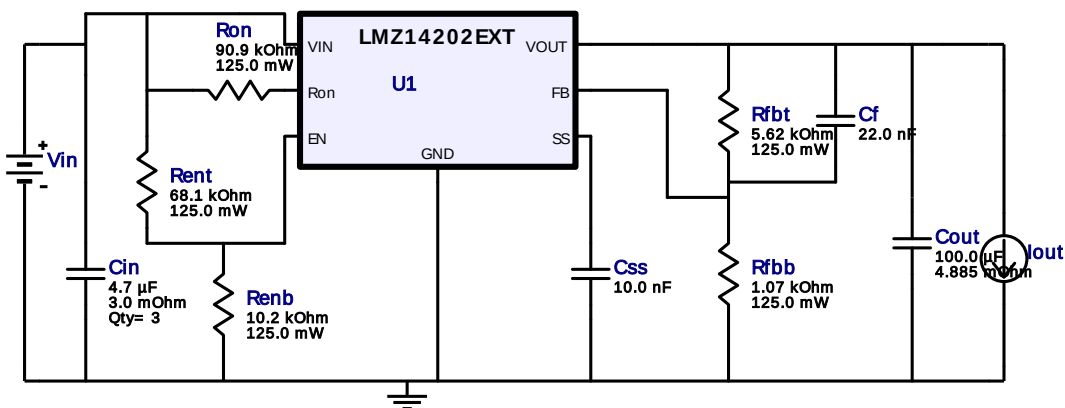


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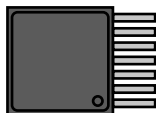
Design : 2350594/20 LMZ14202EXTTZ/NOPB
LMZ14202EXTTZ/NOPB 9.0V-30.0V to 5.00V @ 2.0A

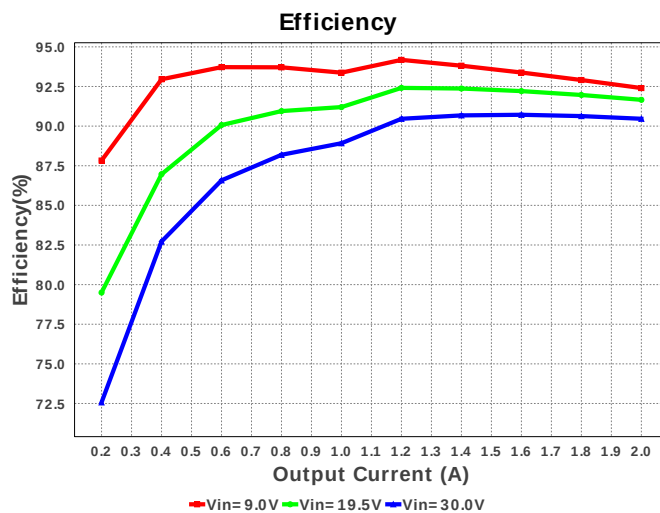
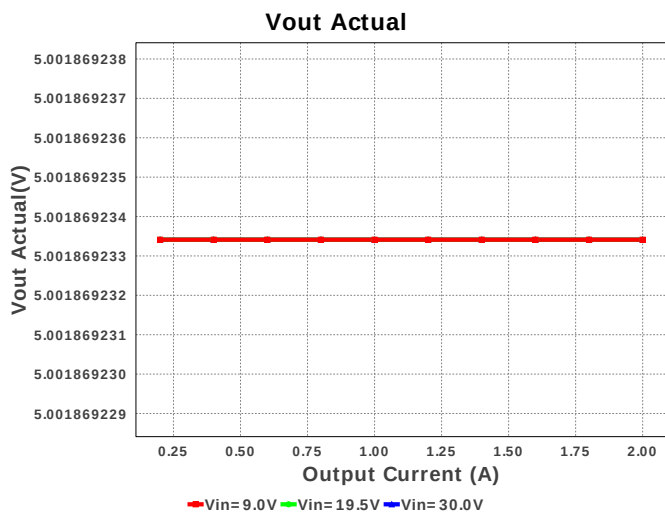
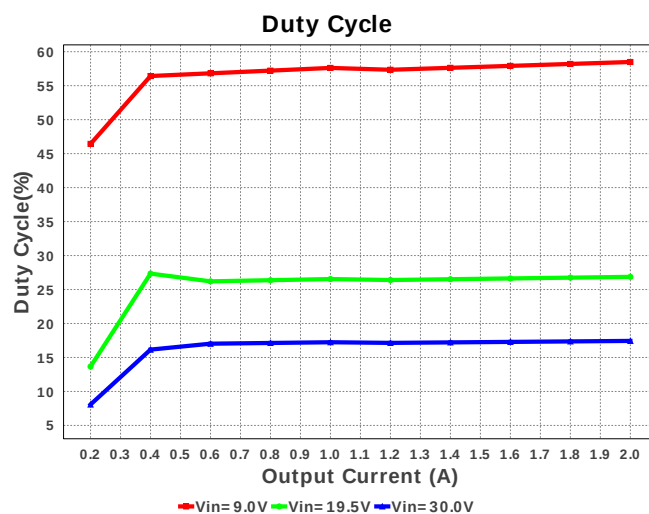
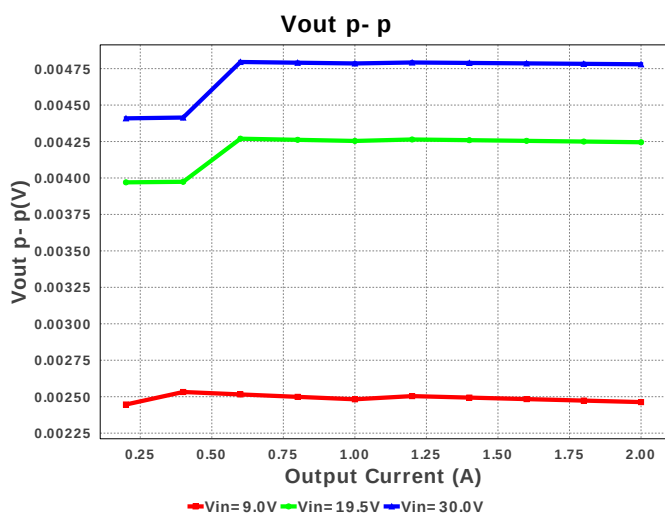
Vout = 5.0V
Iout = 2.0A

