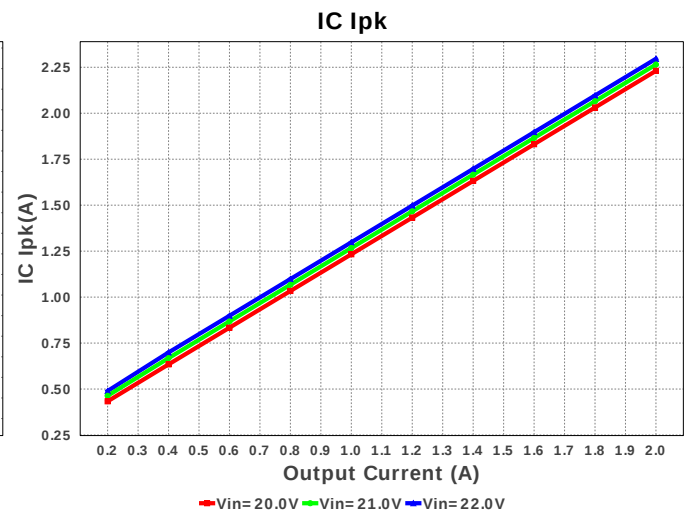
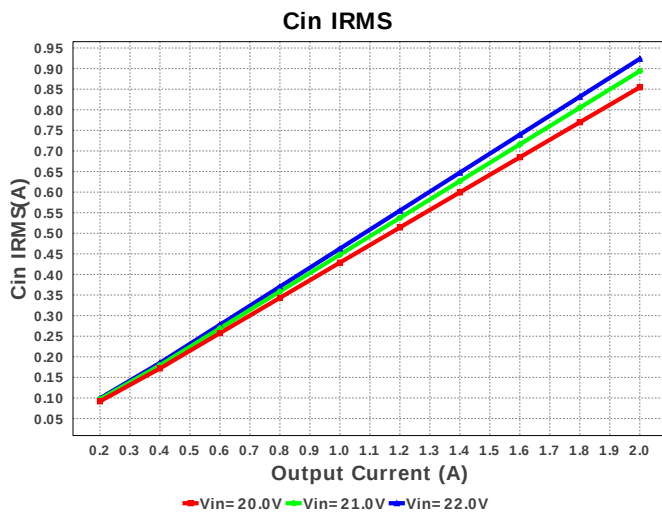
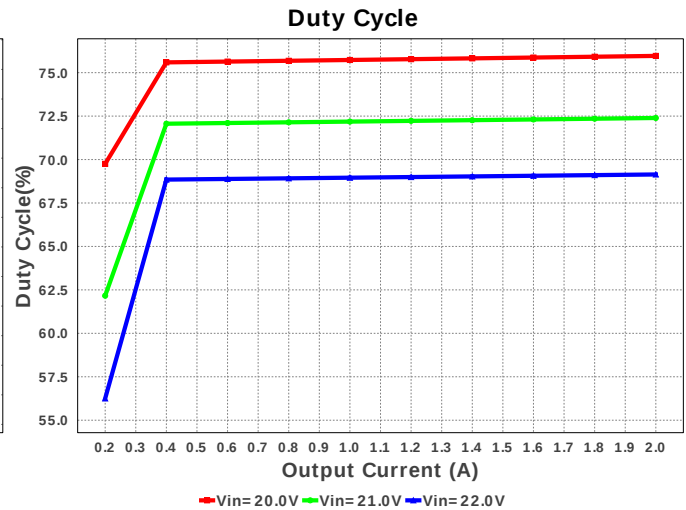
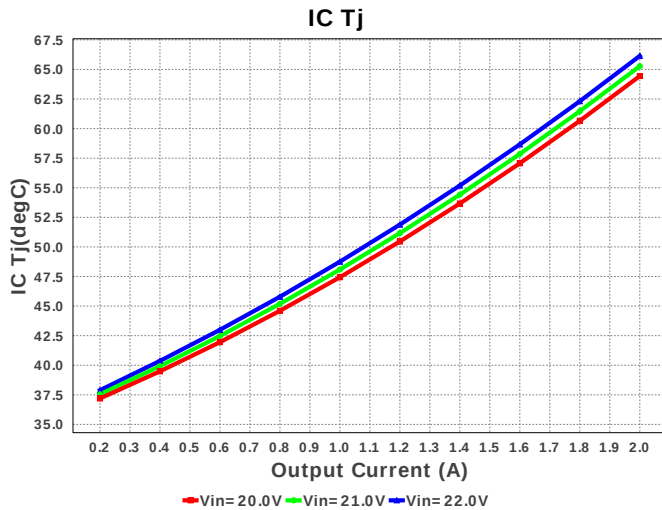
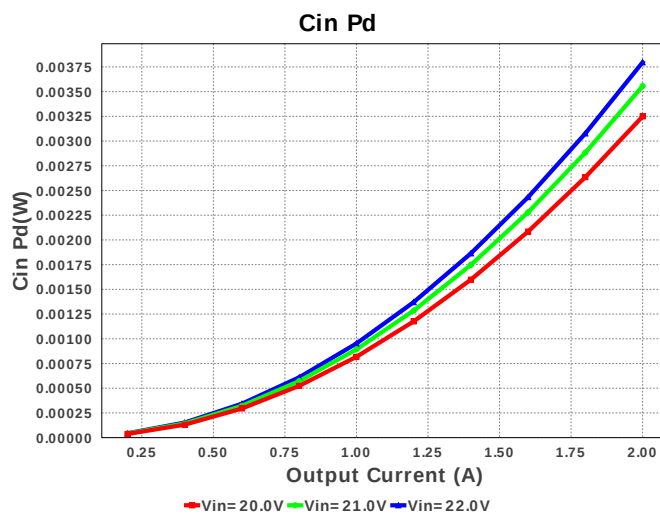
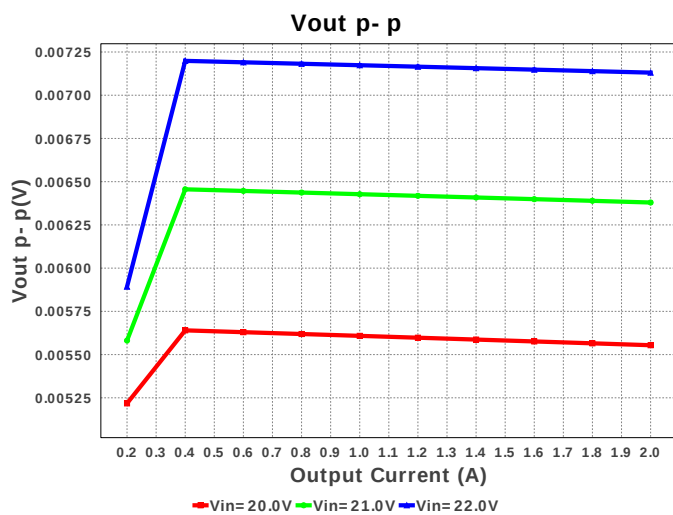
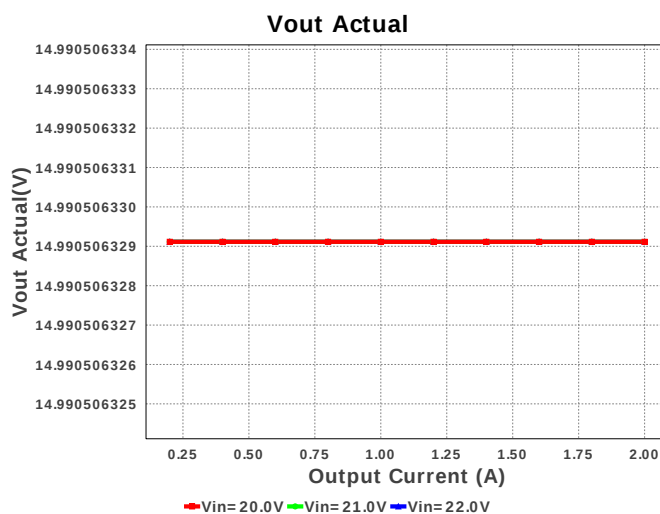
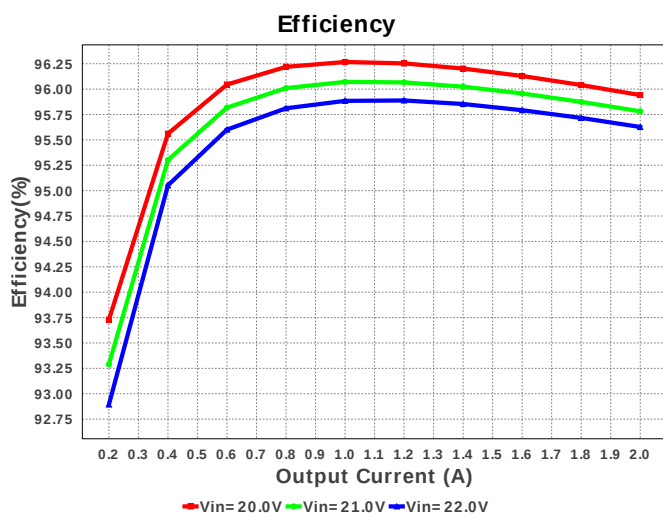
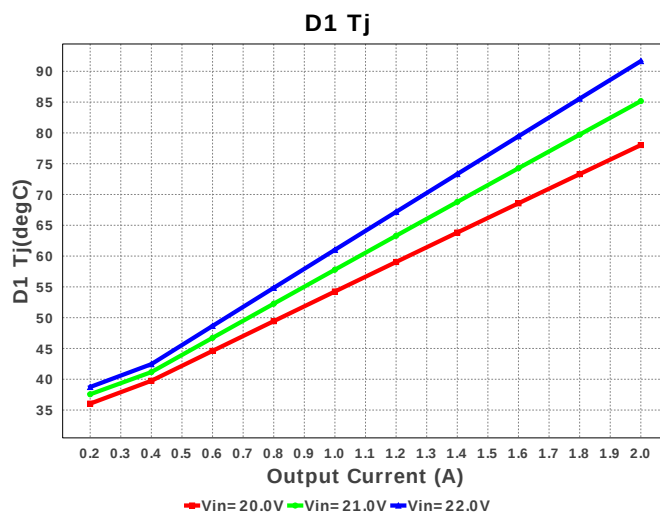
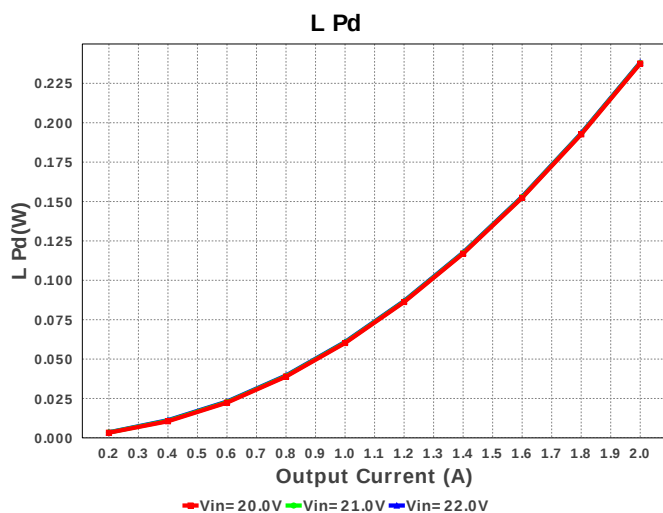


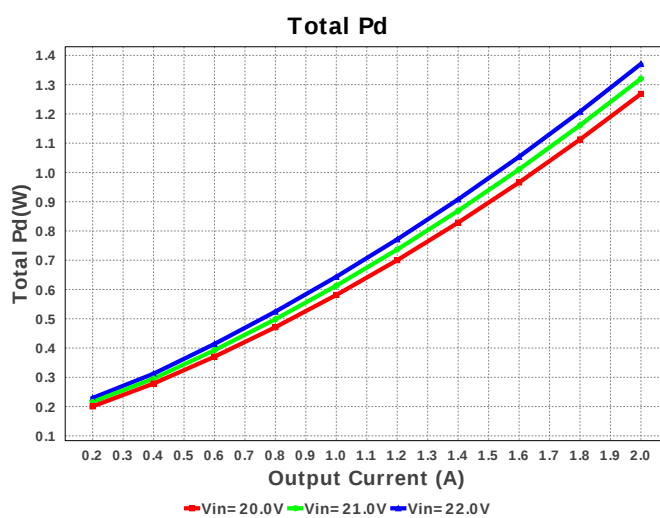
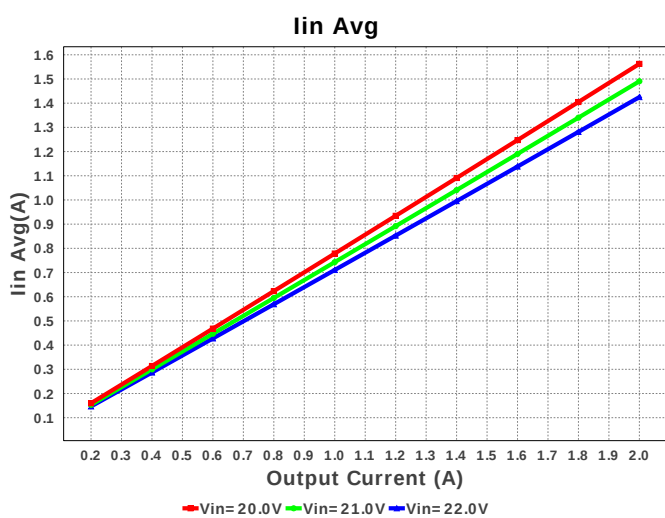
