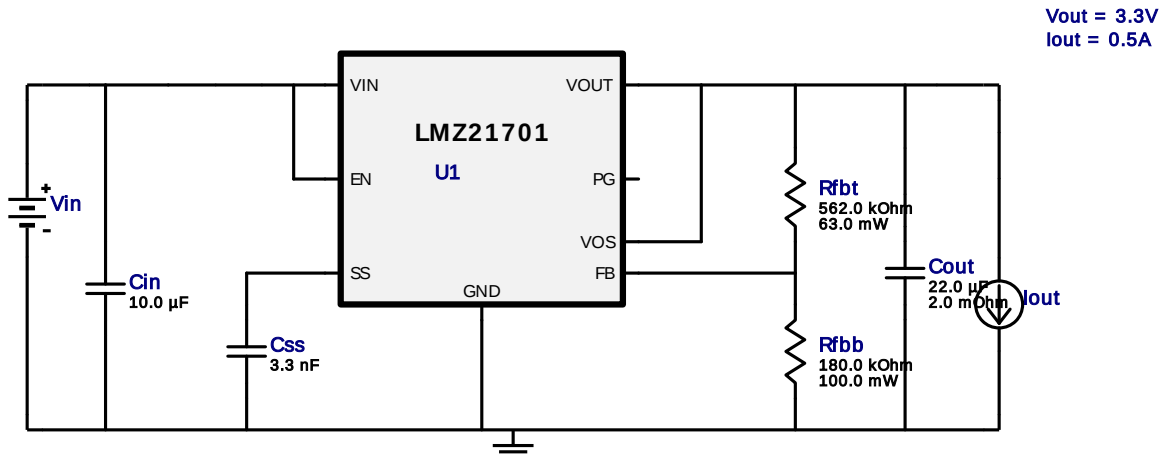


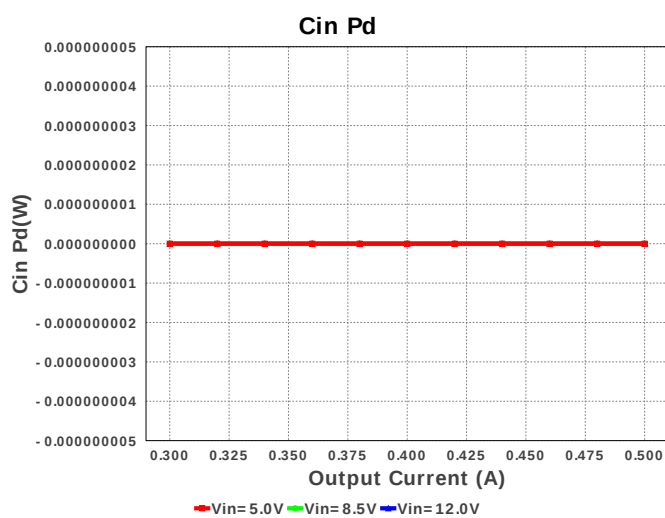
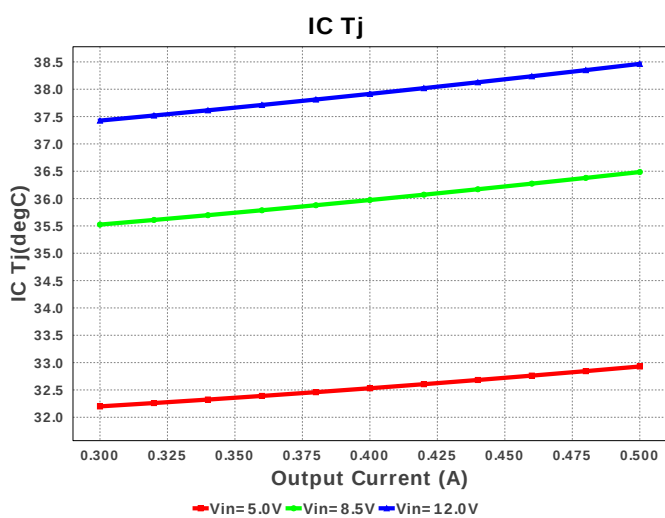
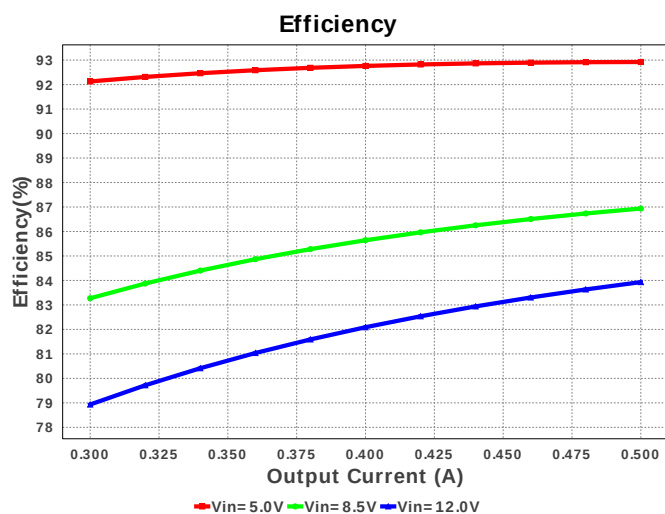
