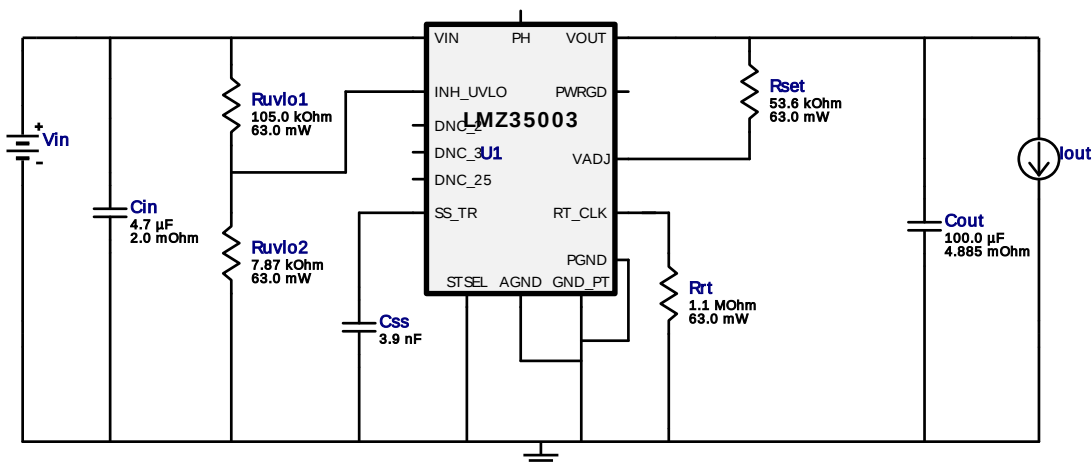


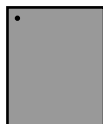
WEBENCH[®] Design Report

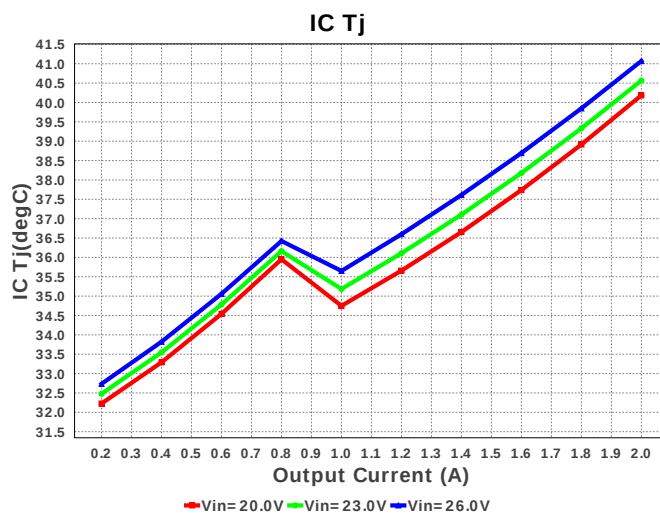
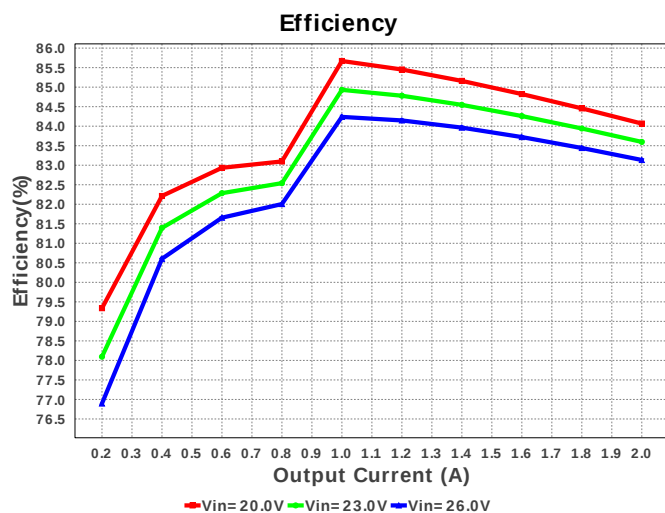
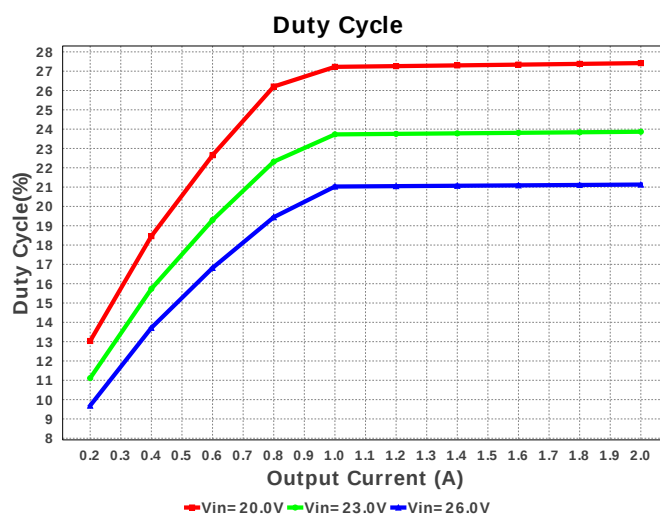
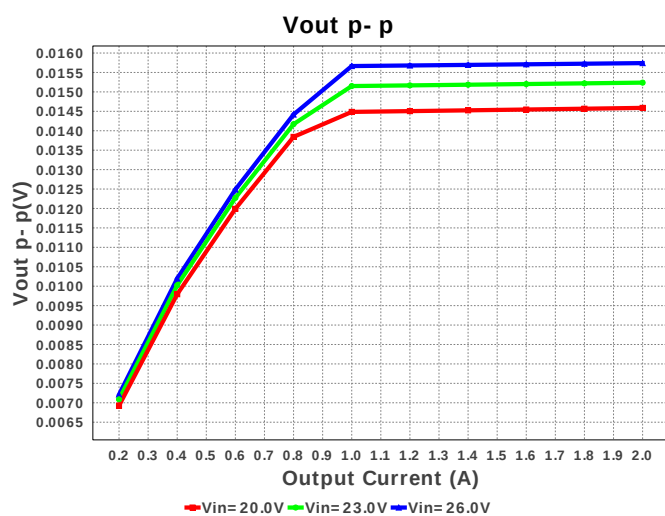
Design : 4764958/6 LMZ35003RKGR
LMZ35003RKGR 20.0V-26.0V to 5.00V @ 2.0A

