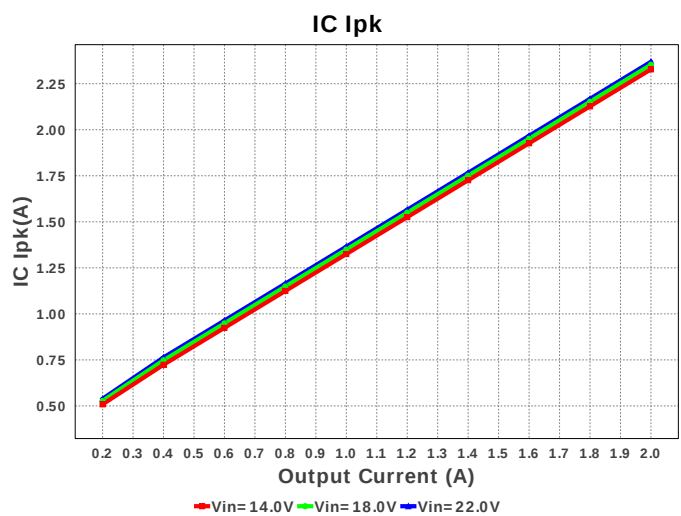
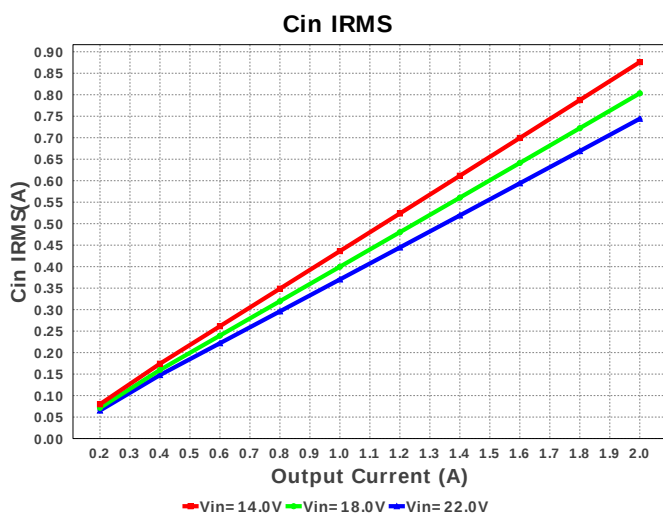
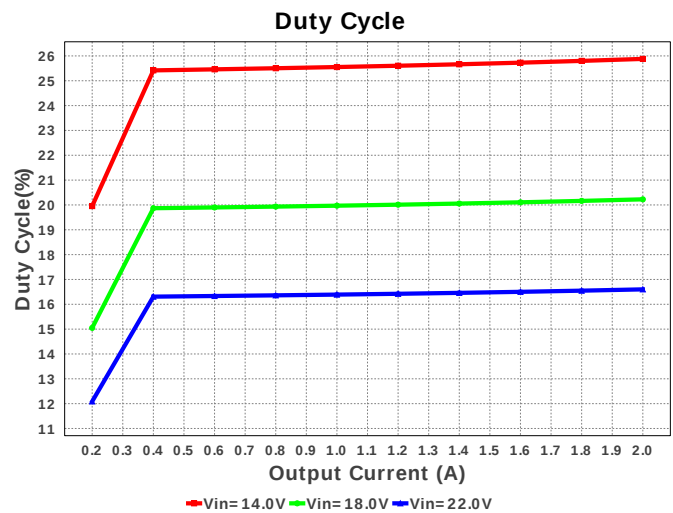
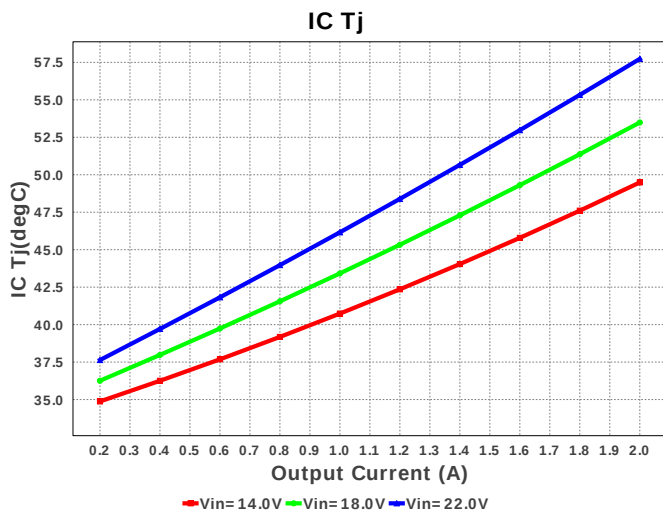
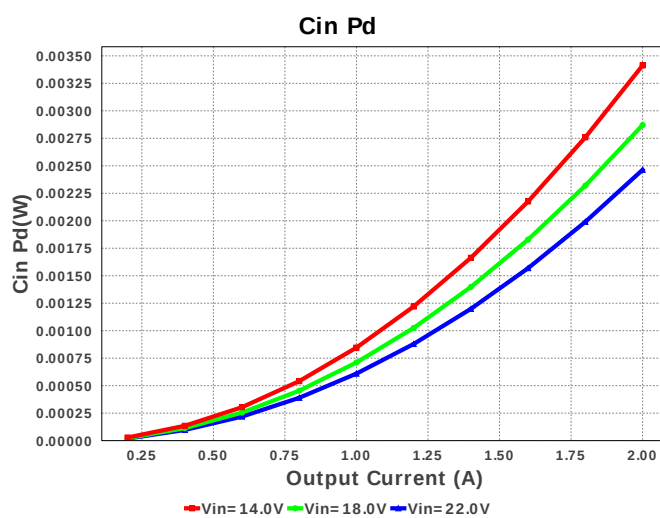
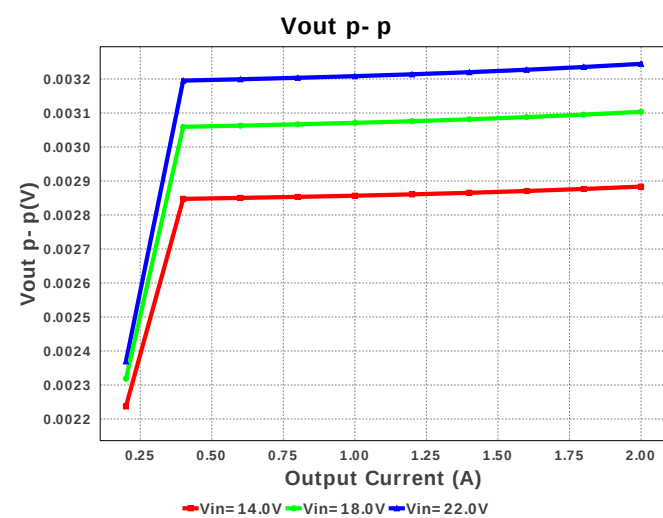
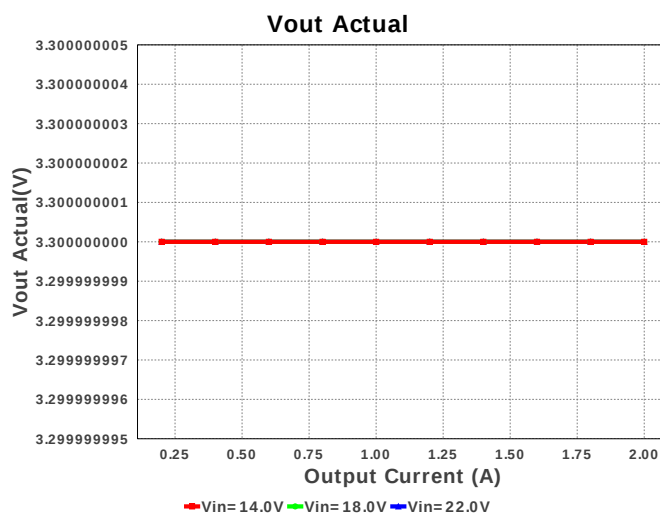
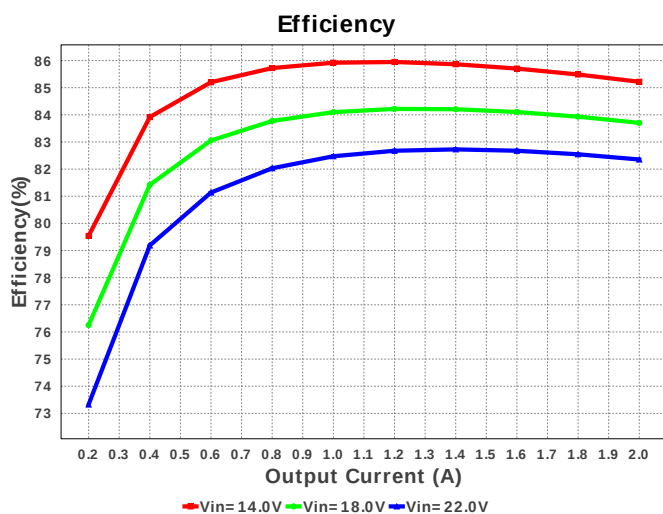
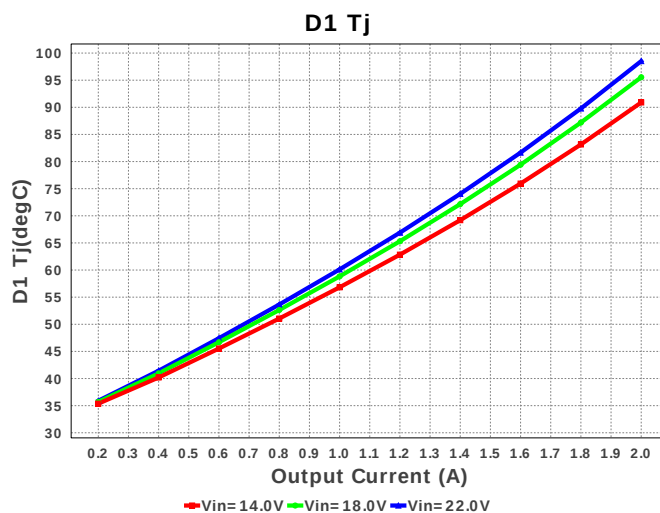
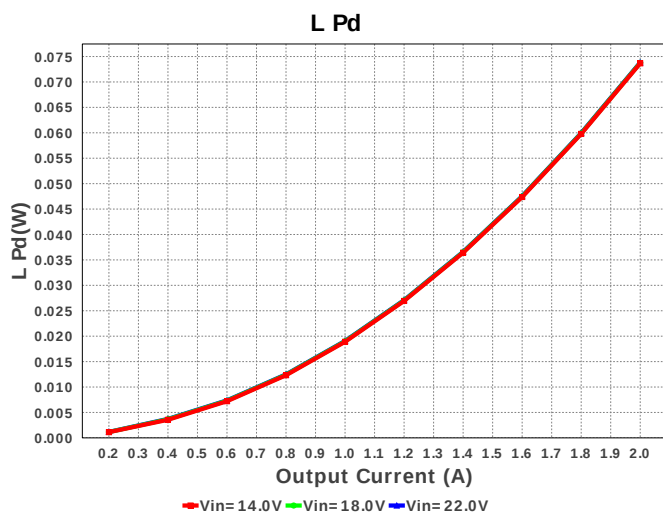


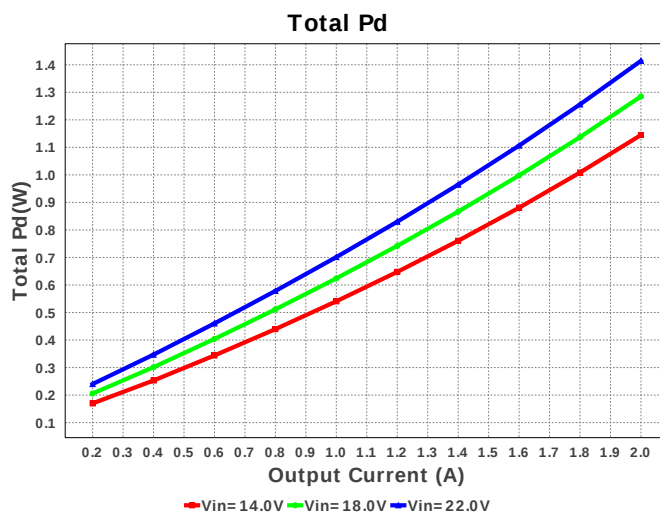
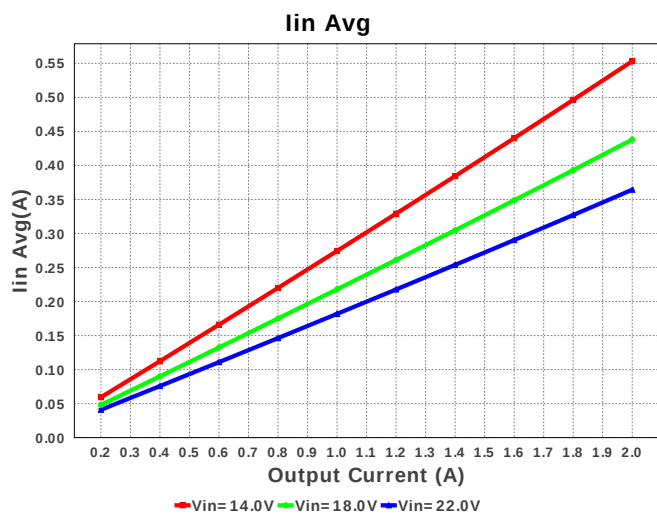
