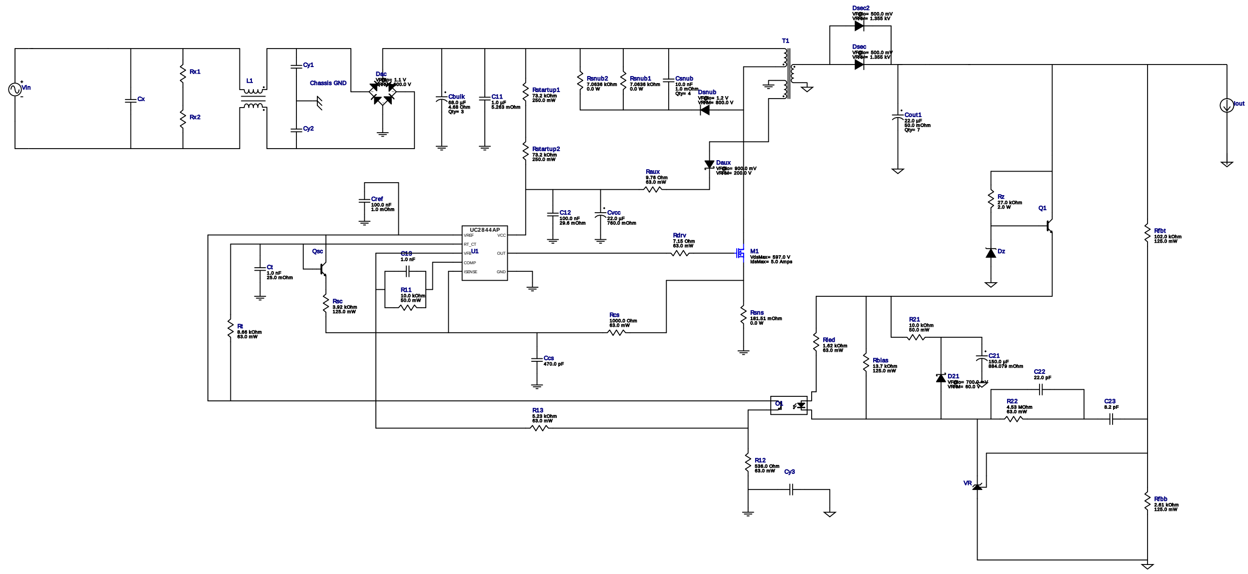
TEXAS INSTRUMENTS

WEBENCH ® Design Report

VinMin = 130.0V
VinMax = 265.0V
Vout = 100.0V
Iout = 1.2A

Device = UC2844AN
Topology = Flyback
Created = 2018-10-18 15:23:35.084
BOM Cost = NA
BOM Count = 58
Total Pd =

Design : 25 UC2844AN
UC2844AN 130V-265V to 100.00V @ 1.2A



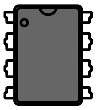
1. The EMI filter shown in the schematic is a placeholder. It has not yet been designed for the application.

Electrical BOM

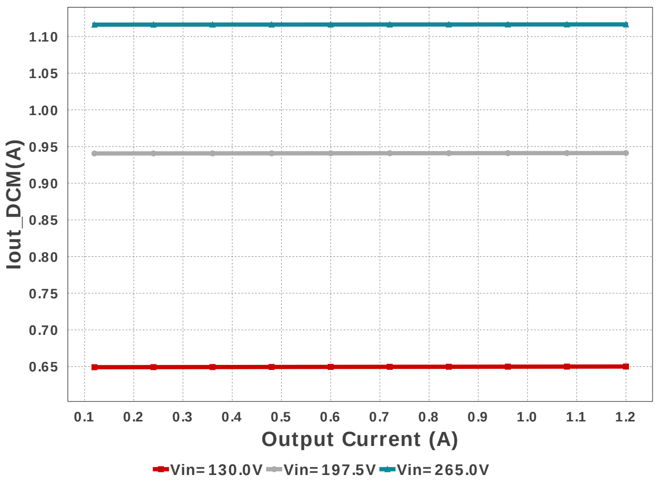
Name	Manufacturer	Part Number	Properties	Qty	Price	Footprint
C11	TDK	C5750X6S2W105K Series= X6S	Cap= 1.0 uF ESR= 5.263 mOhm VDC= 400.0 V IRMS= 0.0 A	1	$1.70	2220 54 mm²
C12	TDK	C1608X7R1H104K080AA Series= X7R	Cap= 100.0 nF ESR= 29.6 mOhm VDC= 50.0 V IRMS= 971.99 mA	1	$0.01	0603 5 mm²
C13	Kemet	C0603C102J3GACTU Series= C0G/NP0	Cap= 1.0 nF VDC= 25.0 V IRMS= 0.0 A	1	$0.01	0603 5 mm²
C21	Chemi-Con	EKZE500ELL151MJC5S Series= KZE	Cap= 150.0 uF ESR= 884.08 mOhm VDC= 50.0 V IRMS= 979.0 mA	1	$0.17	Chemi-Con_1000x1250 144 mm²
C22	Samsung Electro-Mechanics	CL21C220KBANNNC Series= C0G/NP0	Cap= 22.0 pF VDC= 50.0 V IRMS= 0.0 A	1	$0.01	0805 7 mm²
C23	AVX	06031U8R2BAT2A Series= C0G/NP0	Cap= 8.2 pF VDC= 100.0 V IRMS= 0.0 A	1	$0.07	0603 5 mm²
Cbulk	Chemi-Con	EKXG401ELL680MM25S Series= KXG	Cap= 68.0 uF ESR= 4.68 Ohm VDC= 400.0 V IRMS= 1.4625 A	3	$0.97	KXG_1800x2500 400 mm²
Ccs	AVX	04025A471JAT2A Series= C0G/NP0	Cap= 470.0 pF VDC= 50.0 V IRMS= 0.0 A	1	$0.01	0402 3 mm²

Name	Manufacturer	Part Number	Properties	Qty	Price	Footprint
Cout1	Rubycon	400PK22MEFC12_5X20 Series= PK	Cap= 22.0 uF ESR= 50.0 mOhm VDC= 400.0 V IRMS= 200.0 mA	7	$0.40	CAPPR7 144 mm^2
Cref	MuRata	GRM155R61C104KA88D Series= X5R	Cap= 100.0 nF ESR= 1.0 mOhm VDC= 16.0 V IRMS= 0.0 A	1	$0.01	0402 3 mm^2
Csnub	MuRata	GRM21BR72E103KW03L Series= X7R	Cap= 10.0 nF ESR= 1.0 mOhm VDC= 250.0 V IRMS= 0.0 A	4	$0.04	0805 7 mm^2
Ct	Kemet	C0805C102J1GACTU Series= C0G/NP0	Cap= 1.0 nF ESR= 25.0 mOhm VDC= 100.0 V IRMS= 1.71 A	1	$0.10	0805 7 mm^2
Cvcc	Nichicon	UUD1V220MCL1GS Series= uD	Cap= 22.0 uF ESR= 760.0 mOhm VDC= 35.0 V IRMS= 150.0 mA	1	$0.10	SM_RADIAL_5MM 58 mm^2
D21	Fairchild Semiconductor	SS26FL	VF@Io= 700.0 mV VRRM= 60.0 V	1	$0.10	SOD-123F 12 mm^2
Dac	Diodes Inc.	DF1506S-T	VF@Io= 1.1 V VRRM= 600.0 V	1	$0.23	DF-S 99 mm^2
Daux	SMC Diode Solutions	SK220ATR	VF@Io= 900.0 mV VRRM= 200.0 V	1	$0.04	SMA 37 mm^2
Dsec	CUSTOM	CUSTOM	VF@Io= 500.0 mV VRRM= 1.355 kV	1	NA	CUSTOM 0 mm^2
Dsec2	CUSTOM	CUSTOM	VF@Io= 500.0 mV VRRM= 1.355 kV	1	NA	CUSTOM 0 mm^2
Dsnub	Microsemi	UFS180JE3/TR13	VF@Io= 1.2 V VRRM= 800.0 V	1	$0.71	DO-214BA 42 mm^2
Dz	Diodes Inc.	MMSZ5250B-7-F	Zener	1	$0.04	SOD-123 13 mm^2
M1	NA	IdealFET	VdsMax= 597.0 V IdsMax= 5.0 Amps	1	NA	NA 0 mm^2
O1	Fairchild Semiconductor	FOD817A	Optocoupler	1	$0.13	DIP-4 71 mm^2
Q1	Nexperia	MMBTA42	Bipolar Transistor	1	$0.05	SOT-23 14 mm^2
Qsc	STMicroelectronics	2N2222A	Bipolar Transistor	1	$1.02	TO-18 57 mm^2
R11	Yageo	RC0201FR-0710KL Series= ?	Res= 10.0 kOhm Power= 50.0 mW Tolerance= 1.0%	1	$0.01	0201 2 mm^2
R12	Vishay-Dale	CRCW0402536RFKED Series= CRCW..e3	Res= 536.0 Ohm Power= 63.0 mW Tolerance= 1.0%	1	$0.01	0402 3 mm^2
R13	Vishay-Dale	CRCW04025K23FKED Series= CRCW..e3	Res= 5.23 kOhm Power= 63.0 mW Tolerance= 1.0%	1	$0.01	0402 3 mm^2

