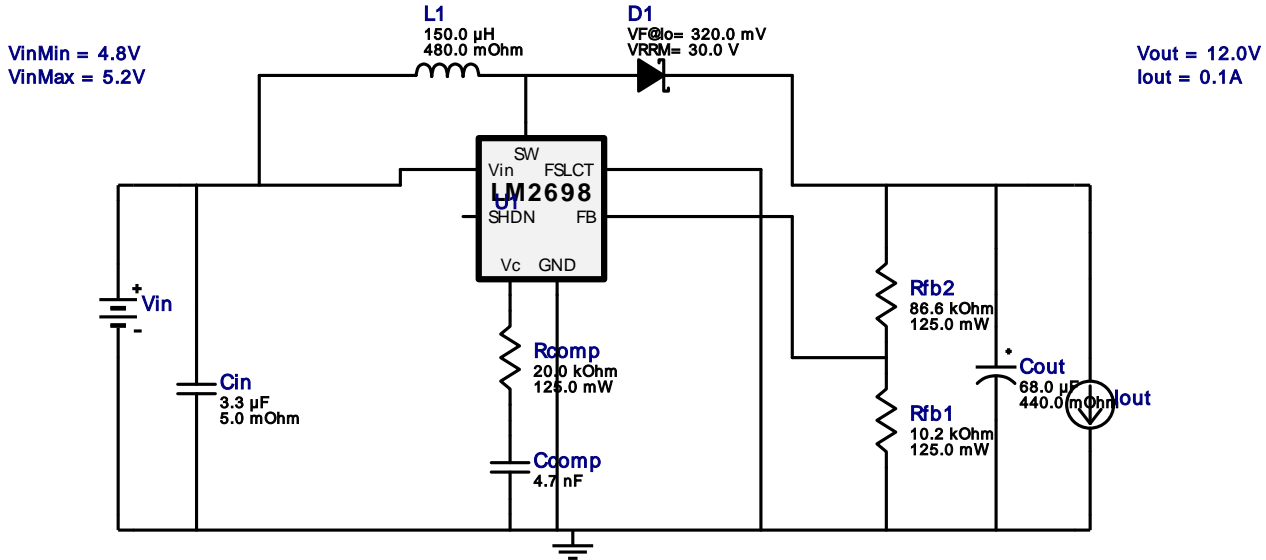


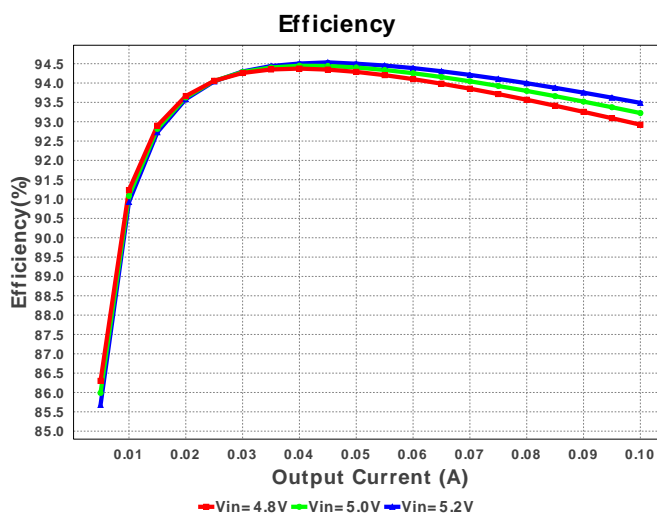
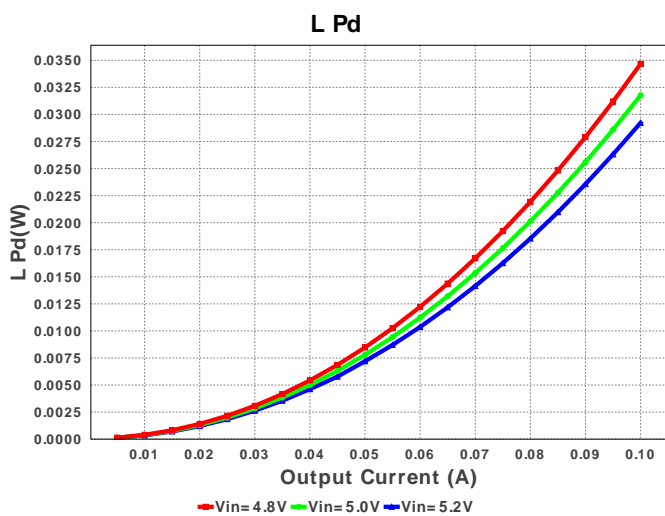