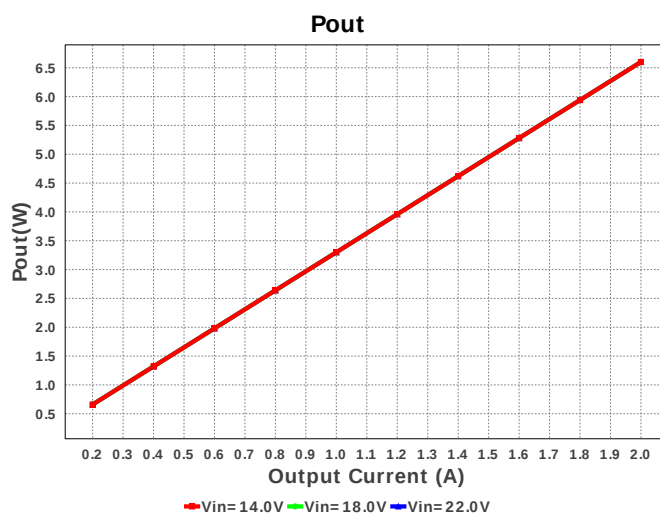
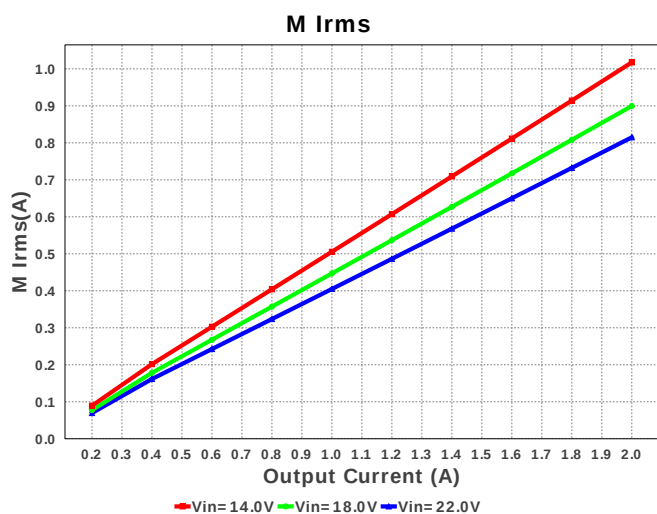
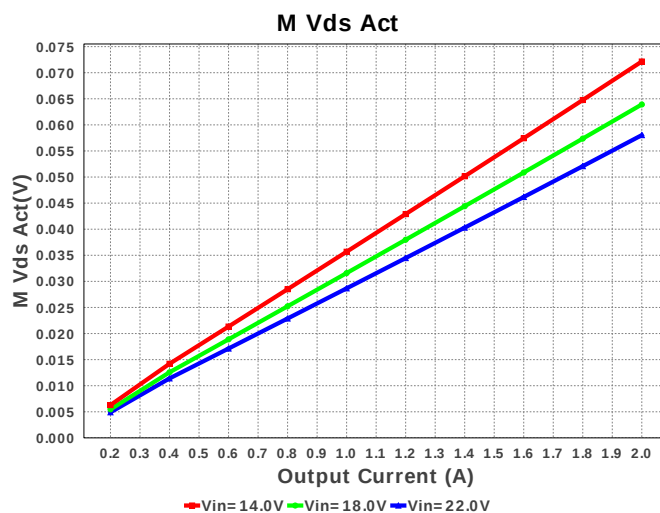
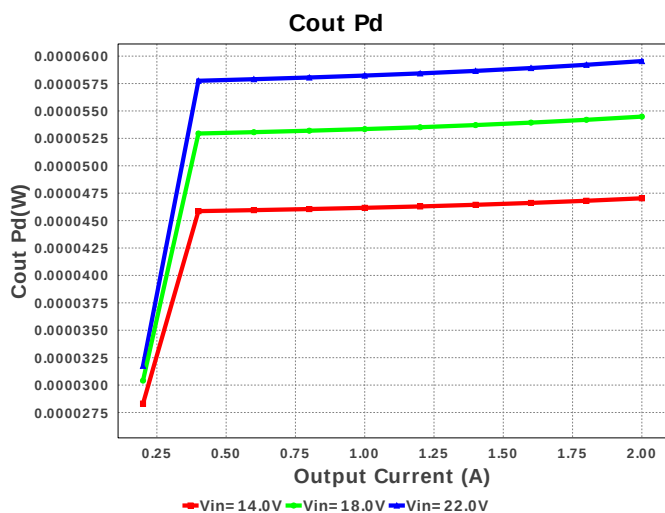


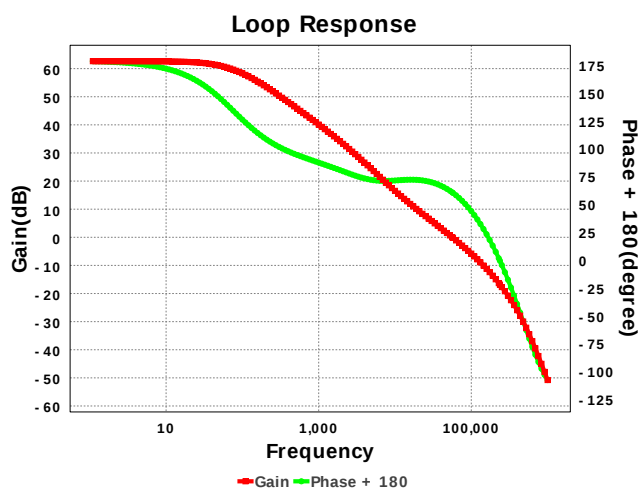
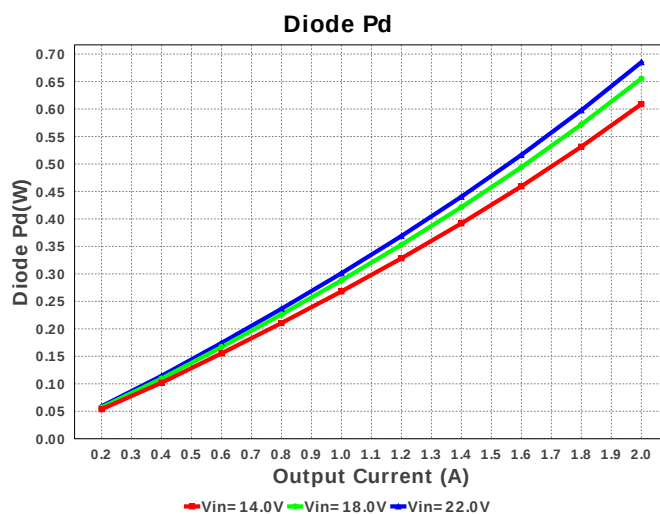
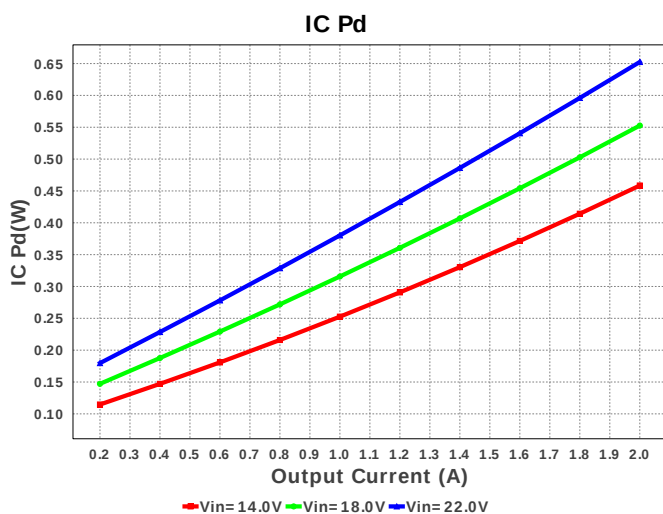
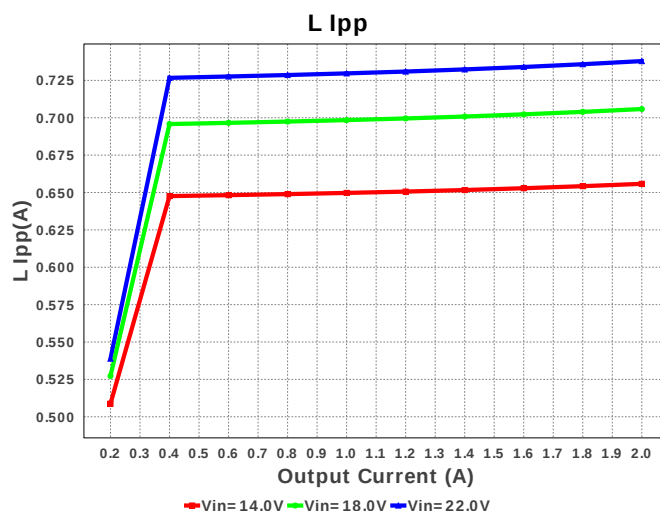
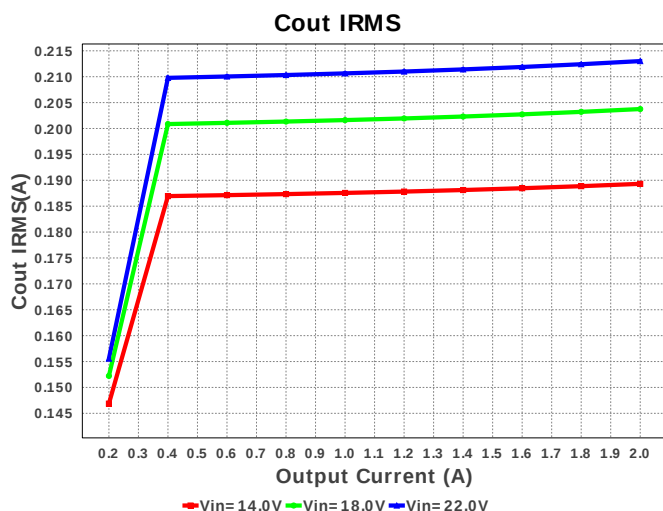
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Topology = Buck
Created = 8/12/16 6:07:10 PM
BOM Cost = \$2.09
BOM Count = 12
Total Pd = 1.41W

