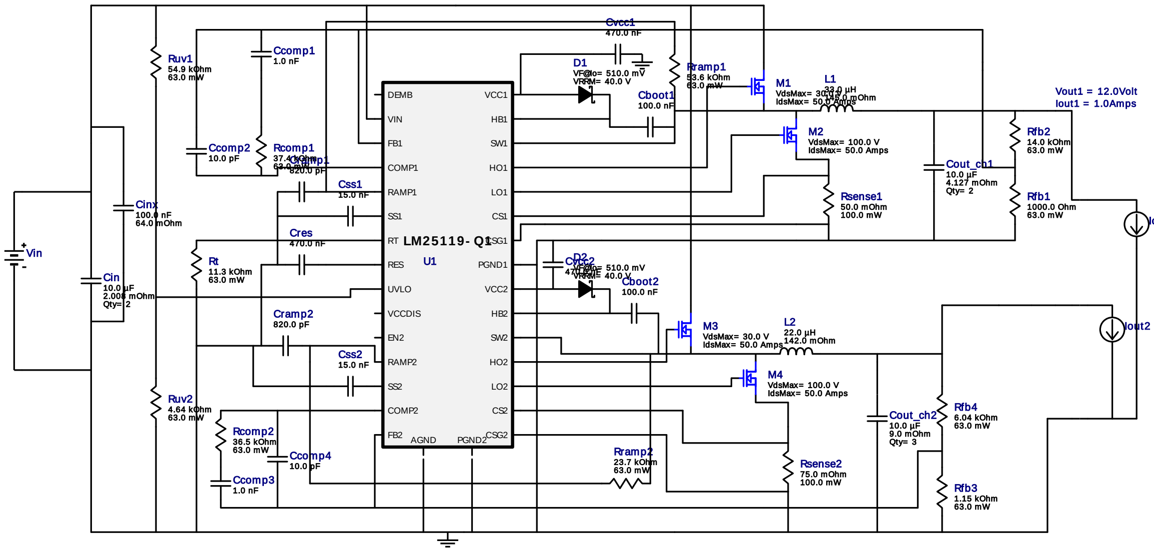
VinMin = 20.0V
VinMax = 24.0V
Vout = 12.0V
Iout = 1.0A

Device = LM25119QPSQ/NOPB
Topology = Buck
Created = 7/18/16 7:04:09 PM
BOM Cost = $6.66
BOM Count = 43
Total Pd = 1.49W

WEBENCH ® Design Report

Design : 3496425/4 LM25119QPSQ/NOPB
LM25119QPSQ/NOPB 20.0V-24.0V to 5.00V @ 1.0A



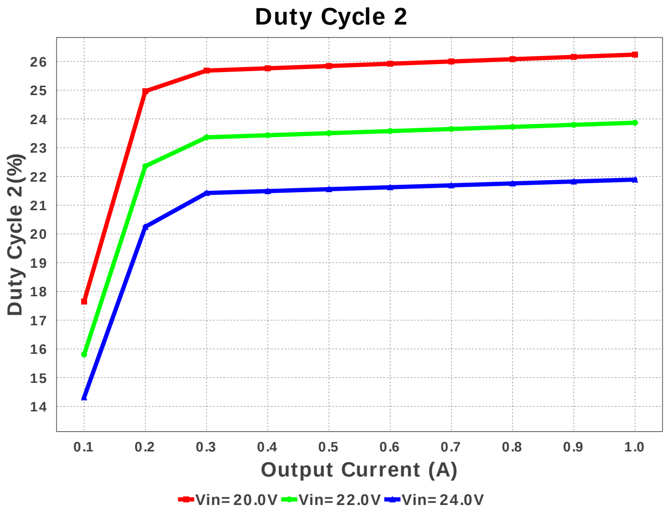
1. This regulator device is qualified for Automotive applications. All passives and other components selected in this design may not be qualified for Automotive applications. The user is required to verify that all components in the design meet the qualification and safety requirements for their specific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