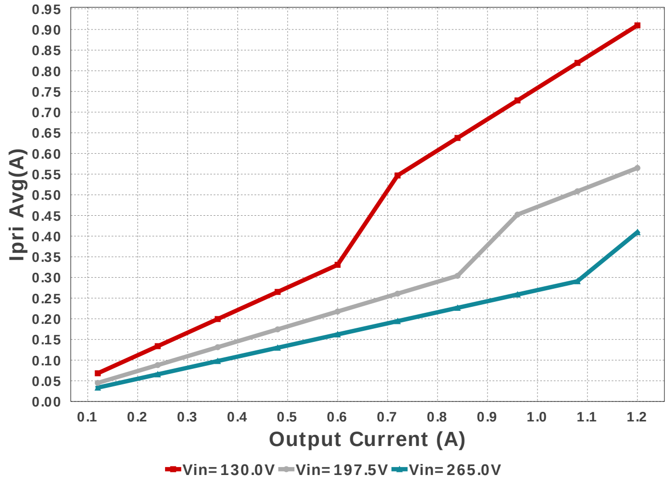
Name	Manufacturer	Part Number	Properties	Qty	Price	Footprint
R21	Yageo	RC0201FR-0710KL Series= ?	Res= 10.0 kOhm Power= 50.0 mW Tolerance= 1.0%	1	$0.01	0201 2 mm^2
R22	Vishay-Dale	CRCW04024M53FKED Series= CRCW..e3	Res= 4.53 MOhm Power= 63.0 mW Tolerance= 1.0%	1	$0.01	0402 3 mm^2
Raux	Vishay-Dale	CRCW04029R76FKED Series= CRCW..e3	Res= 9.76 Ohm Power= 63.0 mW Tolerance= 1.0%	1	$0.01	0402 3 mm^2
Rbias	Panasonic	ERJ-6ENF1372V Series= ERJ-6E	Res= 13.7 kOhm Power= 125.0 mW Tolerance= 1.0%	1	$0.01	0805 7 mm^2
Rcs	Vishay-Dale	CRCW04021K00FKED Series= CRCW..e3	Res= 1000.0 Ohm Power= 63.0 mW Tolerance= 1.0%	1	$0.01	0402 3 mm^2
Rdrv	Vishay-Dale	CRCW04027R15FKED Series= CRCW..e3	Res= 7.15 Ohm Power= 63.0 mW Tolerance= 1.0%	1	$0.01	0402 3 mm^2
Rfbb	Panasonic	ERJ-6ENF2611V Series= ERJ-6E	Res= 2.61 kOhm Power= 125.0 mW Tolerance= 1.0%	1	$0.01	0805 7 mm^2
Rfbt	Vishay-Dale	CRCW0805102KFKEA Series= CRCW..e3	Res= 102.0 kOhm Power= 125.0 mW Tolerance= 1.0%	1	$0.01	0805 7 mm^2
Rled	Vishay-Dale	CRCW04021K62FKED Series= CRCW..e3	Res= 1.62 kOhm Power= 63.0 mW Tolerance= 1.0%	1	$0.01	0402 3 mm^2
Rsc	Vishay-Dale	CRCW08053K92FKEA Series= CRCW..e3	Res= 3.92 kOhm Power= 125.0 mW Tolerance= 1.0%	1	$0.01	0805 7 mm^2
Rsns	CUSTOM	CUSTOM Series= ?	Res= 181.51 mOhm Power= 0.0 W Tolerance= 0.0%	1	NA	CUSTOM 0 mm^2
Rsnub1	CUSTOM	CUSTOM Series= ?	Res= 7.0636 kOhm Power= 0.0 W Tolerance= 0.0%	1	NA	CUSTOM 0 mm^2
Rsnub2	CUSTOM	CUSTOM Series= ?	Res= 7.0636 kOhm Power= 0.0 W Tolerance= 0.0%	1	NA	CUSTOM 0 mm^2
Rstartup1	Vishay-Dale	CRCW120673K2FKEA Series= CRCW..e3	Res= 73.2 kOhm Power= 250.0 mW Tolerance= 1.0%	1	$0.01	1206 11 mm^2
Rstartup2	Vishay-Dale	CRCW120673K2FKEA Series= CRCW..e3	Res= 73.2 kOhm Power= 250.0 mW Tolerance= 1.0%	1	$0.01	1206 11 mm^2
Rt	Vishay-Dale	CRCW04028K66FKED Series= CRCW..e3	Res= 8.66 kOhm Power= 63.0 mW Tolerance= 1.0%	1	$0.01	0402 3 mm^2
Rz	Stackpole Electronics Inc	RSMF2JT27K0 Series= ?	Res= 27.0 kOhm Power= 2.0 W Tolerance= 5.0%	1	$0.02	RSMF2 148 mm^2
T1	Core=TDK , CoilFormer=TDK	Core=B66423G0000X197 , CoilFormer=B66424W1012D001	Lp= 203.0 µH Turns Ratio(Nas)= 9:58 Turns Ratio(Nps)= 49:58 Npri= 49.0 Naux= 9.0 Nsec= 58.0	1	$1.25	TDK_B66305 930 mm^2

Name	Manufacturer	Part Number	Properties	Qty	Price	Footprint
U1	Texas Instruments	UC2844AN	Switcher	1	$0.62	 P0008A 116 mm^2
VR	Texas Instruments	TL431AIDBZR	Voltage References	1	$0.08	 DBZ0003A 14 mm^2