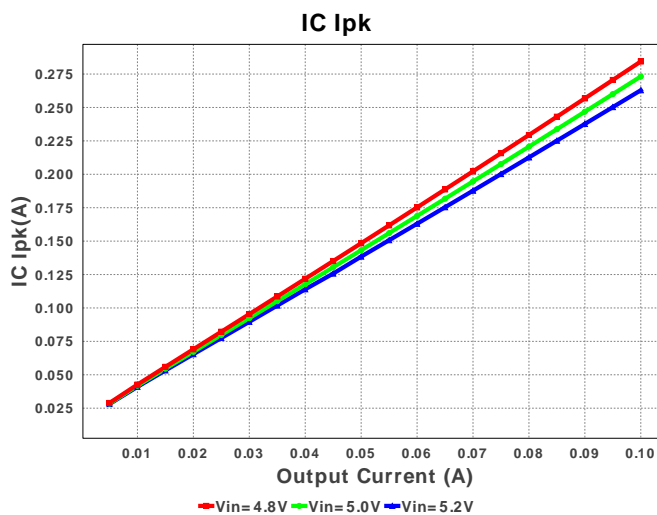
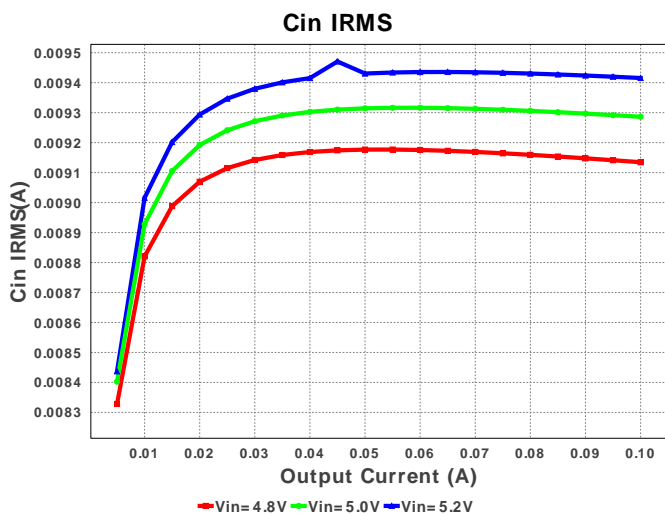
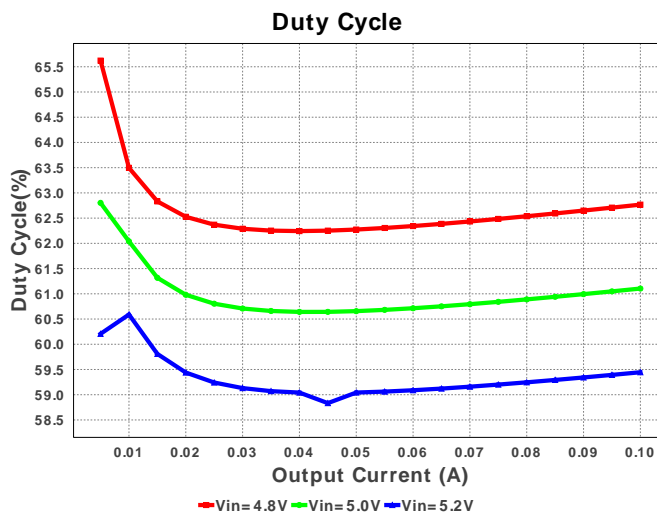
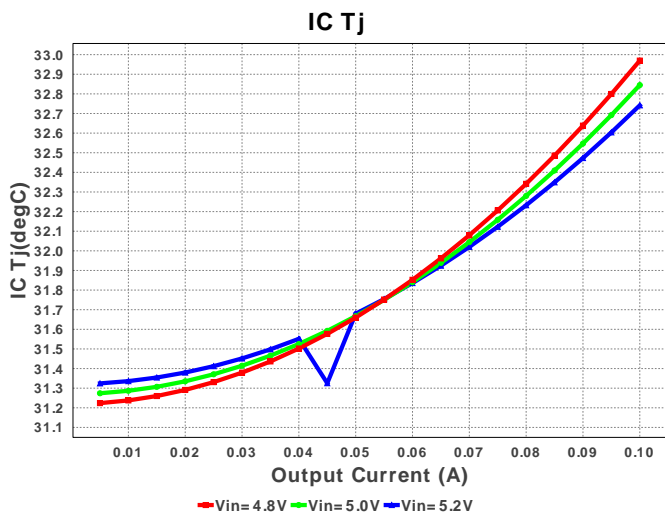