#	Name	Manufacturer	Part Number	Properties	Qty	Price	Footprint
10. U1		Texas Instruments	LMR14020SDDAR	Switcher	1	\$1.46	 DDA0008E_N 57 mm ²









Operating Values

#	Name	Value	Category	Description
1.	Cin IRMS	744.207 mA	Current	Input capacitor RMS ripple current
2.	Cout IRMS	213.013 mA	Current	Output capacitor RMS ripple current
3.	IC Ipk	2.369 A	Current	Peak switch current in IC
4.	Iin Avg	364.3 mA	Current	Average input current
5.	L Ipp	737.9 mA	Current	Peak-to-peak inductor ripple current
6.	M1 Irms	814.917 mA	Current	Q lavg
7.	BOM Count	12	General	Total Design BOM count
8.	FootPrint	245.0 mm ²	General	Total Foot Print Area of BOM components
9.	Frequency	1.075 MHz	General	Switching frequency
10.	IC Tolerance	18.0 mV	General	IC Feedback Tolerance
11.	M Vds Act	58.021 mV	General	Voltage drop across the MosFET

#	Name	Value	Category	Description
12.	Mode	CCM	General	Conduction Mode
13.	Pout	6.6 W	General	Total output power
14.	Total BOM	\$2.09	General	Total BOM Cost
