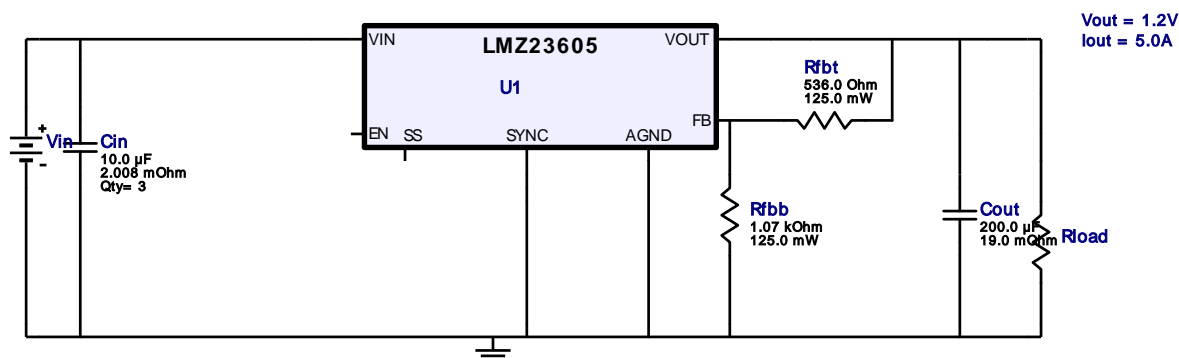
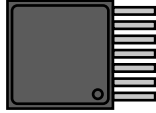


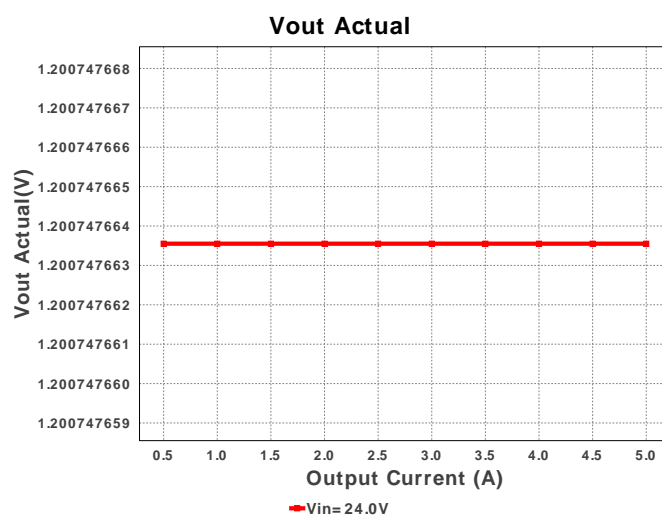
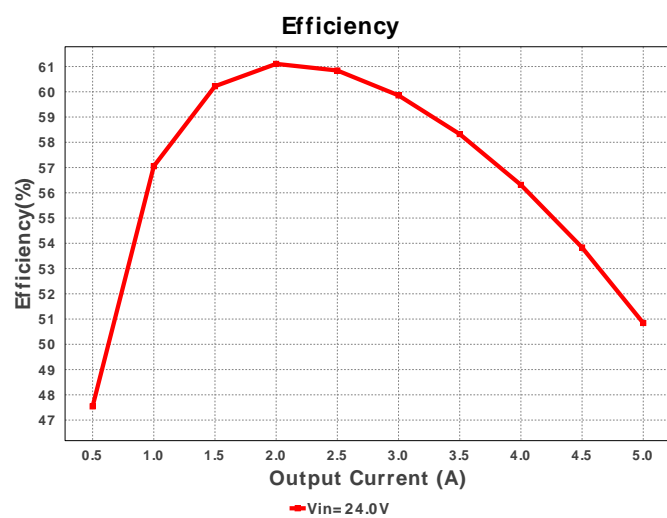
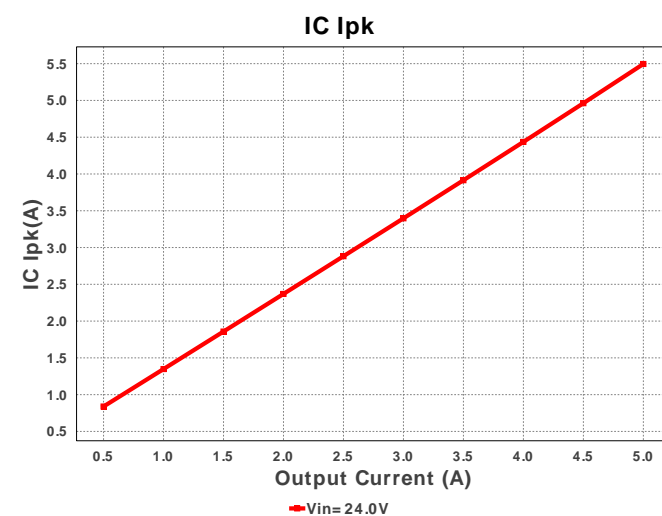
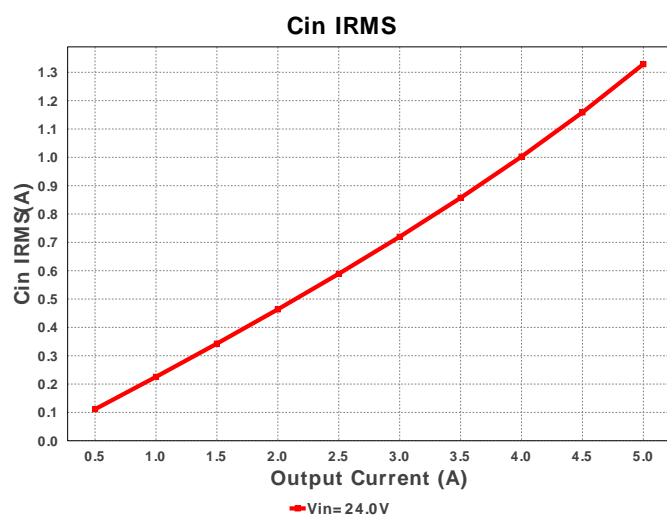
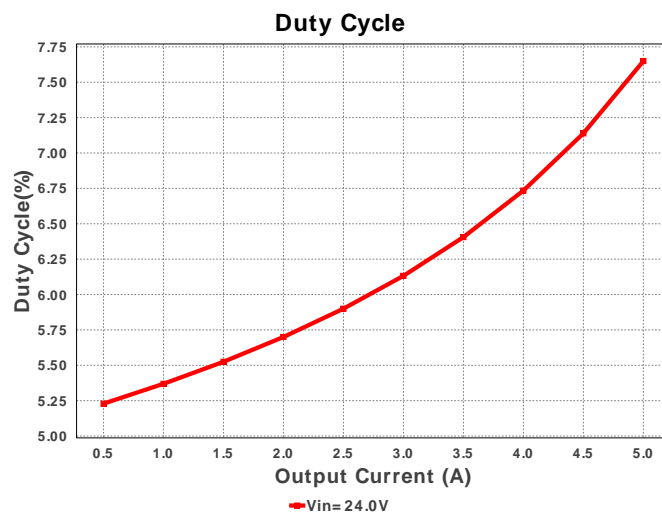
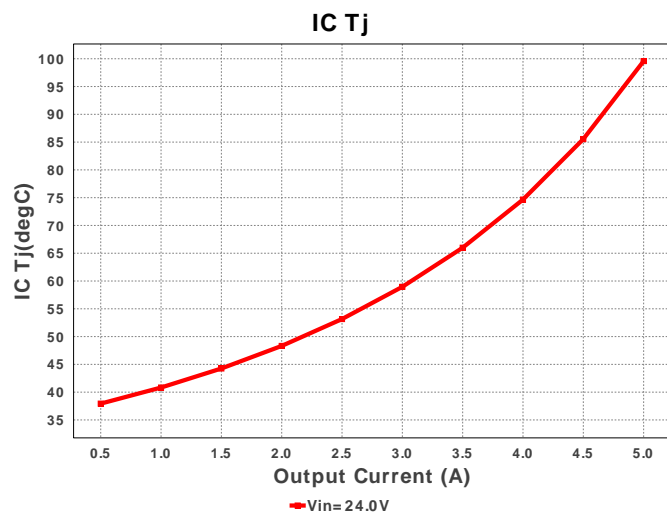
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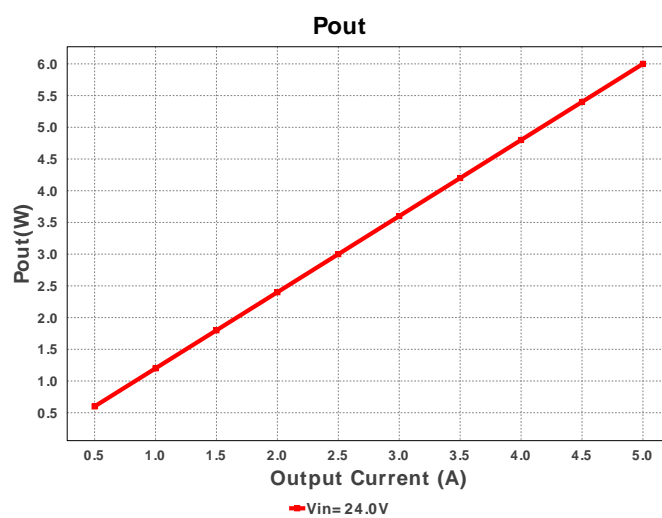
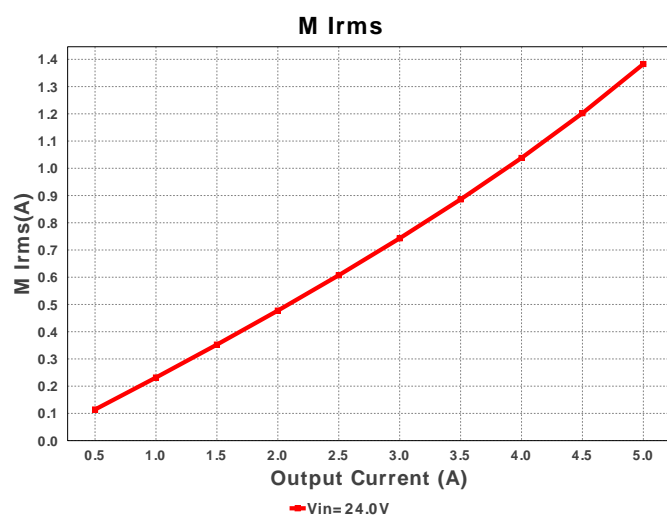
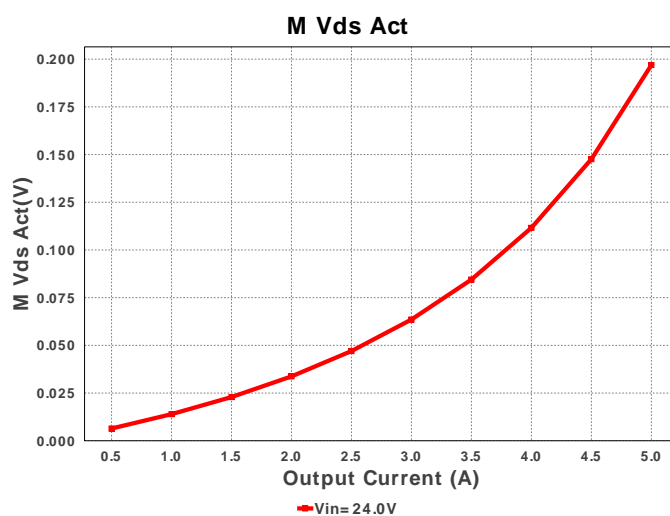
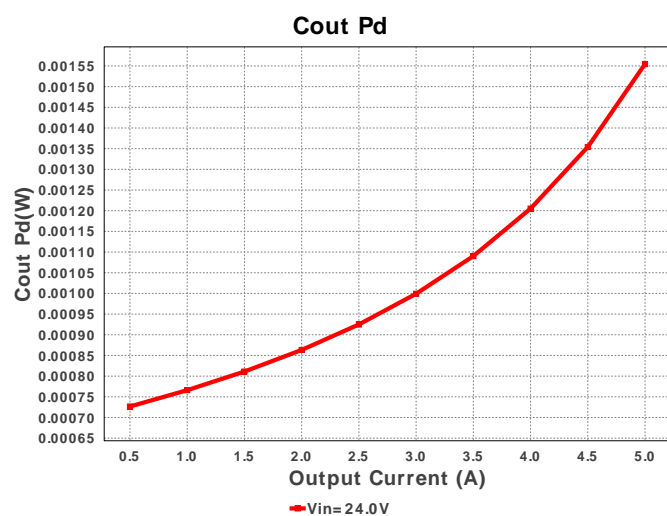
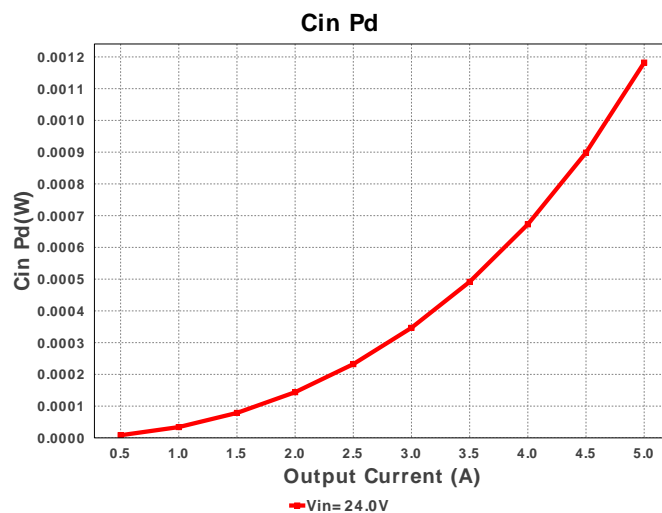
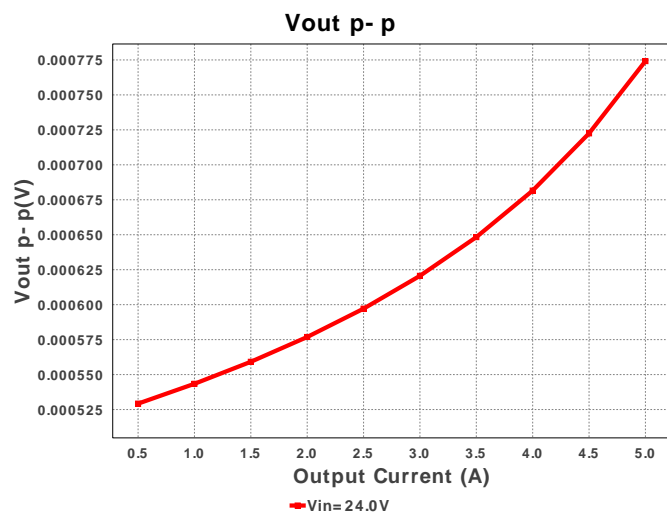