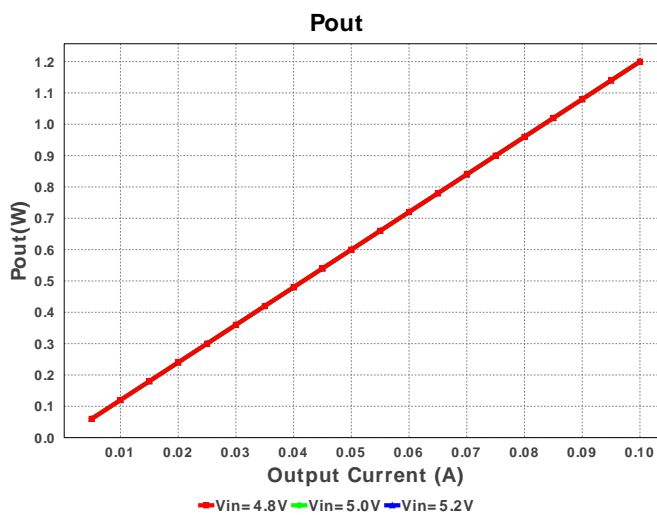
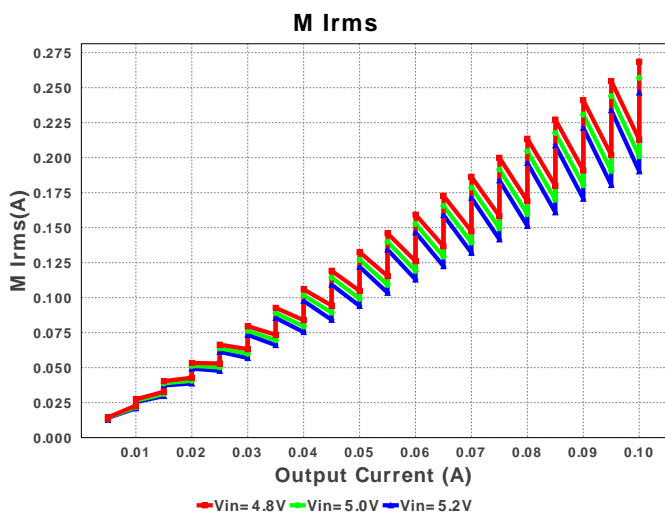
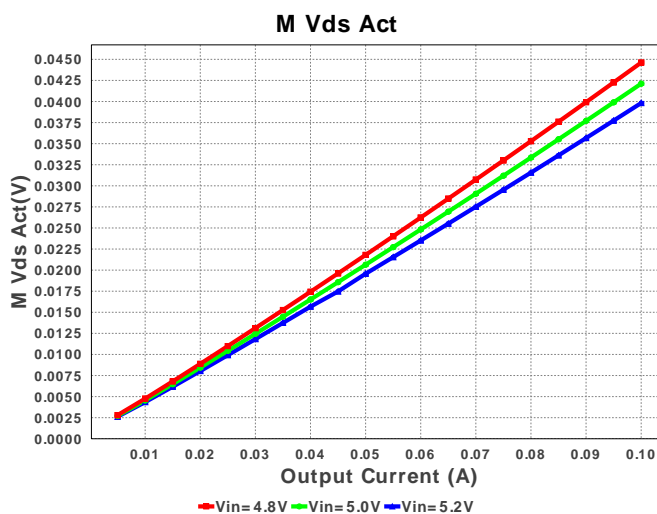
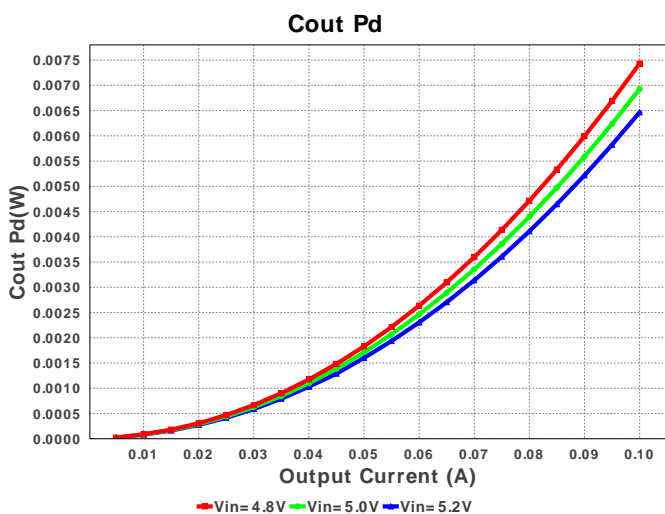
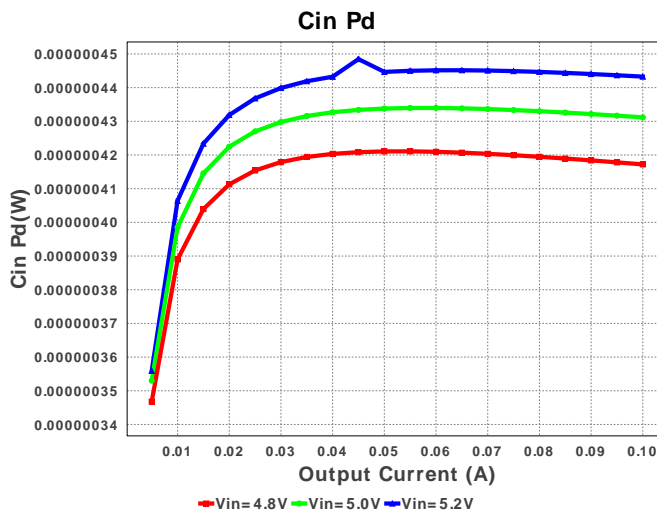
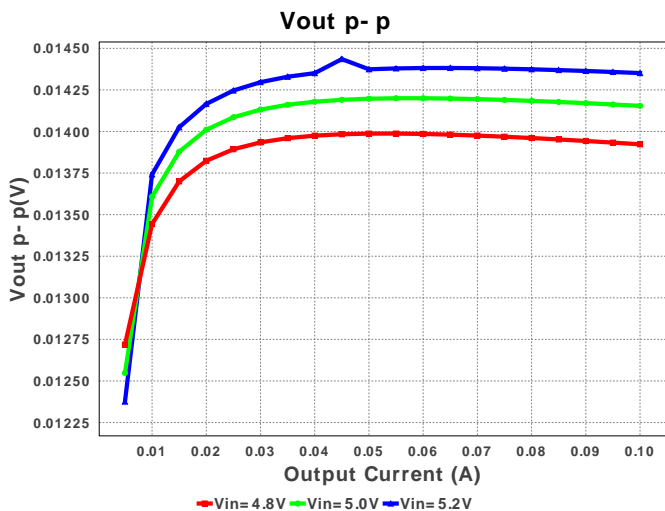
**WEBENCH<sup>®</sup> Design Report**