15.	D1 Tj	98.519 degC	Op_Point	D1 junction temperature
16.	Vout Actual	3.3 V	Op_Point	Vout Actual calculated based on selected voltage divider resistors
17.	Vout OP	3.3 V	Op_Point	Operational Output Voltage
18.	Cross Freq	56.281 kHz	Op_point	Bode plot crossover frequency
19.	Duty Cycle	16.601 %	Op_point	Duty cycle
20.	Efficiency	82.354 %	Op_point	Steady state efficiency
21.	IC Tj	57.404 degC	Op_point	IC junction temperature
22.	ICThetaJA	42.0 degC/W	Op_point	IC junction-to-ambient thermal resistance
23.	IOUT_OP	2.0 A	Op_point	Iout operating point
24.	Phase Marg	61.397 deg	Op_point	Bode Plot Phase Margin
25.	VIN_OP	22.0 V	Op_point	Vin operating point
26.	Vout p-p	3.244 mV	Op_point	Peak-to-peak output ripple voltage
27.	Cin Pd	2.463 mW	Power	Input capacitor power dissipation
28.	Cout Pd	59.546 μ W	Power	Output capacitor power dissipation
29.	Diode Pd	685.192 mW	Power	Diode power dissipation
30.	IC Pd	652.47 mW	Power	IC power dissipation
31.	L Pd	73.834 mW	Power	Inductor power dissipation
32.	Total Pd	1.414 W	Power	Total Power Dissipation
33.	Vout Tolerance	3.998 %		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	22.0	Maximum input voltage
3.	VinMin	14.0	Minimum input voltage
4.	Vout	3.3	Output Voltage
5.	base_pn	LMR14020S	Base Product Number
6.	source	DC	Input Source Type
7.	Ta	30.0	Ambient temperature

Design Assistance

1. **LMR14020S** Product Folder : <http://www.ti.com/product/LMR14020> : contains the data sheet and other resources.

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