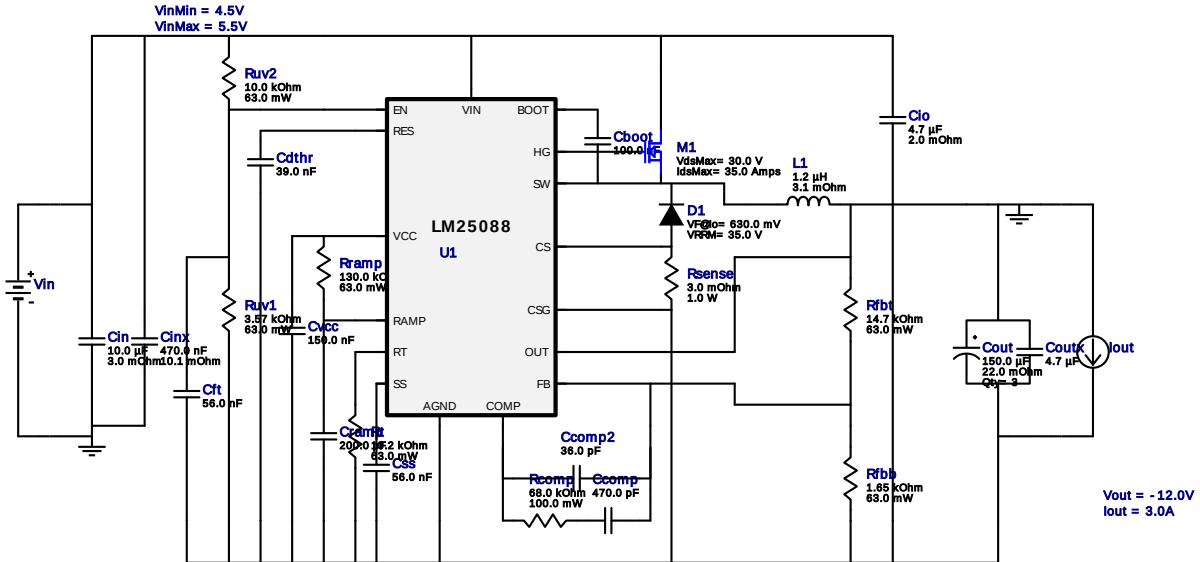
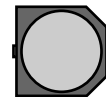




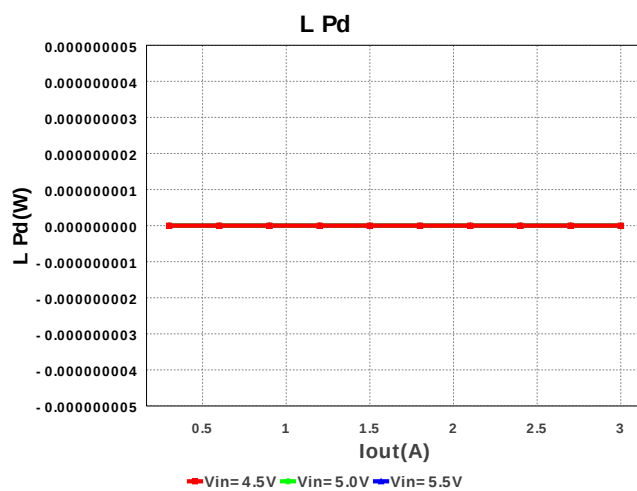
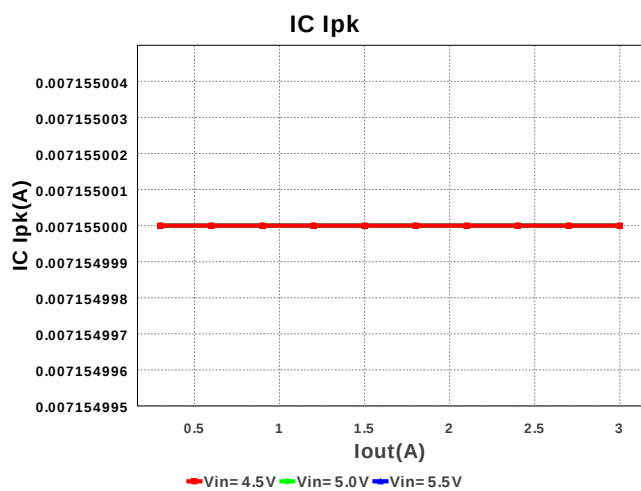
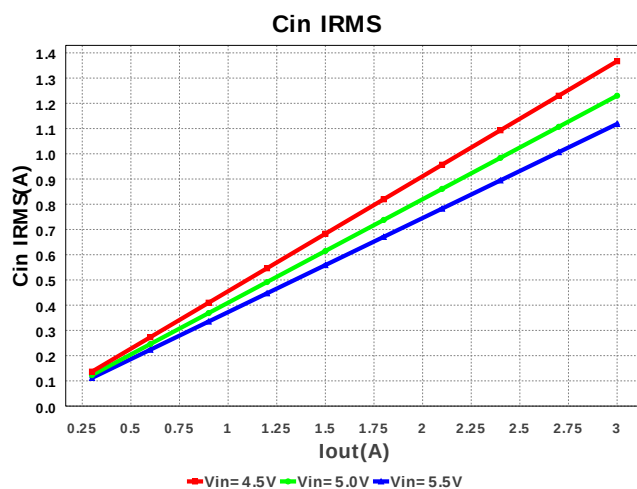
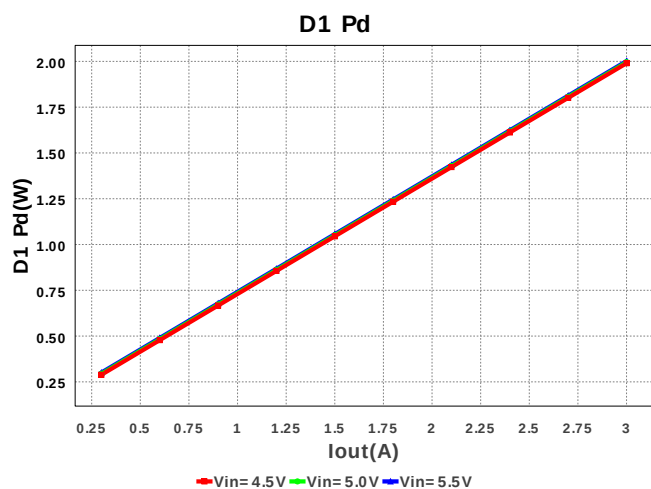
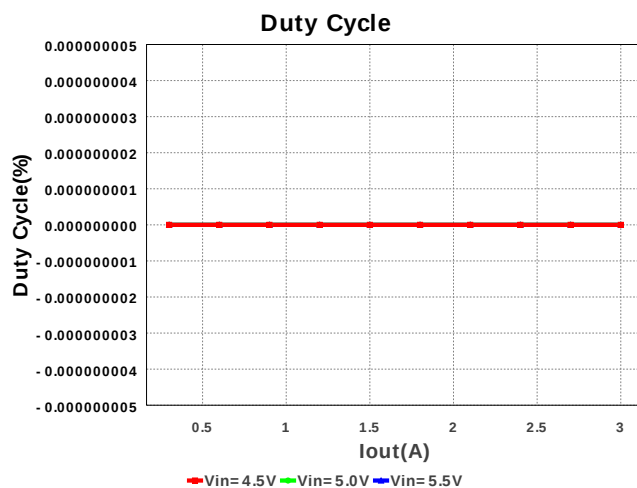
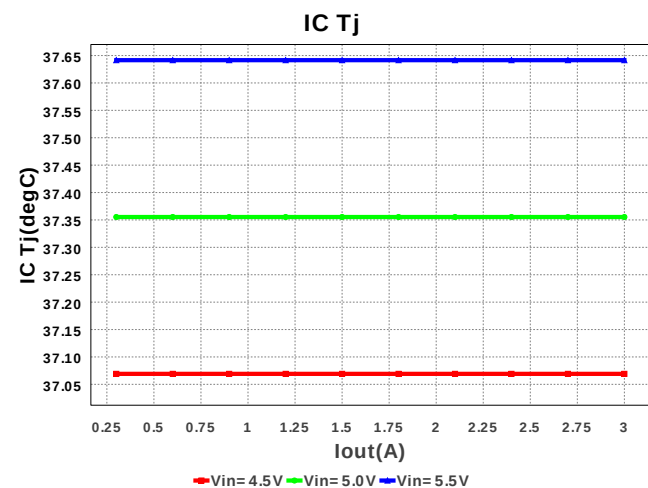
电气材料清单

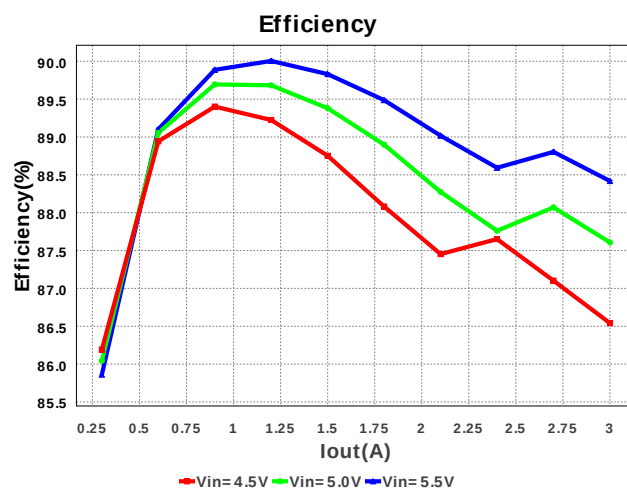
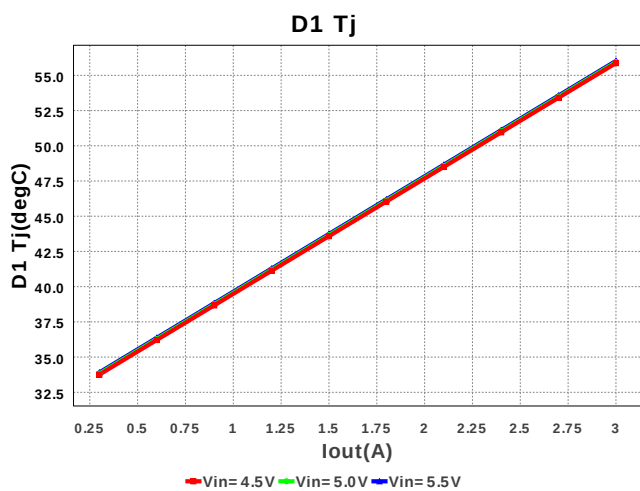
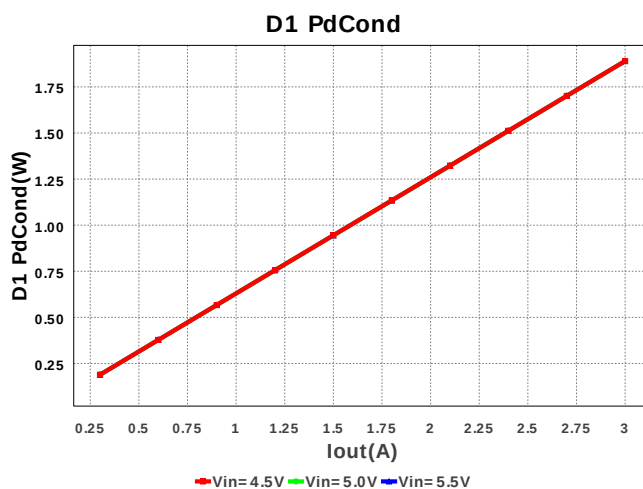
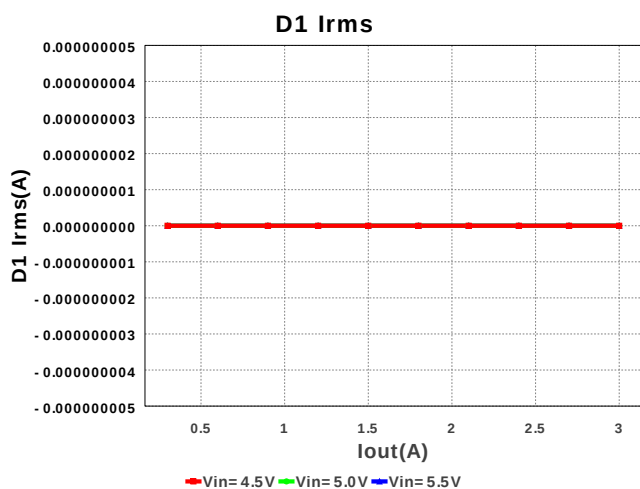
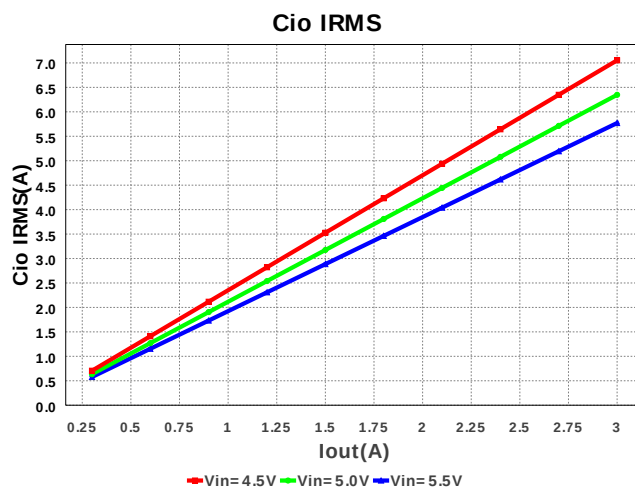
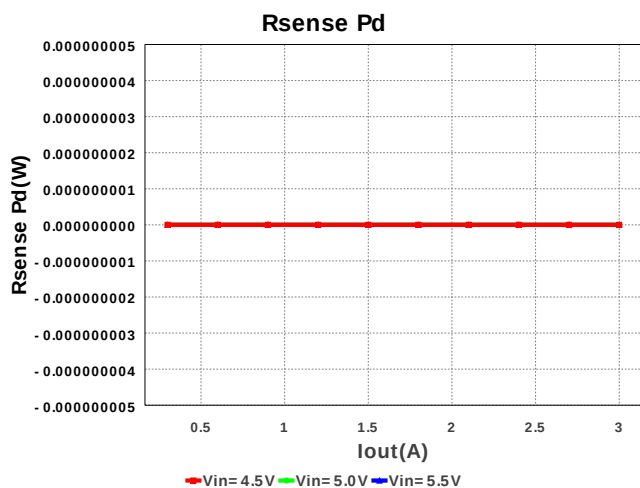
#	名称	制造商	零件编号	属性	Qty	Price	大小
1.	Cboot	Kemet	C0603C104Z4VACTU Series= Y5V	Cap= 100.0 nF VDC= 16.0 V IRMS= 0.0 A	1	\$0.01	0603 5mm2
2.	Ccomp	Yageo America	CC0805KRX7R9BB471 Series= X7R	Cap= 470.0 pF VDC= 50.0 V IRMS= 0.0 A	1	\$0.01	0805 7mm2