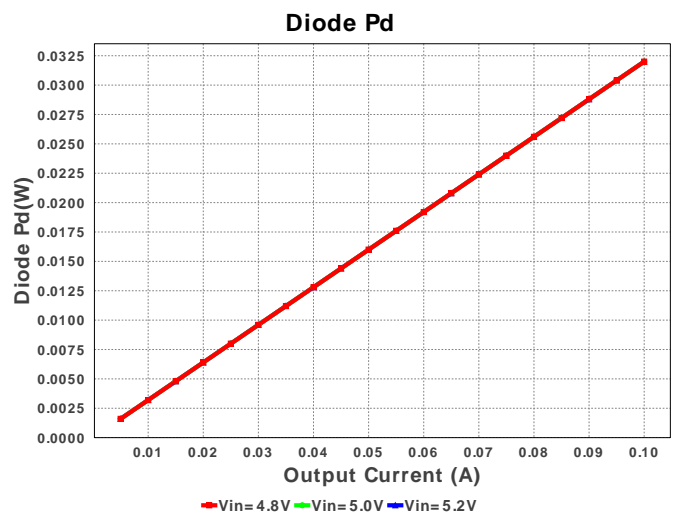
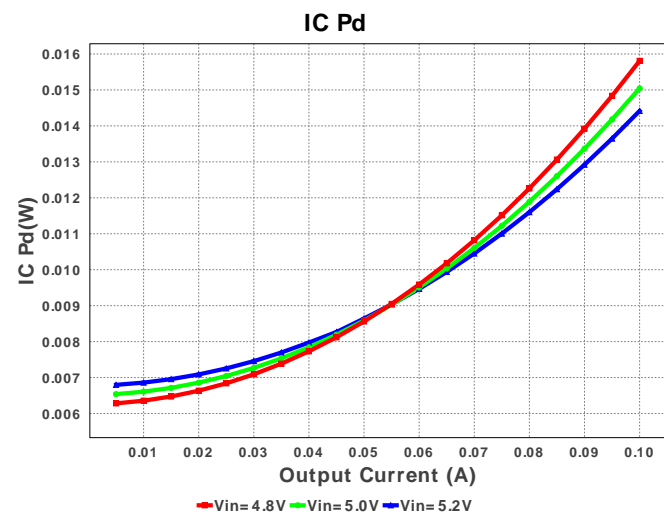
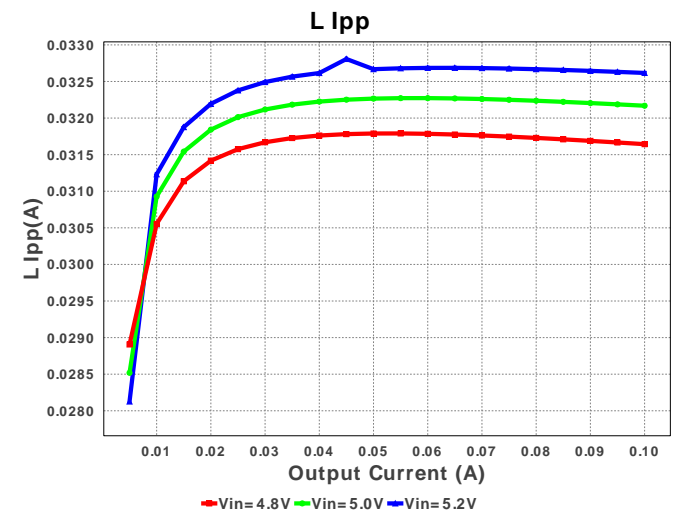
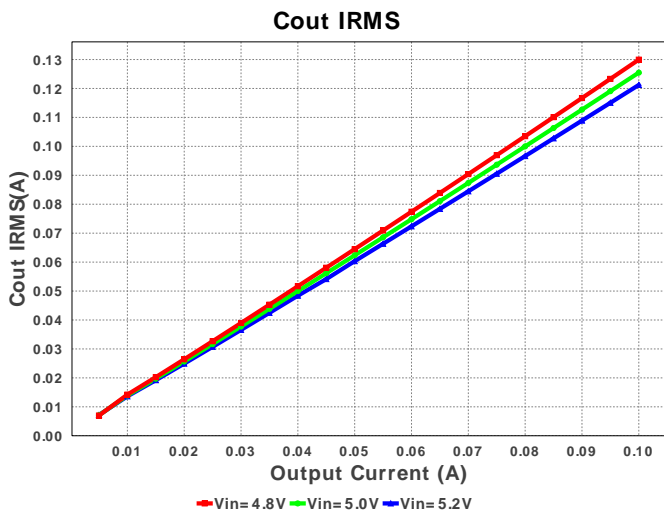
