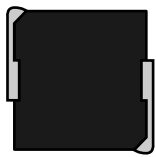



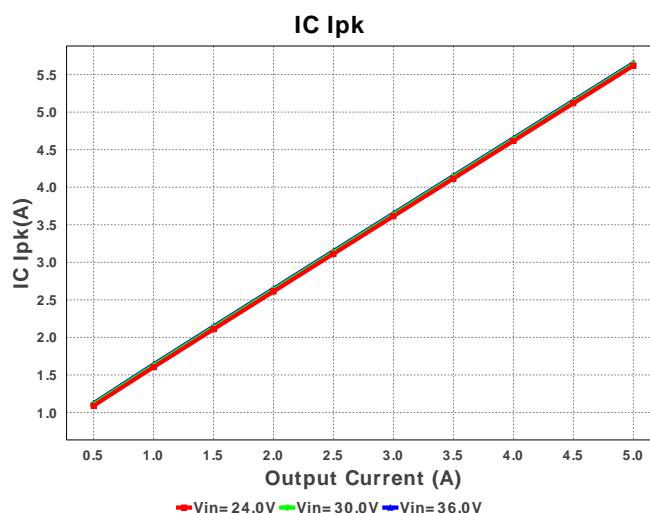
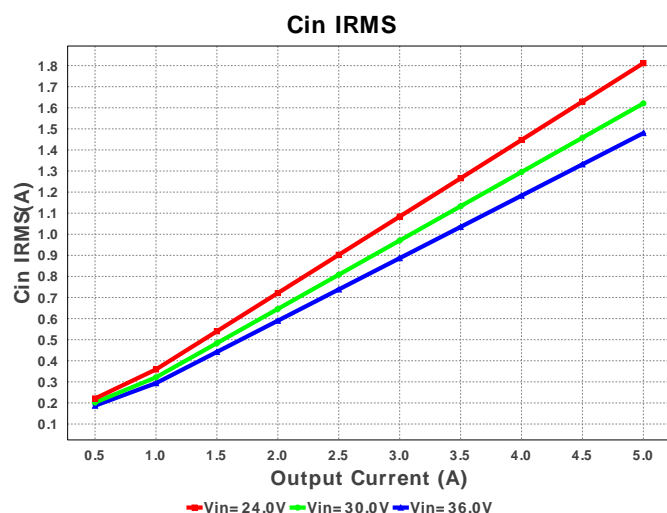
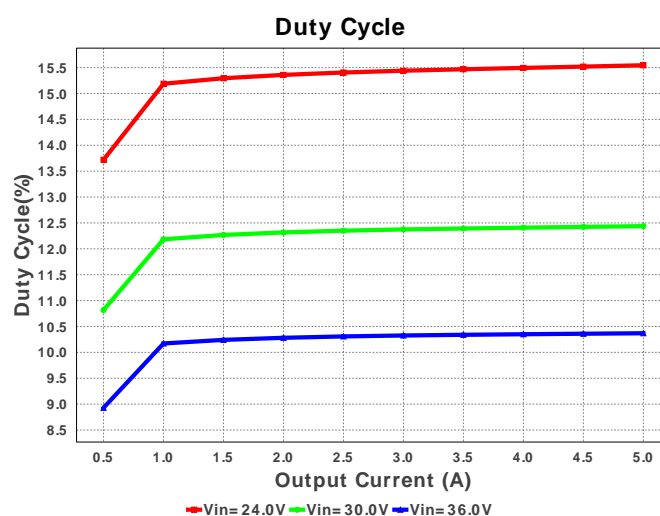
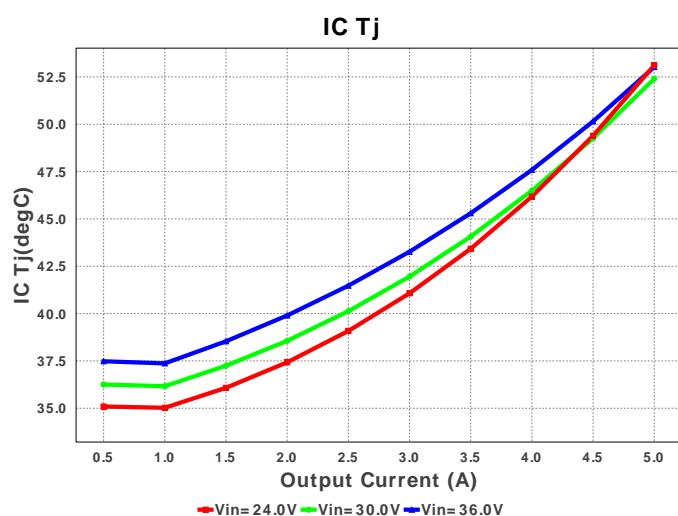
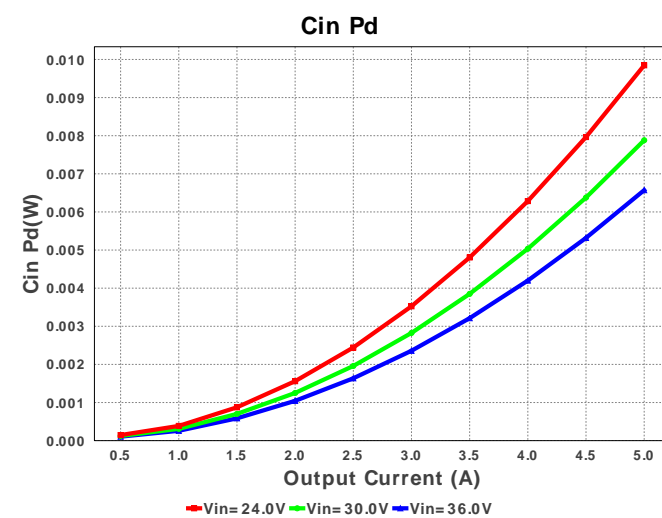
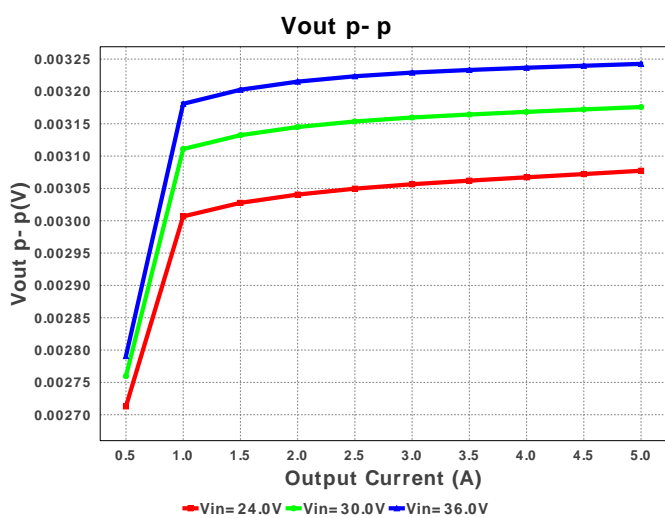
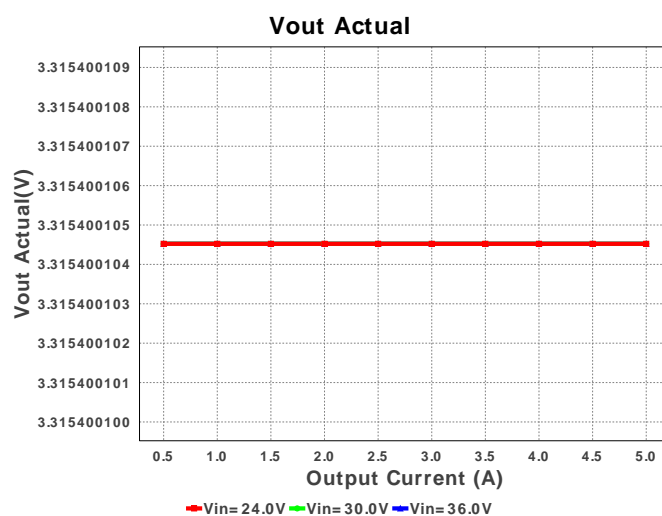
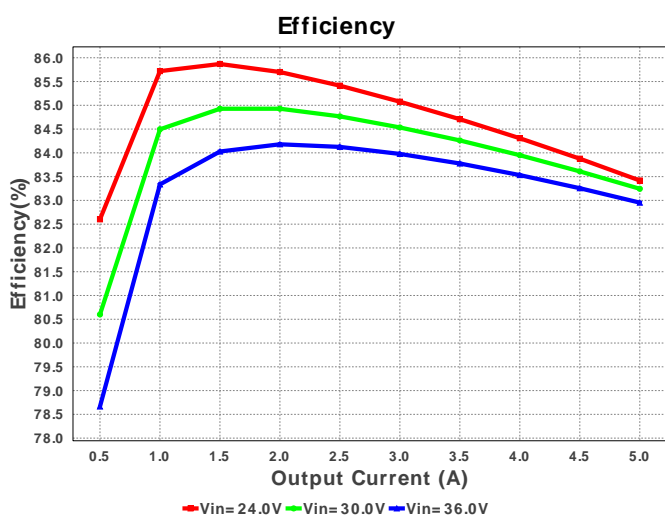
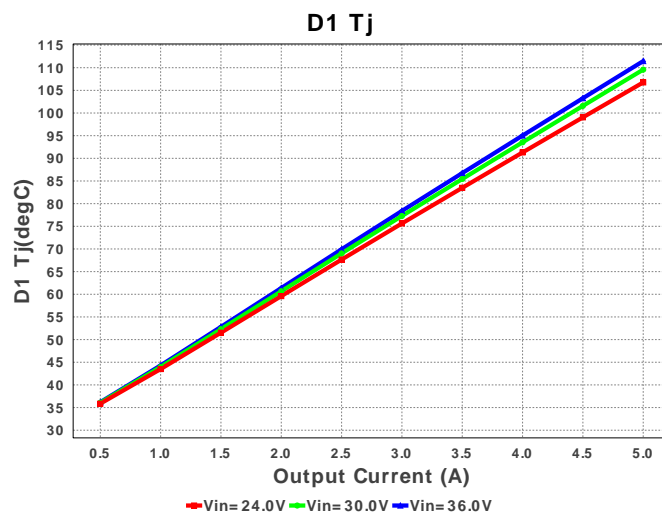
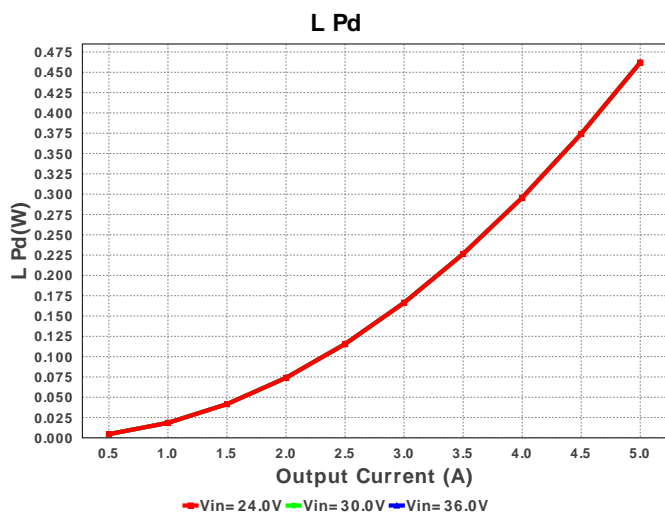
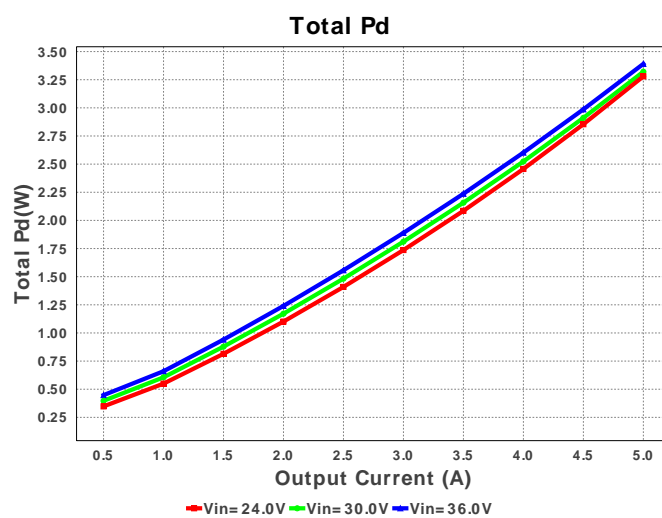
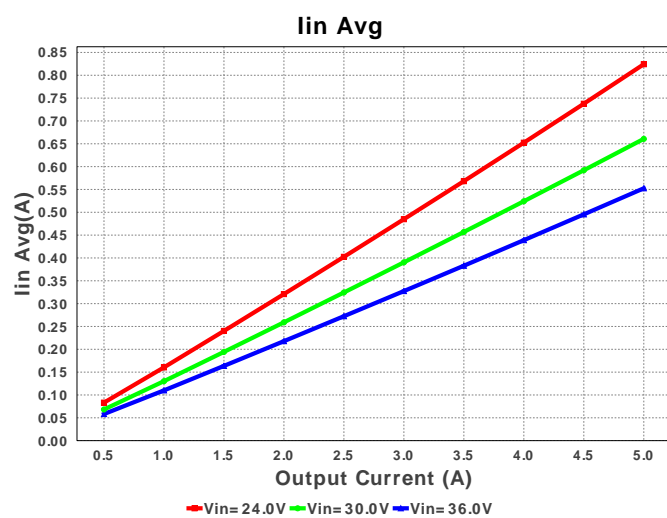
