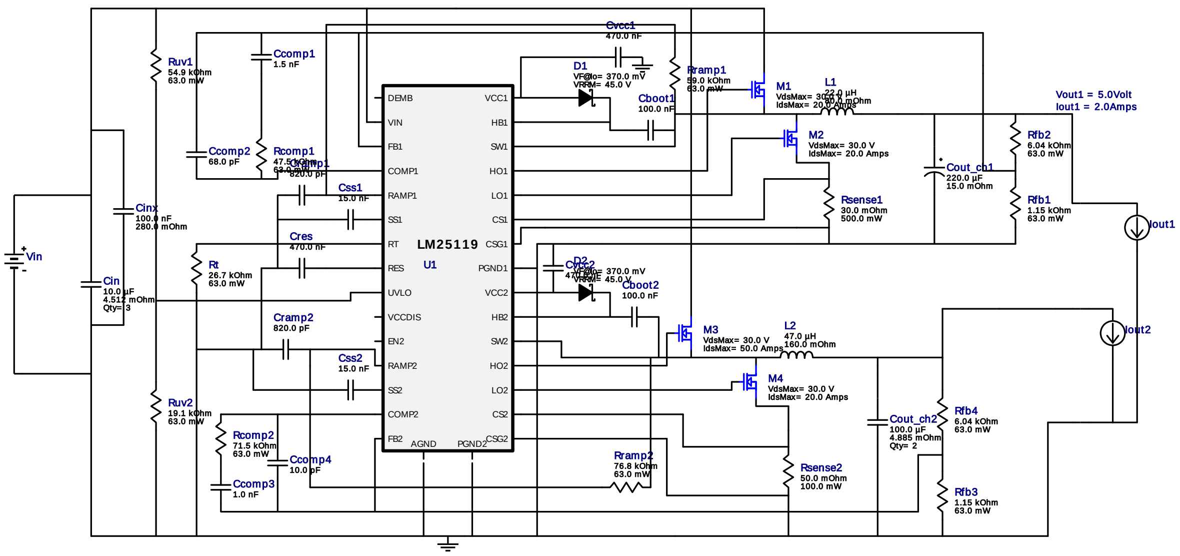
TEXAS INSTRUMENTS

WEBENCH ® Design Report

VinMin = 6.0V
VinMax = 14.0V
Vout = 5.0V
Iout = 2.0A

Device = LM25119PSQ/NOPB
Topology = Buck
Created = 8/10/16 5:10:57 PM
BOM Cost = $5.15
BOM Count = 42
Total Pd = 1.15W

Design : 4759963/7 LM25119PSQ/NOPB
LM25119PSQ/NOPB 6.0V-14.0V to 5.00V @ 1.0A



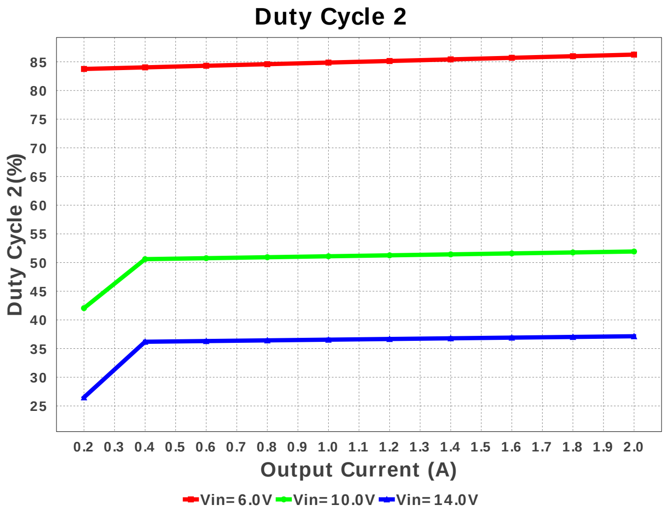
1. This regulator device is qualified for Automotive applications. All passives and other components selected in this design may not be qualified for Automotive applications. The user is required to verify that all components in the design meet the qualification and safety requirements for their specific application.View WEBENCH(R) Disclaimer.

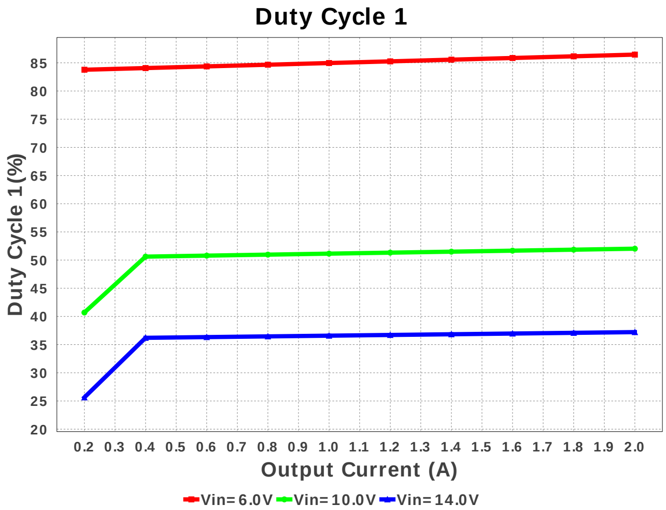
Electrical BOM

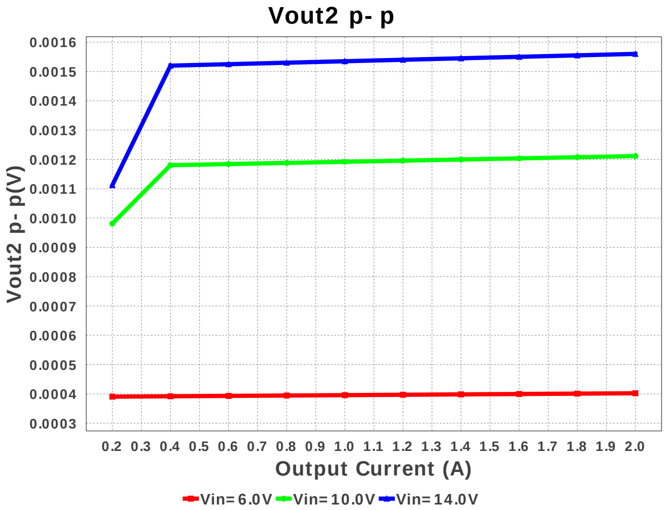
#	Name	Manufacturer	Part Number	Properties	Qty	Price	Footprint
1.	Cboot1	MuRata	GRM155R61A104KA01D Series= X5R	Cap= 100.0 nF VDC= 10.0 V IRMS= 0.0 A	1	$0.01	0402 3 mm^2
2.	Cboot2	MuRata	GRM155R61A104KA01D Series= X5R	Cap= 100.0 nF VDC= 10.0 V IRMS= 0.0 A	1	$0.01	0402 3 mm^2
3.	Ccomp1	Yageo America	CC0805KRX7R9BB152 Series= X7R	Cap= 1.5 nF VDC= 50.0 V IRMS= 0.0 A	1	$0.01	0805 7 mm^2
4.	Ccomp2	Kemet	C0805C680K5GACTU Series= C0G/NP0	Cap= 68.0 pF VDC= 50.0 V IRMS= 0.0 A	1	$0.01	0805 7 mm^2
5.	Ccomp3	Samsung Electro-Mechanics	CL21C102JBCNFNC Series= C0G/NP0	Cap= 1.0 nF VDC= 50.0 V IRMS= 0.0 A	1	$0.01	0805 7 mm^2
6.	Ccomp4	Kemet	C0805C100K5GACTU Series= C0G/NP0	Cap= 10.0 pF VDC= 50.0 V IRMS= 0.0 A	1	$0.01	0805 7 mm^2
7.	Cin	MuRata	GRM31CR61E106KA12L Series= X5R	Cap= 10.0 uF ESR= 4.512 mOhm VDC= 25.0 V IRMS= 2.447 A	3	$0.05	1206_190 11 mm^2
8.	Cinx	AVX	08053C104KAT2A Series= X7R	Cap= 100.0 nF ESR= 280.0 mOhm VDC= 25.0 V IRMS= 0.0 A	1	$0.01	0805 7 mm^2

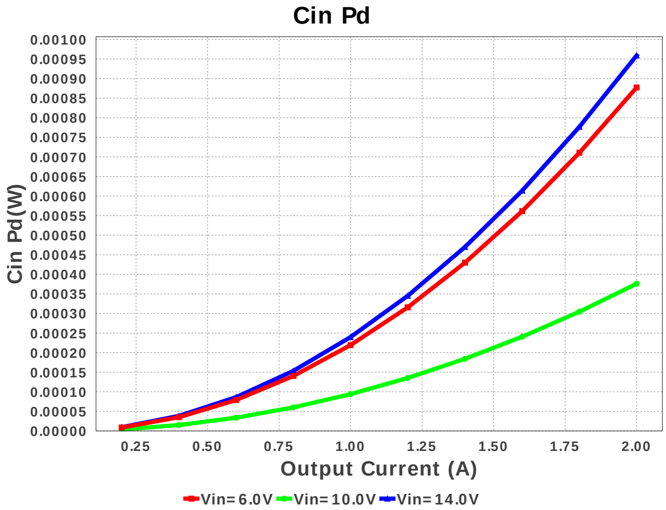
#	Name	Manufacturer	Part Number	Properties	Qty	Price	Footprint
9.	Cout_ch1	Panasonic	6SVPE220MW Series= SVPE	Cap= 220.0 uF ESR= 15.0 mOhm VDC= 6.3 V IRMS= 3.15 A	1	$0.20	CAPSMT_62_E61 53 mm^2
10.	Cout_ch2	MuRata	GRM31CR60J107ME39L Series= X5R	Cap= 100.0 uF ESR= 4.885 mOhm VDC= 6.3 V IRMS= 4.4118 A	2	$0.14	1206_190 11 mm^2
11.	Cramp1	Yageo America	CC0805KRX7R9BB821 Series= X7R	Cap= 820.0 pF VDC= 50.0 V IRMS= 0.0 A	1	$0.01	0805 7 mm^2
12.	Cramp2	Yageo America	CC0805KRX7R9BB821 Series= X7R	Cap= 820.0 pF VDC= 50.0 V IRMS= 0.0 A	1	$0.01	0805 7 mm^2
13.	Cres	MuRata	GRM155C80J474KE19D Series= X6S	Cap= 470.0 nF VDC= 6.3 V IRMS= 0.0 A	1	$0.01	0402 3 mm^2
14.	Css1	Yageo America	CC0805KRX7R9BB153 Series= X7R	Cap= 15.0 nF VDC= 50.0 V IRMS= 0.0 A	1	$0.01	0805 7 mm^2
15.	Css2	Yageo America	CC0805KRX7R9BB153 Series= X7R	Cap= 15.0 nF VDC= 50.0 V IRMS= 0.0 A	1	$0.01	0805 7 mm^2
16.	Cvcc1	MuRata	GRM155R61A474KE15D Series= X5R	Cap= 470.0 nF VDC= 10.0 V IRMS= 0.0 A	1	$0.01	0402 3 mm^2
17.	Cvcc2	MuRata	GRM155R61A474KE15D Series= X5R	Cap= 470.0 nF VDC= 10.0 V IRMS= 0.0 A	1	$0.01	0402 3 mm^2
18.	D1	Bourns	CD1005-B00340	VF@Io= 370.0 mV VRRM= 45.0 V	1	$0.06	Diode_1005 7 mm^2
19.	D2	Bourns	CD1005-B00340	VF@Io= 370.0 mV VRRM= 45.0 V	1	$0.06	Diode_1005 7 mm^2
20.	L1	Bourns	SDR1105-220ML	L= 22.0 µH DCR= 80.0 mOhm	1	$0.29	SDR1105 157 mm^2
21.	L2	TDK	VLP8040T-470M	L= 47.0 µH DCR= 160.0 mOhm	1	$0.22	VLP8040 113 mm^2
22.	M1	Texas Instruments	CSD17579Q3A	VdsMax= 30.0 V IdsMax= 20.0 Amps	1	$0.19	TRANS_NexFET_Q3A 18 mm^2
23.	M2	Texas Instruments	CSD17579Q3A	VdsMax= 30.0 V IdsMax= 20.0 Amps	1	$0.19	TRANS_NexFET_Q3A 18 mm^2
24.	M3	Texas Instruments	CSD17308Q3	VdsMax= 30.0 V IdsMax= 50.0 Amps	1	$0.28	TRANS_NexFET_Q3 18 mm^2
25.	M4	Texas Instruments	CSD17579Q3A	VdsMax= 30.0 V IdsMax= 20.0 Amps	1	$0.19	TRANS_NexFET_Q3A 18 mm^2
26.	Rcomp1	Vishay-Dale	CRCW040247K5FKED Series= CRCW..e3	Res= 47.5 kOhm Power= 63.0 mW Tolerance= 1.0%	1	$0.01	0402 3 mm^2

