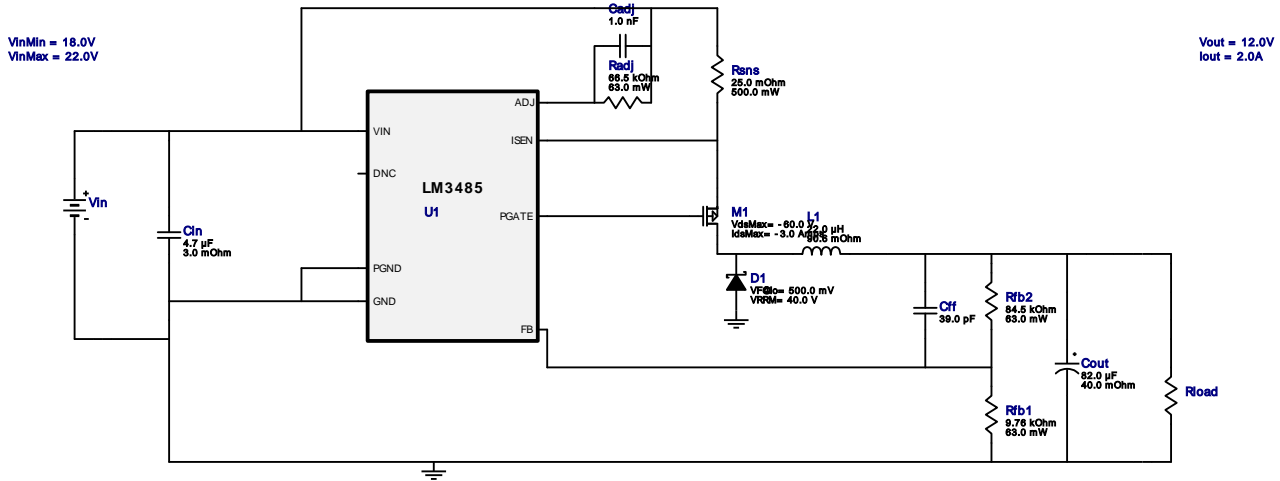
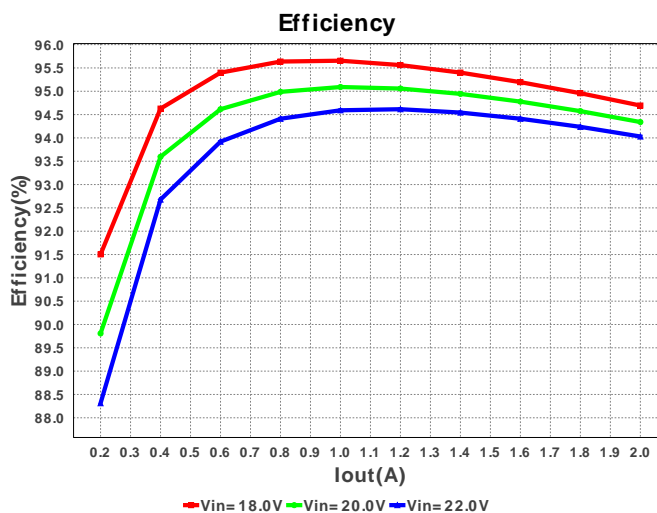
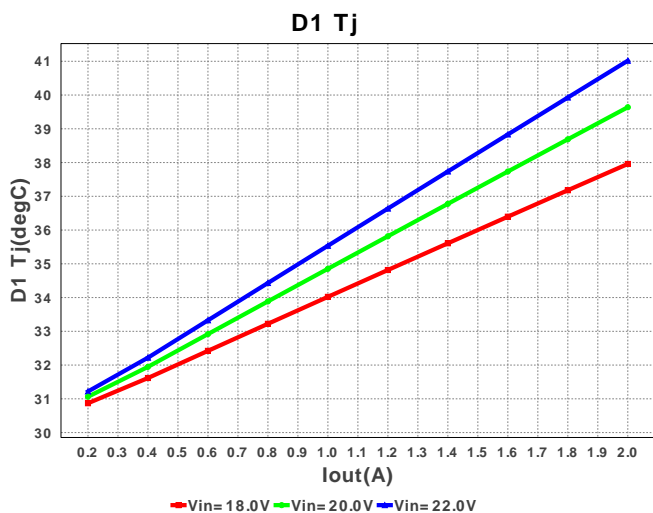
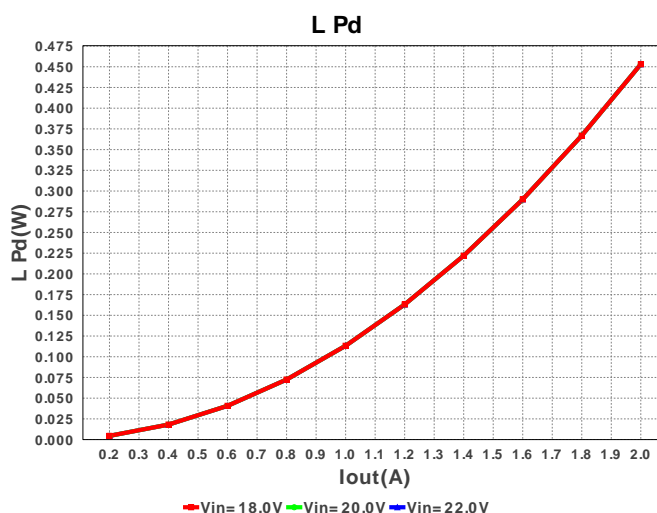
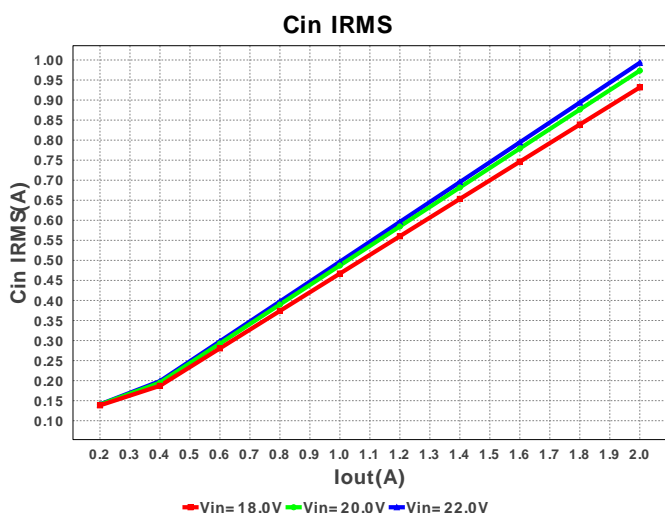
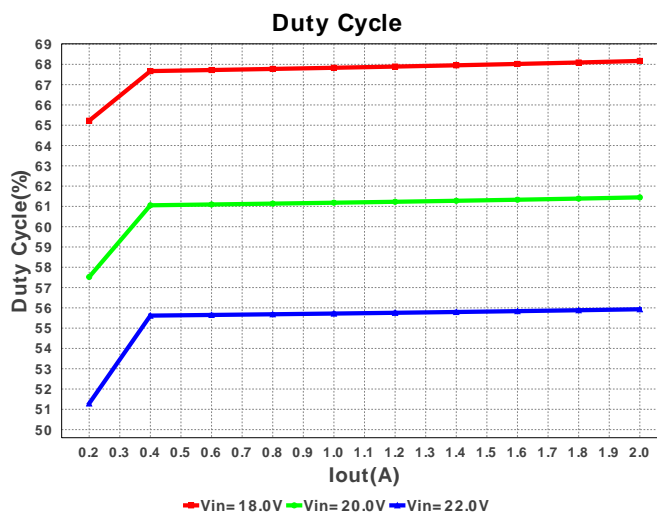
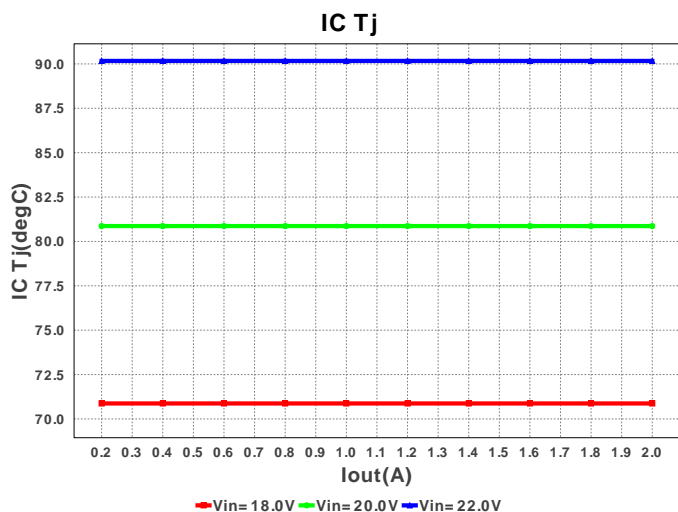


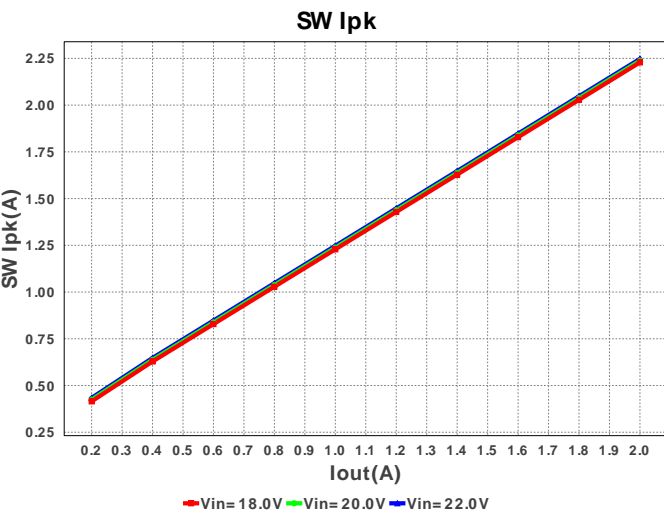
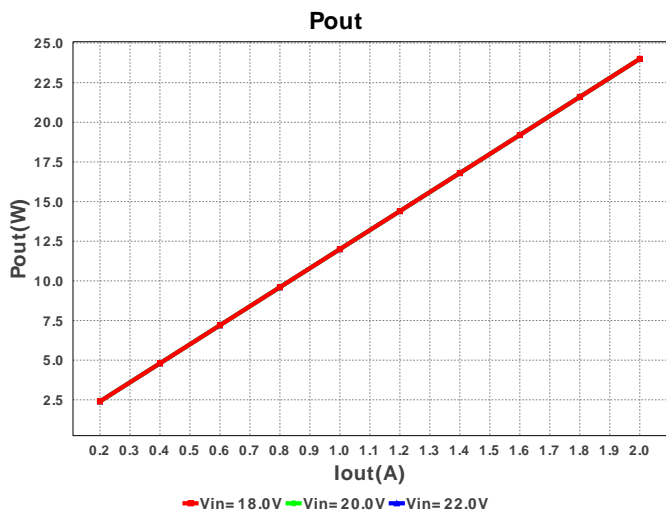
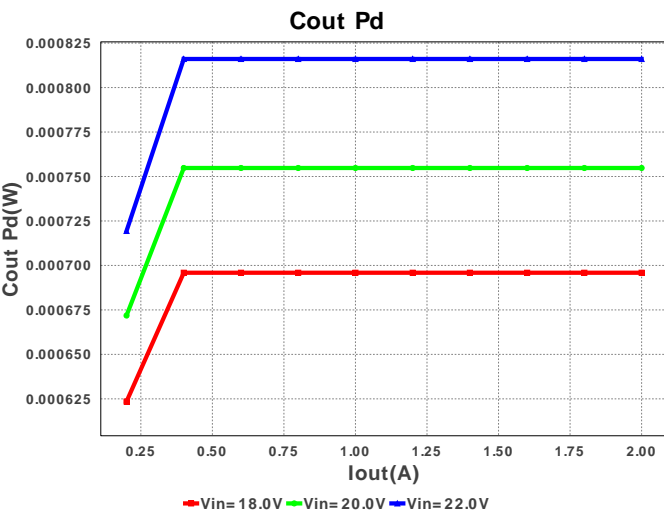
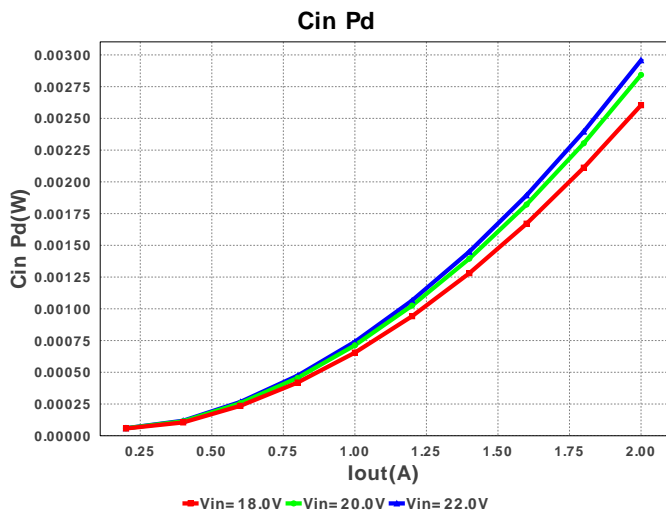
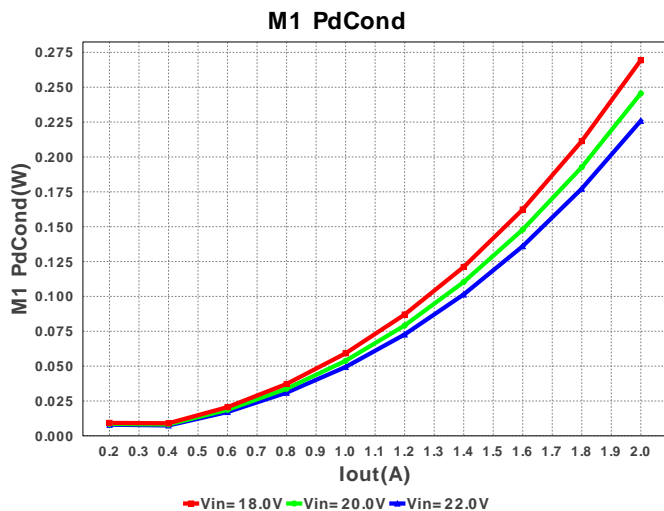
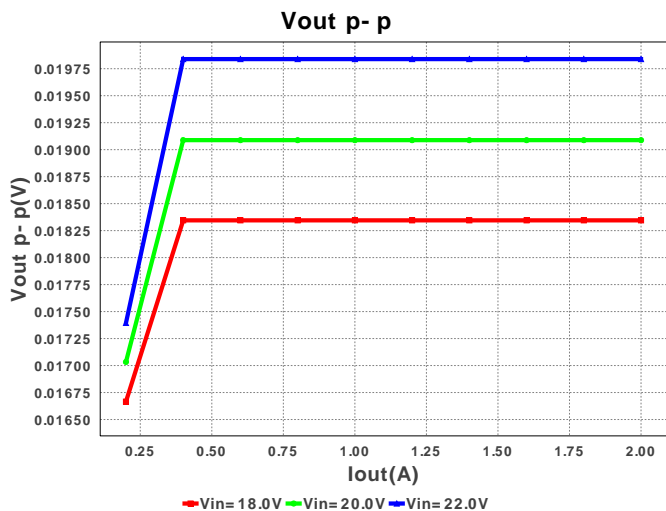
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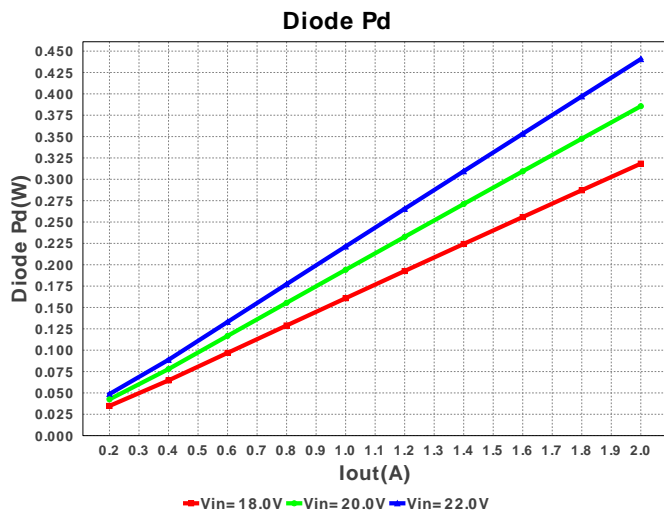
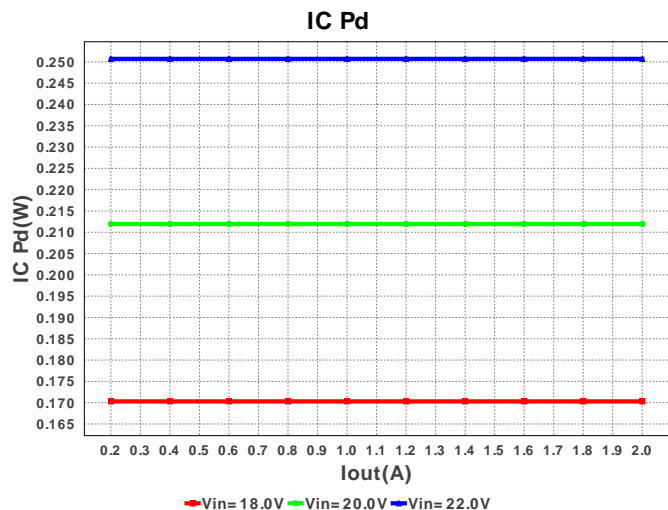