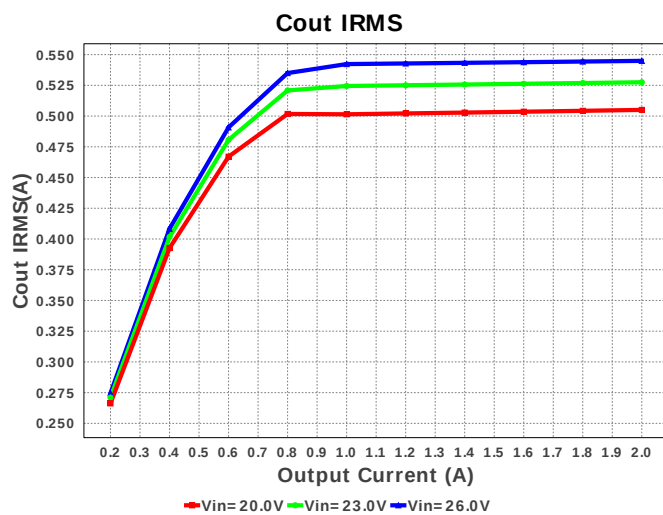
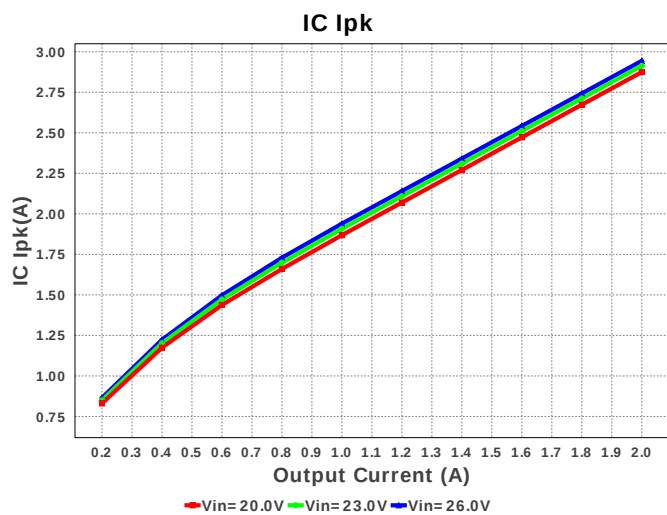
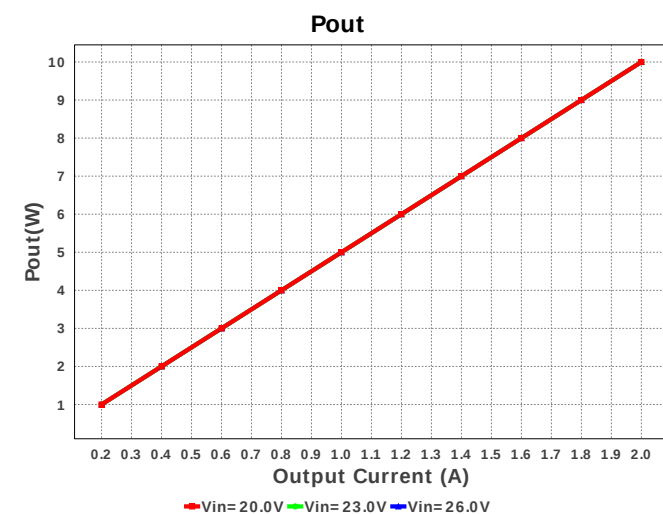