Design : 4466246/75 LMZ23605TZ/NOPB
LMZ23605TZ/NOPB 24.0V-24.0V to 1.20V @ 5.0A

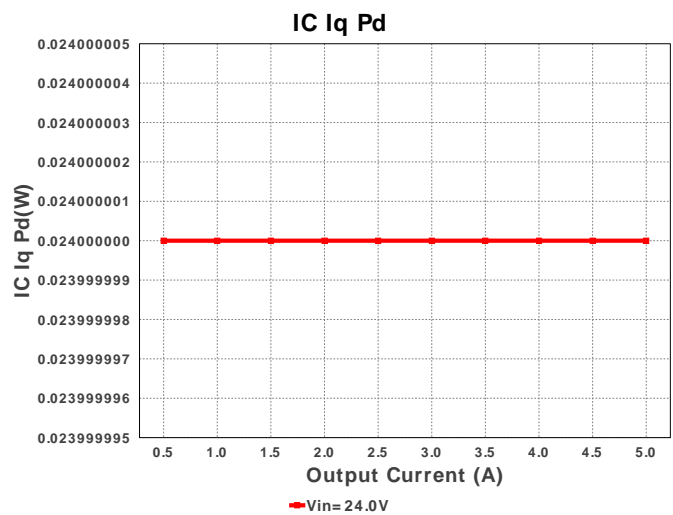
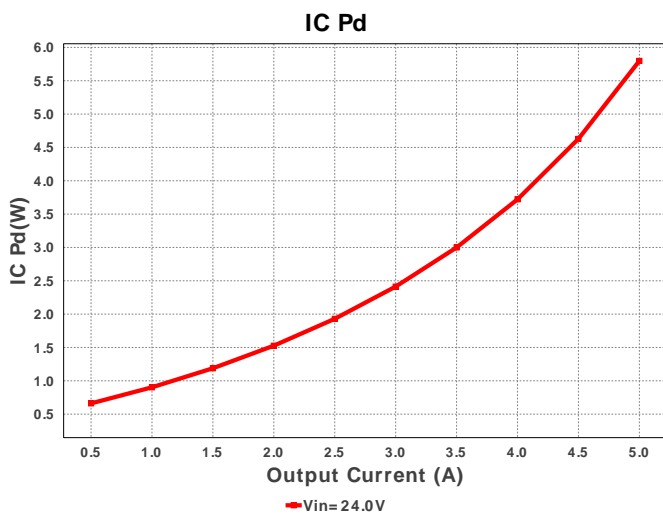
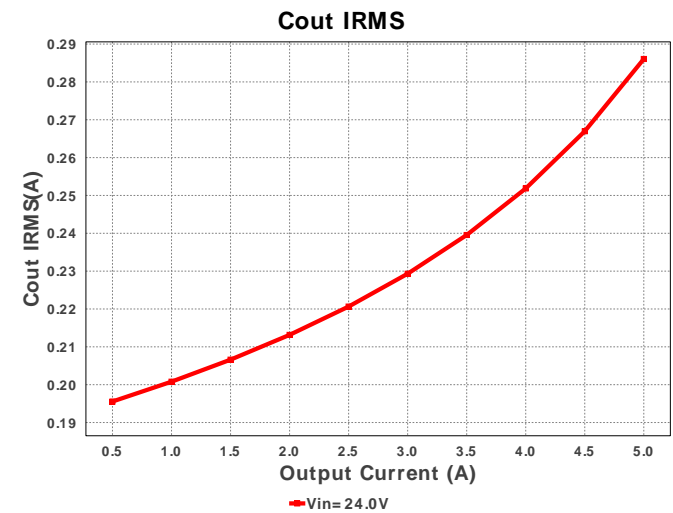
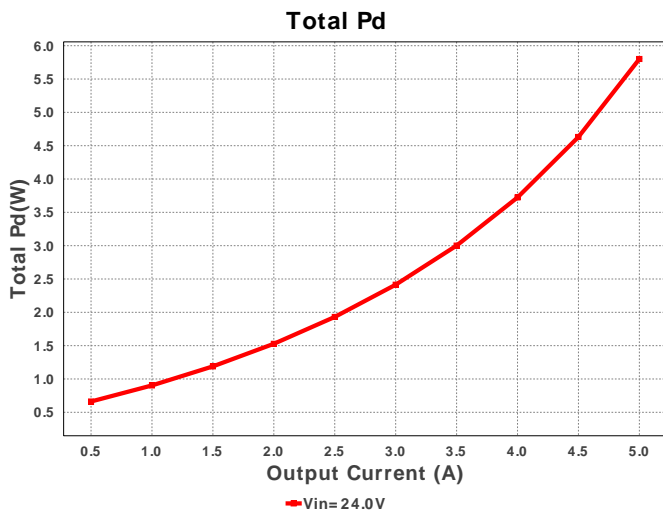
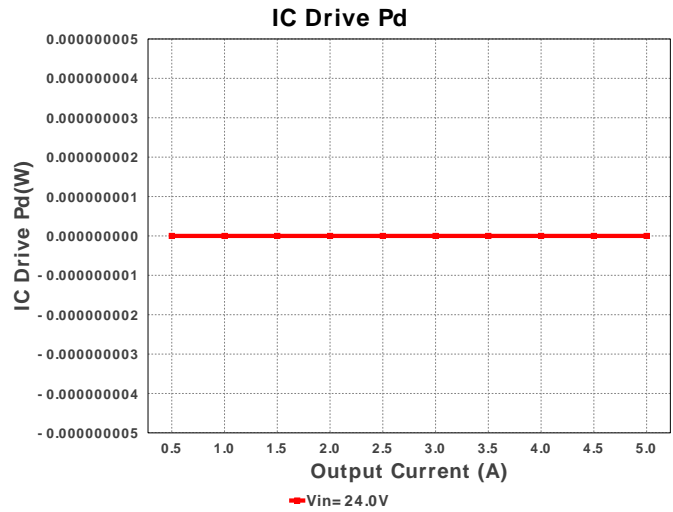
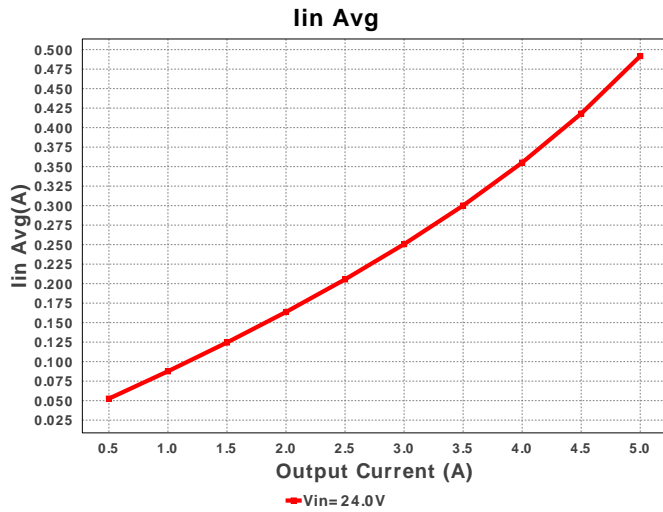


Electrical BOM

#	Name	Manufacturer	Part Number	Properties	Qty	Price	Footprint
1.	Cin	MuRata	GRM32ER7YA106KA12L Series= X7R	Cap= 10.0 uF ESR= 2.008 mOhm VDC= 35.0 V IRMS= 4.6772 A	3	\$0.22	1210_280 15 mm ²
2.	Cout	CUSTOM	CUSTOM Series= ?	Cap= 200.0 uF ESR= 19.0 mOhm VDC= 1.71429 V IRMS= 1.8698 A	1	NA	CUSTOM 0 mm ²
