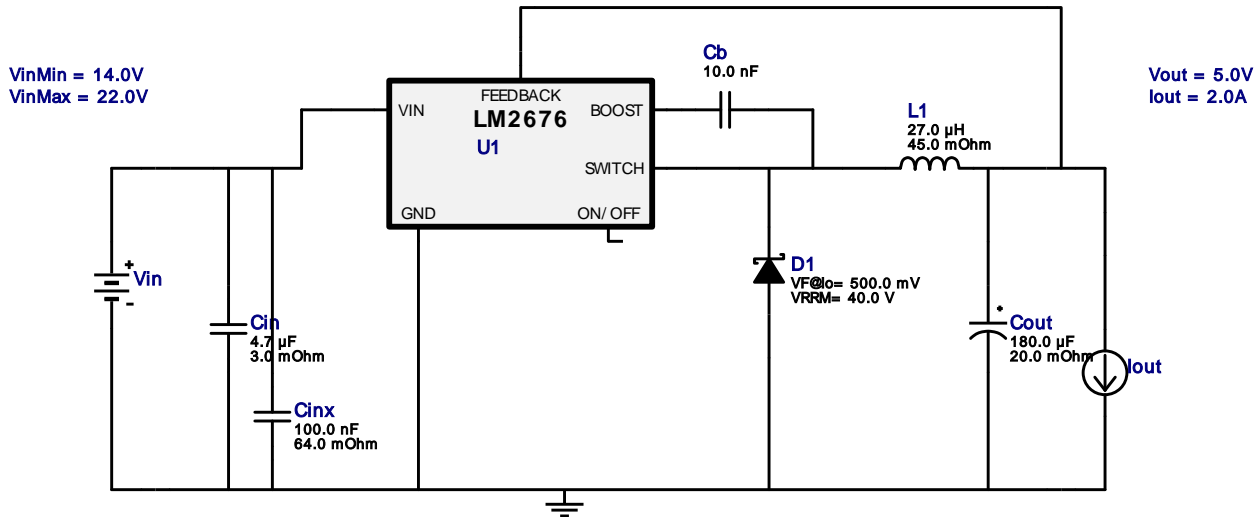



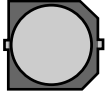


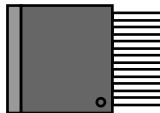
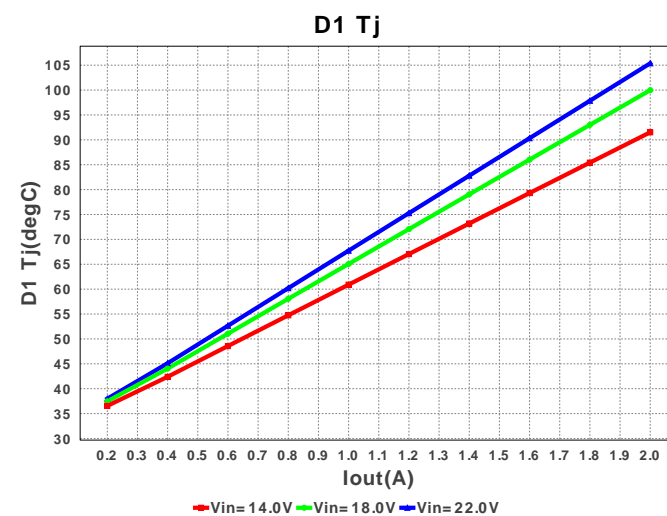