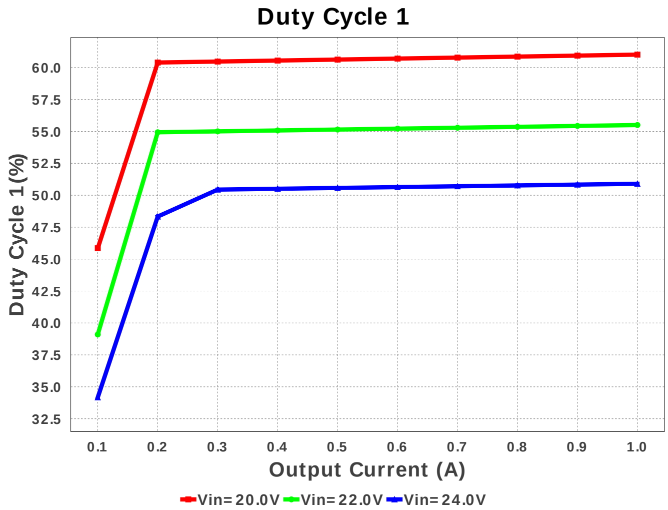
Electrical BOM

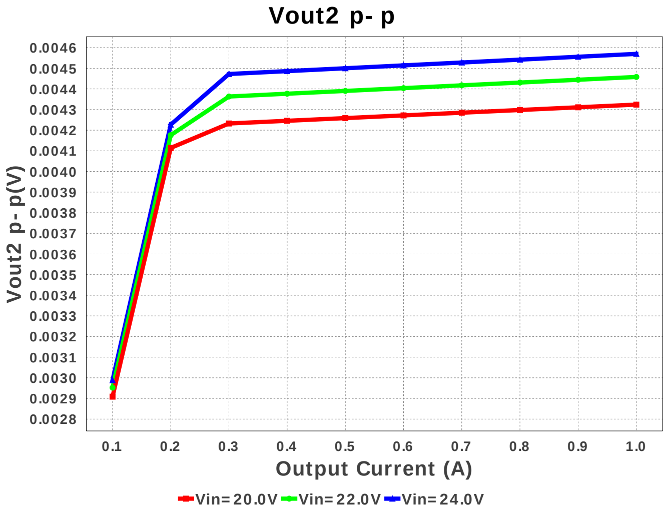
#	Name	Manufacturer	Part Number	Properties	Qty	Price	Footprint
1.	Cboot1	MuRata	GRM155R61A104KA01D Series= X5R	Cap= 100.0 nF VDC= 10.0 V IRMS= 0.0 A	1	$0.01	0402 3 mm²
2.	Cboot2	MuRata	GRM155R61A104KA01D Series= X5R	Cap= 100.0 nF VDC= 10.0 V IRMS= 0.0 A	1	$0.01	0402 3 mm²
3.	Ccomp1	Samsung Electro-Mechanics	CL21C102JBCNFNC Series= C0G/NP0	Cap= 1.0 nF VDC= 50.0 V IRMS= 0.0 A	1	$0.01	0805 7 mm²
4.	Ccomp2	Kemet	C0805C100K5GACTU Series= C0G/NP0	Cap= 10.0 pF VDC= 50.0 V IRMS= 0.0 A	1	$0.01	0805 7 mm²
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 mm²
6.	Ccomp4	Kemet	C0805C100K5GACTU Series= C0G/NP0	Cap= 10.0 pF VDC= 50.0 V IRMS= 0.0 A	1	$0.01	0805 7 mm²
7.	Cin	MuRata	GRM32ER7YA106KA12L Series= X7R	Cap= 10.0 uF ESR= 2.008 mOhm VDC= 35.0 V IRMS= 4.6772 A	2	$0.22	1210_280 15 mm²
8.	Cinx	Kemet	C0805C104K5RACTU Series= X7R	Cap= 100.0 nF ESR= 64.0 mOhm VDC= 50.0 V IRMS= 1.64 A	1	$0.01	0805 7 mm²

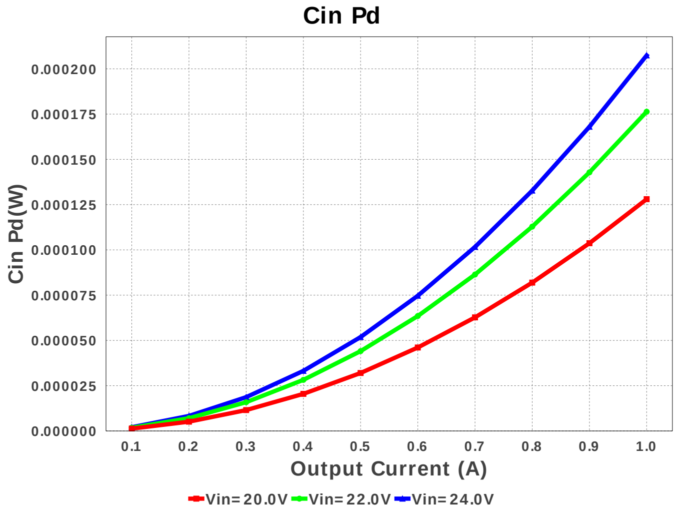
#	Name	Manufacturer	Part Number	Properties	Qty	Price	Footprint
9.	Cout_ch1	MuRata	GRM21BR61C106KE15L Series= X5R	Cap= 10.0 uF ESR= 4.127 mOhm VDC= 16.0 V IRMS= 2.46634 A	2	$0.03	0805 7 mm^2
10.	Cout_ch2	MuRata	GRM188R60J106ME47D Series= X5R	Cap= 10.0 uF ESR= 9.0 mOhm VDC= 6.3 V IRMS= 2.74 A	3	$0.02	0603 5 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	ON Semiconductor	MBR0540T1G	VF@Io= 510.0 mV VRRM= 40.0 V	1	$0.06	SOD-123 13 mm^2
19.	D2	ON Semiconductor	MBR0540T1G	VF@Io= 510.0 mV VRRM= 40.0 V	1	$0.06	SOD-123 13 mm^2
20.	L1	Bourns	SRN8040-330M	L= 33.0 µH DCR= 145.0 mOhm	1	$0.22	SRN8040 100 mm^2
21.	L2	Bourns	SRN6045-220M	L= 22.0 µH DCR= 142.0 mOhm	1	$0.16	SRN6045 64 mm^2
22.	M1	Texas Instruments	CSD17308Q3	VdsMax= 30.0 V IdsMax= 50.0 Amps	1	$0.34	TRANS_NexFET_Q3 18 mm^2
23.	M2	Texas Instruments	CSD19537Q3	VdsMax= 100.0 V IdsMax= 50.0 Amps	1	$0.75	TRANS_NexFET_Q3 18 mm^2
24.	M3	Texas Instruments	CSD17308Q3	VdsMax= 30.0 V IdsMax= 50.0 Amps	1	$0.34	TRANS_NexFET_Q3 18 mm^2
25.	M4	Texas Instruments	CSD19537Q3	VdsMax= 100.0 V IdsMax= 50.0 Amps	1	$0.75	TRANS_NexFET_Q3 18 mm^2
26.	Rcomp1	Vishay-Dale	CRCW040237K4FKED Series= CRCW..e3	Res= 37.4 kOhm Power= 63.0 mW Tolerance= 1.0%	1	$0.01	0402 3 mm^2

