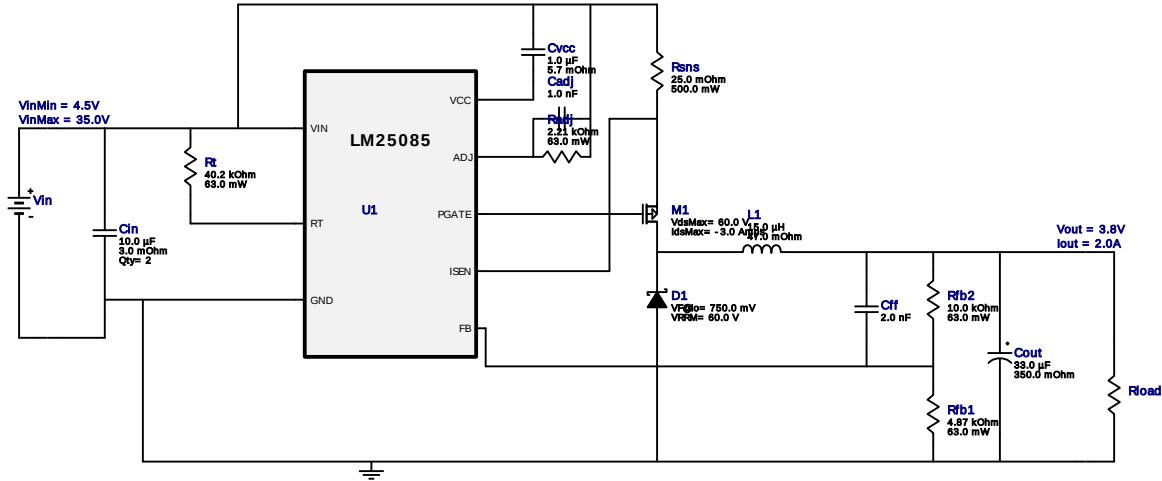
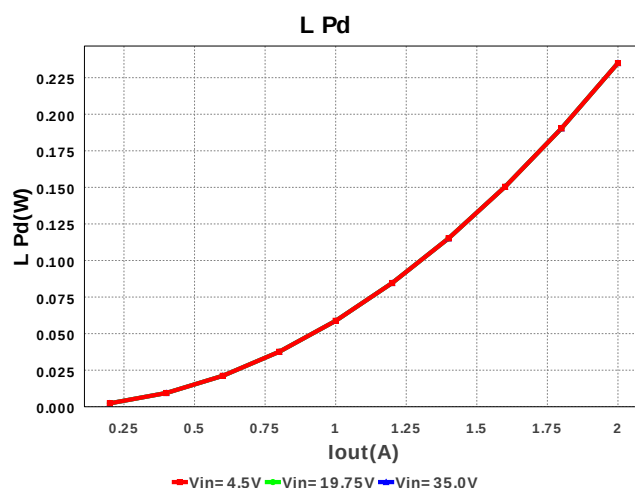
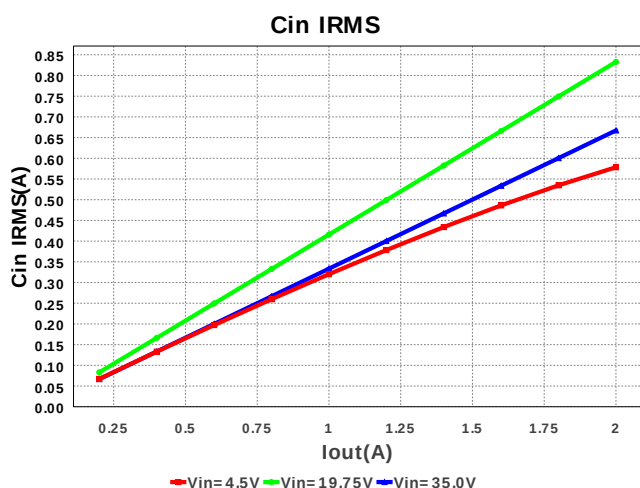
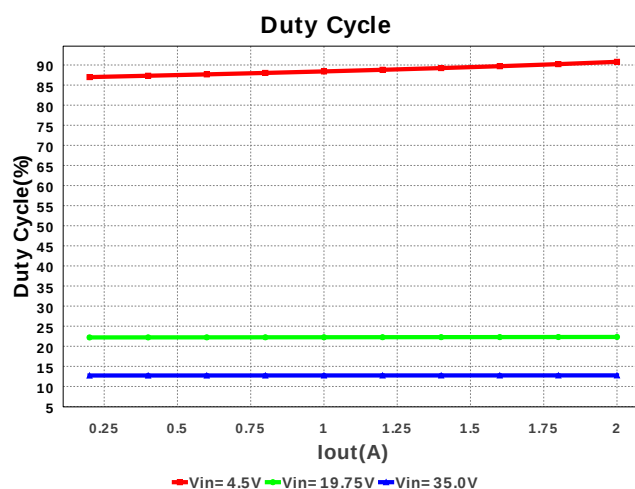
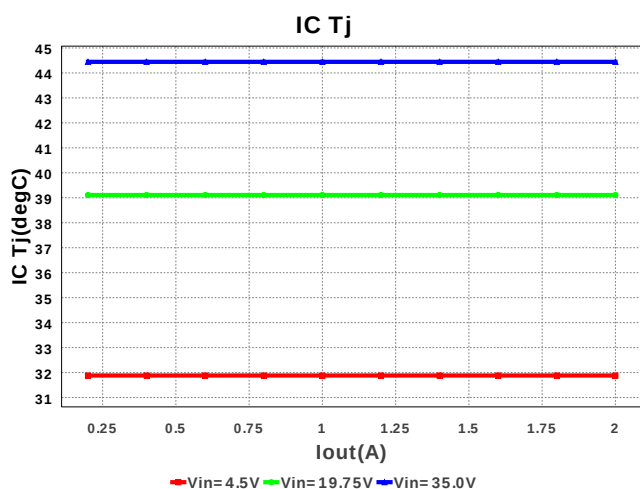


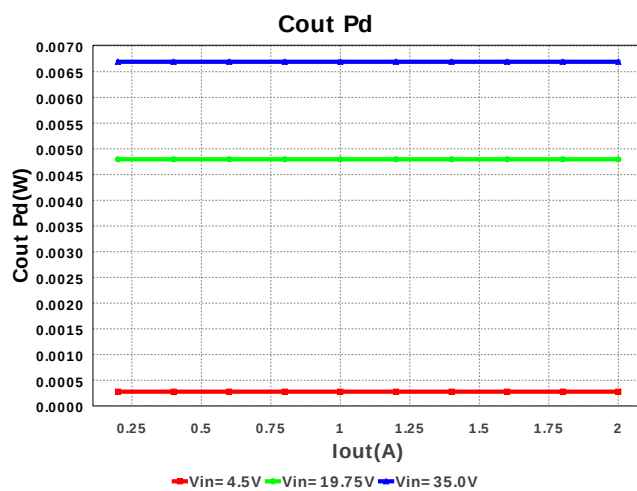
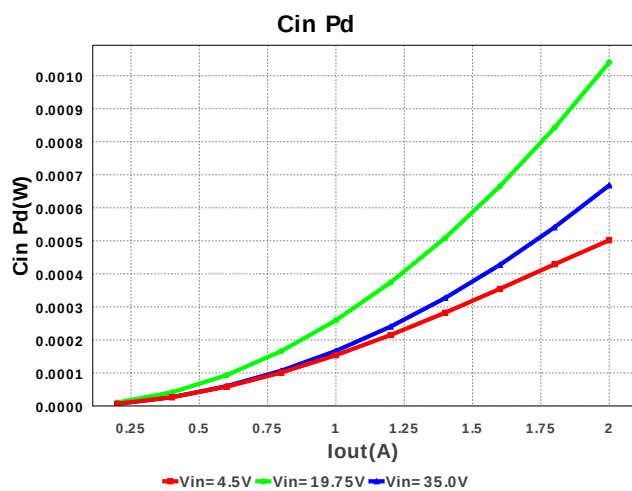
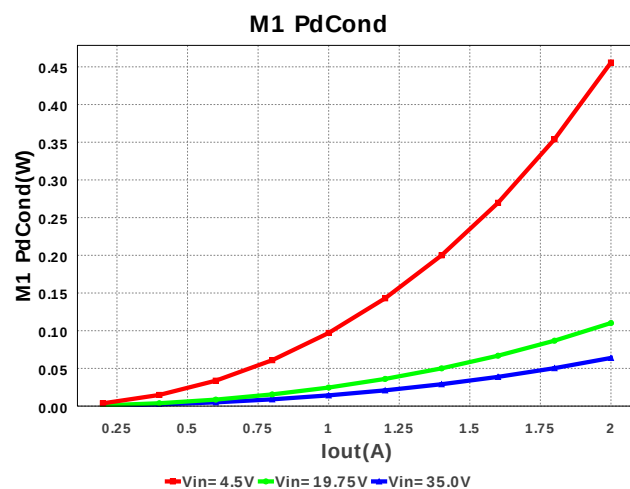
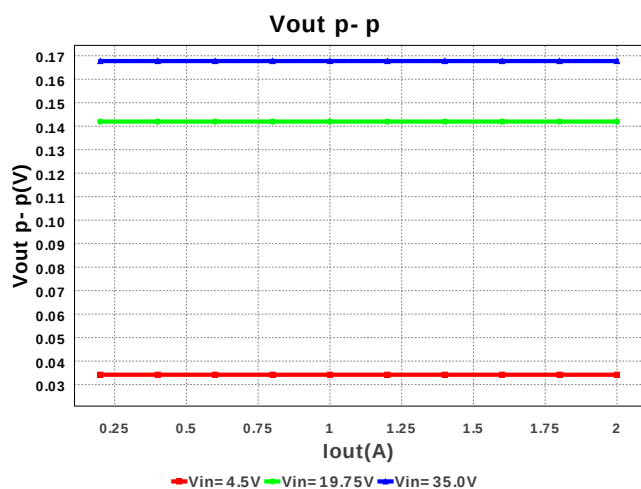
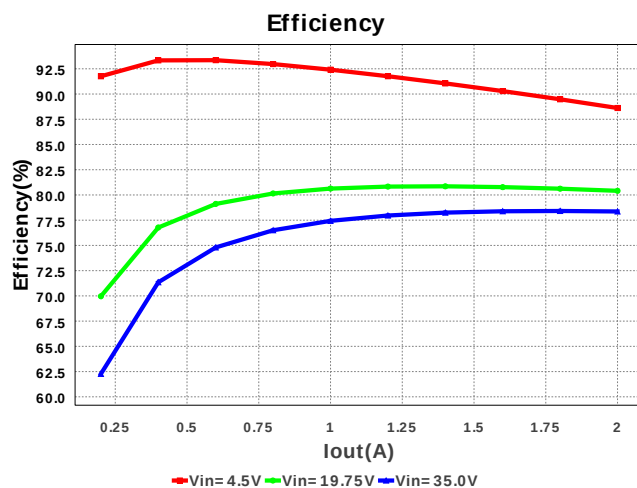
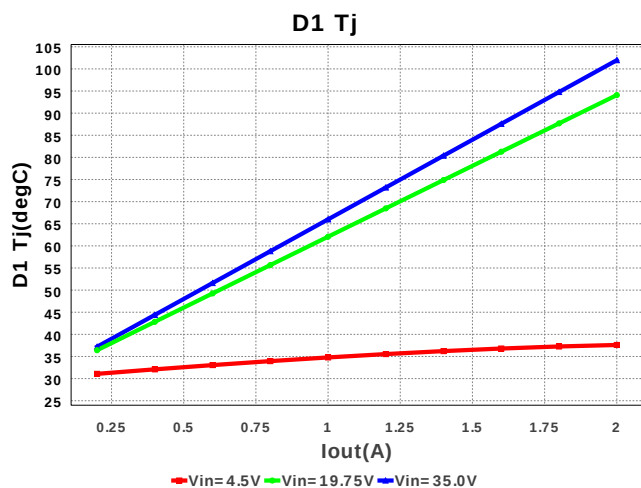


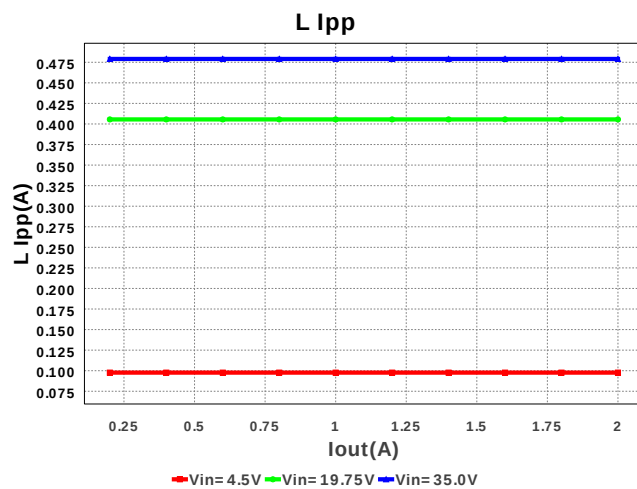
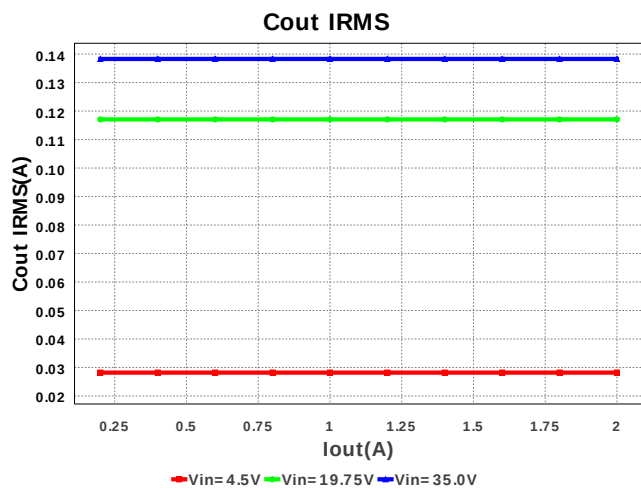
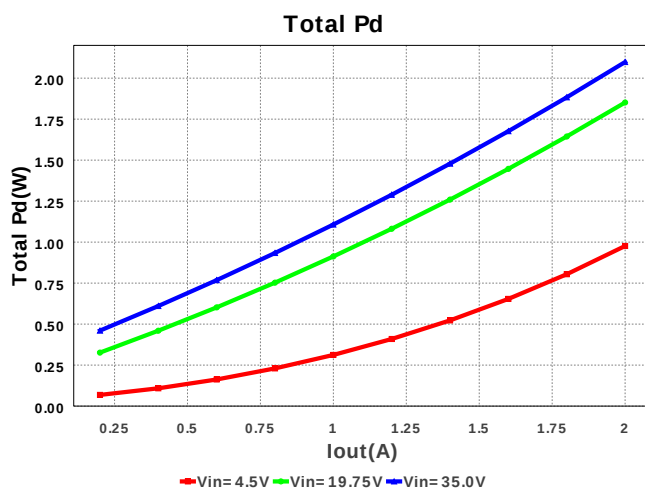
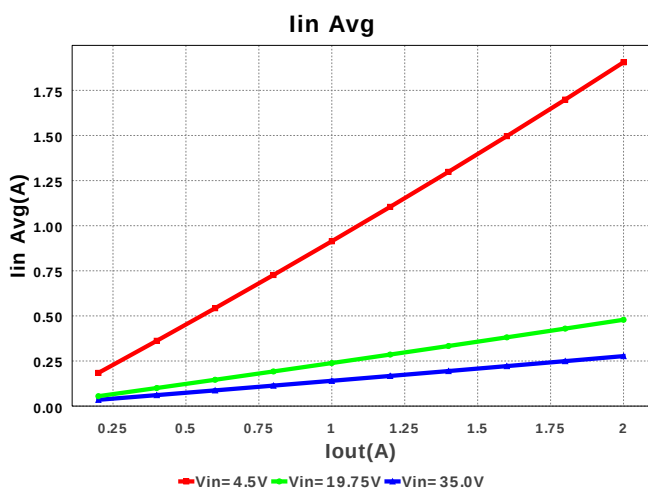
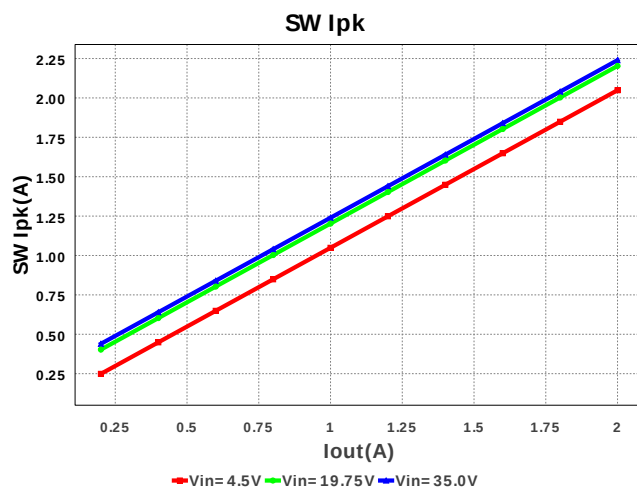
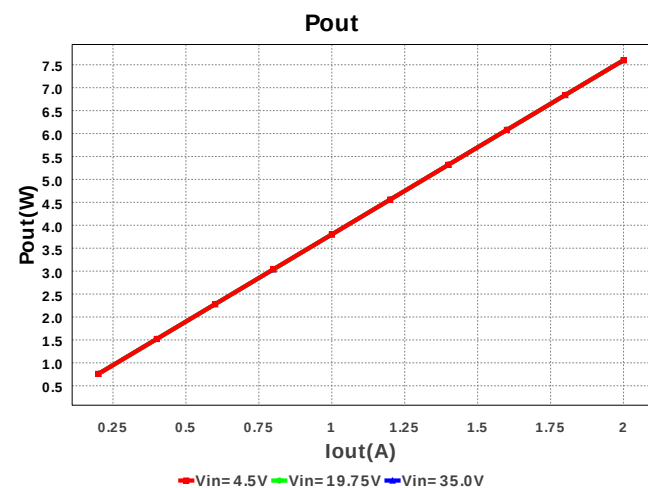
