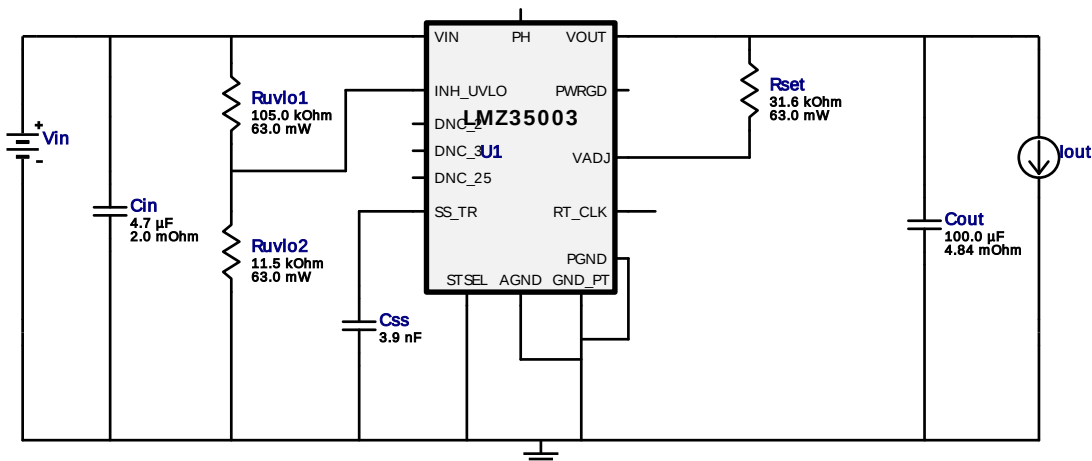
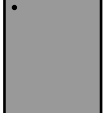


