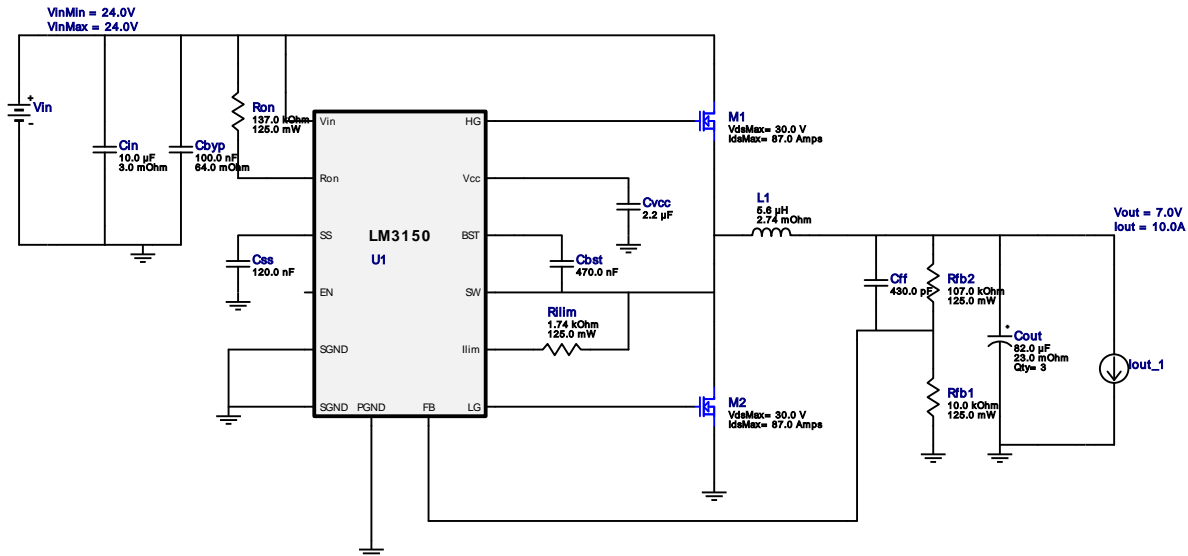


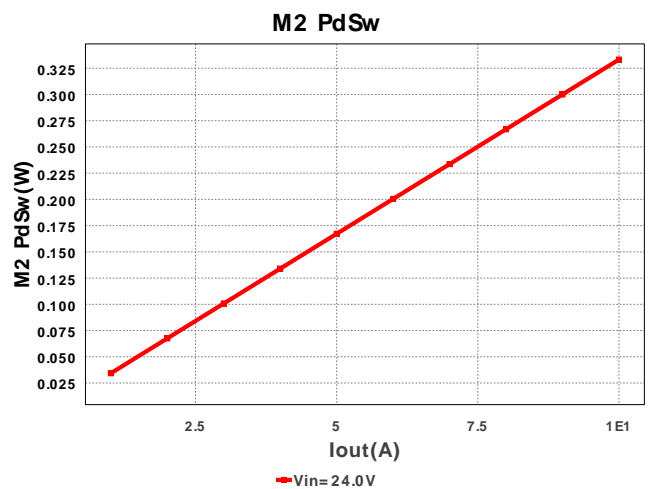
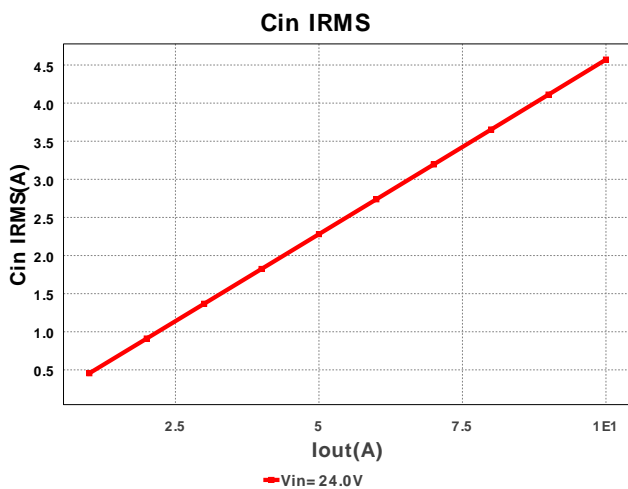
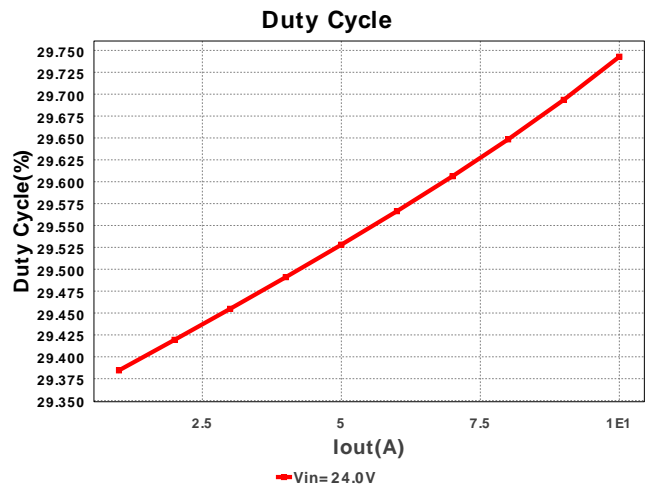
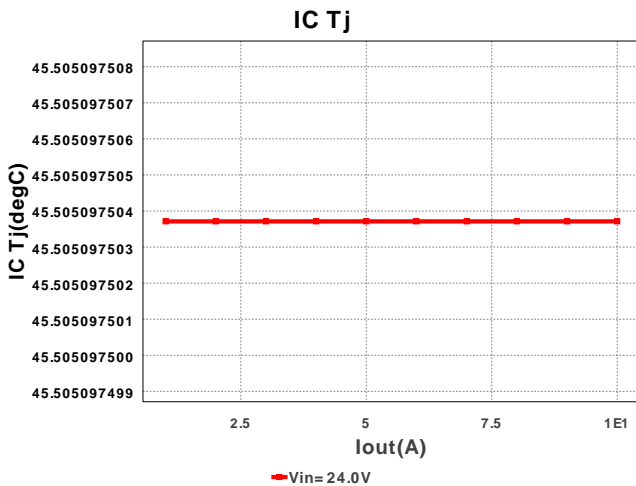


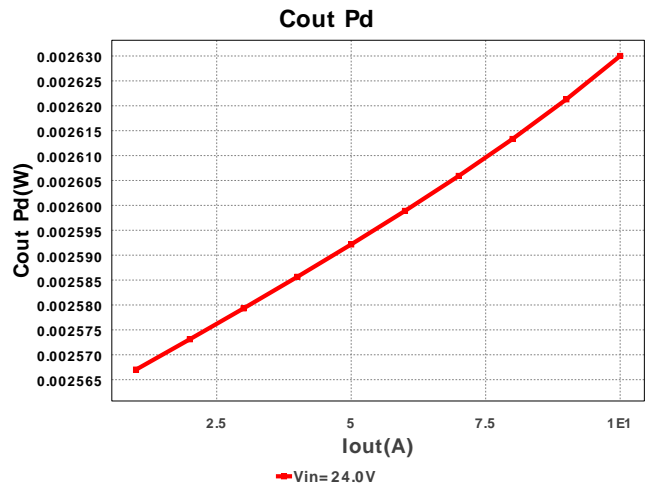
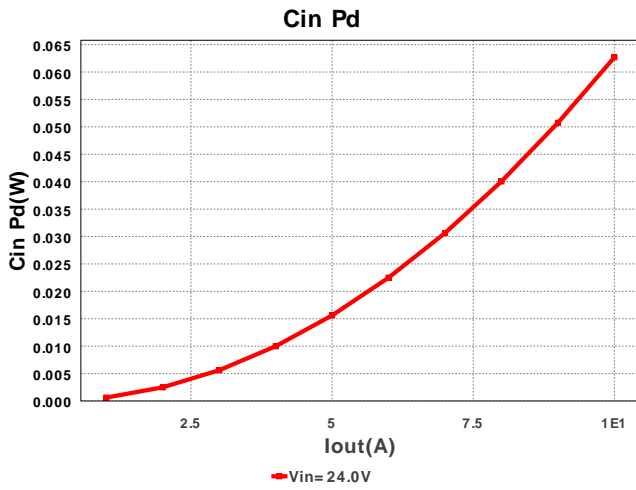
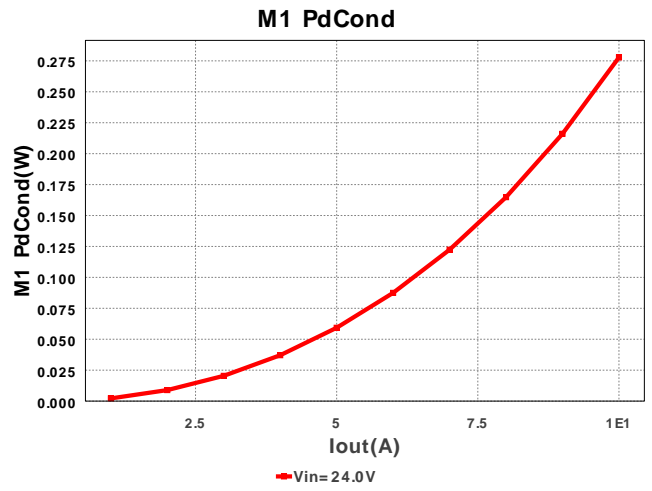
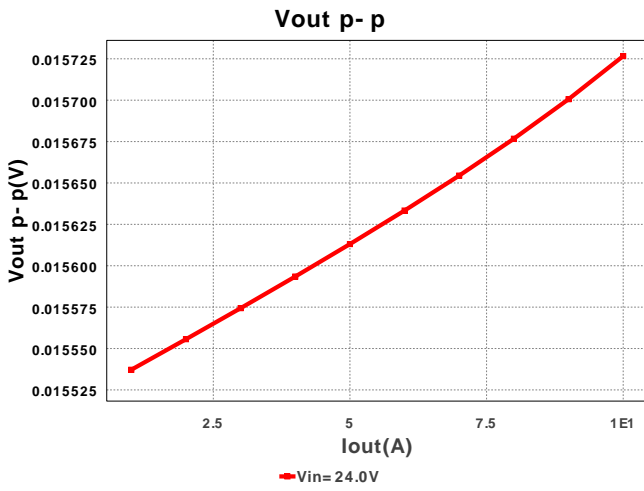
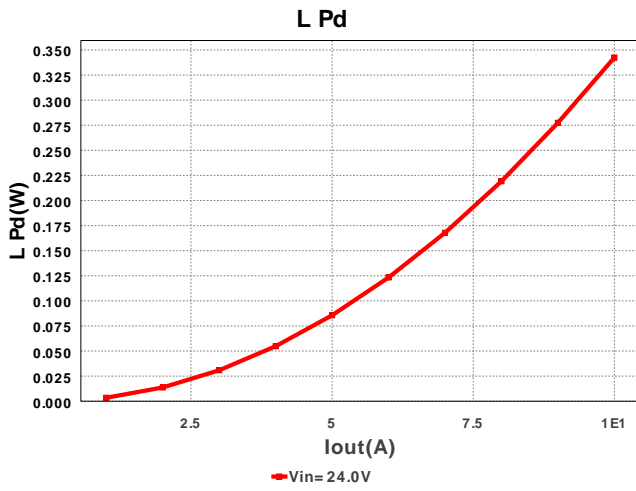
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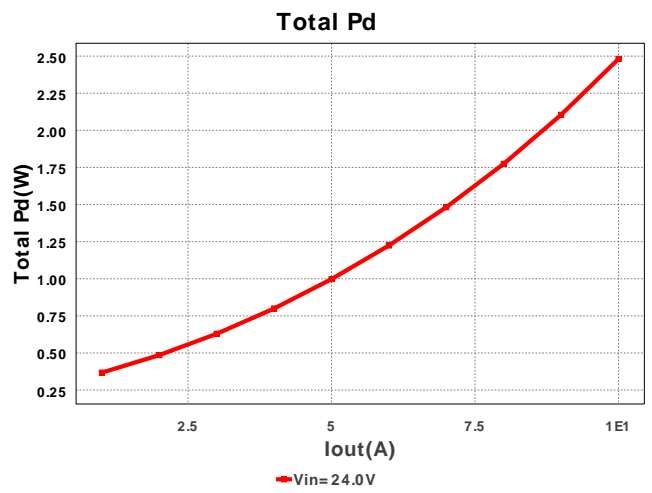
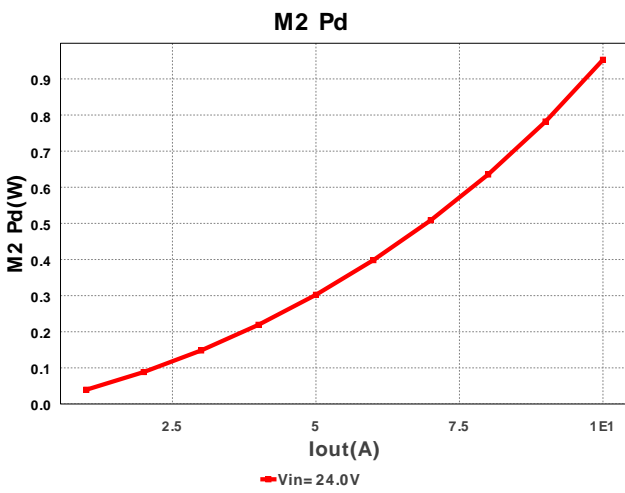
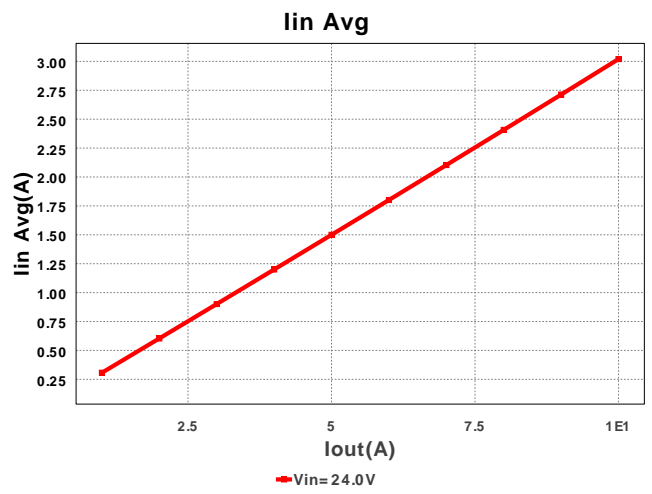
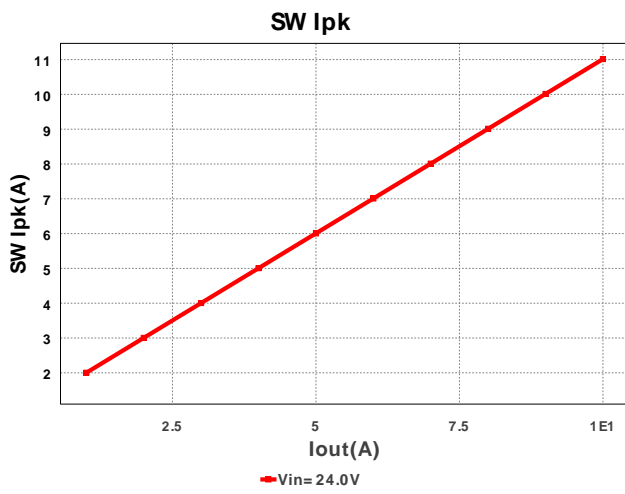
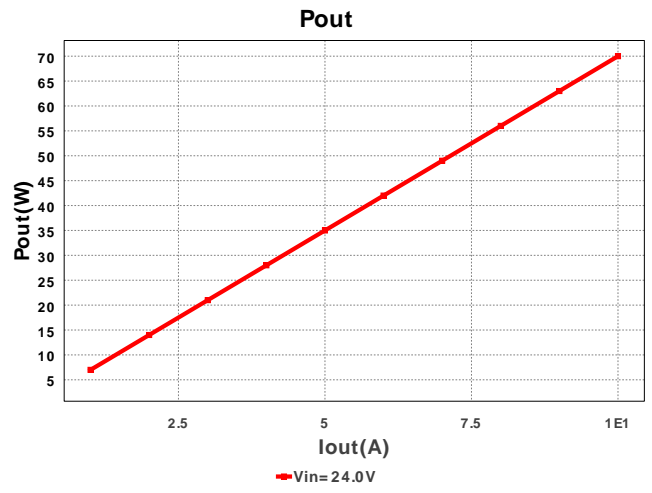