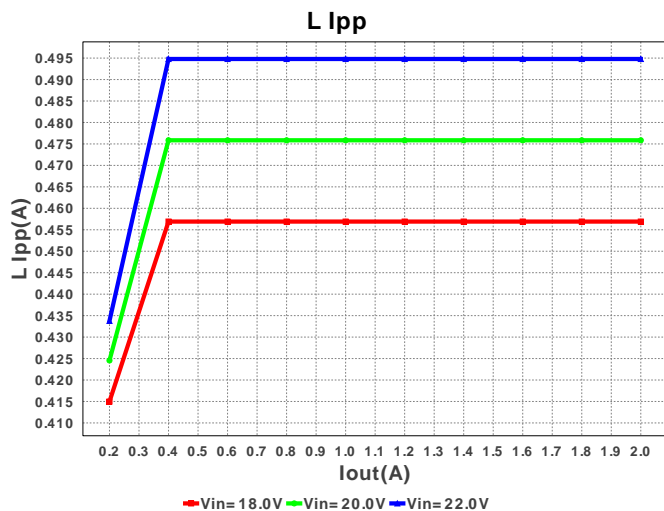
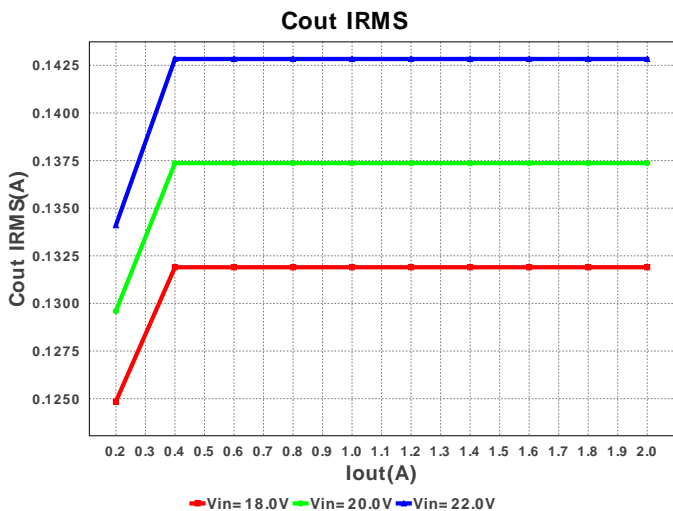
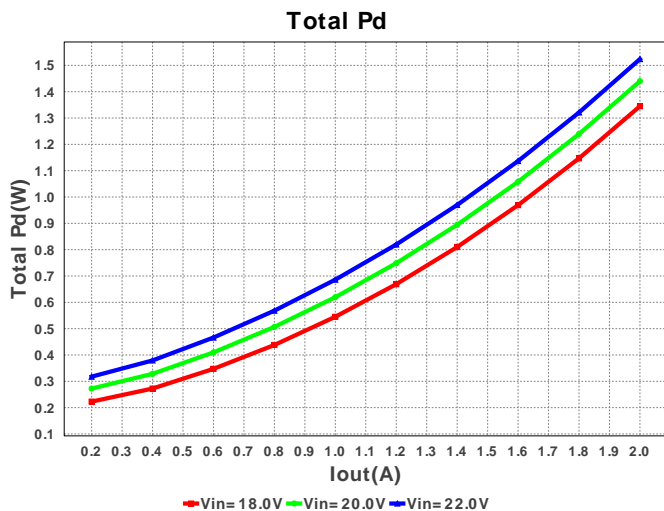
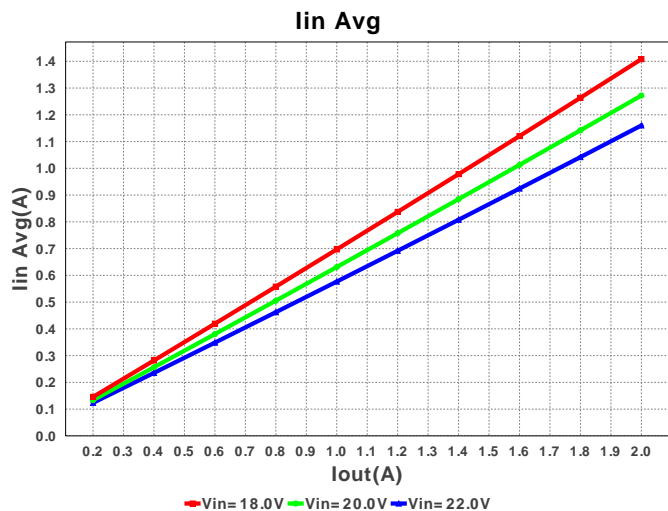
 Design : 3715847/14 LM3485MM/NOPB
 LM3485MM/NOPB 18.0V-22.0V to 12.0V @ 2.0A

电气材料清单

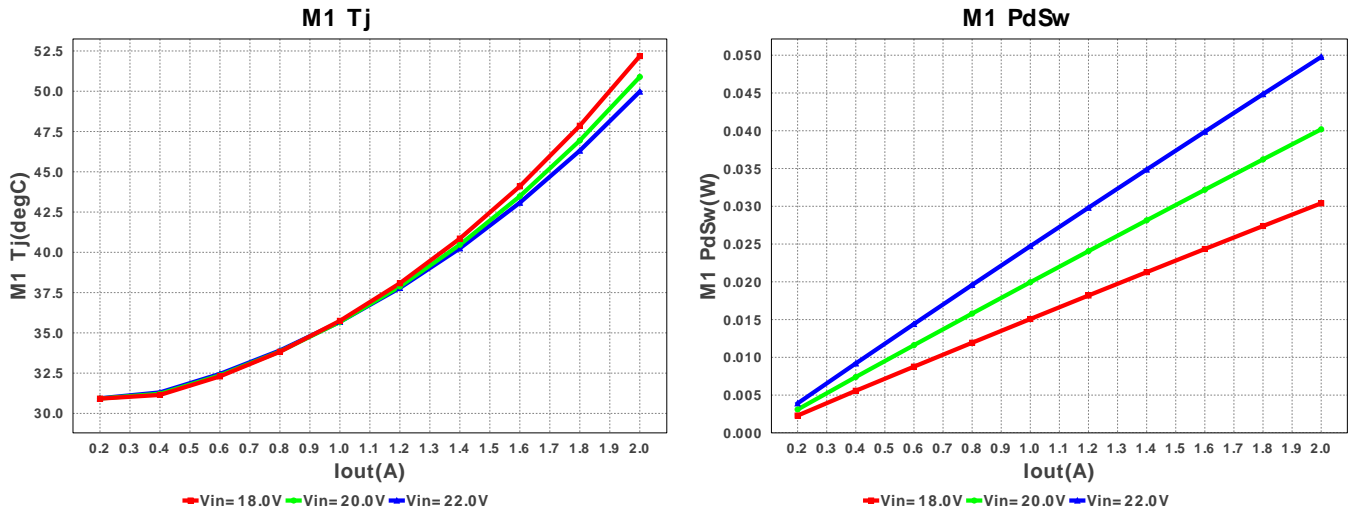
#	名称	制造商	零件编号	属性	Qty	Price	大小
1.	Cadj	Yageo America	CC0805KRX7R9BB102 Series= X7R	Cap= 1.0 nF VDC= 50.0 V IRMS= 0.0 A	1	\$0.01	 0805 7mm2
2.	Cff	Yageo America	CC0805JRNP09BN390 Series= C0G/NP0	Cap= 39.0 pF VDC= 50.0 V IRMS= 0.0 A	1	\$0.01	 0805 7mm2
3.	Cin	MuRata	GRM31CR71H475KA12L Series= X7R	Cap= 4.7 µF ESR= 3.0 mOhm VDC= 50.0 V IRMS= 4.98 A	1	\$0.10	 1206 11mm2