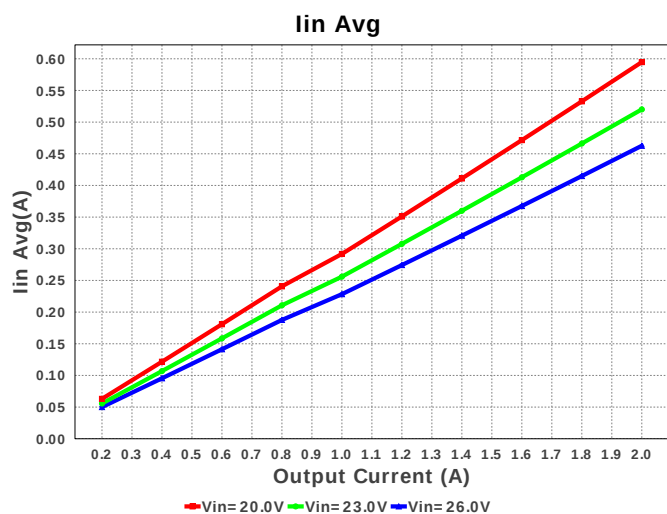
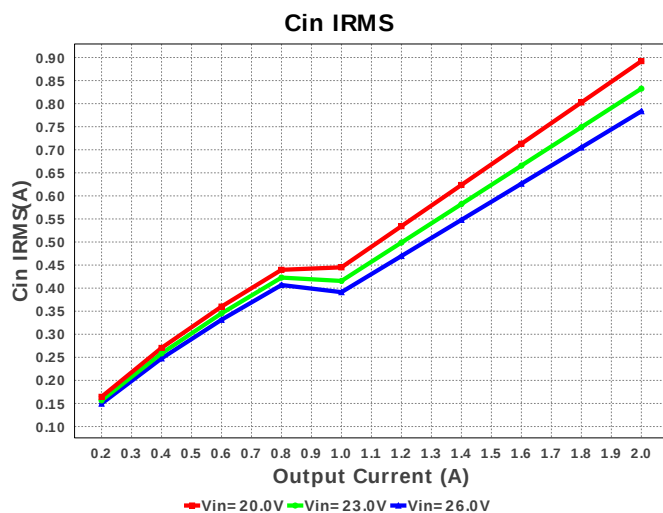
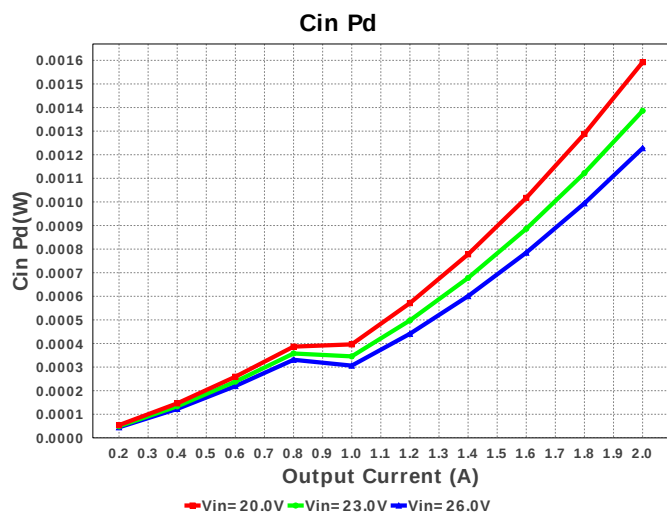