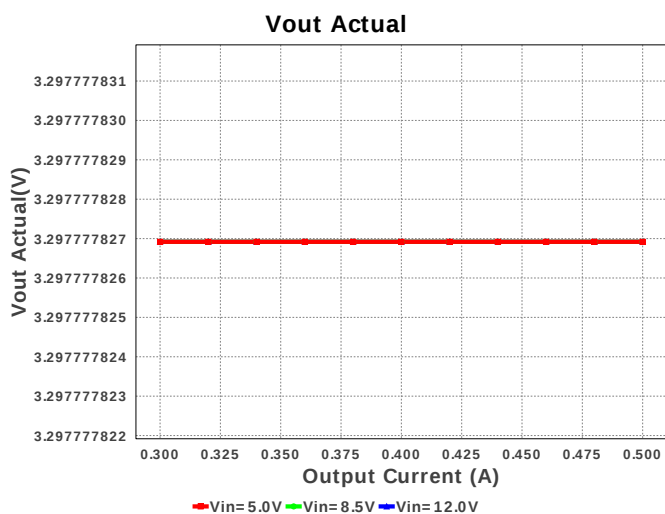
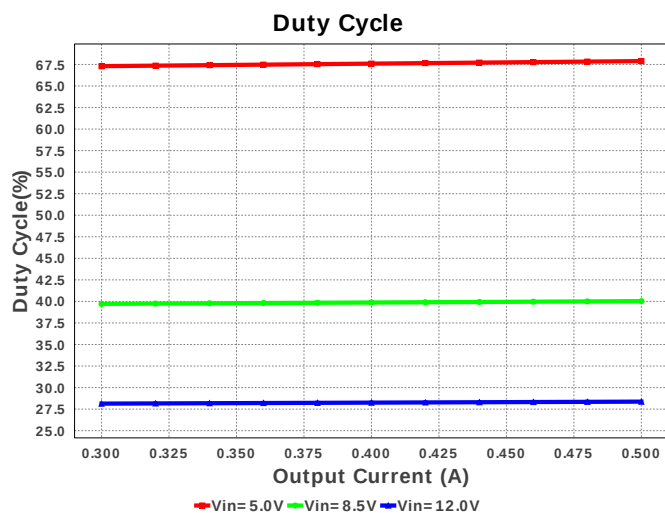
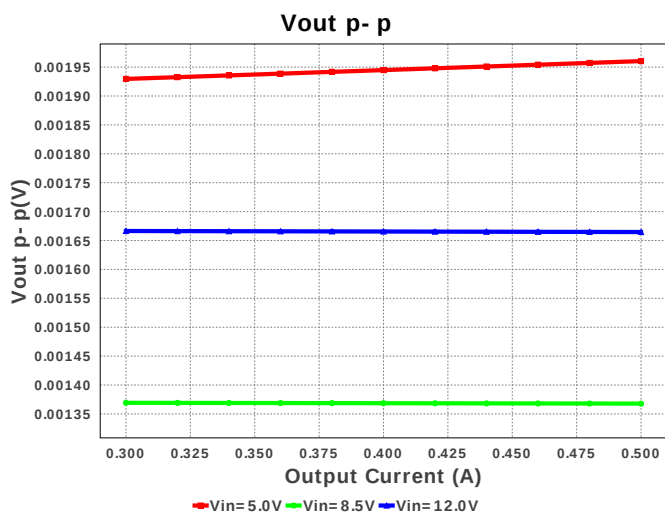
WEBENCH® Design Report

