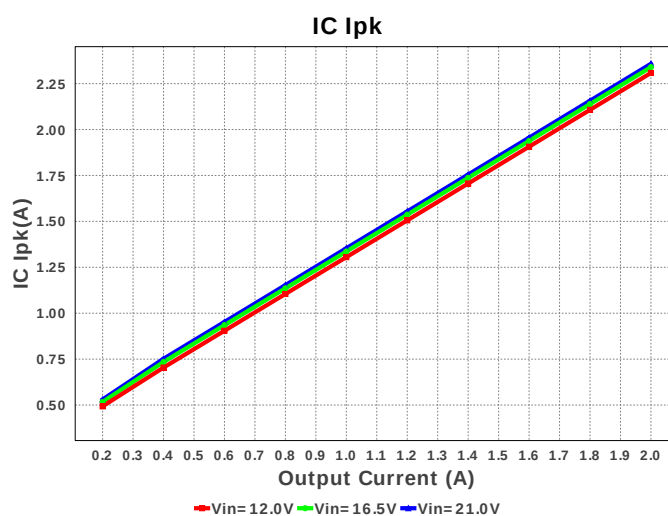
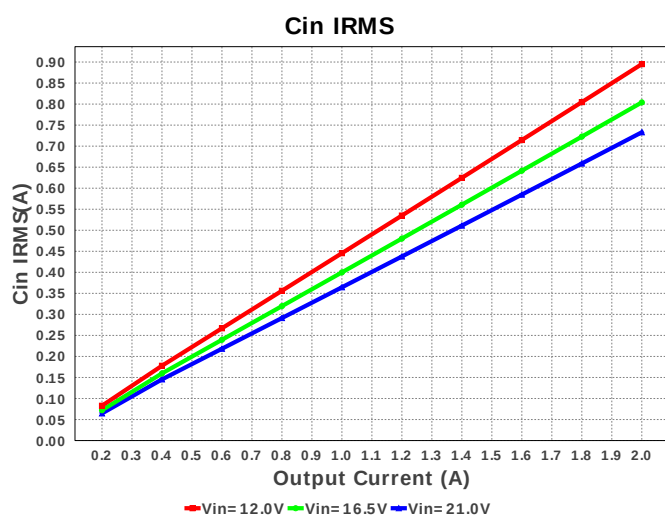
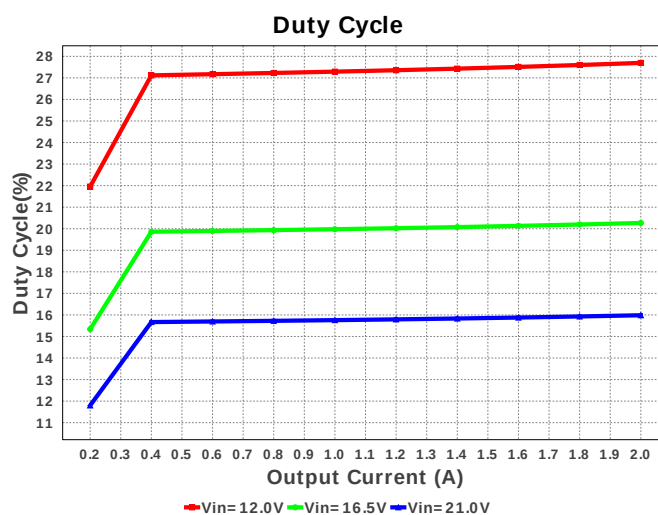
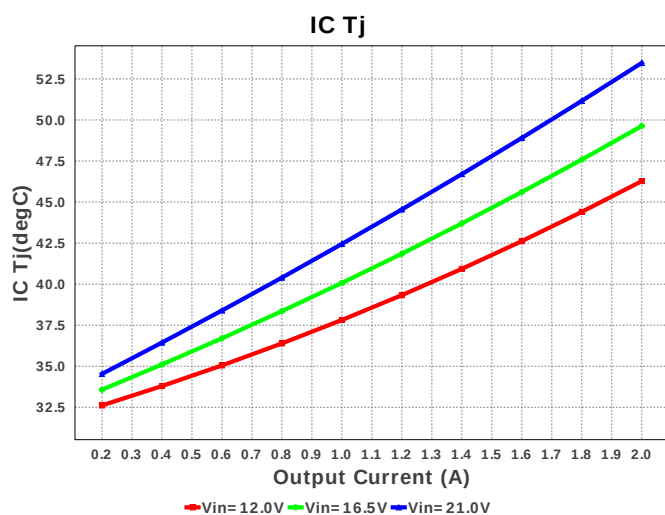
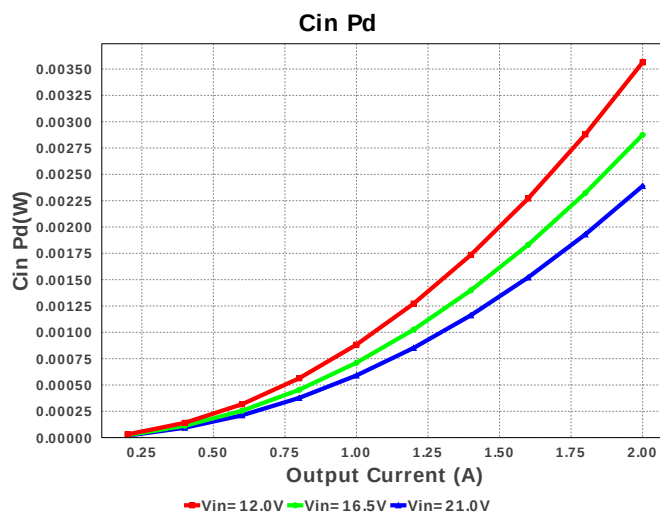
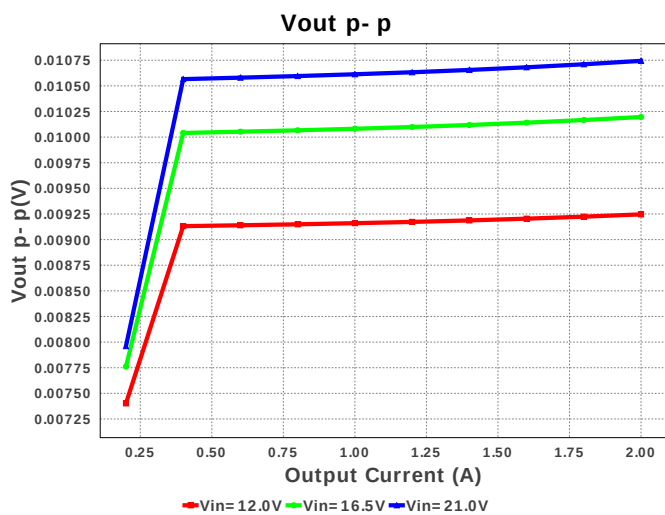
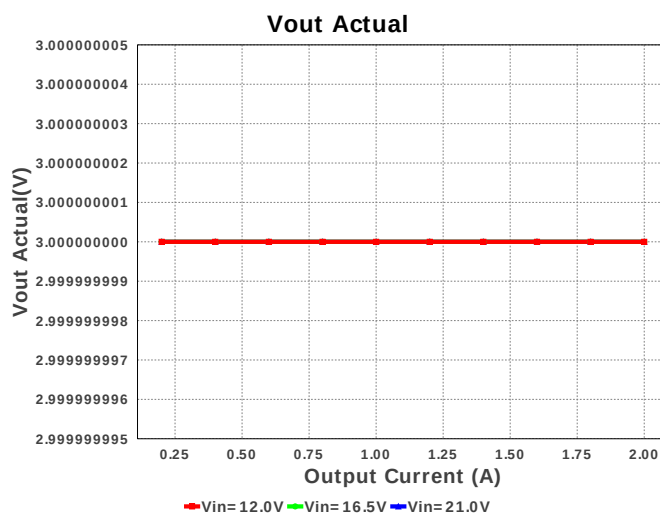
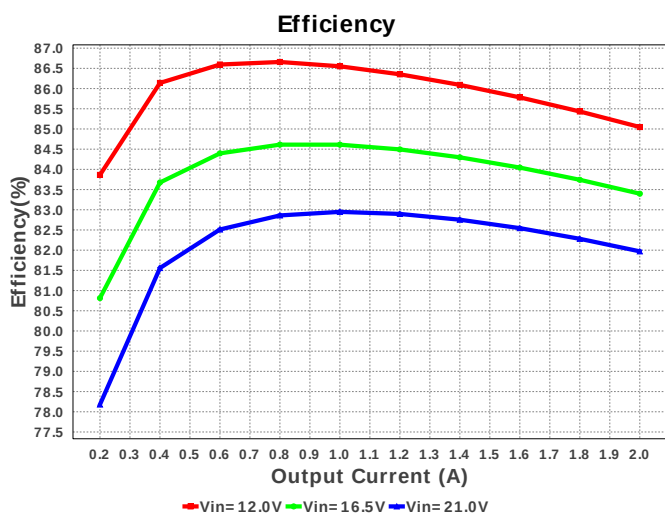
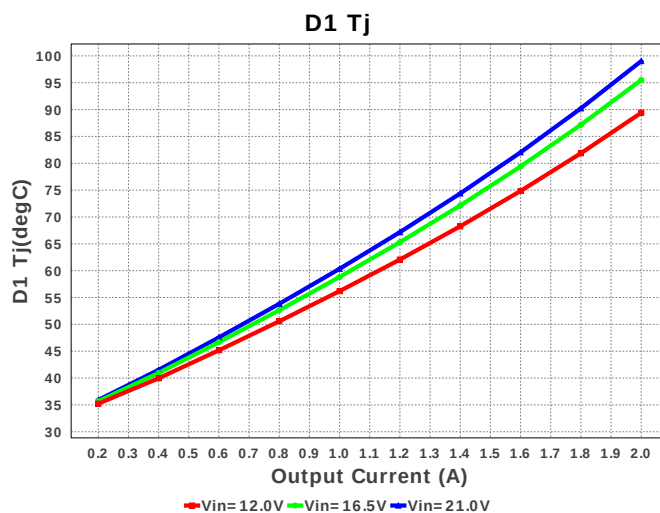
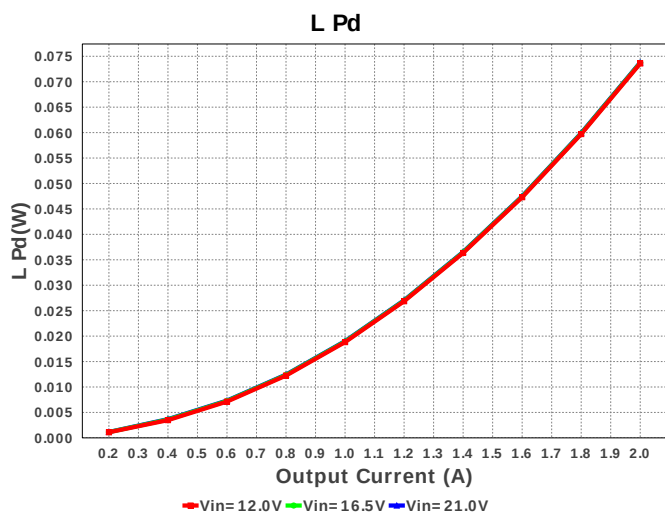


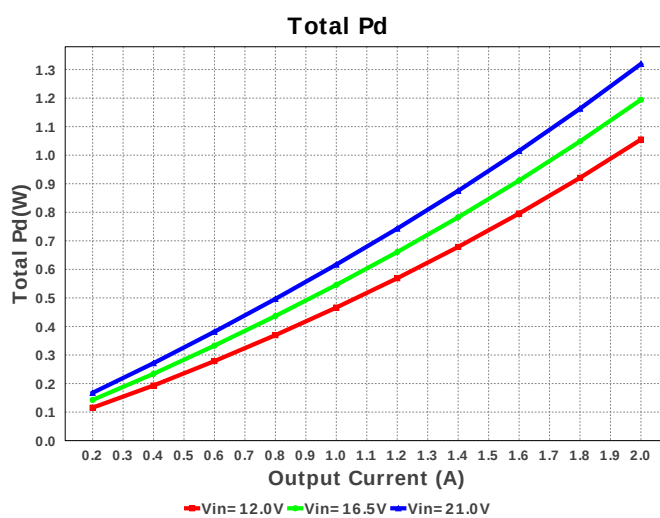
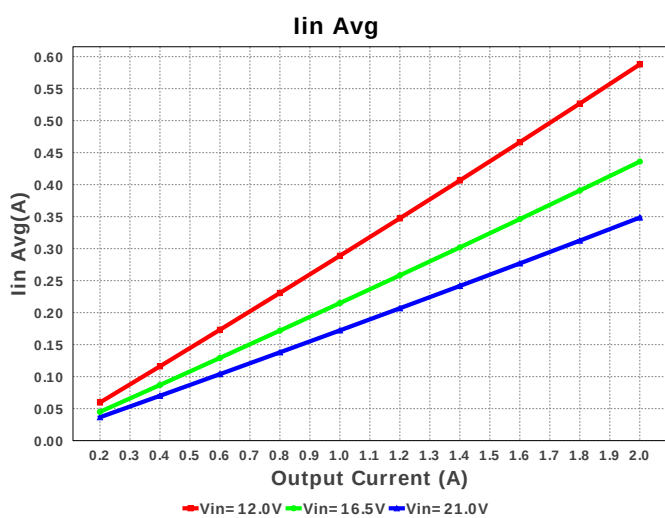