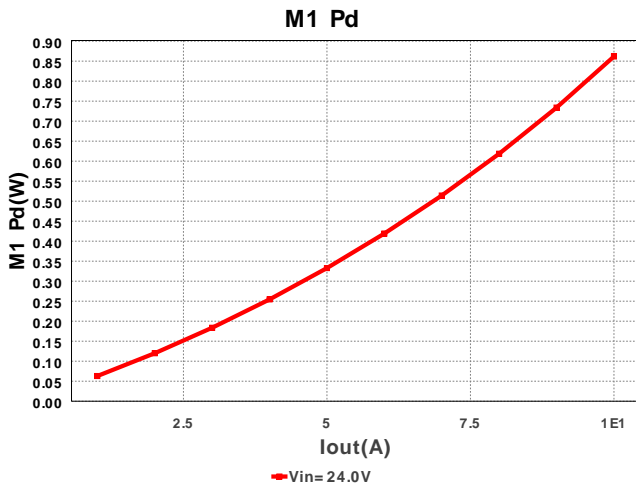
 Design : 1220038/46 LM3150MH/NOPB
 LM3150MH/NOPB 24.0V-24.0V to 7.0V @ 10.0A

Electrical BOM

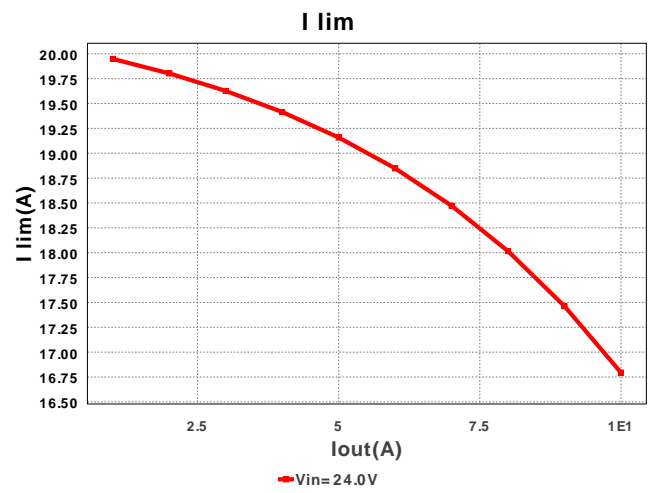
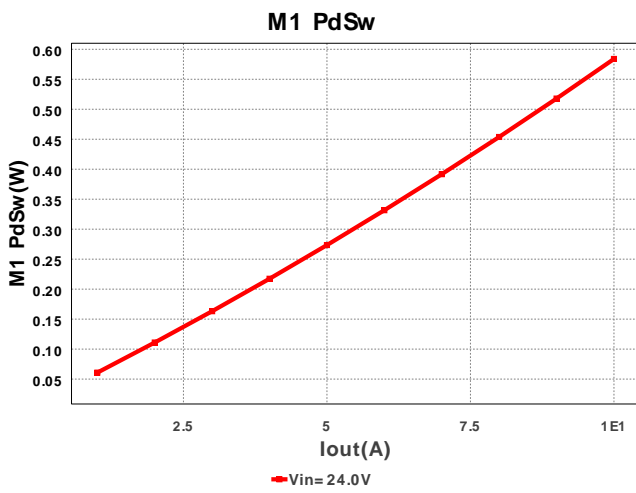
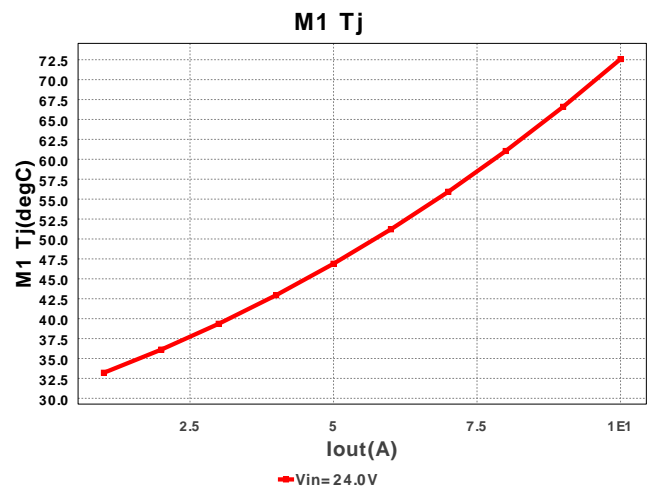
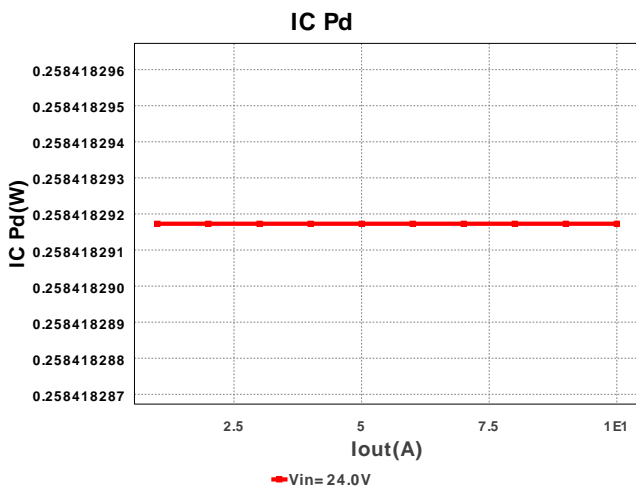
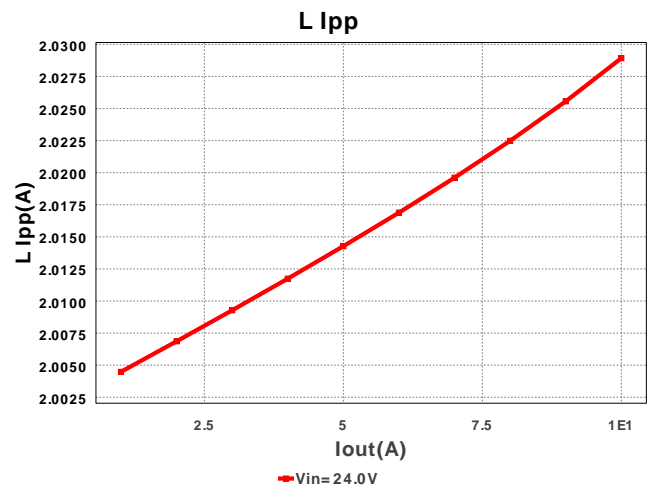
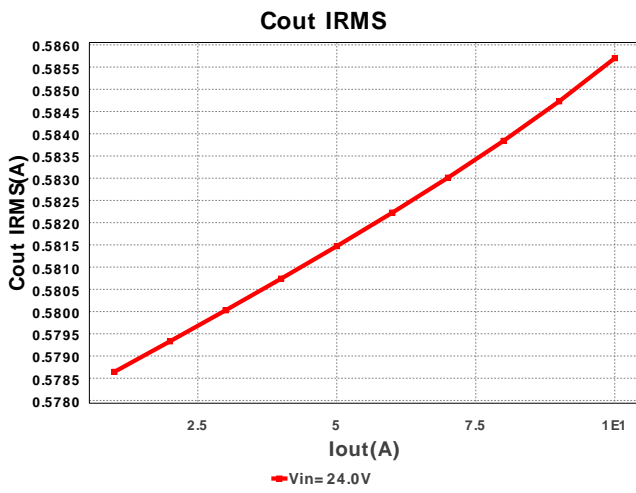
#	Name	Manufacturer	Part Number	Properties	Qty	Price	Footprint
1.	Cbst	Taiyo Yuden	EMK212B7474KD-T Series= X7R	Cap= 470.0 nF VDC= 16.0 V IRMS= 0.0 A	1	\$0.02	 0805 13mm2
2.	Cbyp	Kemet	C0805C104K5RACTU Series= X7R	Cap= 100.0 nF ESR= 64.0 mOhm VDC= 50.0 V IRMS= 1.64 A	1	\$0.01	 0805 13mm2