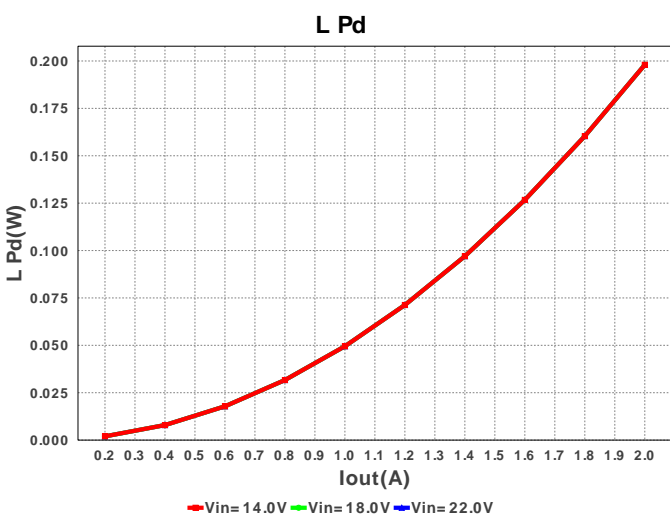
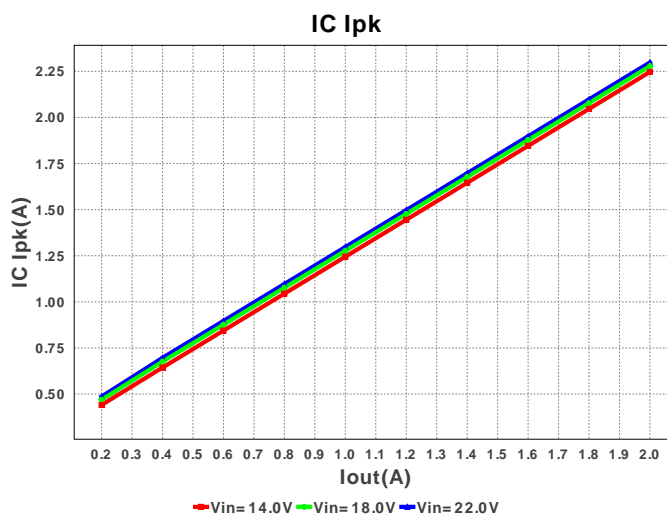
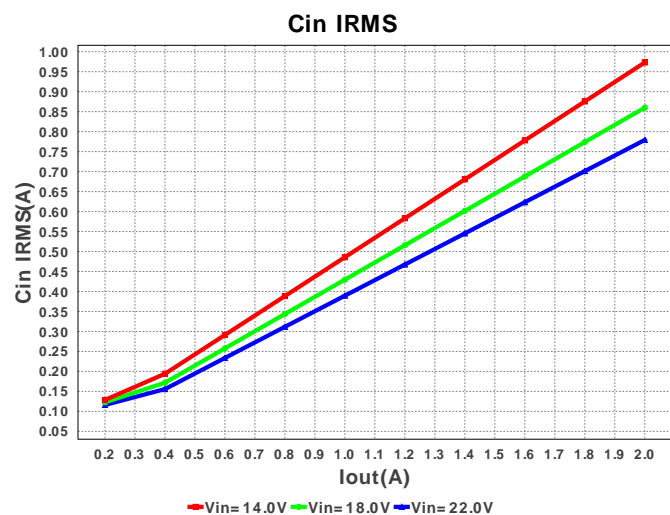
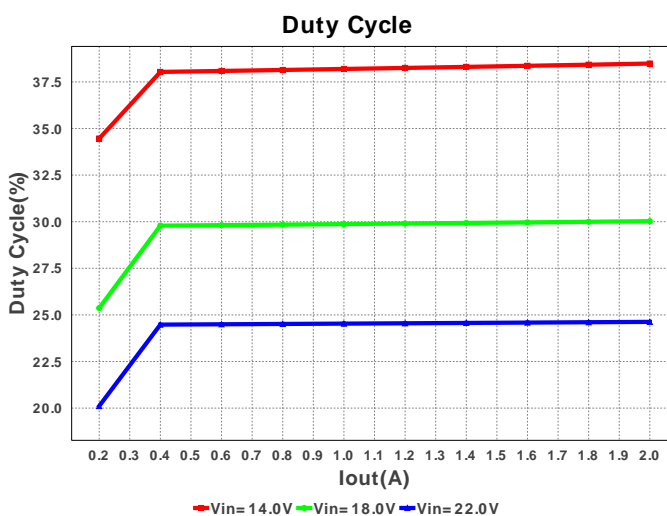
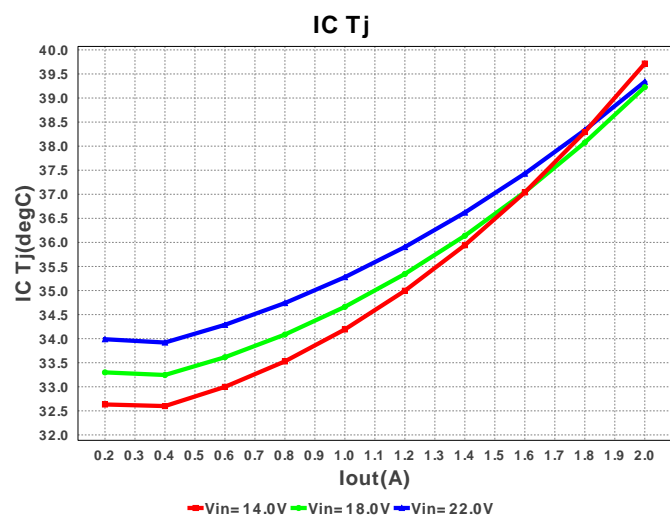


