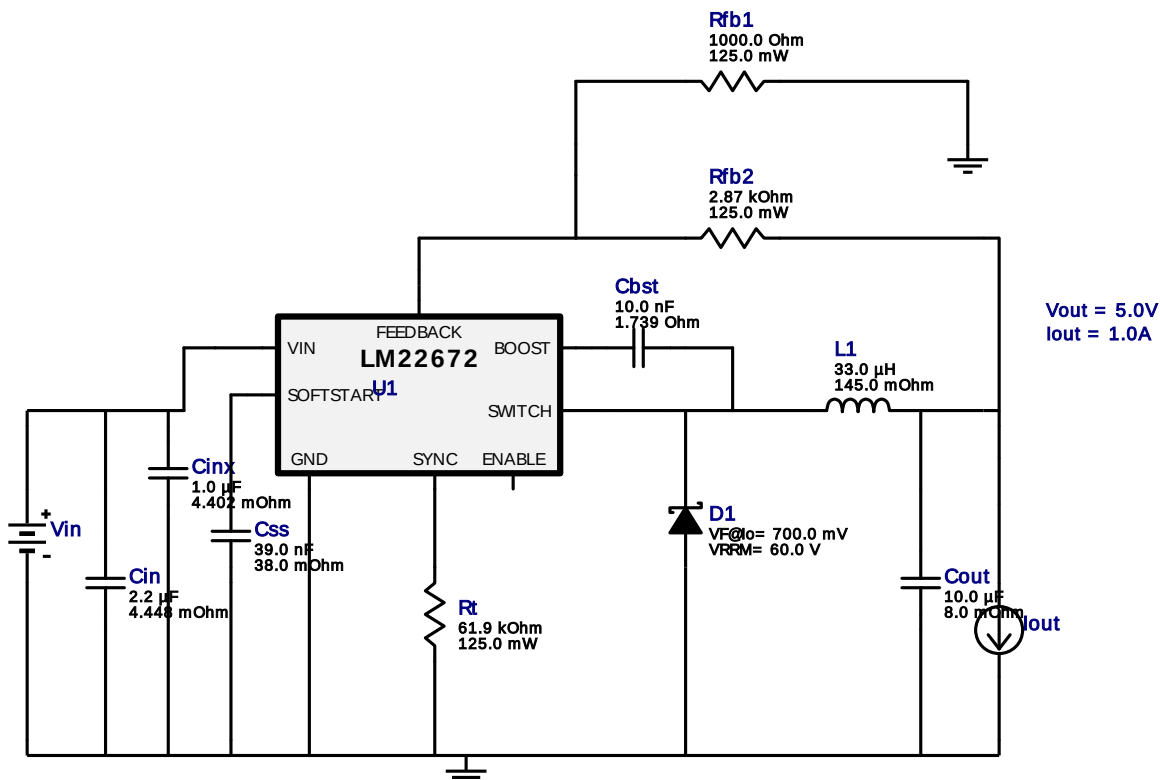


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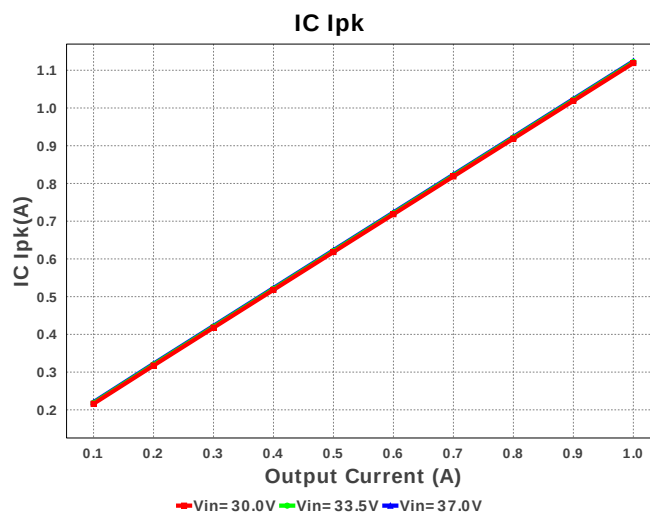
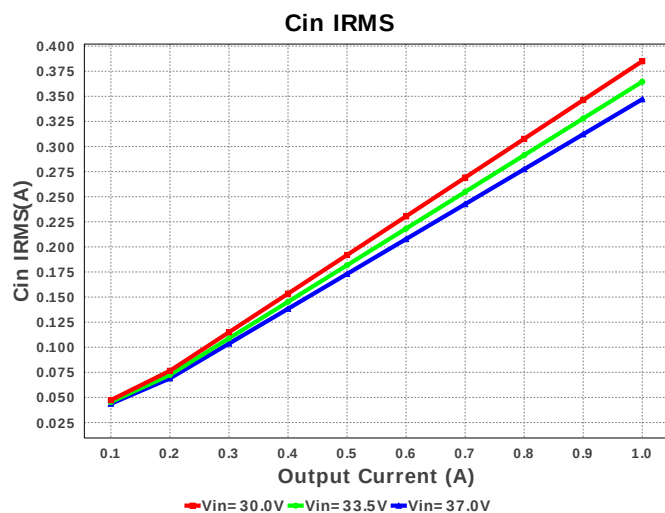
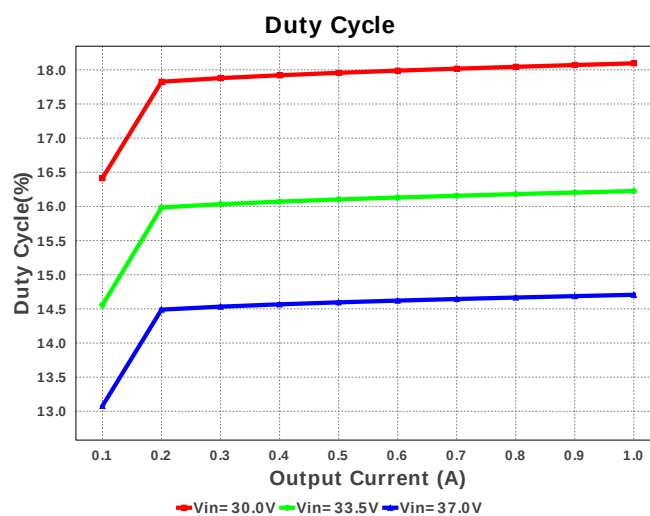
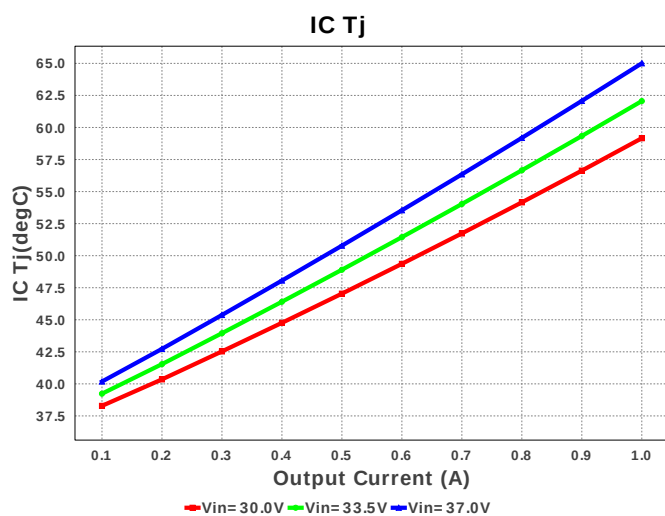
Design : 4742013/102 LM22672MRE-ADJ/NOPB
LM22672MRE-ADJ/NOPB 30.0V-37.0V to 5.00V @ 1.0A

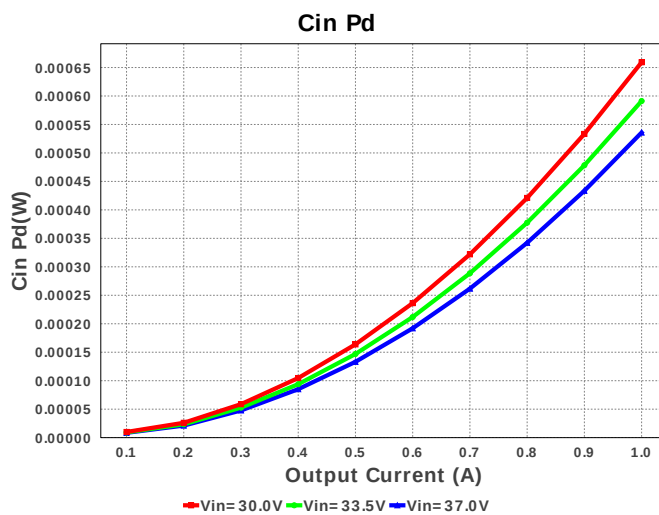
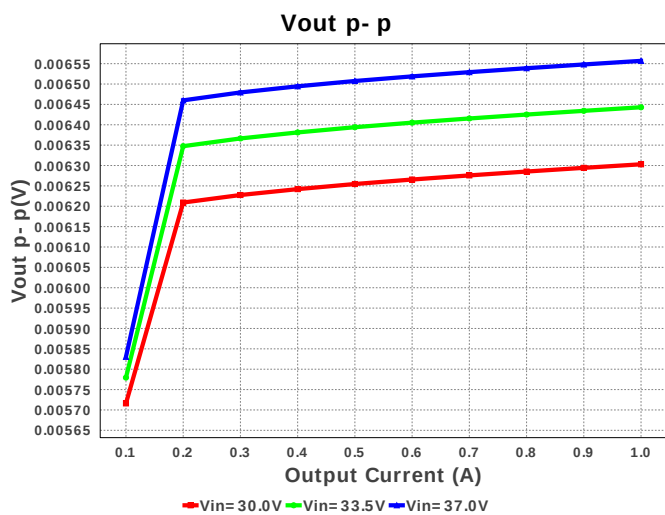
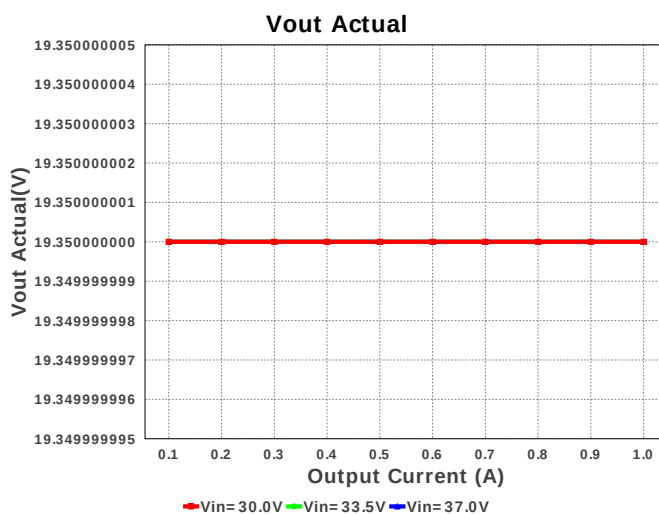
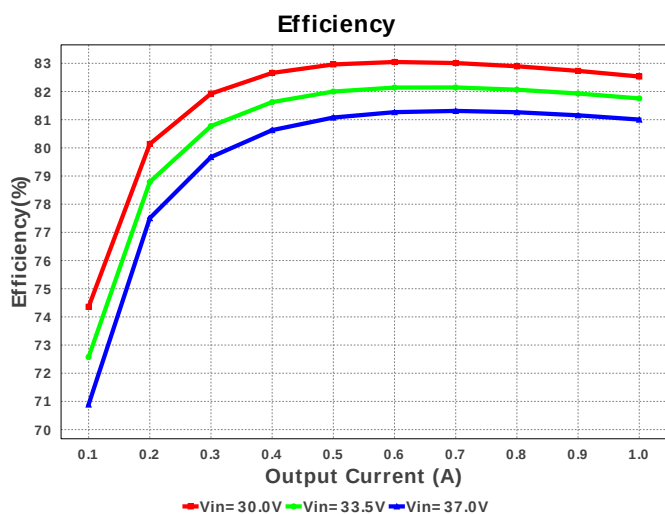
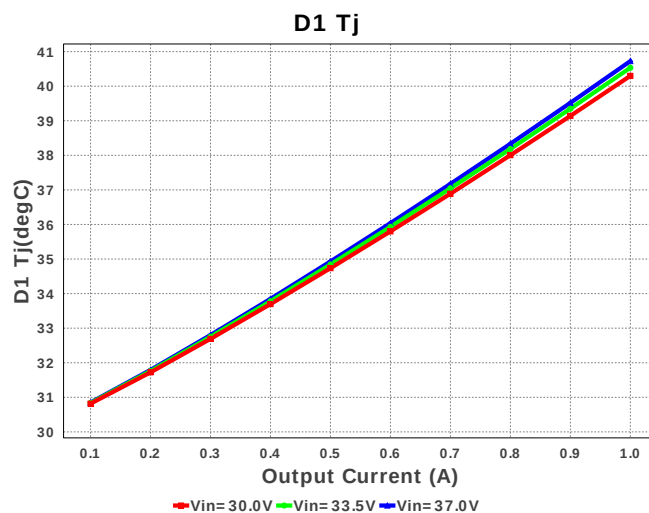
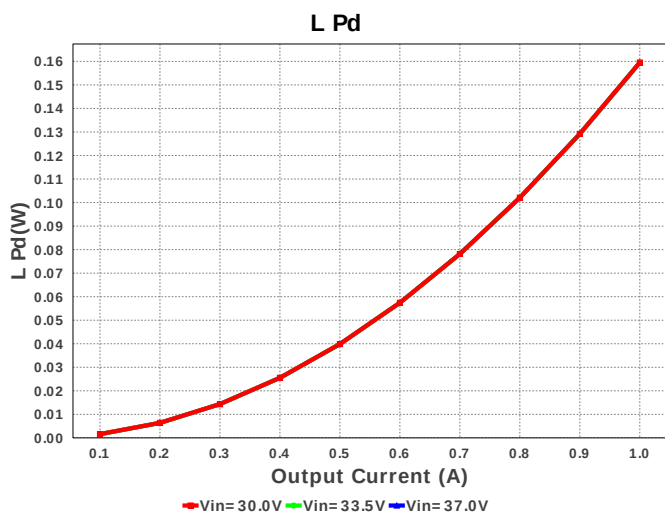


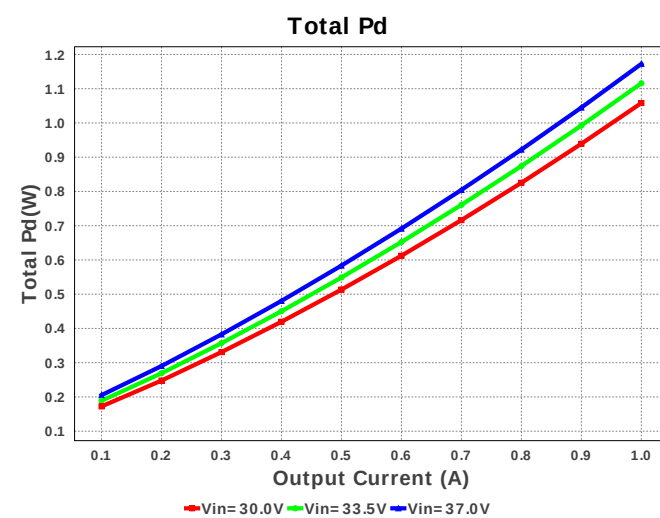