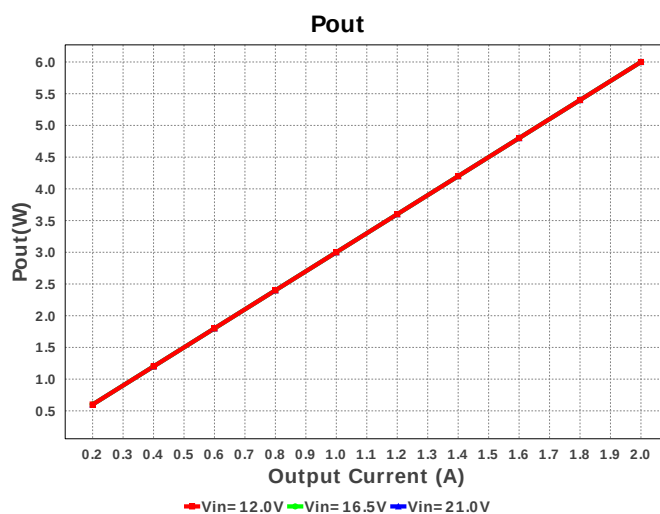
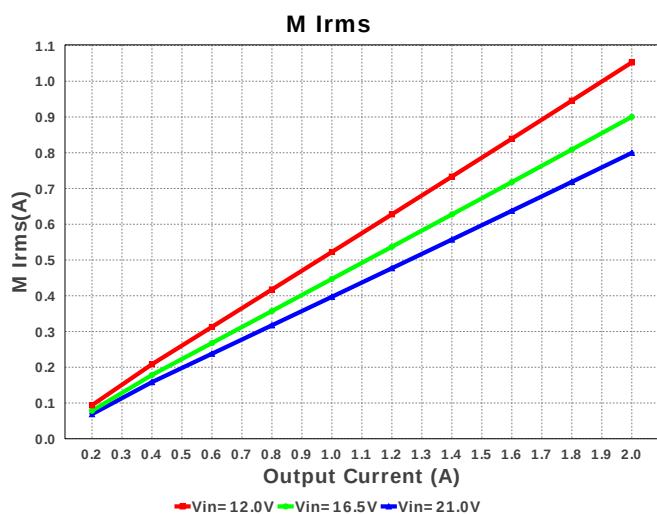
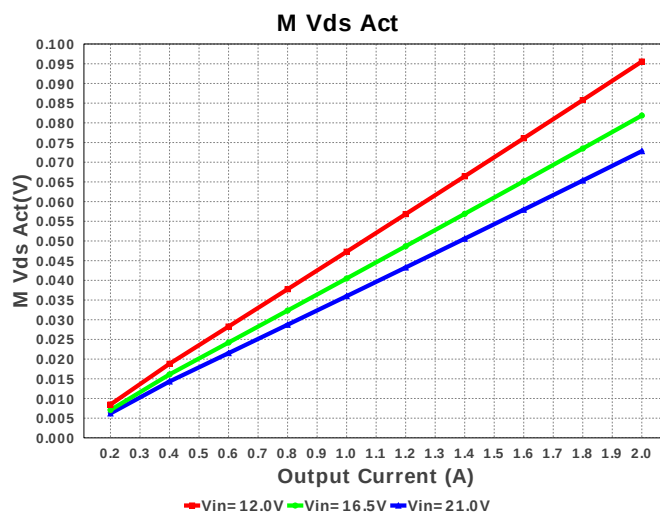
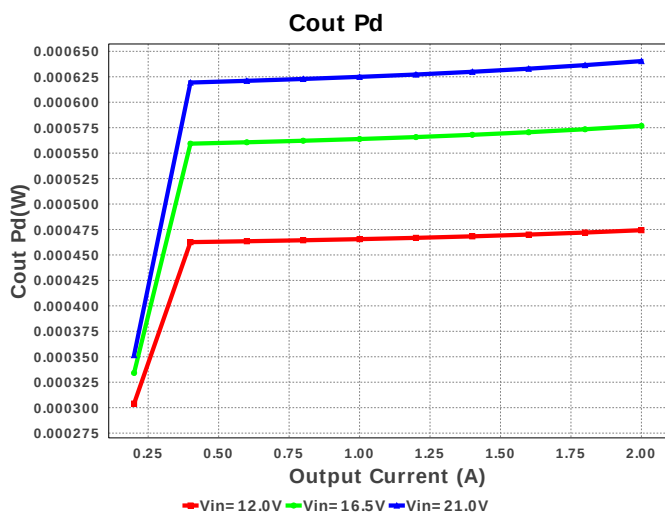


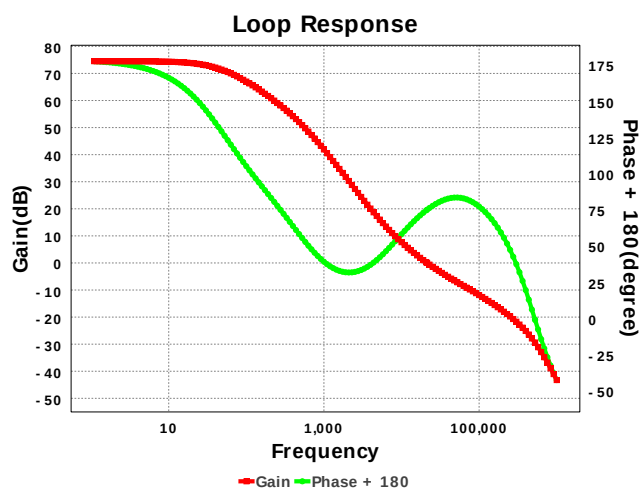
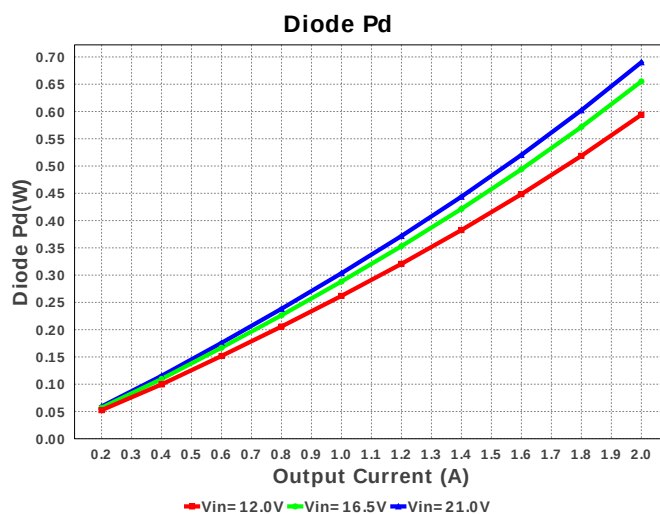
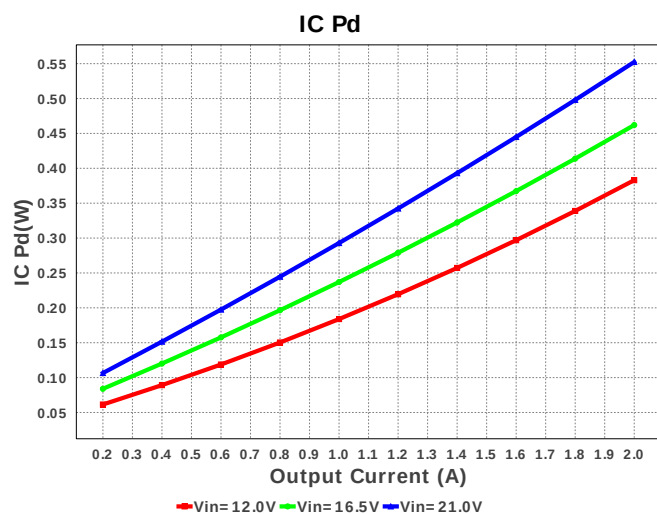
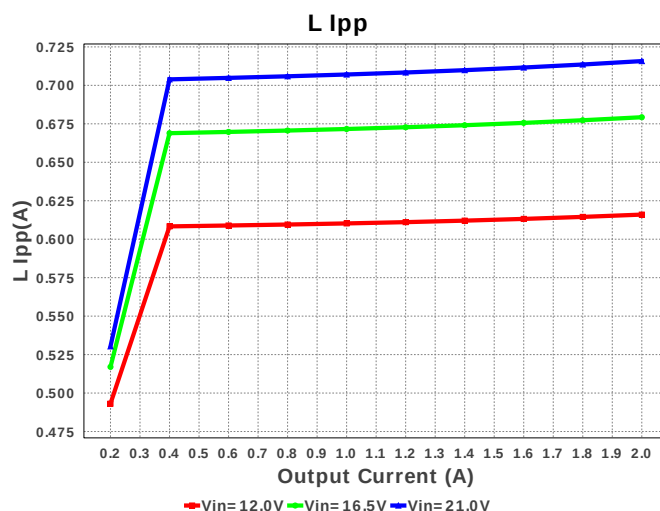
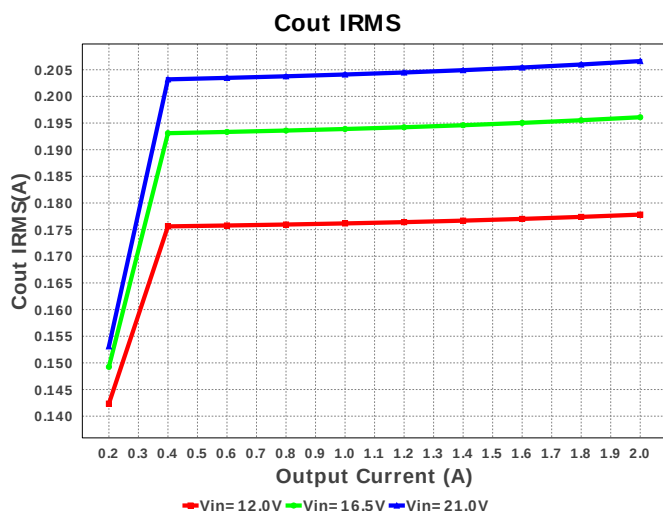
Device = LMR14050SDDAR
Topology = Buck
Created = 7/19/16 6:54:53 AM
BOM Cost = \$2.69
BOM Count = 10
Total Pd = 1.32W

