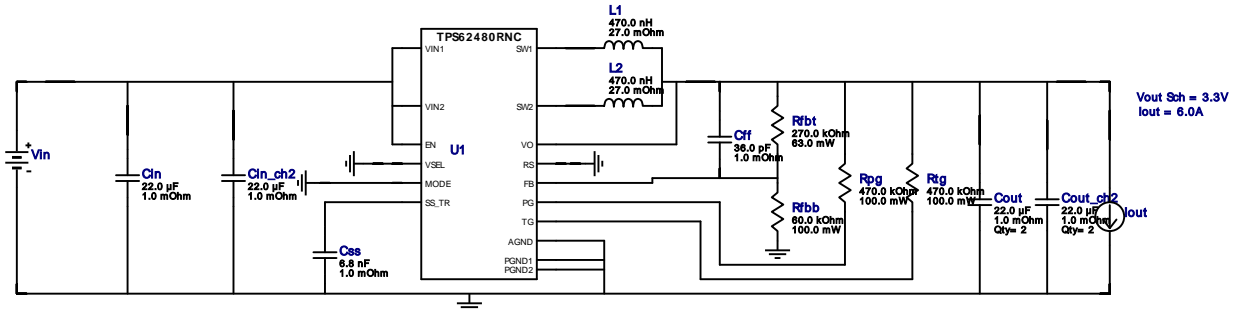


VinMin = 5.0V
 VinMax = 5.0V
 Vout = 3.3V
 Vout Sch = 3.3V
 Iout = 6.0A

Device = TPS62480RNCR
 Topology = Buck
 Created = 2019-02-26 16:51:31.409
 BOM Cost = \$2.05
 BOM Count = 15
 Total Pd = 1.96W

WEBENCH[®] Design Report

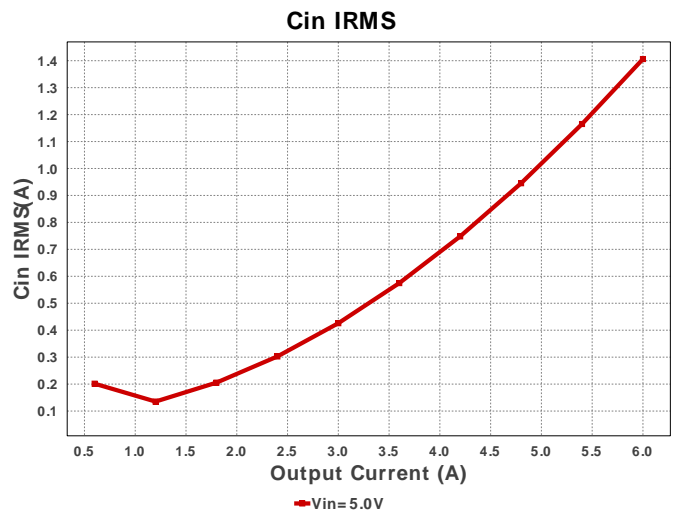
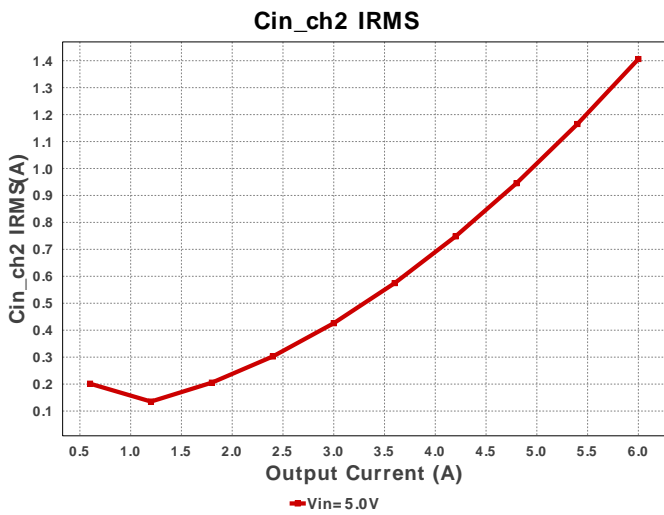
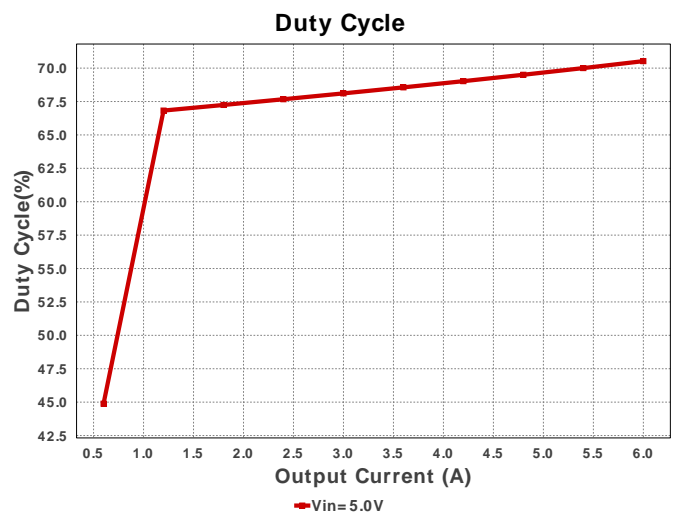
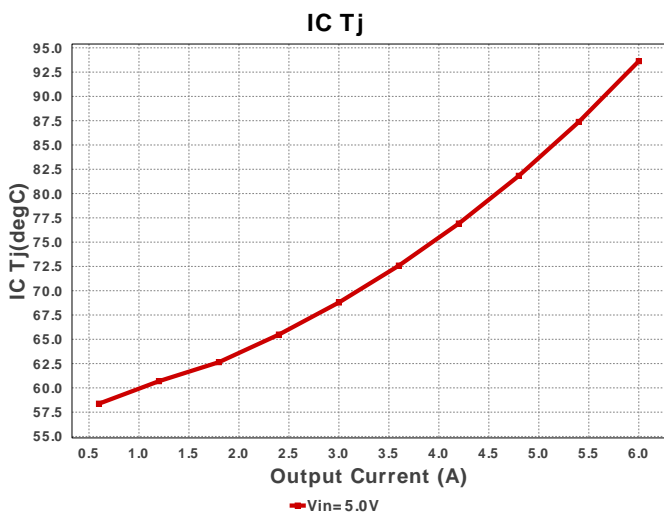
Design : TPS62480RNCR
 TPS62480RNCR 5V-5V to 3.30V @ 6A