3.	Cff	MuRata	GRM2165C2A431JA01D Series= C0G/NP0	Cap= 430.0 pF VDC= 100.0 V IRMS= 0.0 A	1	\$0.03	 0805 13mm2
4.	Cin	TDK	C5750X7R1H106M Series= X7R	Cap= 10.0 µF ESR= 3.0 mOhm VDC= 50.0 V IRMS= 5.5 A	1	\$0.68	 2220 60mm2
5.	Cout	Nippon Chemi-Con	APXC100ARA820MF60G Series= PXC	Cap= 82.0 µF ESR= 23.0 mOhm VDC= 10.0 V IRMS= 2.4 A	3	\$0.43	 CAPSMT_62_F60 77mm2
6.	Css	MuRata	GRM21BR71E124KA01L Series= X7R	Cap= 120.0 nF VDC= 25.0 V IRMS= 0.0 A	1	\$0.04	 0805 13mm2
7.	Cvcc	Taiyo Yuden	EMK212B7225KG-T Series= X7R	Cap= 2.2 µF VDC= 16.0 V IRMS= 0.0 A	1	\$0.03	 0805 13mm2
8.	L1	Würth Elektronik eiSos	7443557560	L= 5.6 µH DCR= 2.74 mOhm	1	NA	 WE-HCB-18X8.9 410mm2