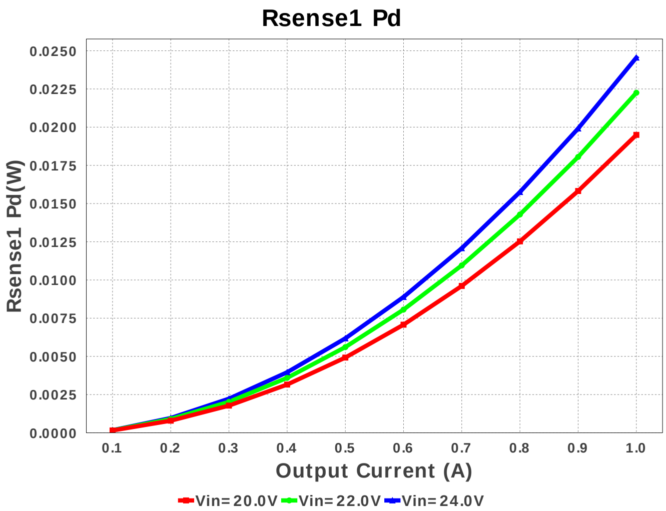
#	Name	Manufacturer	Part Number	Properties	Qty	Price	Footprint
27.	Rcomp2	Vishay-Dale	CRCW040236K5FKED Series= CRCW..e3	Res= 36.5 kOhm Power= 63.0 mW Tolerance= 1.0%	1	$0.01	0402 3 mm^2
28.	Rfb1	Vishay-Dale	CRCW04021K00FKED Series= CRCW..e3	Res= 1000.0 Ohm Power= 63.0 mW Tolerance= 1.0%	1	$0.01	0402 3 mm^2
29.	Rfb2	Vishay-Dale	CRCW040214K0FKED Series= CRCW..e3	Res= 14.0 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	CRCW040253K6FKED Series= CRCW..e3	Res= 53.6 kOhm Power= 63.0 mW Tolerance= 1.0%	1	$0.01	0402 3 mm^2
33.	Rramp2	Vishay-Dale	CRCW040223K7FKED Series= CRCW..e3	Res= 23.7 kOhm Power= 63.0 mW Tolerance= 1.0%	1	$0.01	0402 3 mm^2
34.	Rsense1	Panasonic	ERJ-L03KF50MV Series= ERJ-L03	Res= 50.0 mOhm Power= 100.0 mW Tolerance= 1.0%	1	$0.09	0603 5 mm^2
35.	Rsense2	Panasonic	ERJ-L03UF75MV Series= ERJ-L03	Res= 75.0 mOhm Power= 100.0 mW Tolerance= 1.0%	1	$0.09	0603 5 mm^2
36.	Rt	Vishay-Dale	CRCW040211K3FKED Series= CRCW..e3	Res= 11.3 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	CRCW04024K64FKED Series= CRCW..e3	Res= 4.64 kOhm Power= 63.0 mW Tolerance= 1.0%	1	$0.01	0402 3 mm^2
39.	U1	Texas Instruments	LM25119QPSQ/NOPB	Switcher	1	$2.99	SQA32A 49 mm^2