3.	Rfbb	Panasonic	ERJ-6ENF1071V Series= ERJ-6E	Res= 1.07 kOhm Power= 125.0 mW Tolerance= 1.0%	1	\$0.01	0805 7 mm ²
4.	Rfbt	Vishay-Dale	CRCW0805536RFKEA Series= CRCW..e3	Res= 536.0 Ohm Power= 125.0 mW Tolerance= 1.0%	1	\$0.01	0805 7 mm ²
5.	U1	Texas Instruments	LMZ23605TZ/NOPB	Switcher	1	\$9.25	 TZA07A 199 mm ²







Operating Values

#	Name	Value	Category	Description
1.	Cin IRMS	1.329 A	Current	Input capacitor RMS ripple current
2.	Cout IRMS	286.058 mA	Current	Output capacitor RMS ripple current
3.	IC Ipk	5.495 A	Current	Peak switch current in IC
4.	Iin Avg	491.7 mA	Current	Average input current
5.	M1 Irms	1.383 A	Current	Q lavg
6.	BOM Count	7	General	Total Design BOM count
7.	FootPrint	296.0 mm ²	General	Total Foot Print Area of BOM components
8.	Frequency	800.0 kHz	General	Switching frequency
9.	IC Tolerance	20.0 mV	General	IC Feedback Tolerance
10.	M Vds Act	196.924 mV	General	Voltage drop across the MosFET
11.	Pout	6.0 W	General	Total output power

#	Name	Value	Category	Description
12.	Total BOM	\$0.0	General	Total BOM Cost
13.	Vout Actual	1.201 V	Op_Point	Vout Actual calculated based on selected voltage divider resistors
14.	Vout OP	1.2 V	Op_Point	Operational Output Voltage
15.	Cross Freq	117.607 kHz	Op_point	Bode plot crossover frequency