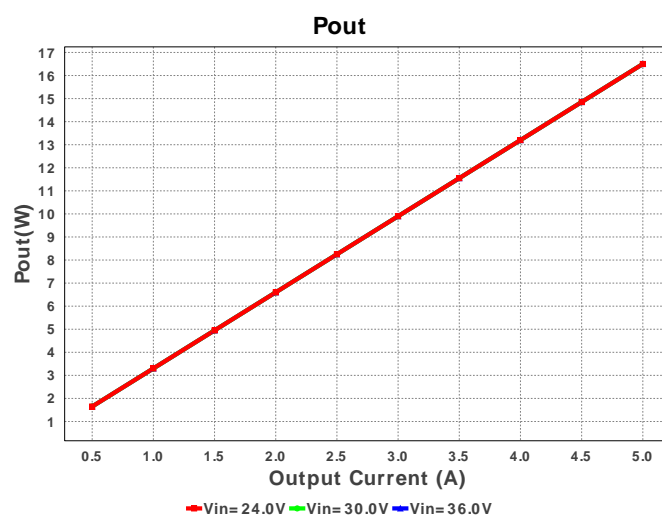
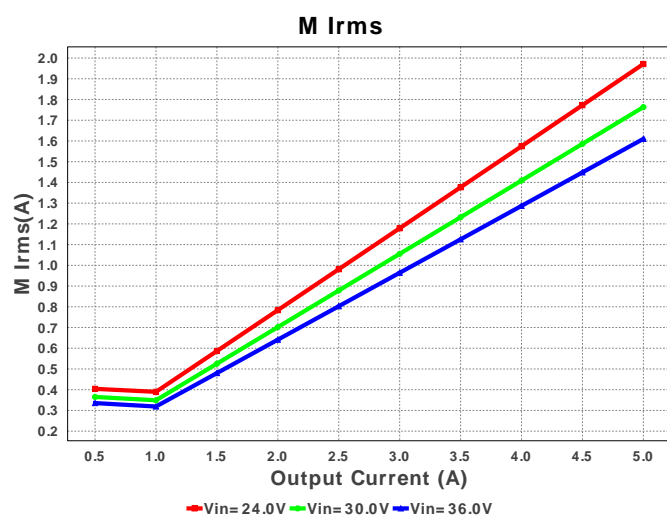
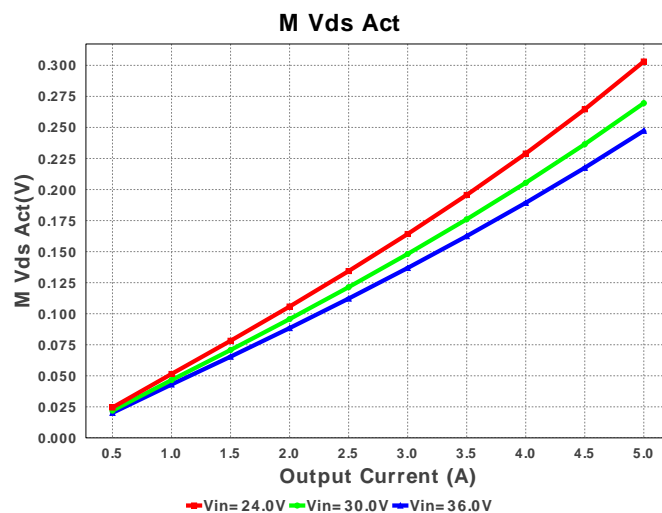
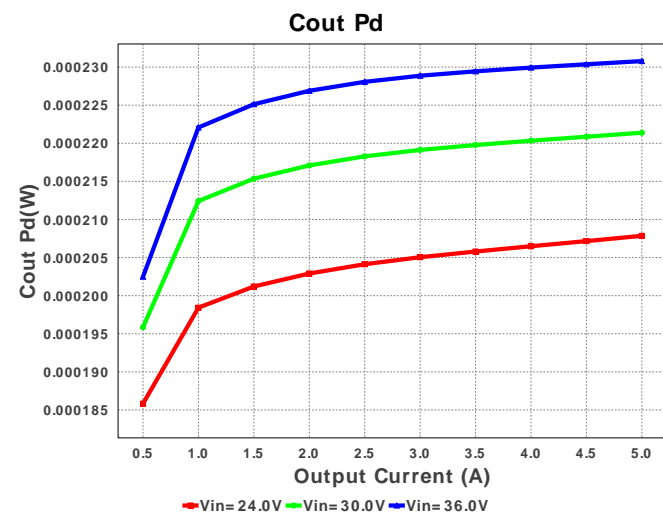
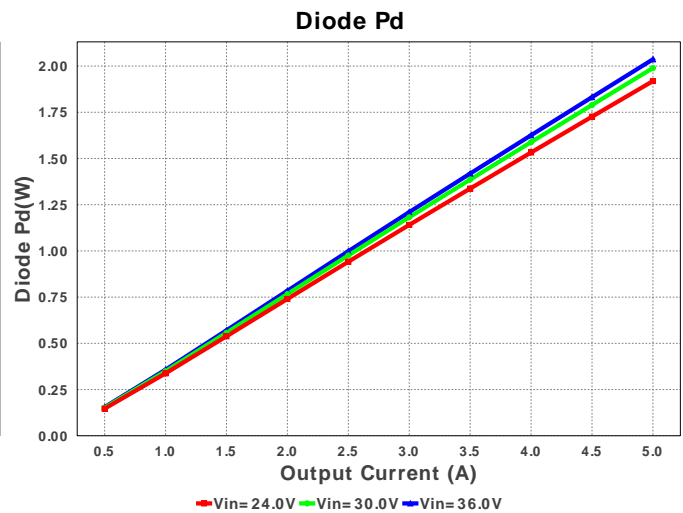
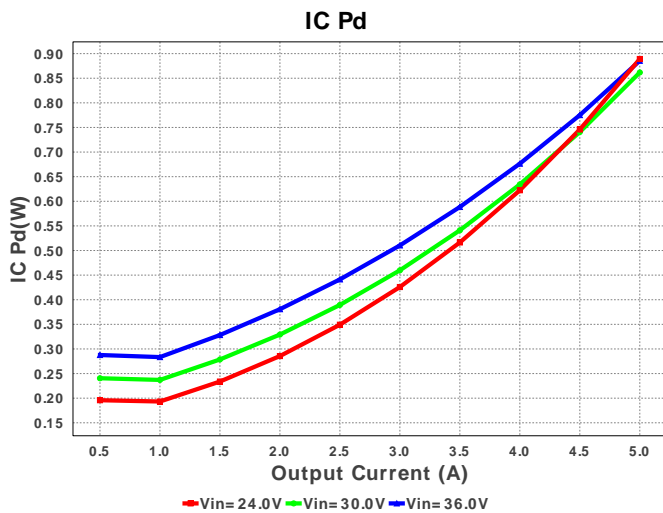
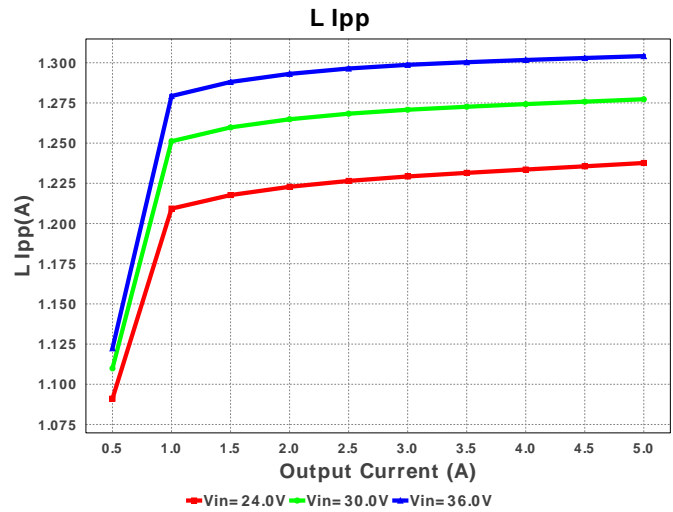
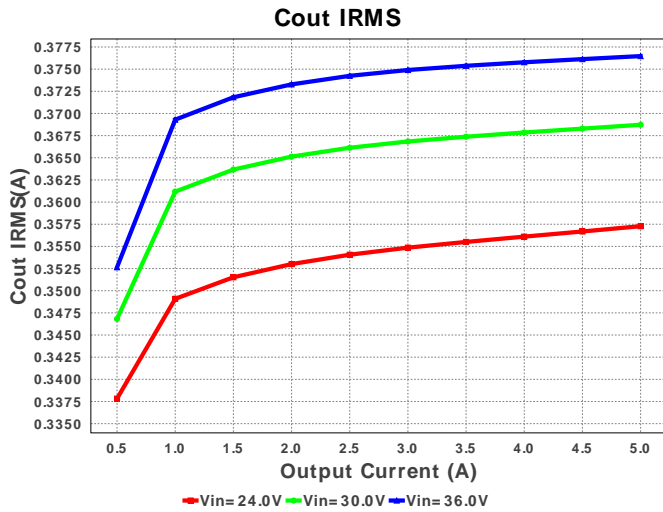


#	Name	Manufacturer	Part Number	Properties	Qty	Price	Footprint
6.	L1	Bourns	SRP1270-100M	L= 10.0 μ H DCR= 16.8 mOhm	1	\$0.60	 SRP1270 246 mm ²