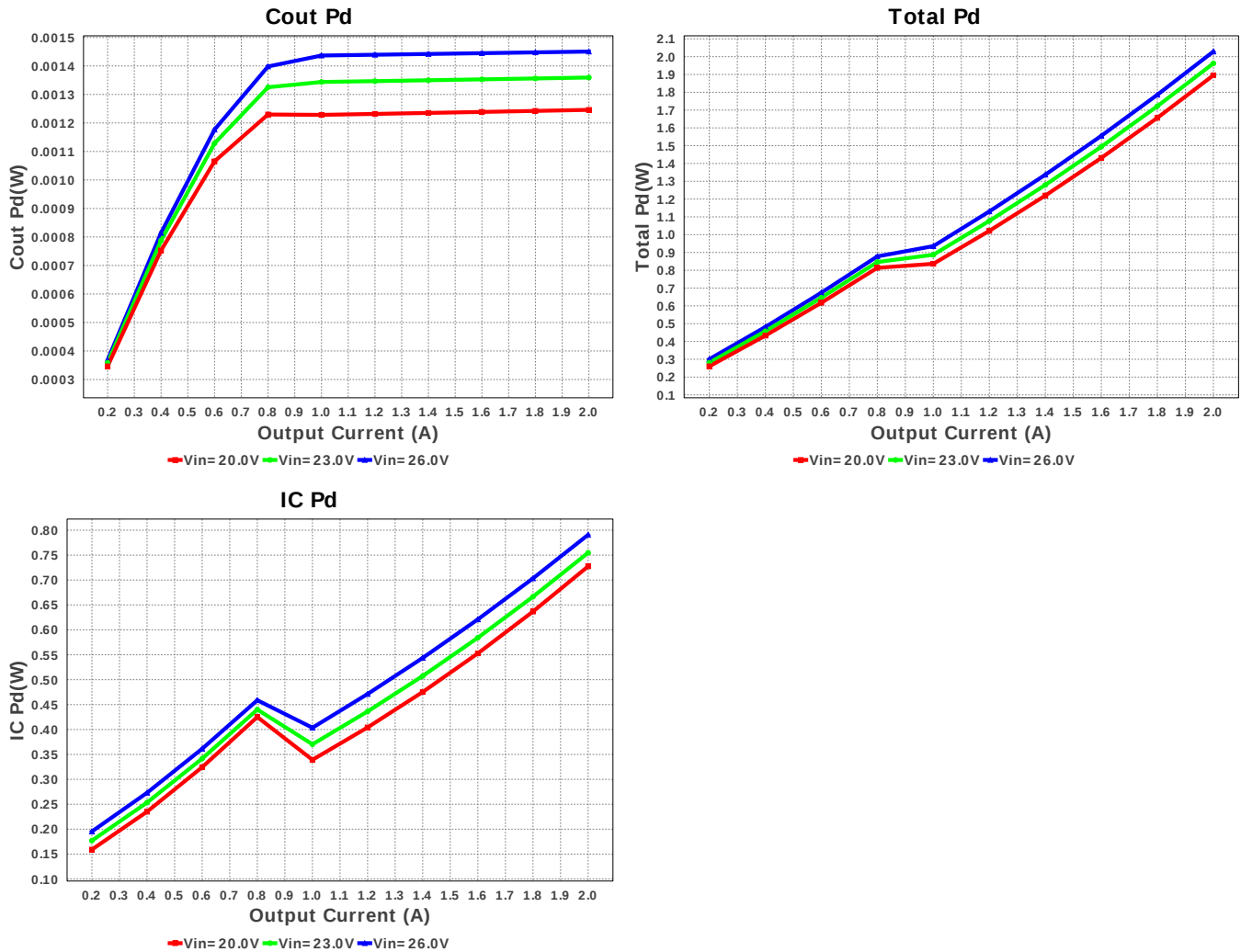
Electrical BOM

#	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	GRM31CR60J107ME39L Series= X5R	Cap= 100.0 uF ESR= 4.885 mOhm VDC= 6.3 V IRMS= 4.4118 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.	Rrt	Vishay-Dale	CRCW04021M10FKED Series= CRCW..e3	Res= 1.1 MOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	 0402 3 mm ²
5.	Rset	Vishay-Dale	CRCW040253K6FKED Series= CRCW..e3	Res= 53.6 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	 0402 3 mm ²
6.	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
7.	Ruvlo2	Vishay-Dale	CRCW04027K87FKED Series= CRCW..e3	Res= 7.87 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	 0402 3 mm ²

#	Name	Manufacturer	Part Number	Properties	Qty	Price	Footprint
8.	U1	Texas Instruments	LMZ35003RKGR	Switcher	1	\$7.95	

RKG0041A 143 mm²





Operating Values

#	Name	Value	Category	Description
1.	Cin IRMS	783.501 mA	Current	Input capacitor RMS ripple current
2.	Cout IRMS	545.106 mA	Current	Output capacitor RMS ripple current
3.	IC Ipk	2.0 A	Current	Peak switch current in IC
4.	Iin Avg	462.64 mA	Current	Average input current
5.	BOM Count	8	General	Total Design BOM count
6.	FootPrint	183.0 mm ²	General	Total Foot Print Area of BOM components
