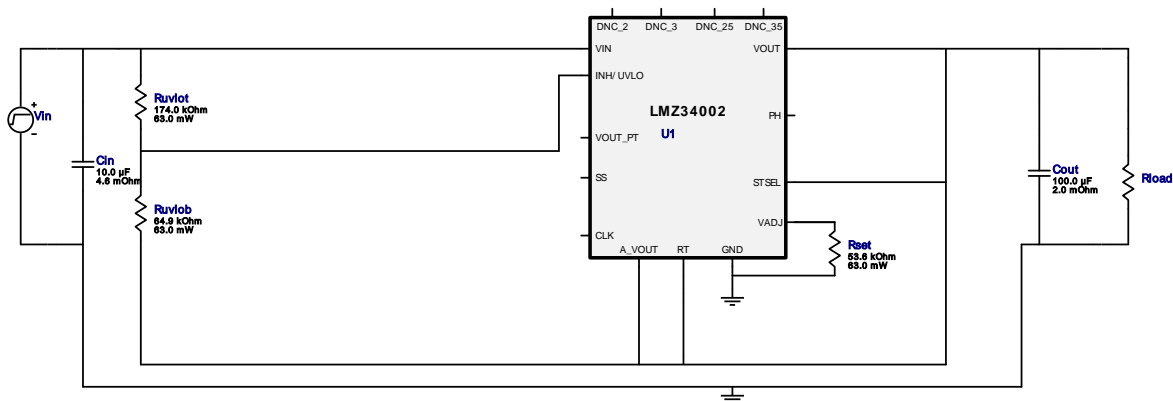


VinMin = 5.0V
 VinMax = 6.0V
 Vout = -5.0V
 Iout = 0.1A






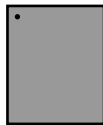
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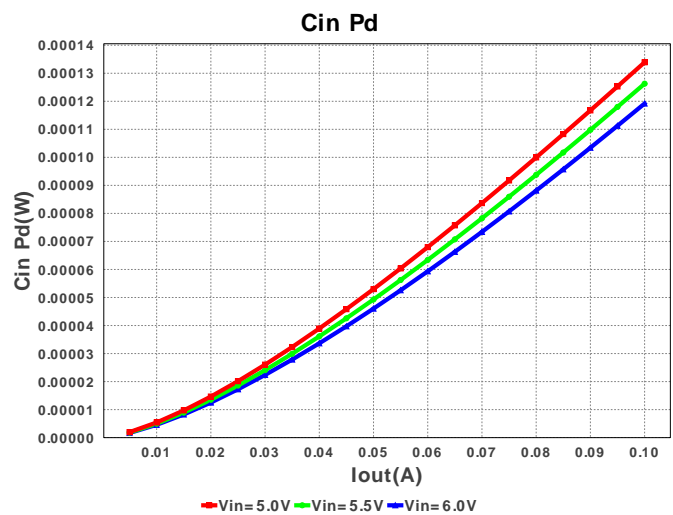