4.	Cout	Panasonic	16SVP82M Series= 261	Cap= 82.0 µF ESR= 40.0 mOhm VDC= 16.0 V IRMS= 2.12 A	1	\$0.49	 SM_RADIAL_8MM 113mm2
5.	D1	Diodes Inc.	B240A-13-F	VF@Io= 500.0 mV VRRM= 40.0 V	1	\$0.09	 SMA 37mm2
6.	L1	Coilcraft	XAL5050-223MEB	L= 22.0 µH DCR= 90.6 mOhm	1	\$0.60	 XAL5050 54mm2
7.	M1	Fairchild Semiconductor	FDC5614P	VdsMax= -60.0 V IdsMax= -3.0 Amps	1	\$0.22	 SOT-23-6 15mm2
8.	Radj	Vishay-Dale	CRCW040266K5FKED Series= CRCW..e3	Res= 66.5 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	 0402 3mm2
9.	Rfb1	Vishay-Dale	CRCW04029K76FKED Series= CRCW..e3	Res= 9.76 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	 0402 3mm2
10.	Rfb2	Vishay-Dale	CRCW040284K5FKED Series= CRCW..e3	Res= 84.5 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	 0402 3mm2
11.	Rsns	Stackpole Electronics Inc	CSR1206FK25L0 Series= ?	Res= 25.0 mOhm Power= 500.0 mW Tolerance= 1.0%	1	\$0.10	 1206 11mm2

#	名称	制造商	零件编号	属性	Qty	Price	大小
12.	U1	Texas Instruments	LM3485MM/NOPB	Switcher	1	\$0.52	 mpds028d 16mm2









工作数值

#	名称	数值	类别	说明
1.	Cin IRMS	992.931 mA	Current	输入电容器均方根纹波电流
2.	Cout IRMS	139.66 mA	Current	输出电容器均方根纹波电流
3.	Iin Avg	1.16 A	Current	平均输入电流
4.	L Ipp	483.796 mA	Current	峰值到峰值电感器纹波电流
5.	SW Ipk	2.242 A	Current	峰值开关电流
6.	BOM 数量	12	General	Total Design BOM count
7.	大小	280.0 mm ²	General	BOM组件的总所占面积