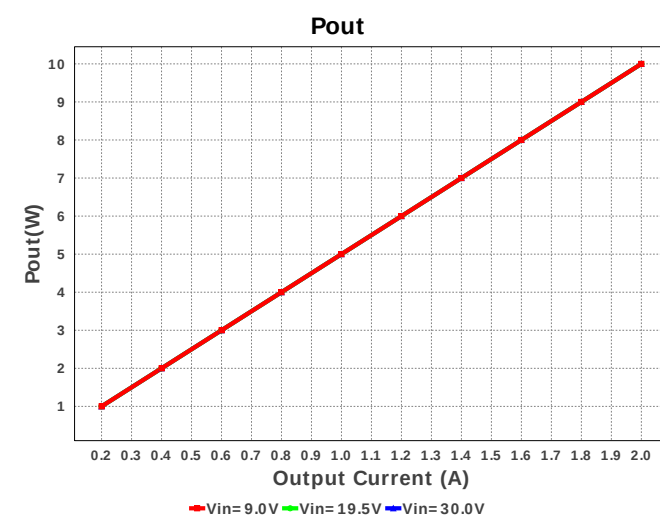
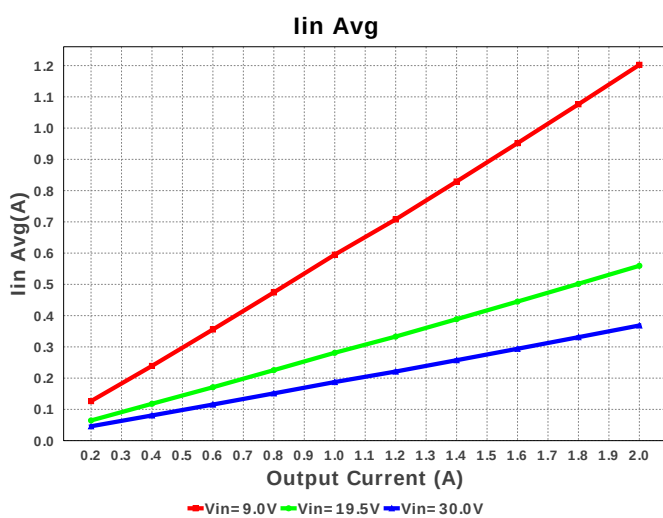
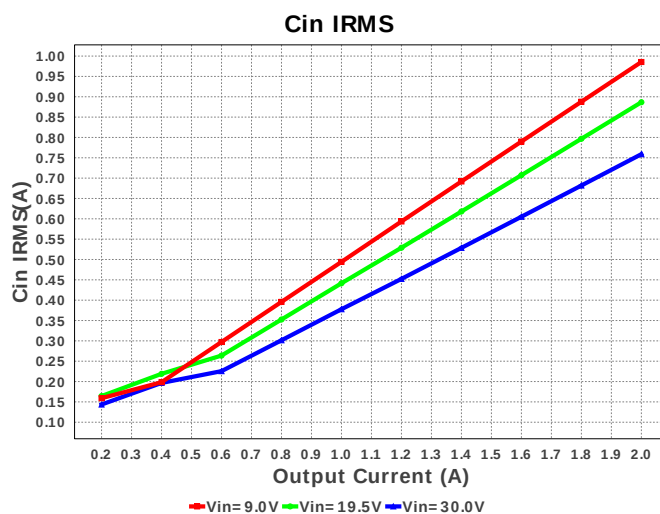
