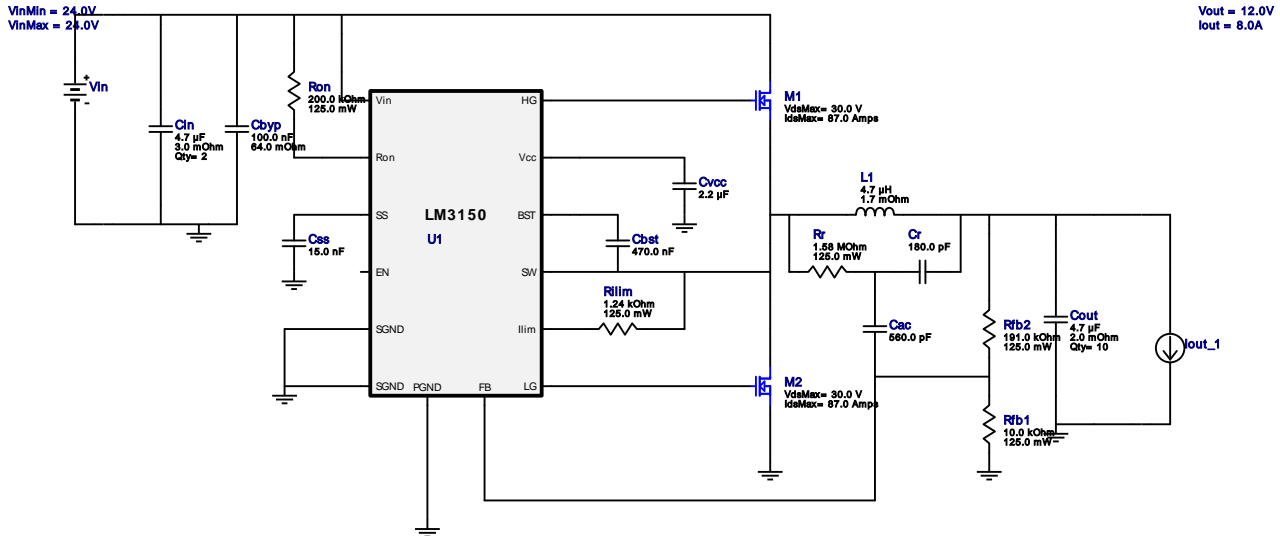
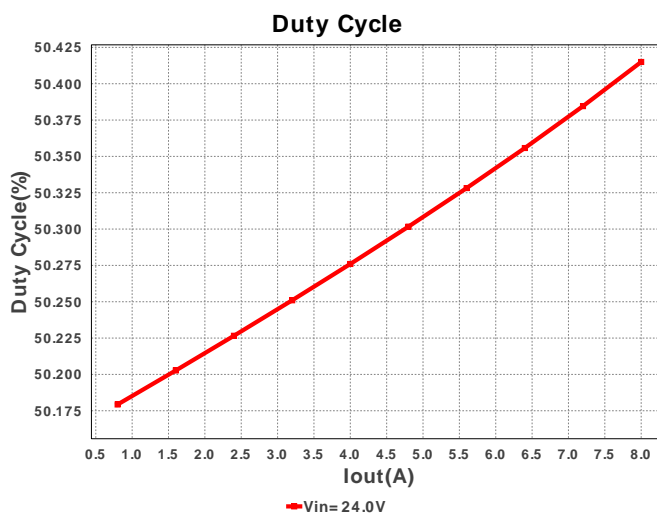
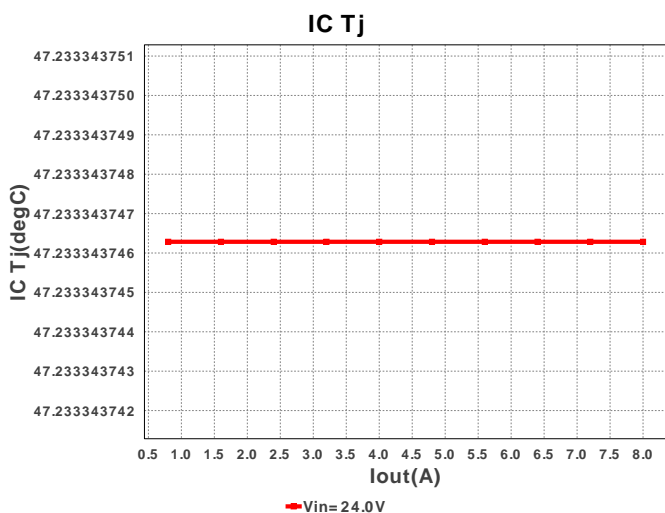


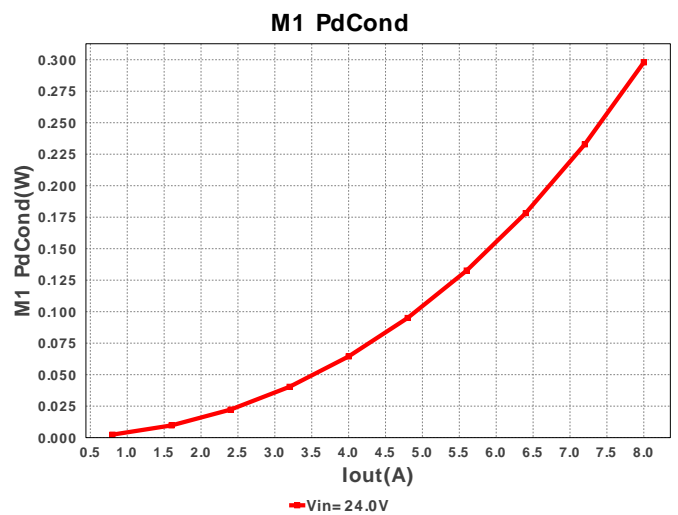
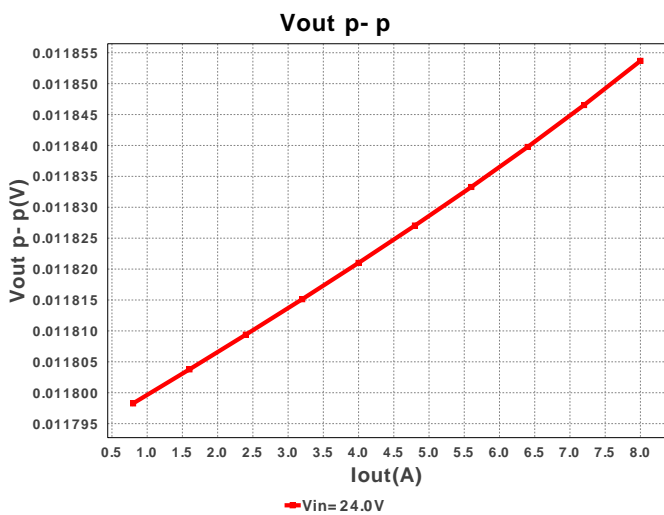
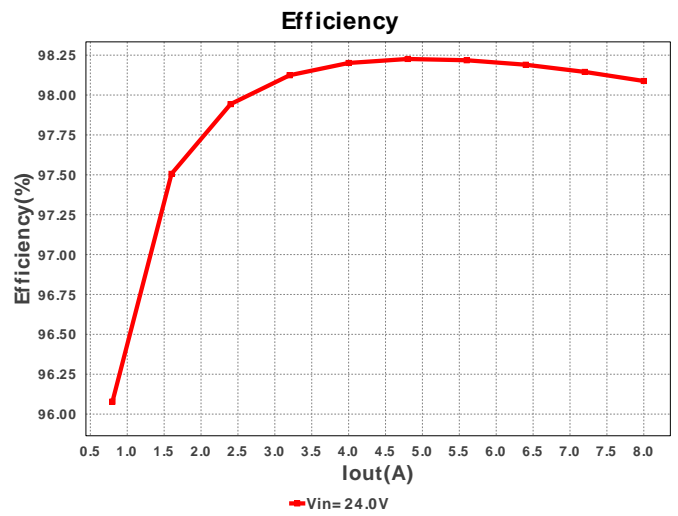
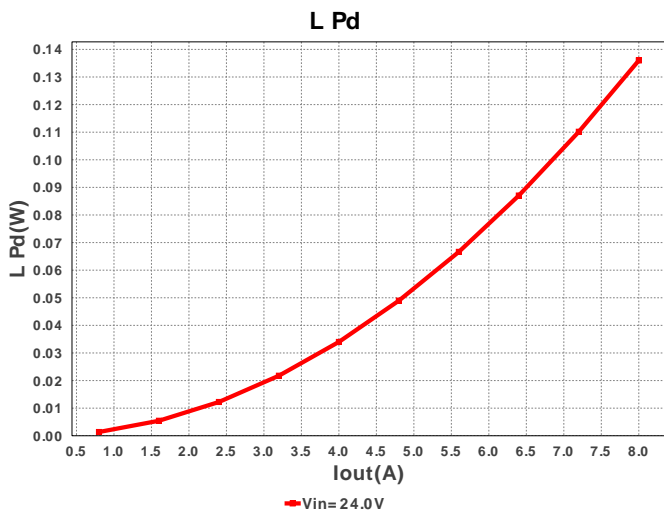
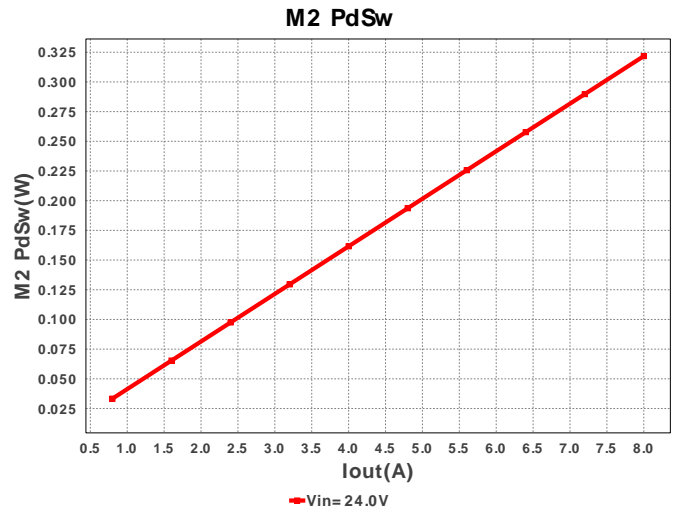
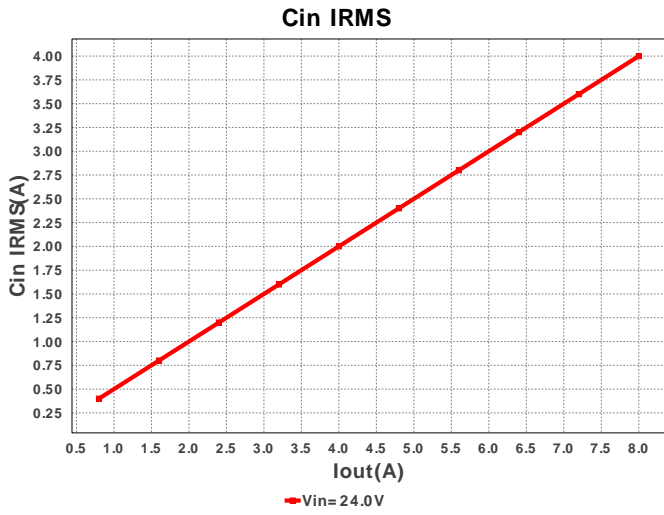
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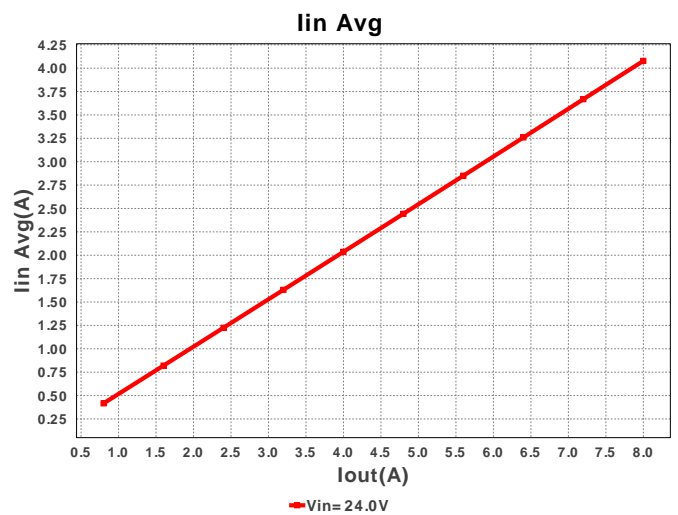
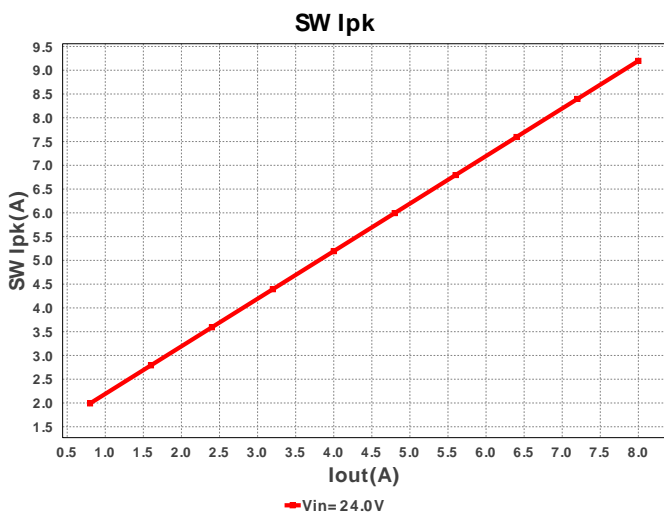
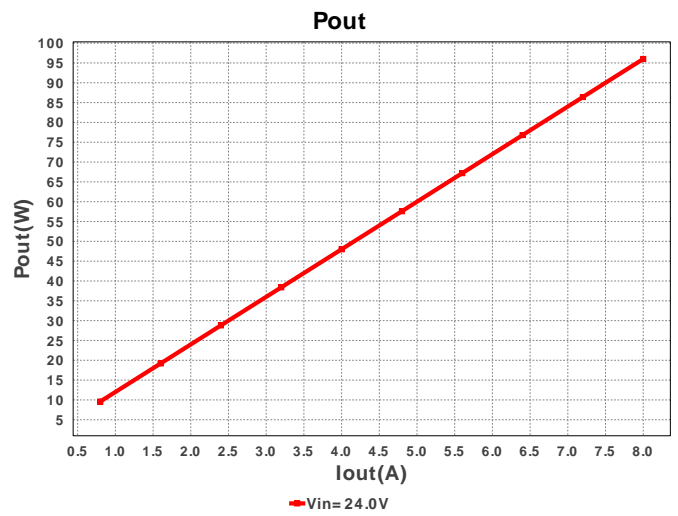
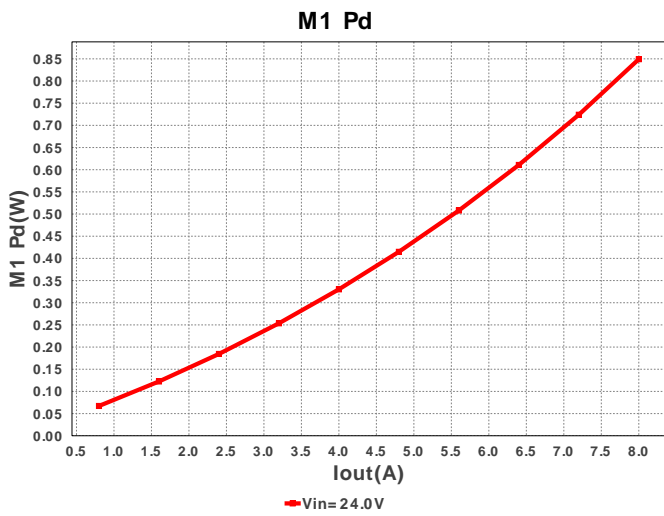
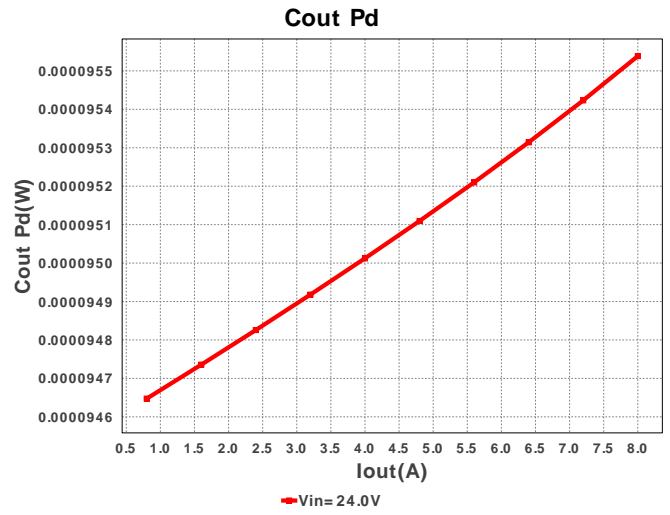
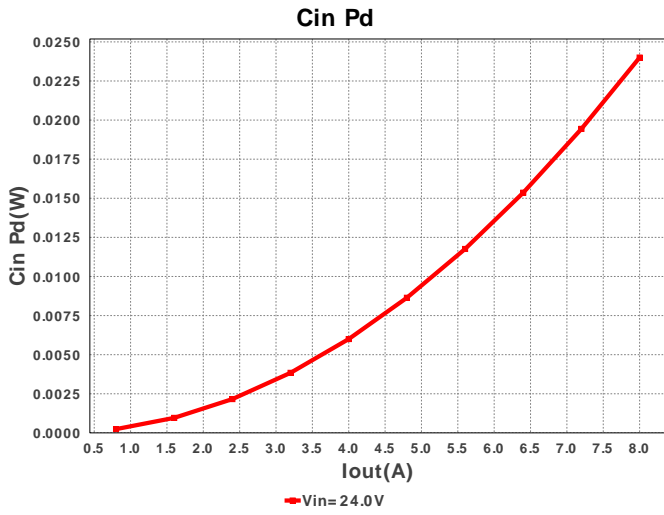