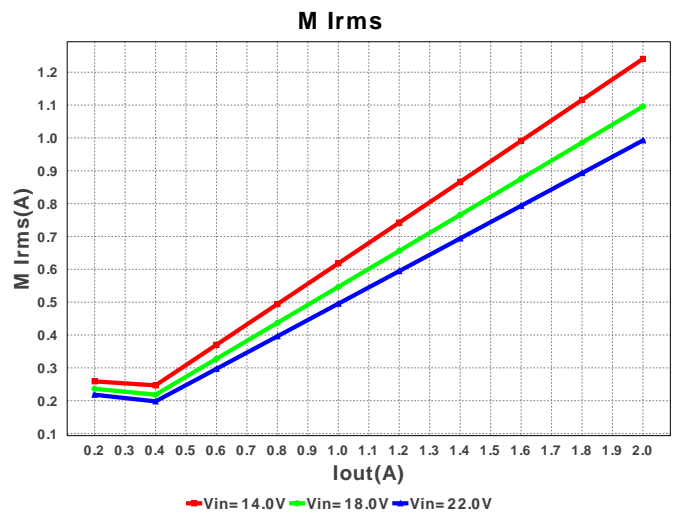
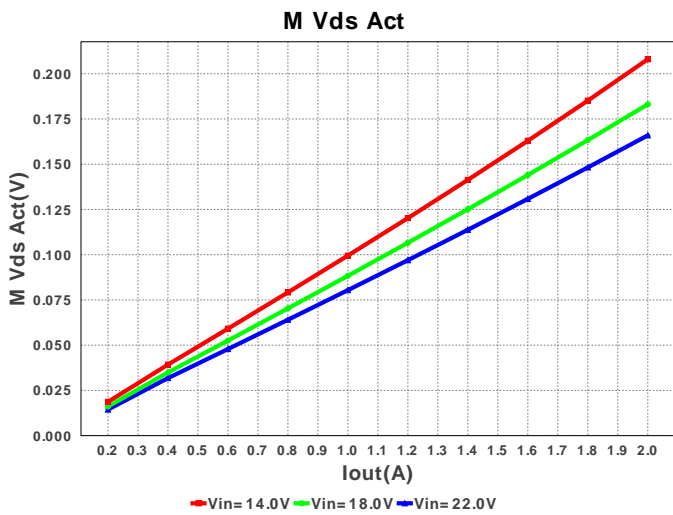
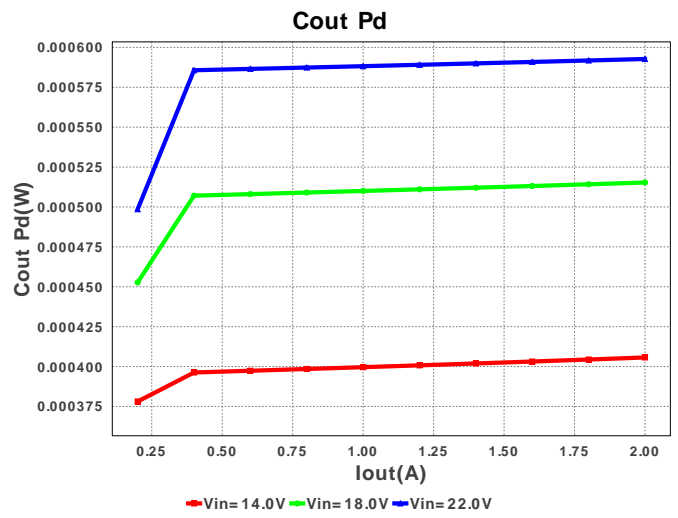
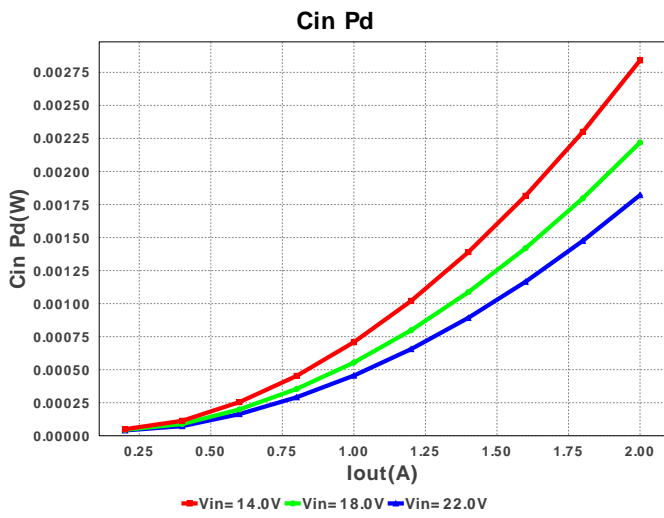
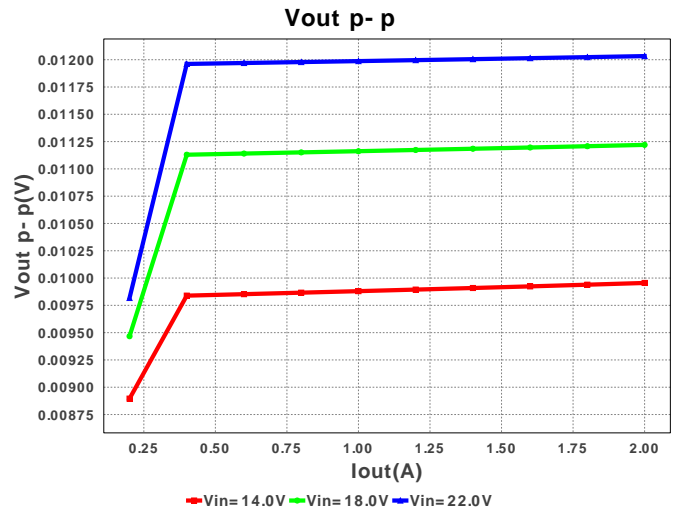
