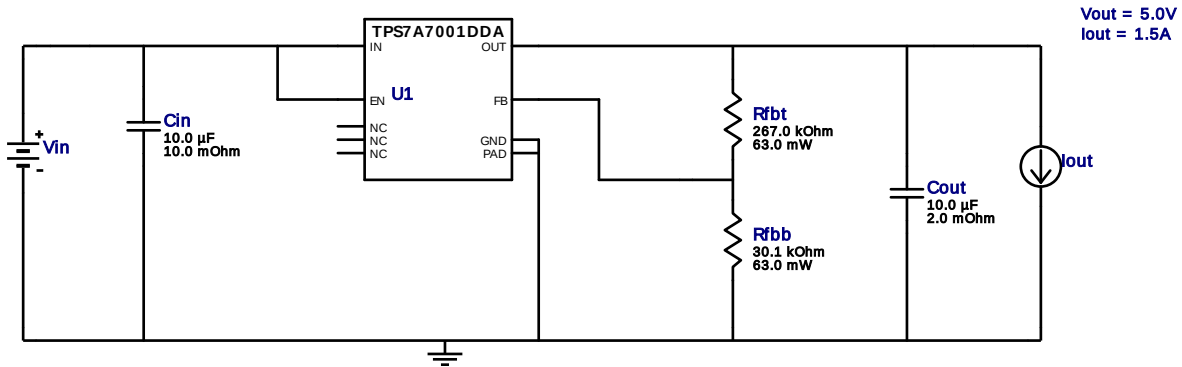


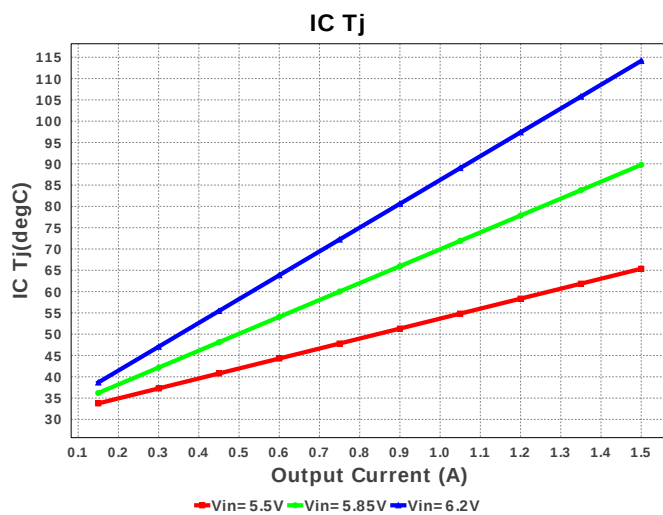
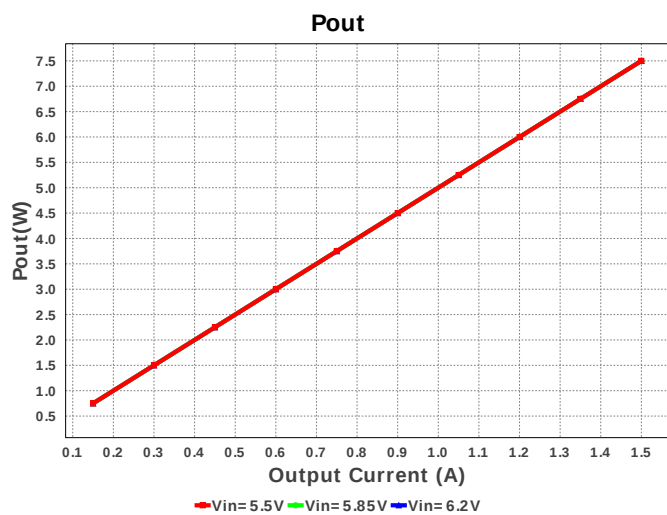
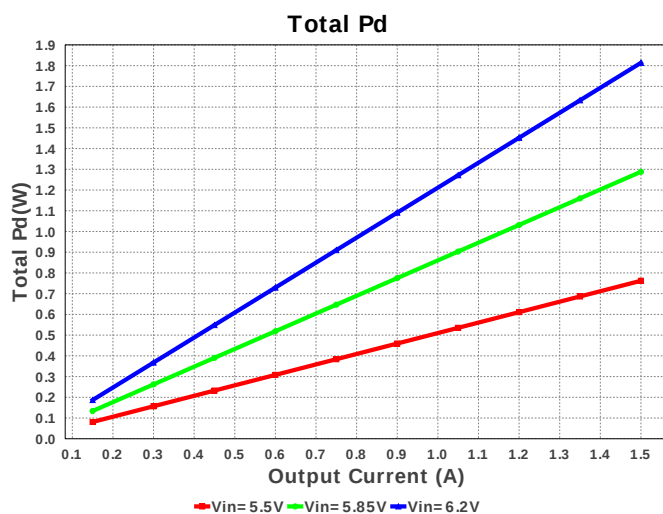
