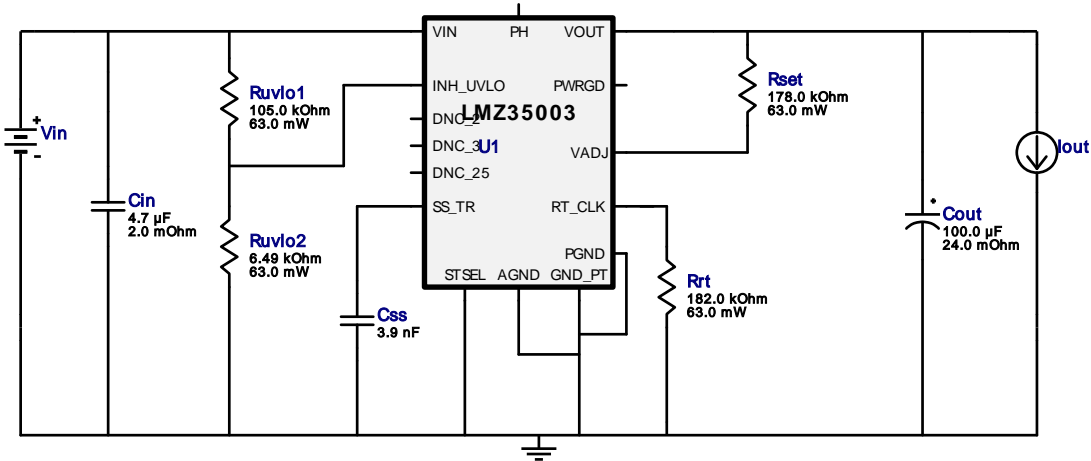
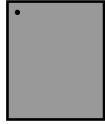
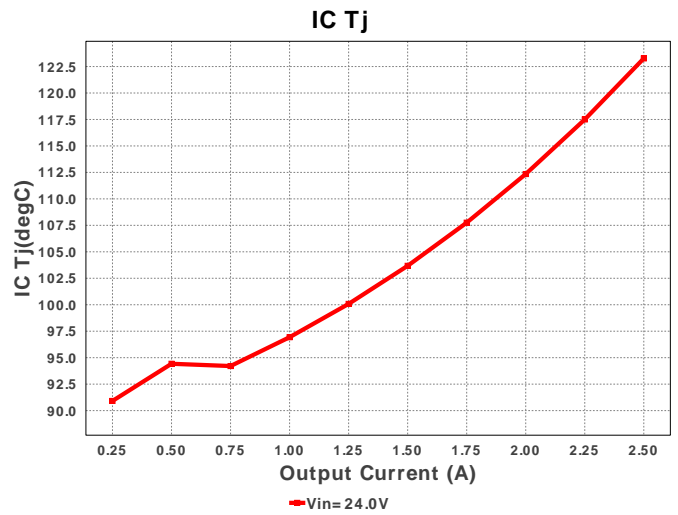
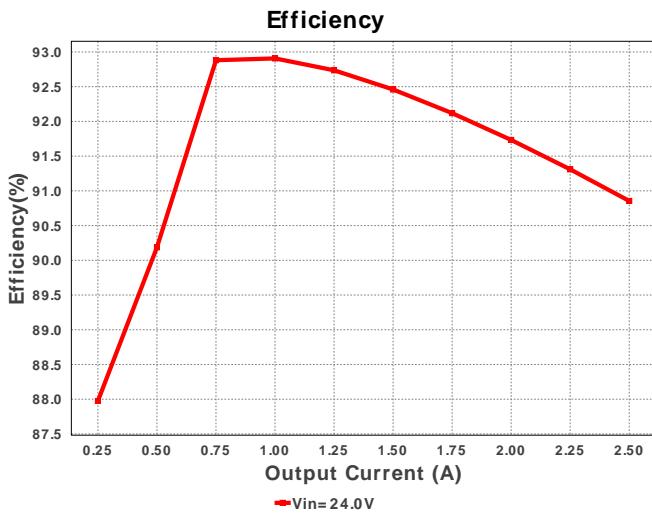
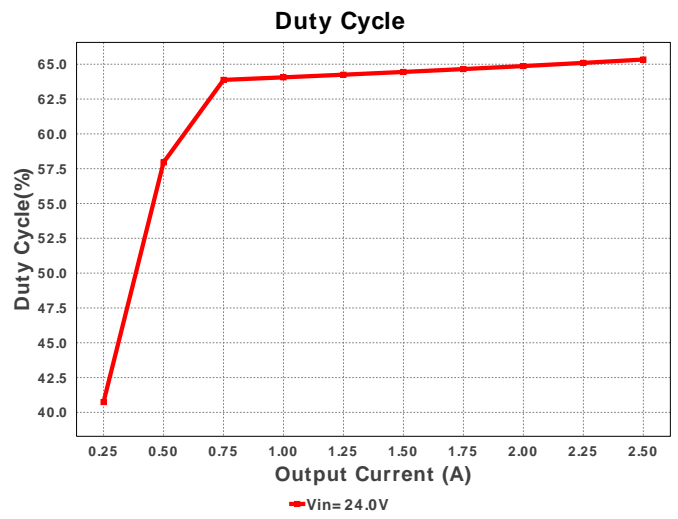
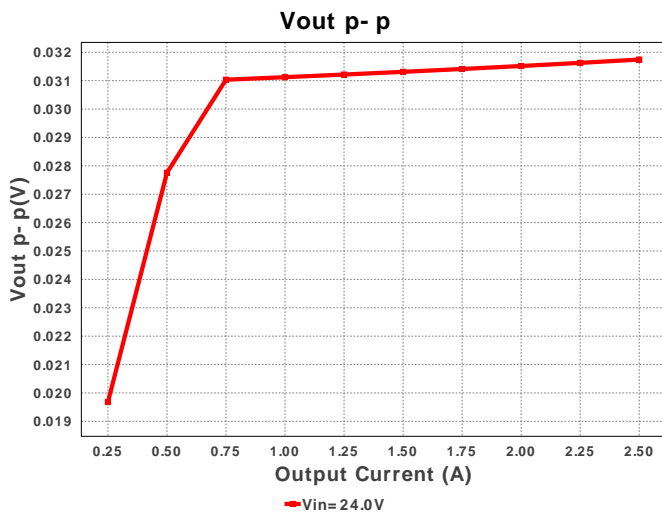


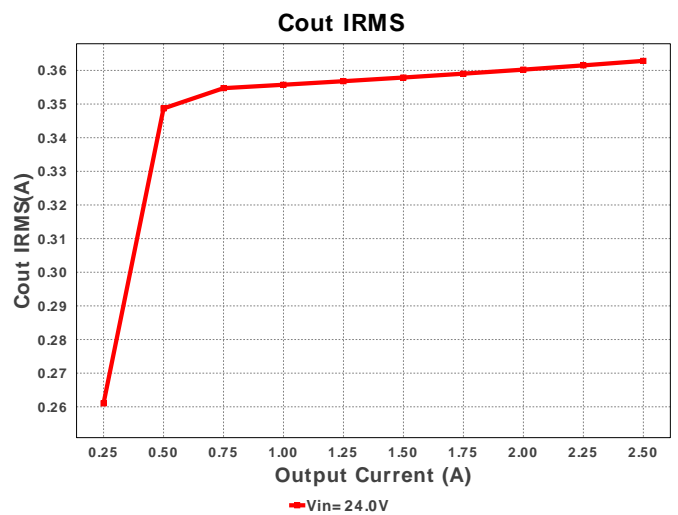
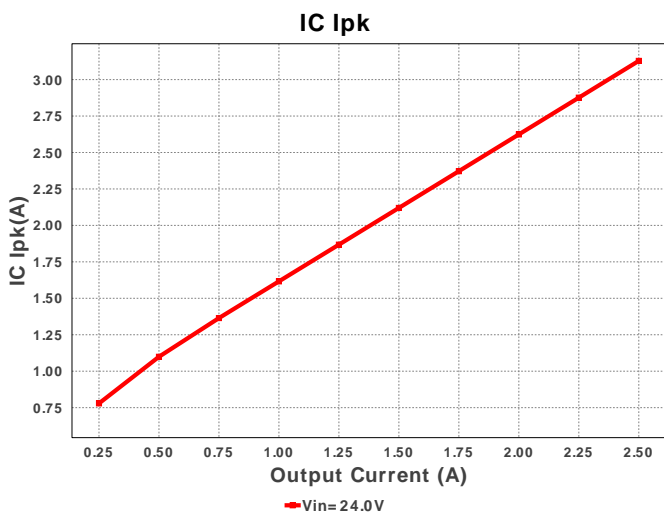
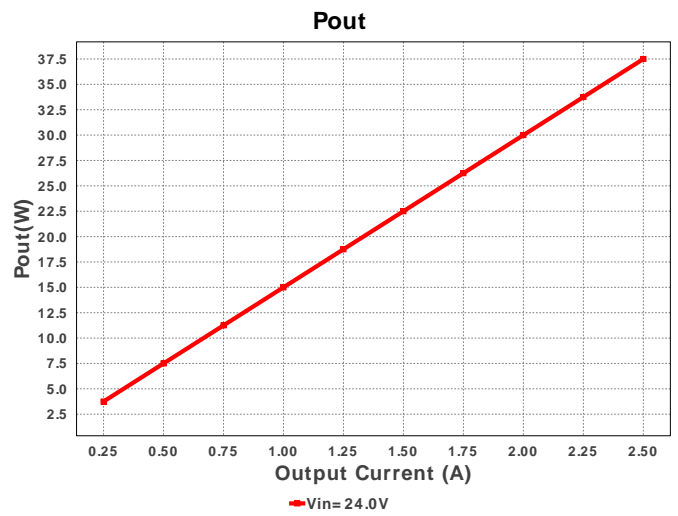
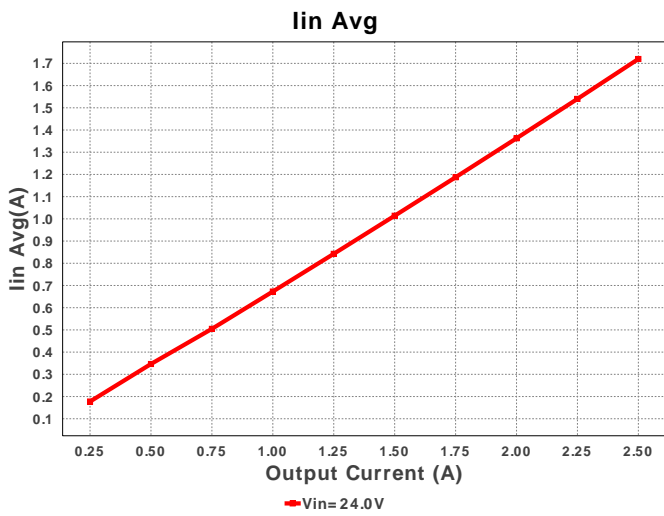
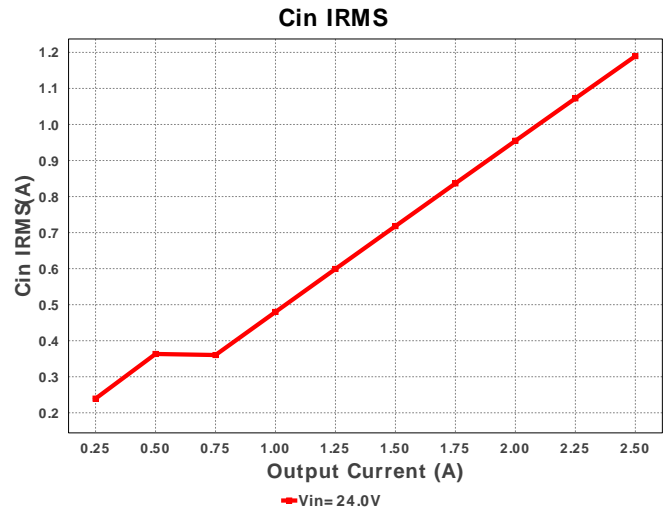
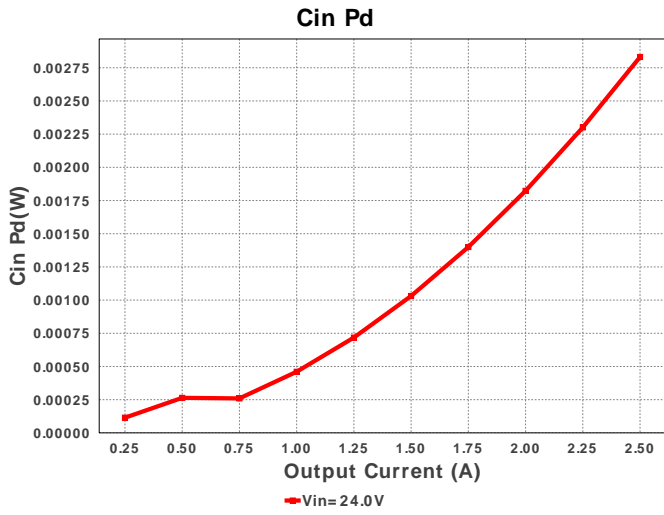
WEBENCH® Design Report

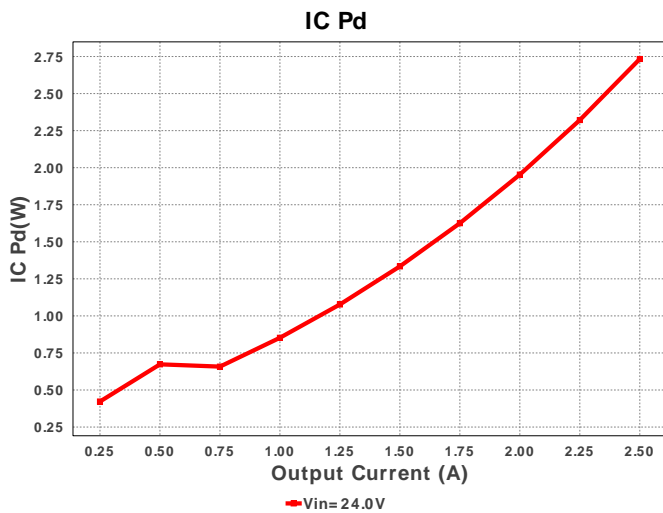
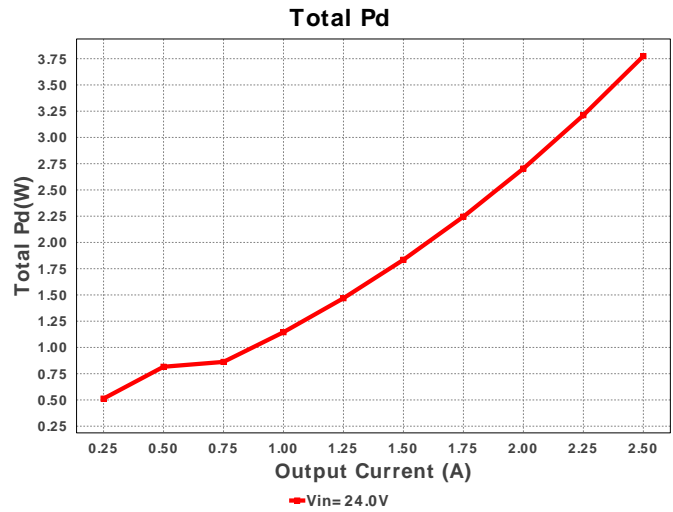
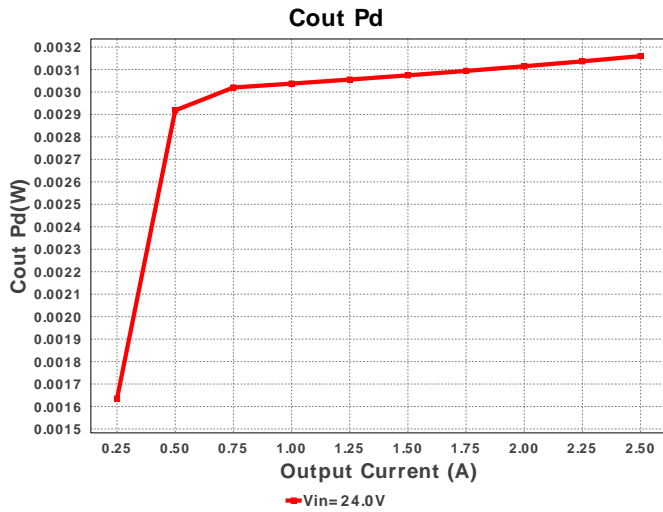