8.	频率	550.964 kHz	General	开关频率
9.	IC Tolerance	0.0 V	General	IC Feedback Tolerance
10.	Pout	24.0 W	General	总输出功率
11.	总 BOM	\$2.17	General	Total BOM Cost
12.	D1 Tj	41.016 degC	Op_Point	D1接点温度
13.	Vout OP	12.0 V	Op_Point	Operational Output Voltage
14.	占空比	55.935 %	Op_point	占空比
15.	效率	94.021 %	Op_point	稳态效率
16.	IC Tj	80.14 degC	Op_point	电路接点温度
17.	ICThetaJA	200.0 degC/W	Op_point	电路接点到环境热敏电阻
18.	IOUT_OP	2.0 A	Op_point	Iout 操作点
19.	M1 Tj	49.98 degC	Op_point	M1 MOSFET 接点温度
20.	VIN_OP	22.0 V	Op_point	Vin操作点
21.	Vout p-p	19.398 mV	Op_point	峰值到峰值输出纹波电压
22.	Cin Pd	2.958 mW	Power	输入电容器功率耗散
23.	Cout Pd	780.196 μW	Power	输出电容器功率耗散
24.	二极管 Pd	440.653 mW	Power	二极管功率耗散
25.	IC Pd	250.699 mW	Power	电路功率耗散
26.	L Pd	453.0 mW	Power	电感器功率耗散
27.	M1 PdCond	228.273 mW	Power	M1 MOSFET 传导损耗
28.	M1 PdSw	49.776 mW	Power	M1 MOSFET 开关损耗
29.	整体 Pd	1.526 W	Power	总功率耗散

设计输入

#	名称	数值	说明
1.	输出电流	2.0 A	最大输出电流
2.	Iout1	2.0 Amps	Output Current #1
3.	Vin 最大	22.0 V	最高输入电压
4.	Vin 最小	18.0 V	最低输入电压
5.	输出电压:	12.0 V	输出电压
6.	Vout1	12.0 Volt	Output Voltage #1
7.	base_pn	LM3485	美国国家半导体的产品编号
8.	源	DC	输入源类别
9.	工作环境温度	30.0 degC	环境温度

设计协助

1. Outline The LM3485 is a hysteretic PFET controller. The hysteretic control architecture provides for a stable design without the use of a control loop. The switching frequency depends on the inductance value, output capacitor ESR, and the input voltage. Therefore depending on the chosen BOM, the frequency at different input voltages would vary.

2. LM3485 Product Folder : <http://www.ti.com/product/lm3485> : contains the data sheet and other resources.

Texas Instruments' WEBENCH simulation tools attempt to recreate the performance of a substantially equivalent physical implementation of the design. Simulations are created using Texas Instruments' published specifications as well as the published specifications of other device manufacturers. While Texas Instruments does update this information periodically, this information may not be current at the time the simulation is built. Texas Instruments does not warrant the accuracy or completeness of the specifications or any information contained therein. Texas Instruments does not warrant that any designs or recommended parts will meet the specifications you entered, will be suitable for your application or fit for any particular purpose, or will operate as shown in the simulation in a physical implementation. Texas Instruments does not warrant that the designs are production worthy.

You should completely validate and test your design implementation to confirm the system functionality for your application prior to production.

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