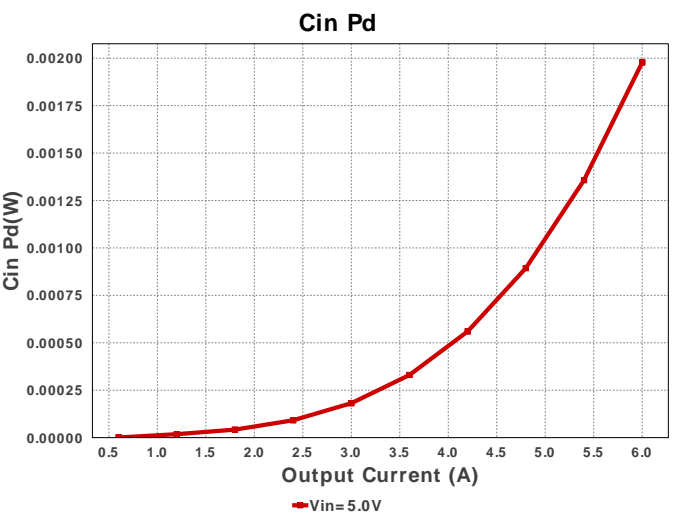
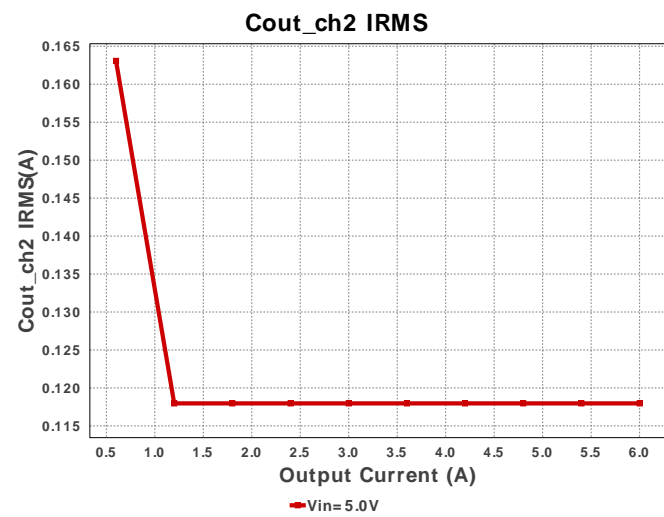
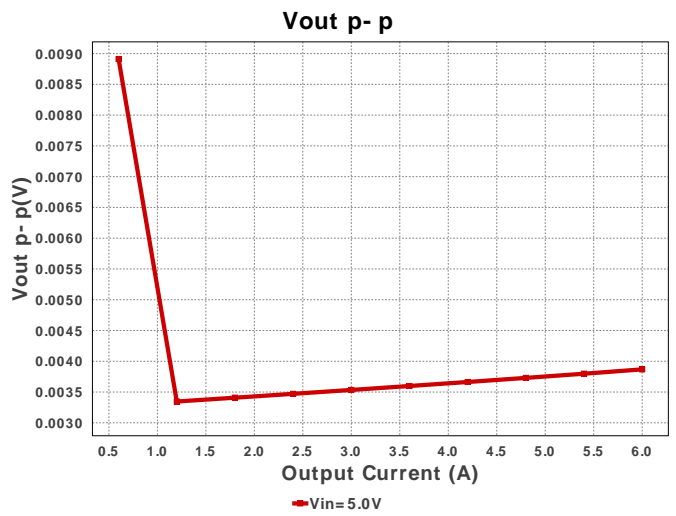