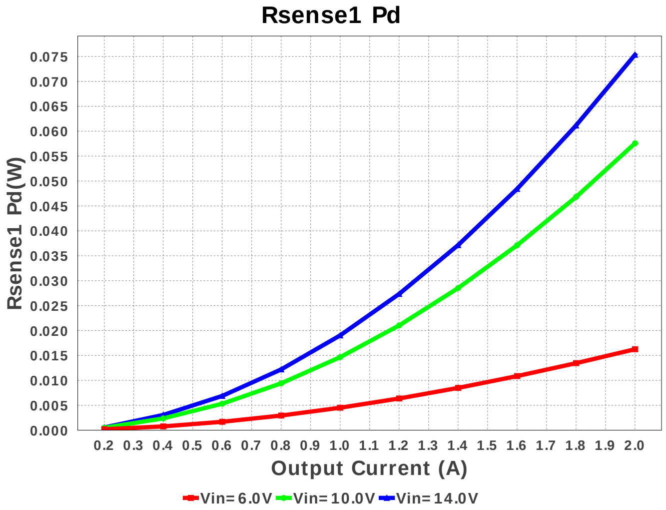
#	Name	Manufacturer	Part Number	Properties	Qty	Price	Footprint
27.	Rcomp2	Vishay-Dale	CRCW040271K5FKED Series= CRCW..e3	Res= 71.5 kOhm Power= 63.0 mW Tolerance= 1.0%	1	$0.01	0402 3 mm^2
28.	Rfb1	Vishay-Dale	CRCW04021K15FKED Series= CRCW..e3	Res= 1.15 kOhm Power= 63.0 mW Tolerance= 1.0%	1	$0.01	0402 3 mm^2
29.	Rfb2	Vishay-Dale	CRCW04026K04FKED Series= CRCW..e3	Res= 6.04 kOhm Power= 63.0 mW Tolerance= 1.0%	1	$0.01	0402 3 mm^2
30.	Rfb3	Vishay-Dale	CRCW04021K15FKED Series= CRCW..e3	Res= 1.15 kOhm Power= 63.0 mW Tolerance= 1.0%	1	$0.01	0402 3 mm^2
31.	Rfb4	Vishay-Dale	CRCW04026K04FKED Series= CRCW..e3	Res= 6.04 kOhm Power= 63.0 mW Tolerance= 1.0%	1	$0.01	0402 3 mm^2
32.	Rramp1	Vishay-Dale	CRCW040259K0FKED Series= CRCW..e3	Res= 59.0 kOhm Power= 63.0 mW Tolerance= 1.0%	1	$0.01	0402 3 mm^2
33.	Rramp2	Vishay-Dale	CRCW040276K8FKED Series= CRCW..e3	Res= 76.8 kOhm Power= 63.0 mW Tolerance= 1.0%	1	$0.01	0402 3 mm^2
34.	Rsense1	Stackpole Electronics Inc	CSR1206FK30L0 Series= ?	Res= 30.0 mOhm Power= 500.0 mW Tolerance= 1.0%	1	$0.10	1206 11 mm^2
35.	Rsense2	Panasonic	ERJ-L03KF50MV Series= ERJ-L03	Res= 50.0 mOhm Power= 100.0 mW Tolerance= 1.0%	1	$0.09	0603 5 mm^2
36.	Rt	Vishay-Dale	CRCW040226K7FKED Series= CRCW..e3	Res= 26.7 kOhm Power= 63.0 mW Tolerance= 1.0%	1	$0.01	0402 3 mm^2
37.	Ruv1	Vishay-Dale	CRCW040254K9FKED Series= CRCW..e3	Res= 54.9 kOhm Power= 63.0 mW Tolerance= 1.0%	1	$0.01	0402 3 mm^2
38.	Ruv2	Vishay-Dale	CRCW040219K1FKED Series= CRCW..e3	Res= 19.1 kOhm Power= 63.0 mW Tolerance= 1.0%	1	$0.01	0402 3 mm^2
39.	U1	Texas Instruments	LM25119PSQ/NOPB	Switcher	1	$2.60	SQA32A 49 mm^2

