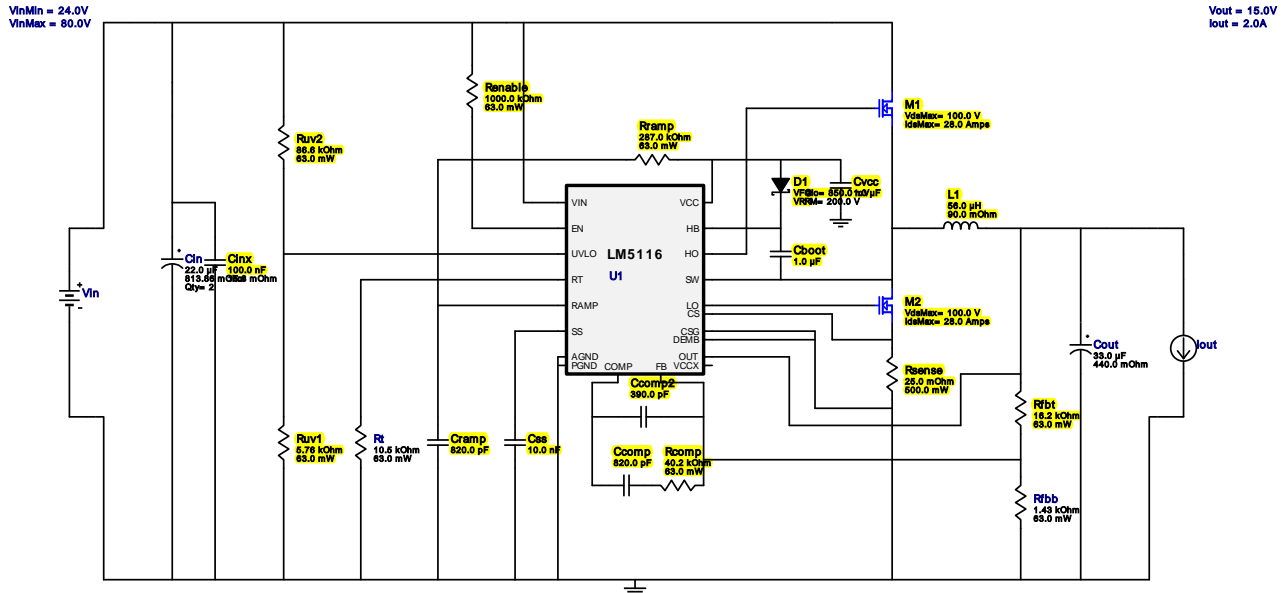
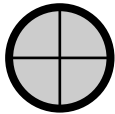

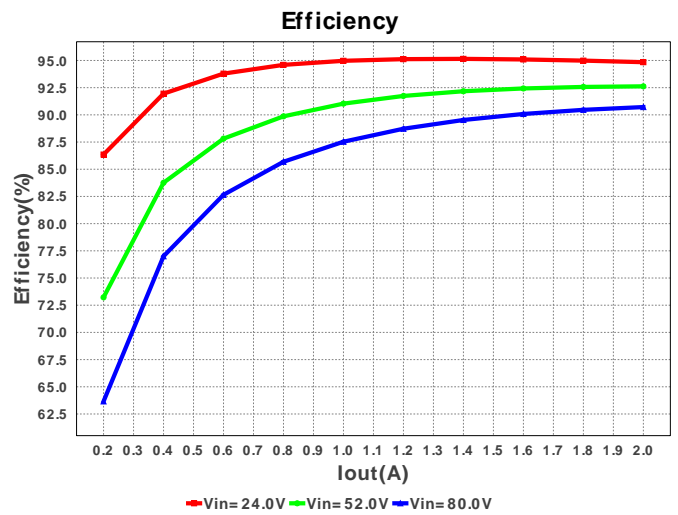
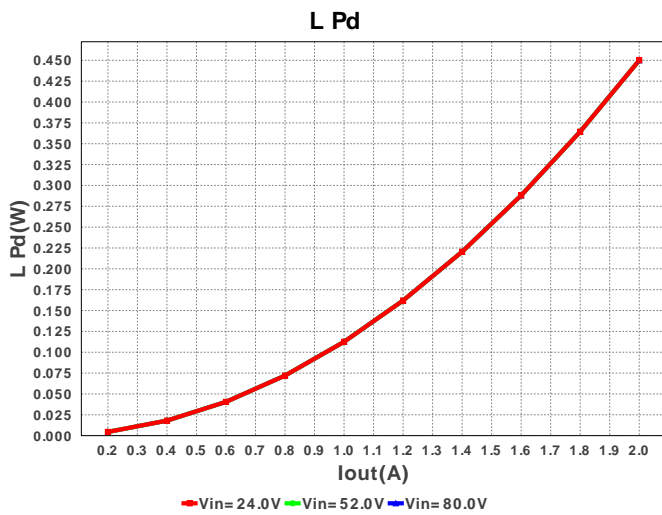
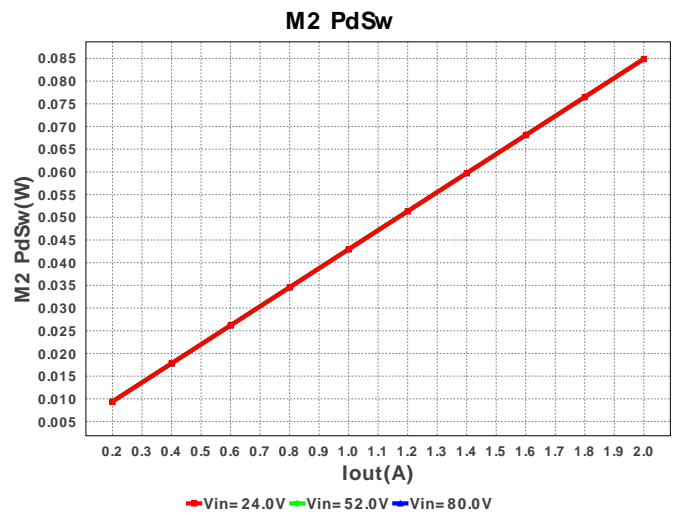
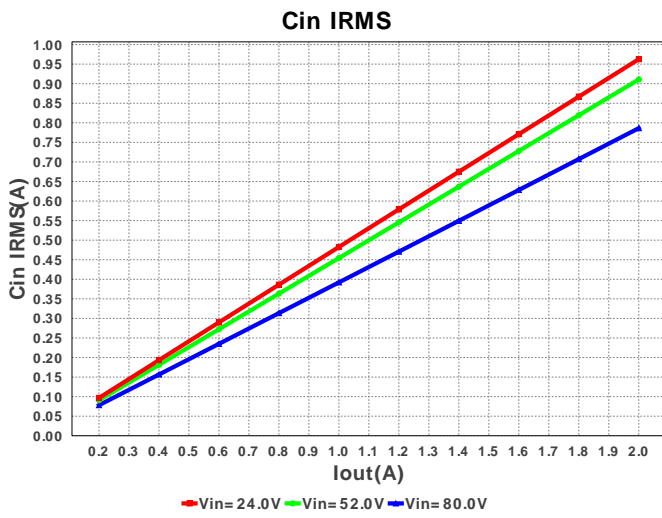
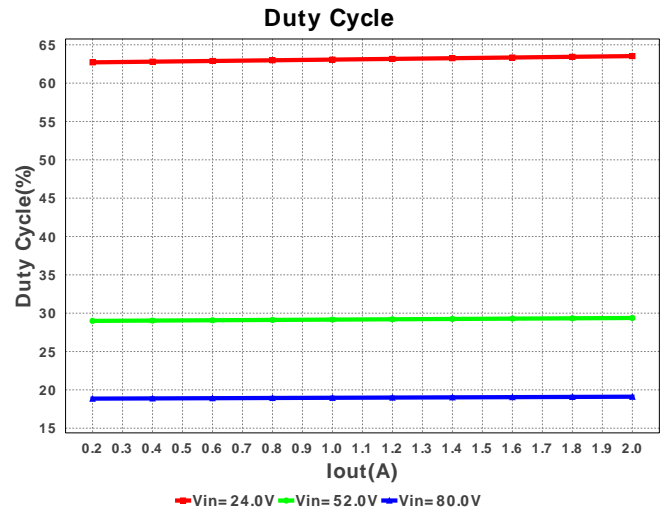
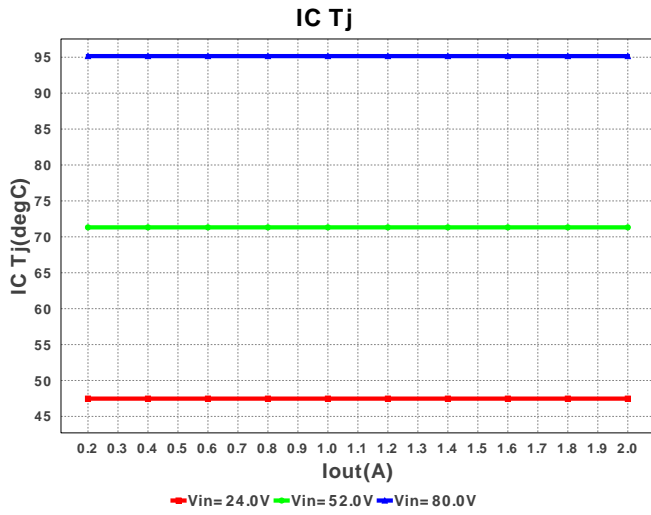


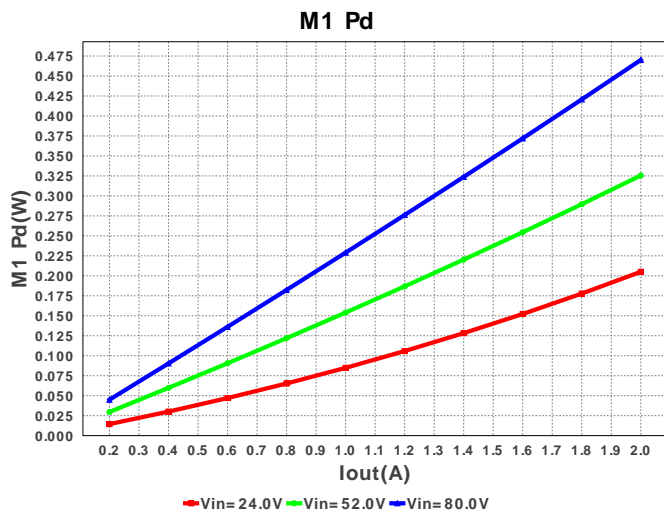
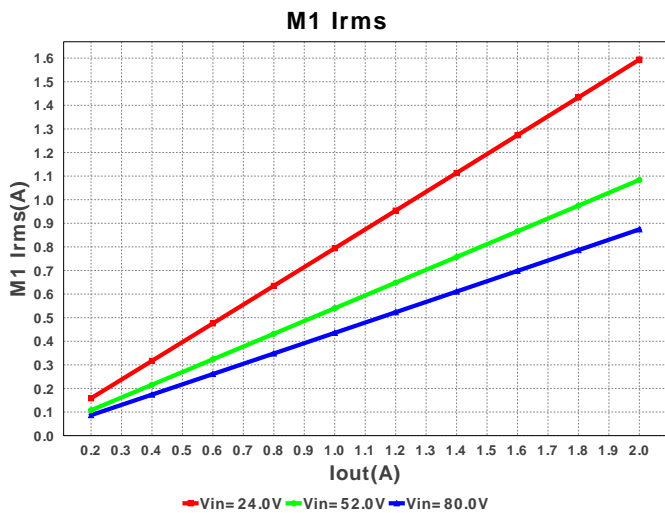
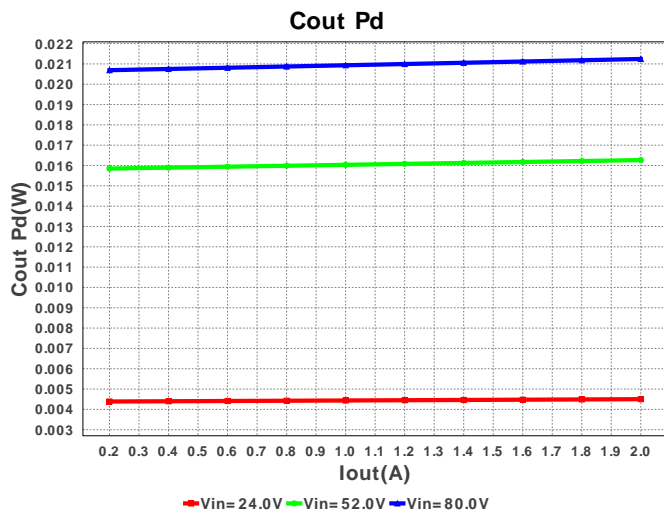
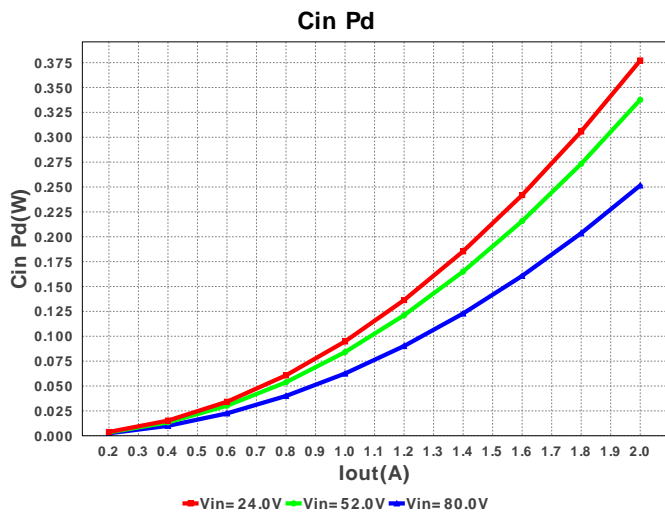
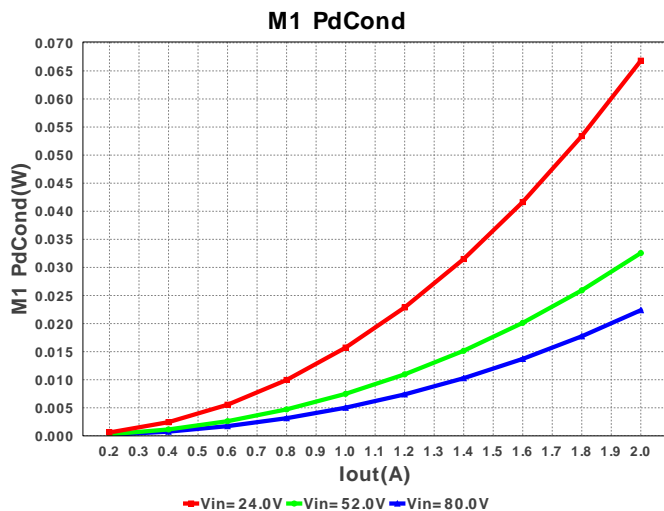
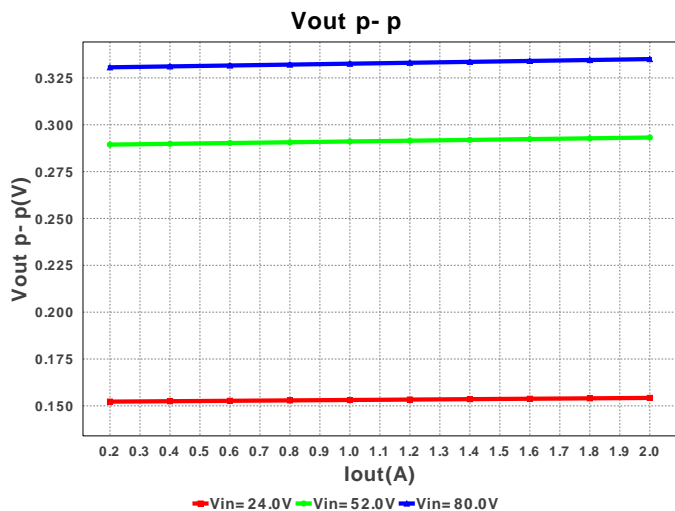
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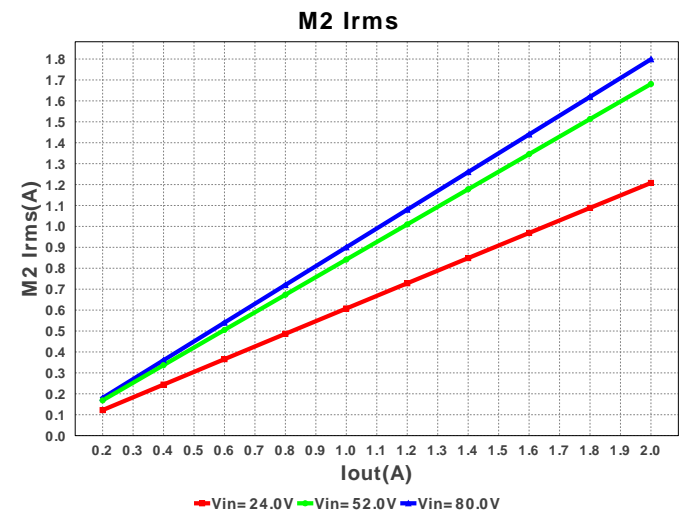
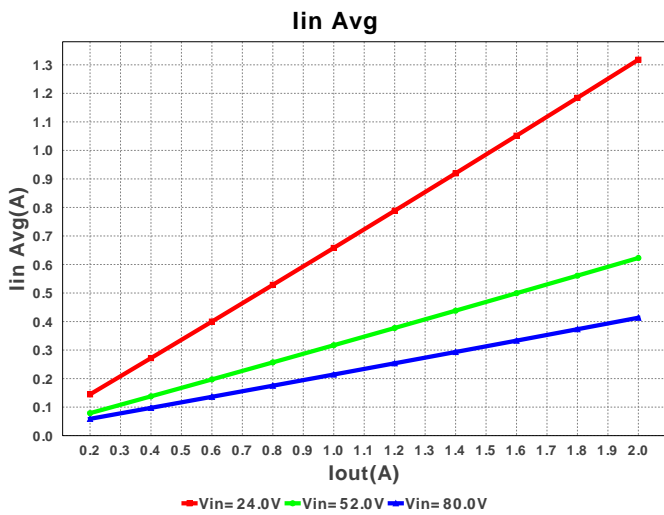
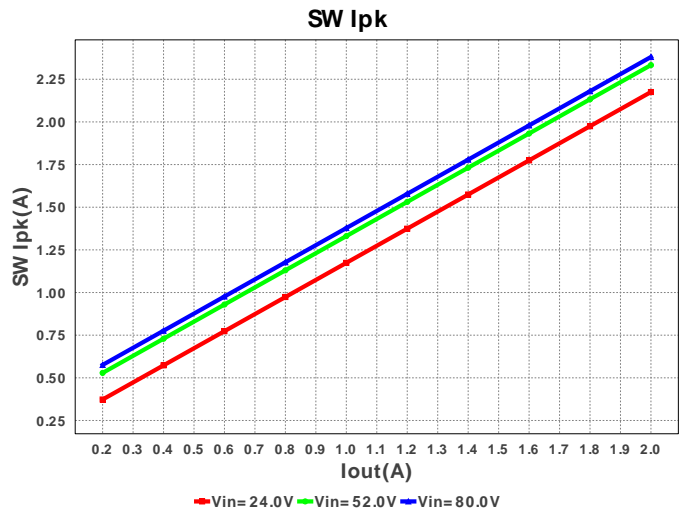
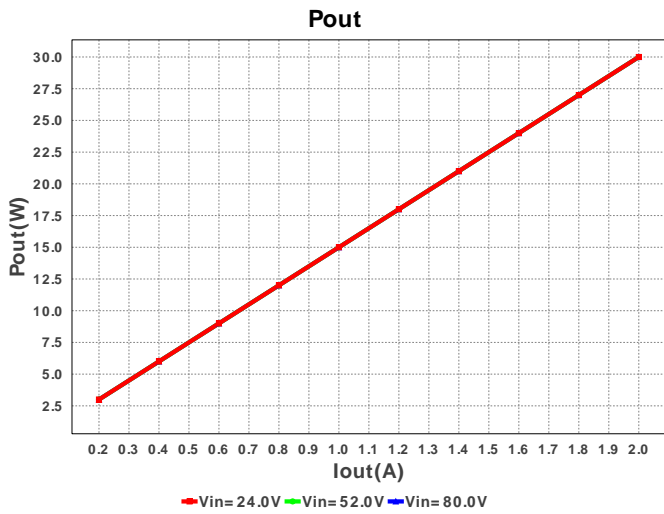
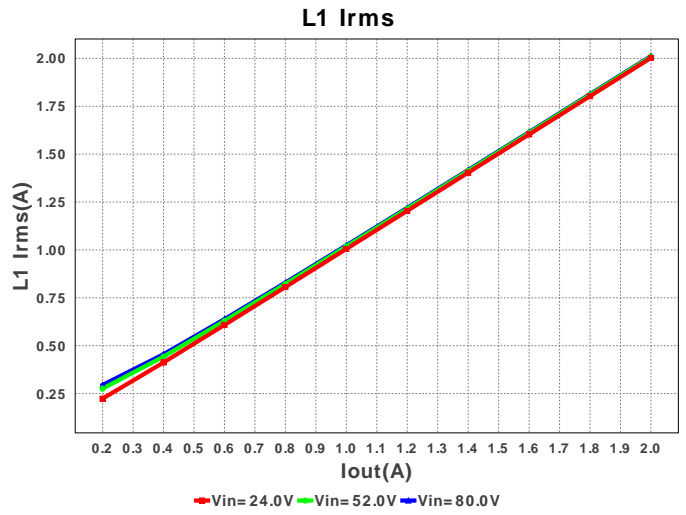
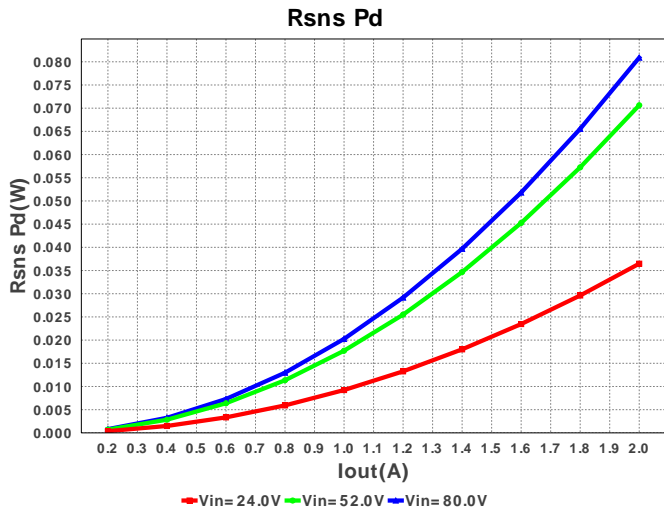