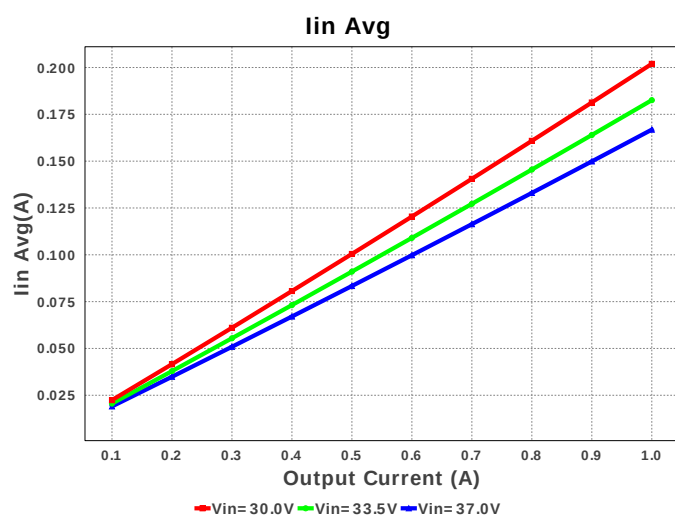
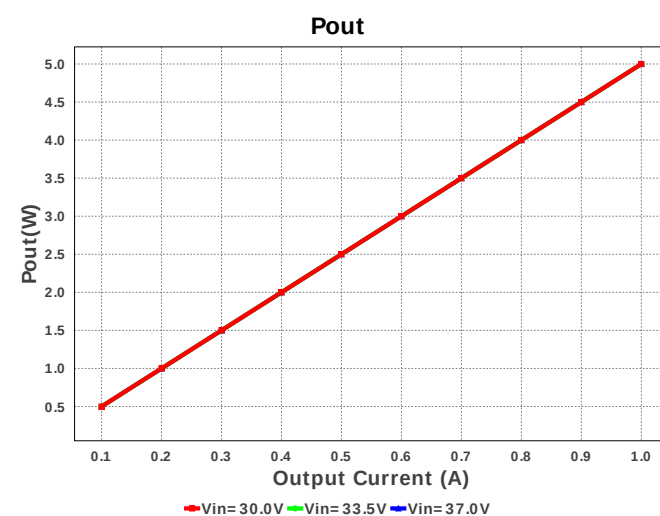
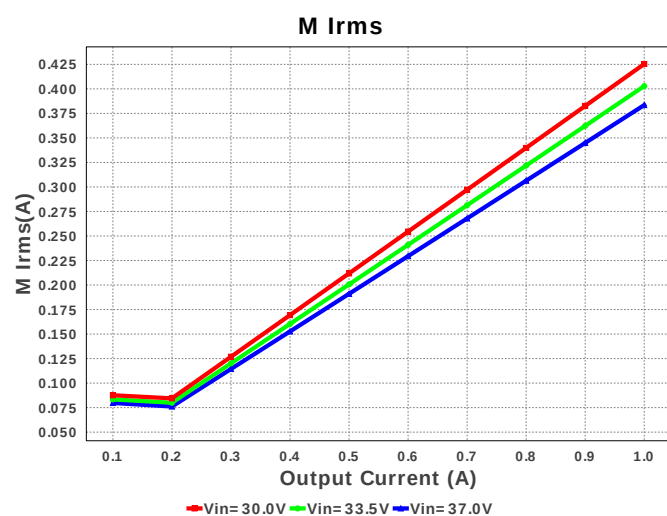
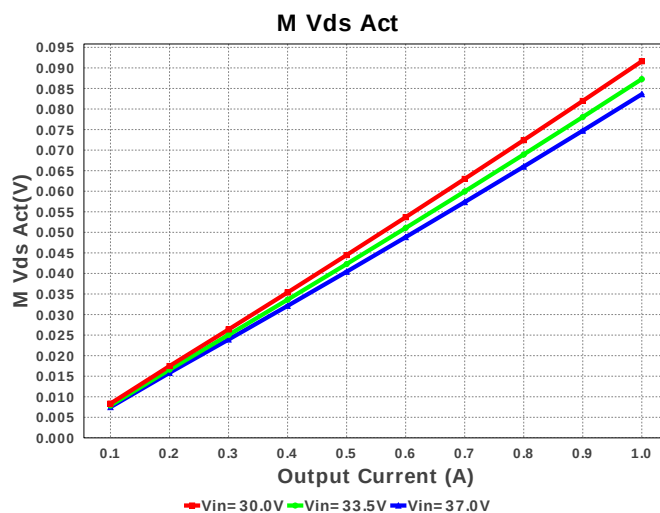
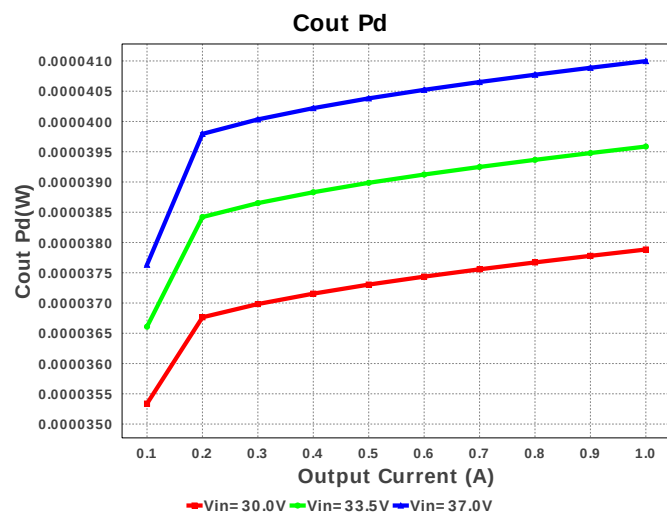
Electrical BOM

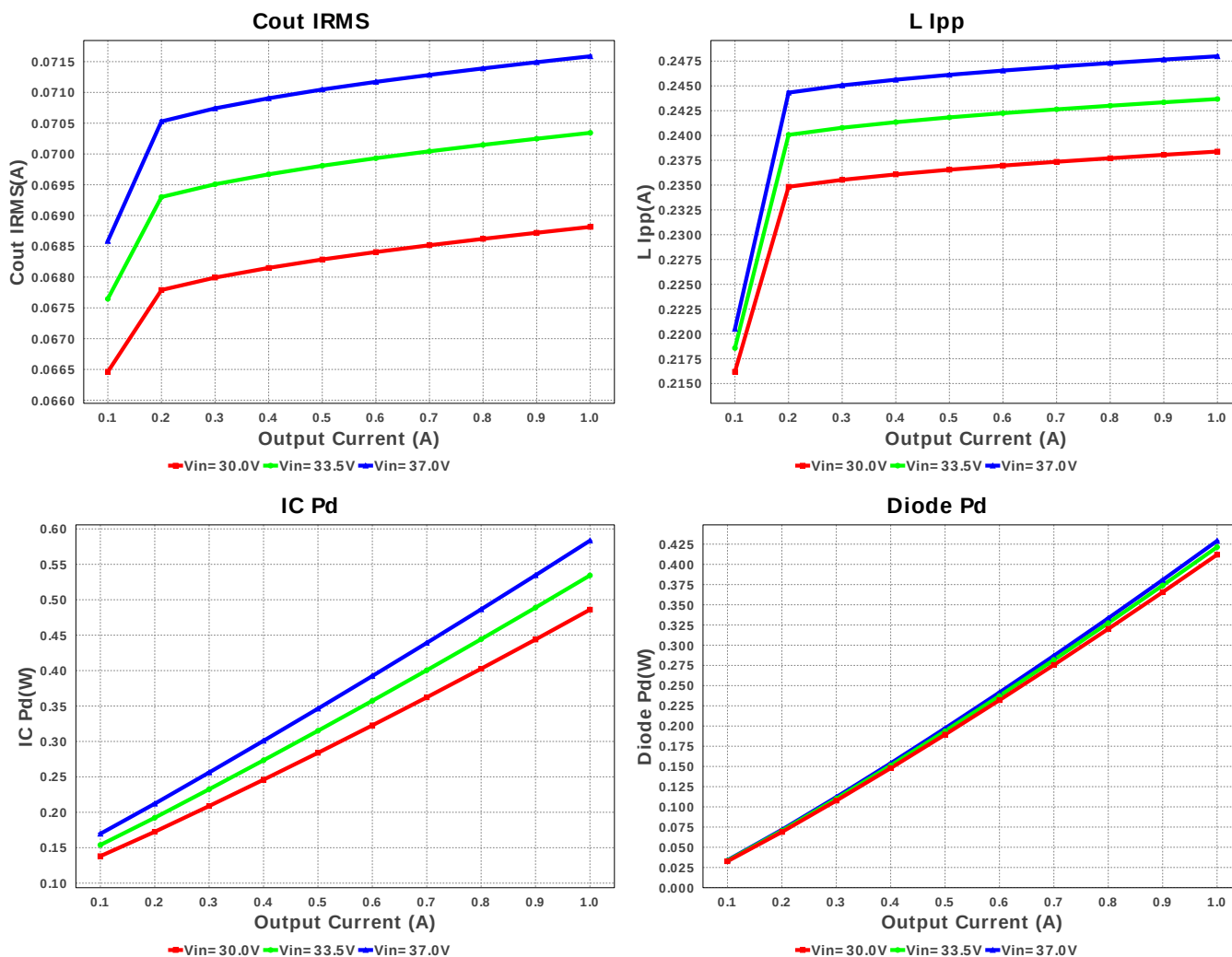
#	Name	Manufacturer	Part Number	Properties	Qty	Price	Footprint
1.	Cbst	Kemet	C0805C103K5RACTU Series= X7R	Cap= 10.0 nF ESR= 1.739 Ohm VDC= 50.0 V IRMS= 411.0 mA	1	\$0.01	0805 7 mm ²
2.	Cin	MuRata	GRM31CR71H225KA88L Series= X7R	Cap= 2.2 uF ESR= 4.448 mOhm VDC= 50.0 V IRMS= 2.2252 A	1	\$0.05	1206_190 11 mm ²