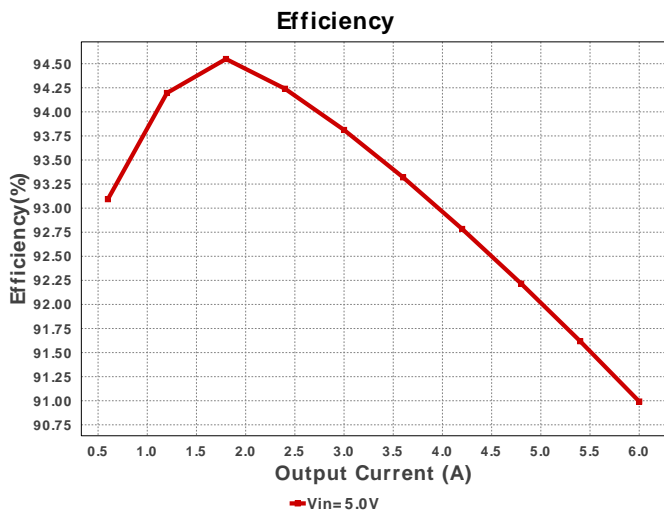
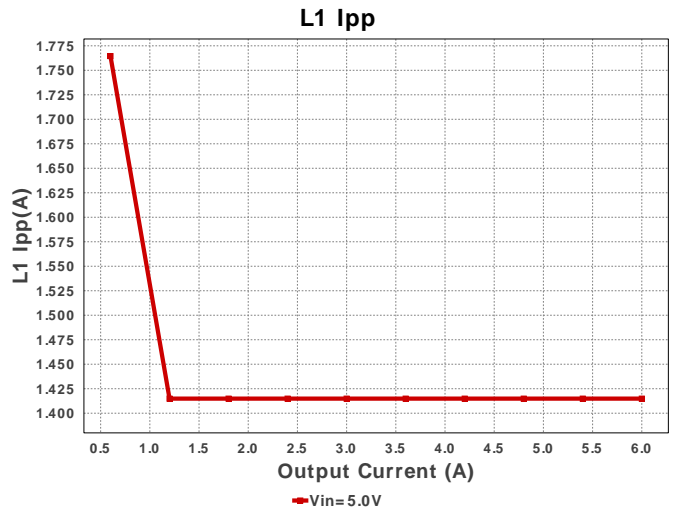
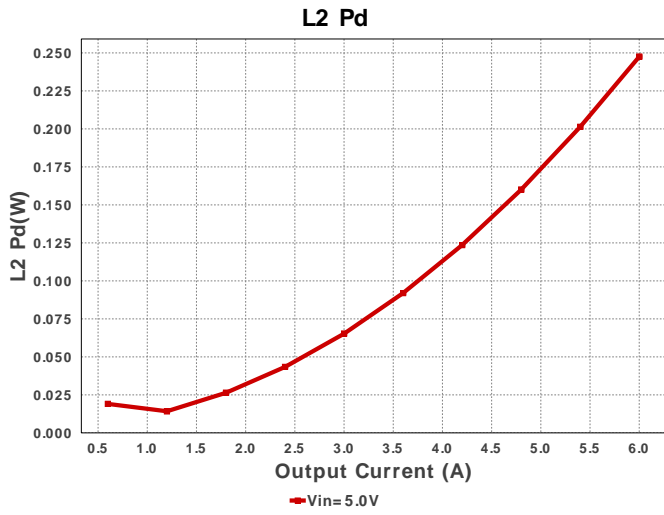