 Design : 3857866/664 LMZ35003RKGR
 LMZ35003RKGR 24.0V-24.0V to 15.00V @ 2.5A

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	Panasonic	16SVPC100M Series= SVPC	Cap= 100.0 uF ESR= 24.0 mOhm VDC= 16.0 V IRMS= 2.49 A	1	\$0.29	 SM_RADIAL_6.3AMM 80 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	CRCW0402182KFKED Series= CRCW..e3	Res= 182.0 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	 0402 3 mm ²
5.	Rset	Vishay-Dale	CRCW0402178KFKED Series= CRCW..e3	Res= 178.0 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	CRCW04026K49FKED Series= CRCW..e3	Res= 6.49 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 mm ²







Operating Values

#	Name	Value	Category	Description
1.	Cin IRMS	1.19 A	Current	Input capacitor RMS ripple current
2.	Cout IRMS	361.176 mA	Current	Output capacitor RMS ripple current
3.	IC Ipk	2.5 A	Current	Peak switch current in IC
4.	Iin Avg	1.72 A	Current	Average input current
5.	BOM Count	8	General	Total Design BOM count
6.	FootPrint	252.0 mm ²	General	Total Foot Print Area of BOM components
7.	Frequency	1000.0 kHz	General	Switching frequency
8.	Mode	CCM	General	Conduction Mode
9.	Pout	37.5 W	General	Total output power
10.	Total BOM	\$8.48	General	Total BOM Cost
11.	Vout OP	15.0 V	Op_Point	Operational Output Voltage