 Design : 1579257/3 LM5116MHX/NOPB
 LM5116MHX/NOPB 24.0V-80.0V to 15.0V @ 2.0A

Electrical BOM

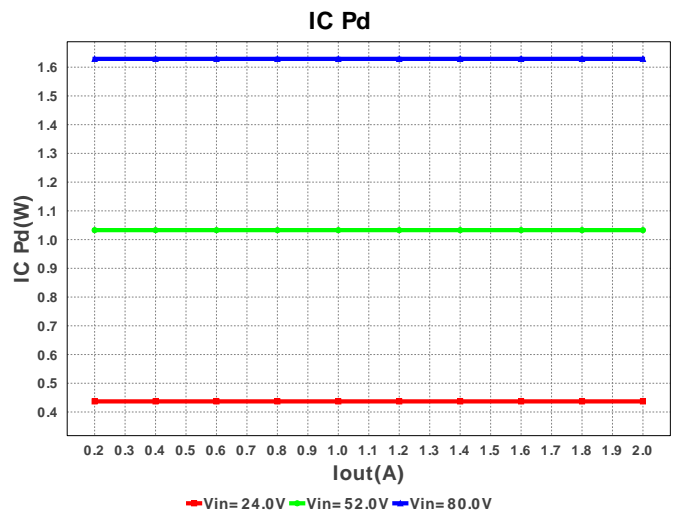
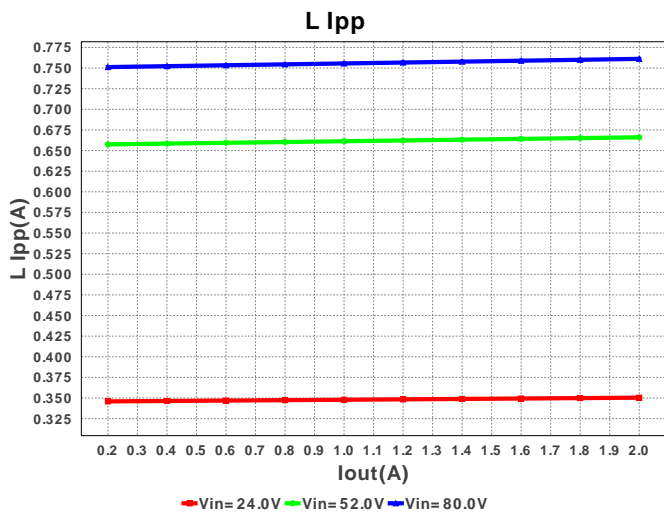
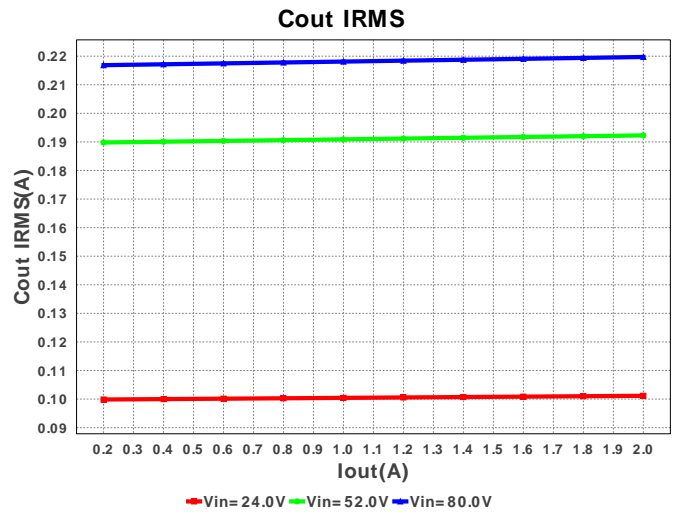
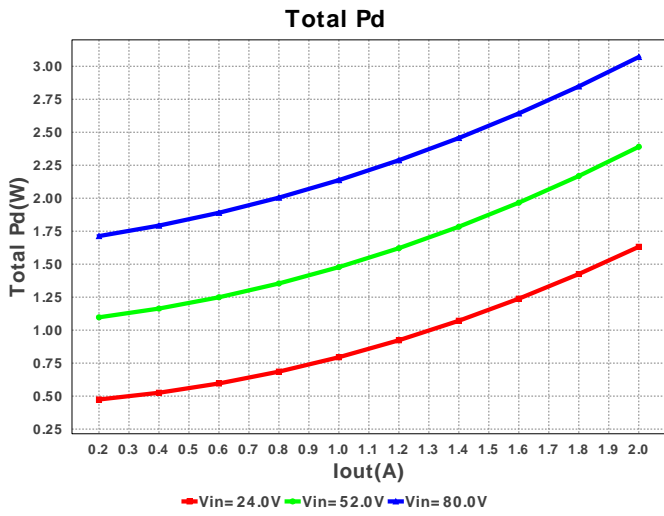
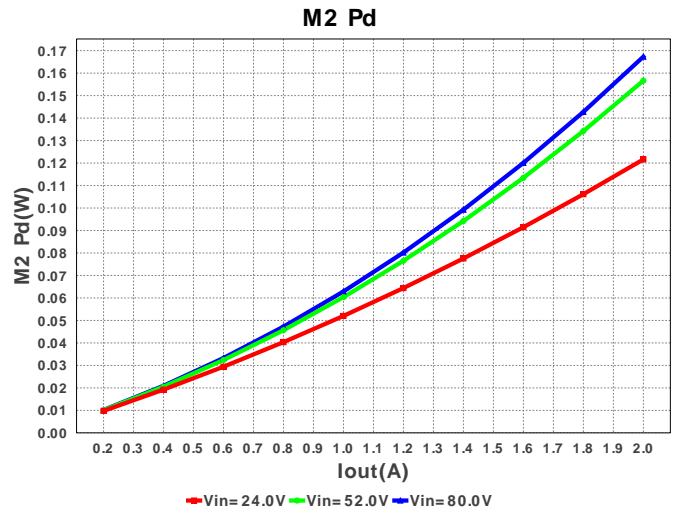
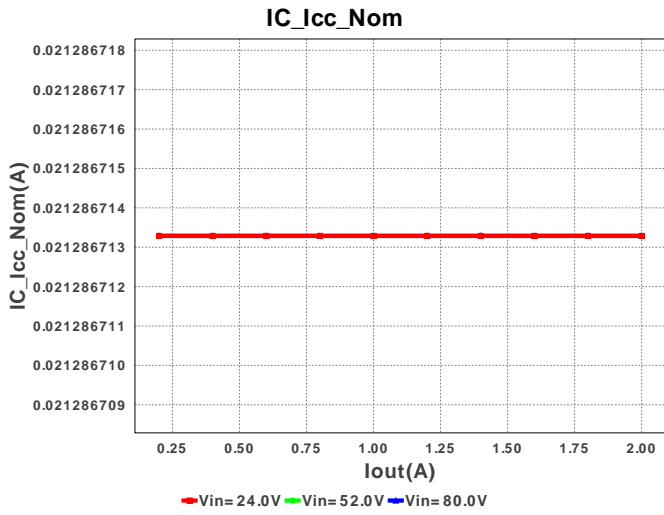
#	Name	Manufacturer	Part Number	Properties	Qty	Price	Footprint
1.	Cboot	MuRata	GRM155R61A105KE15D Series= X5R	Cap= 1.0 μ F VDC= 10.0 V IRMS= 0.0 A	1	\$0.01	0402 3mm2
2.	Ccomp	Yageo America	CC0805KRX7R9BB821 Series= X7R	Cap= 820.0 pF VDC= 50.0 V IRMS= 0.0 A	1	\$0.01	0805 7mm2
3.	Ccomp2	Yageo America	CC0805KRX7R9BB391 Series= X7R	Cap= 390.0 pF VDC= 50.0 V IRMS= 0.0 A	1	\$0.01	0805 7mm2
4.	Cin	Panasonic	EEUED2D220 Series= 286	Cap= 22.0 μ F ESR= 813.86 mOhm VDC= 200.0 V IRMS= 600.0 mA	2	\$0.19	 CAPPR5-10X20 144mm2