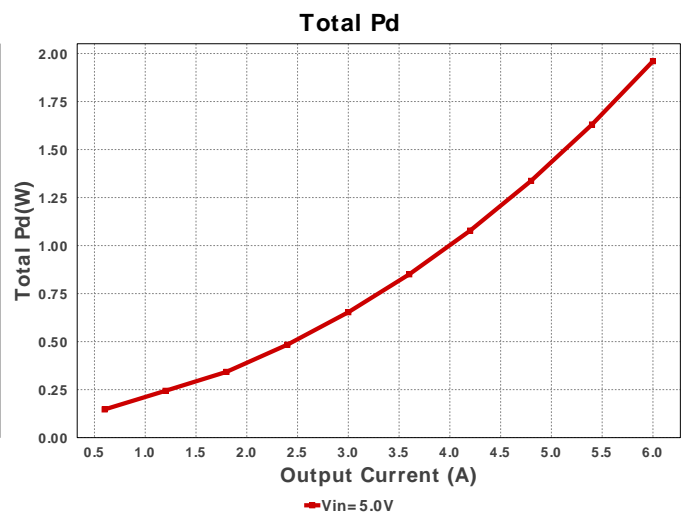
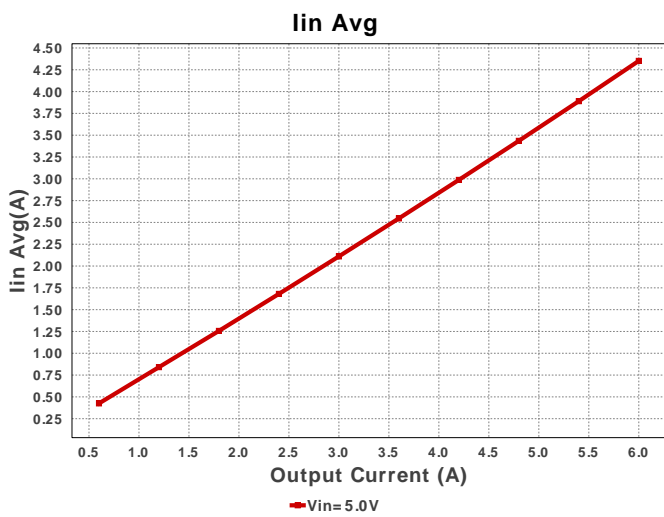
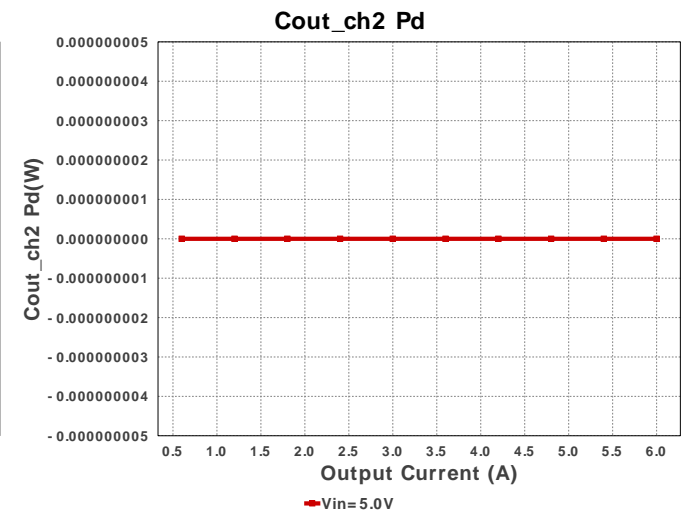
