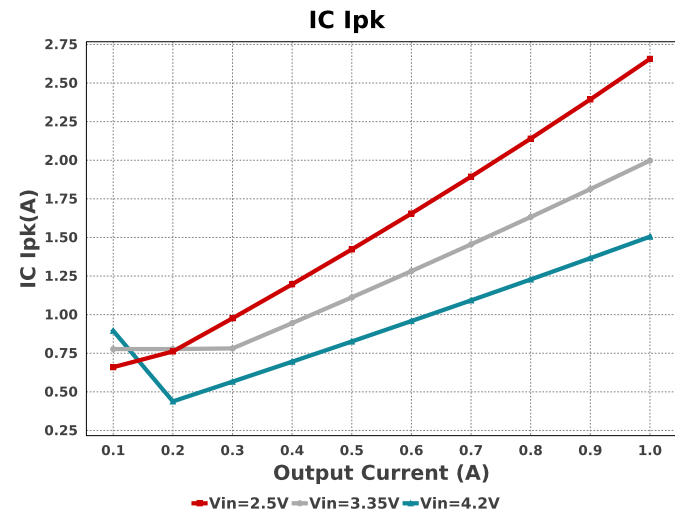
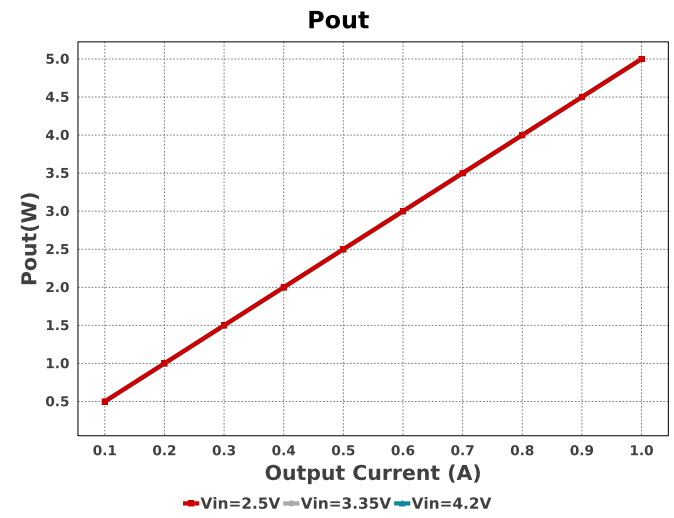
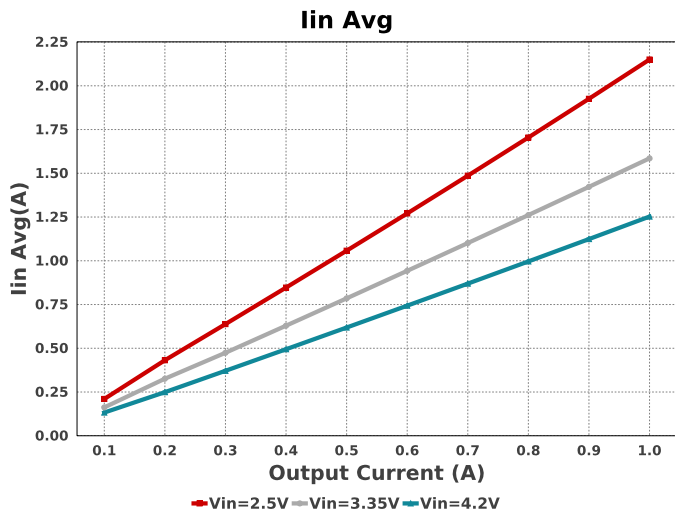
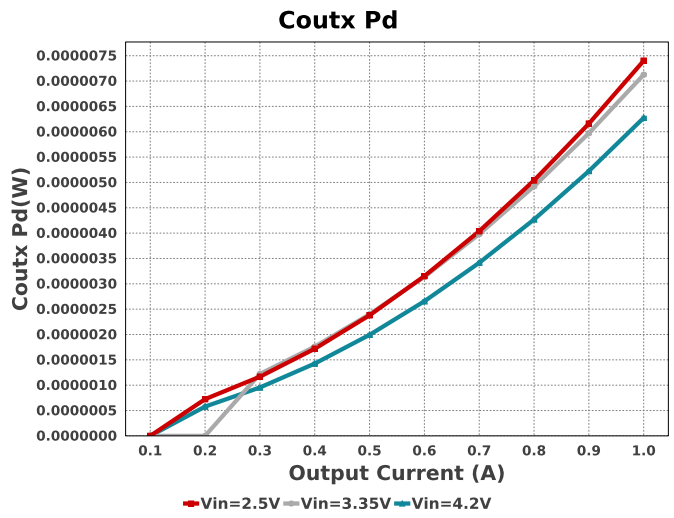
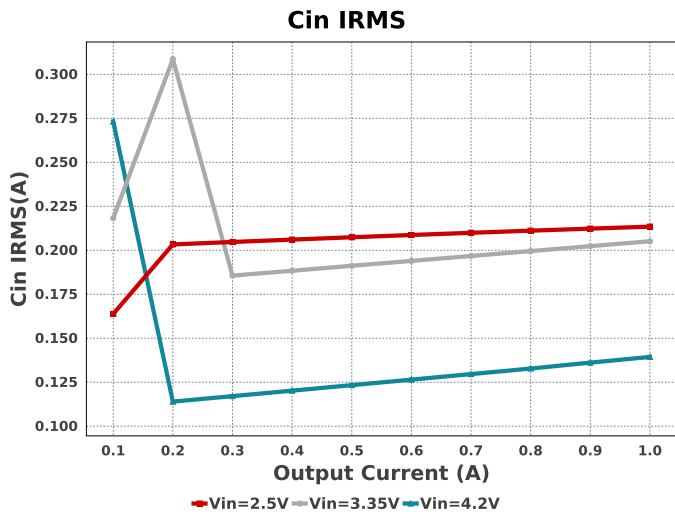