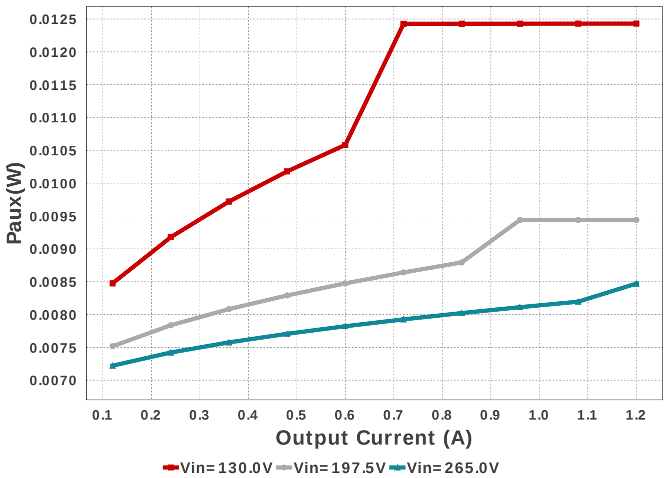
Iout_DCM



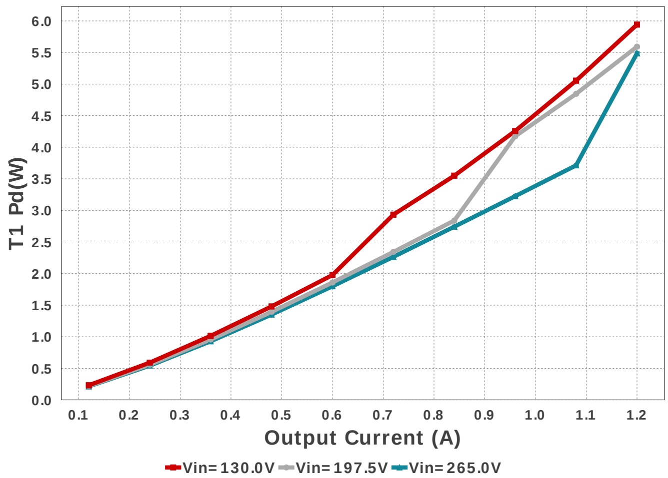
Ipri Avg



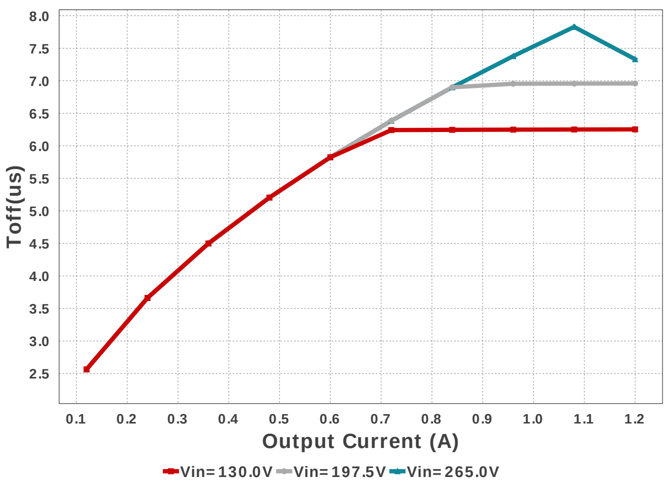
Paux



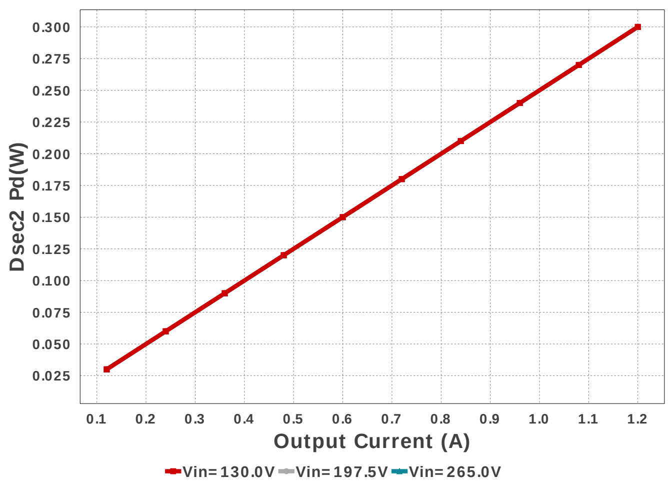
T1 Pd

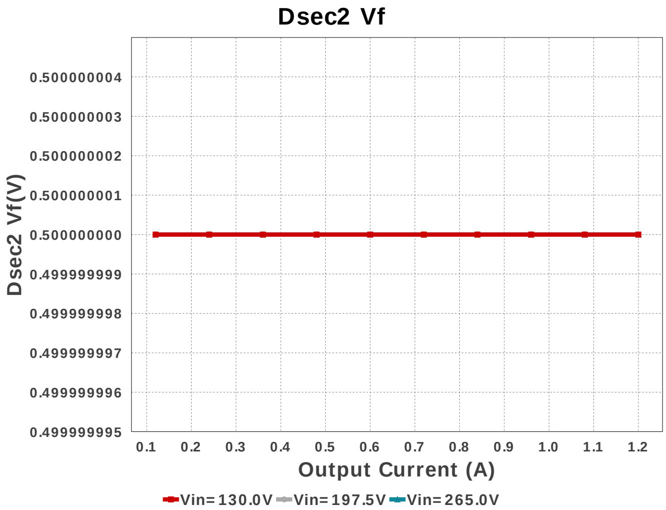


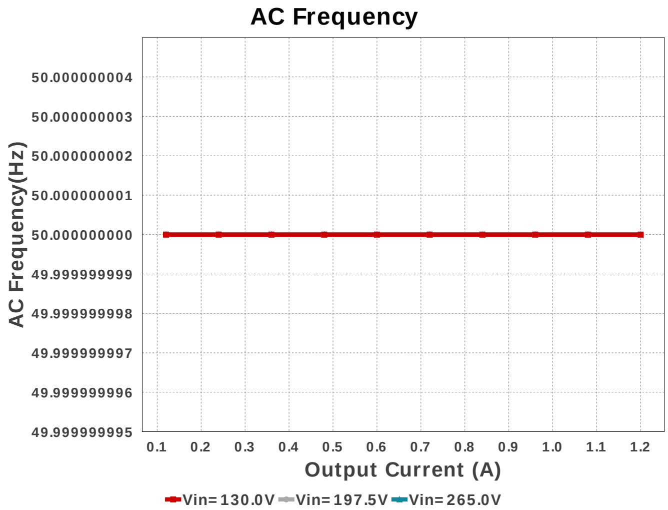
Toff

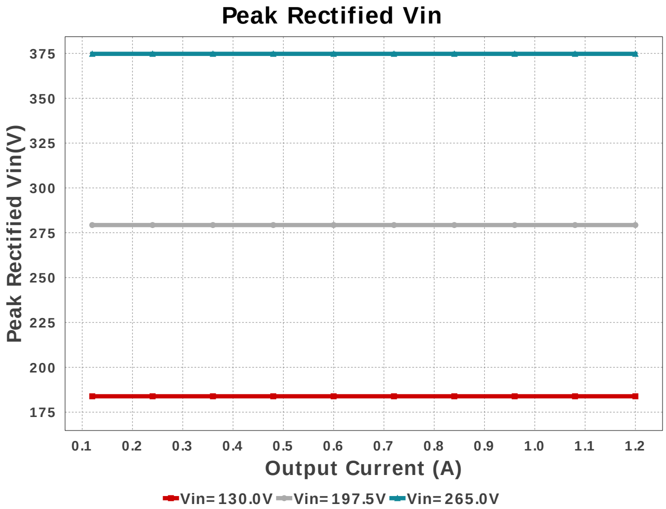


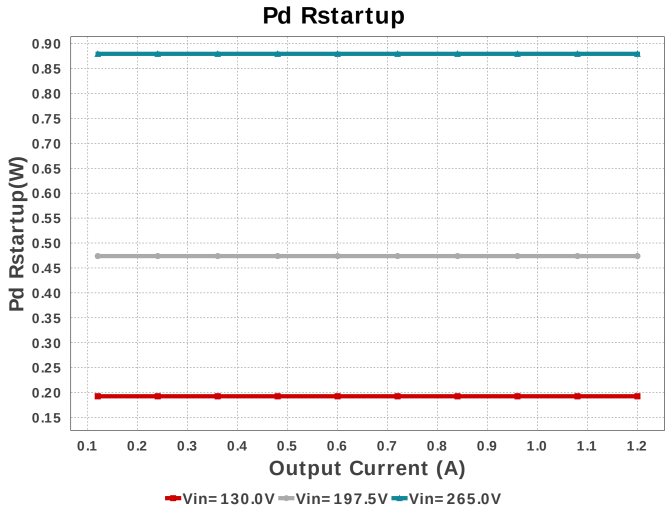
Dsec2 Pd

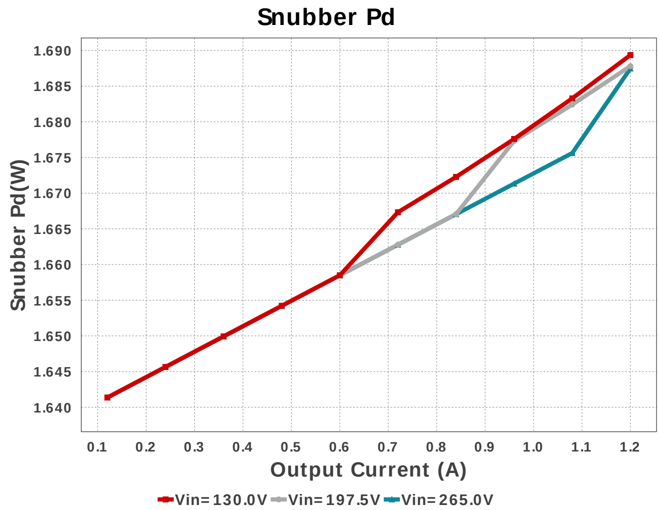


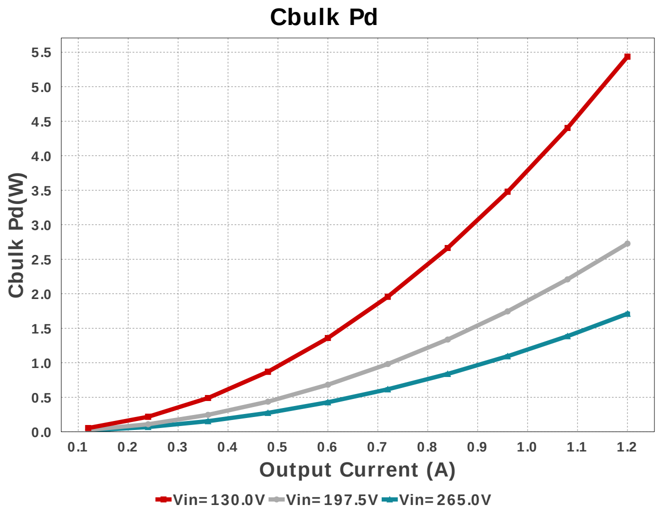

Dsec2 Vf
Dsec2 Vf(V)
0.500000004
0.500000003
0.500000002
0.500000001
0.500000000
0.499999999
0.499999998
0.499999997
0.499999996
0.499999995
0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9 1.0 1.1 1.2
Output Current (A)
Vin=130.0V Vin=197.5V Vin=265.0V

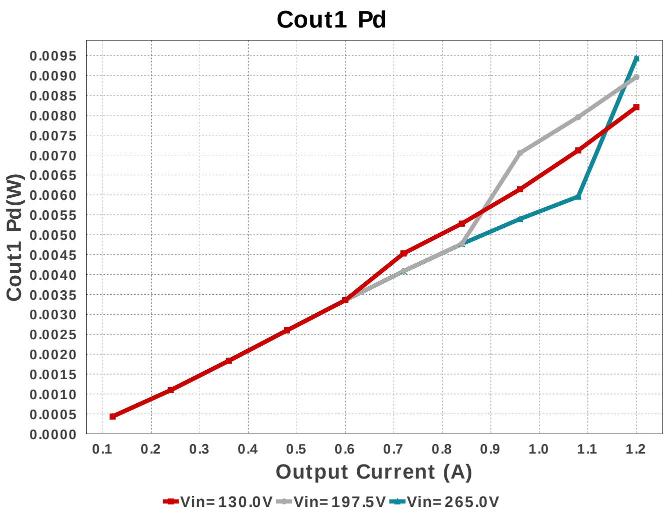

AC Frequency
AC Frequency(Hz)
50.000000004
50.000000003
50.000000002
50.000000001
50.000000000
49.999999999
49.999999998
49.999999997
49.999999996
49.999999995
0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9 1.0 1.1 1.2
Output Current (A)
Vin=130.0V Vin=197.5V Vin=265.0V