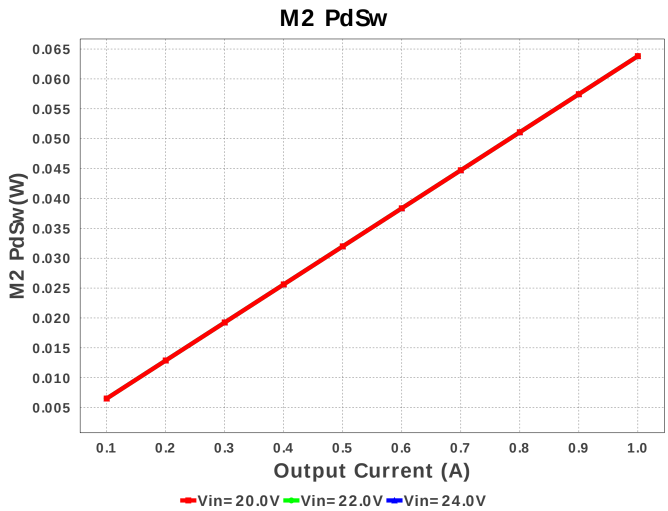

Duty Cycle 2
Duty Cycle 2(%)
Output Current (A)
Vin=20.0V Vin=22.0V Vin=24.0V

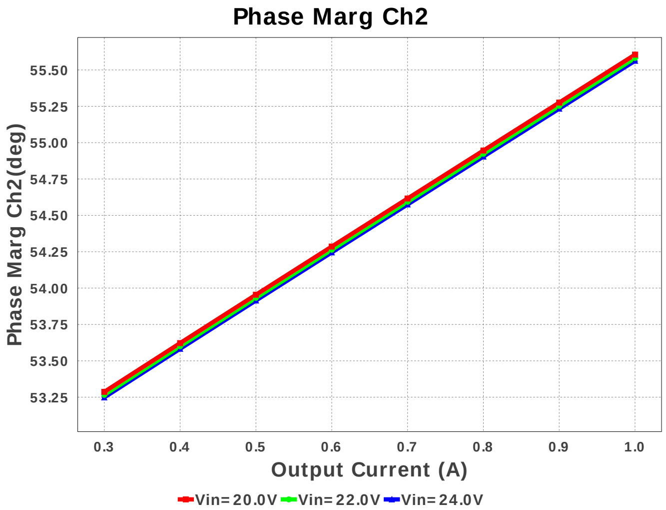

Duty Cycle 1
Duty Cycle 1(%)
Output Current (A)
Vin=20.0V Vin=22.0V Vin=24.0V

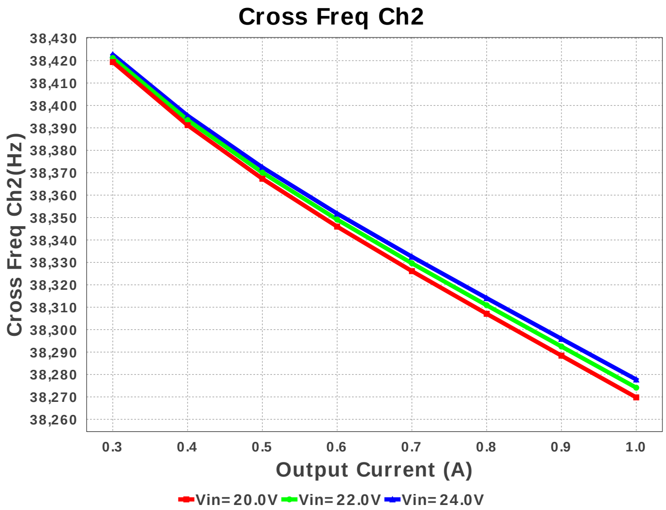

Vout2 p-p
Vout2 p-p(V)
Output Current (A)
Vin=20.0V Vin=22.0V Vin=24.0V

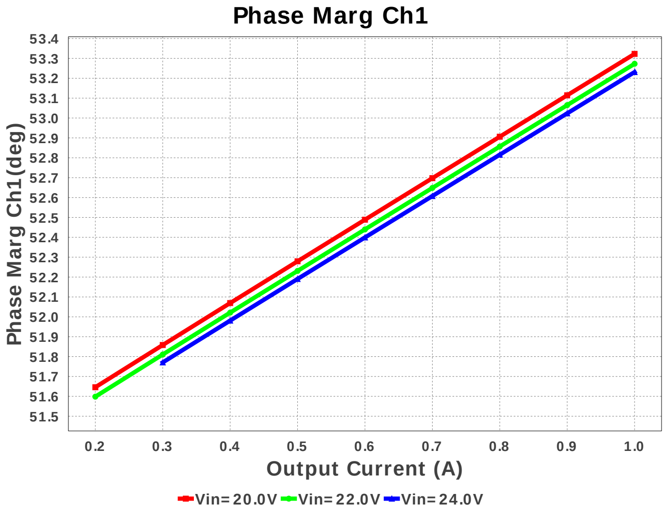

Cin Pd
Cin Pd(W)
Output Current (A)
Vin=20.0V Vin=22.0V Vin=24.0V