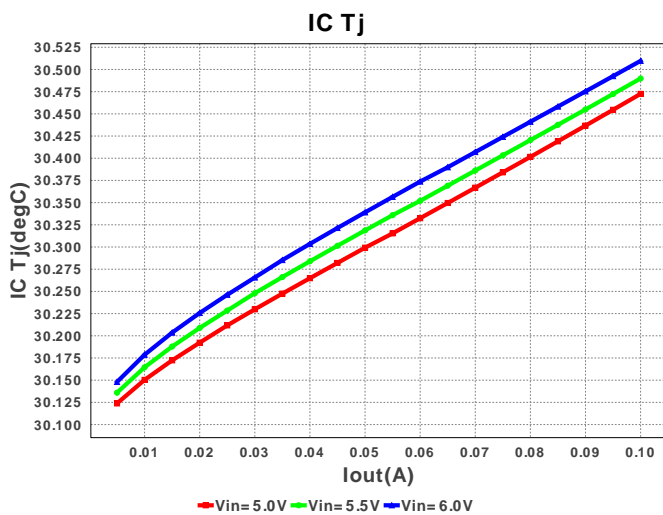
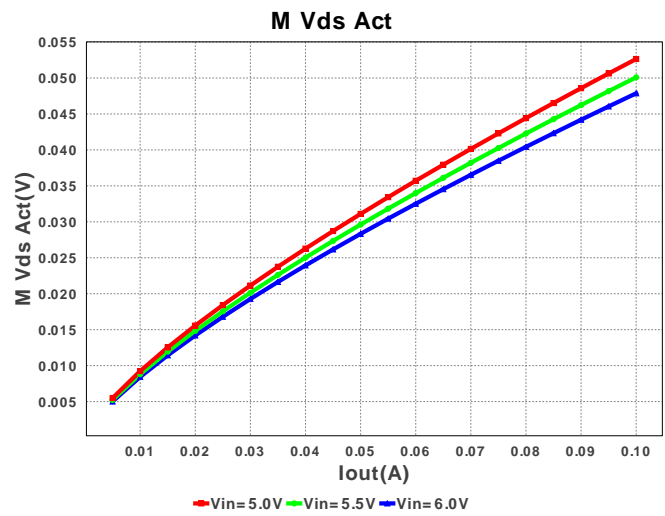
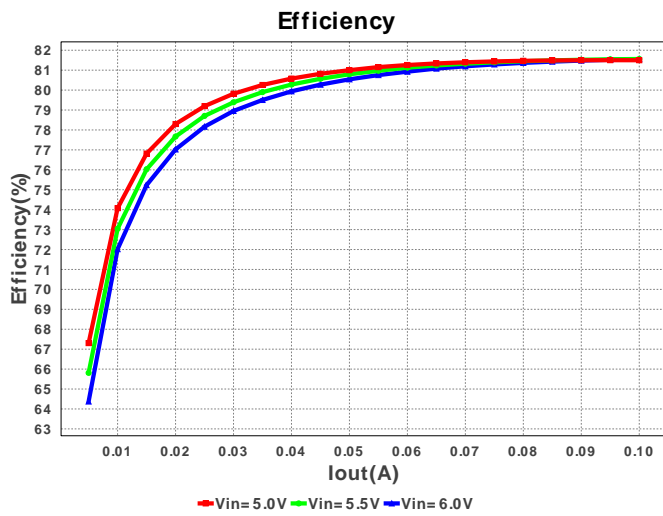
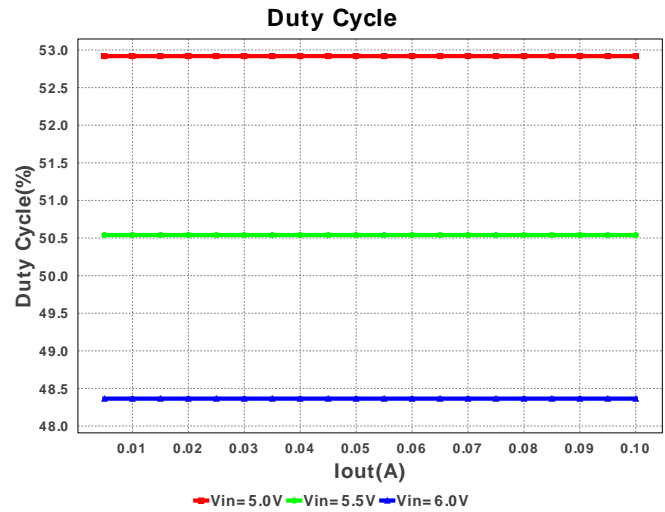
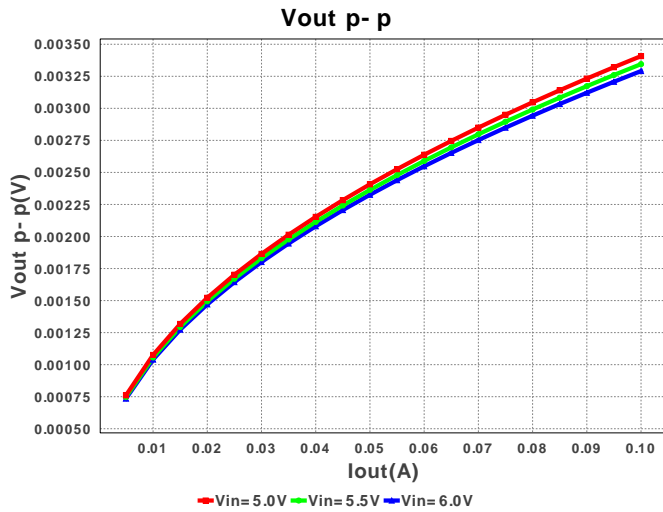
WEBENCH® Design Report