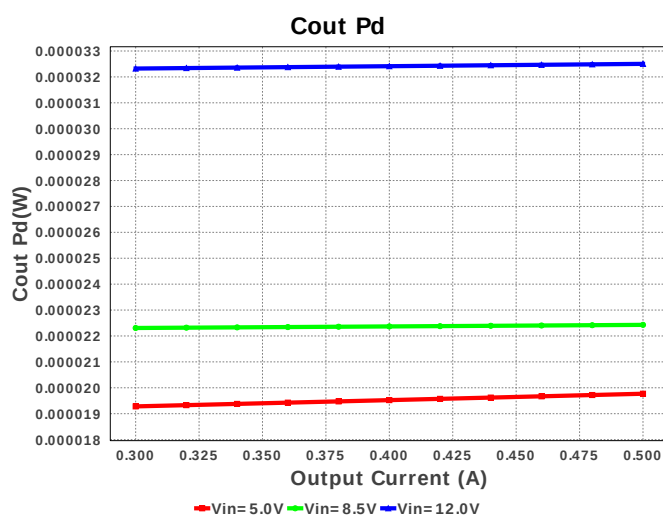
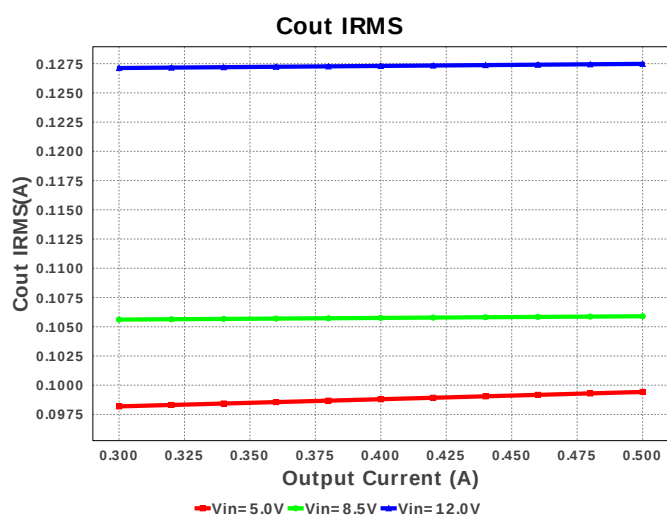
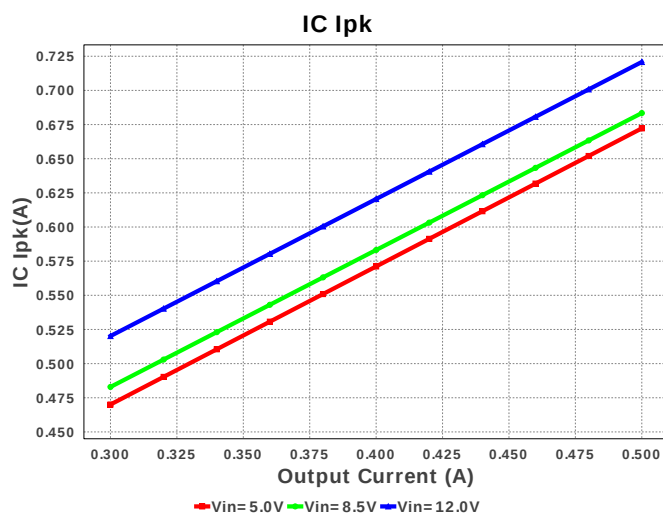
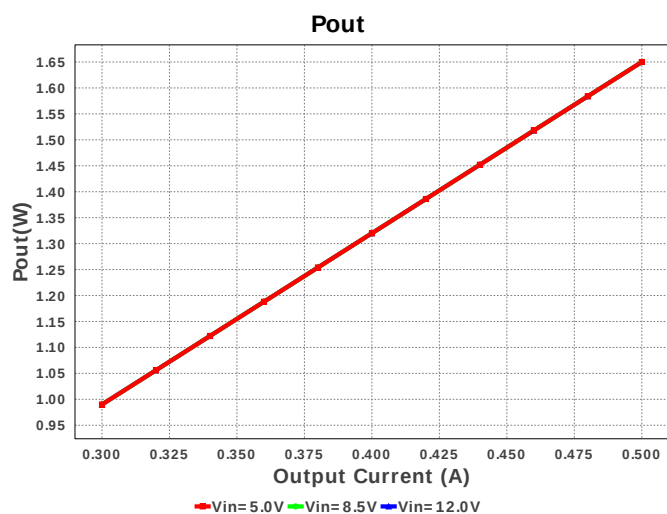