5.	Cinx	TDK	C2012X7R2A104K Series= X7R	Cap= 100.0 nF ESR= 15.8 mOhm VDC= 100.0 V IRMS= 0.0 A	1	\$0.03	0805 7mm2
6.	Cout	Nichicon	UUD1E330MCL1GS Series= uD	Cap= 33.0 μ F ESR= 440.0 mOhm VDC= 25.0 V IRMS= 230.0 mA	1	\$0.11	 SM_RADIAL_6.3AMM 80mm2
7.	Cramp	Yageo America	CC0805KRX7R9BB821 Series= X7R	Cap= 820.0 pF VDC= 50.0 V IRMS= 0.0 A	1	\$0.01	0805 7mm2
8.	Css	MuRata	GRM216R71H103KA01D Series= X7R	Cap= 10.0 nF VDC= 50.0 V IRMS= 0.0 A	1	\$0.01	0805 7mm2
9.	Cvcc	MuRata	GRM155R61A105KE15D Series= X5R	Cap= 1.0 μ F VDC= 10.0 V IRMS= 0.0 A	1	\$0.01	0402 3mm2

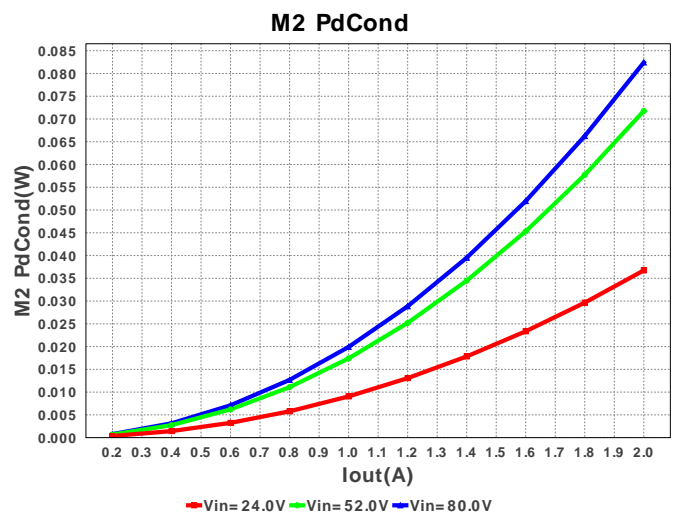
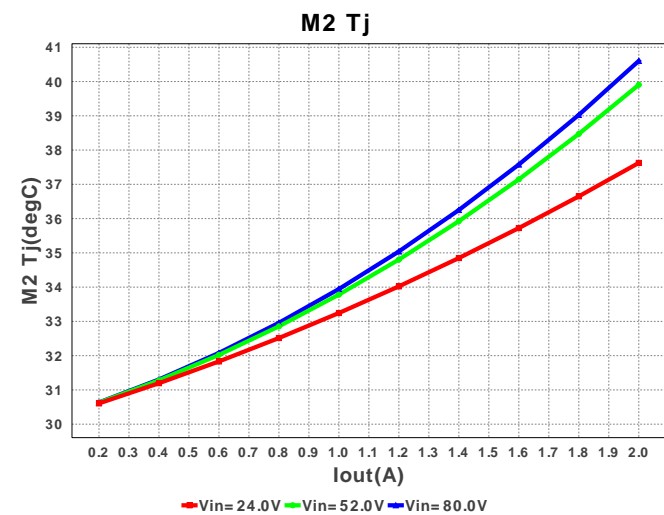
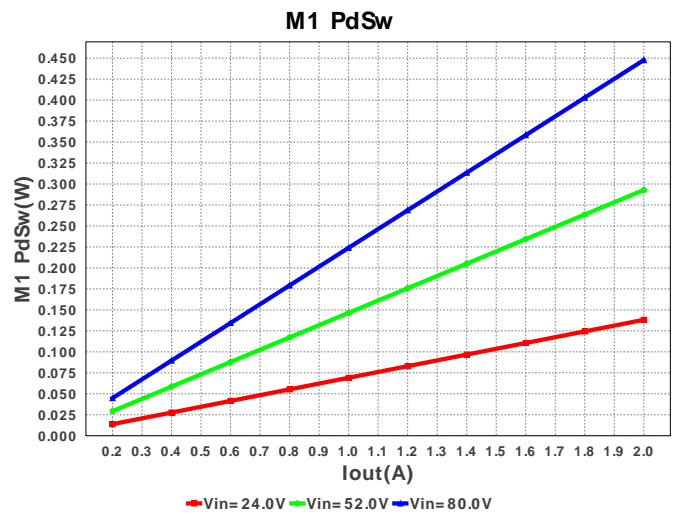
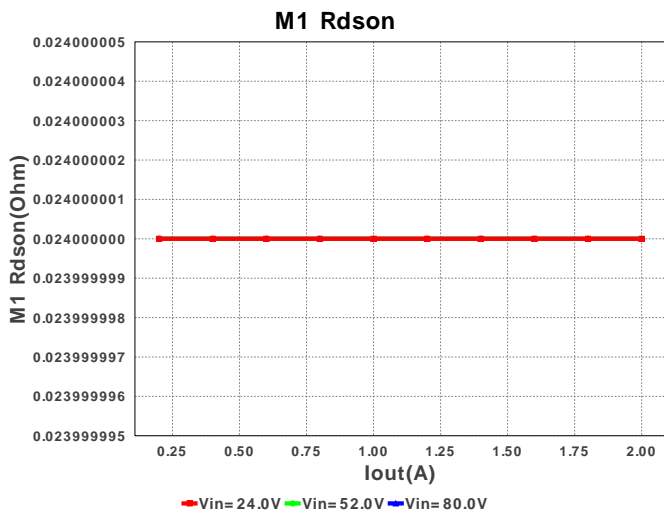
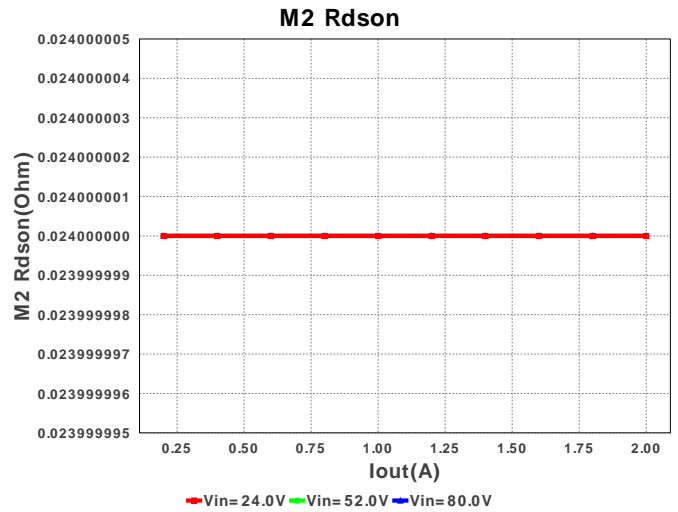
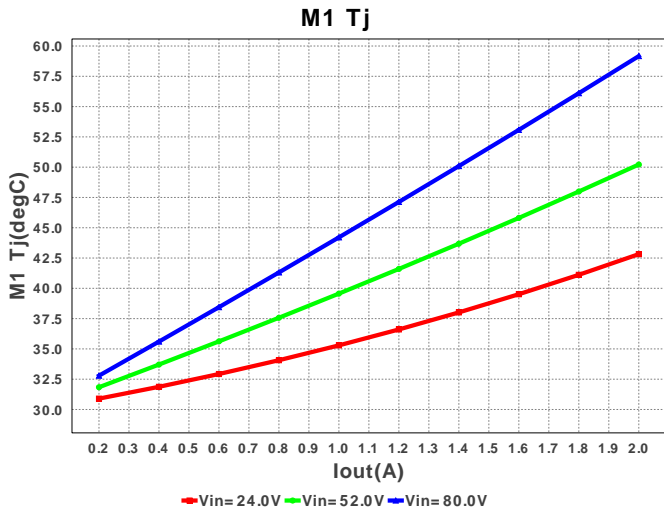
#	Name	Manufacturer	Part Number	Properties	Qty	Price	Footprint
10.	D1	Diodes Inc.	DFLS1200-7	VF@Io= 850.0 mV VRRM= 200.0 V	1	\$0.21	 PowerD1123 13mm2