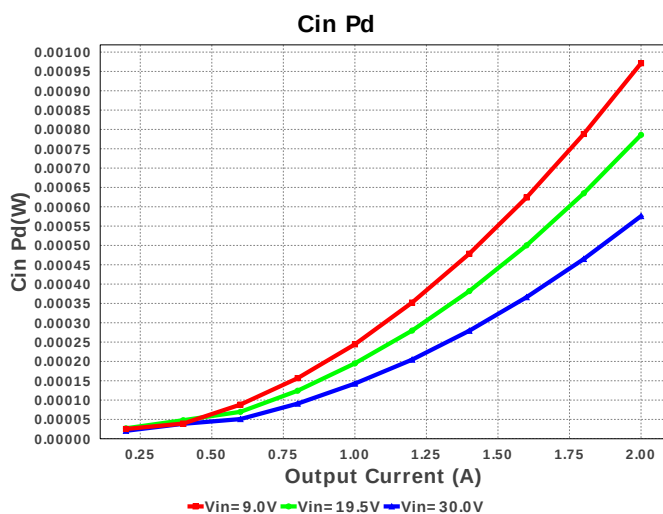
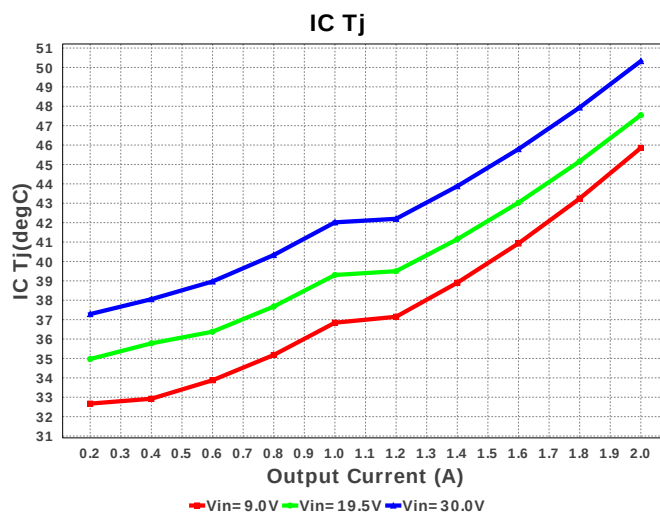
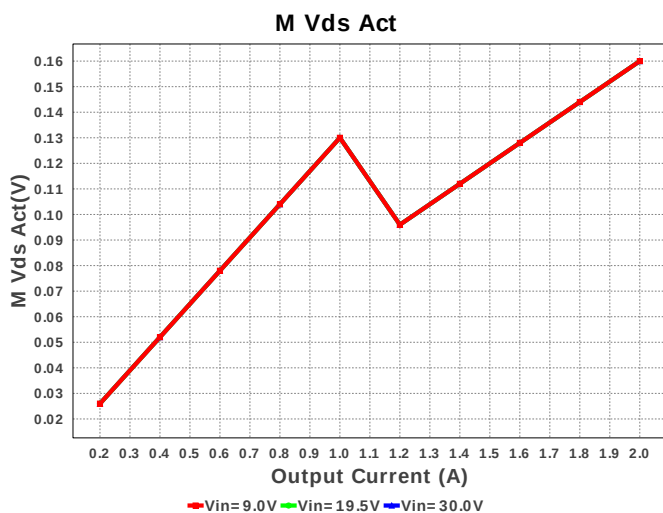