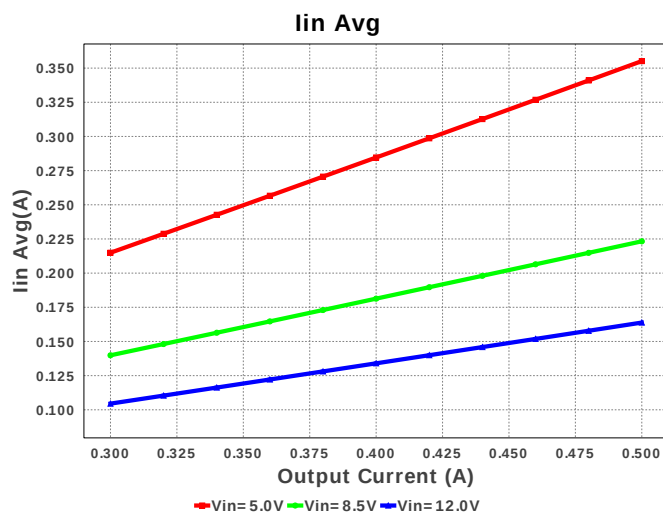
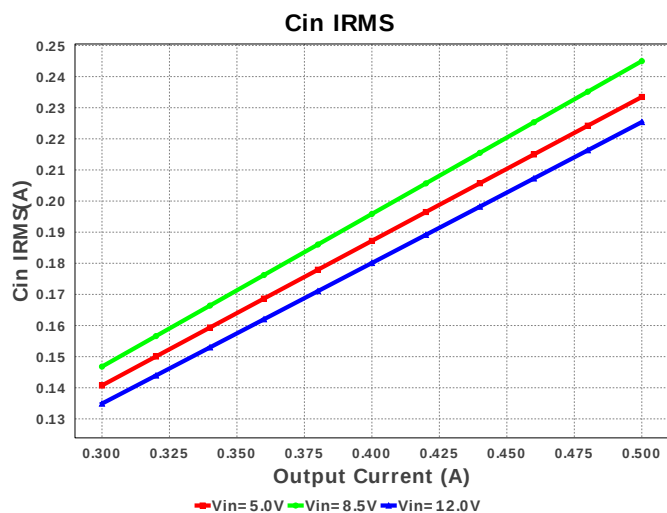
Design : 4372614/32 LMZ21701SILR
LMZ21701SILR 5.0V-12.0V to 3.30V @ 0.5A