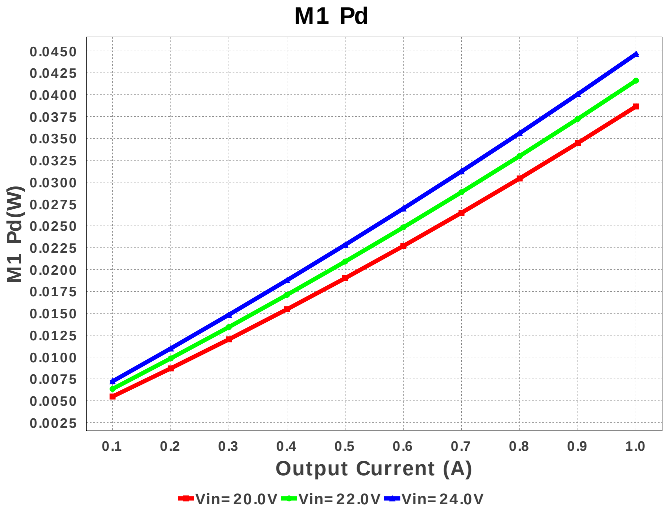

Rsense1 Pd
Rsense1 Pd(W)
Output Current (A)
Vin=20.0V Vin=22.0V Vin=24.0V

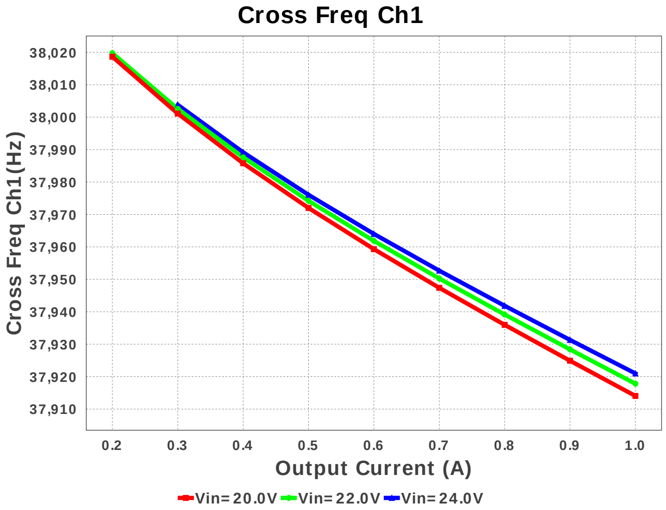

M2 PdSw
M2 PdSw(W)
Output Current (A)
Vin=20.0V Vin=22.0V Vin=24.0V

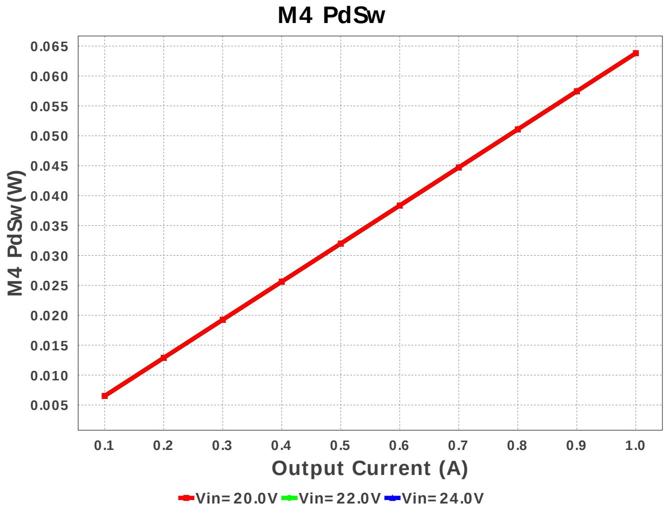

Phase Marg Ch2
Phase Marg Ch2(deg)
Output Current (A)
Vin=20.0V Vin=22.0V Vin=24.0V

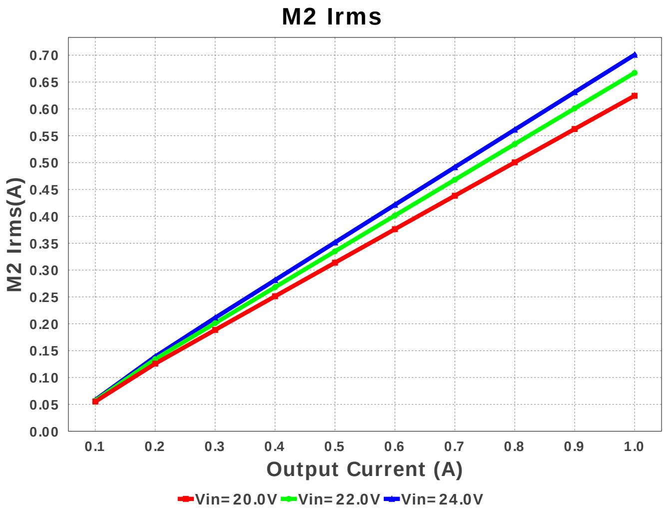

Cross Freq Ch2
Cross Freq Ch2(Hz)
Output Current (A)
Vin=20.0V Vin=22.0V Vin=24.0V