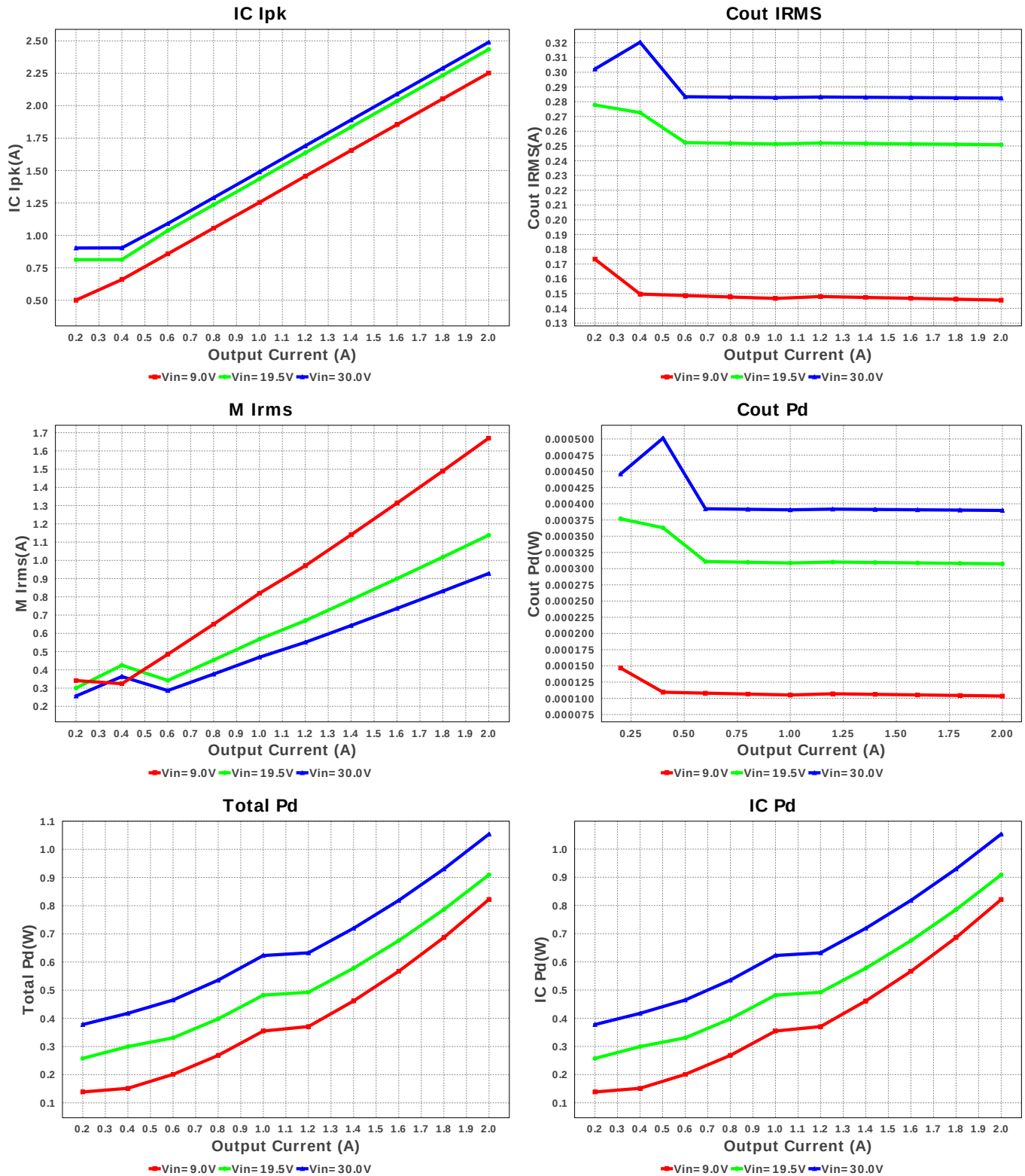
Electrical BOM

#	Name	Manufacturer	Part Number	Properties	Qty	Price	Footprint
1.	Cf	Yageo America	CC0805KRX7R9BB223 Series= X7R	Cap= 22.0 nF VDC= 50.0 V IRMS= 0.0 A	1	\$0.01	0805 7 mm ²
2.	Cin	MuRata	GRM31CR71H475KA12L Series= X7R	Cap= 4.7 uF ESR= 3.0 mOhm VDC= 50.0 V IRMS= 4.98 A	3	\$0.07	1206 11 mm ²
3.	Cout	MuRata	GRM31CR60J107ME39L Series= X5R	Cap= 100.0 uF ESR= 4.885 mOhm VDC= 6.3 V IRMS= 4.4118 A	1	\$0.14	1206_190 11 mm ²
4.	Css	MuRata	GRM216R71H103KA01D Series= X7R	Cap= 10.0 nF VDC= 50.0 V IRMS= 0.0 A	1	\$0.01	0805 7 mm ²
5.	Renb	Panasonic	ERJ-6ENF1022V Series= ERJ-6E	Res= 10.2 kOhm Power= 125.0 mW Tolerance= 1.0%	1	\$0.01	0805 7 mm ²
6.	Rent	Panasonic	ERJ-6ENF6812V Series= ERJ-6E	Res= 68.1 kOhm Power= 125.0 mW Tolerance= 1.0%	1	\$0.01	0805 7 mm ²
7.	Rfbb	Panasonic	ERJ-6ENF1071V Series= ERJ-6E	Res= 1.07 kOhm Power= 125.0 mW Tolerance= 1.0%	1	\$0.01	0805 7 mm ²
8.	Rfbb	Panasonic	ERJ-6ENF5621V Series= ERJ-6E	Res= 5.62 kOhm Power= 125.0 mW Tolerance= 1.0%	1	\$0.01	0805 7 mm ²
9.	Ron	Panasonic	ERJ-6ENF9092V Series= ERJ-6E	Res= 90.9 kOhm Power= 125.0 mW Tolerance= 1.0%	1	\$0.01	0805 7 mm ²

#	Name	Manufacturer	Part Number	Properties	Qty	Price	Footprint
10. U1		Texas Instruments	LMZ14202EXTTZ/NOPB	Switcher	1	\$15.30	 TZA07A 199 mm ²







Operating Values

#	Name	Value	Category	Description
1.	Cin IRMS	758.86 mA	Current	Input capacitor RMS ripple current
2.	Cout IRMS	282.453 mA	Current	Output capacitor RMS ripple current
3.	IC Ipk	2.489 A	Current	Peak switch current in IC
4.	Iin Avg	364.93 mA	Current	Average input current
5.	M Irms	919.484 mA	Current	MOSFET RMS current
6.	BOM Count	12	General	Total Design BOM count