电气材料清单

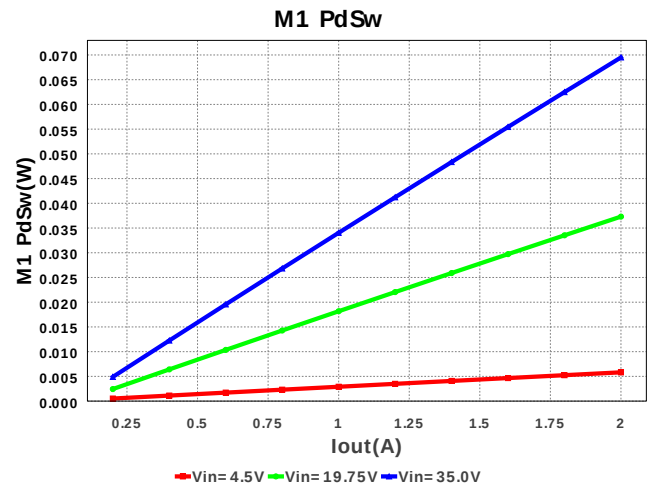
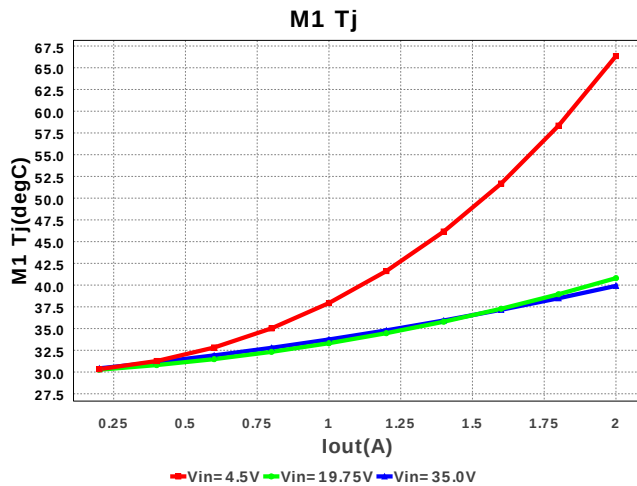
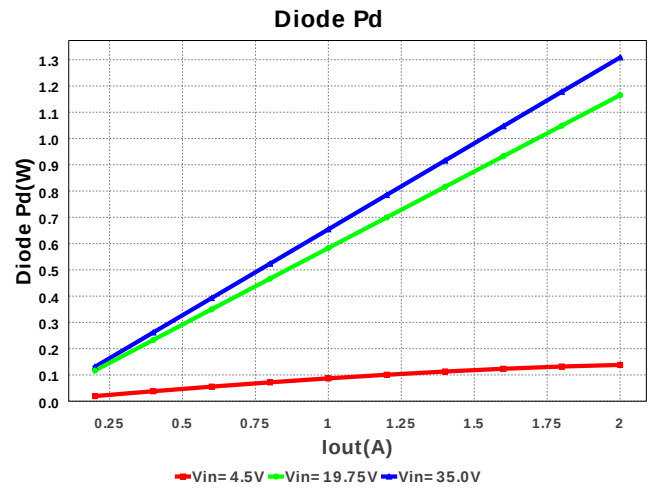
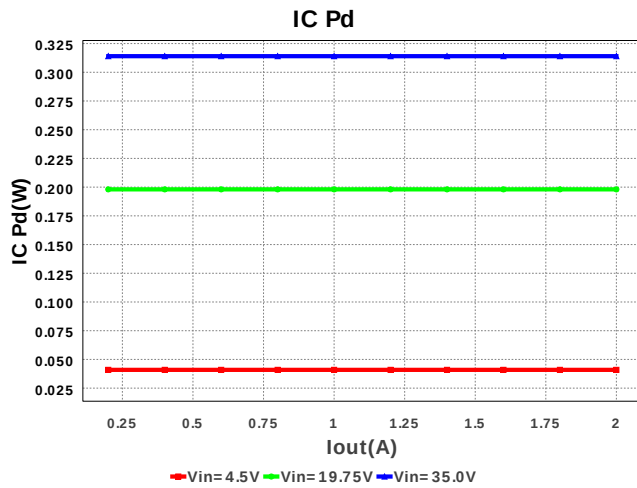
#	名称	制造商	零件编号	属性	Qty	Price	大小
1.	Cadj	Yageo America	CC0805KRX7R9BB102 Series= X7R	Cap= 1.0 nF VDC= 50.0 V IRMS= 0.0 A	1	\$0.01	 0805 7mm2
2.	Cff	MuRata	GRM1885C1H202JA01D Series= C0G/NP0	Cap= 2.0 nF VDC= 50.0 V IRMS= 0.0 A	1	\$0.02	 0603 5mm2
3.	Cin	TDK	C5750X7R1H106M Series= X7R	Cap= 10.0 uF ESR= 3.0 mOhm VDC= 50.0 V IRMS= 5.5 A	2	\$0.68	 2220 60mm2
4.	Cout	AVX	TPSB336K016R0350 Series= TPS	Cap= 33.0 uF ESR= 350.0 mOhm VDC= 16.0 V IRMS= 444.0 mA	1	\$0.33	 3528-21 17mm2
5.	Cvcc	TDK	C1608X5R1C105K Series= X5R	Cap= 1.0 uF ESR= 5.7 mOhm VDC= 16.0 V IRMS= 0.0 A	1	\$0.01	 0603 5mm2