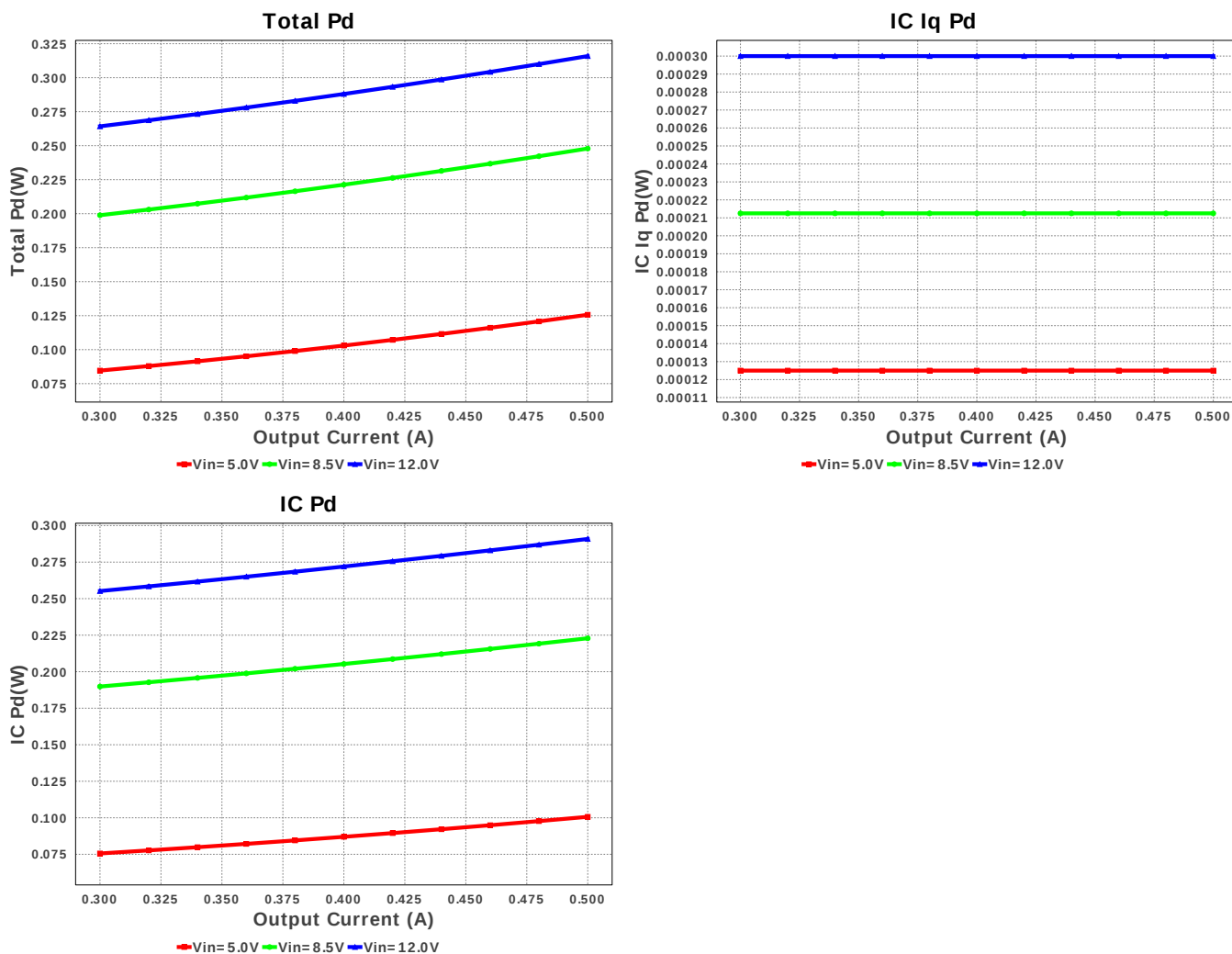


Electrical BOM

#	Name	Manufacturer	Part Number	Properties	Qty	Price	Footprint
1.	Cin	Taiyo Yuden	TMK316BJ106KL-T Series= X5R	Cap= 10.0 uF VDC= 25.0 V IRMS= 0.0 A	1	\$0.05	 1206 11 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.	Css	MuRata	GRM216R71E332KA01D Series= X7R	Cap= 3.3 nF VDC= 25.0 V IRMS= 0.0 A	1	\$0.01	 0805 7 mm ²
4.	Rfbb	Yageo America	RC0603FR-07180KL Series= ?	Res= 180.0 kOhm Power= 100.0 mW Tolerance= 1.0%	1	\$0.01	 0603 5 mm ²
5.	Rfbbt	Vishay-Dale	CRCW0402562KFKED Series= CRCW..e3	Res= 562.0 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	 0402 3 mm ²
6.	U1	Texas Instruments	LMZ21701SILR	Switcher	1	\$1.75	 SIL0008B 14 mm ²







Operating Values

#	Name	Value	Category	Description
1.	Cin IRMS	225.392 mA	Current	Input capacitor RMS ripple current
2.	Cout IRMS	127.482 mA	Current	Output capacitor RMS ripple current
3.	IC Ipk	720.805 mA	Current	Peak switch current in IC
4.	Iin Avg	163.82 mA	Current	Average input current
5.	BOM Count	6	General	Total Design BOM count
6.	FootPrint	47.0 mm ²	General	Total Foot Print Area of BOM components
7.	Frequency	2.54 MHz	General	Switching frequency
8.	Pout	1.65 W	General	Total output power
9.	Total BOM	\$1.96	General	Total BOM Cost
10.	Vout Actual	3.298 V	Op_Point	Vout Actual calculated based on selected voltage divider resistors
11.	Vout OP	3.3 V	Op_Point	Operational Output Voltage
12.	Duty Cycle	28.368 %	Op_point	Duty cycle
13.	Efficiency	83.932 %	Op_point	Steady state efficiency