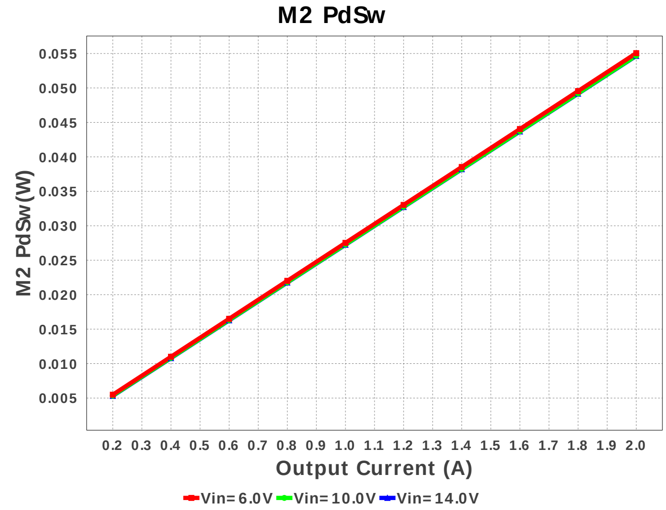

Duty Cycle 2
Duty Cycle 2(%)
Output Current (A)
Vin=6.0V Vin=10.0V Vin=14.0V

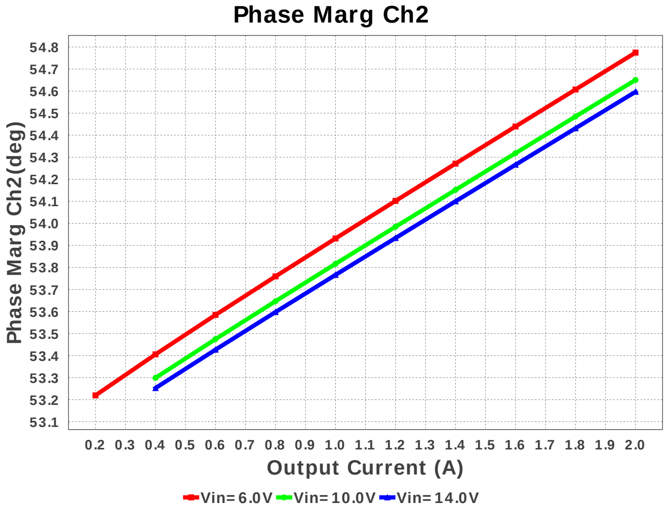

Duty Cycle 1
Duty Cycle 1(%)
Output Current (A)
Vin=6.0V Vin=10.0V Vin=14.0V

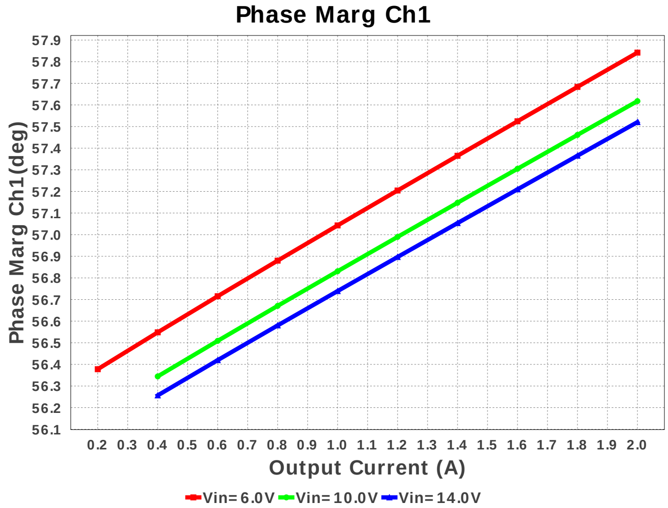

Vout2 p-p
Vout2 p-p(V)
Output Current (A)
Vin=6.0V Vin=10.0V Vin=14.0V

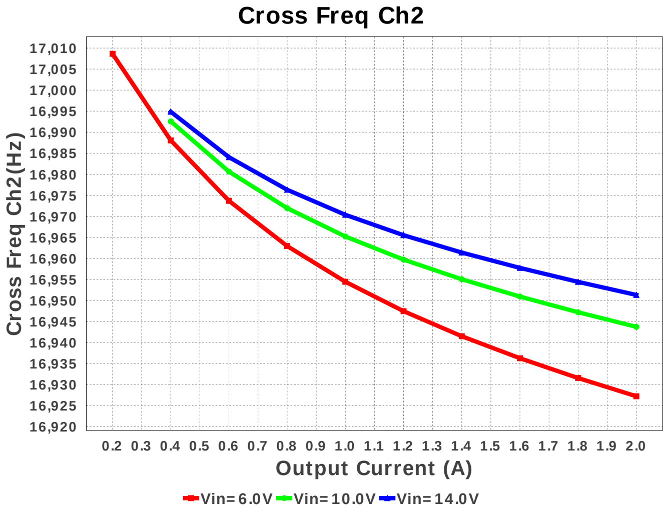

Cin Pd
Cin Pd(W)
Output Current (A)
Vin=6.0V Vin=10.0V Vin=14.0V

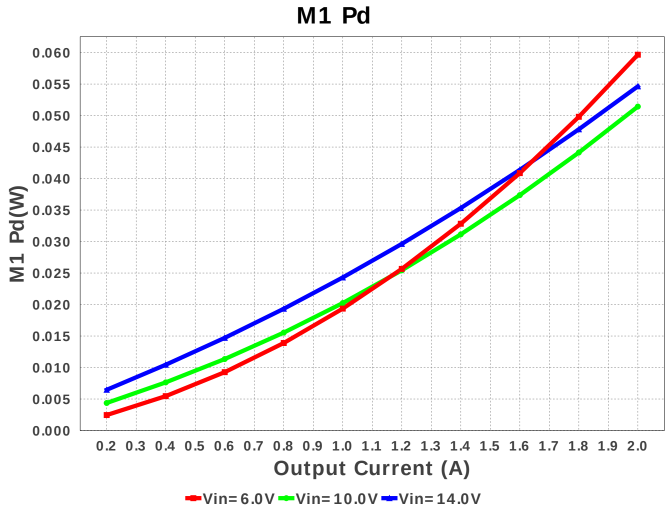

Rsense1 Pd
Rsense1 Pd(W)
Output Current (A)
Vin=6.0V Vin=10.0V Vin=14.0V

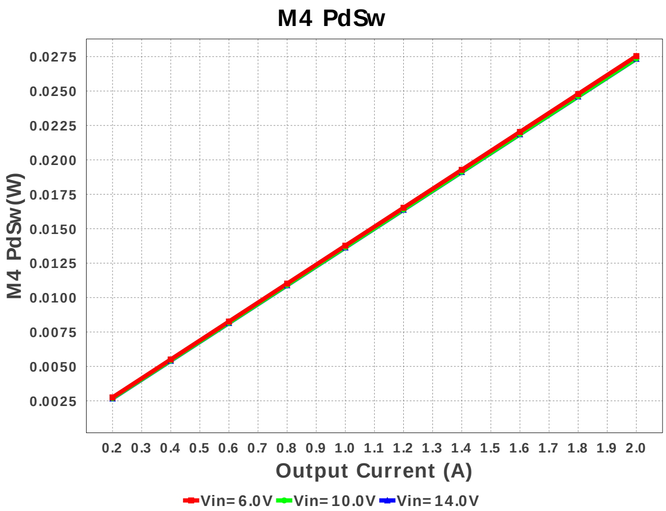

M2 PdSw
M2 PdSw(W)
Output Current (A)
Vin=6.0V Vin=10.0V Vin=14.0V

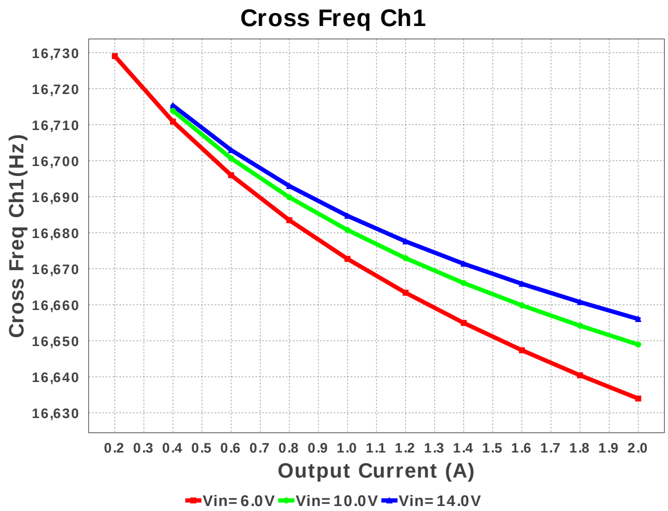

Phase Marg Ch2
Phase Marg Ch2(deg)
Output Current (A)
Vin=6.0V Vin=10.0V Vin=14.0V

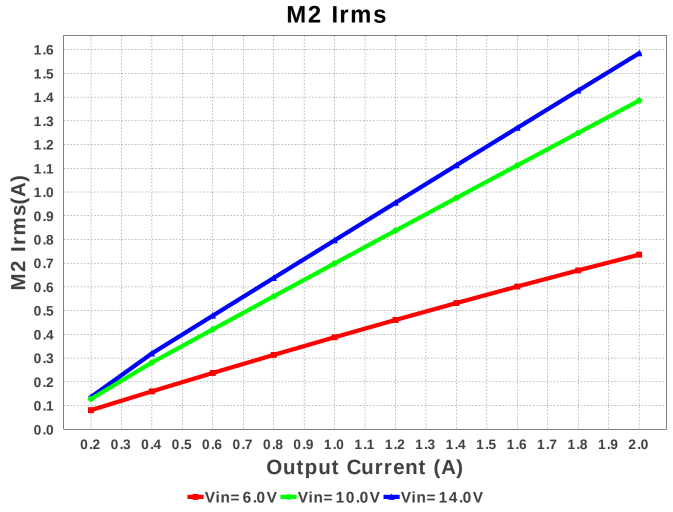

Phase Marg Ch1
Phase Marg Ch1(deg)
Output Current (A)
Vin=6.0V Vin=10.0V Vin=14.0V

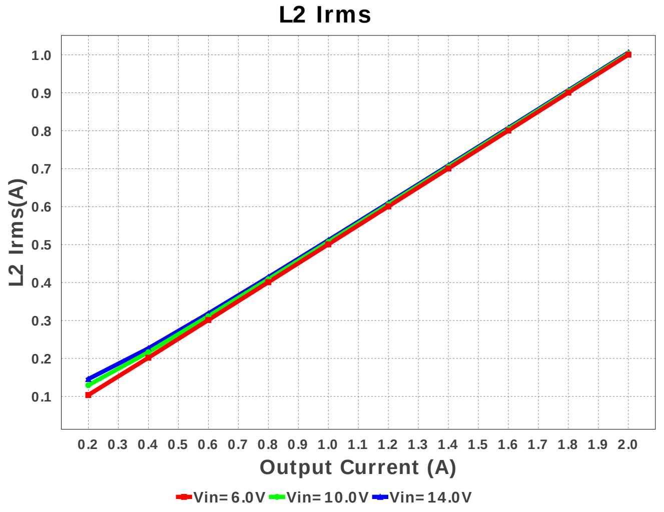

Cross Freq Ch2
Cross Freq Ch2(Hz)
Output Current (A)
Vin=6.0V Vin=10.0V Vin=14.0V

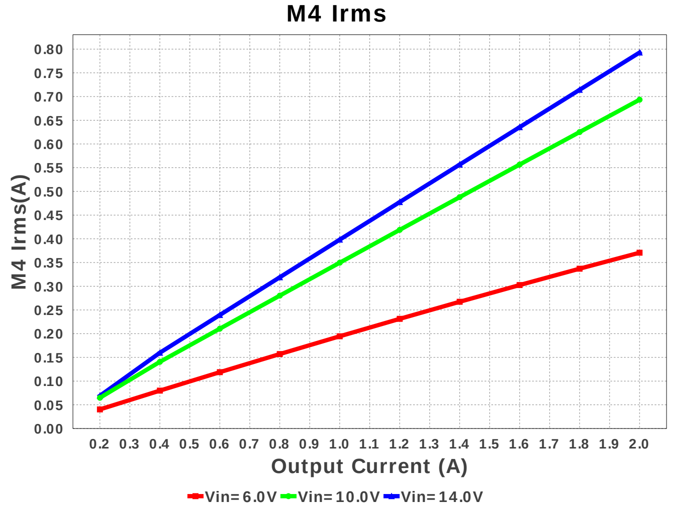

M1 Pd
M1 Pd(W)
Output Current (A)
Vin=6.0V Vin=10.0V Vin=14.0V

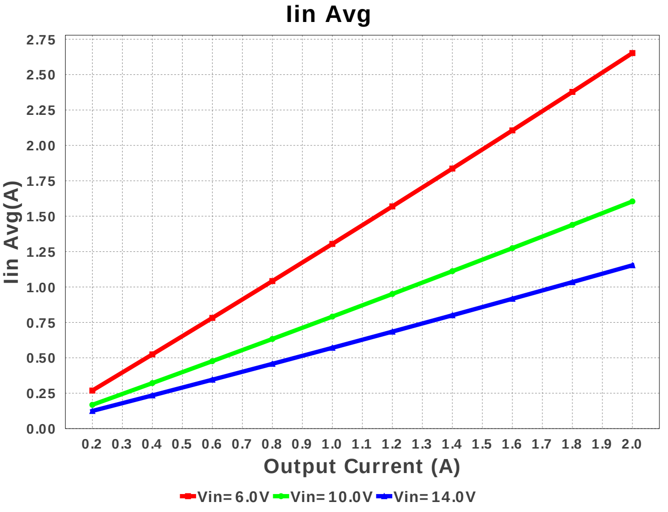

M4 PdSw
M4 PdSw(W)
Output Current (A)
Vin=6.0V Vin=10.0V Vin=14.0V

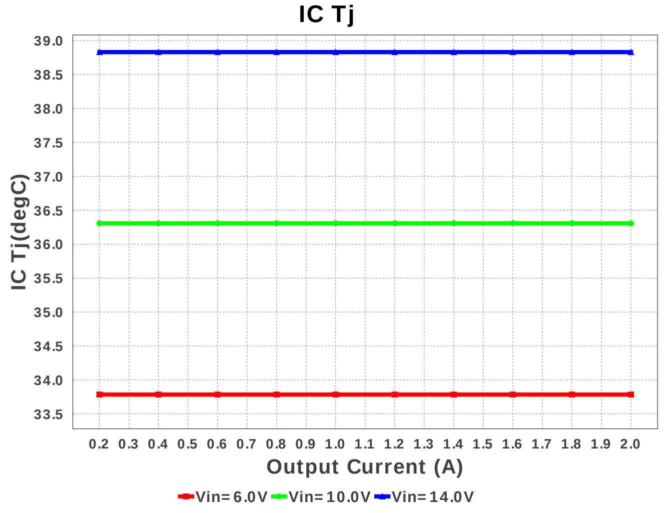

Cross Freq Ch1
Cross Freq Ch1(Hz)
Output Current (A)
Vin=6.0V Vin=10.0V Vin=14.0V