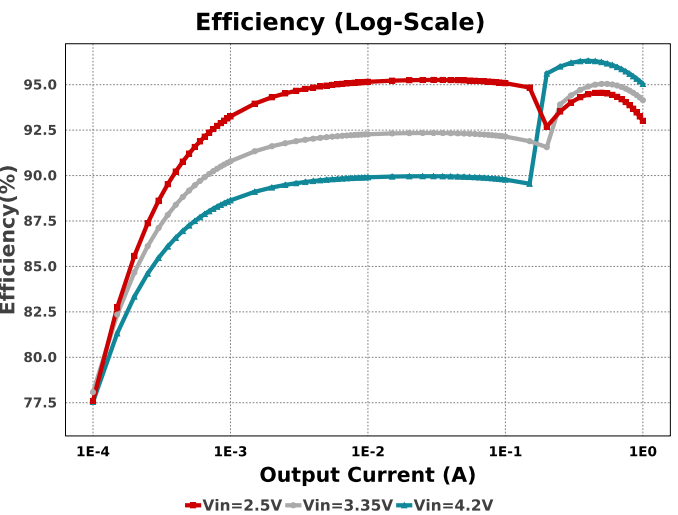
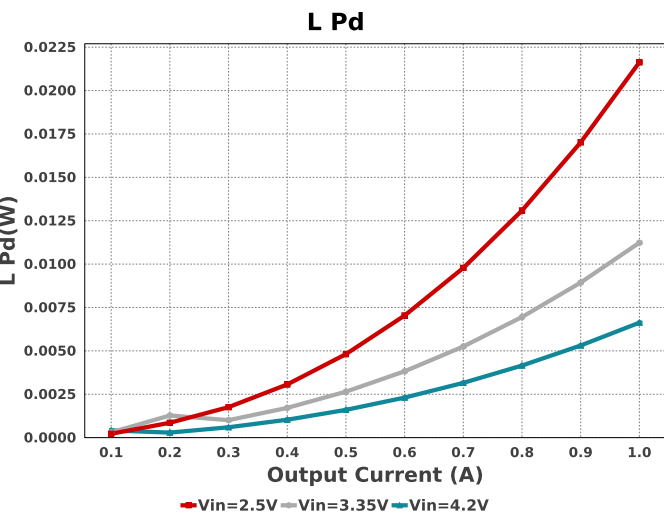
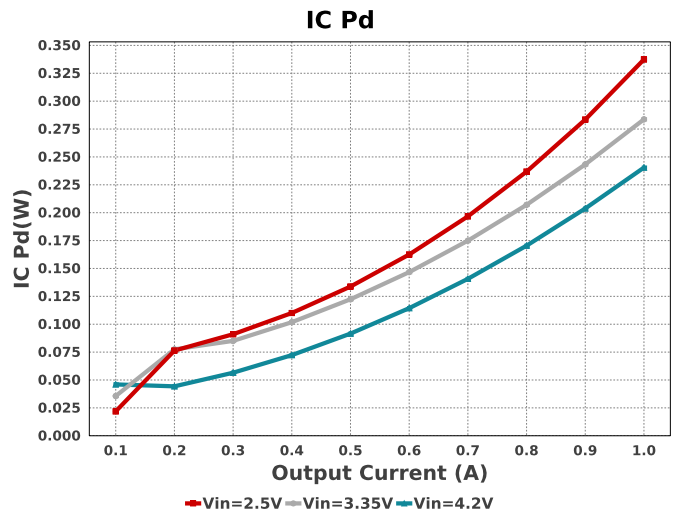
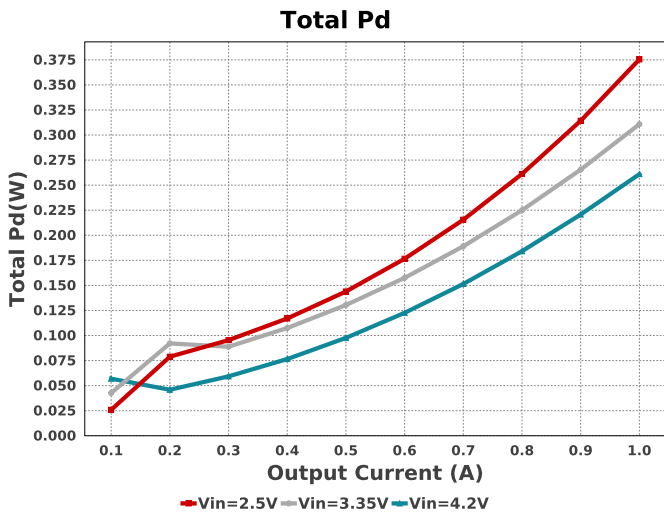
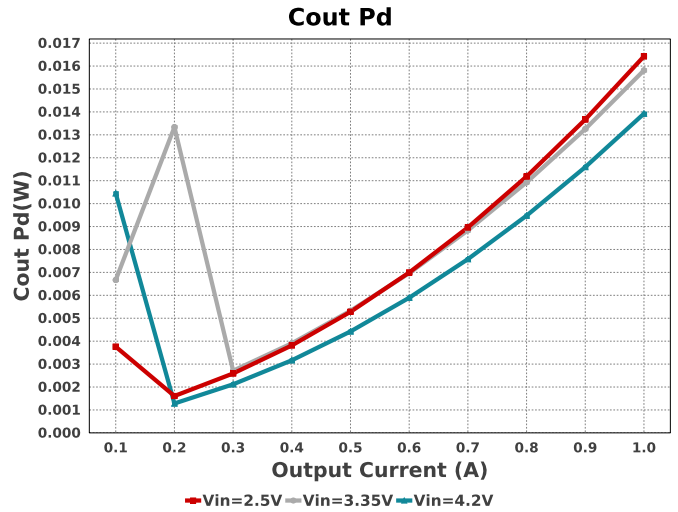
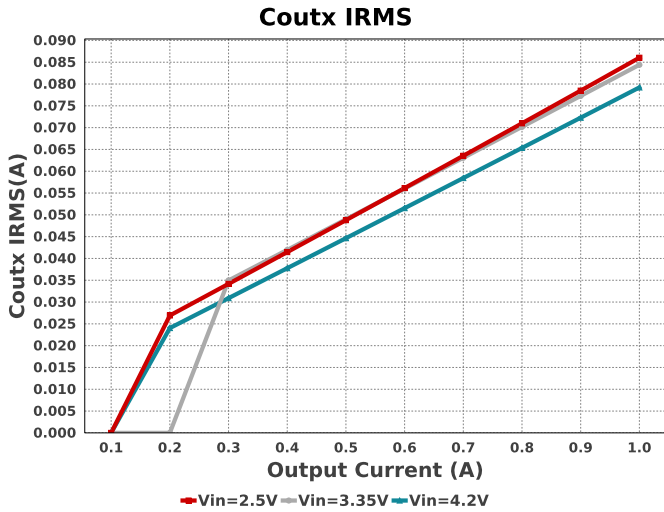
## Electrical BOM