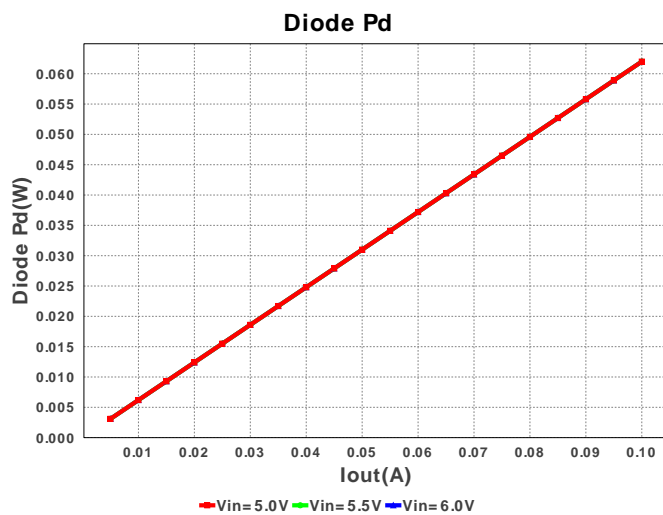
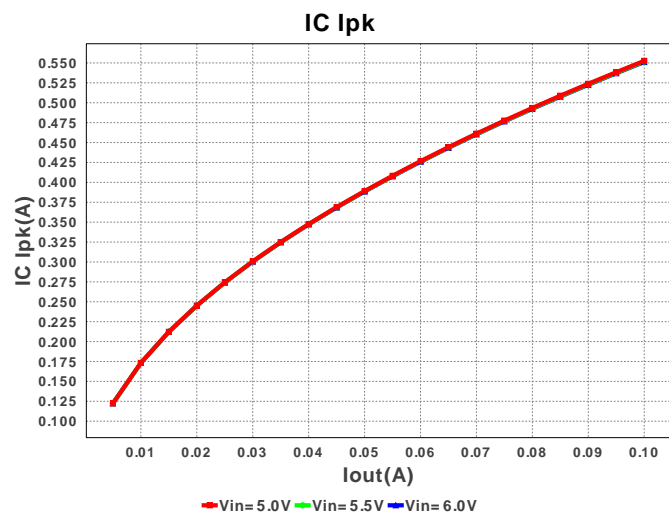
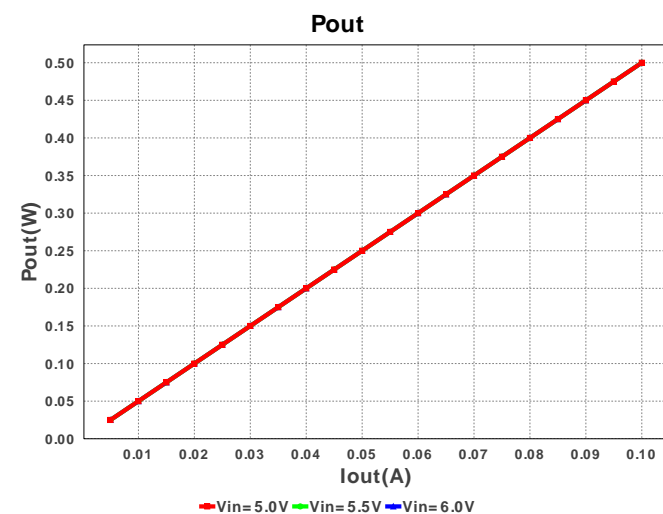
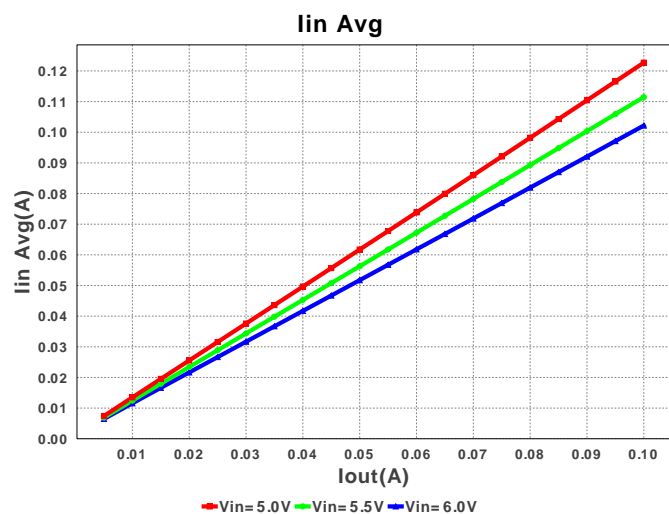