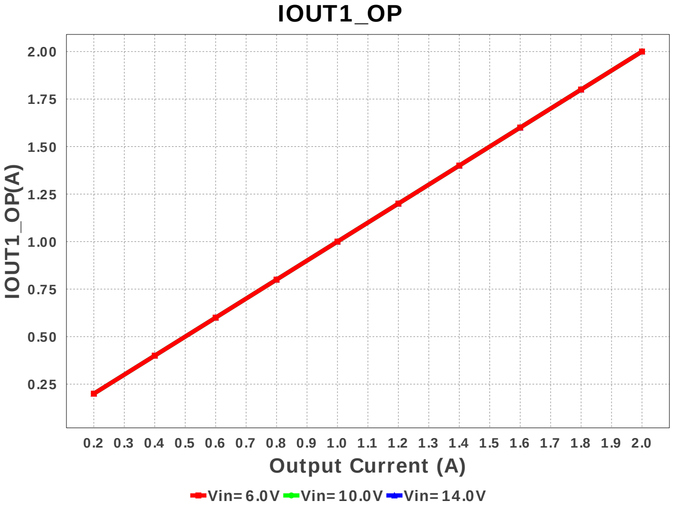

M2 Irms
M2 Irms(A)
Output Current (A)
Vin= 6.0V Vin= 10.0V Vin= 14.0V


L2 Irms
L2 Irms(A)
Output Current (A)
Vin= 6.0V Vin= 10.0V Vin= 14.0V

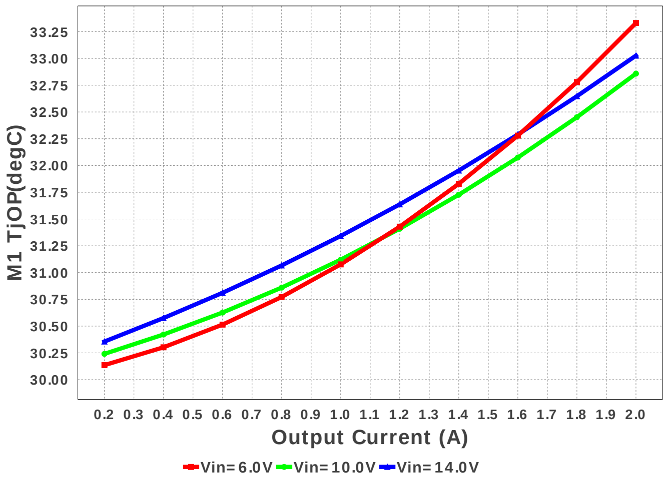

M4 Irms
M4 Irms(A)
Output Current (A)
Vin= 6.0V Vin= 10.0V Vin= 14.0V


Iin Avg
Iin Avg(A)
Output Current (A)
Vin= 6.0V Vin= 10.0V Vin= 14.0V

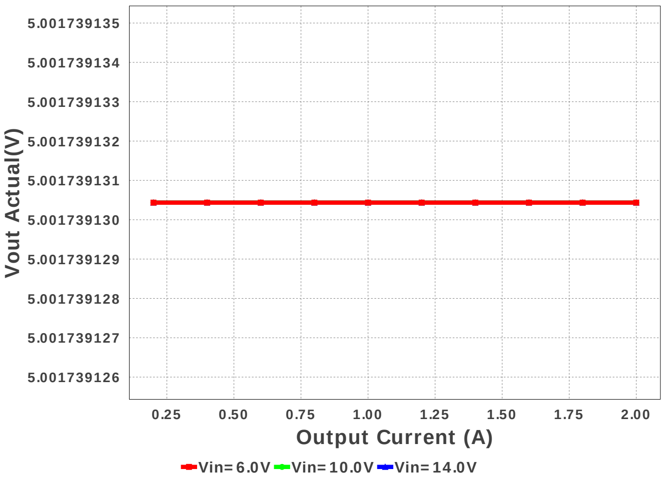

IC Tj
IC Tj(degC)
Output Current (A)
Vin= 6.0V Vin= 10.0V Vin= 14.0V


IOUT1_OP
IOUT1_OP(A)
Output Current (A)
Vin= 6.0V Vin= 10.0V Vin= 14.0V

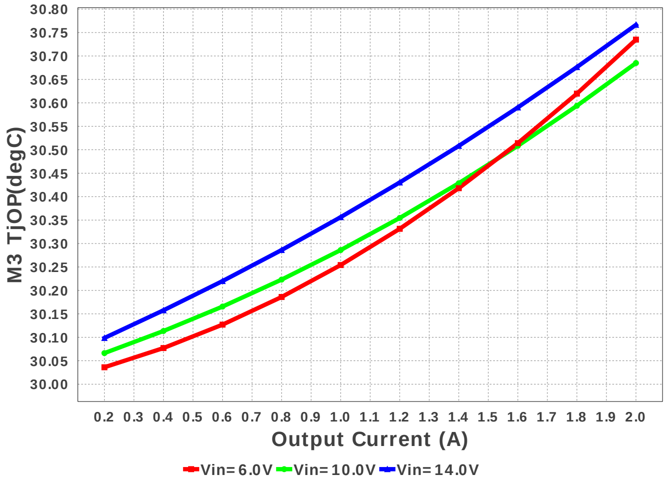
M1 TjOP



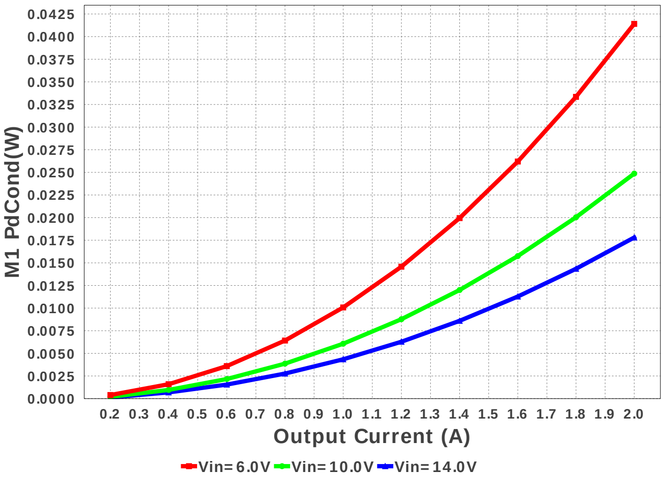
Vout Actual



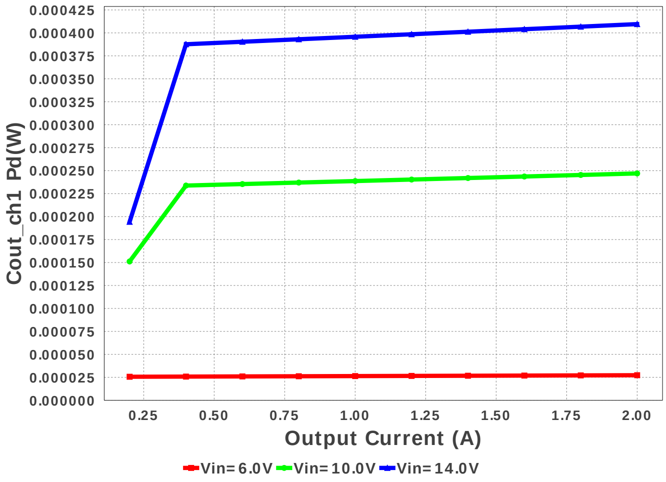
M3 TjOP



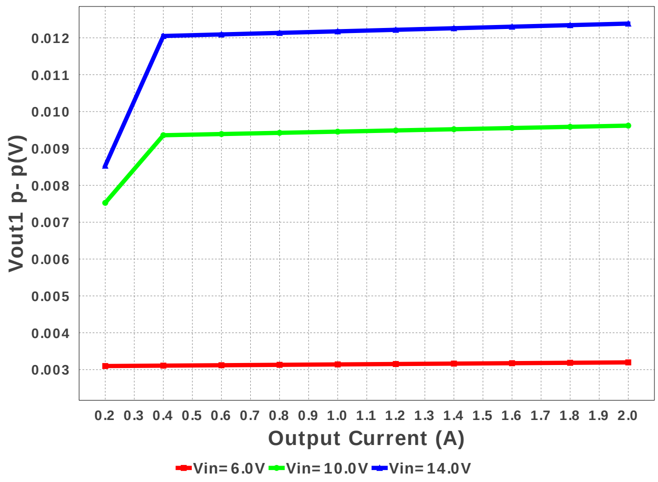
M1 PdCond



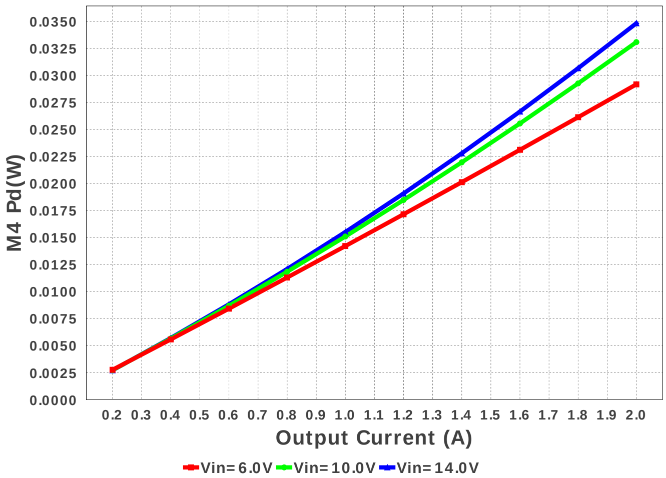
Cout_ch1 Pd



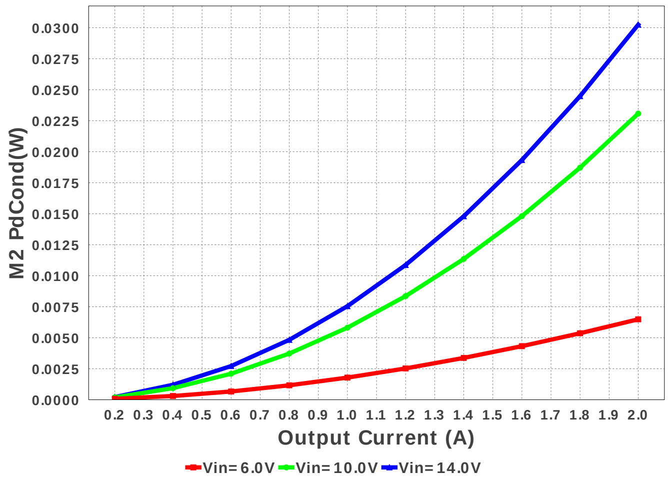
Vout1 p- p



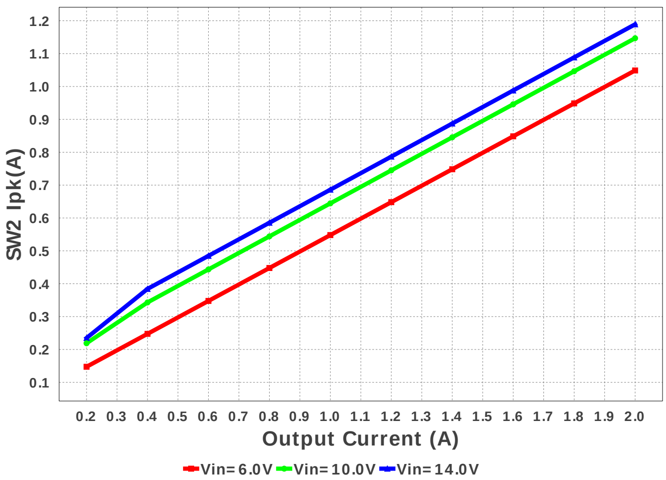
M4 Pd



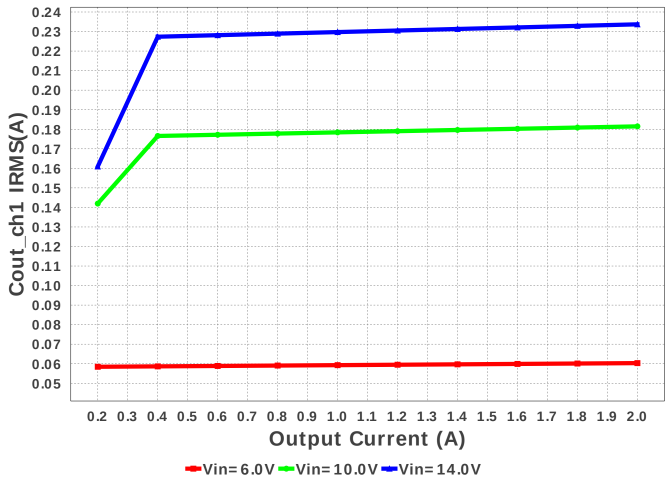
M2 PdCond



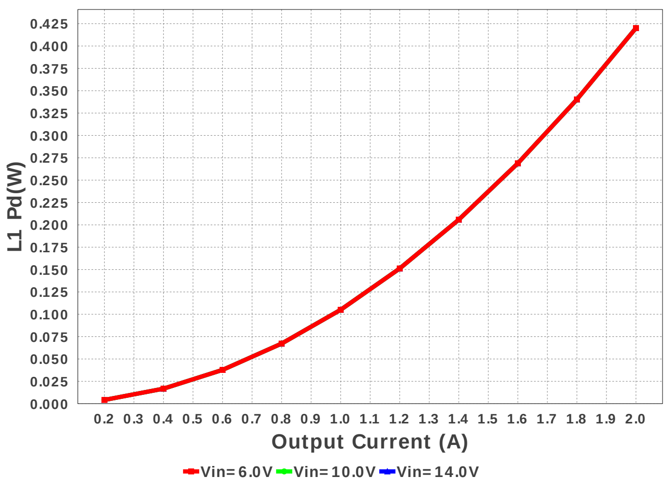