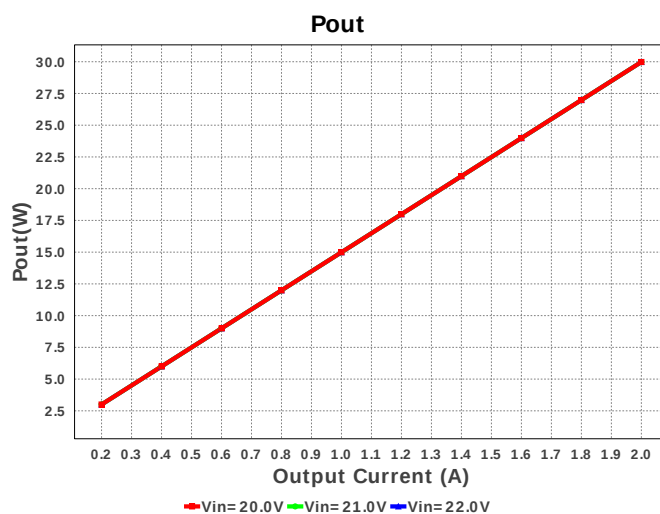
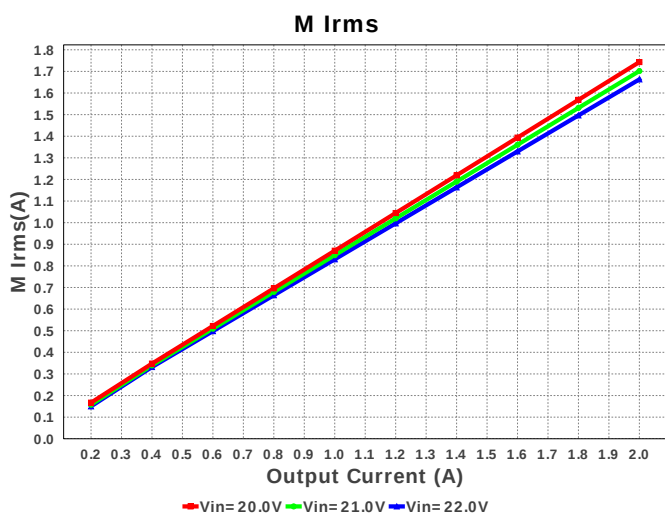
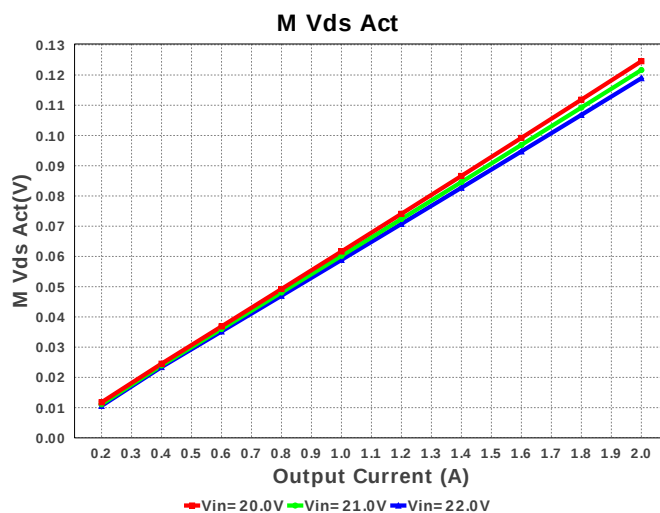
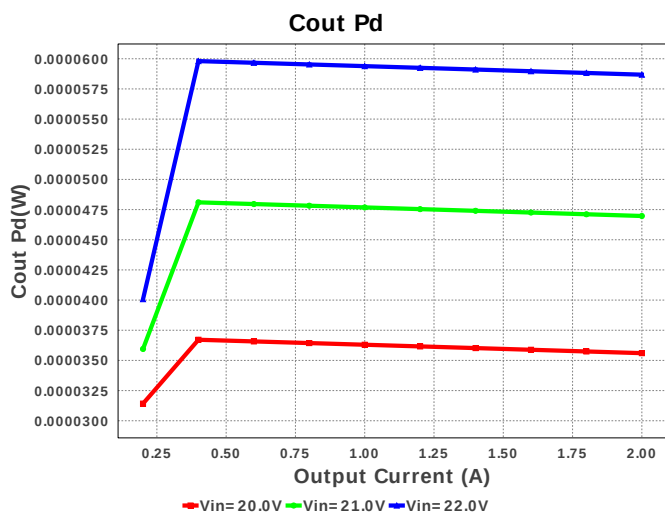


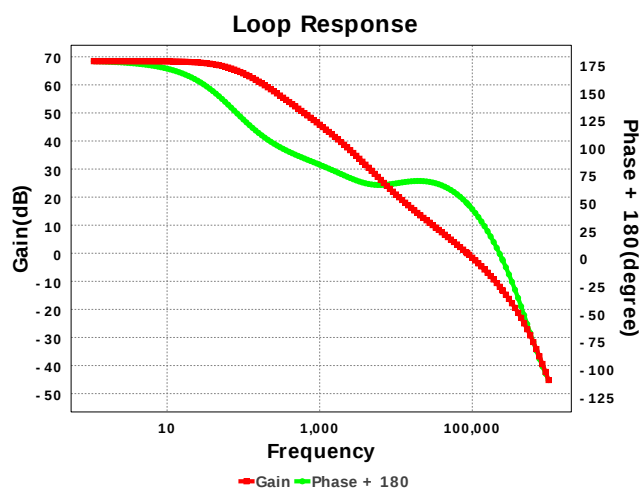
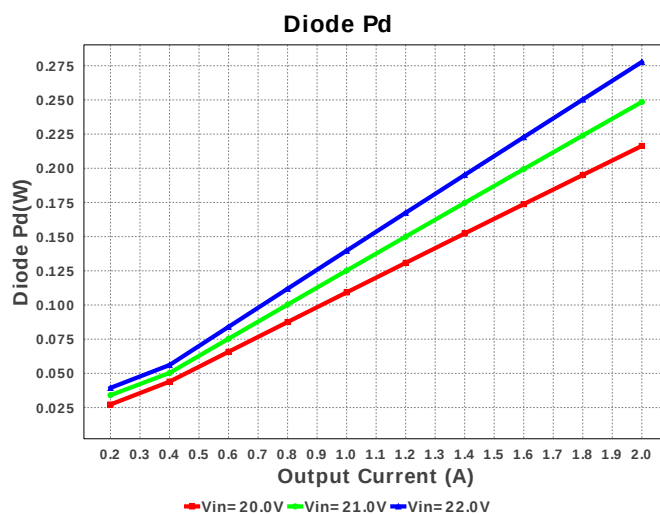
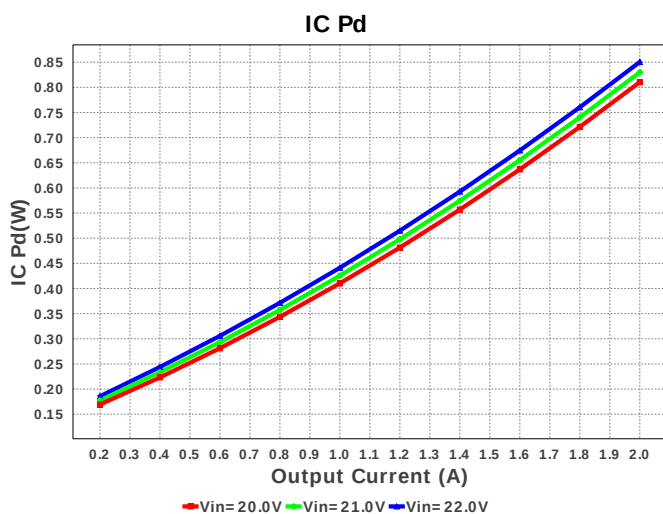
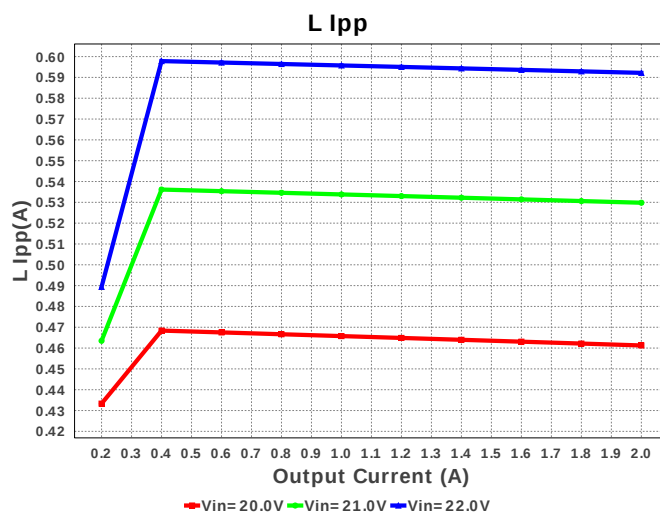
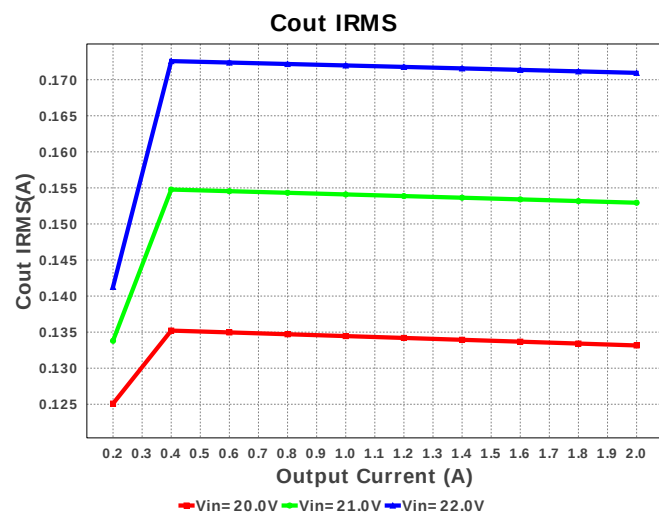
Device = LMR14020SDDAR
Topology = Buck
Created = 8/10/16 6:45:40 PM
BOM Cost = \$2.02
BOM Count = 10
Total Pd = 1.37W

