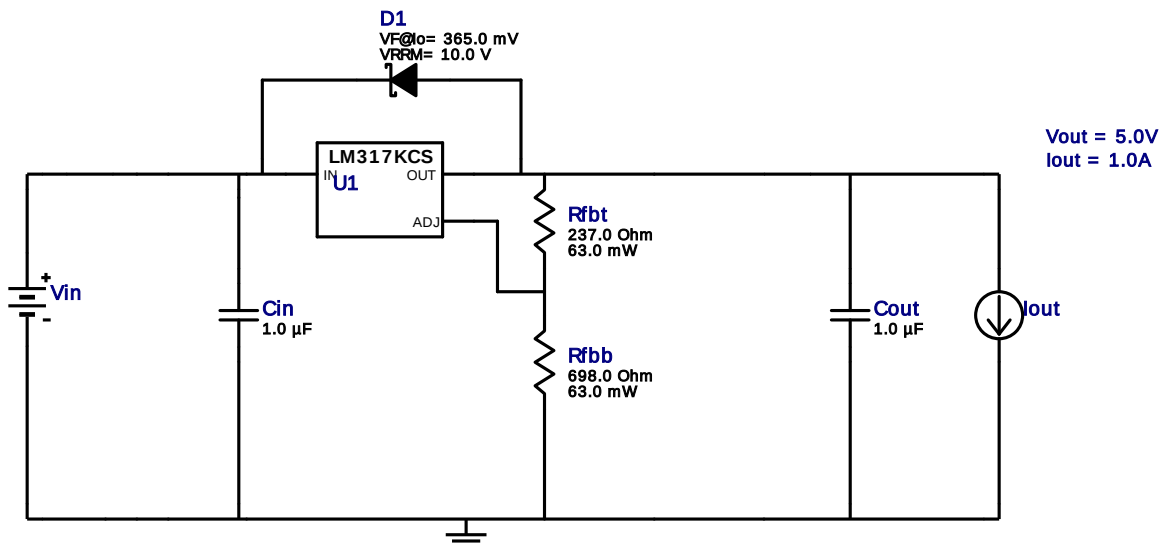
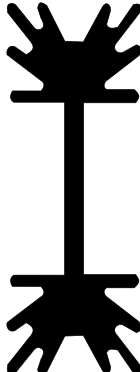


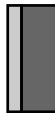
WEBENCH® Design Report

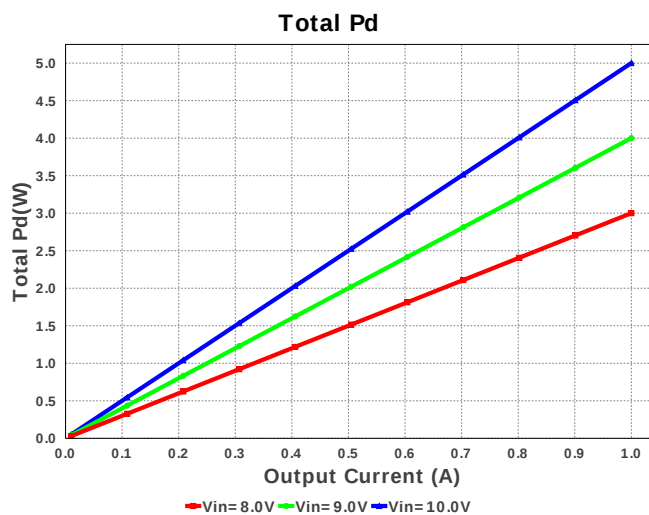
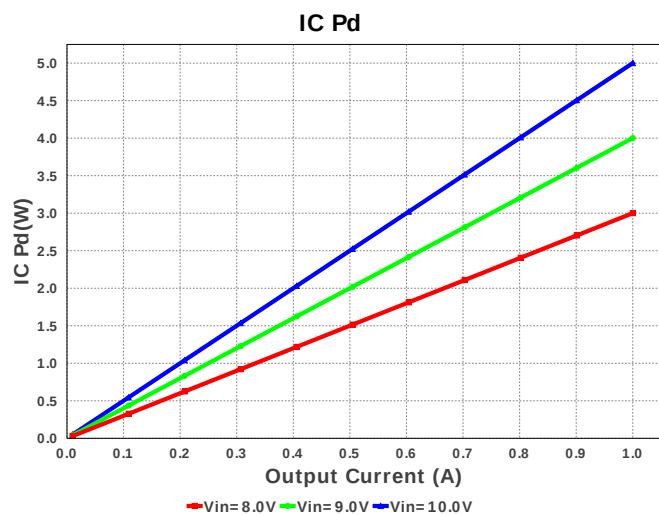
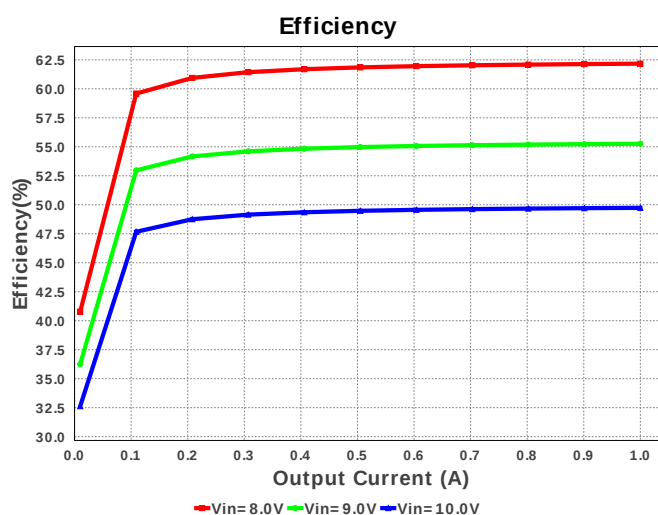
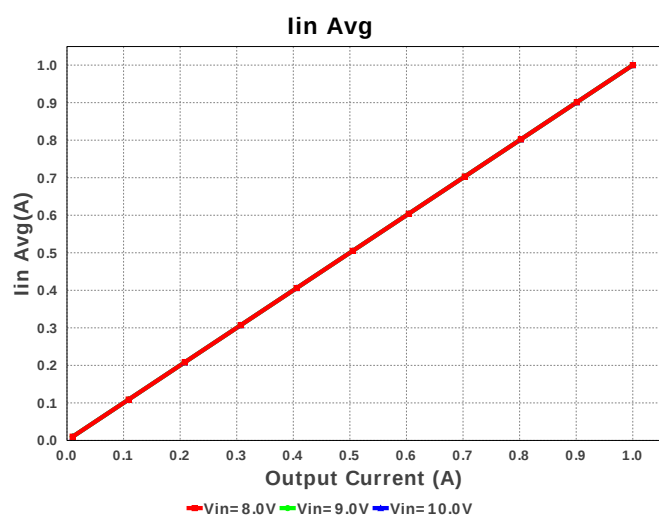
Design : 4737126/3 LM317KCS
LM317KCS 8.0V-10.0V to 5.00V @ 1.0A