SW2 Ipk



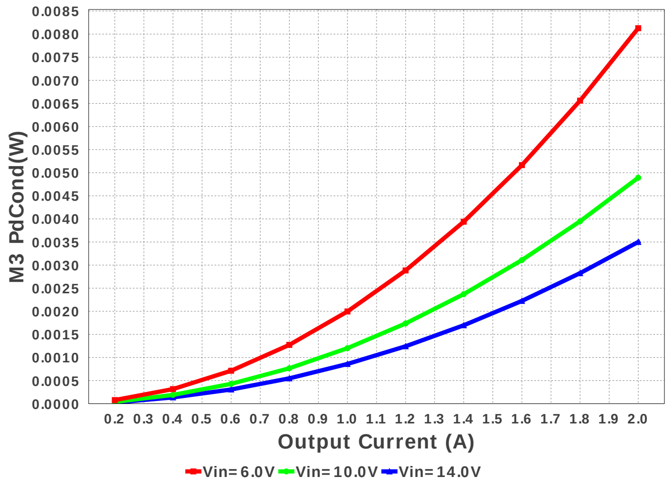
Cout_ch1 IRMS



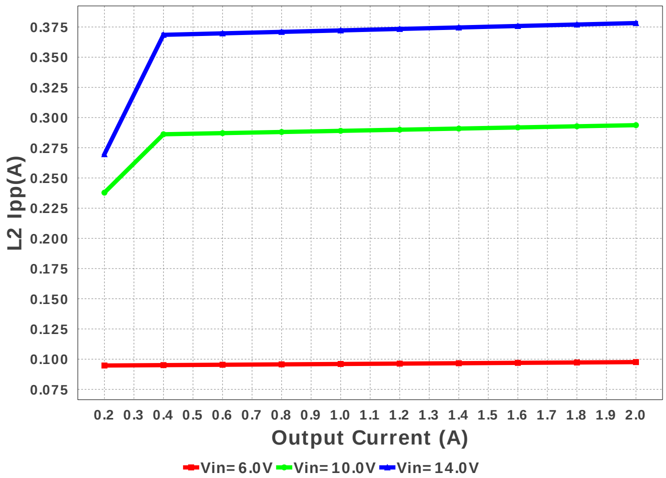
L1 Pd



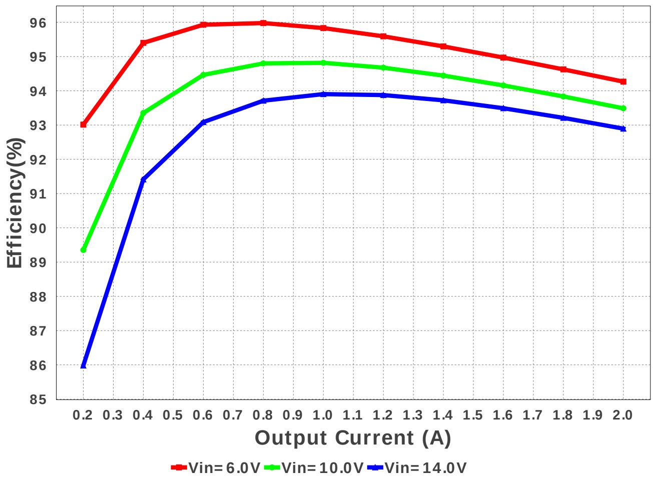
M3 PdCond



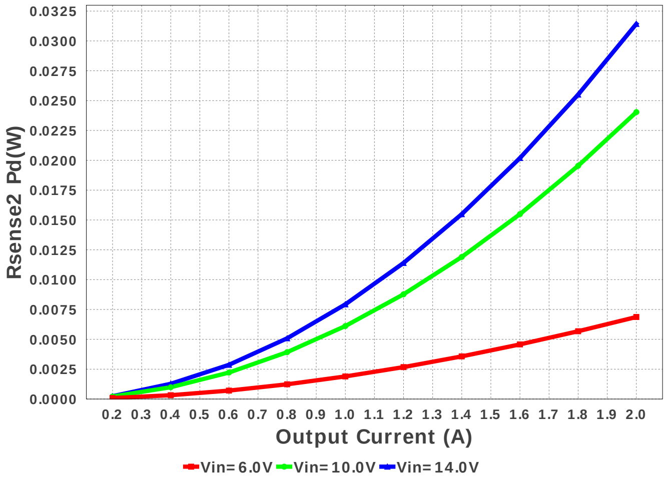
L2 Ipp



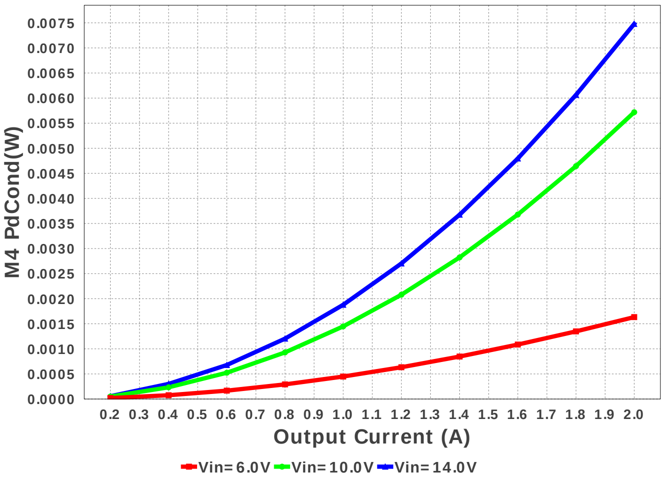
Efficiency



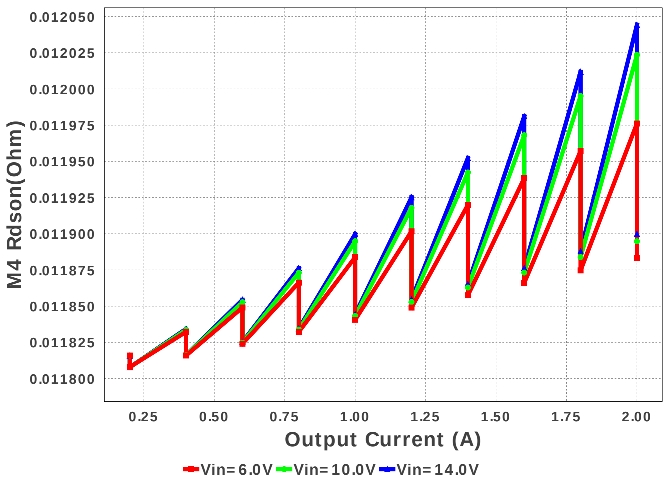
Rsense2 Pd



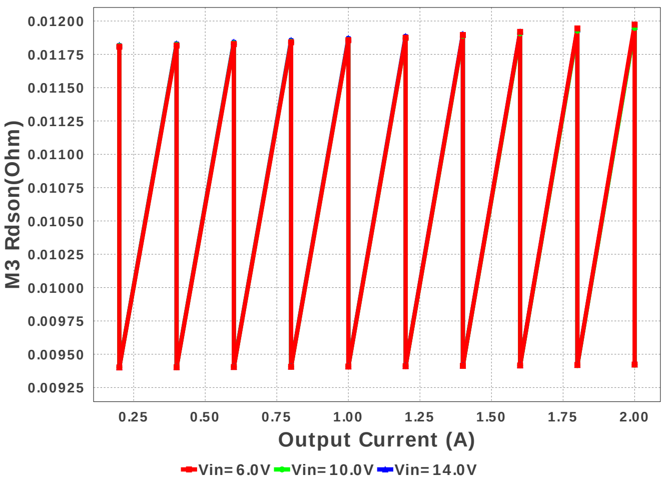
M4 PdCond

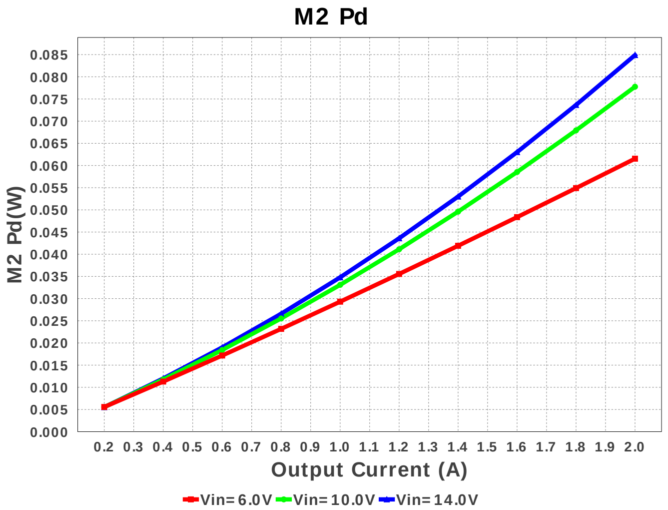


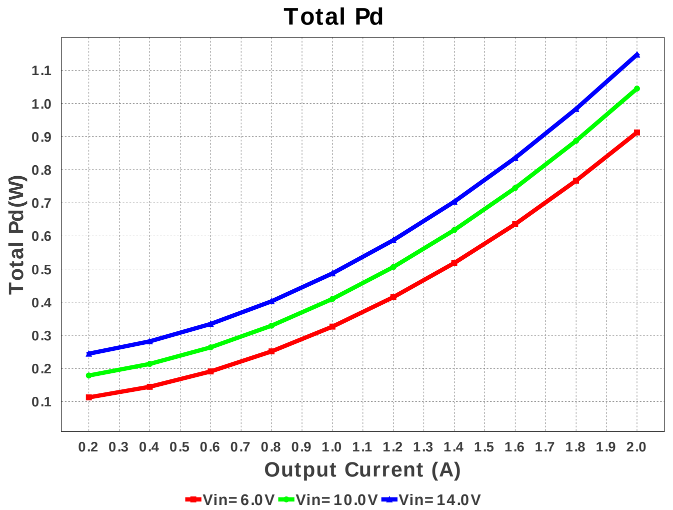
M4 Rdson

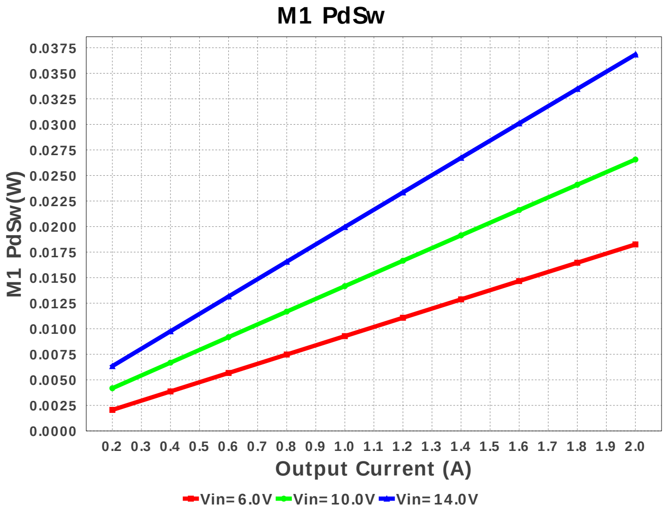


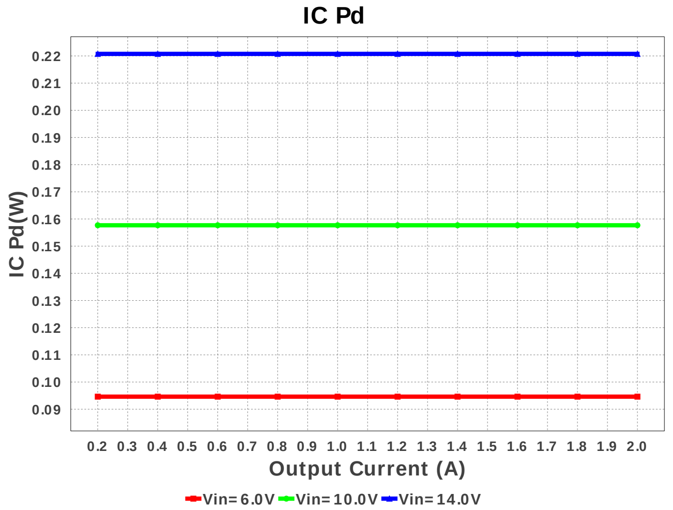
M3 Rdson

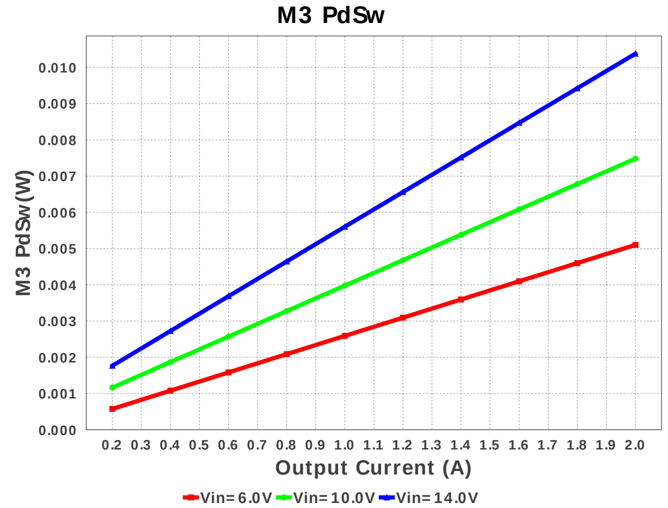


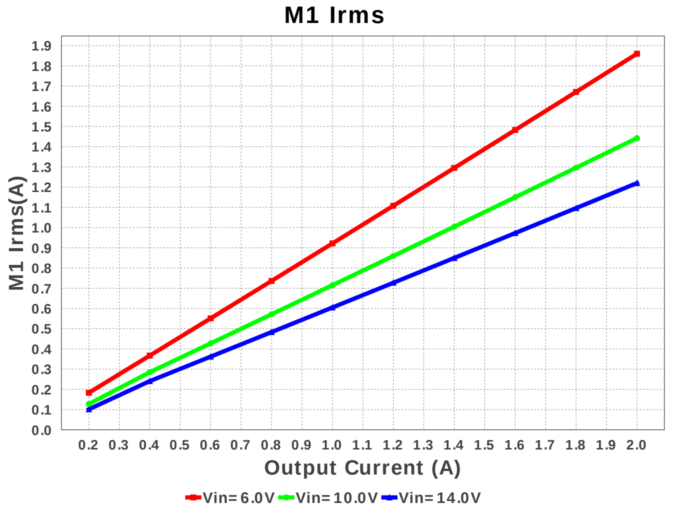

M2 Pd
M2 Pd(W)
0.085 0.080 0.075 0.070 0.065 0.060 0.055 0.050 0.045 0.040 0.035 0.030 0.025 0.020 0.015 0.010 0.005 0.000
0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9 1.0 1.1 1.2 1.3 1.4 1.5 1.6 1.7 1.8 1.9 2.0
Output Current (A)
Vin=6.0V Vin=10.0V Vin=14.0V

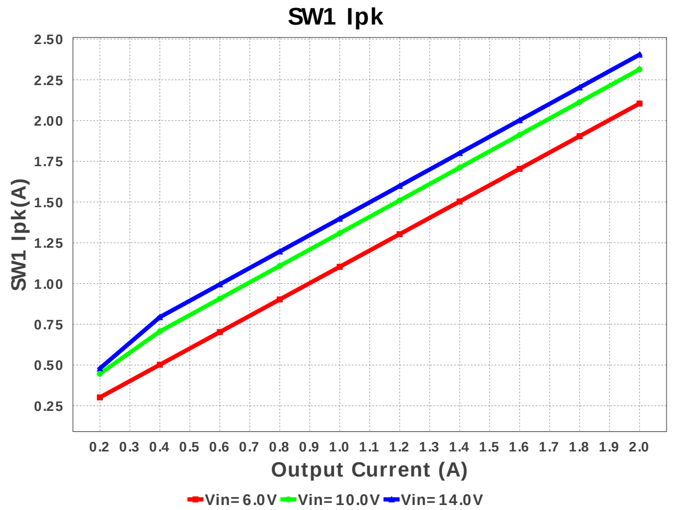

Total Pd
Total Pd(W)
1.1 1.0 0.9 0.8 0.7 0.6 0.5 0.4 0.3 0.2 0.1