14.	IC Tj	38.464 degC	Op_point	IC junction temperature
15.	ICThetaJA	29.1 degC/W	Op_point	IC junction-to-ambient thermal resistance
16.	IOUT_OP	500.0 mA	Op_point	Iout operating point
17.	VIN_OP	12.0 V	Op_point	Vin operating point
18.	Vout p-p	1.665 mV	Op_point	Peak-to-peak output ripple voltage
19.	Cin Pd	0.0 W	Power	Input capacitor power dissipation
20.	Cout Pd	32.503 μW	Power	Output capacitor power dissipation
21.	IC Iq Pd	300.0 μW	Power	IC Iq Pd
22.	IC Pd	290.854 mW	Power	IC power dissipation
23.	Total Pd	315.871 mW	Power	Total Power Dissipation
24.	Vout Tolerance	1.53 %		Vout Tolerance based on IC Tolerance (no load) and voltage divider resistors if applicable

Design Inputs

#	Name	Value	Description
1.	Iout	500.0 m	Maximum Output Current
2.	VinMax	12.0	Maximum input voltage

#	Name	Value	Description
3.	VinMin	5.0	Minimum input voltage
4.	Vout	3.3	Output Voltage
5.	base_pn	LMZ21701	Base Product Number
6.	source	DC	Input Source Type
7.	Ta	30.0	Ambient temperature

Design Assistance

1. Feature Highlights: DCS-Control(TM) Architecture with upto 3A output current, 3V to 17V Input Voltage Range, Adjustable output voltage from 0.9V to 6V Optional Softstart Capacitor for slow startup, Seamless Power Save Mode for Light Load Efficiency, Power Good Output, 100% Duty Cycle mode, Short Circuit Protection, Thermal Shutdown

2. **LMZ21701** Product Folder : <http://www.ti.com/product/LMZ21701> : 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](#).