3.	Ccomp2	MuRata	GRM1885C1H360JA01D Series= C0G/NP0	Cap= 36.0 pF VDC= 50.0 V IRMS= 0.0 A	1	\$0.01	0603 5mm2
4.	Cdthr	MuRata	GRM155R71A393KA01D Series= X7R	Cap= 39.0 nF VDC= 10.0 V IRMS= 0.0 A	1	\$0.01	0402 3mm2
5.	Cft	MuRata	GRM155R61A563KA01D Series= X5R	Cap= 56.0 nF VDC= 10.0 V IRMS= 0.0 A	1	\$0.01	0402 3mm2
6.	Cin	Kemet	C0805C106K8PACTU Series= X5R	Cap= 10.0 μF ESR= 3.0 mOhm VDC= 10.0 V IRMS= 11.43 A	1	\$0.05	0805 7mm2
7.	Cinx	TDK	C1608X5R1A474K Series= X5R	Cap= 470.0 nF ESR= 10.1 mOhm VDC= 10.0 V IRMS= 0.0 A	1	\$0.01	0603 5mm2
8.	Cio	MuRata	GRM21BR61E475MA12L Series= X5R	Cap= 4.7 μF ESR= 2.0 mOhm VDC= 25.0 V IRMS= 7.29 A	1	\$0.06	0805 7mm2
9.	Cout	Nippon Chemi-Con	APXE160ARA151MH80G Series= PXE	Cap= 150.0 μF ESR= 22.0 mOhm VDC= 16.0 V IRMS= 3.15 A	3	\$0.68	CAPSMT_62_H80 106mm2