7.	Rfb1	Panasonic	ERJ-6ENF1001V Series= ERJ-6E	Res= 1000.0 Ohm Power= 125.0 mW Tolerance= 1.0%	1	\$0.01	 0805 7 mm ²
8.	Rfb2	Panasonic	ERJ-6ENF1741V Series= ERJ-6E	Res= 1.74 kOhm Power= 125.0 mW Tolerance= 1.0%	1	\$0.01	 0805 7 mm ²
9.	U1	Texas Instruments	LM2678SX-ADJ/NOPB	Switcher	1	\$2.20	 TS7B 199 mm ²









Operating Values

#	Name	Value	Category	Description
1.	Cin IRMS	1.48 A	Current	Input capacitor RMS ripple current
2.	Cout IRMS	376.472 mA	Current	Output capacitor RMS ripple current
3.	IC Ipk	5.652 A	Current	Peak switch current in IC
4.	Iin Avg	552.52 mA	Current	Average input current
5.	L Ipp	1.304 A	Current	Peak-to-peak inductor ripple current
6.	M1 Irms	1.61 A	Current	Q Iavg
7.	BOM Count	11	General	Total Design BOM count
8.	FootPrint	726.0 mm ²	General	Total Foot Print Area of BOM components
9.	Frequency	260.0 kHz	General	Switching frequency
10.	IC Tolerance	24.0 mV	General	IC Feedback Tolerance
11.	M Vds Act	247.352 mV	General	Voltage drop across the MosFET
12.	Pout	16.5 W	General	Total output power
13.	Total BOM	\$4.66	General	Total BOM Cost