 Design : 3794074/6 LM3150MHX/NOPB
 LM3150MHX/NOPB 24.0V-24.0V to 12.0V @ 8.0A

Electrical BOM

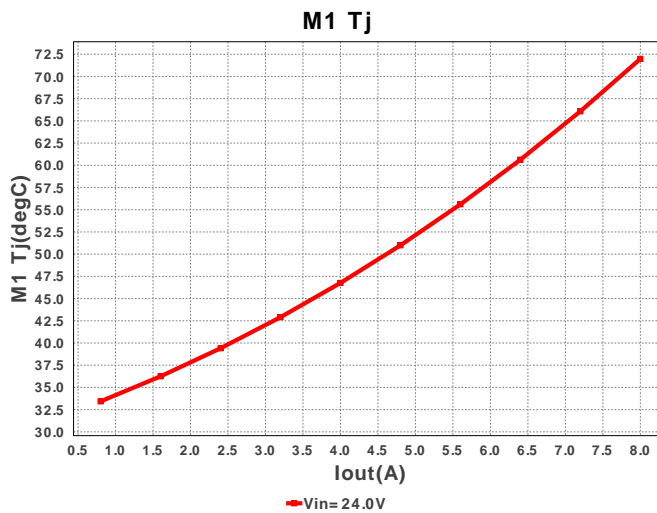
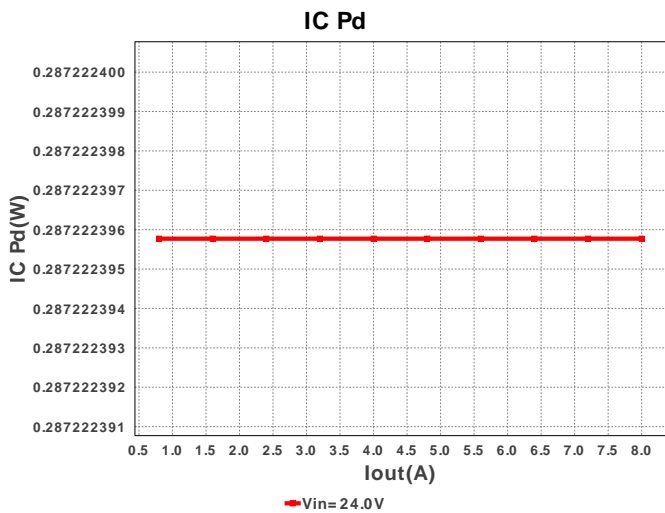
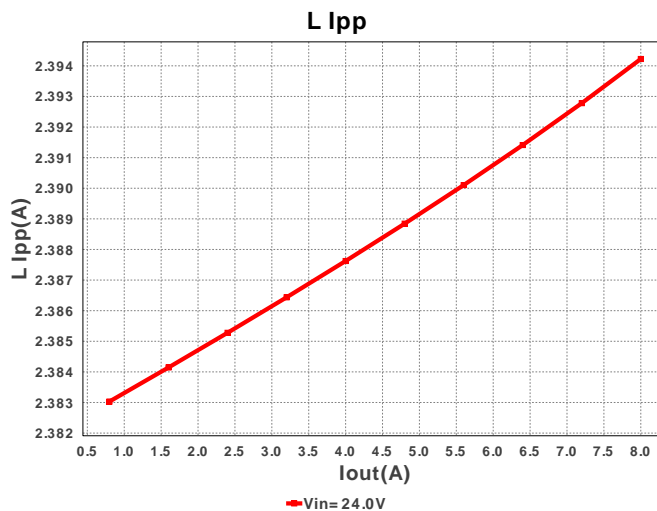
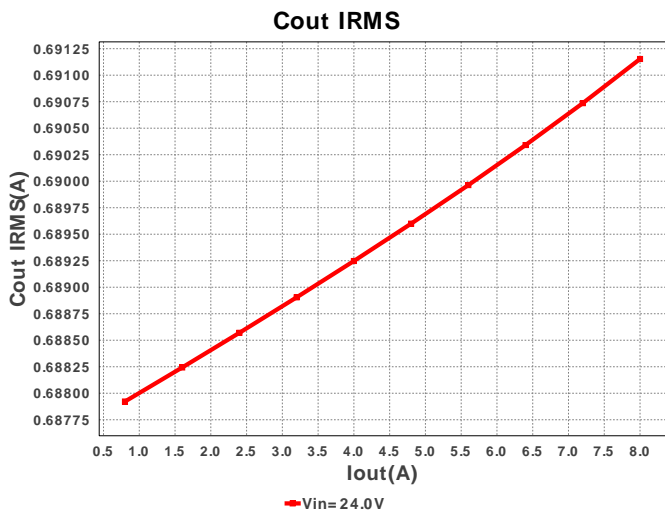
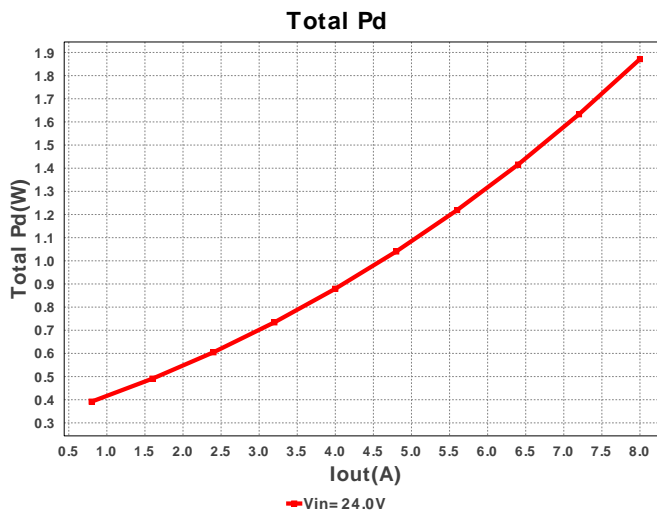
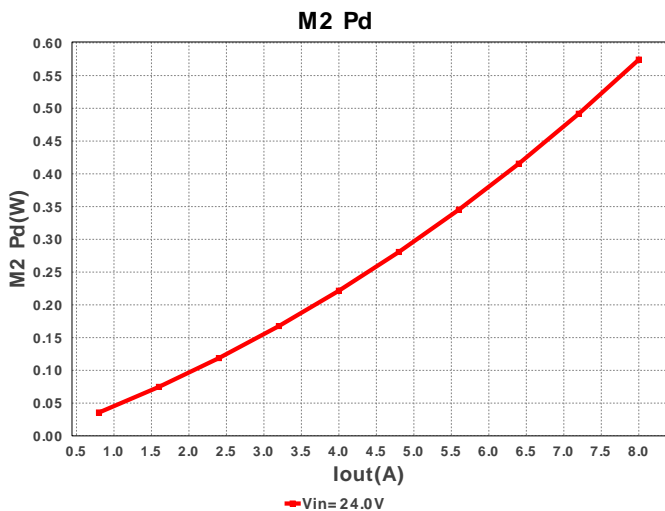
#	Name	Manufacturer	Part Number	Properties	Qty	Price	Footprint
1.	Cac	Yageo America	CC0805KRX7R9BB561 Series= X7R	Cap= 560.0 pF VDC= 50.0 V IRMS= 0.0 A	1	\$0.01	0805 7mm2
2.	Cbst	Taiyo Yuden	EMK212B7474KD-T Series= X7R	Cap= 470.0 nF VDC= 16.0 V IRMS= 0.0 A	1	\$0.02	0805 7mm2