0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9 1.0 1.1 1.2 1.3 1.4 1.5 1.6 1.7 1.8 1.9 2.0
Output Current (A)
Vin=6.0V Vin=10.0V Vin=14.0V

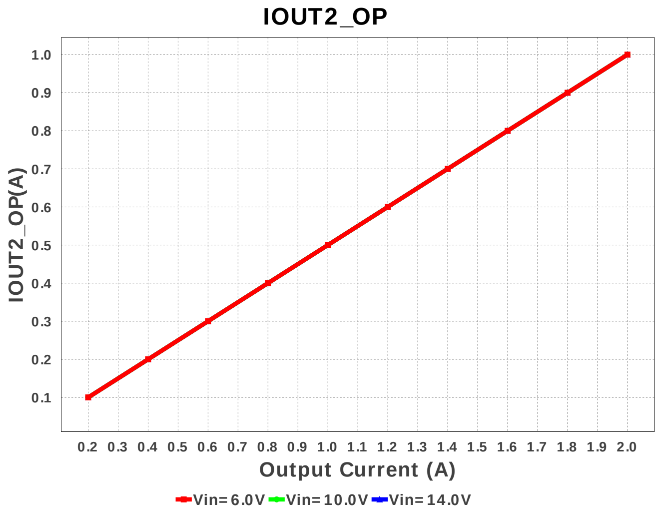

M1 PdSw
M1 PdSw(W)
0.0375 0.0350 0.0325 0.0300 0.0275 0.0250 0.0225 0.0200 0.0175 0.0150 0.0125 0.0100 0.0075 0.0050 0.0025 0.0000
0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9 1.0 1.1 1.2 1.3 1.4 1.5 1.6 1.7 1.8 1.9 2.0
Output Current (A)
Vin=6.0V Vin=10.0V Vin=14.0V

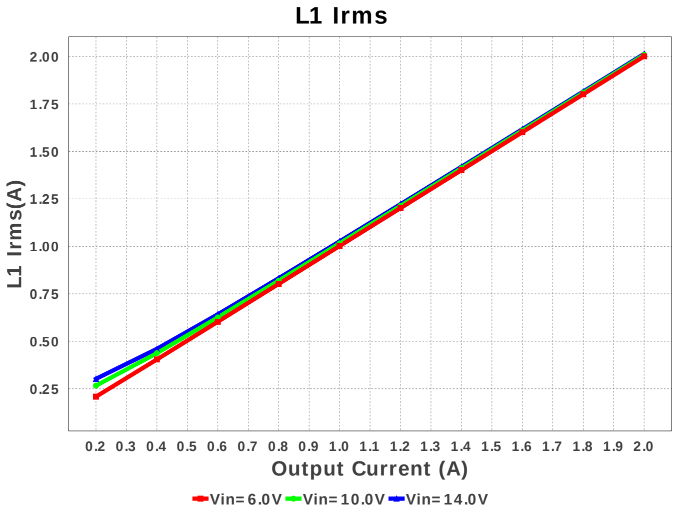

IC Pd
IC Pd(W)
0.22 0.21 0.20 0.19 0.18 0.17 0.16 0.15 0.14 0.13 0.12 0.11 0.10 0.09
0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9 1.0 1.1 1.2 1.3 1.4 1.5 1.6 1.7 1.8 1.9 2.0
Output Current (A)
Vin=6.0V Vin=10.0V Vin=14.0V

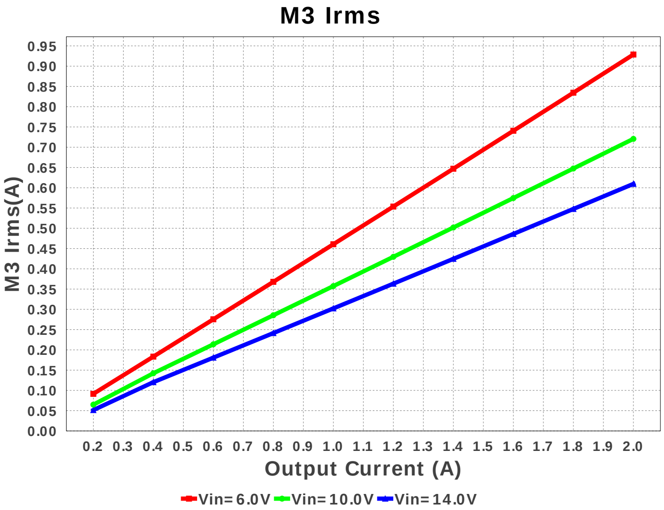

M3 PdSw
M3 PdSw(W)
0.010 0.009 0.008 0.007 0.006 0.005 0.004 0.003 0.002 0.001 0.000
0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9 1.0 1.1 1.2 1.3 1.4 1.5 1.6 1.7 1.8 1.9 2.0
Output Current (A)
Vin=6.0V Vin=10.0V Vin=14.0V