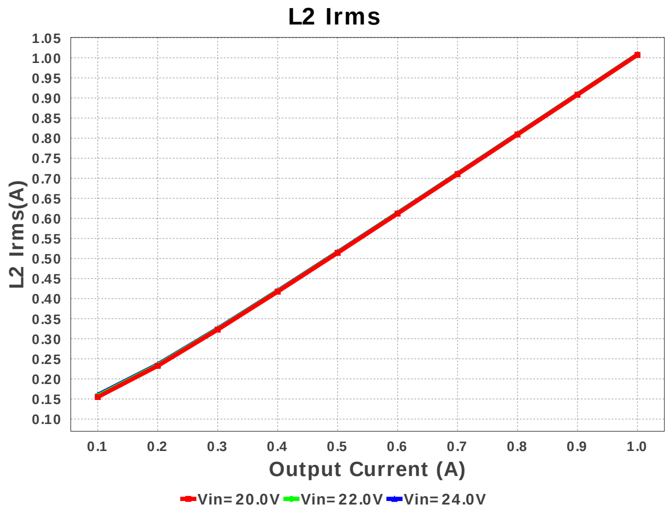

Phase Marg Ch1
Phase Marg Ch1(deg)
Output Current (A)
Vin=20.0V Vin=22.0V Vin=24.0V

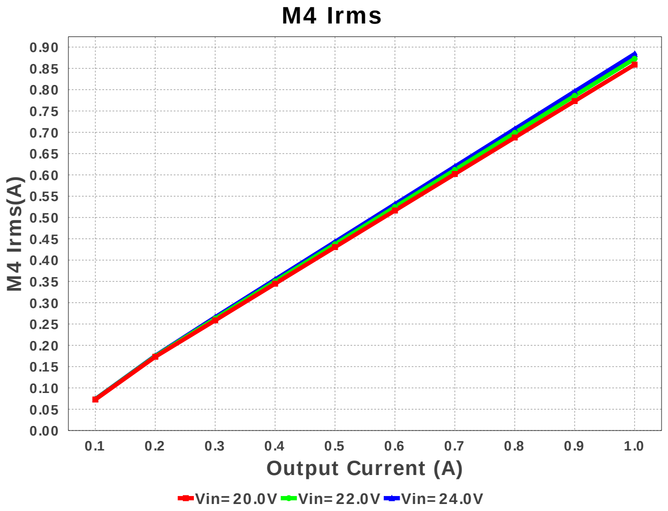

M1 Pd
M1 Pd(W)
Output Current (A)
Vin=20.0V Vin=22.0V Vin=24.0V

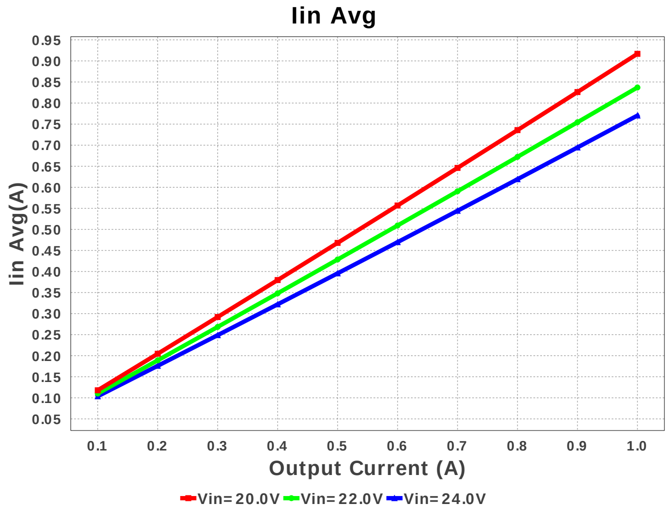

Cross Freq Ch1
Cross Freq Ch1(Hz)
Output Current (A)
Vin=20.0V Vin=22.0V Vin=24.0V