14.	D1 Tj	111.458 degC	Op_Point	D1 junction temperature
15.	Vout Actual	3.315 V	Op_Point	Vout Actual calculated based on selected voltage divider resistors
16.	Vout OP	3.3 V	Op_Point	Operational Output Voltage
17.	Cross Freq	30.954 kHz	Op_point	Bode plot crossover frequency
18.	Duty Cycle	10.369 %	Op_point	Duty cycle
19.	Efficiency	82.953 %	Op_point	Steady state efficiency
20.	IC Tj	53.023 degC	Op_point	IC junction temperature
21.	ICThetaJA	26.0 degC/W	Op_point	IC junction-to-ambient thermal resistance
22.	IOUT_OP	5.0 A	Op_point	Iout operating point
23.	Phase Marg	44.002 deg	Op_point	Bode Plot Phase Margin
24.	VIN_OP	36.0 V	Op_point	Vin operating point
25.	Vout p-p	3.243 mV	Op_point	Peak-to-peak output ripple voltage
26.	Cin Pd	6.571 mW	Power	Input capacitor power dissipation
27.	Cout Pd	230.785 μ W	Power	Output capacitor power dissipation
28.	Diode Pd	2.036 W	Power	Diode power dissipation
29.	IC Pd	885.517 mW	Power	IC power dissipation
30.	L Pd	462.0 mW	Power	Inductor power dissipation
31.	Total Pd	3.391 W	Power	Total Power Dissipation

#	Name	Value	Category	Description
32.	Vout Tolerance	3.292 %		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	36.0	Maximum input voltage
3.	VinMin	24.0	Minimum input voltage
4.	Vout	3.3	Output Voltage
5.	base_pn	LM2678	Base Product Number
6.	source	DC	Input Source Type
7.	Ta	30.0	Ambient temperature

Design Assistance

1. **LM2678** Product Folder : <http://www.ti.com/product/LM2678> : contains the data sheet and other resources.

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