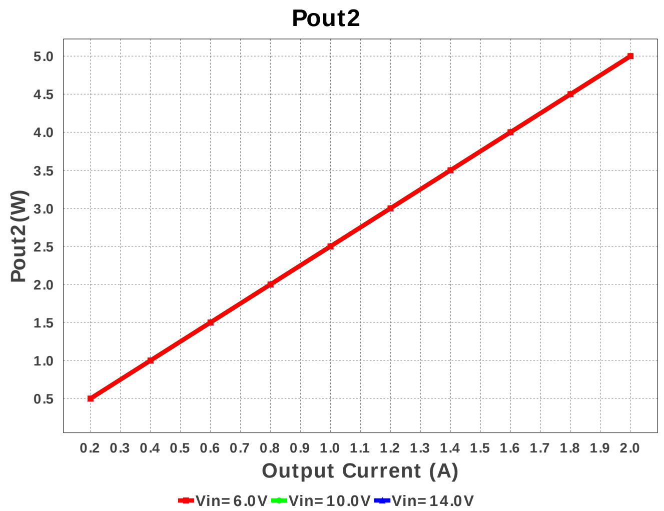

M1 Irms
M1 Irms(A)
1.9 1.8 1.7 1.6 1.5 1.4 1.3 1.2 1.1 1.0 0.9 0.8 0.7 0.6 0.5 0.4 0.3 0.2 0.1 0.0
0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9 1.0 1.1 1.2 1.3 1.4 1.5 1.6 1.7 1.8 1.9 2.0
Output Current (A)
Vin=6.0V Vin=10.0V Vin=14.0V