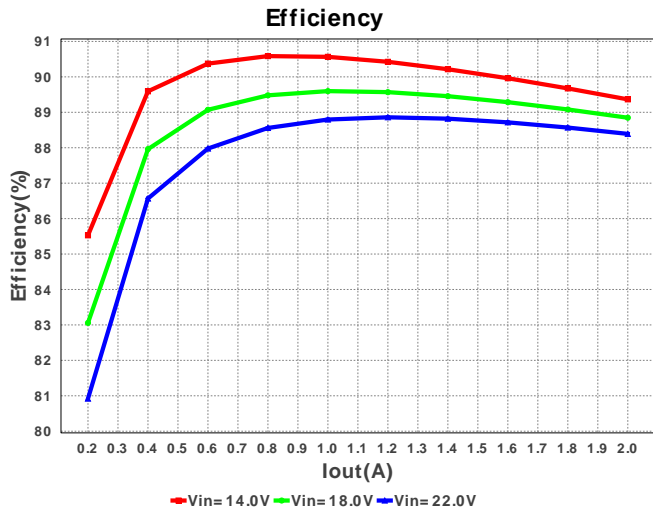
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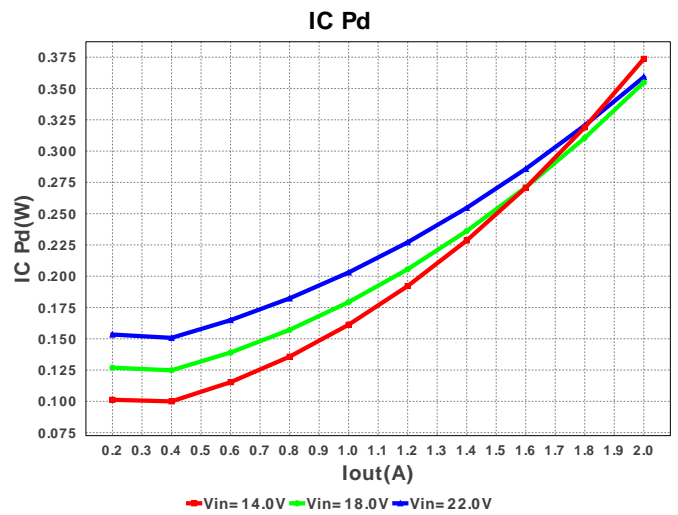
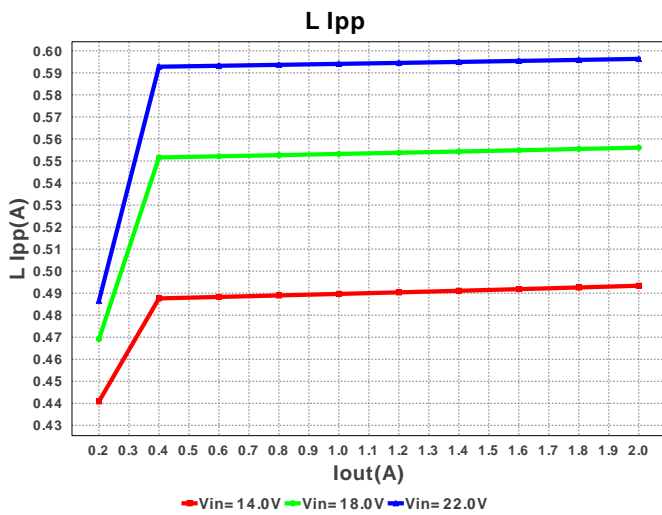
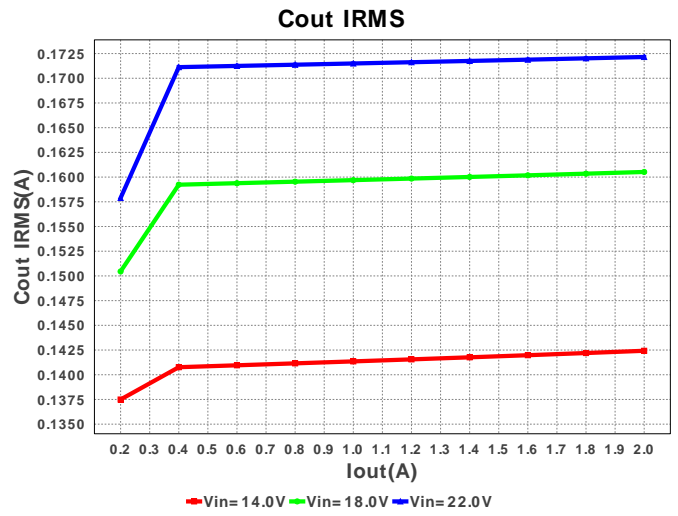