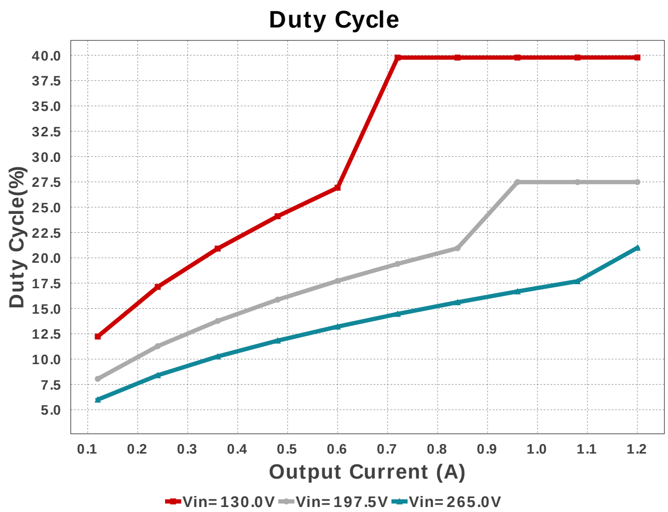

Peak Rectified Vin
Peak Rectified Vin(V)
375
350
325
300
275
250
225
200
175
0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9 1.0 1.1 1.2
Output Current (A)
Vin=130.0V Vin=197.5V Vin=265.0V

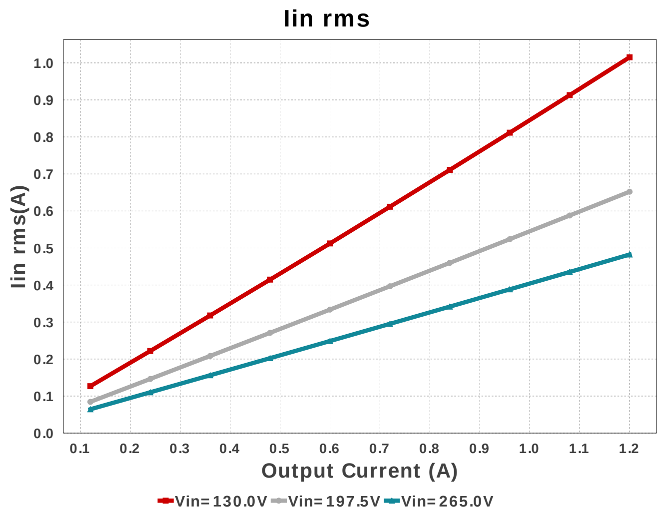

Pd Rstartup
Pd Rstartup(W)
0.90
0.85
0.80
0.75
0.70
0.65
0.60
0.55
0.50
0.45
0.40
0.35
0.30
0.25
0.20
0.15
0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9 1.0 1.1 1.2
Output Current (A)
Vin=130.0V Vin=197.5V Vin=265.0V

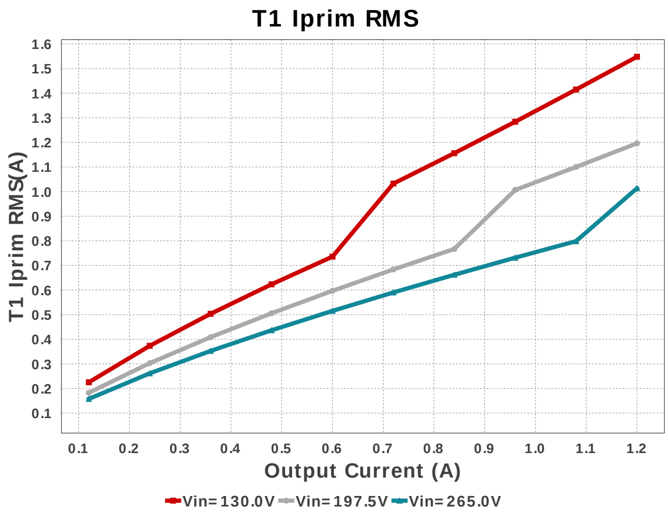

Snubber Pd
Snubber Pd(W)
1.690
1.685
1.680
1.675
1.670
1.665
1.660
1.655
1.650
1.645
1.640
0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9 1.0 1.1 1.2
Output Current (A)
Vin=130.0V Vin=197.5V Vin=265.0V

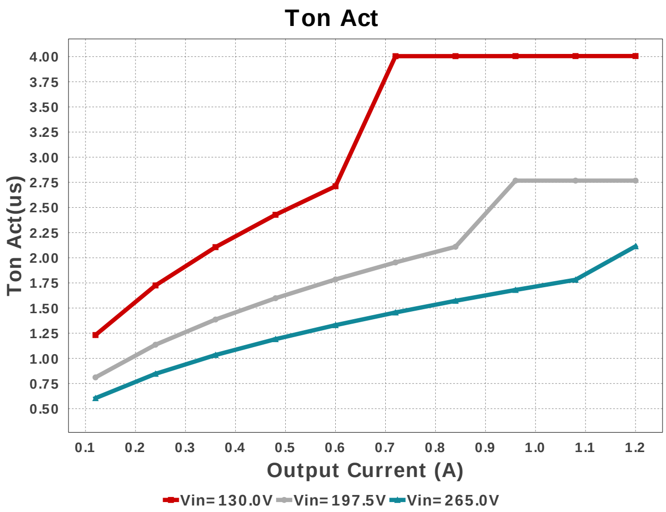

Cbulk Pd
Cbulk Pd(W)
5.5
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9 1.0 1.1 1.2
Output Current (A)
Vin=130.0V Vin=197.5V Vin=265.0V

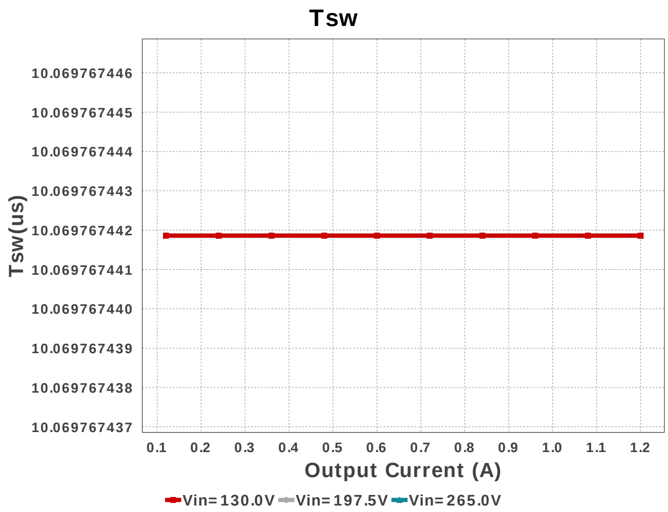

Cout1 Pd
Cout1 Pd(W)
Output Current (A)
Vin= 130.0V
Vin= 197.5V
Vin= 265.0V

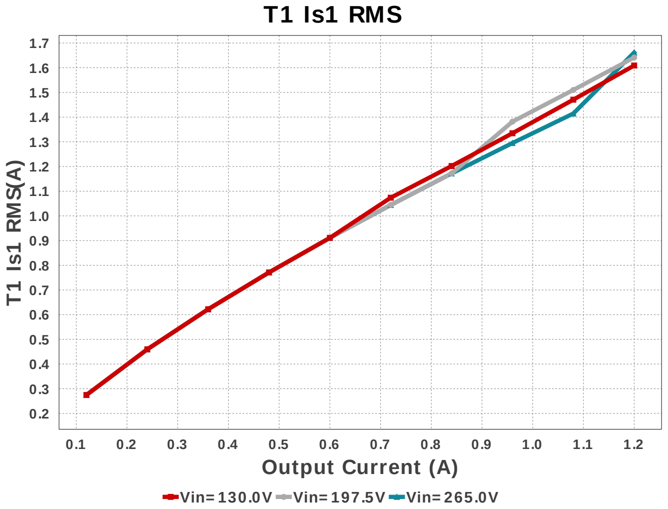

Duty Cycle
Duty Cycle(%)
Output Current (A)
Vin= 130.0V
Vin= 197.5V
Vin= 265.0V

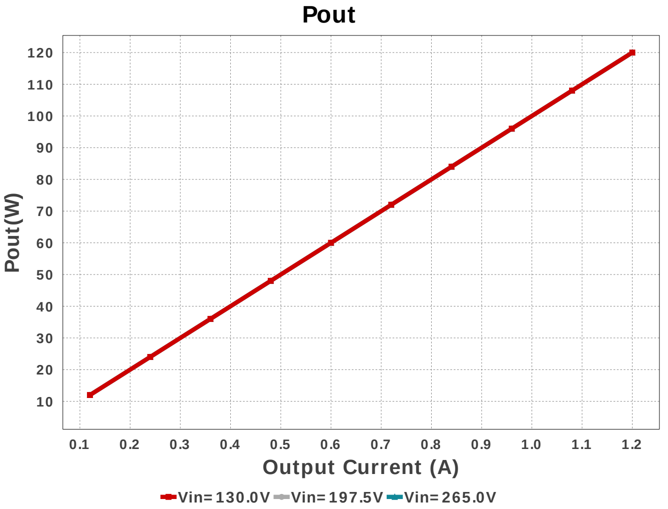

Iin rms
Iin rms(A)
Output Current (A)
Vin= 130.0V
Vin= 197.5V
Vin= 265.0V

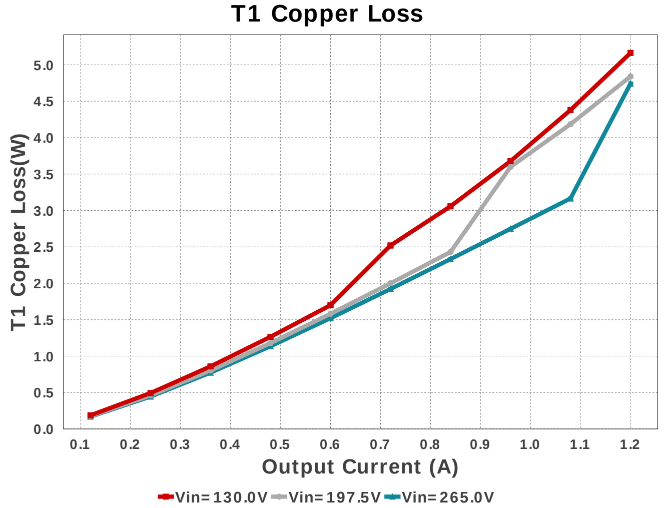

T1 Iprim RMS
T1 Iprim RMS(A)
Output Current (A)
Vin= 130.0V
Vin= 197.5V
Vin= 265.0V