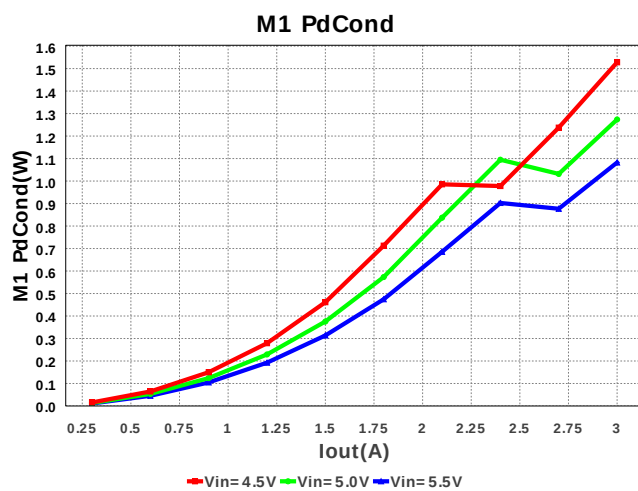
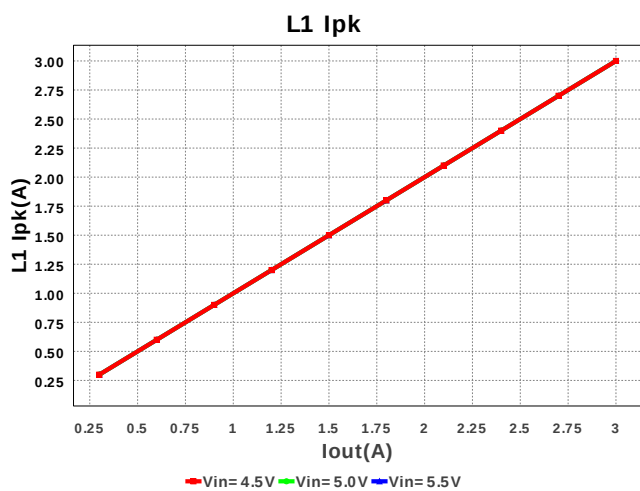
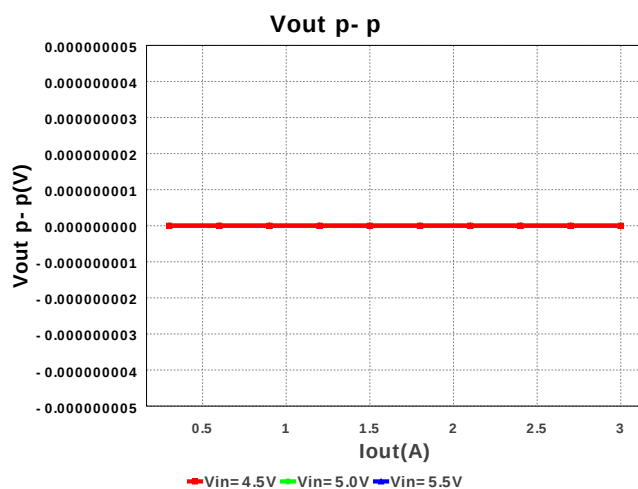
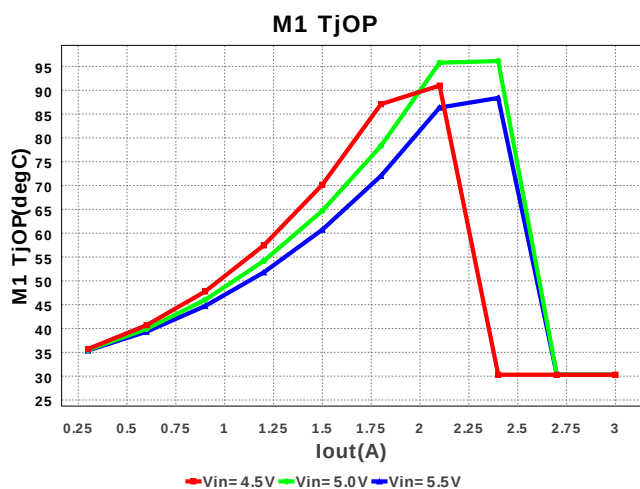
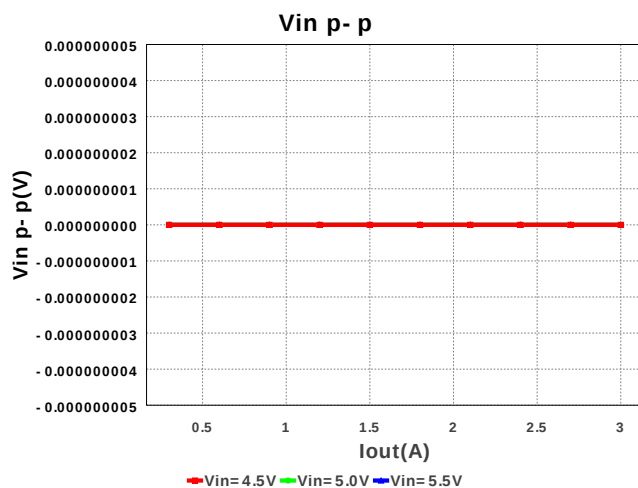
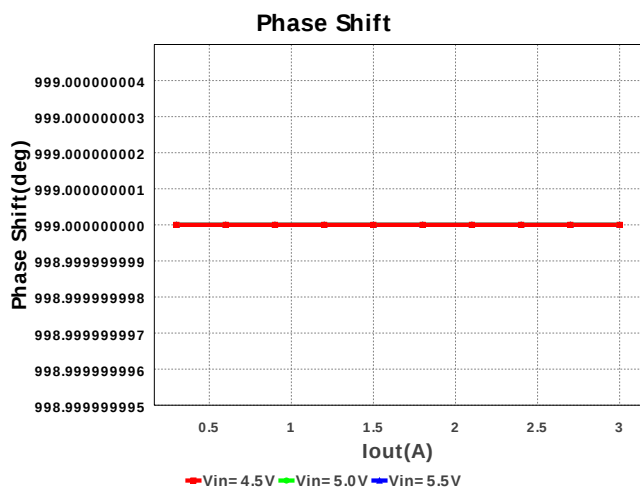


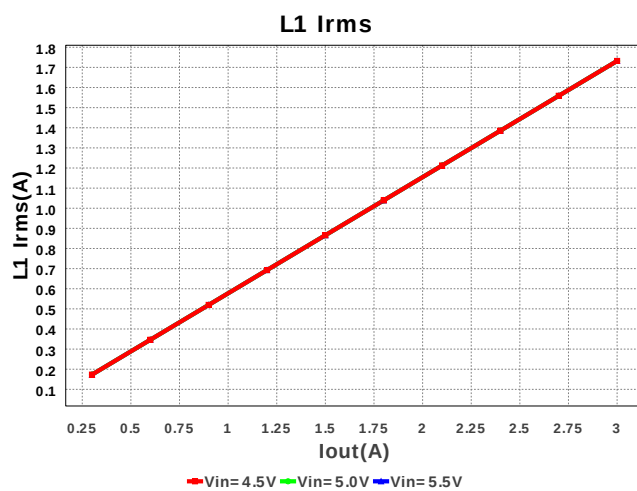
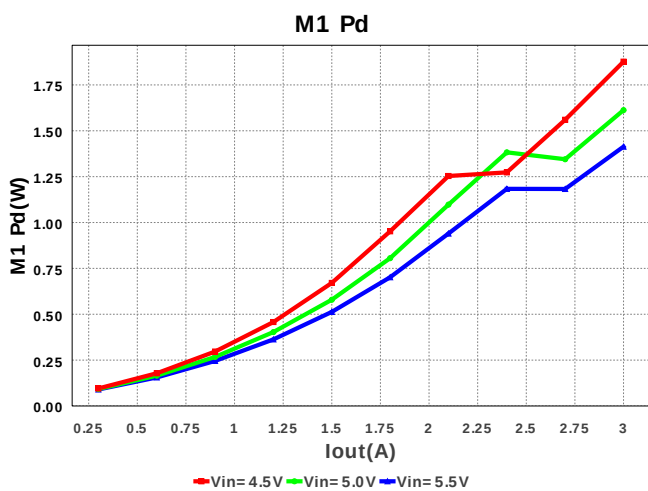
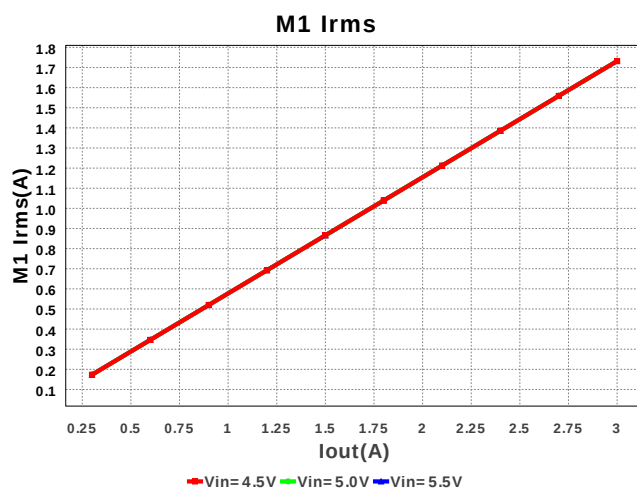
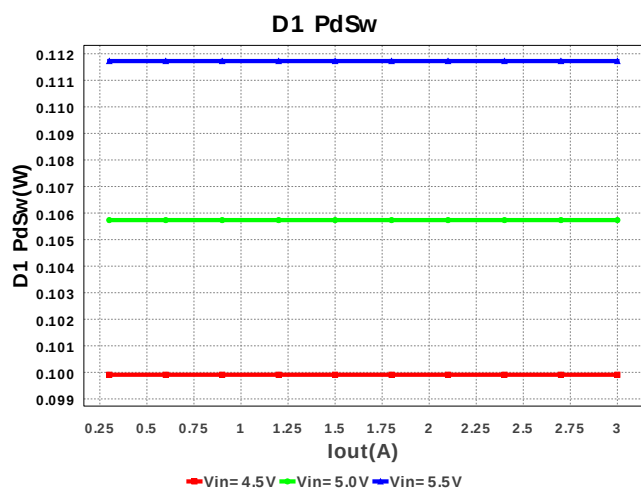
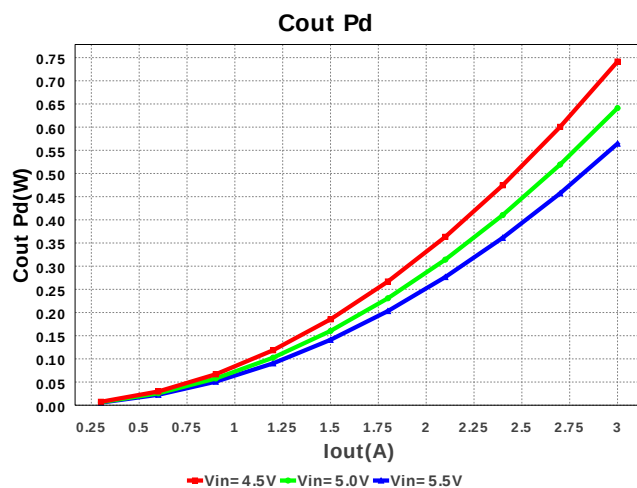
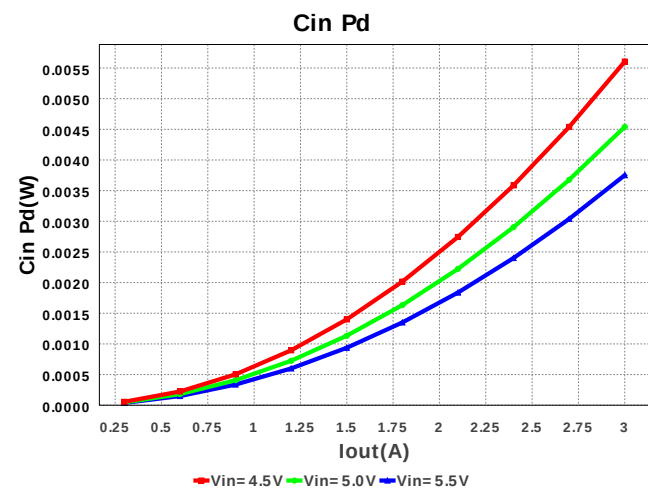
CAPSMT_62_H80 106mm2

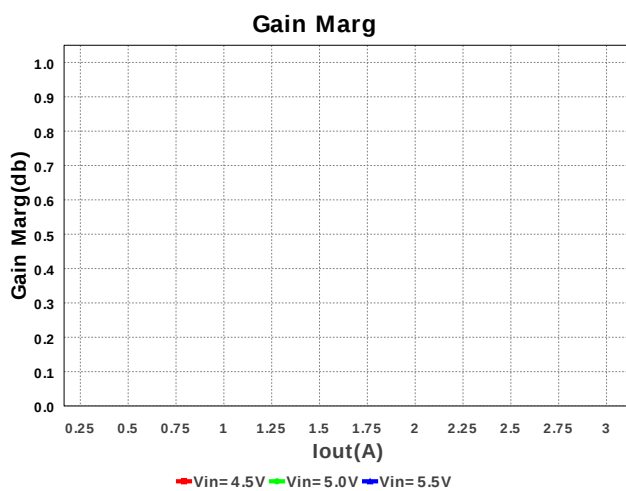
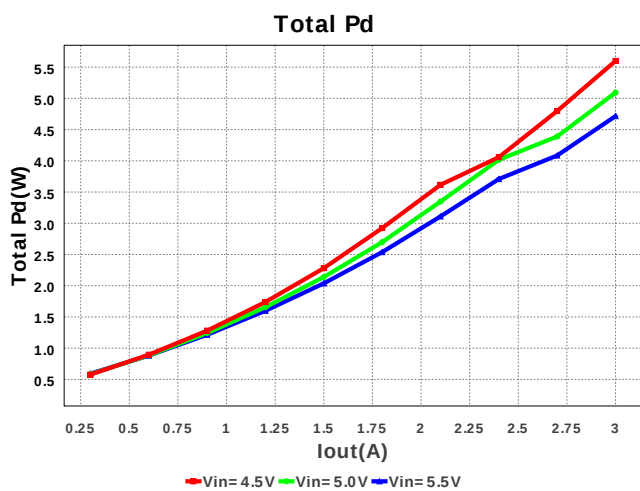
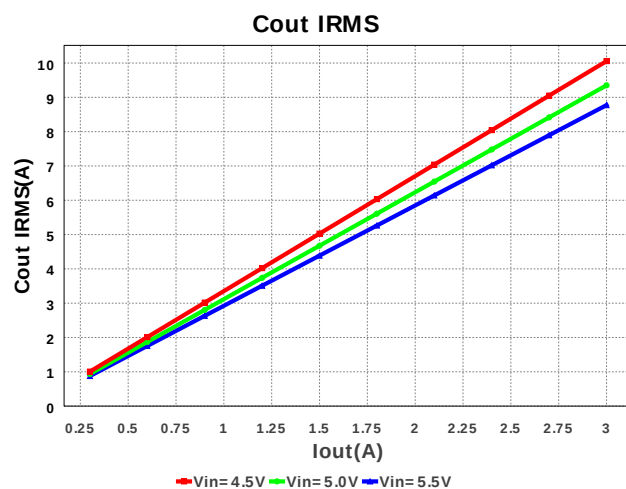
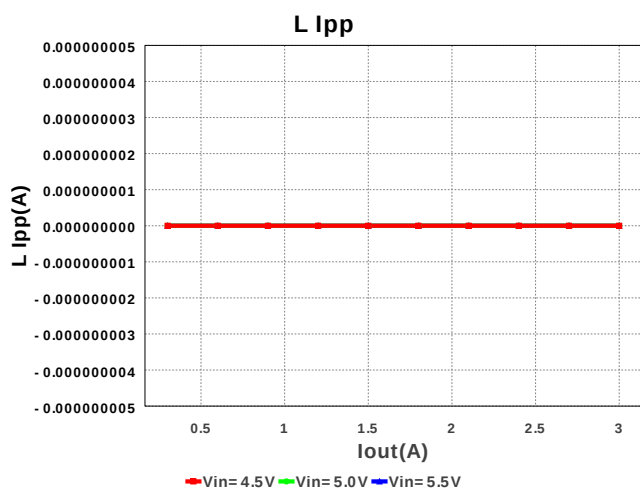
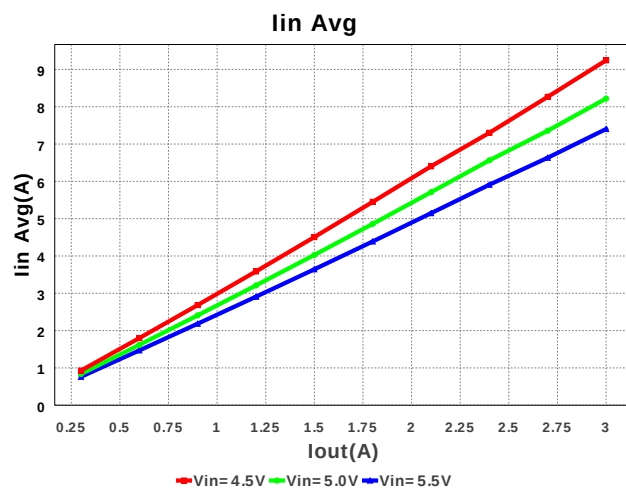
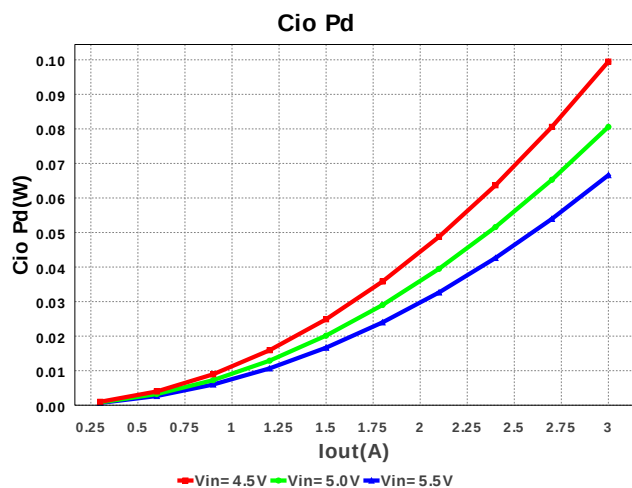