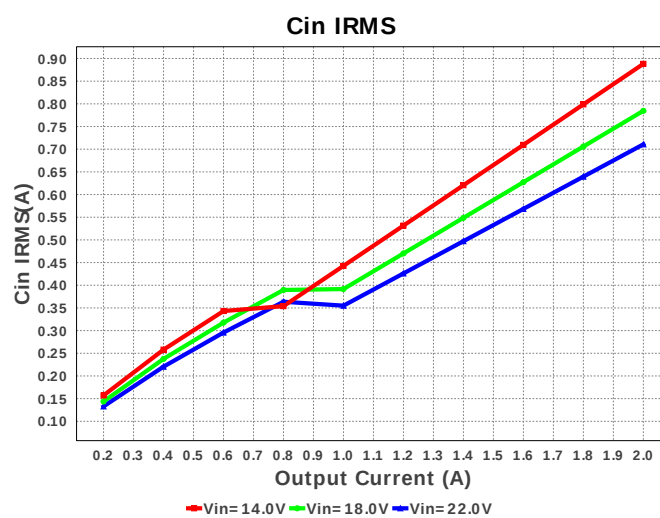
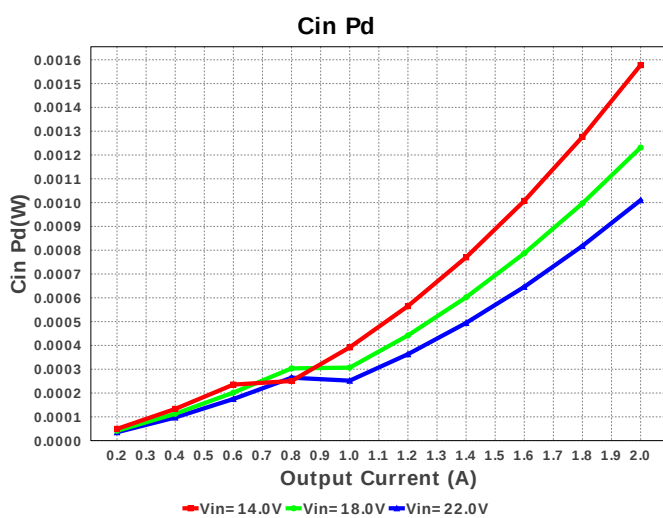
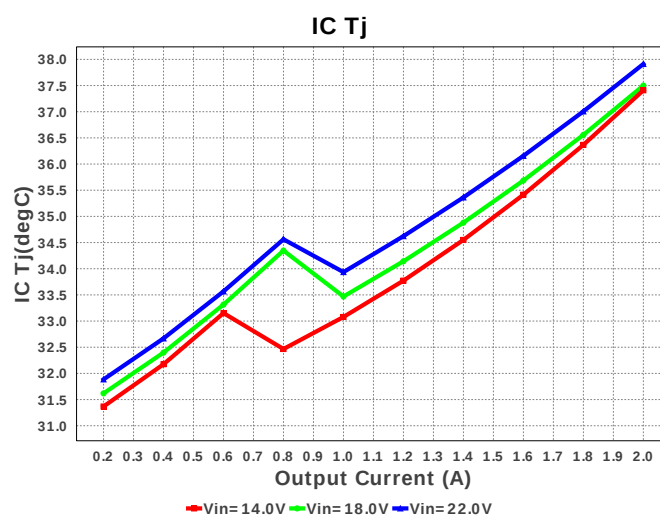
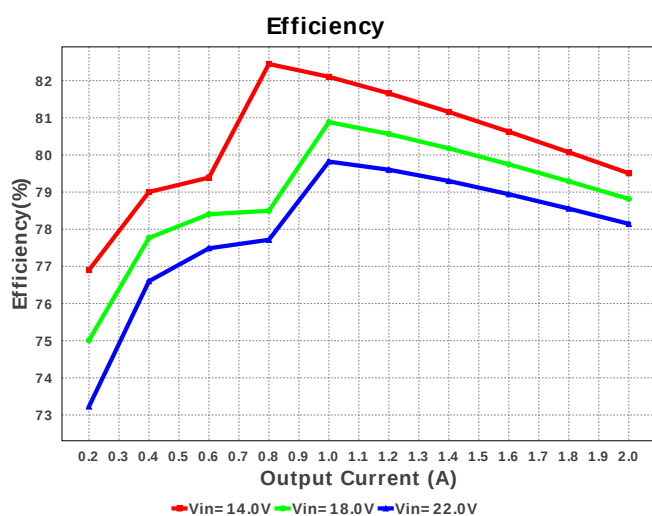
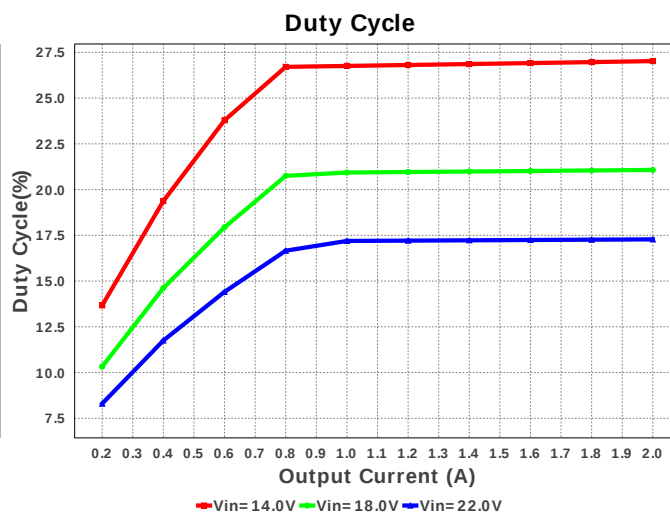