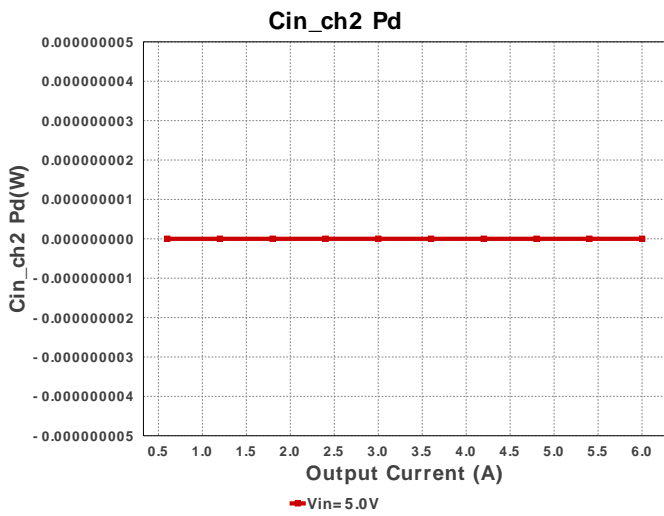
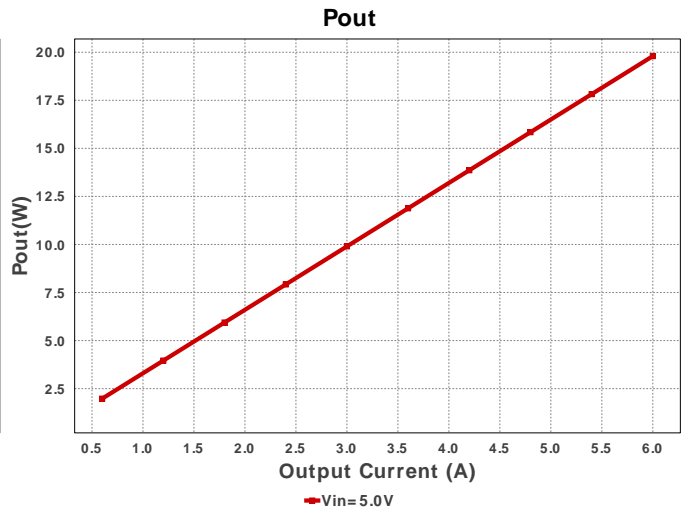
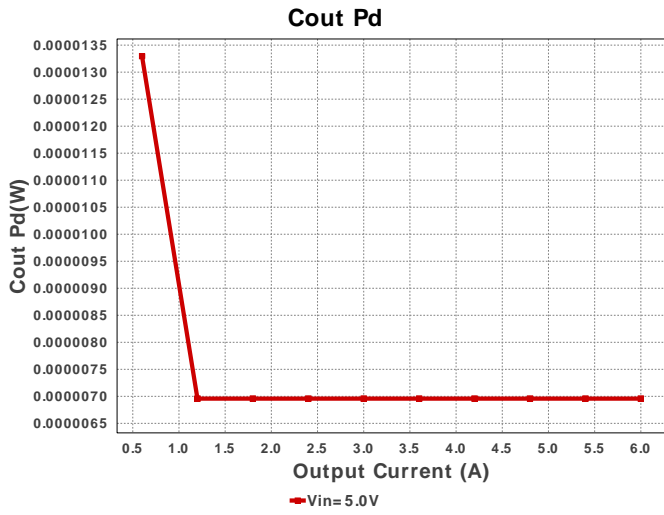
Electrical BOM