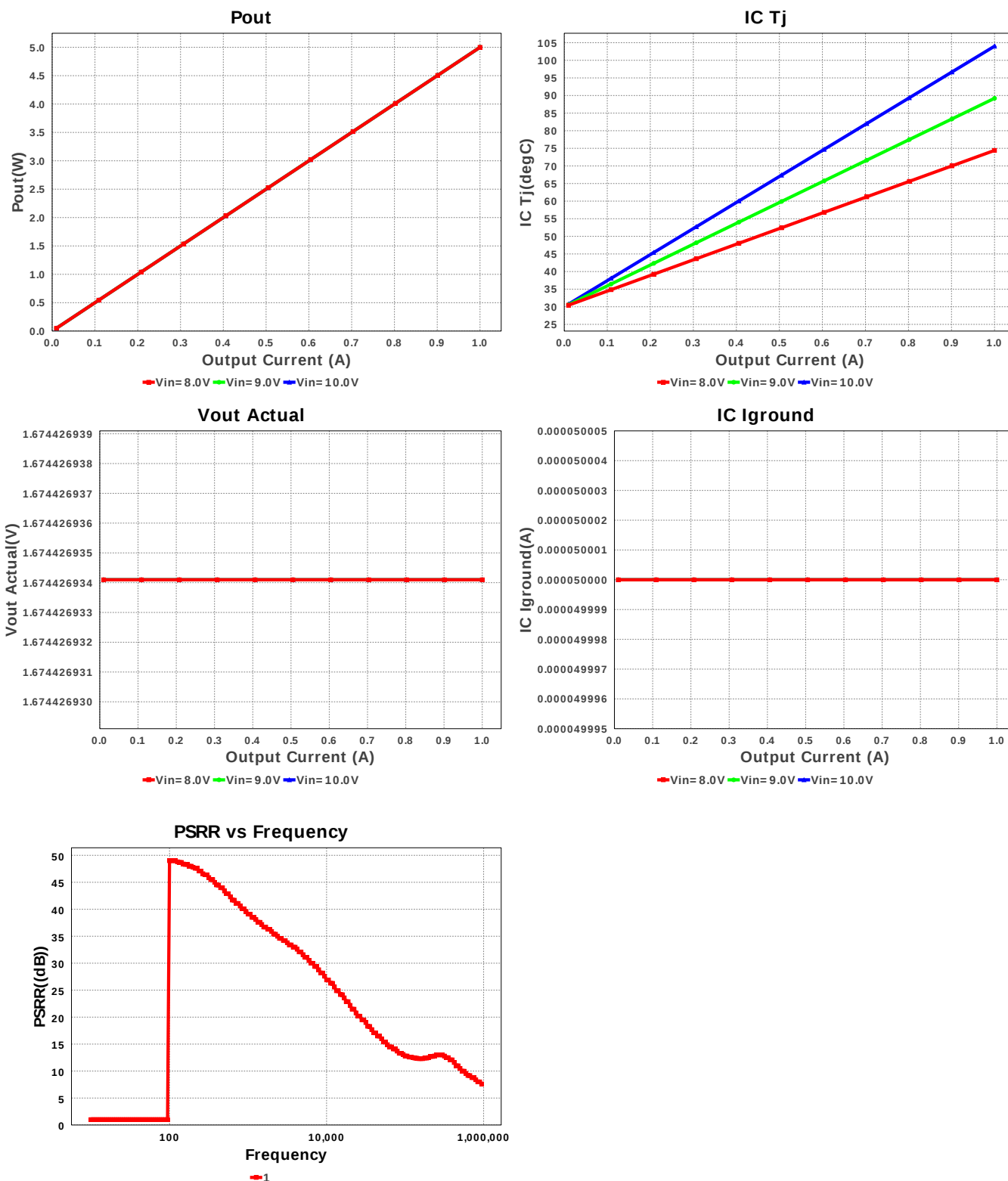


Electrical BOM

#	Name	Manufacturer	Part Number	Properties	Qty	Price	Footprint
1.	Cin	Taiyo Yuden	EMK107B7105KA-T Series= X7R	Cap= 1.0 uF VDC= 16.0 V IRMS= 0.0 A	1	\$0.01	 0603 5 mm ²
2.	Cout	Kemet	C0603C105Z9VACTU Series= Y5V	Cap= 1.0 uF VDC= 6.3 V IRMS= 0.0 A	1	\$0.01	 0603 5 mm ²
3.	D1	ON Semiconductor	MBRM110LT1G	VF@Io= 365.0 mV VRRM= 10.0 V	1	\$0.15	 POWERMITE 15 mm ²
4.	HeatSink	Aavid	531202B02500G	Heatsink	1	\$0.90	 531202 545 mm ²
5.	Rfbb	Vishay-Dale	CRCW0402698RFKED Series= CRCW..e3	Res= 698.0 Ohm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	 0402 3 mm ²
6.	Rfbt	Vishay-Dale	CRCW0402237RFKED Series= CRCW..e3	Res= 237.0 Ohm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	 0402 3 mm ²

#	Name	Manufacturer	Part Number	Properties	Qty	Price	Footprint
7.	U1	Texas Instruments	LM317KCS	Switcher	1	\$0.24	 TO-220-3 127 mm ²





Operating Values

#	Name	Value	Category	Description
1.	IC Iground	50.0 μA	Current	IC ground current
2.	Iin Avg	1.0 A	Current	Average input current
3.	BOM Count	7	General	Total Design BOM count
4.	FootPrint	702.0 mm ²	General	Total Foot Print Area of BOM components
5.	IC Tolerance	50.0 mV	General	IC Feedback Tolerance
6.	Output Noise RMS	150.0 μV	General	Noise RMS
7.	Pout	5.0 W	General	Total output power