3.	Cbyp	Kemet	C0805C104K5RACTU Series= X7R	Cap= 100.0 nF ESR= 64.0 mOhm VDC= 50.0 V IRMS= 1.64 A	1	\$0.01	0805 7mm2
4.	Cin	MuRata	GRM31CR71H475KA12L Series= X7R	Cap= 4.7 µF ESR= 3.0 mOhm VDC= 50.0 V IRMS= 4.98 A	2	\$0.10	1206 11mm2
5.	Cout	MuRata	GRM21BR61E475MA12L Series= X5R	Cap= 4.7 µF ESR= 2.0 mOhm VDC= 25.0 V IRMS= 7.29 A	10	\$0.06	0805 7mm2
6.	Cr	Yageo America	CC0805JRNP09BN181 Series= C0G/NP0	Cap= 180.0 pF VDC= 50.0 V IRMS= 0.0 A	1	\$0.01	0805 7mm2
7.	Css	Yageo America	CC0805KRX7R9BB153 Series= X7R	Cap= 15.0 nF VDC= 50.0 V IRMS= 0.0 A	1	\$0.01	0805 7mm2
8.	Cvcc	Taiyo Yuden	EMK212B7225KG-T Series= X7R	Cap= 2.2 µF VDC= 16.0 V IRMS= 0.0 A	1	\$0.03	0805 7mm2