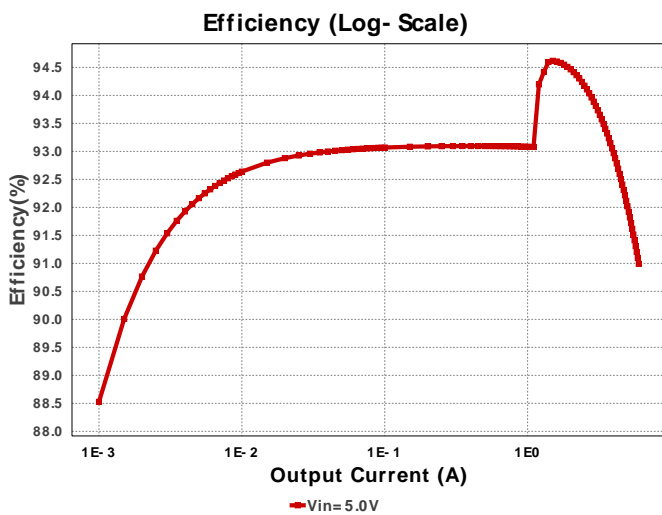
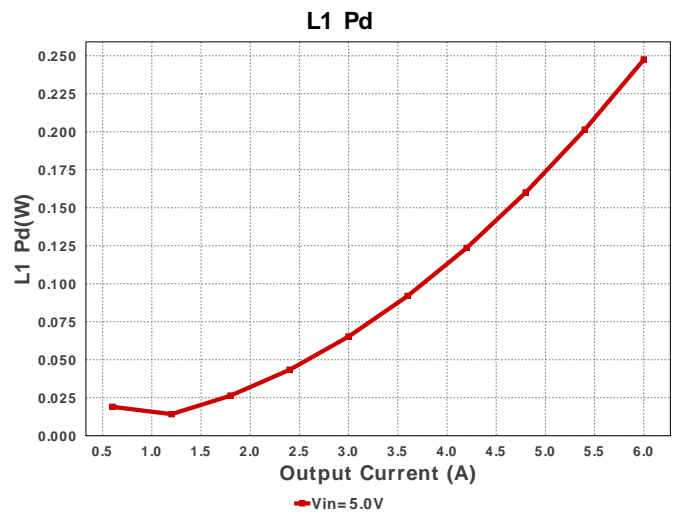
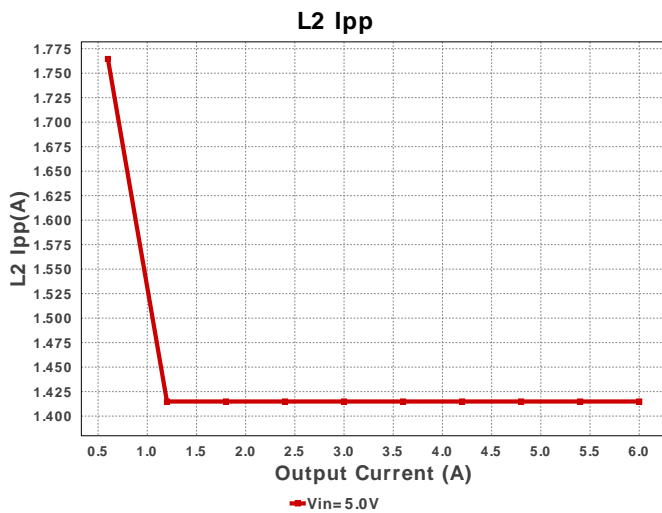
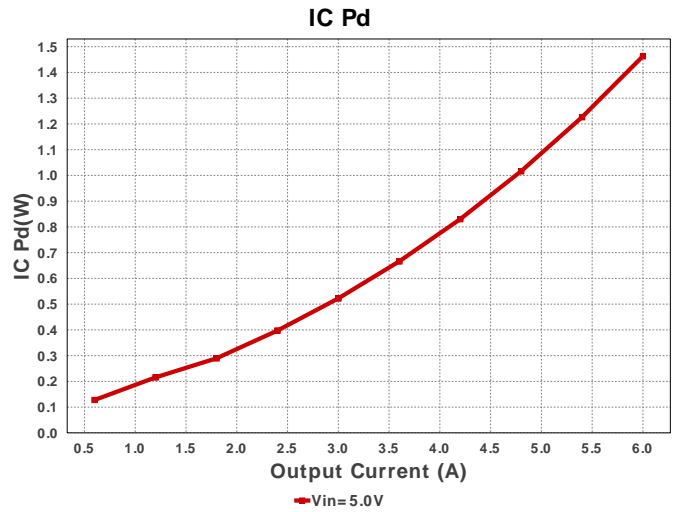
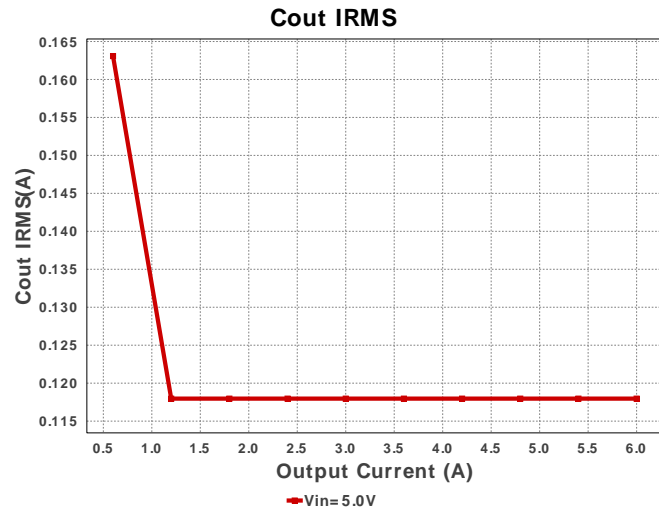
#	Name	Manufacturer	Part Number	Properties	Qty	Price	Footprint
1.	Cff	MuRata	GRM1555C1E360JA01D Series= C0G/NP0	Cap= 36.0 pF ESR= 1.0 mOhm VDC= 25.0 V IRMS= 0.0 A	1	\$0.01	0402 3 mm ²
2.	Cin	Taiyo Yuden	LMK212BJ226MG-T Series= X5R	Cap= 22.0 uF ESR= 1.0 mOhm VDC= 10.0 V IRMS= 0.0 A	1	\$0.11	0805 7 mm ²
3.	Cin_ch2	Taiyo Yuden	LMK212BJ226MG-T Series= X5R	Cap= 22.0 uF ESR= 1.0 mOhm VDC= 10.0 V IRMS= 0.0 A	1	\$0.11	0805 7 mm ²
4.	Cout	MuRata	GRM188R60J226MEA0D Series= X5R	Cap= 22.0 uF ESR= 1.0 mOhm VDC= 6.3 V IRMS= 6.0 A	2	\$0.05	0603 5 mm ²