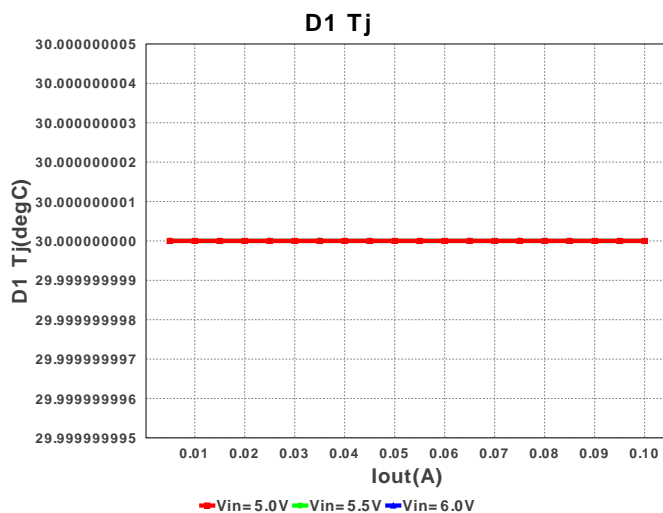
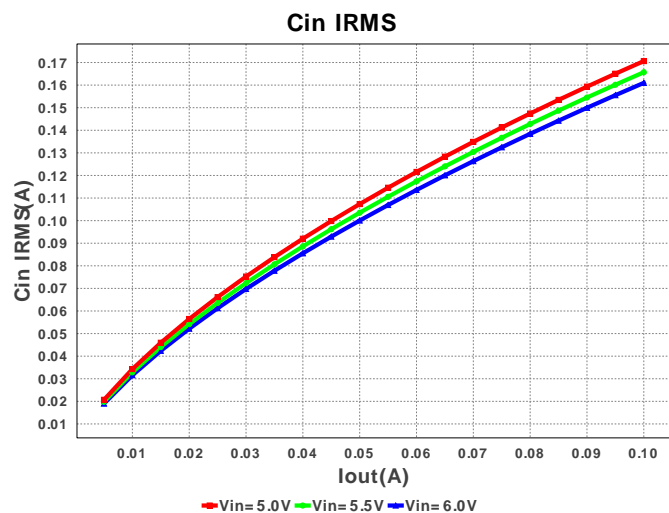
Design : 3886784/20 LMZ34002RKGR
 LMZ34002RKGR 5.0V-6.0V to -5.0V @ 0.1A