3.	Cinx	MuRata	GRM21BR71H105KA12L Series= X7R	Cap= 1.0 uF ESR= 4.402 mOhm VDC= 50.0 V IRMS= 1.677 A	1	\$0.05	0805 7 mm ²
4.	Cout	Kemet	C1210C106K8PACTU Series= X5R	Cap= 10.0 uF ESR= 8.0 mOhm VDC= 10.0 V IRMS= 6.9 A	1	\$0.18	1210 15 mm ²
5.	Css	AVX	08055C393KAT2A Series= X7R	Cap= 39.0 nF ESR= 38.0 mOhm VDC= 50.0 V IRMS= 0.0 A	1	\$0.02	0805 7 mm ²
6.	D1	Diodes Inc.	B260A-13-F	VF@Io= 700.0 mV VRRM= 60.0 V	1	\$0.09	SMA 37 mm ²

#	Name	Manufacturer	Part Number	Properties	Qty	Price	Footprint
7.	L1	Bourns	SRN8040-330M	L= 33.0 μ H DCR= 145.0 mOhm	1	\$0.22	 SRN8040 100 mm ²
8.	Rfb1	Panasonic	ERJ-6ENF1001V Series= ERJ-6E	Res= 1000.0 Ohm Power= 125.0 mW Tolerance= 1.0%	1	\$0.01	 0805 7 mm ²