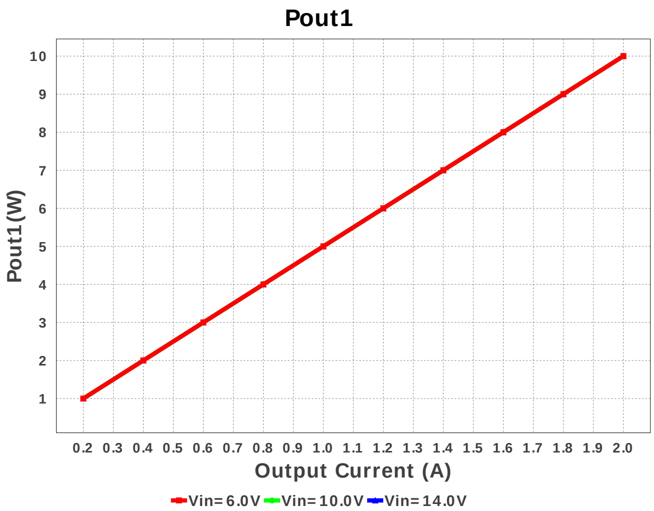

SW1 Ipk
SW1 Ipk(A)
Output Current (A)
Vin=6.0V Vin=10.0V Vin=14.0V

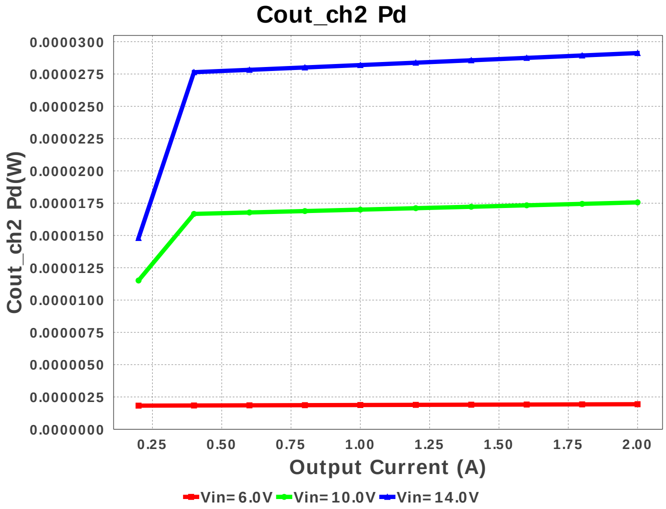

IOUT2_OP
IOUT2_OP(A)
Output Current (A)
Vin=6.0V Vin=10.0V Vin=14.0V

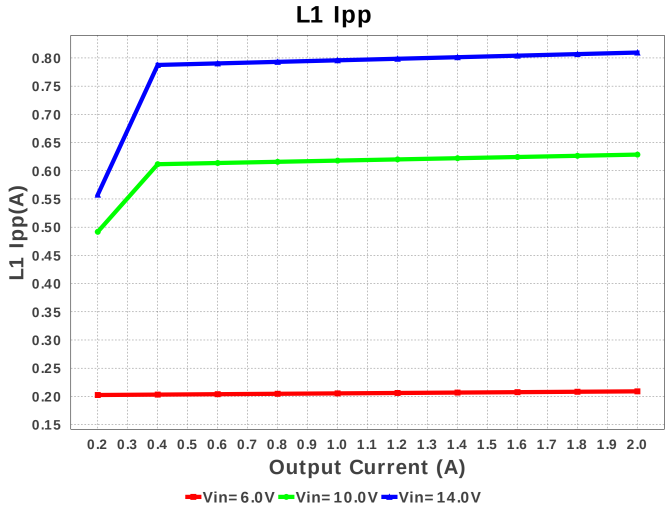

L1 Irms
L1 Irms(A)
Output Current (A)
Vin=6.0V Vin=10.0V Vin=14.0V

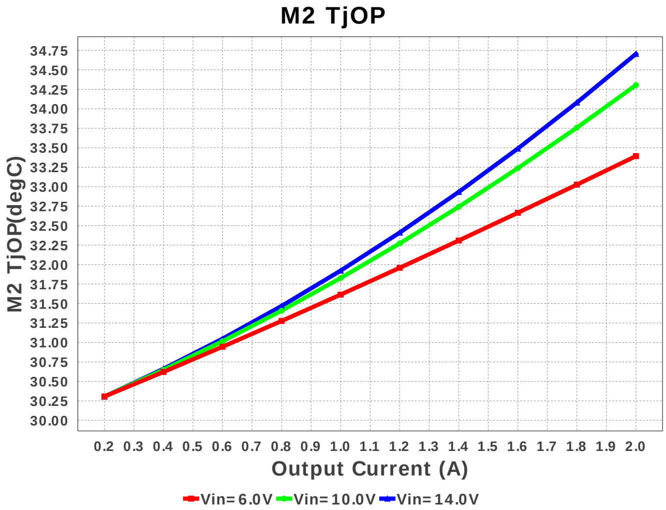

M3 Irms
M3 Irms(A)
Output Current (A)
Vin=6.0V Vin=10.0V Vin=14.0V

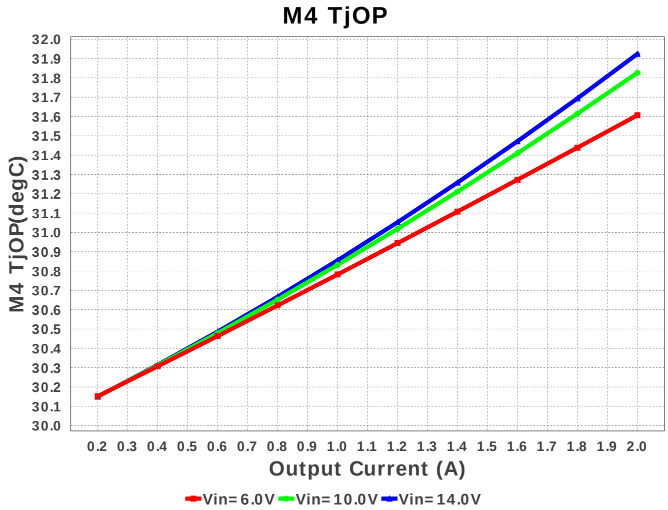

Pout2
Pout2(W)
Output Current (A)
Vin=6.0V Vin=10.0V Vin=14.0V

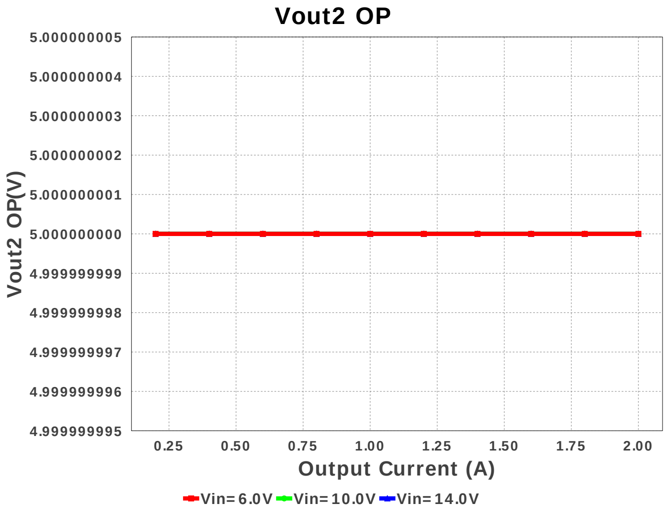

Pout1
Pout1(W)
Output Current (A)
Vin=6.0V Vin=10.0V Vin=14.0V

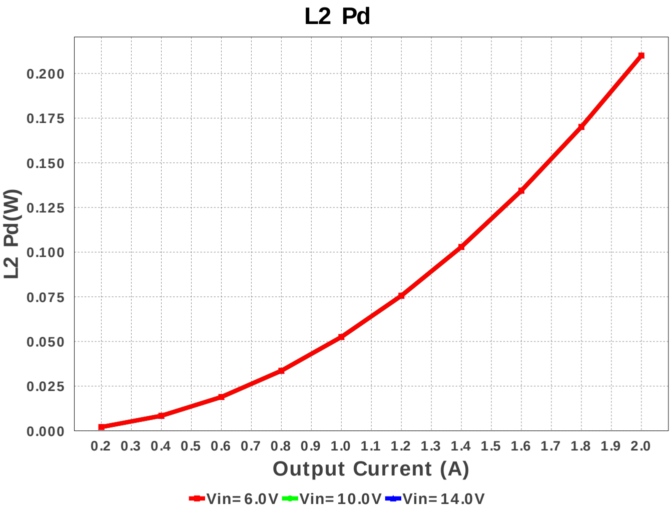

Cout_ch2 Pd
Cout_ch2 Pd(W)
Output Current (A)
Vin=6.0V Vin=10.0V Vin=14.0V

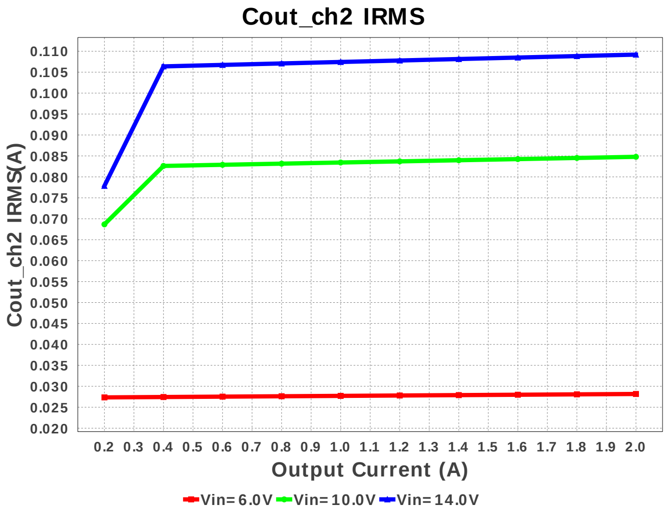

L1 Ipp
L1 Ipp(A)
Output Current (A)
Vin=6.0V Vin=10.0V Vin=14.0V

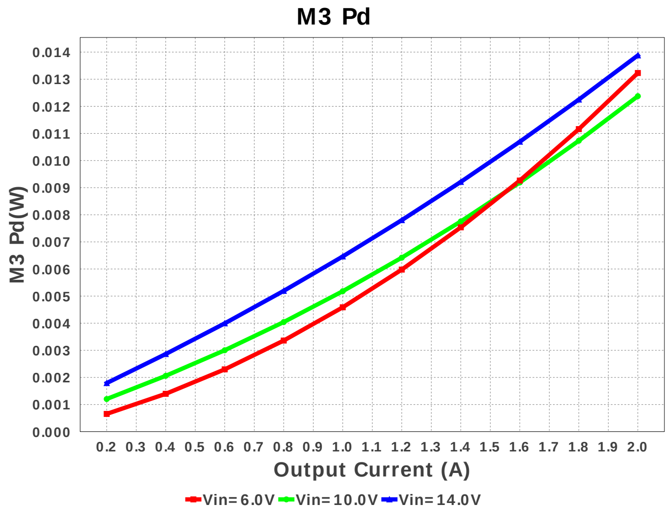

M2 TjOP
M2 TjOP(degC)
Output Current (A)
Vin=6.0V Vin=10.0V Vin=14.0V

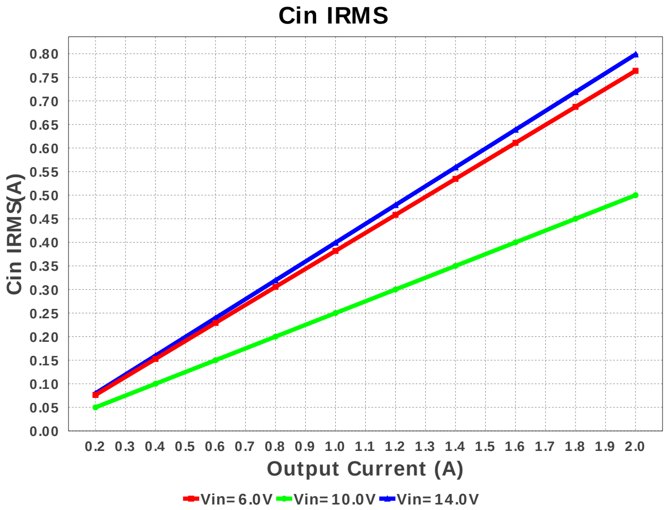

M4 TjOP
M4 TjOP(degC)
Output Current (A)
Vin=6.0V Vin=10.0V Vin=14.0V


Vout2 OP
Vout2 OP(V)
Output Current (A)
Vin=6.0V Vin=10.0V Vin=14.0V


L2 Pd
L2 Pd(W)
Output Current (A)
Vin=6.0V Vin=10.0V Vin=14.0V







Operating Values

#	Name	Value	Category	Description
1.	Cin IRMS	798.485 mA	Current	Input capacitor RMS ripple current
2.	Cout_ch1 IRMS	233.722 mA	Current	Output Channel 1 Capacitor RMS ripple current
3.	Cout_ch2 IRMS	109.206 mA	Current	Output Channel 2 Capacitor RMS ripple current
4.	Iin Avg	1.154 A	Current	Average input current
5.	L1 Ipp	809.636 mA	Current	Peak-to-peak inductor ripple current
6.	L1 Irms	2.014 A	Current	Inductor ripple current
7.	L2 Ipp	378.301 mA	Current	Inductor 2 peak to peak current
8.	L2 Irms	1.006 A	Current	Inductor ripple current
9.	M1 Irms	1.22 A	Current	MOSFET RMS ripple current
10.	M2 Irms	1.585 A	Current	MOSFET RMS ripple current
11.	M3 Irms	609.619 mA	Current	MOSFET RMS ripple current
12.	M4 Irms	792.695 mA	Current	MOSFET RMS ripple current
13.	SW1 Ipk	2.405 A	Current	Peak switch current
14.	SW2 Ipk	1.189 A	Current	Peak switch current
15.	BOM Count	42	General	Total Design BOM count
16.	FootPrint	640.0 mm^2	General	Total Foot Print Area of BOM components
17.	Frequency	188.079 kHz	General	Switching frequency
18.	IC Tolerance	12.0 mV	General	IC Feedback Tolerance
19.	Pout1	10.003 W	General	Channel 1 output Power
20.	Pout2	5.002 W	General	Channel 2 output Power
21.	Total BOM	$5.15	General	Total BOM Cost
22.	ch1 Mode	CCM	General	Conduction Mode
23.	ch2 Mode	CCM	General	Conduction Mode
24.	M3 TjOP	30.767 degC	Op_Point	M3 MOSFET junction temperature
25.	M4 TjOP	31.924 degC	Op_Point	M4 MOSFET junction temperature
26.	Vout Actual	5.002 V	Op_Point	Vout Actual calculated based on selected voltage divider resistors
27.	Duty Cycle 1	37.23 %	Op_point	Duty cycle for Channel 1
28.	Duty Cycle 2	37.164 %	Op_point	Duty cycle for Channel 2
29.	Efficiency	92.898 %	Op_point	Steady state efficiency
30.	IC Tj	38.83 degC	Op_point	IC junction temperature
31.	IOUT1_OP	2.0 A	Op_point	Iout1 operating point

#	Name	Value	Category	Description
32.	IOUT2_OP	1.0 A	Op_point	Iout2 operating point
33.	M1 TjOP	33.027 degC	Op_point	M1 MOSFET junction temperature
34.	M2 TjOP	34.705 degC	Op_point	M2 MOSFET junction temperature
35.	VIN_OP	14.0 V	Op_point	Vin operating point
36.	Vout1 OP	5.002 V	Op_point	Operational Voltage 1
37.	Vout1 p-p	12.388 mV	Op_point	Peak-to-peak output1 ripple voltage
38.	Vout2 OP	5.002 V	Op_point	Operational Voltage 2
39.	Vout2 p-p	1.56 mV	Op_point	Peak-to-peak output2 ripple voltage
40.	Cin Pd	958.917 µW	Power	Input capacitor power dissipation
41.	Cout_ch1 Pd	409.694 µW	Power	Ouput channel 1 capacitor power dissipation
42.	Cout_ch2 Pd	29.129 µW	Power	Ouput channel 2 capacitor power dissipation
43.	IC Pd	220.762 mW	Power	IC power dissipation
44.	L1 Pd	420.062 mW	Power	Inductor power dissipation
45.	L2 Pd	210.031 mW	Power	Inductor power dissipation
46.	M1 Pd	54.645 mW	Power	M1 MOSFET total power dissipation
47.	M1 PdCond	17.807 mW	Power	M1 MOSFET conduction losses
48.	M1 PdSw	36.839 mW	Power	M1 MOSFET switching losses
49.	M2 Pd	84.888 mW	Power	M2 MOSFET total power dissipation
50.	M2 PdCond	30.241 mW	Power	M2 MOSFET conduction losses
51.	M2 PdSw	54.647 mW	Power	M2 MOSFET switching losses
52.	M3 Pd	13.879 mW	Power	M3 MOSFET total power dissipation
53.	M3 PdCond	3.502 mW	Power	M3 MOSFET conduction losses
54.	M3 PdSw	10.377 mW	Power	M3 MOSFET switching losses
55.	M3 Rdson	11.957 mOhm	Power	Drain-Source On-resistance
56.	M3 Rdson	9.424 mOhm	Power	Drain-Source On-resistance
57.	M4 Pd	34.817 mW	Power	M4 MOSFET total power dissipation
58.	M4 PdCond	7.477 mW	Power	M4 MOSFET conduction losses
59.	M4 PdSw	27.339 mW	Power	M4 MOSFET switching losses
60.	M4 Rdson	12.044 mOhm	Power	Drain-Source On-resistance
61.	M4 Rdson	11.9 mOhm	Power	Drain-Source On-resistance
62.	Rsense1 Pd	75.324 mW	Power	Current Limit Sense Resistor Power Dissipation
63.	Rsense2 Pd	31.418 mW	Power	Current Limit Sense Resistor Power Dissipation
64.	Total Pd	1.147 W	Power	Total Power Dissipation
65.	Cross Freq Ch1	16.656 kHz		Bode plot crossover frequency
66.	Cross Freq Ch2	16.951 kHz		Bode plot crossover frequency
67.	Phase Marg Ch1	57.518 deg		Bode Plot Phase Margin
68.	Phase Marg Ch2	54.595 deg		Bode Plot Phase Margin
69.	Vout Tolerance	3.222 %		Vout Tolerance based on IC Tolerance (no load) and voltage divider resistors if applicable

Design Inputs

#	Name	Value	Description
1.	Iout	2.0	Maximum Output Current
2.	Iout1	2.0	Output Current #1
3.	Iout2	1.0	Output Current #2
4.	VinMax	14.0	Maximum input voltage
5.	VinMin	6.0	Minimum input voltage
6.	Vout	5.0	Output Voltage
7.	Vout1	5.0	Output Voltage #1
8.	Vout2	5.0	Output Voltage #2
9.	base_pn	LM25119	Texas Instruments Base Part Number
10.	source	DC	Input Source Type
11.	ta	30.0	Ambient temperature

Design Assistance

1. Outline The LM5119 is a dual synchronous buck controller intended for step-down regulator applications from a high voltage or widely varying input supply. The control method is based upon current mode control utilizing an emulated current ramp. Current mode control provides inherent line feed-forward, cycle-by-cycle current limiting and ease of loop compensation. The use of an emulated control ramp reduces noise sensitivity of the pulse-width modulation circuit, allowing reliable control of very small duty cycles necessary in high input voltage applications. Sequencing the 2 outputs The LM(2)5119 contains an enable function allowing shutdown control of channel2, independent of channel1. If the EN2 pin is pulled below 2.0V, channel2 enters shutdown mode. If the EN2 input is greater than 2.5V, channel2 returns to normal operation. Diode Emulation A fully synchronous buck regulator implemented with a freewheel MOSFET rather than a diode has the capability to sink current from the output in certain conditions such as light load, over-voltage or pre-bias startup. The LM(2)5119 provides a diode emulation feature that can be enabled to prevent reverse (drain to source) current flow in the low side free-wheel MOSFET.

2. LM25119 Product Folder : http://www.ti.com/product/LM25119 : contains the data sheet and other resources.

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