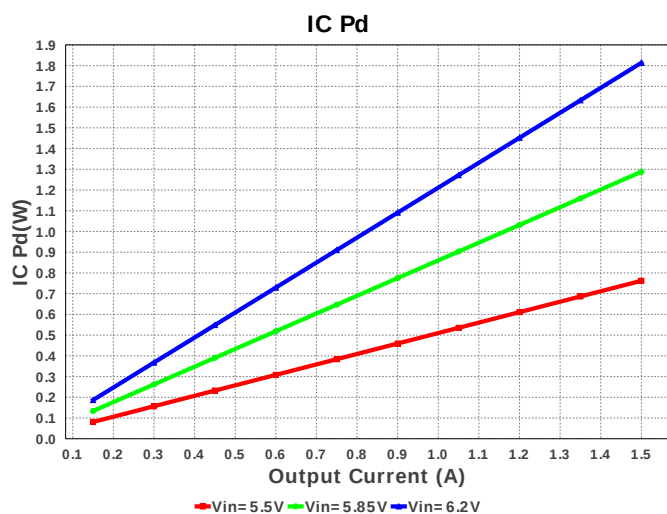
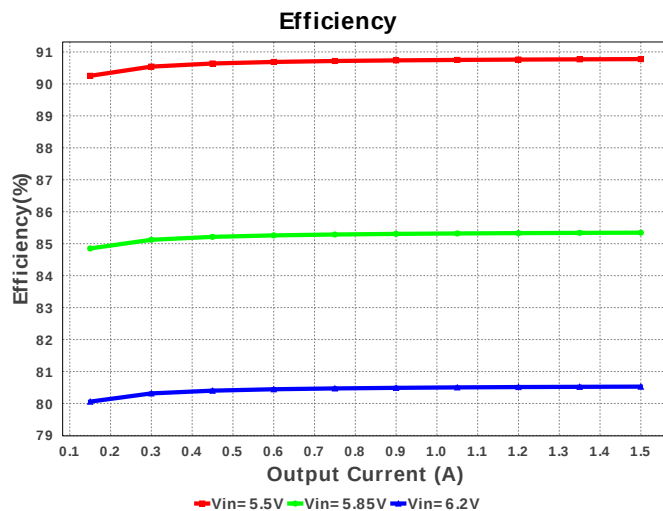
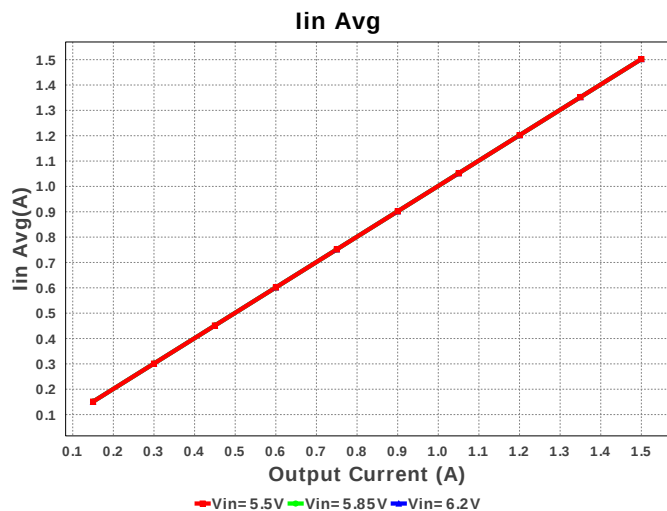
WEBENCH® Design Report

