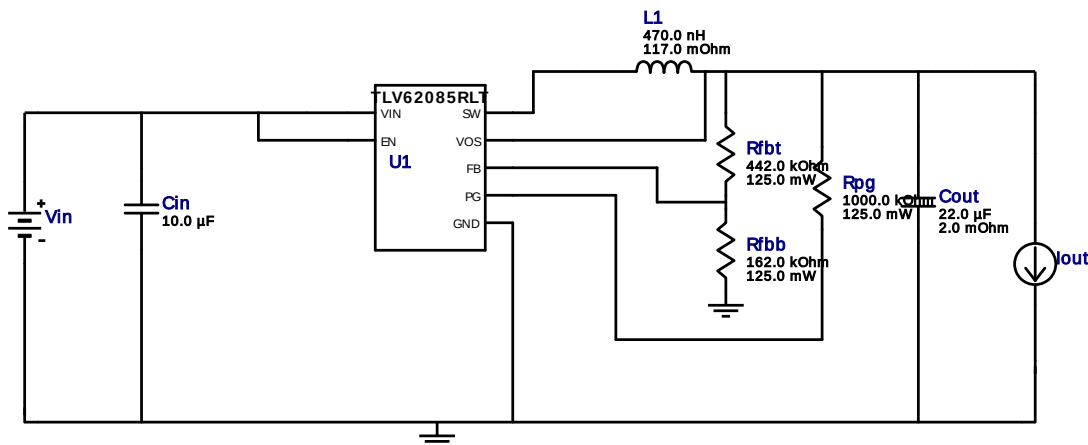


WEBENCH® Design Report

Design : 1284796/4338 TLV62085RLTR
TLV62085RLTR 5.0V-5.0V to 3.00V @ 1.0A

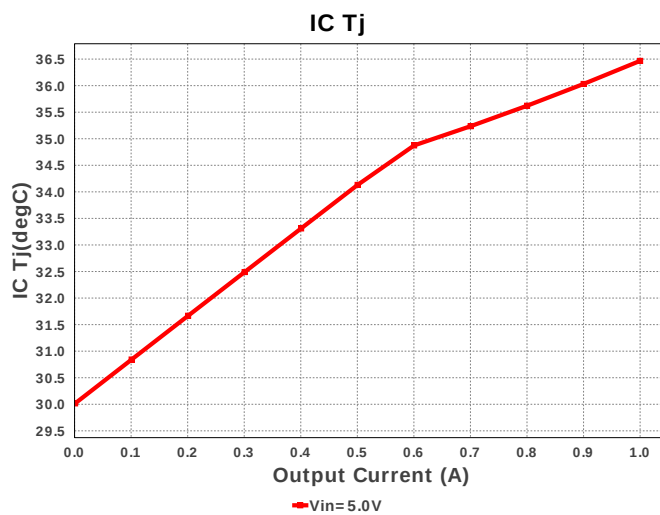