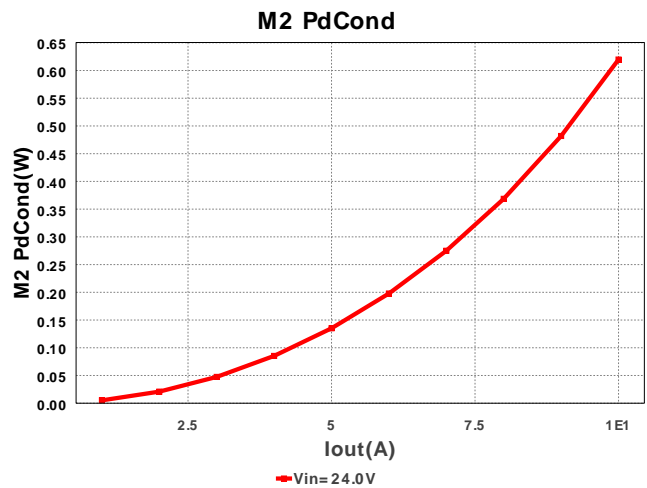
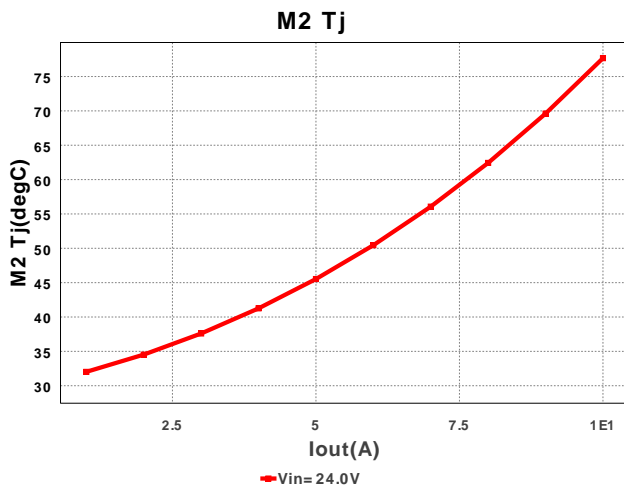
#	Name	Manufacturer	Part Number	Properties	Qty	Price	Footprint
9.	M1	Texas Instruments	CSD17302Q5A	VdsMax= 30.0 V IdsMax= 87.0 Amps	1	\$0.36	 TRANS_NexFET_Q5A 55mm2
10.	M2	Texas Instruments	CSD17302Q5A	VdsMax= 30.0 V IdsMax= 87.0 Amps	1	\$0.36	 TRANS_NexFET_Q5A 55mm2
11.	Rfb1	Vishay-Dale	CRCW080510K0FKEA Series= CRCW..e3	Res= 10.0 kOhm Power= 125.0 mW Tolerance= 1.0%	1	\$0.01	 0805 13mm2
12.	Rfb2	Vishay-Dale	CRCW0805107KFKEA Series= CRCW..e3	Res= 107.0 kOhm Power= 125.0 mW Tolerance= 1.0%	1	\$0.01	 0805 13mm2
13.	Rilim	Vishay-Dale	CRCW08051K74FKEA Series= CRCW..e3	Res= 1.74 kOhm Power= 125.0 mW Tolerance= 1.0%	1	\$0.01	 0805 13mm2