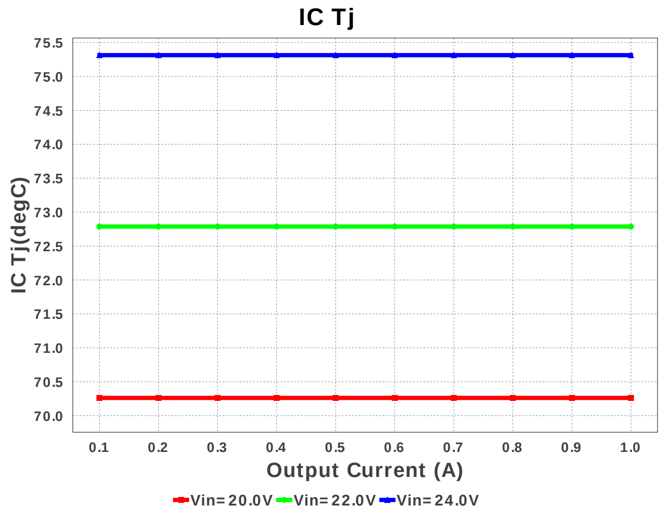

M4 PdSw
M4 PdSw(W)
Output Current (A)
Vin=20.0V Vin=22.0V Vin=24.0V

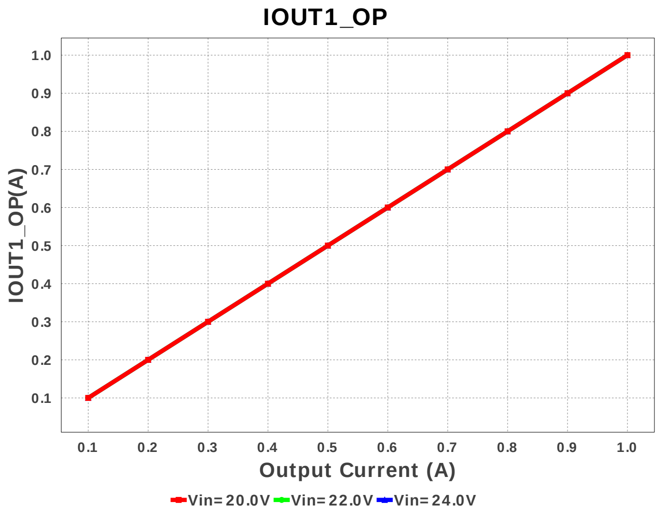

M2 Irms
M2 Irms(A)
Output Current (A)
Vin= 20.0V Vin= 22.0V Vin= 24.0V

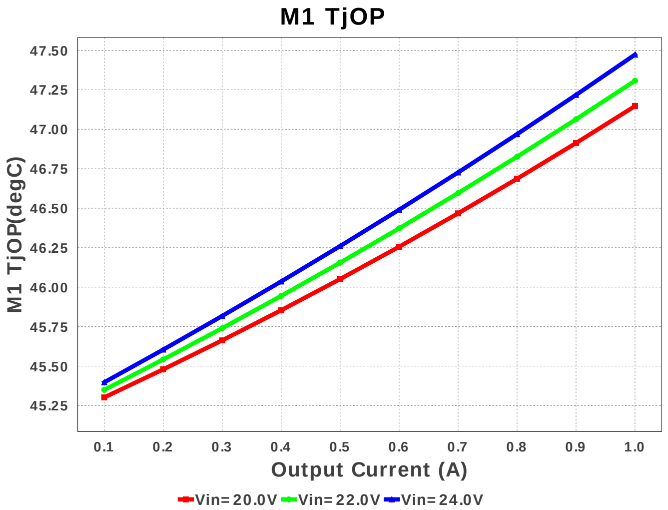

L2 Irms
L2 Irms(A)
Output Current (A)
Vin= 20.0V Vin= 22.0V Vin= 24.0V

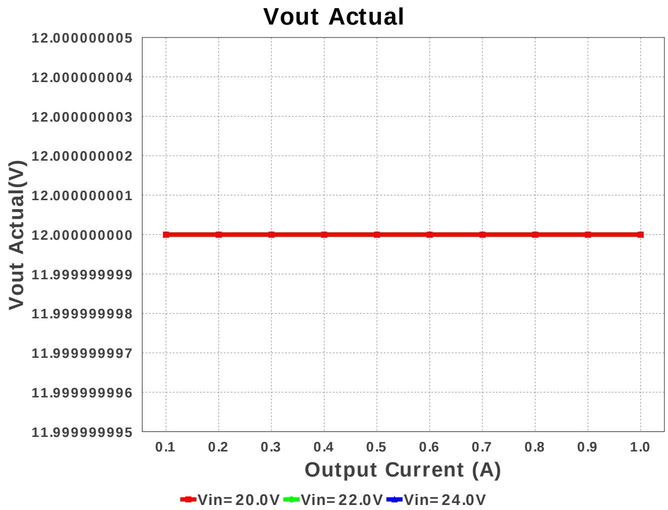

M4 Irms
M4 Irms(A)
Output Current (A)
Vin= 20.0V Vin= 22.0V Vin= 24.0V

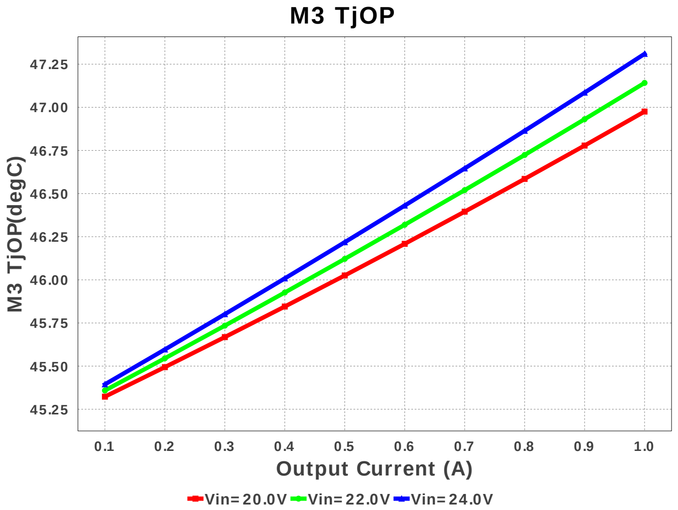

Iin Avg
Iin Avg(A)
Output Current (A)
Vin= 20.0V Vin= 22.0V Vin= 24.0V

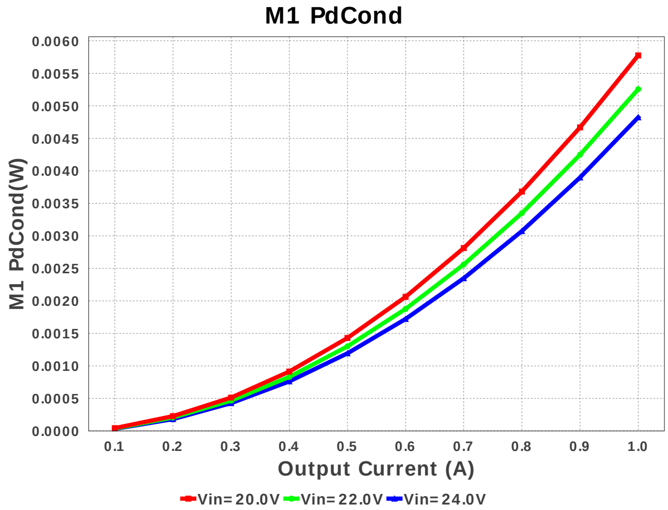

IC Tj
IC Tj(degC)
Output Current (A)