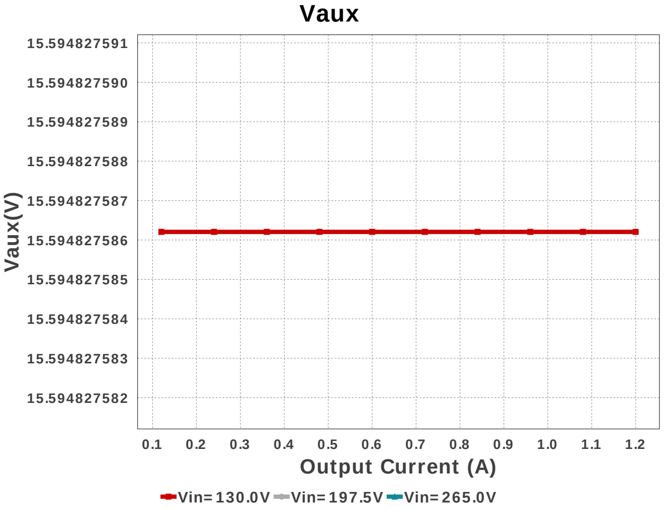

Ton Act
Ton Act(us)
Output Current (A)
Vin= 130.0V
Vin= 197.5V
Vin= 265.0V

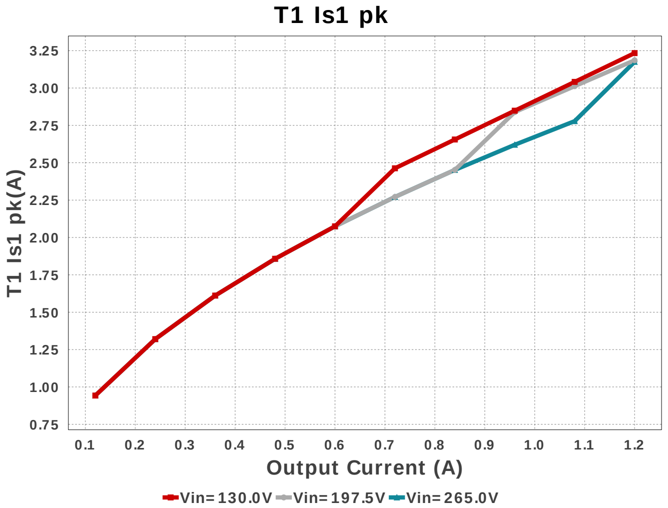

Tsw
Tsw(us)
Output Current (A)
Vin= 130.0V
Vin= 197.5V
Vin= 265.0V

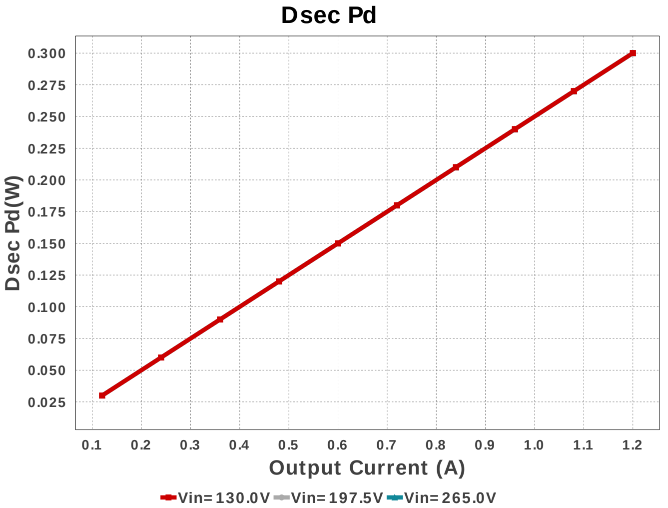

T1 Is1 RMS
T1 Is1 RMS(A)
Output Current (A)
Vin=130.0V Vin=197.5V Vin=265.0V


Pout
Pout(W)
Output Current (A)
Vin=130.0V Vin=197.5V Vin=265.0V

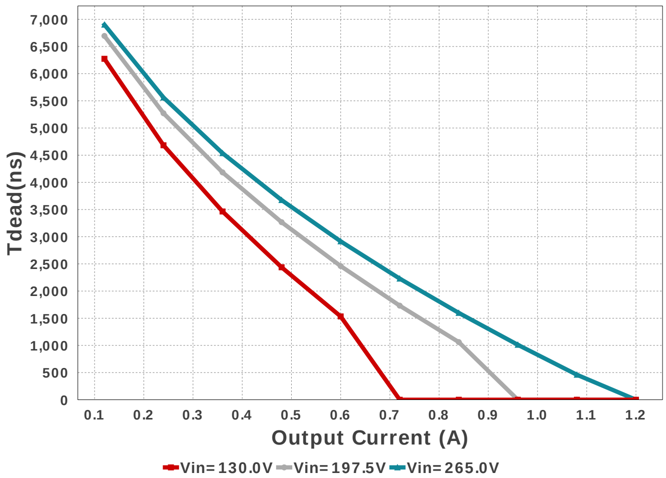

T1 Copper Loss
T1 Copper Loss(W)
Output Current (A)
Vin=130.0V Vin=197.5V Vin=265.0V