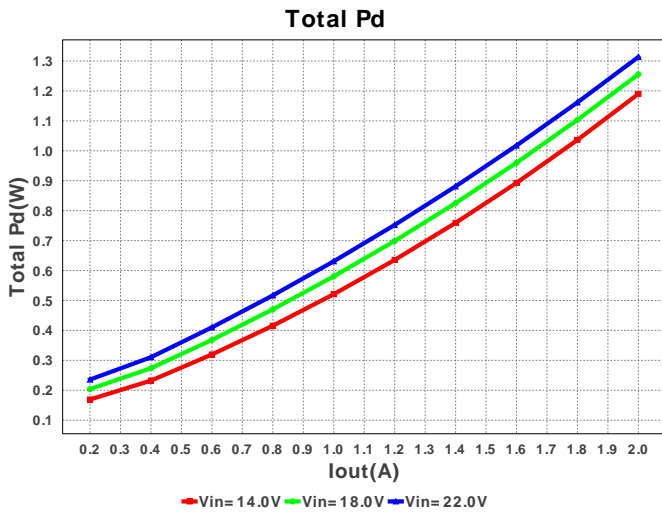
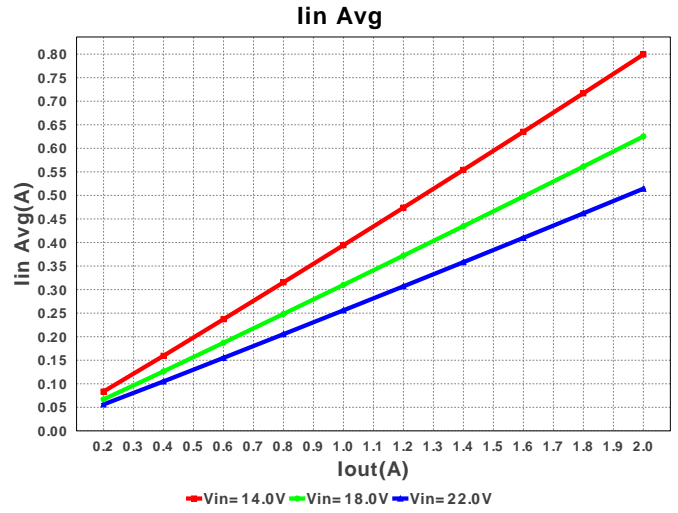
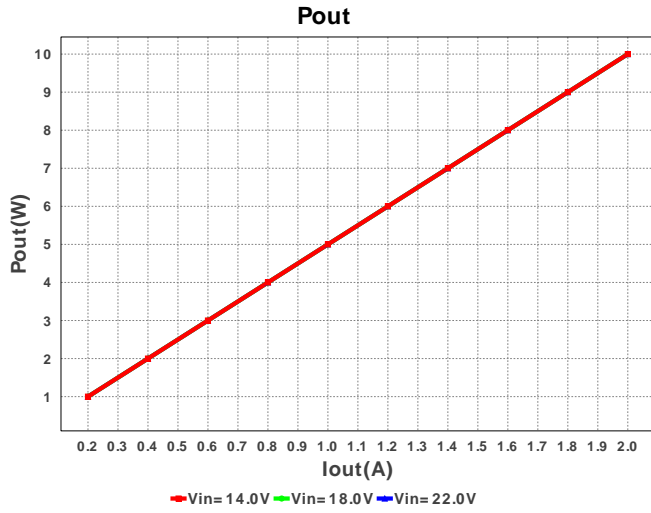
 Design : 3820738/135 LM2676T-5.0/NOPB
 LM2676SX-5.0/NOPB 14.0V-22.0V to 5.0V @ 2.0A