5.	Cout_ch2	MuRata	GRM188R60J226MEA0D Series= X5R	Cap= 22.0 uF ESR= 1.0 mOhm VDC= 6.3 V IRMS= 6.0 A	2	\$0.05	0603 5 mm ²
6.	Css	CUSTOM	CUSTOM_CAP_MD Series= CUSTOM	Cap= 6.8 nF ESR= 1.0 mOhm VDC= 25.0 V IRMS= 100.0 mA	1	\$0.10	1210 1 mm ²
7.	L1	Murata	CUSTOM_INDUCTOR_MD	L= 470.0 nH DCR= 27.0 mOhm	1	\$0.10	IHLP-1212AE 5 mm ²
8.	L2	Murata	CUSTOM_INDUCTOR_MD	L= 470.0 nH DCR= 27.0 mOhm	1	\$0.10	IHLP-1212AE 5 mm ²
9.	Rfbb	CUSTOM	CUSTOM_RESISTOR_MD Series= CUSTOM	Res= 60000Ohm Power= 100.0 mW Tolerance= 1.0%	1	\$0.10	0805 1 mm ²
10.	Rfbb	CUSTOM	CUSTOM_RESISTOR_MD Series= CUSTOM	Res= 270000Ohm Power= 63.0 mW Tolerance= 1.0%	1	\$0.10	0805 1 mm ²
11.	Rpg	Yageo	RC0603FR-07470KL Series= ?	Res= 470000.0Ohm Power= 100.0 mW Tolerance= 1.0%	1	\$0.01	0603 5 mm ²