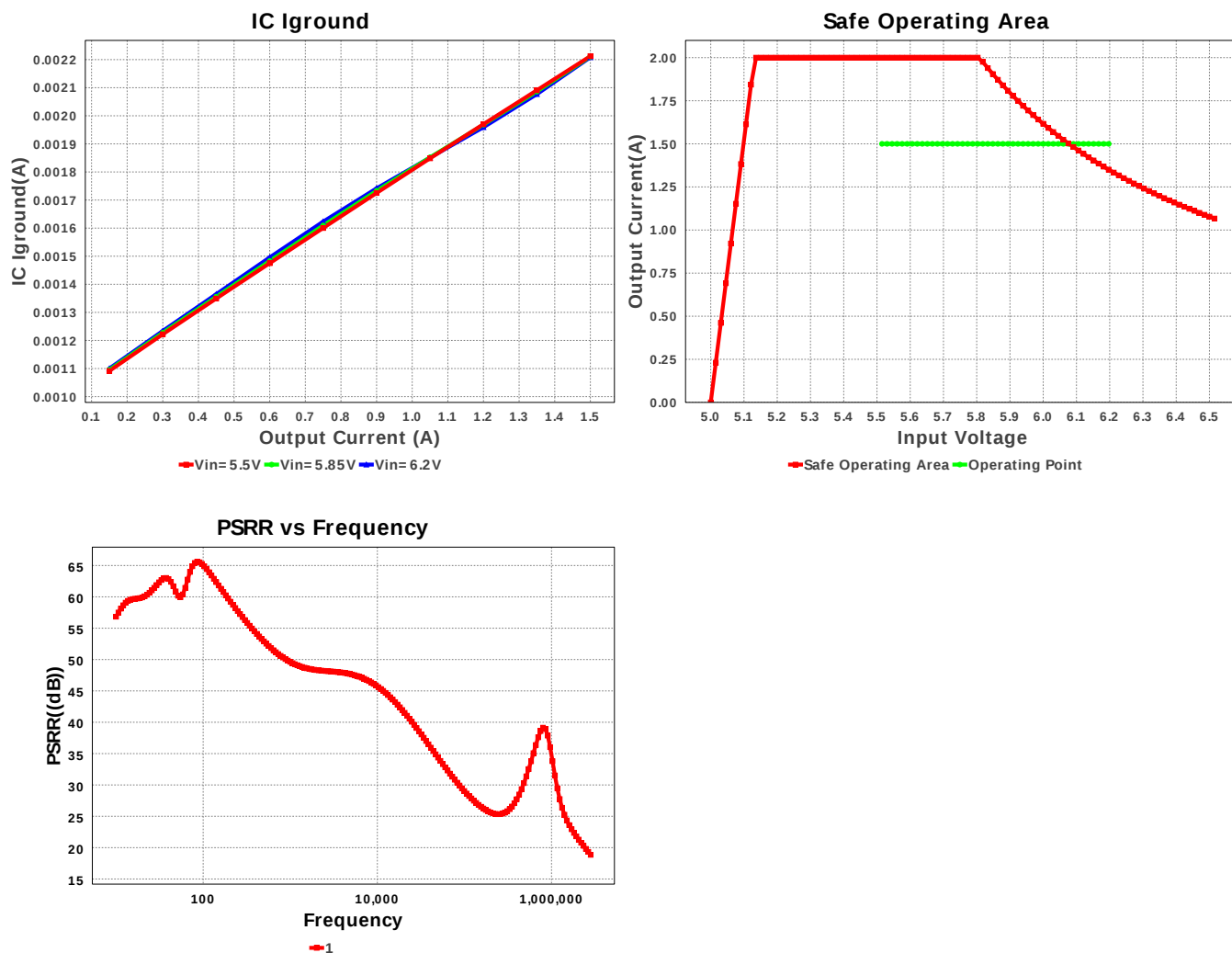
Design : 4466811/6 TPS7A7001DDAR
TPS7A7001DDAR 5.5V-6.2V to 5.00V @ 1.5A