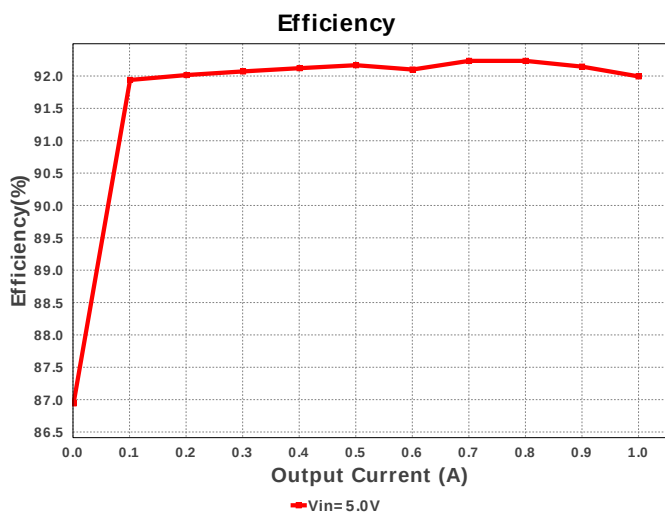
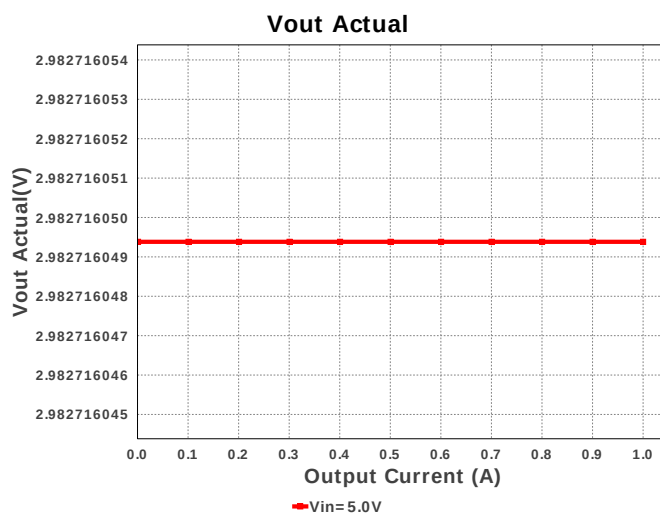
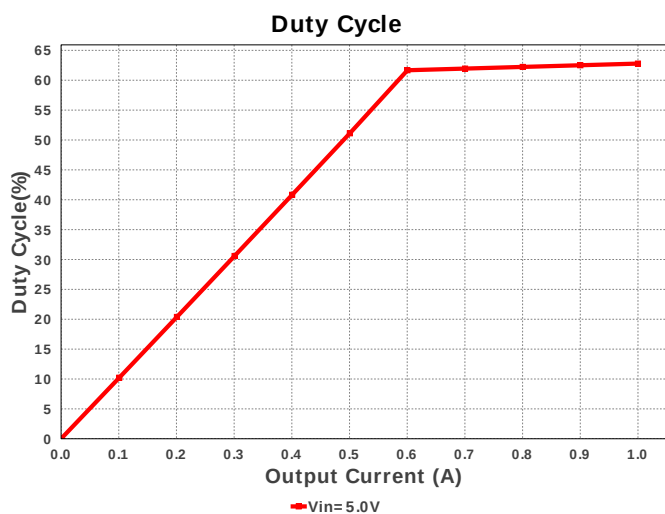
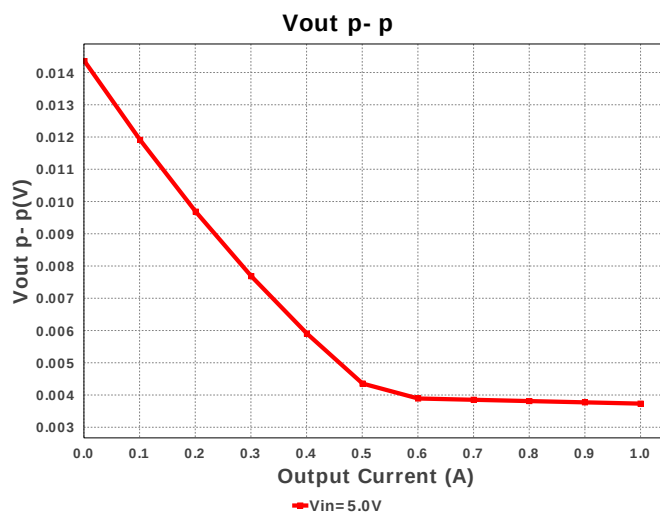
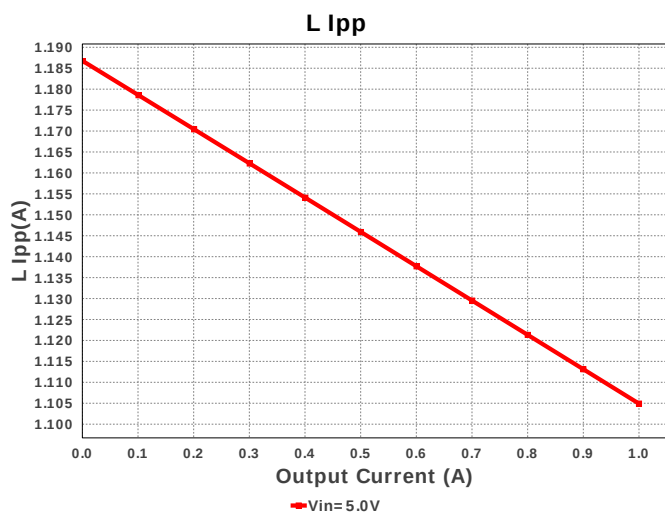
Iout = 1.0A