6.	D1	Vishay-Semiconductor	SS36-E3/57T	VF@Io= 750.0 mV VRRM= 60.0 V	1	\$0.18	 SMC 83mm2
7.	L1	Bourns	SRR1240-150M	L= 15.0 uH DCR= 47.0 mOhm	1	\$0.41	 SRR1240 210mm2
8.	M1	Fairchild Semiconductor	FDC5614P	VdsMax= 60.0 V IdsMax= -3.0 Amps	1	\$0.23	 SOT-23-6 15mm2
9.	Radj	Vishay-Dale	CRCW04022K21FKED Series= CRCW..e3	Res= 2.21 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	 0402 3mm2

#	名称	制造商	零件编号	属性	Qty	Price	大小
10.	Rfb1	Vishay-Dale	CRCW04024K87FKED Series= CRCW..e3	Res= 4.87 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	 0402 3mm2
11.	Rfb2	Vishay-Dale	CRCW040210K0FKED Series= CRCW..e3	Res= 10.0 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	 0402 3mm2
12.	Rsns	Stackpole Electronics Inc	CSR1206FK25L0 Series= ?	Res= 25.0 mOhm Power= 500.0 mW Tolerance= 1.0%	1	\$0.10	 1206 11mm2
13.	Rt	Vishay-Dale	CRCW040240K2FKED Series= CRCW..e3	Res= 40.2 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	 0402 3mm2
14.	U1	Texas Instruments	LM25085MM/NOPB	Switcher	1	\$0.70	 MUA08A 24mm2









工作数值

#	名称	数值	类别	说明
1.	Cin IRMS	667.265 mA	Current	输入电容器均方根纹波电流
2.	Cout IRMS	138.291 mA	Current	输出电容器均方根纹波电流
3.	Iin Avg	277.09 mA	Current	平均输入电流
4.	L Ipp	479.054 mA	Current	峰值到峰值电感器纹波电流
5.	SW Ipk	2.24 A	Current	峰值开关电流
6.	BOM 数量	15	General	Total Design BOM count
7.	大小	534.0 mm2	General	BOM组件的总所占面积
8.	频率	387.32 kHz	General	开关频率