#	名称	制造商	零件编号	属性	Qty	Price	大小
10.	Coutx	MuRata	GRM21BC81E475KA12L Series= 379	Cap= 4.7 μ F VDC= 25.0 V IRMS= 0.0 A	1	\$0.04	 0805 7mm2
11.	Cramp	MuRata	GRM1555C1H201JA01D Series= C0G/NP0	Cap= 200.0 pF VDC= 50.0 V IRMS= 0.0 A	1	\$0.01	 0402 3mm2
12.	Css	MuRata	GRM155R61A563KA01D Series= X5R	Cap= 56.0 nF VDC= 10.0 V IRMS= 0.0 A	1	\$0.01	 0402 3mm2
13.	Cvcc	MuRata	GRM155R61A154KE19D Series= X5R	Cap= 150.0 nF VDC= 10.0 V IRMS= 0.0 A	1	\$0.01	 0402 3mm2
14.	D1	Vishay-Semiconductor	MBRB1635PBF	VF@Io= 630.0 mV VRRM= 35.0 V	1	\$1.81	 DDPAK 210mm2
15.	L1	Coilcraft	XAL7070-122MEB	L= 1.2 μ H DCR= 3.1 mOhm	1	\$0.98	 XAL7070 87mm2
16.	M1	Infineon Technologies	BSZ130N03MS G	VdsMax= 30.0 V IdsMax= 35.0 Amps	1	\$0.26	 PG-TSDSON-8 19mm2
17.	Rcomp	Susumu Co Ltd	RR1220P-683-D Series= 264	Res= 68.0 kOhm Power= 100.0 mW Tolerance= 0.5%	1	\$0.01	 0805 7mm2