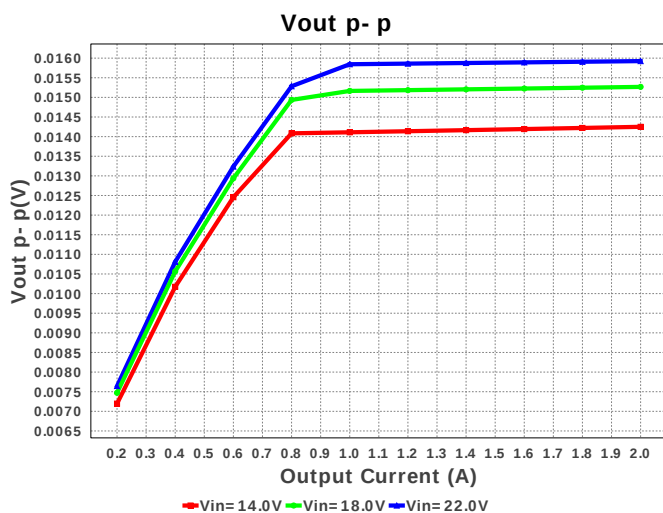
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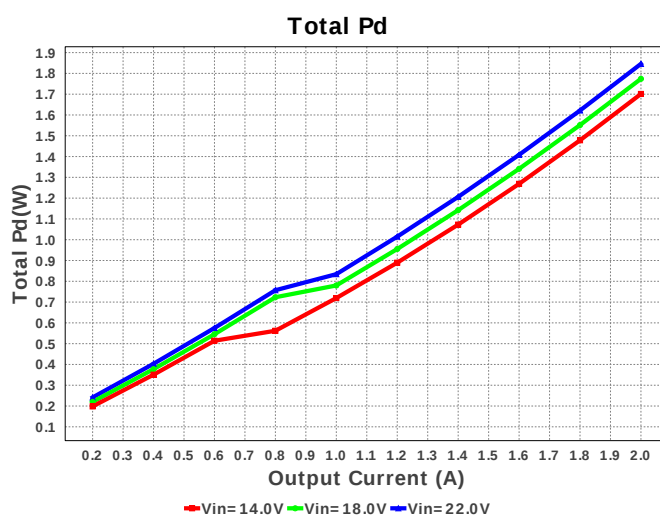
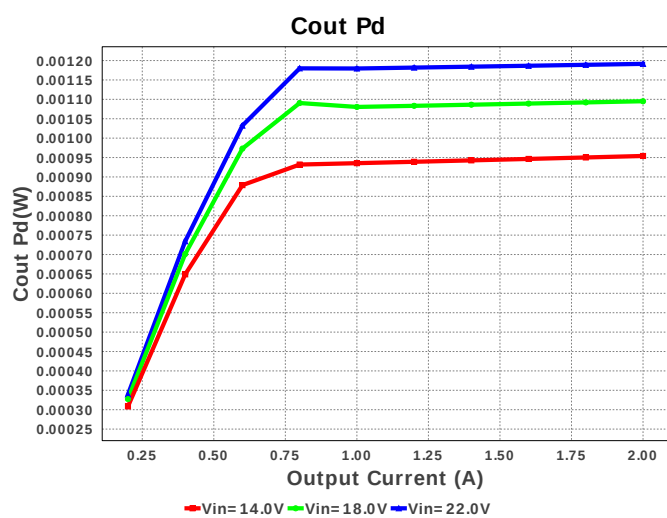
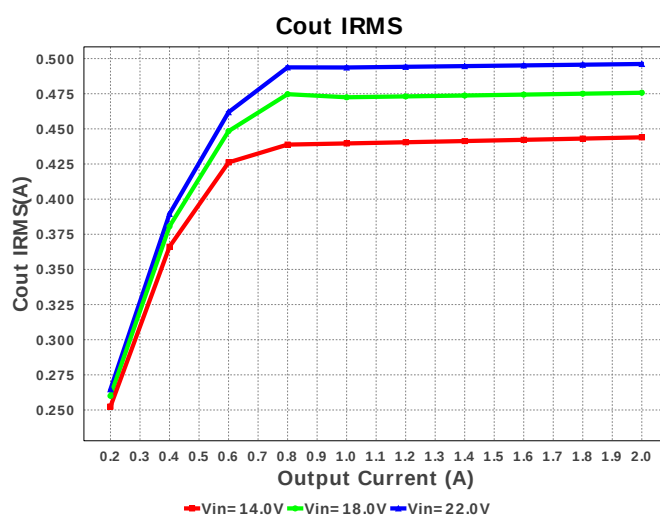