Name	Manufacturer	Part Number	Properties	Qty	Price	Footprint
Cin	MuRata	GRJ155R60J106ME11D Series= X5R	Cap= 10.0 uF ESR= 1.0 mOhm VDC= 6.3 V IRMS= 0.0 A	2	\$0.02	0402_070 3 mm <sup>2</sup>
Cinx	MuRata	GRM155R71A104KA01D Series= X7R	Cap= 100.0 nF ESR= 1.0 mOhm VDC= 10.0 V IRMS= 0.0 A	1	\$0.01	0402 3 mm <sup>2</sup>
Cout	Panasonic	6TPE220MAZB Series= TPE	Cap= 220.0 uF ESR= 35.0 mOhm VDC= 6.3 V IRMS= 1.4 A	1	\$0.54	CAPSMT_6_B2S 17 mm <sup>2</sup>
Coutx	Kemet	C0603C105K8PACTU Series= X5R	Cap= 1.0 uF ESR= 1.0 mOhm VDC= 10.0 V IRMS= 0.0 A	1	\$0.01	0603 5 mm <sup>2</sup>
L1	Coilcraft	MLC1555-302MLB	L= 3.0 µH 4.1 mOhm	1	\$0.93	MLC1555 240 mm <sup>2</sup>
Rlbb	Yageo	RC0603FR-07390KL Series= ?	Res= 390.0 kOhm Power= 100.0 mW Tolerance= 1.0%	1	\$0.01	0603 5 mm <sup>2</sup>
Rlbo	Vishay-Dale	CRCW04021M54FKED Series= CRCW..e3	Res= 1.54 MOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	0402 3 mm <sup>2</sup>
Rlbt	Vishay-Dale	CRCW04021M54FKED Series= CRCW..e3	Res= 1.54 MOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	0402 3 mm <sup>2</sup>