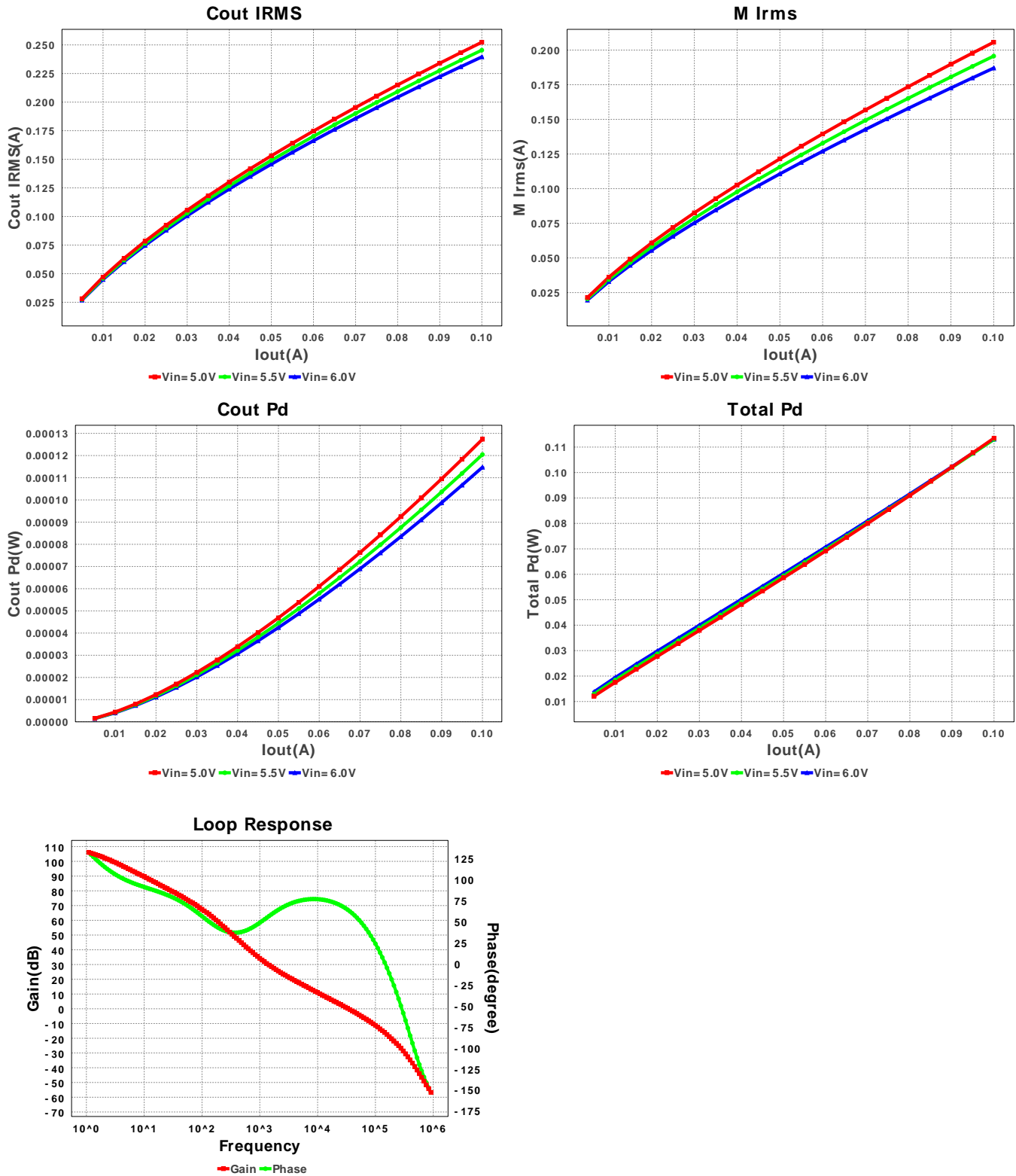


Electrical BOM

#	Name	Manufacturer	Part Number	Properties	Qty	Price	Footprint
1.	Cin	TDK	C3216X5R1A106M Series= X5R	Cap= 10.0 µF ESR= 4.6 mOhm VDC= 10.0 V IRMS= 2.7 A	1	\$0.06	 1206 11mm2
2.	Cout	TDK	C3225X5R0J107M Series= X5R	Cap= 100.0 µF ESR= 2.0 mOhm VDC= 6.3 V IRMS= 3.5 A	1	\$0.38	 1210 15mm2
3.	Rset	Vishay-Dale	CRCW040253K6FKED Series= CRCW..e3	Res= 53.6 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	 0402 3mm2
4.	Ruvlob	Vishay-Dale	CRCW040264K9FKED Series= CRCW..e3	Res= 64.9 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	 0402 3mm2
5.	Ruvlot	Vishay-Dale	CRCW0402174KFKED Series= CRCW..e3	Res= 174.0 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	 0402 3mm2
6.	U1	Texas Instruments	LMZ34002RKGR	Switcher	1	\$6.75	 MPQF264B 147mm2







Operating Values

#	Name	Value	Category	Description
1.	Cin IRMS	160.979 mA	Current	Input capacitor RMS ripple current
2.	Cout IRMS	239.505 mA	Current	Output capacitor RMS ripple current
3.	IC IpK	551.162 mA	Current	Peak switch current in IC
4.	Iin Avg	101.42 mA	Current	Average input current
5.	M Irms	187.013 mA	Current	MOSFET RMS current
6.	BOM Count	6	General	Total Design BOM count
7.	FootPrint	181.0 mm2	General	Total Foot Print Area of BOM components
8.	Frequency	800.0 kHz	General	Switching frequency
9.	IC Tolerance	16.0 mV	General	IC Feedback Tolerance
10.	M Vds Act	47.875 mV	General	Voltage drop across the MosFET
11.	Pout	500.0 mW	General	Total output power

#	Name	Value	Category	Description
12.	Total BOM	\$7.22	General	Total BOM Cost
13.	D1 Tj	30.0 degC	Op_Point	D1 junction temperature