11.	L1	Bourns	SRR1210-560M	L= 56.0 µH DCR= 90.0 mOhm	1	\$0.44	 SRR1210 196mm2
12.	M1	Infineon Technologies	BSZ160N10NS3 G	VdsMax= 100.0 V IdsMax= 28.0 Amps	1	\$0.63	 PG-TSDSON-8 19mm2
13.	M2	Infineon Technologies	BSZ160N10NS3 G	VdsMax= 100.0 V IdsMax= 28.0 Amps	1	\$0.63	 PG-TSDSON-8 19mm2
14.	Rcomp	Vishay-Dale	CRCW040240K2FKED Series= CRCW..e3	Res= 40.2 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	 0402 3mm2
15.	Renable	Vishay-Dale	CRCW04021M00FKED Series= CRCW..e3	Res= 1000.0 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	 0402 3mm2
16.	Rfbb	Vishay-Dale	CRCW04021K43FKED Series= CRCW..e3	Res= 1.43 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	 0402 3mm2
17.	Rfbt	Vishay-Dale	CRCW040216K2FKED Series= CRCW..e3	Res= 16.2 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	 0402 3mm2
18.	Rramp	Vishay-Dale	CRCW0402287KFKED Series= CRCW..e3	Res= 287.0 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	 0402 3mm2
19.	Rsense	Stackpole Electronics Inc	CSR1206FK25L0 Series= ?	Res= 25.0 mOhm Power= 500.0 mW Tolerance= 1.0%	1	\$0.10	 1206 11mm2
20.	Rt	Vishay-Dale	CRCW040210K5FKED Series= CRCW..e3	Res= 10.5 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	 0402 3mm2
21.	Ruv1	Vishay-Dale	CRCW04025K76FKED Series= CRCW..e3	Res= 5.76 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	 0402 3mm2
22.	Ruv2	Vishay-Dale	CRCW040286K6FKED Series= CRCW..e3	Res= 86.6 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	 0402 3mm2
23.	U1	Texas Instruments	LM5116MHX/NOPB	Switcher	1	\$2.42	 MXA20A 71mm2











Operating Values

#	Name	Value	Category	Description
1.	Cin IRMS	786.288 mA	Current	Input capacitor RMS ripple current
2.	Cout IRMS	219.722 mA	Current	Output capacitor RMS ripple current