8.	Total BOM	\$1.33	General	Total BOM Cost
9.	Vin p-p	100.0 mV	Op_Point	Input Source ripple voltage
10.	Vout Actual	1.674 V	Op_Point	Vout Actual calculated based on selected voltage divider resistors
11.	Vout OP	5.0 V	Op_Point	Operational Output Voltage

#	Name	Value	Category	Description
12.	Efficiency	49.735 %	Op_point	Steady state efficiency
13.	IC Tj	110.508 degC	Op_point	IC junction temperature
14.	ICThetaJA	16.1 degC/W	Op_point	IC junction-to-ambient thermal resistance
15.	IOUT_OP	1.0 A	Op_point	Iout operating point
16.	Input Ripple Frequency	100.0 kHz	Op_point	Input Source Ripple Frequency for PSRR Calculation
17.	PSRR est.	-12.8 dB	Op_point	Power Supply Rejection Ratio, estimated
18.	VIN_OP	10.0 V	Op_point	Vin operating point
19.	Vout p-p	22.909 mV	Op_point	Peak-to-peak output ripple voltage
20.	IC Pd	5.0 W	Power	IC power dissipation
21.	Total Pd	5.0 W	Power	Total Power Dissipation
22.	Vout Tolerance	4.533 %		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	10.0	Maximum input voltage
3.	VinMin	8.0	Minimum input voltage
4.	Vout	5.0	Output Voltage
5.	base_pn	LM317	Texas Instruments Base Part Number
6.	source	DC	Input Source Type
7.	ta	30.0	Ambient temperature

Design Assistance

1.

2. LM317 Product Folder : <http://www.ti.com/product/lm317> : 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](#).