9.	Rfb2	Panasonic	ERJ-6ENF2871V Series= ERJ-6E	Res= 2.87 kOhm Power= 125.0 mW Tolerance= 1.0%	1	\$0.01	 0805 7 mm ²
10.	Rt	Panasonic	ERJ-6ENF6192V Series= ERJ-6E	Res= 61.9 kOhm Power= 125.0 mW Tolerance= 1.0%	1	\$0.01	 0805 7 mm ²
11.	U1	Texas Instruments	LM22672MRE-ADJ/NOPB	Switcher	1	\$1.84	 MRA08B 56 mm ²









Operating Values

#	Name	Value	Category	Description
1.	Cin IRMS	347.071 mA	Current	Input capacitor RMS ripple current
2.	Cout IRMS	71.587 mA	Current	Output capacitor RMS ripple current
3.	IC Ipk	1.124 A	Current	Peak switch current in IC
4.	Iin Avg	166.82 mA	Current	Average input current
5.	L Ipp	247.98 mA	Current	Peak-to-peak inductor ripple current
6.	M1 Irms	383.487 mA	Current	Q lavg
7.	BOM Count	11	General	Total Design BOM count
8.	FootPrint	259.0 mm ²	General	Total Foot Print Area of BOM components
9.	Frequency	575.061 kHz	General	Switching frequency
10.	IC Tolerance	19.0 mV	General	IC Feedback Tolerance
11.	M Vds Act	83.601 mV	General	Voltage drop across the MosFET
12.	Pout	5.0 W	General	Total output power
13.	Total BOM	\$2.49	General	Total BOM Cost
14.	D1 Tj	40.726 degC	Op_Point	D1 junction temperature
15.	Vout Actual	4.973 V	Op_Point	Vout Actual calculated based on selected voltage divider resistors