Vaux
Vaux(V)
Output Current (A)
Vin=130.0V Vin=197.5V Vin=265.0V

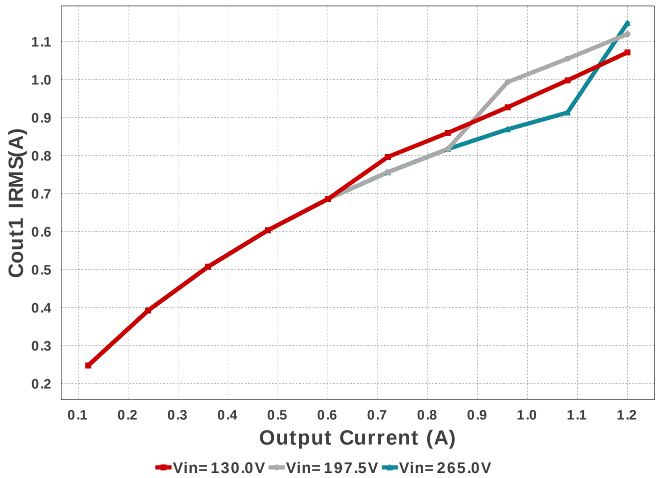

T1 Is1 pk
T1 Is1 pk(A)
Output Current (A)
Vin=130.0V Vin=197.5V Vin=265.0V


Dsec Pd
Dsec Pd(W)
Output Current (A)
Vin=130.0V Vin=197.5V Vin=265.0V

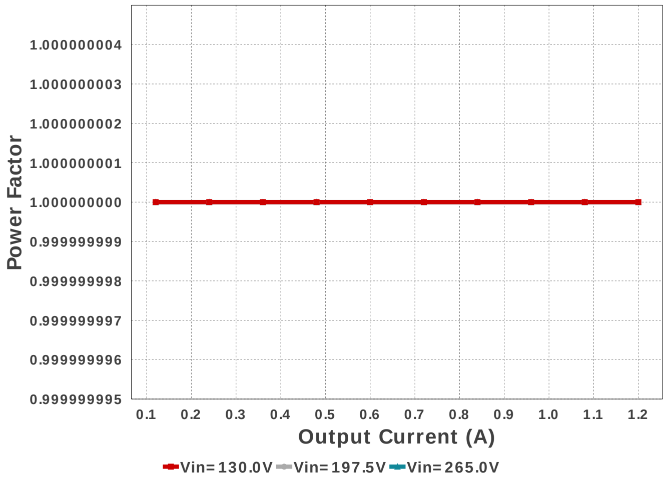
Tdead



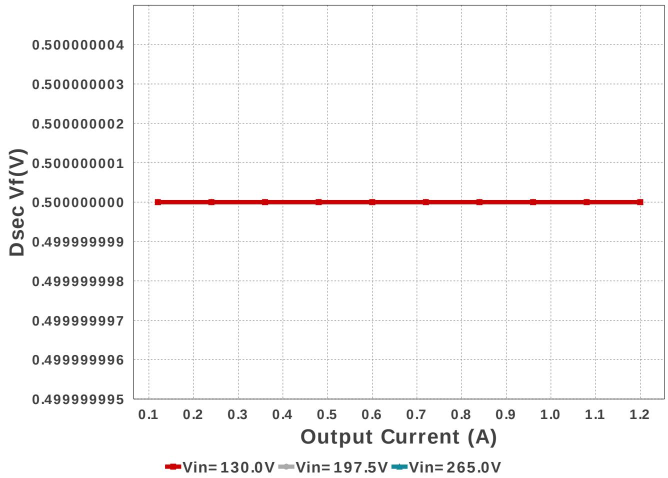
Cout1 IRMS



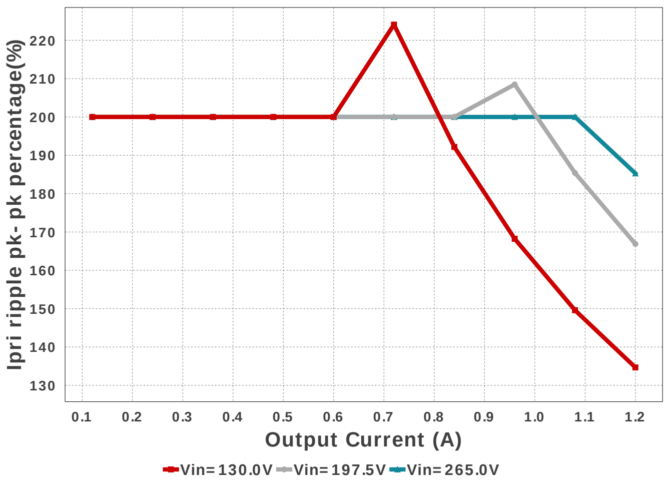
Power Factor



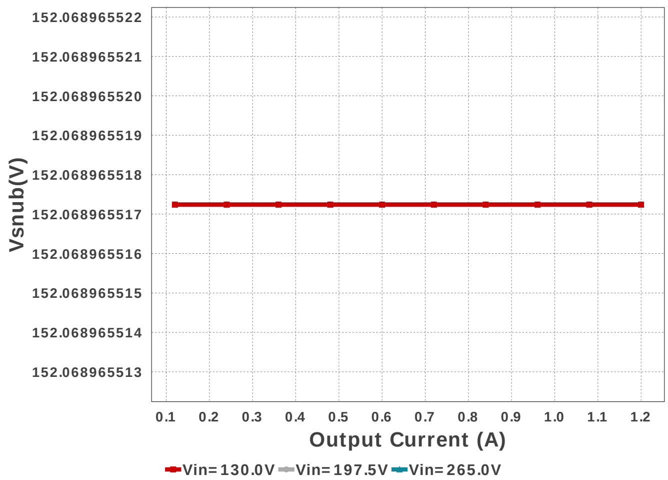
Dsec Vf

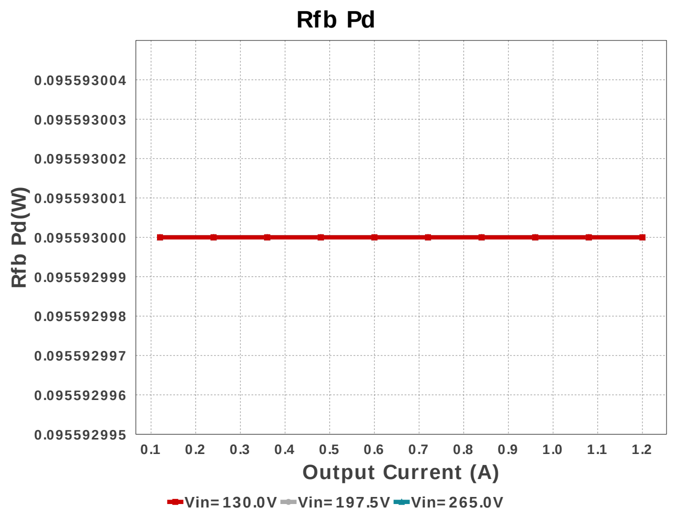


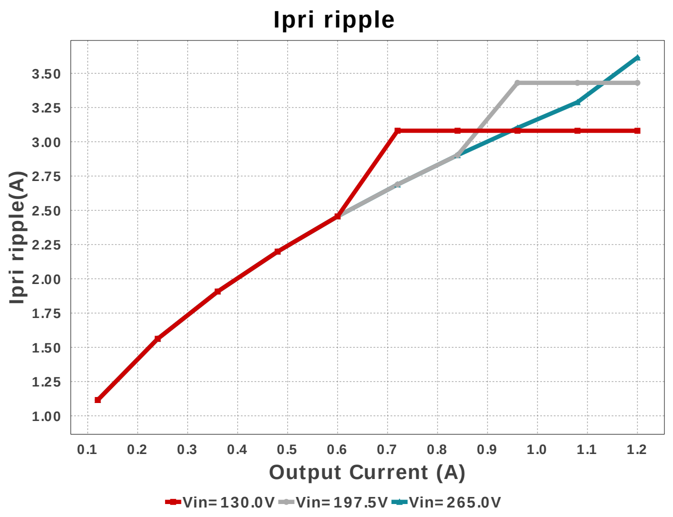
Ipri ripple pk- pk percentage

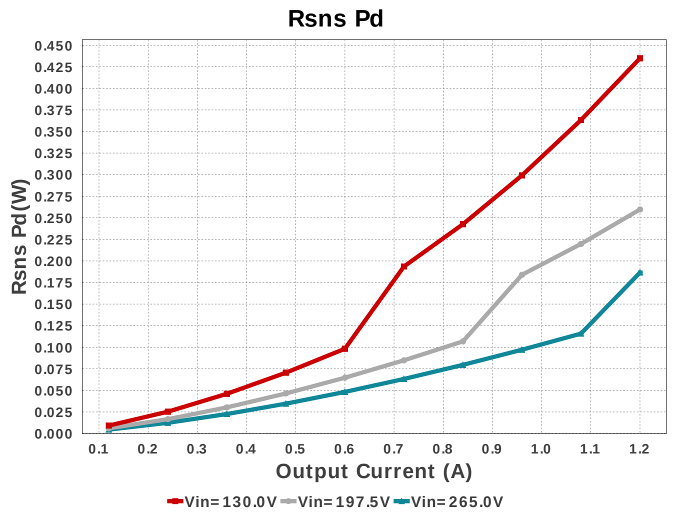


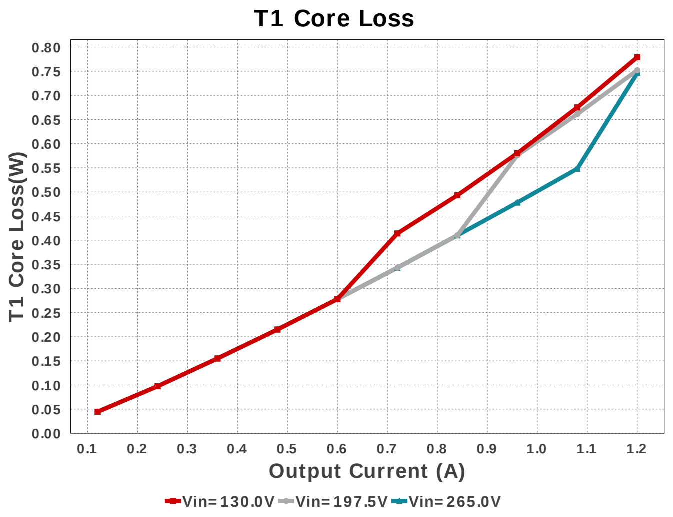
Vsnub

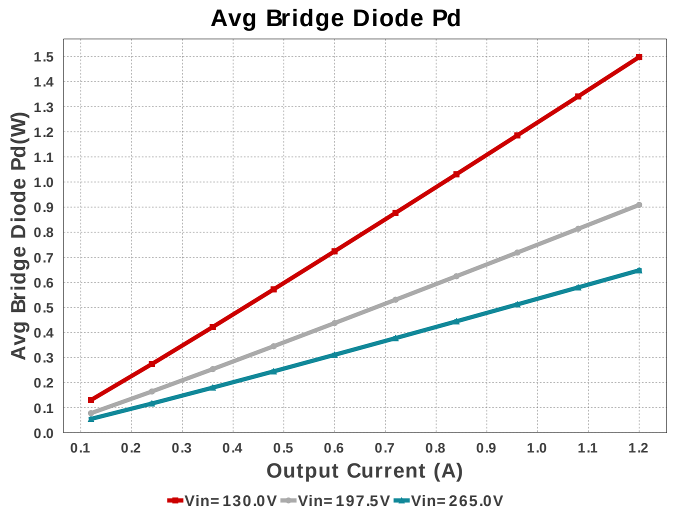


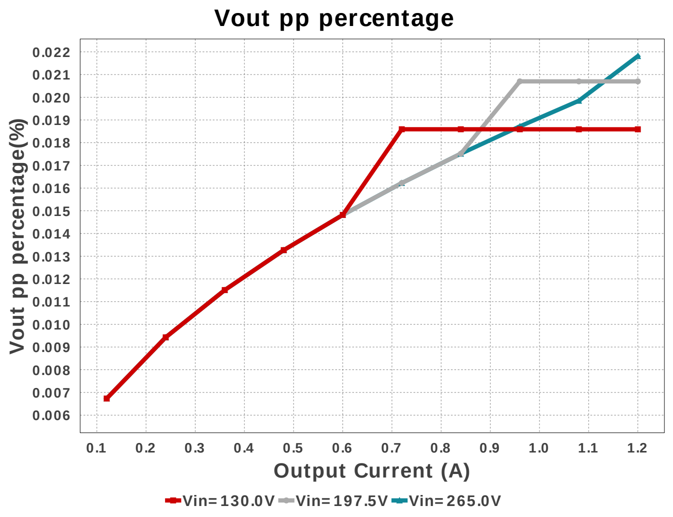

Rfb Pd
Rfb Pd(W)
Output Current (A)
Vin= 130.0V Vin= 197.5V Vin= 265.0V

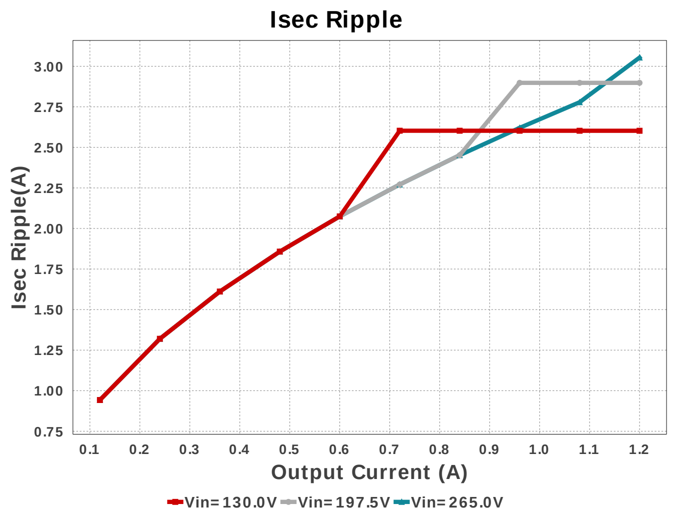

Ipri ripple
Ipri ripple(A)
Output Current (A)
Vin= 130.0V Vin= 197.5V Vin= 265.0V