Electrical BOM

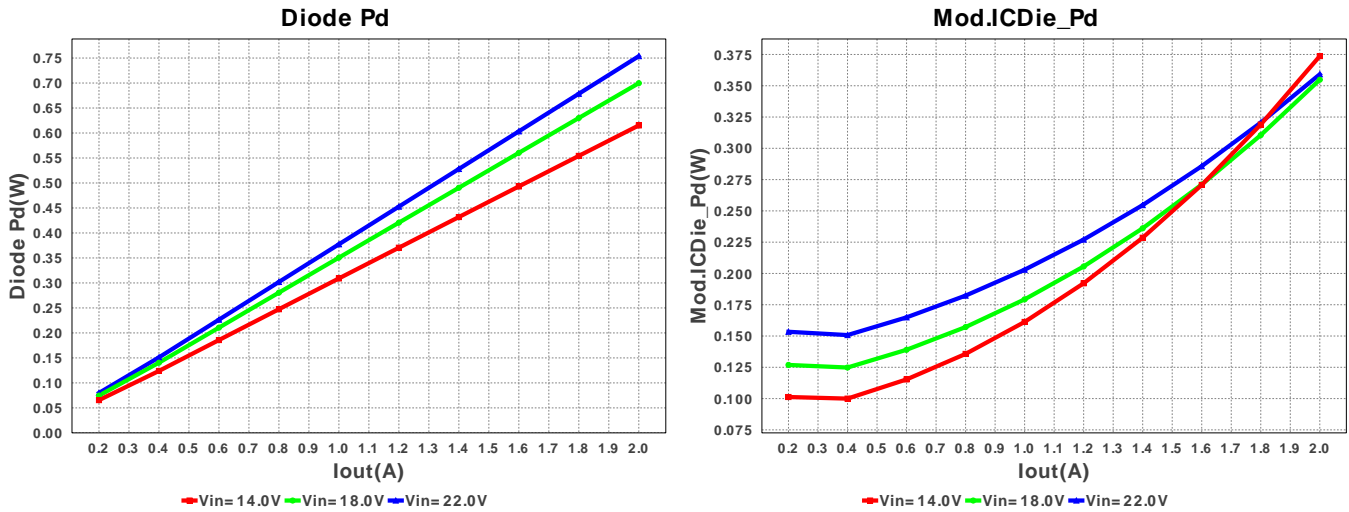
#	Name	Manufacturer	Part Number	Properties	Qty	Price	Footprint
1.	Cb	MuRata	GRM216R71H103KA01D Series= X7R	Cap= 10.0 nF VDC= 50.0 V IRMS= 0.0 A	1	\$0.01	 0805 7mm ²
2.	Cin	MuRata	GRM31CR71H475KA12L Series= X7R	Cap= 4.7 µF ESR= 3.0 mOhm VDC= 50.0 V IRMS= 4.98 A	1	\$0.10	 1206 11mm ²
3.	Cinx	Kemet	C0805C104K5RACTU Series= X7R	Cap= 100.0 nF ESR= 64.0 mOhm VDC= 50.0 V IRMS= 1.64 A	1	\$0.01	 0805 7mm ²
4.	Cout	Panasonic	16SVP180M Series= 261	Cap= 180.0 µF ESR= 20.0 mOhm VDC= 16.0 V IRMS= 3.64 A	1	\$0.29	 SM_RADIAL_8MM 113mm ²
5.	D1	Diodes Inc.	B340A-13-F	VF@Io= 500.0 mV VRRM= 40.0 V	1	\$0.11	 SMA 37mm ²
6.	L1	Bourns	SRR1260-270M	L= 27.0 µH DCR= 45.0 mOhm	1	\$0.41	 SRR1260 210mm ²