16.	Vout OP	5.0 V	Op_Point	Operational Output Voltage
17.	Cross Freq	67.462 kHz	Op_point	Bode plot crossover frequency
18.	Duty Cycle	14.706 %	Op_point	Duty cycle
19.	Efficiency	81.004 %	Op_point	Steady state efficiency
20.	IC Tj	65.004 degC	Op_point	IC junction temperature
21.	ICThetaJA	60.0 degC/W	Op_point	IC junction-to-ambient thermal resistance
22.	IOUT_OP	1.0 A	Op_point	Iout operating point
23.	Phase Marg	42.646 deg	Op_point	Bode Plot Phase Margin
24.	VIN_OP	37.0 V	Op_point	Vin operating point
25.	Vout p-p	6.557 mV	Op_point	Peak-to-peak output ripple voltage
26.	Cin Pd	535.799 μW	Power	Input capacitor power dissipation
27.	Cout Pd	40.997 μW	Power	Output capacitor power dissipation
28.	Diode Pd	429.022 mW	Power	Diode power dissipation
29.	IC Pd	583.405 mW	Power	IC power dissipation
30.	L Pd	159.5 mW	Power	Inductor power dissipation
31.	Total Pd	1.172 W	Power	Total Power Dissipation

#	Name	Value	Category	Description
32.	Vout Tolerance	2.999 %		Vout Tolerance based on IC Tolerance (no load) and voltage divider resistors if applicable

Design Inputs

#	Name	Value	Description
1.	Iout	1.0	Maximum Output Current
2.	VinMax	37.0	Maximum input voltage
3.	VinMin	30.0	Minimum input voltage
4.	Vout	5.0	Output Voltage
5.	base_pn	LM22672	Base Product Number
6.	source	DC	Input Source Type
7.	Ta	30.0	Ambient temperature

Design Assistance

1. Part Description The LM22672 is a monolithic integrated circuit that provides all of the active functions for a step-down (buck) switching regulator capable of driving up to 1.0A loads with excellent line and load regulation characteristics. High efficiency (>90%) is obtained through the use of a low ON-resistance N-channel MOSFET.

2. **LM22672** Product Folder : <http://www.ti.com/product/LM22672> : 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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