7.	FootPrint	290.0 mm ²	General	Total Foot Print Area of BOM components
8.	Frequency	423.119 kHz	General	Switching frequency
9.	IC Tolerance	20.0 mV	General	IC Feedback Tolerance
10.	M Vds Act	160.0 mV	General	Voltage drop across the MosFET
11.	Pout	10.0 W	General	Total output power

#	Name	Value	Category	Description
12.	Total BOM	\$15.72	General	Total BOM Cost
13.	Vout Actual	5.002 V	Op_Point	Vout Actual calculated based on selected voltage divider resistors
14.	Vout OP	5.0 V	Op_Point	Operational Output Voltage
15.	Duty Cycle	17.437 %	Op_point	Duty cycle
16.	Efficiency	91.341 %	Op_point	Steady state efficiency
17.	IC Tj	48.278 degC	Op_point	IC junction temperature
18.	ICThetaJA	19.3 degC/W	Op_point	IC junction-to-ambient thermal resistance
19.	IOUT_OP	2.0 A	Op_point	Iout operating point
20.	VIN_OP	30.0 V	Op_point	Vin operating point
21.	Vout p-p	4.78 mV	Op_point	Peak-to-peak output ripple voltage
22.	Cin Pd	575.869 μ W	Power	Input capacitor power dissipation
23.	Cout Pd	389.725 μ W	Power	Output capacitor power dissipation
24.	IC Pd	947.052 mW	Power	IC power dissipation
25.	Total Pd	947.979 mW	Power	Total Power Dissipation
26.	Vout Tolerance	4.24 %		Vout Tolerance based on IC Tolerance (no load) and voltage divider resistors if applicable

Design Inputs

#	Name	Value	Description
1.	Iout	2.0	Maximum Output Current
2.	VinMax	30.0	Maximum input voltage
3.	VinMin	9.0	Minimum input voltage
4.	Vout	5.0	Output Voltage
5.	base_pn	LMZ14202EXT	Texas Instruments Base Part Number
6.	source	DC	Input Source Type
7.	ta	30.0	Ambient temperature

Design Assistance

1. LMZ14202EXT Product Folder : <http://www.ti.com/product/LMZ14202EXT> : contains the data sheet and other resources.

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