18.	Rfbb	Vishay-Dale	CRCW04021K65FKED Series= CRCW..e3	Res= 1.65 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	 0402 3mm2
19.	Rfbt	Vishay-Dale	CRCW040214K7FKED Series= CRCW..e3	Res= 14.7 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	 0402 3mm2
20.	Rramp	Vishay-Dale	CRCW0402130KFKED Series= CRCW..e3	Res= 130.0 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	 0402 3mm2
21.	Rsense	Stackpole Electronics Inc	CSNL1206FT3L00 Series= 478	Res= 3.0 mOhm Power= 1.0 W Tolerance= 1.0%	1	\$0.19	 1206 11mm2
22.	Rt	Vishay-Dale	CRCW040210K2FKED Series= CRCW..e3	Res= 10.2 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	 0402 3mm2
23.	Ruv1	Vishay-Dale	CRCW04023K57FKED Series= CRCW..e3	Res= 3.57 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	 0402 3mm2
24.	Ruv2	Vishay-Dale	CRCW040210K0FKED Series= CRCW..e3	Res= 10.0 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	 0402 3mm2
25.	U1	Texas Instruments	LM25088MH-1/NOPB	Switcher	1	\$1.25	 MXA16A 59mm2

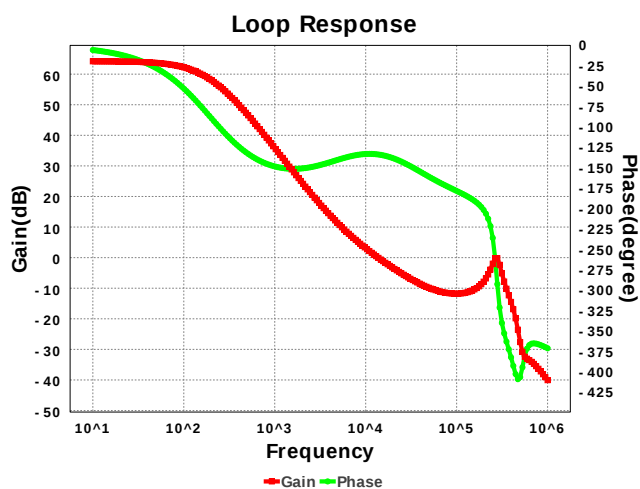
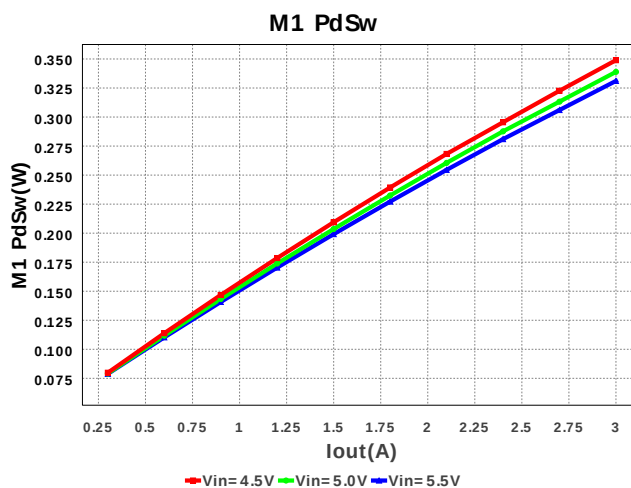
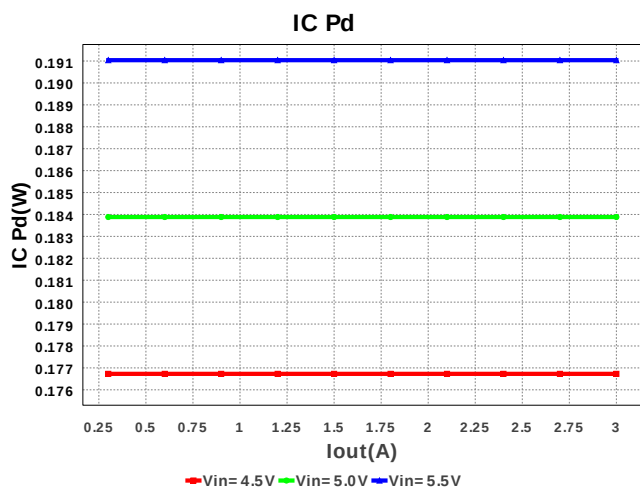












工作数值

#	名称	数值	类别	说明
1.	Cin IRMS	6.797 A	Current	输入电容器均方根纹波电流
2.	Cio IRMS	3.099 A	Current	Input to output capacitor RMS ripple current
3.	Cout IRMS	2.505 A	Current	输出电容器均方根纹波电流
4.	D1 Irms	7.331 A	Current	D1 Irms
5.	IC Ipk	7.155 mA	Current	电路内的峰值开关电流
6.	Iin Avg	9.404 A	Current	平均输入电流
7.	L Ipp	4.736 A	Current	峰值到峰值输出电感器纹波电流
8.	L1 Ipk	14.613 A	Current	电感器峰值电流
9.	L1 Irms	8.437 A	Current	电感器纹波电流
10.	M1 Irms	4.176 A	Current	M1 MOSFET Irms
11.	BOM 数量	27	General	Total Design BOM count