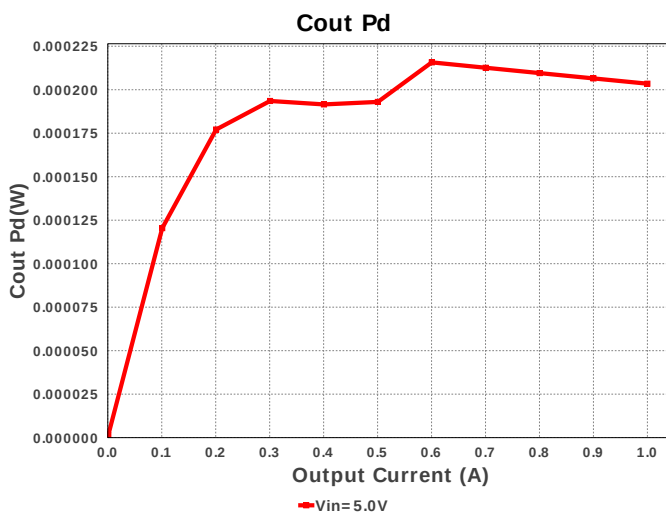
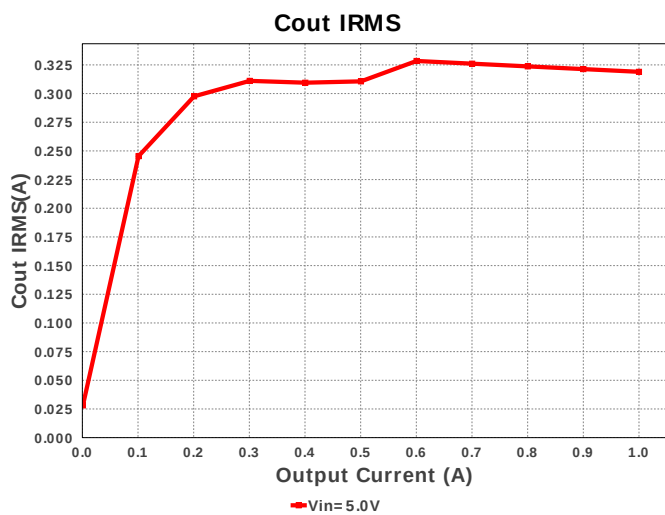
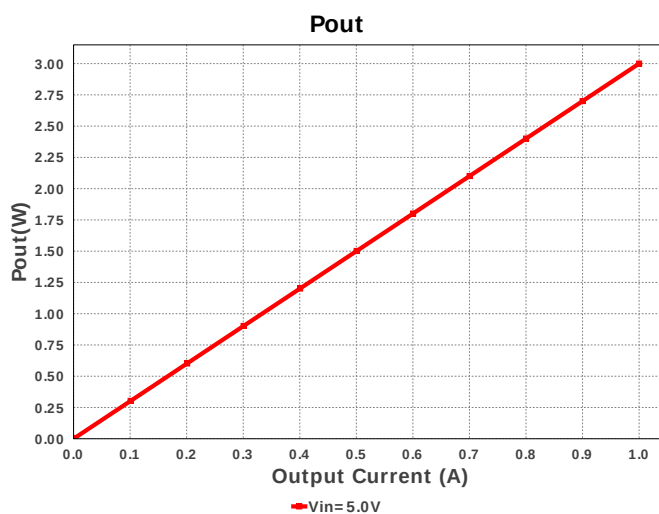