#	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	923.842 mA	Current	Input capacitor RMS ripple current
2.	Cout IRMS	170.949 mA	Current	Output capacitor RMS ripple current
3.	IC Ipk	2.296 A	Current	Peak switch current in IC
4.	Iin Avg	1.425 A	Current	Average input current
5.	L Ipp	592.18 mA	Current	Peak-to-peak inductor ripple current
6.	M1 Irms	1.663 A	Current	Q lavg
7.	BOM Count	10	General	Total Design BOM count
8.	FootPrint	181.0 mm ²	General	Total Foot Print Area of BOM components
9.	Frequency	1.183 MHz	General	Switching frequency
10.	IC Tolerance	18.0 mV	General	IC Feedback Tolerance
11.	M Vds Act	118.92 mV	General	Voltage drop across the MosFET

#	Name	Value	Category	Description
12.	Mode	CCM	General	Conduction Mode
13.	Pout	29.98 W	General	Total output power
14.	Total BOM	\$2.02	General	Total BOM Cost
15.	D1 Tj	91.657 degC	Op_Point	D1 junction temperature
16.	Vout Actual	14.991 V	Op_Point	Vout Actual calculated based on selected voltage divider resistors
17.	Vout OP	14.99 V	Op_Point	Operational Output Voltage
18.	Cross Freq	86.239 kHz	Op_point	Bode plot crossover frequency
19.	Duty Cycle	69.141 %	Op_point	Duty cycle
20.	Efficiency	95.627 %	Op_point	Steady state efficiency
21.	IC Tj	65.717 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	50.386 deg	Op_point	Bode Plot Phase Margin
25.	VIN_OP	22.0 V	Op_point	Vin operating point
26.	Vout p-p	7.131 mV	Op_point	Peak-to-peak output ripple voltage
27.	Cin Pd	3.796 mW	Power	Input capacitor power dissipation
28.	Cout Pd	58.681 μW	Power	Output capacitor power dissipation
29.	Diode Pd	277.735 mW	Power	Diode power dissipation
30.	IC Pd	850.394 mW	Power	IC power dissipation
31.	L Pd	238.239 mW	Power	Inductor power dissipation
32.	Total Pd	1.371 W	Power	Total Power Dissipation
33.	Vout Tolerance	4.365 %		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	20.0	Minimum input voltage
4.	Vout	15.0	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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