#	Name	Manufacturer	Part Number	Properties	Qty	Price	Footprint
10.	U1	Texas Instruments	LMR14050SDDAR	Switcher	1	\$1.95	 DDA0008E_N 57 mm ²









Operating Values

#	Name	Value	Category	Description
1.	Cin IRMS	732.953 mA	Current	Input capacitor RMS ripple current
2.	Cout IRMS	206.623 mA	Current	Output capacitor RMS ripple current
3.	IC Ipk	2.358 A	Current	Peak switch current in IC
4.	Iin Avg	348.57 mA	Current	Average input current
5.	L Ipp	715.76 mA	Current	Peak-to-peak inductor ripple current
6.	M1 Irms	799.643 mA	Current	Q lavg
7.	BOM Count	10	General	Total Design BOM count
8.	FootPrint	279.0 mm ²	General	Total Foot Print Area of BOM components
9.	Frequency	1.027 MHz	General	Switching frequency
10.	IC Tolerance	18.0 mV	General	IC Feedback Tolerance
11.	M Vds Act	72.802 mV	General	Voltage drop across the MosFET

#	Name	Value	Category	Description
12.	Pout	6.0 W	General	Total output power
13.	Total BOM	\$2.69	General	Total BOM Cost
14.	D1 Tj	99.026 degC	Op_Point	D1 junction temperature