14.	Ron	Vishay-Dale	CRCW0805137KFKEA Series= CRCW..e3	Res= 137.0 kOhm Power= 125.0 mW Tolerance= 1.0%	1	\$0.01	 0805 13mm2
15.	U1	Texas Instruments	LM3150MH/NOPB	Switcher	1	\$1.55	 MXA14A 59mm2











Operating Values

#	Name	Value	Category	Description
1.	BOM Count	17		Total Design BOM count
2.	Total BOM	\$0.0		Total BOM Cost
3.	Cin IRMS	4.571 A	Current	Input capacitor RMS ripple current
4.	Cout IRMS	585.7 mA	Current	Output capacitor RMS ripple current
5.	I lim	16.794 A	Current	Current limit threshold
6.	Iin Avg	3.02 A	Current	Average input current
7.	L Ipp	2.029 A	Current	Peak-to-peak inductor ripple current
8.	SW Ipk	11.014 A	Current	Peak switch current
9.	FootPrint	989.0 mm2	General	Total Foot Print Area of BOM components
10.	Frequency	445.018 kHz	General	Switching frequency
11.	IC Tolerance	12.0 mV	General	IC Feedback Tolerance
12.	Pout	70.0 W	General	Total output power
13.	Duty Cycle	29.743 %	Op_point	Duty cycle
14.	Efficiency	96.577 %	Op_point	Steady state efficiency
15.	IC Tj	45.505 degC	Op_point	IC junction temperature
16.	IOUT_OP	10.0 A	Op_point	Iout operating point
17.	M1 Tj	72.58 degC	Op_point	M1 MOSFET junction temperature
18.	M2 Tj	77.671 degC	Op_point	M2 MOSFET junction temperature
19.	VIN_OP	24.0 V	Op_point	Vin operating point