12.	大小	849.0 mm2	General	BOM组件的总所占面积
13.	频率	550.0 kHz	General	开关频率
14.	IC Tolerance	18.0 mV	General	IC Feedback Tolerance
15.	总 BOM	\$6.84	General	Total BOM Cost
16.	D1 Tj	55.869 degC	Op_Point	D1接点温度
17.	Vin p-p	589.249 mV	Op_Point	峰值到峰值输入电压
18.	交叉频率	13.049 kHz	Op_point	波特图交叉频率
19.	占空比	75.5 %	Op_point	占空比
20.	效率	85.069 %	Op_point	稳态效率
21.	增益裕度	11.71 db	Op_point	波特图增益裕度
22.	IC Tj	37.642 degC	Op_point	电路接点温度
23.	IOUT_OP	3.0 A	Op_point	Iout 操作点
24.	M1 TjOP	30.3 degC	Op_point	M1 MOSFET 接点温度
25.	相位裕度	46.658 deg	Op_point	波特图相位裕度
26.	相移	28.783 deg	Op_point	波特图相移
27.	VIN_OP	4.5 V	Op_point	Vin操作点
28.	Vout p-p	64.553 mV	Op_point	峰值到峰值输出纹波电压
29.	Cin Pd	138.603 mW	Power	输入电容器功率耗散
30.	Cio Pd	19.211 mW	Power	Input to output capacitor power dissipation
31.	Cout Pd	46.006 mW	Power	输出电容器功率耗散
32.	D1 Pd	1.99 W	Power	二极管功率耗散

#	名称	数值	类别	说明
33.	D1 PdCond	1.89 W	Power	二极管传导损耗
34.	D1 PdSw	99.911 mW	Power	二极管开关损耗
35.	IC Pd	191.038 mW	Power	电路功率耗散
36.	L Pd	814.772 mW	Power	电感器功率耗散
37.	M1 Pd	1.877 W	Power	M1 MOSFET 总功率耗散
38.	M1 PdCond	1.528 W	Power	M1 MOSFET 传导损耗
39.	M1 PdSw	348.967 mW	Power	M1 MOSFET 开关损耗
40.	Rsense Pd	106.03 mW	Power	LED 电流 Rsns 功率耗散
41.	整体 Pd	6.319 W	Power	总功率耗散

设计输入

#	名称	数值	说明
1.	输出电流	3.0 A	最大输出电流
2.	Iout1	3.0 Amps	Output Current #1
3.	Vin 最大	5.5 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:	-12.0 V	输出电压
6.	Vout1	-12.0 Volt	Output Voltage #1
7.	base_pn	LM25088	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. LM25088 Product Folder : <http://www.ti.com/product/lm25088> : contains the data sheet and other resources.

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