7.	Frequency	500.0 kHz	General	Switching frequency
8.	Mode	CCM	General	Conduction Mode
9.	Pout	10.0 W	General	Total output power
10.	Total BOM	\$8.33	General	Total BOM Cost
11.	Vout OP	5.0 V	Op_Point	Operational Output Voltage
12.	Cross Freq	31.972 kHz	Op_point	Bode plot crossover frequency
13.	Duty Cycle	21.131 %	Op_point	Duty cycle
14.	Efficiency	83.135 %	Op_point	Steady state efficiency
15.	IC Tj	41.068 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	67.59 deg	Op_point	Bode Plot Phase Margin
19.	VIN_OP	26.0 V	Op_point	Vin operating point
20.	Vout p-p	11.299 mV	Op_point	Peak-to-peak output ripple voltage
21.	Cin Pd	1.228 mW	Power	Input capacitor power dissipation
22.	Cout Pd	1.452 mW	Power	Output capacitor power dissipation
23.	IC Pd	2.421 W	Power	IC power dissipation
24.	Total Pd	2.029 W	Power	Total Power Dissipation
25.	Vout Tolerance	1.5 %		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

#	Name	Value	Description
2.	VinMax	26.0	Maximum input voltage
3.	VinMin	20.0	Minimum input voltage
4.	Vout	5.0	Output Voltage
5.	base_pn	LMZ35003	Texas Instruments Base Part 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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