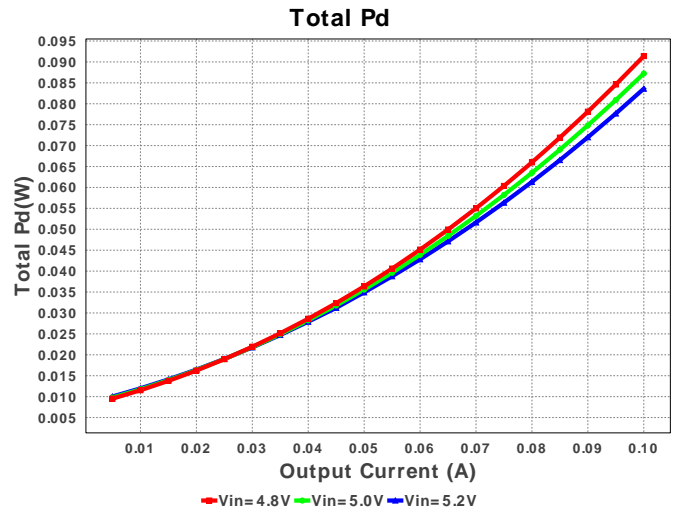
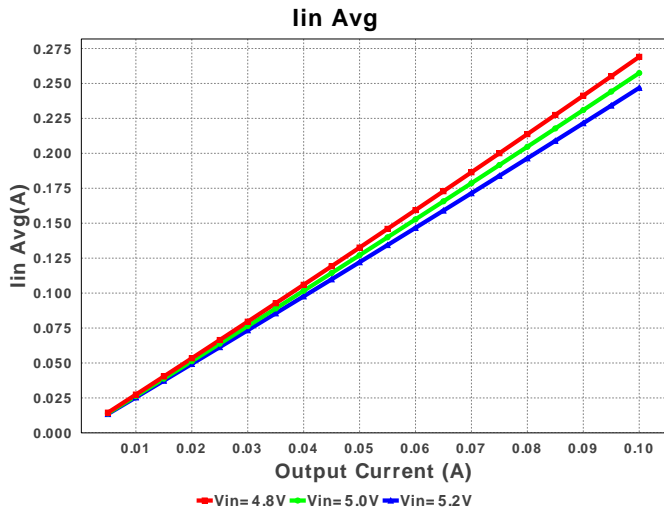
 Design : 3479207/80 LM2698MM-ADJ/NOPB  
 LM2698MM-ADJ/NOPB 4.8V-5.2V to 12.00V @ 0.1A