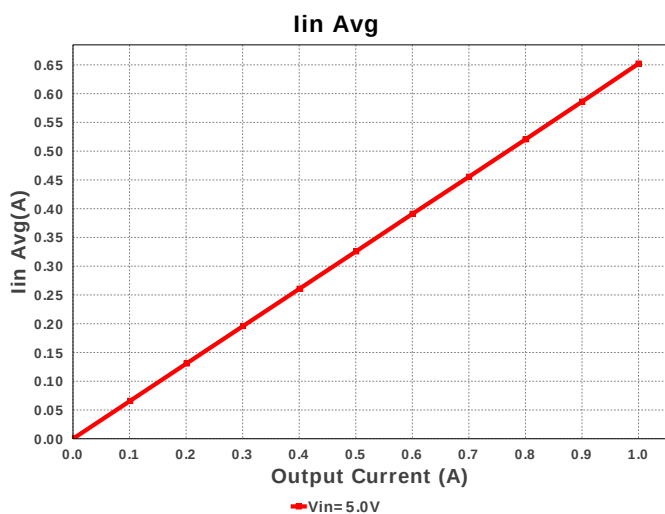
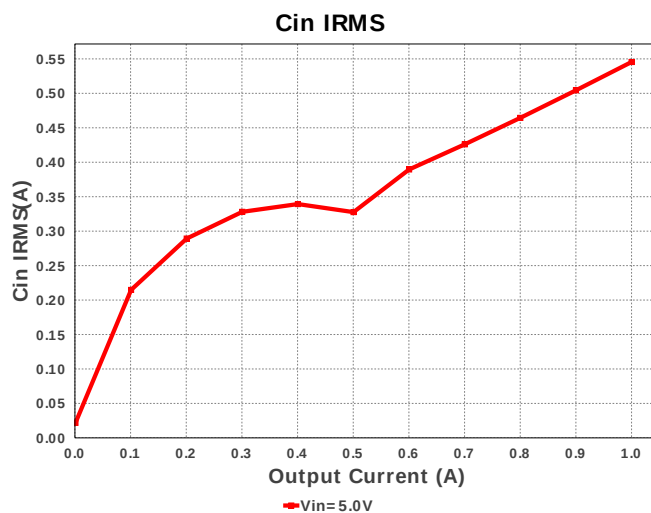
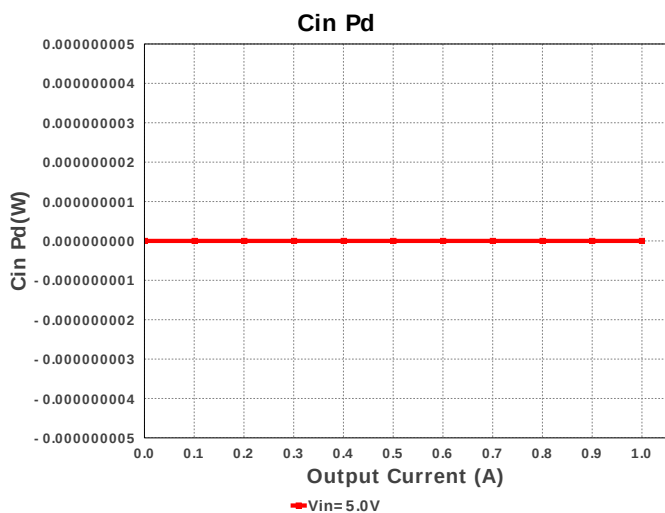