14.	Vout OP	-5.0 V	Op_Point	Operational Output Voltage
15.	Cross Freq	34.113 kHz	Op_point	Bode plot crossover frequency
16.	Duty Cycle	48.365 %	Op_point	Duty cycle
17.	Efficiency	82.167 %	Op_point	Steady state efficiency
18.	IC Tj	30.446 degC	Op_point	IC junction temperature
19.	ICThetaJA	14.0 degC/W	Op_point	IC junction-to-ambient thermal resistance
20.	IOUT_OP	100.0 mA	Op_point	Iout operating point
21.	Phase Marg	64.257 deg	Op_point	Bode Plot Phase Margin
22.	VIN_OP	6.0 V	Op_point	Vin operating point
23.	Vout p-p	3.291 mV	Op_point	Peak-to-peak output ripple voltage
24.	Cin Pd	119.205 μ W	Power	Input capacitor power dissipation
25.	Cout Pd	114.725 μ W	Power	Output capacitor power dissipation
26.	Diode Pd	62.0 mW	Power	Diode power dissipation
27.	Total Pd	108.517 mW	Power	Total Power Dissipation

Design Inputs

#	Name	Value	Description
1.	Iout	100.0 mA	Maximum Output Current
2.	Iout1	100.0 mAmps	Output Current #1
3.	VinMax	6.0 V	Maximum input voltage
4.	VinMin	5.0 V	Minimum input voltage
5.	Vout	-5.0 V	Output Voltage
6.	Vout1	-5.0 Volt	Output Voltage #1
7.	base_pn	LMZ34002	Texas Instruments Base Part Number
8.	source	DC	Input Source Type
9.	ta	30.0 degC	Ambient temperature

Design Assistance

1. LMZ34002 Product Folder : <http://www.ti.com/product/lmz34002> : contains the data sheet and other resources.

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You should completely validate and test your design implementation to confirm the system functionality for your application prior to production.

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