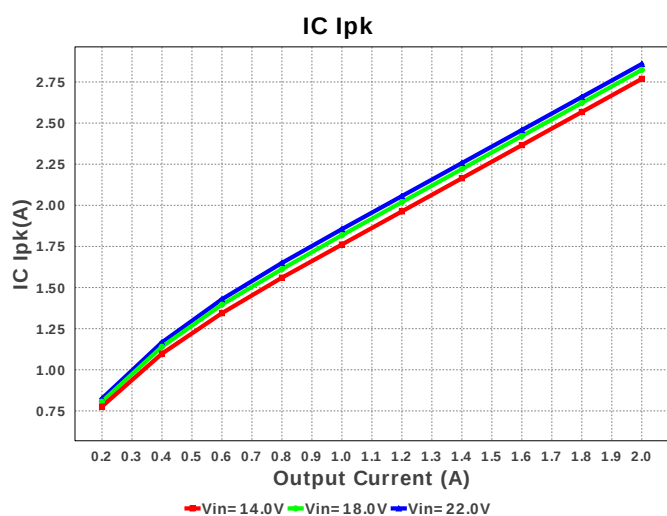
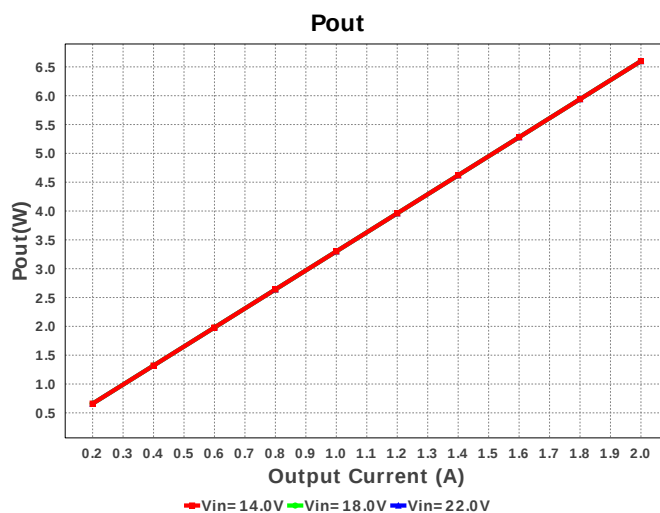
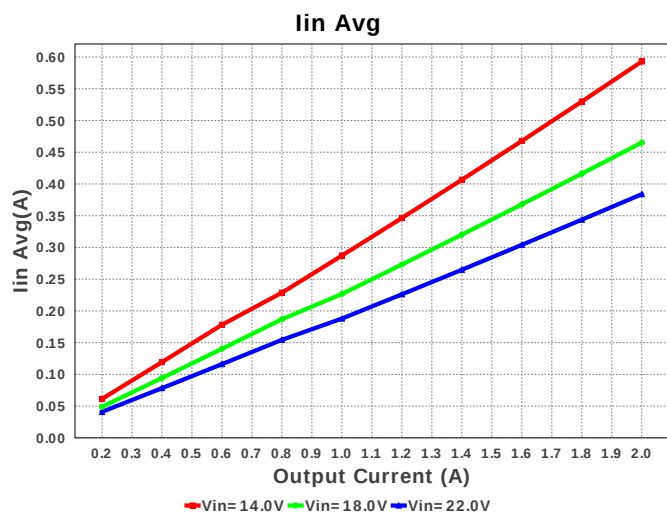
Design : 4709062/5 LMZ35003RKGR
LMZ35003RKGR 14.0V-22.0V to 3.30V @ 2.0A