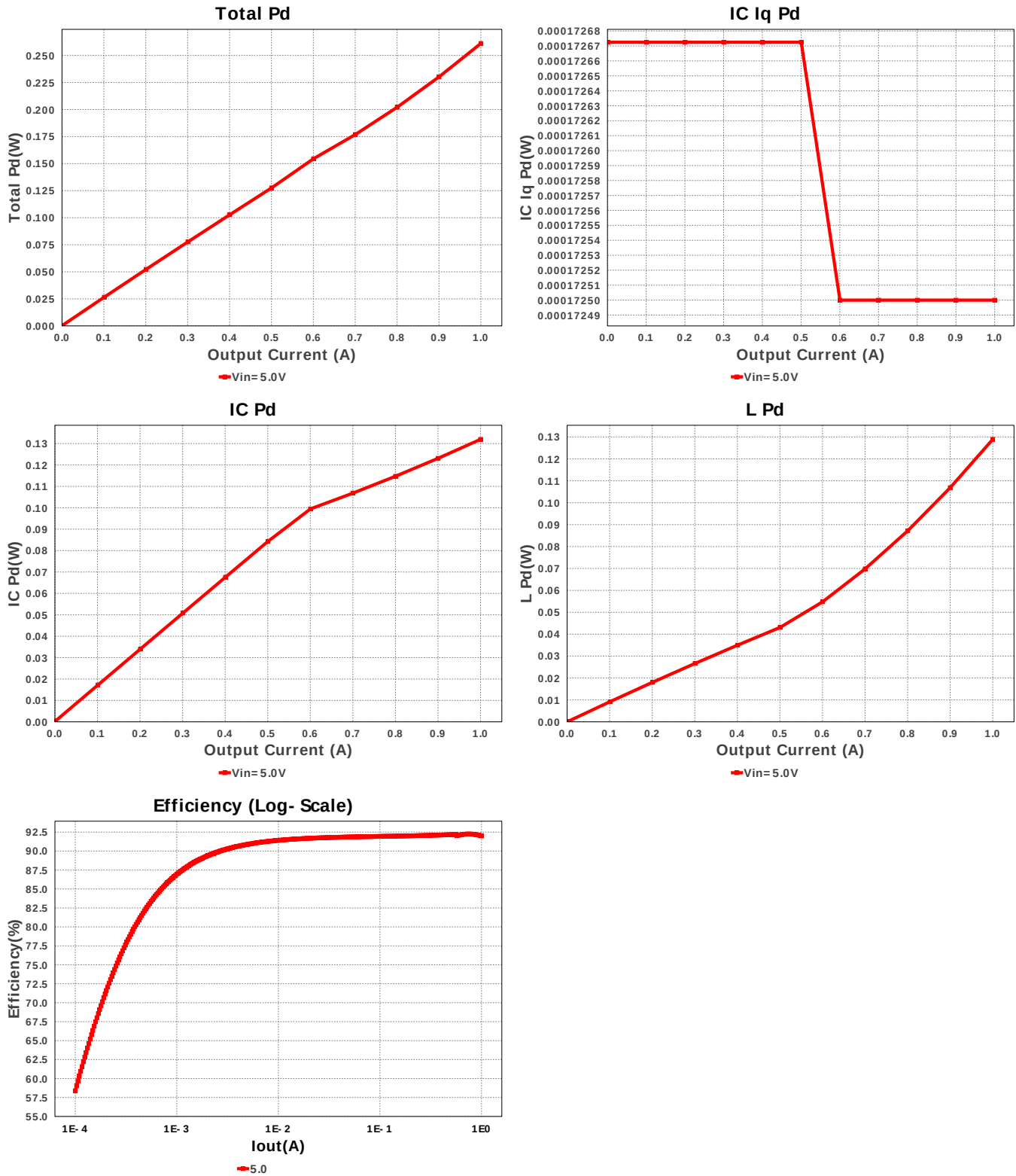
1. The switching frequency of this device is not fixed across the operating range of this device. This variability is not completely captured in the spice model and you may see variation in the spice simulation frequency compared to bench measurements. If frequency of operation is an important constraint for your application, please check the measurement on bench. View WEBENCH(R) Disclaimer.