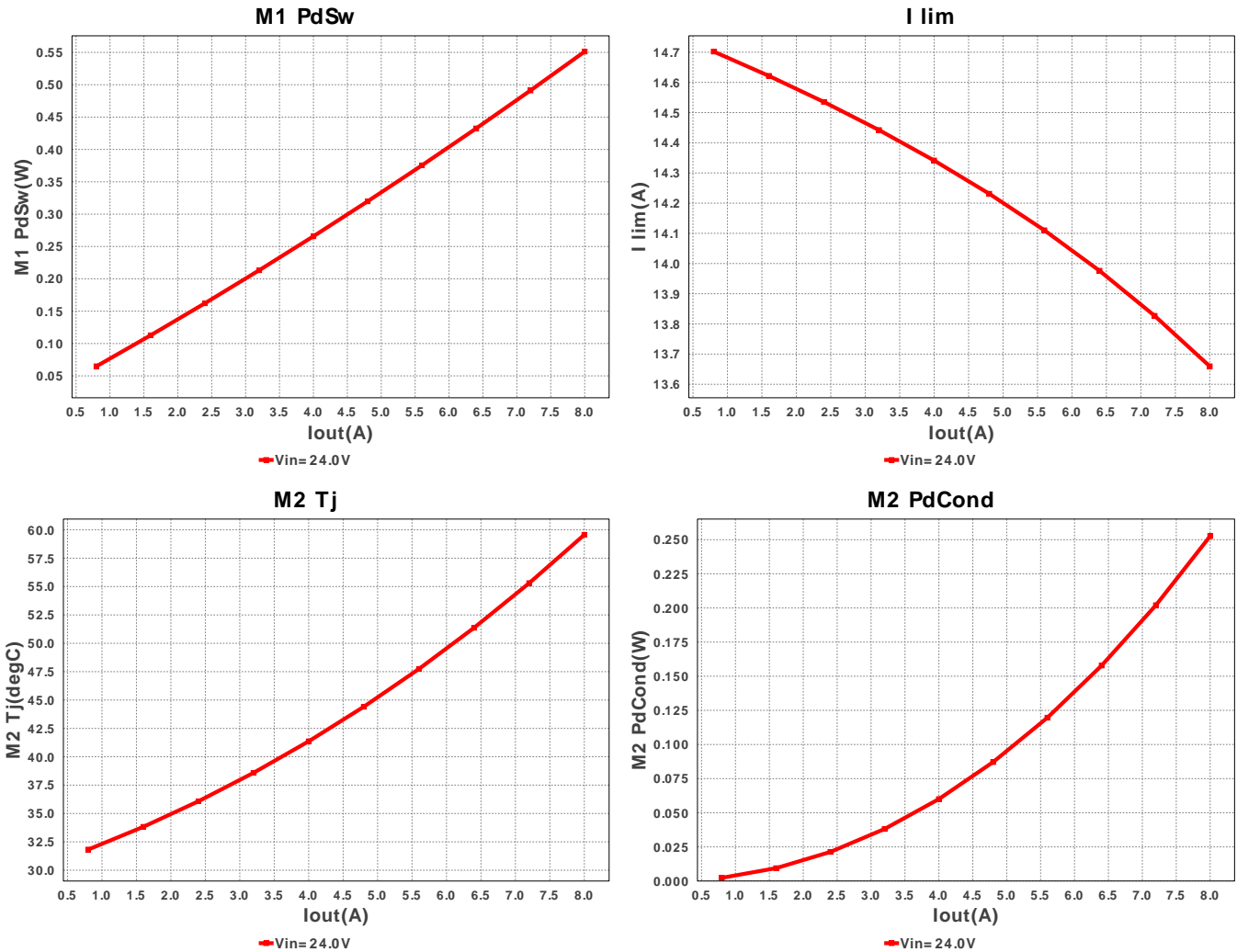
#	Name	Manufacturer	Part Number	Properties	Qty	Price	Footprint
9.	L1	Coilcraft	SER2013-472MLB	L= 4.7 μH DCR= 1.7 mOhm	1	\$1.10	 SER2013 438mm2
10.	M1	Texas Instruments	CSD17302Q5A	VdsMax= 30.0 V IdsMax= 87.0 Amps	1	\$0.36	 TRANS_NexFET_Q5A 55mm2
11.	M2	Texas Instruments	CSD17302Q5A	VdsMax= 30.0 V IdsMax= 87.0 Amps	1	\$0.36	 TRANS_NexFET_Q5A 55mm2
12.	Rfb1	Panasonic	ERJ-6ENF1002V Series= 225	Res= 10.0 kOhm Power= 125.0 mW Tolerance= 1.0%	1	\$0.01	 0805 7mm2
13.	Rfb2	Panasonic	ERJ-6ENF1913V Series= 225	Res= 191.0 kOhm Power= 125.0 mW Tolerance= 1.0%	1	\$0.01	 0805 7mm2
14.	Rilim	Panasonic	ERJ-6ENF1241V Series= 225	Res= 1.24 kOhm Power= 125.0 mW Tolerance= 1.0%	1	\$0.01	 0805 7mm2