3.	Iin Avg	413.46 mA	Current	Average input current
4.	L Ipp	761.14 mA	Current	Peak-to-peak inductor ripple current
5.	L1 Irms	2.012 A	Current	Inductor ripple current
6.	M1 Irms	874.231 mA	Current	MOSFET RMS ripple current
7.	M2 Irms	1.799 A	Current	MOSFET RMS ripple current
8.	SW Ipk	2.381 A	Current	Peak switch current
9.	BOM Count	24	General	Total Design BOM count
10.	FootPrint	762.0 mm2	General	Total Foot Print Area of BOM components
11.	Frequency	291.375 kHz	General	Switching frequency

#	Name	Value	Category	Description
12.	IC Tolerance	16.0 mV	General	IC Feedback Tolerance
13.	M1 Rdson	24.0 mOhm	General	Drain-Source On-resistance
14.	M2 Rdson	24.0 mOhm	General	Drain-Source On-resistance
15.	Pout	30.0 W	General	Total output power
16.	Total BOM	\$5.09	General	Total BOM Cost
17.	Cross Freq	33.548 kHz	Op_point	Bode plot crossover frequency
18.	Duty Cycle	19.107 %	Op_point	Duty cycle
19.	Efficiency	90.697 %	Op_point	Steady state efficiency
20.	IC Tj	95.159 degC	Op_point	IC junction temperature
21.	IOUT_OP	2.0 A	Op_point	Iout operating point
22.	M1 Tj	59.716 degC	Op_point	M1 MOSFET junction temperature
23.	M2 Tj	40.499 degC	Op_point	M2 MOSFET junction temperature
24.	Phase Marg	63.916 deg	Op_point	Bode Plot Phase Margin
25.	VIN_OP	80.0 V	Op_point	Vin operating point
26.	Vout p-p	335.048 mV	Op_point	Peak-to-peak output ripple voltage
27.	Cin Pd	251.584 mW	Power	Input capacitor power dissipation
28.	Cout Pd	21.242 mW	Power	Output capacitor power dissipation
29.	IC Pd	1.629 W	Power	IC power dissipation
30.	L Pd	450.0 mW	Power	Inductor power dissipation
31.	M1 Pd	478.849 mW	Power	M1 MOSFET total power dissipation
32.	M1 PdCond	22.362 mW	Power	M1 MOSFET conduction losses
33.	M1 PdSw	456.487 mW	Power	M1 MOSFET switching losses
34.	M2 Pd	165.665 mW	Power	M2 MOSFET total power dissipation
35.	M2 PdCond	82.412 mW	Power	M2 MOSFET conduction losses
36.	M2 PdSw	83.253 mW	Power	M2 MOSFET switching losses
37.	Rsns Pd	80.893 mW	Power	Current Limit Sense Resistor Power Dissipation
38.	Total Pd	3.077 W	Power	Total Power Dissipation
39.	IC Icc Nom	21.287 mA	Unknown	IC Icc gate driver current

Design Inputs

#	Name	Value	Description
1.	Iout	2.0 A	Maximum Output Current
2.	Iout1	2.0 Amps	Output Current #1
3.	VinMax	80.0 V	Maximum input voltage
4.	VinMin	24.0 V	Minimum input voltage
5.	Vout	15.0 V	Output Voltage
6.	Vout1	15.0 Volt	Output Voltage #1
7.	base_pn	LM5116	Base Product Number
8.	source	DC	Input Source Type
9.	Ta	30.0 degC	Ambient temperature

Design Assistance

1. **LM5116** Product Folder : <http://www.ti.com/product/lm5116> : contains the data sheet and other resources.

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