**Electrical BOM**

#	Name	Manufacturer	Part Number	Properties	Qty	Price	Footprint
1.	Ccomp	Yageo America	CC0805KRX7R9BB472 Series= X7R	Cap= 4.7 nF VDC= 50.0 V IRMS= 0.0 A	1	\$0.01	 0805 7 mm <sup>2</sup>
2.	Cin	MuRata	GRM188R61A335KE15D Series= X5R	Cap= 3.3 uF ESR= 5.0 mOhm VDC= 10.0 V IRMS= 1.7 A	1	\$0.05	 0603 5 mm <sup>2</sup>
3.	Cinx	AVX	08053C104KAT2A Series= X7R	Cap= 100.0 nF ESR= 280.0 mOhm VDC= 25.0 V IRMS= 0.0 A	1	\$0.01	 0805 7 mm <sup>2</sup>
4.	Cout	Nichicon	UUD1C680MCL1GS Series= uD	Cap= 68.0 uF ESR= 440.0 mOhm VDC= 16.0 V IRMS= 230.0 mA	1	\$0.11	 SM_RADIAL_6.3AMM 80 mm <sup>2</sup>
5.	D1	Toshiba	CMS06	VF@Io= 320.0 mV VRRM= 30.0 V	1	\$0.19	 M-FLAT 19 mm <sup>2</sup>
6.	L1	Bourns	SRR7045-151M	L= 150.0 uH DCR= 480.0 mOhm	1	\$0.26	 SRR7045 81 mm <sup>2</sup>
7.	Rcomp	Panasonic	ERJ-6ENF2002V Series= 225	Res= 20.0 kOhm Power= 125.0 mW Tolerance= 1.0%	1	\$0.01	 0805 7 mm <sup>2</sup>
8.	Rfb1	Panasonic	ERJ-6ENF1022V Series= 225	Res= 10.2 kOhm Power= 125.0 mW Tolerance= 1.0%	1	\$0.01	 0805 7 mm <sup>2</sup>