Electrical BOM

#	Name	Manufacturer	Part Number	Properties	Qty	Price	Footprint
1.	Cin	Taiyo Yuden	LMK212BJ106KD-T Series= X5R	Cap= 10.0 uF ESR= 10.0 mOhm VDC= 10.0 V IRMS= 0.0 A	1	\$0.04	 0805 7 mm ²
2.	Cout	Taiyo Yuden	JMK212BJ106KD-T Series= X5R	Cap= 10.0 uF ESR= 2.0 mOhm VDC= 6.3 V IRMS= 0.0 A	1	\$0.02	 0805 7 mm ²
3.	Rfbb	Vishay-Dale	CRCW040230K1FKED Series= CRCW..e3	Res= 30.1 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	 0402 3 mm ²
4.	Rfht	Vishay-Dale	CRCW0402267KFKED Series= CRCW..e3	Res= 267.0 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	 0402 3 mm ²
5.	U1	Texas Instruments	TPS7A7001DDAR	Switcher	1	\$0.70	 DDA0008E 57 mm ²





Operating Values

#	Name	Value	Category	Description
1.	IC Iground	2.208 mA	Current	IC ground current
2.	Iin Avg	1.502 A	Current	Average input current
3.	BOM Count	5	General	Total Design BOM count
4.	FootPrint	77.0 mm ²	General	Total Foot Print Area of BOM components
5.	IC Tolerance	15.0 mV	General	IC Feedback Tolerance
6.	Output Noise RMS	115.13 μ V	General	Noise RMS
7.	Pout	7.5 W	General	Total output power
8.	Total BOM	\$0.78	General	Total BOM Cost
9.	Vin p-p	62.0 mV	Op_Point	Input Source ripple voltage
10.	Vout Actual	4.935 V	Op_Point	Vout Actual calculated based on selected voltage divider resistors
11.	Vout OP	5.0 V	Op_Point	Operational Output Voltage
12.	Efficiency	80.526 %	Op_point	Steady state efficiency
13.	IC Tj	114.155 degC	Op_point	IC junction temperature
14.	ICThetaJA	46.4 degC/W	Op_point	IC junction-to-ambient thermal resistance
15.	IOUT_OP	1.5 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.	-29.013 dB	Op_point	Power Supply Rejection Ratio, estimated
18.	VIN_OP	6.2 V	Op_point	Vin operating point
19.	Vout p-p	2.197 mV	Op_point	Peak-to-peak output ripple voltage
20.	IC Pd	1.814 W	Power	IC power dissipation
21.	Total Pd	1.814 W	Power	Total Power Dissipation
22.	Vout Tolerance	4.87 %		Vout Tolerance based on IC Tolerance (no load) and voltage divider resistors if applicable

Design Inputs

#	Name	Value	Description
1.	Iout	1.5	Maximum Output Current
2.	VinMax	6.2	Maximum input voltage
3.	VinMin	5.5	Minimum input voltage
4.	Vout	5.0	Output Voltage

#	Name	Value	Description
5.	base_pn	TPS7A7001	Texas Instruments Base Part Number
6.	source	DC	Input Source Type
7.	ta	30.0	Ambient temperature

Design Assistance

- 1.
2. TPS7A7001 Product Folder : <http://www.ti.com/product/TPS7A7001> : 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](#).