15.	Vout Actual	3.0 V	Op_Point	Vout Actual calculated based on selected voltage divider resistors
16.	Vout OP	3.0 V	Op_Point	Operational Output Voltage
17.	Cross Freq	21.374 kHz	Op_point	Bode plot crossover frequency
18.	Duty Cycle	15.985 %	Op_point	Duty cycle
19.	Efficiency	81.971 %	Op_point	Steady state efficiency
20.	IC Tj	53.2 degC	Op_point	IC junction temperature
21.	ICThetaJA	42.0 degC/W	Op_point	IC junction-to-ambient thermal resistance
22.	IOUT_OP	2.0 A	Op_point	Iout operating point
23.	Phase Marg	76.033 deg	Op_point	Bode Plot Phase Margin
24.	VIN_OP	21.0 V	Op_point	Vin operating point
25.	Vout p-p	10.744 mV	Op_point	Peak-to-peak output ripple voltage
26.	Cin Pd	2.39 mW	Power	Input capacitor power dissipation
27.	Cout Pd	640.399 µW	Power	Output capacitor power dissipation
28.	Diode Pd	690.257 mW	Power	Diode power dissipation
29.	IC Pd	552.38 mW	Power	IC power dissipation
30.	L Pd	73.785 mW	Power	Inductor power dissipation
31.	Total Pd	1.32 W	Power	Total Power Dissipation
32.	Vout Tolerance	3.952 %		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	21.0	Maximum input voltage
3.	VinMin	12.0	Minimum input voltage
4.	Vout	3.0	Output Voltage
5.	base_pn	LMR14050S	Base Product Number
6.	source	DC	Input Source Type
7.	Ta	30.0	Ambient temperature

Design Assistance

1. **LMR14050S** Product Folder : <http://www.ti.com/product/LMR14050> : contains the data sheet and other resources.

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