15.	Ron	Panasonic	ERJ-6ENF2003V Series= 225	Res= 200.0 kOhm Power= 125.0 mW Tolerance= 1.0%	1	\$0.01	 0805 7mm2
16.	Rr	Vishay-Dale	CRCW08051M58FKEA Series= CRCW.e3	Res= 1.58 MOhm Power= 125.0 mW Tolerance= 1.0%	1	\$0.01	 0805 7mm2
17.	U1	Texas Instruments	LM3150MHX/NOPB	Switcher	1	\$1.55	 MXA14A 59mm2











Operating Values

#	Name	Value	Category	Description
1.	Cin IRMS	4.0 A	Current	Input capacitor RMS ripple current
2.	Cout IRMS	691.158 mA	Current	Output capacitor RMS ripple current
3.	I lim	13.648 A	Current	Current limit threshold
4.	Iin Avg	4.078 A	Current	Average input current
5.	L Ipp	2.394 A	Current	Peak-to-peak inductor ripple current
6.	SW Ipk	9.197 A	Current	Peak switch current
7.	BOM Count	27	General	Total Design BOM count
8.	FootPrint	771.0 mm2	General	Total Foot Print Area of BOM components
9.	Frequency	537.623 kHz	General	Switching frequency
10.	IC Tolerance	12.0 mV	General	IC Feedback Tolerance
11.	Pout	96.0 W	General	Total output power
12.	Total BOM	\$4.31	General	Total BOM Cost
13.	Duty Cycle	50.415 %	Op_point	Duty cycle
14.	Efficiency	98.082 %	Op_point	Steady state efficiency
15.	IC Tj	48.669 degC	Op_point	IC junction temperature
16.	IOUT_OP	8.0 A	Op_point	Iout operating point
17.	M1 Tj	71.98 degC	Op_point	M1 MOSFET junction temperature