Name	Manufacturer	Part Number	Properties	Qty	Price	Footprint
U1	Texas Instruments	TPS61032PWPR	Switcher	1	\$1.11	 PWP0016K_N 59 mm <sup>2</sup>







Operating Values

#	Name	Value	Category	Description
1.	Cin IRMS	213.417 mA	Capacitor	Input capacitor RMS ripple current
2.	Cin Pd	22.773 μW	Capacitor	Input capacitor power dissipation
3.	Cout IRMS	685.017 mA	Capacitor	Output capacitor RMS ripple current
4.	Cout Pd	16.424 mW	Capacitor	Output capacitor power dissipation
5.	Coutx IRMS	86.029 mA	Capacitor	Output capacitor_x RMS ripple current
6.	Coutx Pd	7.401 μW	Capacitor	Output capacitor_x power loss
7.	IC Ipk	2.657 A	IC	Peak switch current in IC
8.	IC Pd	337.39 mW	IC	IC power dissipation
9.	IC Tj	45.824 degC	IC	IC junction temperature
10.	ICThetaJA	46.9 degC/W	IC	IC junction-to-ambient thermal resistance
11.	Iin Avg	2.15 A	IC	Average input current

#	Name	Value	Category	Description
12.	L Ipp	739.3 mA	Inductor	Peak-to-peak inductor ripple current
13.	L Pd	21.629 mW	Inductor	Inductor power dissipation
14.	Cin Pd	22.773 $\mu$ W	Power	Input capacitor power dissipation
15.	Cout Pd	16.424 mW	Power	Output capacitor power dissipation
16.	Coutx Pd	7.401 $\mu$ W	Power	Output capacitor_x power loss
17.	IC Pd	337.39 mW	Power	IC power dissipation
18.	L Pd	21.629 mW	Power	Inductor power dissipation
19.	Total Pd	375.479 mW	Power	Total Power Dissipation
20.	BOM Count	10	System Information	Total Design BOM count
21.	Duty Cycle	56.272 %	System Information	Duty cycle
22.	Efficiency	93.015 %	System Information	Steady state efficiency
23.	FootPrint	340.0 mm <sup>2</sup>	System Information	Total Foot Print Area of BOM components
24.	Frequency	600.0 kHz	System Information	Switching frequency
25.	Iout	1.0 A	System Information	Iout operating point
26.	Mode	PWM CCM	System Information	PWM/PFM Mode
27.	Pout	5.0 W	System Information	Total output power
28.	Total BOM	\$2.67	System Information	Total BOM Cost
29.	Vin	2.5 V	System Information	Vin operating point
30.	Vout Tolerance	400.0 m%	System Information	Vout Tolerance based on IC Tolerance (no load) and voltage divider resistors if applicable
31.	Vout p-p	25.891 mV	System Information	Peak-to-peak output ripple voltage

## Design Inputs

Name	Value	Description
Iout	1.0	Maximum Output Current
VinMax	4.2	Maximum input voltage
VinMin	2.5	Minimum input voltage
Vout	5.0	Output Voltage
base_pn	TPS61032	Base Product Number
source	DC	Input Source Type
Ta	30.0	Ambient temperature

## WEBENCH® Assembly

### Design Assistance

1. Master key : 86D6F88F8F0DED4F[v1]
2. **TPS61032** Product Folder : <http://www.ti.com/product/TPS61032> : contains the data sheet and other resources.

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