20.	Vout p-p	15.727 mV	Op_point	Peak-to-peak output ripple voltage
21.	Cin Pd	62.689 mW	Power	Input capacitor power dissipation
22.	Cout Pd	2.63 mW	Power	Output capacitor power dissipation
23.	IC Pd	258.418 mW	Power	IC power dissipation
24.	L Pd	342.5 mW	Power	Inductor power dissipation
25.	M1 Pd	861.662 mW	Power	M1 MOSFET total power dissipation
26.	M1 PdCond	277.771 mW	Power	M1 MOSFET conduction losses
27.	M1 PdSw	583.891 mW	Power	M1 MOSFET switching losses
28.	M2 Pd	953.015 mW	Power	M2 MOSFET total power dissipation
29.	M2 PdCond	619.776 mW	Power	M2 MOSFET conduction losses
30.	M2 PdSw	333.239 mW	Power	M2 MOSFET switching losses
31.	Total Pd	2.481 W	Power	Total Power Dissipation

Design Inputs

#	Name	Value	Description
1.	Iout	10.0 A	Maximum Output Current
2.	Iout1	10.0 Amps	Output Current #1
3.	SoftStart	9.0 ms	Soft Start Time (ms)
4.	VinMax	24.0 V	Maximum input voltage
5.	VinMin	24.0 V	Minimum input voltage
6.	Vout	7.0 V	Output Voltage
7.	Vout1	7.0 Volt	Output Voltage #1
8.	base_pn	LM3150	Base Product Number
9.	source	DC	Input Source Type
10.	Ta	30.0 degC	Ambient temperature
11.	UserFsw	444.869 kHz	Customer Selected Frequency

Design Assistance

1. **LM3150 Product Folder** : <http://www.ti.com/product/lm3150> : contains the data sheet and other resources.

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