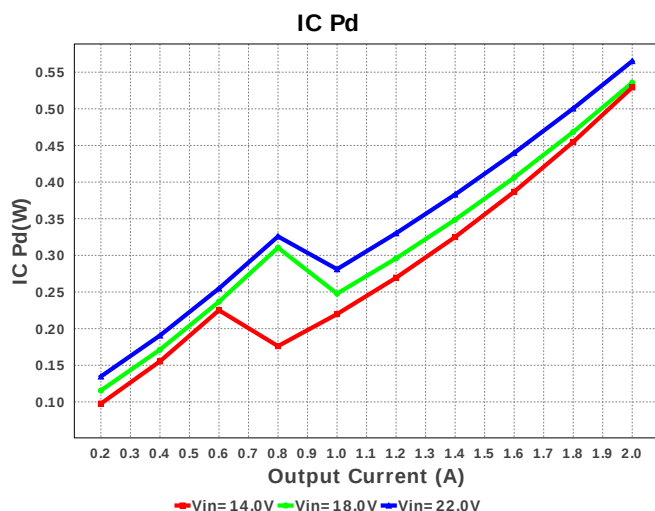


Electrical BOM

#	Name	Manufacturer	Part Number	Properties	Qty	Price	Footprint
1.	Cin	MuRata	GRM32ER71H475KA88L Series= X7R	Cap= 4.7 uF ESR= 2.0 mOhm VDC= 50.0 V IRMS= 5.35 A	1	\$0.19	 1210 15 mm ²
2.	Cout	MuRata	GRM31CD80G107ME39L Series= X6T	Cap= 100.0 uF ESR= 4.84 mOhm VDC= 4.0 V IRMS= 4.3381 A	1	\$0.14	 1206_190 11 mm ²
3.	Css	MuRata	GRM033R71A392KA01D Series= X7R	Cap= 3.9 nF VDC= 10.0 V IRMS= 0.0 A	1	\$0.01	 0201 2 mm ²
4.	Rset	Vishay-Dale	CRCW040231K6FKED Series= CRCW..e3	Res= 31.6 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	 0402 3 mm ²
5.	Ruvlo1	Vishay-Dale	CRCW0402105KFKED Series= CRCW..e3	Res= 105.0 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	 0402 3 mm ²
6.	Ruvlo2	Vishay-Dale	CRCW040211K5FKED Series= CRCW..e3	Res= 11.5 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	 0402 3 mm ²
7.	U1	Texas Instruments	LMZ35003RKGR	Switcher	1	\$7.95	 RKG0041A 143 mm ²







Operating Values

#	Name	Value	Category	Description
1.	Cin IRMS	710.71 mA	Current	Input capacitor RMS ripple current
2.	Cout IRMS	496.154 mA	Current	Output capacitor RMS ripple current
3.	IC Ipk	2.0 A	Current	Peak switch current in IC
4.	Iin Avg	383.9 mA	Current	Average input current
5.	BOM Count	7	General	Total Design BOM count
6.	FootPrint	180.0 mm ²	General	Total Foot Print Area of BOM components
7.	Frequency	400.0 kHz	General	Switching frequency
8.	Mode	CCM	General	Conduction Mode
9.	Pout	6.6 W	General	Total output power
10.	Total BOM	\$8.32	General	Total BOM Cost
11.	Vout OP	3.3 V	Op_point	Operational Output Voltage
12.	Cross Freq	46.028 kHz	Op_point	Bode plot crossover frequency
13.	Duty Cycle	17.279 %	Op_point	Duty cycle
14.	Efficiency	78.145 %	Op_point	Steady state efficiency
15.	IC Tj	37.912 degC	Op_point	IC junction temperature
16.	ICThetaJA	14.0 degC/W	Op_point	IC junction-to-ambient thermal resistance
17.	IOUT_OP	2.0 A	Op_point	Iout operating point
18.	Phase Marg	50.719 deg	Op_point	Bode Plot Phase Margin
19.	VIN_OP	22.0 V	Op_point	Vin operating point
20.	Vout p-p	11.272 mV	Op_point	Peak-to-peak output ripple voltage
21.	Cin Pd	1.01 mW	Power	Input capacitor power dissipation
22.	Cout Pd	1.191 mW	Power	Output capacitor power dissipation
23.	IC Pd	2.126 W	Power	IC power dissipation
24.	Total Pd	1.846 W	Power	Total Power Dissipation
25.	Vout Tolerance	2.273 %		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	LMZ35003	Base Product Number
6.	source	DC	Input Source Type
7.	Ta	30.0	Ambient temperature

Design Assistance

1. **LMZ35003** Product Folder : <http://www.ti.com/product/LMZ35003> : contains the data sheet and other resources.

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