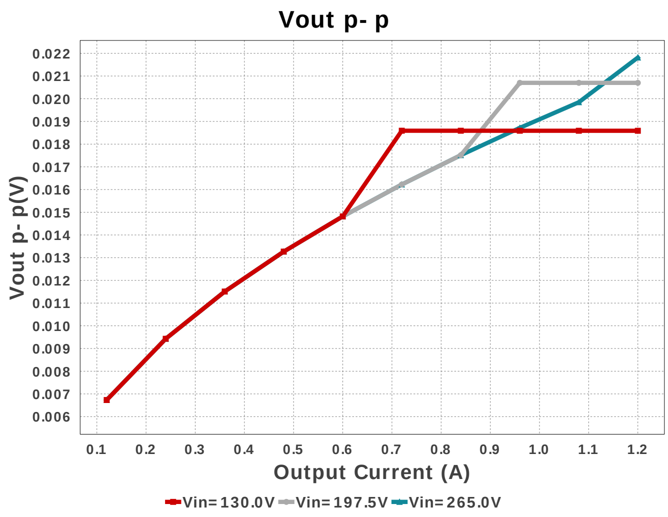

Rsns Pd
Rsns Pd(W)
Output Current (A)
Vin= 130.0V Vin= 197.5V Vin= 265.0V

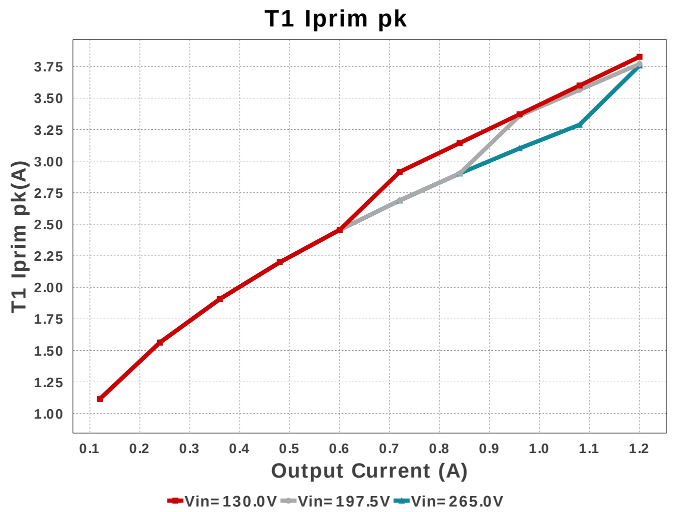

T1 Core Loss
T1 Core Loss(W)
Output Current (A)
Vin= 130.0V Vin= 197.5V Vin= 265.0V


Avg Bridge Diode Pd
Avg Bridge Diode Pd(W)
Output Current (A)
Vin= 130.0V Vin= 197.5V Vin= 265.0V


Vout pp percentage
Vout pp percentage(%)
Output Current (A)
Vin= 130.0V Vin= 197.5V Vin= 265.0V







Operating Values

#	Name	Value	Category	Description
1.	Cbulk Pd	5.435 W	Capacitor	Bulk capacitor power dissipation
2.	Cout1 IRMS	1.072 A	Capacitor	Output capacitor1 RMS ripple current
3.	Cout1 Pd	8.204 mW	Capacitor	Output capacitor1 power dissipation
4.	Avg Bridge Diode Pd	1.498 W	Diode	Average Power Dissipation in the Bridge Diode over the AC Line Period
5.	Daux trr	0.0 ns	Diode	Auxiliary Diode Reverse Recovery Time
6.	Dsec Pd	300.0 mW	Diode	Secondary Diode Power Dissipation
7.	Dsec Vf	500.0 mV	Diode	Effective Forward Voltage Drop at the Operating Current
8.	Dsec trr	0.0 ns	Diode	Output Diode Reverse Recovery Time
9.	Dsec2 Pd	300.0 mW	Diode	Secondary Diode Power Dissipation
10.	Dsec2 Vf	500.0 mV	Diode	Effective Forward Voltage Drop at the Operating Current
11.	Dsnub trr	60.0 ns	Diode	Snubber Diode Reverse Recovery Time
12.	ICThetaJA	110.0 degC/W	IC	IC junction-to-ambient thermal resistance
13.	Avg Bridge Diode Pd	1.498 W	Power	Average Power Dissipation in the Bridge Diode over the AC Line Period
14.	Cbulk Pd	5.435 W	Power	Bulk capacitor power dissipation
15.	Cout1 Pd	8.204 mW	Power	Output capacitor1 power dissipation
16.	Dsec Pd	300.0 mW	Power	Secondary Diode Power Dissipation
17.	Dsec2 Pd	300.0 mW	Power	Secondary Diode Power Dissipation
18.	Paux	12.43 mW	Power	Power Dissipation in Raux and Daux
19.	Pd Rstartup	192.59 mW	Power	Power Dissipation in Rstartup1 and Rstartup2
20.	Rfb Pd	95.593 mW	Power	Rfb Power Dissipation
21.	Rsns Pd	434.87 mW	Power	Current Limit Sense Resistor Power Dissipation
22.	Snubber Pd	1.689 W	Power	Snubber Power Dissipation
23.	T1 Copper Loss	5.163 W	Power	Transformer Copper Loss Power Dissipation
24.	T1 Core Loss	779.0 mW	Power	Transformer Core Loss Power Dissipation
25.	T1 Pd	5.942 W	Power	Estimated Losses in Transformer
26.	Pd Rstartup	192.59 mW	Resistor	Power Dissipation in Rstartup1 and Rstartup2
27.	Rfb Pd	95.593 mW	Resistor	Rfb Power Dissipation
28.	Rsns Pd	434.87 mW	Resistor	Current Limit Sense Resistor Power Dissipation
29.	AC Frequency	50.0 Hz	System Information	Input AC frequency
30.	BOM Count	58	System Information	Total Design BOM count

#	Name	Value	Category	Description
31.	Duty Cycle	39.781 %	System Information	Duty cycle
32.	FootPrint	4.305 k mm^2	System Information	Total Foot Print Area of BOM components
33.	Frequency	99.307 kHz	System Information	Switching frequency
34.	Iin rms	1.015 A	System Information	RMS Input Current
35.	Iout	1.2 A	System Information	Iout operating point
36.	Iout_DCM	650.049 mA	System Information	Approximate Current below which DCM mode of operation will begin
37.	Mode	CCM	System Information	Conduction Mode
38.	Peak Rectified Vin	183.846 V	System Information	Peak voltage seen at rectified input
39.	Pout	120.0 W	System Information	Total output power
40.	Power Factor	1.0	System Information	Assumed Power Factor for the Application
41.	Tdead	0.0 ns	System Information	Approximate Dead Time of the Regulator
42.	Toff	6.253 us	System Information	Approximate Converter Off Time
43.	Ton Act	4.006 us	System Information	Approximate Converter On Time
44.	Total BOM	NA	System Information	Total BOM Cost
45.	Tsw	10.07 us	System Information	Switching Time Period
46.	Vin_RMS	130.0 V	System Information	Vin operating point
47.	Vout	100.0 V	System Information	Operational Output Voltage
48.	Vout Actual	100.001 V	System Information	Vout Actual calculated based on selected voltage divider resistors
49.	Vout Tolerance	2.297 %	System Information	Vout Tolerance based on IC Tolerance (no load) and voltage divider resistors if applicable
50.	Vout p-p	18.589 mV	System Information	Peak-to-peak output ripple voltage
51.	Vout pp percentage	18.589 m%	System Information	Output Voltage ripple percentage
52.	Vsnub	152.069 V	System Information	Voltage Across the Snubber
53.	Ipri Avg	909.932 mA	Transformer	Average Current in Primary Winding over the complete Switching Period
54.	Ipri ripple	3.08 A	Transformer	Ripple Current in the Primary Winding
55.	Ipri ripple pk-pk percentage	134.672 %	Transformer	Primary Current pk-pk ripple percentage(of Ipri avg during ton only)
56.	Isec Ripple	2.602 A	Transformer	Ripple Current in the Secondary Winding
57.	Paux	12.43 mW	Transformer	Power Dissipation in Raux and Daux
58.	T1 Copper Loss	5.095 W	Transformer	Transformer Copper Loss Power Dissipation
59.	T1 Core Loss	772.0 mW	Transformer	Transformer Core Loss Power Dissipation
60.	T1 Iprim RMS	1.548 A	Transformer	Transformer Primary RMS Current
61.	T1 Iprim pk	3.828 A	Transformer	Transformer Primary Peak Current
62.	T1 Is1 RMS	1.609 A	Transformer	Transformer Secondary1 RMS Current
63.	T1 Is1 pk	3.234 A	Transformer	Transformer Secondary1 Peak Current
64.	T1 Pd	5.867 W	Transformer	Estimated Losses in Transformer
65.	Vaux	15.595 V	Transformer	Auxiliary Voltage