#	Name	Manufacturer	Part Number	Properties	Qty	Price	Footprint
12.	Rtg	Yageo	RC0603FR-07470KL Series= ?	Res= 470000.0Ohm Power= 100.0 mW Tolerance= 1.0%	1	\$0.01	0603 5 mm ²
13.	U1	Texas Instruments	TPS62480RNCR	Switcher	1	\$1.10	RNC0016A 14 mm ²









Operating Values

#	Name	Value	Category	Description
1.	BOM Count	15		Total Design BOM count
2.	Total BOM	\$2.05		Total BOM Cost
3.	Cin IRMS	1.406 A	Capacitor	Input capacitor RMS ripple current
4.	Cin Pd	1.977 mW	Capacitor	Input capacitor power dissipation
5.	Cin_ch2 IRMS	1.406 A	Capacitor	Input Capacitor Cin2 RMS Ripple Current
6.	Cin_ch2 Pd	0.0 W	Capacitor	Average Power Dissipation in the Input Capacitor Cin2
7.	Cout IRMS	117.964 mA	Capacitor	Output capacitor RMS ripple current
8.	Cout Pd	6.958 μ W	Capacitor	Output capacitor power dissipation
9.	Cout_ch2 IRMS	117.964 mA	Capacitor	Output capacitor2 RMS ripple current
10.	Cout_ch2 Pd	0.0 W	Capacitor	Output capacitor2 power dissipation
11.	IC Ipk	3.707 A	IC	Max rated switch current in IC

#	Name	Value	Category	Description
12.	IC Iq Pd	150.0 μ W	IC	IC Iq Pd
13.	IC Pd	1.463 W	IC	IC power dissipation
14.	IC Tj	93.629 degC	IC	IC junction temperature
15.	IC Tolerance	20.0 mV	IC	IC Feedback Tolerance
16.	ICThetaJA	26.4 degC/W	IC	IC junction-to-ambient thermal resistance
17.	Iin Avg	4.352 A	IC	Average input current
18.	L1 Ipp	1.415 A	Inductor	Peak-to-peak inductor ripple current
19.	L1 Pd	247.5 mW	Inductor	Inductor power dissipation
20.	L2Ipp	1.415 A	Inductor	Peak-to-peak inductor ripple current
21.	L2 Pd	247.5 mW	Inductor	Inductor power dissipation
22.	Cin Pd	1.977 mW	Power	Input capacitor power dissipation
23.	Cin_ch2 Pd	0.0 W	Power	Average Power Dissipation in the Input Capacitor Cin2
24.	Cout Pd	6.958 μ W	Power	Output capacitor power dissipation
25.	Cout_ch2 Pd	0.0 W	Power	Output capacitor2 power dissipation
26.	IC Pd	1.463 W	Power	IC power dissipation
27.	L1 Pd	247.5 mW	Power	Inductor power dissipation
28.	L2 Pd	247.5 mW	Power	Inductor power dissipation
29.	Total Pd	1.96 W	Power	Total Power Dissipation
30.	Duty Cycle	70.522 %	System	Duty cycle
31.	Efficiency	90.992 %	System	Steady state efficiency
32.	FootPrint	92.0 mm ²	System	Total Foot Print Area of BOM components
33.	Frequency	1.687 MHz	System	Switching frequency
34.	Iout	6.0 A	System	Iout operating point
35.	Mode	CCM	System	Conduction Mode
36.	Pout	19.8 W	System	Total output power
37.	Vin	5.0 V	System	Vin operating point
38.	Vout	3.3 V	System	Operational Output Voltage
39.	Vout Actual	3.3 V	System	Vout Actual calculated based on selected voltage divider resistors
40.	Vout Sch	3.3 V	System	Output voltage selected
41.	Vout Tolerance	5.041 %	System	Vout Tolerance based on IC Tolerance (no load) and voltage divider resistors if applicable
42.	Vout p-p	3.868 mV	System	Peak-to-peak output ripple voltage

Design Inputs

#	Name	Value	Description
1.	Iout	6.0	Maximum Output Current
2.	VinMax	5.0	Maximum input voltage
3.	VinMin	5.0	Minimum input voltage
4.	Vout	3.3	Output Voltage
5.	acFrequency	60.0	AC Frequency
6.	base_pn	TPS62480	Base Product Number
7.	source	DC	Input Source Type
8.	Ta	55.0	Ambient temperature
1.	Vout Sch	3.3	Output voltage selected

Design Assistance

1. **TPS62480** Product Folder : <http://www.ti.com/product/tps62480> : contains the data sheet and other resources.

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