#	Name	Manufacturer	Part Number	Properties	Qty	Price	Footprint
7.	U1	Texas Instruments	LM2676SX-5.0/NOPB	Switcher	1	\$1.80	 TS7B 199mm2









Operating Values

#	Name	Value	Category	Description
1.	Cin IRMS	779.154 mA	Current	Input capacitor RMS ripple current
2.	Cout IRMS	172.154 mA	Current	Output capacitor RMS ripple current
3.	IC Ipk	2.298 A	Current	Peak switch current in IC
4.	Iin Avg	514.24 mA	Current	Average input current
5.	L Ipp	596.358 mA	Current	Peak-to-peak inductor ripple current
6.	M1 Irms	992.493 mA	Current	Q Iavg
7.	BOM Count	7	General	Total Design BOM count
8.	FootPrint	584.0 mm2	General	Total Foot Print Area of BOM components
9.	Frequency	260.0 kHz	General	Switching frequency
10.	IC Tolerance	100.0 mV	General	IC Feedback Tolerance
11.	M Vds Act	165.95 mV	General	Voltage drop across the MosFET
12.	Pout	10.0 W	General	Total output power
13.	Total BOM	\$2.73	General	Total BOM Cost
14.	D1 Tj	105.374 degC	Op_Point	D1 junction temperature
15.	Vout OP	5.0 V	Op_Point	Operational Output Voltage
16.	Cross Freq	19.582 kHz	Op_point	Bode plot crossover frequency
17.	Duty Cycle	24.626 %	Op_point	Duty cycle
18.	Efficiency	88.391 %	Op_point	Steady state efficiency
19.	IC Tj	39.338 degC	Op_point	IC junction temperature
20.	ICThetaJA	26.0 degC/W	Op_point	IC junction-to-ambient thermal resistance
21.	IOUT_OP	2.0 A	Op_point	Iout operating point
22.	Phase Marg	63.302 deg	Op_point	Bode Plot Phase Margin
23.	VIN_OP	22.0 V	Op_point	Vin operating point
24.	Vout p-p	12.033 mV	Op_point	Peak-to-peak output ripple voltage
25.	Cin Pd	1.821 mW	Power	Input capacitor power dissipation
26.	Cout Pd	592.738 μW	Power	Output capacitor power dissipation
27.	Diode Pd	753.739 mW	Power	Diode power dissipation
28.	IC Pd	359.152 mW	Power	IC power dissipation
29.	L Pd	198.0 mW	Power	Inductor power dissipation
30.	Total Pd	1.313 W	Power	Total Power Dissipation

Design Inputs

#	Name	Value	Description
1.	Iout	2.0 A	Maximum Output Current
2.	Iout1	2.0 Amps	Output Current #1
3.	VinMax	22.0 V	Maximum input voltage
4.	VinMin	14.0 V	Minimum input voltage
5.	Vout	5.0 V	Output Voltage
6.	Vout1	5.0 Volt	Output Voltage #1
7.	base_pn	LM2676	Base Product Number
8.	source	DC	Input Source Type
9.	Ta	30.0 degC	Ambient temperature

Design Assistance

1. **LM2676** Product Folder : <http://www.ti.com/product/lm2676> : contains the data sheet and other resources.

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