9.	IC Tolerance	25.0 mV	General	IC Feedback Tolerance
10.	Pout	7.6 W	General	总输出功率
11.	总 BOM	\$3.39	General	Total BOM Cost
12.	D1 Tj	101.974 degC	Op_Point	D1接点温度
13.	Vout OP	3.8 V	Op_Point	Operational Output Voltage
14.	占空比	12.759 %	Op_point	占空比
15.	效率	78.367 %	Op_point	稳态效率
16.	IC Tj	44.445 degC	Op_point	电路接点温度
17.	ICThetaJA	46.0 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	39.913 degC	Op_point	M1 MOSFET 接点温度
20.	VIN_OP	35.0 V	Op_point	Vin操作点
21.	Vout p-p	167.734 mV	Op_point	峰值到峰值输出纹波电压
22.	Cin Pd	667.864 μW	Power	输入电容器功率耗散
23.	Cout Pd	6.694 mW	Power	输出电容器功率耗散
24.	二极管 Pd	1.309 W	Power	二极管功率耗散
25.	IC Pd	314.012 mW	Power	电路功率耗散
26.	L Pd	235.0 mW	Power	电感器功率耗散
27.	M1 PdCond	63.499 mW	Power	M1 MOSFET 传导损耗
28.	M1 PdSw	69.5 mW	Power	M1 MOSFET 开关损耗
29.	整体 Pd	2.098 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	35.0 V	最高输入电压
4.	Vin 最小	4.5 V	最低输入电压
5.	输出电压:	3.8 V	输出电压
6.	Vout1	3.8 Volt	Output Voltage #1
7.	base_pn	LM25085	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
10.	UserFsw	387.32 kHz	客户选用频率

设计协助

1. For a Constant On Time device to be stable, we need to provide a ripple at the feedback comparator. There are various methods to implement the ripple. Depending on the circuit complexity vs. the allowable ripple, we have three options to choose from. The simplest option, 'Low Complexity', would require only a high ESR cap at the output. This means that the BOM count will be small, but the output voltage ripple will be quite large. The 'optimal solution' would require a feed-forward cap in parallel with the upper feedback resistor to AC couple the ripple to the feedback node. This increases the BOM count slightly, but now we have more control over the output voltage ripple. If the output voltage requirement is very tight, then the best option is to go for the 'Low Output Ripple' solution. In this option we can go with very low ESR output caps and have very good control over the output voltage ripple

2. LM25085 Product Folder : <http://www.ti.com/product/lm25085> : contains the data sheet and other resources.

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