#	Name	Manufacturer	Part Number	Properties	Qty	Price	Footprint
9.	Rfb2	Panasonic	ERJ-6ENF8662V Series= 225	Res= 86.6 kOhm Power= 125.0 mW Tolerance= 1.0%	1	\$0.01	 0805 7 mm <sup>2</sup>
10.	U1	Texas Instruments	LM2698MM-ADJ/NOPB	Switcher	1	\$1.70	 MUA08A 24 mm <sup>2</sup>







### Operating Values

#	Name	Value	Category	Description
1.	Cin IRMS	9.068 mA	Current	Input capacitor RMS ripple current
2.	Cout IRMS	128.89 mA	Current	Output capacitor RMS ripple current
3.	IC Ipk	281.524 mA	Current	Peak switch current in IC
4.	Iin Avg	266.05 mA	Current	Average input current
5.	L Ipp	31.412 mA	Current	Peak-to-peak inductor ripple current
6.	M1 Irms	210.069 mA	Current	Q lavg
7.	BOM Count	10	General	Total Design BOM count
8.	FootPrint	242.0 mm <sup>2</sup>	General	Total Foot Print Area of BOM components
9.	Frequency	600.0 kHz	General	Switching frequency
10.	IC Tolerance	31.5 mV	General	IC Feedback Tolerance
11.	M Vds Act	44.023 mV	General	

#	Name	Value	Category	Description
12.	Pout	1.2 W	General	Total output power
13.	Total BOM	\$2.36	General	Total BOM Cost
14.	Cross Freq	996.284 Hz	Op_point	Bode plot crossover frequency
15.	Duty Cycle	62.38 %	Op_point	Duty cycle
16.	Efficiency	93.967 %	Op_point	Steady state efficiency
17.	IC Tj	32.969 degC	Op_point	IC junction temperature
18.	ICThetaJA	195.0 degC/W	Op_point	IC junction-to-ambient thermal resistance
19.	IOUT_OP	100.0 mA	Op_point	Iout operating point
20.	Phase Marg	39.885 deg	Op_point	Bode Plot Phase Margin
21.	VIN_OP	4.8 V	Op_point	Vin operating point
22.	Vout p-p	13.821 mV	Op_point	Peak-to-peak output ripple voltage
23.	Cin Pd	411.138 nW	Power	Input capacitor power dissipation
24.	Cout Pd	7.31 mW	Power	Output capacitor power dissipation
25.	Diode Pd	18.737 mW	Power	Diode power dissipation
26.	IC Pd	15.557 mW	Power	IC power dissipation
27.	L Pd	33.956 mW	Power	Inductor power dissipation
28.	Total Pd	77.044 mW	Power	Total Power Dissipation

## Design Inputs

#	Name	Value	Description
1.	Iout	100.0 m	Maximum Output Current
2.	Iout1	100.0 m	Output Current #1
3.	VinMax	5.2	Maximum input voltage
4.	VinMin	4.8	Minimum input voltage
5.	Vout	12.0	Output Voltage
6.	Vout1	12.0	Output Voltage #1
7.	base_pn	LM2698	Base Product Number
8.	source	DC	Input Source Type
9.	Ta	30.0	Ambient temperature

## Design Assistance

1. **LM2698** Product Folder : <http://www.ti.com/product/lm2698> : contains the data sheet and other resources.

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