16.	Duty Cycle	7.649 %	Op_point	Duty cycle
17.	Efficiency	50.844 %	Op_point	Steady state efficiency
18.	IC Tj	99.577 degC	Op_point	IC junction temperature
19.	ICThetaJA	12.0 degC/W	Op_point	IC junction-to-ambient thermal resistance
20.	IOUT_OP	5.0 A	Op_point	Iout operating point
21.	Phase Marg	35.463 deg	Op_point	Bode Plot Phase Margin
22.	VIN_OP	24.0 V	Op_point	Vin operating point
23.	Vout p-p	774.168 µV	Op_point	Peak-to-peak output ripple voltage
24.	Cin Pd	1.182 mW	Power	Input capacitor power dissipation
25.	Cout Pd	1.555 mW	Power	Output capacitor power dissipation
26.	IC Drive Pd	0.0 W	Power	Driver power dissipation
27.	IC Iq Pd	24.0 mW	Power	IC Iq Pd
28.	IC Pd	5.798 W	Power	IC power dissipation
29.	Total Pd	5.801 W	Power	Total Power Dissipation
30.	Vout Tolerance	3.191 %		Vout Tolerance based on IC Tolerance (no load) and voltage divider resistors if applicable

Design Inputs

#	Name	Value	Description
1.	Iout	5.0	Maximum Output Current
2.	VinMax	24.0	Maximum input voltage
3.	VinMin	24.0	Minimum input voltage
4.	Vout	1.2	Output Voltage
5.	base_pn	LMZ23605	Base Product Number
6.	source	DC	Input Source Type
7.	Ta	30.0	Ambient temperature

Design Assistance

1. The 2nd Gen Modules are very easy to use and just need a basic design using a resistor divider at the feedback and input and output caps to work. To design for UVLO you could click on the drop down menu in the 'Change Inputs' menu and select the 'UVLO Enabled Design'. The internal softstart time is set at 1.6mSec. If a longer softstart time is desired, you could change the preset to the desired amount and click on 'Submit'. Webench will then add an external softstart cap to the schematic.

2. **LMZ23605 Product Folder** : <http://www.ti.com/product/LMZ23605> : 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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