Design Inputs

Name	Value	Description
Iout	1.2	Maximum Output Current
VinMax	265.0	Maximum input voltage
VinMin	130.0	Minimum input voltage
Vout	100.0	Output Voltage
acFrequency	50.0	AC Frequency
base_pn	UC2844A	Base Product Number
source	AC	Input Source Type
Ta	30.0	Ambient temperature

WEBENCH® Assembly

Component Testing

Some published data on components in datasheets such as Capacitor ESR and Inductor DC resistance is based on conservative values that will guarantee that the components always exceed the specification. For design purposes it is usually better to work with typical values. Since this data is not always available it is a good practice to measure the Capacitance and ESR values of Cin and Cout, and the inductance and DC resistance of L1 before assembly of the board. Any large discrepancies in values should be electrically simulated in WEBENCH to check for instabilities and thermally simulated in WebTHERM to make sure critical temperatures are not exceeded.

Soldering Component to Board

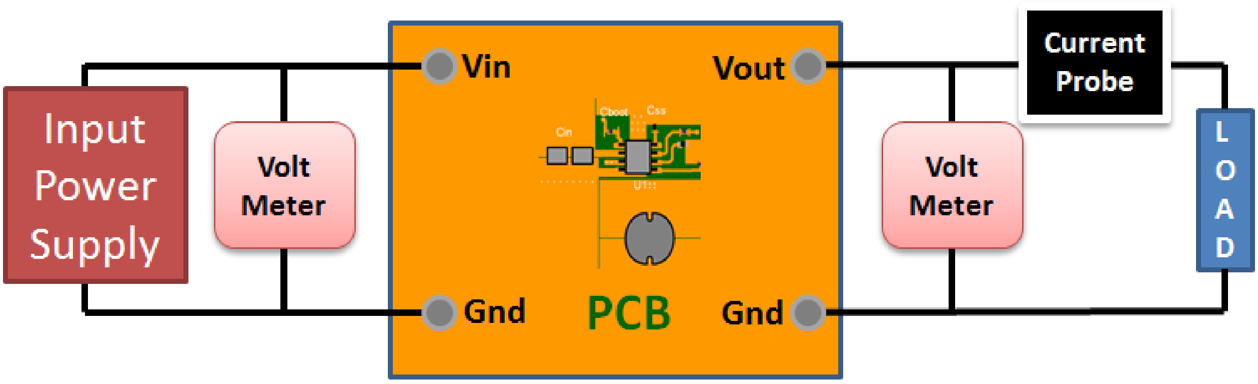
If board assembly is done in house it is best to tack down one terminal of a component on the board then solder the other terminal. For surface mount parts with large tabs, such as the DPAK, the tab on the back of the package should be pre-tinned with solder, then tacked into place by one of the pins. To solder the tab town to the board place the iron down on the board while resting against the tab, heating both surfaces simultaneously. Apply light pressure to the top of the plastic case until the solder flows around the part and the part is flush with the PCB. If the solder is not flowing around the board you may need a higher wattage iron (generally 25W to 30W is enough).

Initial Startup of Circuit

It is best to initially power up the board by setting the input supply voltage to the lowest operating input voltage 130.0V and set the input supply's current limit to zero. With the input supply off connect up the input supply to Vin and GND. Connect a digital volt meter and a load if needed to set the minimum Iout of the design from Vout and GND. Turn on the input supply and slowly turn up the current limit on the input supply. If the voltage starts to rise on the input supply continue increasing the input supply current limit while watching the output voltage. If the current increases on the input supply, but the voltage remains near zero, then there may be a short or a component misplaced on the board. Power down the board and visually inspect for solder bridges and recheck the diode and capacitor polarities. Once the power supply circuit is operational then more extensive testing may include full load testing, transient load and line tests to compare with simulation results.

Load Testing

The setup is the same as the initial startup, except that an additional digital voltmeter is connected between Vin and GND, a load is connected between Vout and GND and a current meter is connected in series between Vout and the load. The load must be able to handle at least rated output power + 50% (7.5 watts for this design). Ideally the load is supplied in the form of a variable load test unit. It can also be done in the form of suitably large power resistors. When using an oscilloscope to measure waveforms on the prototype board, the ground leads of the oscilloscope probes should be as short as possible and the area of the loop formed by the ground lead should be kept to a minimum. This will help reduce ground lead inductance and eliminate EMI noise that is not actually present in the circuit.



WEBENCH® Transformer Report

#	Name	Value
1.	Core Part Number	B66423G0000X197
2.	Core Manufacturer	TDK
3.	Coil Former Part Number	B66424W1012D001
4.	Coil Former Manufacturer	TDK

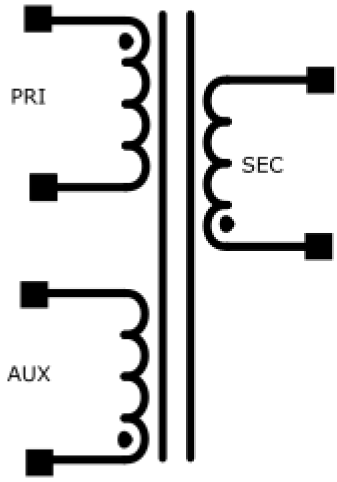
Transformer Electrical Diagram

Primary

Turns	49.0
AWG	32.0
Layers	2.0
Strands	3.0
Insulation Type	Heavy Insulated Magnet Wire

Auxiliary

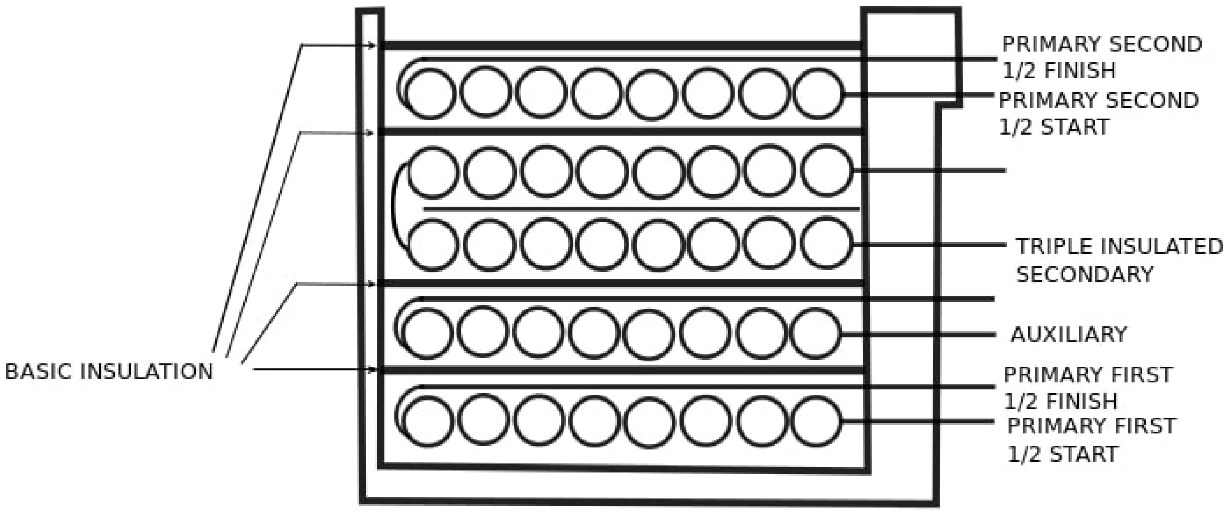
Turns	9.0
AWG	28.0
Layers	1.0
Strands	4.0
Insulation Type	Heavy Insulated Magnet Wire



Secondary

Turns	58.0
AWG	28.0
Layers	2.0
Strands	1.0
Insulation Type	Triple Insulated

Transformer Construction Diagram



Winding Instruction

Winding	AWG	Turns	Winding Orientation
Primary First 1/2.0	32.0	25	Clockwise
Auxiliary	28.0	9.0	Counter Clockwise
Triple Insulated Secondary	28.0	58.0	Counter Clockwise
Primary Second 1/2.0	32.0	24	Clockwise

Transformer Parameters

#	Name	Value
1.	Lpri	2.03E-10H
2.	Inductance Factor(Al)	85.0nH
3.	Npri	49.0
4.	Nsec	58.0
5.	Naux	9.0
6.	Core Type	EFD30/15/9
7.	Core Material	N97
8.	Bmax	0.23T
9.	Switching Frequency	0.10kHz
10.	DMax	0.4
11.	Ipk(Primary)	3.81A
12.	Irms(Primary)	1.54A
13.	Ipk(Secondary)	3.22A
14.	Irms(Secondary)	1.59A

Design Assistance

1. Master key : 9A3F5B20E88A1102[v1]
2. **UC2844A** Product Folder : http://www.ti.com/product/UC2844A : contains the data sheet and other resources.