12.	Cross Freq	8.125 kHz	Op_point	Bode plot crossover frequency
13.	Duty Cycle	65.338 %	Op_point	Duty cycle
14.	Efficiency	90.841 %	Op_point	Steady state efficiency
15.	IC Tj	123.353 degC	Op_point	IC junction temperature
16.	ICThetaJA	14.0 degC/W	Op_point	IC junction-to-ambient thermal resistance
17.	IOUT_OP	2.5 A	Op_point	Iout operating point
18.	Phase Marg	87.6 deg	Op_point	Bode Plot Phase Margin
19.	VIN_OP	24.0 V	Op_point	Vin operating point
20.	Vout p-p	30.068 mV	Op_point	Peak-to-peak output ripple voltage
21.	Cin Pd	2.831 mW	Power	Input capacitor power dissipation
22.	Cout Pd	3.131 mW	Power	Output capacitor power dissipation
23.	IC Pd	5.144 W	Power	IC power dissipation
24.	Total Pd	3.781 W	Power	Total Power Dissipation
25.	Vout Tolerance	500.0 m%		Vout Tolerance based on IC Tolerance (no load) and voltage divider resistors if applicable

Design Inputs

#	Name	Value	Description
1.	Iout	2.5	Maximum Output Current

#	Name	Value	Description
2.	SoftStart	3.0 ms	Soft Start Time (ms)
3.	VinMax	24.0	Maximum input voltage
4.	VinMin	24.0	Minimum input voltage
5.	Vout	15.0	Output Voltage
6.	base_pn	LMZ35003	Base Product Number
7.	source	DC	Input Source Type
8.	Ta	85.0	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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