18.	M2 Tj	59.876 degC	Op_point	M2 MOSFET junction temperature
19.	VIN_OP	24.0 V	Op_point	Vin operating point
20.	Vout p-p	11.854 mV	Op_point	Peak-to-peak output ripple voltage
21.	Cin Pd	23.998 mW	Power	Input capacitor power dissipation
22.	Cout Pd	95.54 μ W	Power	Output capacitor power dissipation
23.	IC Pd	287.222 mW	Power	IC power dissipation
24.	L Pd	136.0 mW	Power	Inductor power dissipation
25.	M1 Pd	849.967 mW	Power	M1 MOSFET total power dissipation
26.	M1 PdCond	298.661 mW	Power	M1 MOSFET conduction losses
27.	M1 PdSw	551.306 mW	Power	M1 MOSFET switching losses
28.	M2 Pd	580.477 mW	Power	M2 MOSFET total power dissipation
29.	M2 PdCond	252.837 mW	Power	M2 MOSFET conduction losses
30.	M2 PdSw	327.639 mW	Power	M2 MOSFET switching losses
31.	Total Pd	1.877 W	Power	Total Power Dissipation

Design Inputs

#	Name	Value	Description
1.	Iout	8.0 A	Maximum Output Current
2.	Iout1	8.0 Amps	Output Current #1
3.	VinMax	24.0 V	Maximum input voltage
4.	VinMin	24.0 V	Minimum input voltage
5.	Vout	12.0 V	Output Voltage
6.	Vout1	12.0 Volt	Output Voltage #1
7.	base_pn	LM3150	Texas Instruments Base Part Number
8.	source	DC	Input Source Type
9.	ta	30.0 degC	Ambient temperature

Design Assistance

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

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