Electrical BOM

#	Name	Manufacturer	Part Number	Properties	Qty	Price	Footprint
1.	Cin	Taiyo Yuden	LMK212BJ106KG-T Series= X5R	Cap= 10.0 uF VDC= 10.0 V IRMS= 0.0 A	1	\$0.03	0805 7 mm ²
2.	Cout	Taiyo Yuden	JMK212BJ226KG-T Series= X5R	Cap= 22.0 uF ESR= 2.0 mOhm VDC= 6.3 V IRMS= 0.0 A	1	\$0.13	0805 7 mm ²
3.	L1	TDK	MLP2012SR47MT0S1	L= 470.0 nH DCR= 117.0 mOhm	1	\$0.12	MLP2012S-M 8 mm ²
4.	Rfbb	Panasonic	ERJ-6ENF1623V Series= ERJ-6E	Res= 162.0 kOhm Power= 125.0 mW Tolerance= 1.0%	1	\$0.01	0805 7 mm ²
5.	Rfbs	Panasonic	ERJ-6ENF4423V Series= ERJ-6E	Res= 442.0 kOhm Power= 125.0 mW Tolerance= 1.0%	1	\$0.01	0805 7 mm ²
6.	Rpg	Panasonic	ERJ-6ENF1004V Series= ERJ-6E	Res= 1000.0 kOhm Power= 125.0 mW Tolerance= 1.0%	1	\$0.01	0805 7 mm ²
7.	U1	Texas Instruments	TLV62085RLTR	Switcher	1	\$0.65	RLT0007A 9 mm ²







Operating Values

#	Name	Value	Category	Description
1.	Cin IRMS	545.46 mA	Current	Input capacitor RMS ripple current
2.	Cout IRMS	318.96 mA	Current	Output capacitor RMS ripple current
3.	Iin Avg	652.22 mA	Current	Average input current
4.	L Ipp	1.105 A	Current	Peak-to-peak inductor ripple current
5.	BOM Count	7	General	Total Design BOM count
6.	FootPrint	51.0 mm ²	General	Total Foot Print Area of BOM components
7.	Frequency	2.154 MHz	General	Switching frequency
8.	IC Tolerance	20.0 mV	General	IC Feedback Tolerance
9.	Mode	CCM	General	Conduction Mode
10.	Pout	3.0 W	General	Total output power
11.	Total BOM	\$0.96	General	Total BOM Cost

#	Name	Value	Category	Description
12.	ICThetaJA Effective	49.0 degC/W	Op_Point	Effective IC Junction-to-Ambient Thermal Resistance
13.	Vout Actual	2.983 V	Op_Point	Vout Actual calculated based on selected voltage divider resistors
14.	Vout OP	3.0 V	Op_Point	Operational Output Voltage
15.	Duty Cycle	62.787 %	Op_point	Duty cycle
16.	Efficiency	91.994 %	Op_point	Steady state efficiency
17.	IC Tj	36.466 degC	Op_point	IC junction temperature
18.	IOUT_OP	1.0 A	Op_point	Iout operating point
19.	VIN_OP	5.0 V	Op_point	Vin operating point
20.	Vout p-p	3.733 mV	Op_point	Peak-to-peak output ripple voltage
21.	Cin Pd	0.0 W	Power	Input capacitor power dissipation
22.	Cout Pd	203.471 μ W	Power	Output capacitor power dissipation
23.	IC Iq Pd	172.5 μ W	Power	IC Iq Pd
24.	IC Pd	131.968 mW	Power	IC power dissipation
25.	L Pd	128.903 mW	Power	Inductor power dissipation
26.	Total Pd	261.084 mW	Power	Total Power Dissipation
27.	Vout Tolerance	4.015 %		Vout Tolerance based on IC Tolerance (no load) and voltage divider resistors if applicable

Design Inputs

#	Name	Value	Description
1.	Iout	1.0	Maximum Output Current
2.	VinMax	5.0	Maximum input voltage
3.	VinMin	5.0	Minimum input voltage
4.	Vout	3.0	Output Voltage
5.	base_pn	TLV62085	Texas Instruments Base Part Number
6.	source	DC	Input Source Type
7.	ta	30.0	Ambient temperature

Design Assistance

1. [TLV62085 Product Folder](http://www.ti.com/product/TLV62085) : <http://www.ti.com/product/TLV62085> : 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](#).