Vin= 20.0V Vin= 22.0V Vin= 24.0V

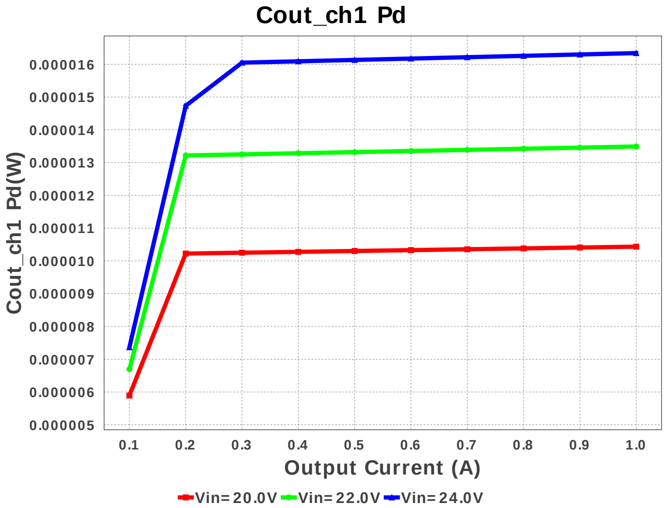

IOUT1_OP
IOUT1_OP(A)
Output Current (A)
Vin= 20.0V Vin= 22.0V Vin= 24.0V

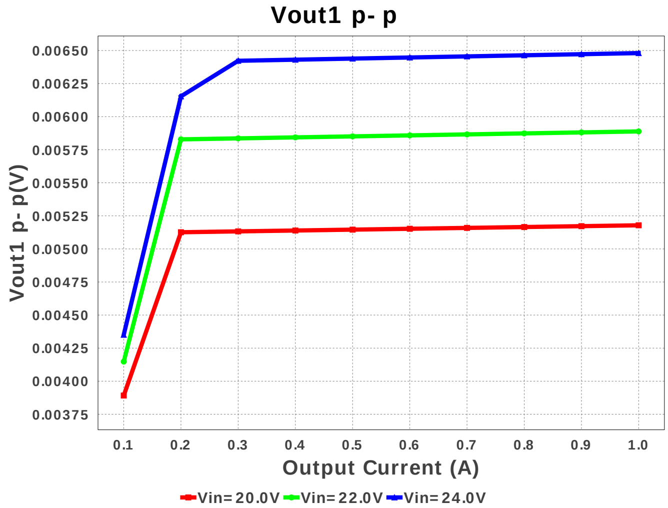

M1 TjOP
M1 TjOP(degC)
47.50
47.25
47.00
46.75
46.50
46.25
46.00
45.75
45.50
45.25
0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9 1.0
Output Current (A)
Vin=20.0V Vin=22.0V Vin=24.0V


Vout Actual
Vout Actual(V)
12.000000005
12.000000004
12.000000003
12.000000002
12.000000001
12.000000000
11.999999999
11.999999998
11.999999997
11.999999996
11.999999995
0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9 1.0
Output Current (A)
Vin=20.0V Vin=22.0V Vin=24.0V

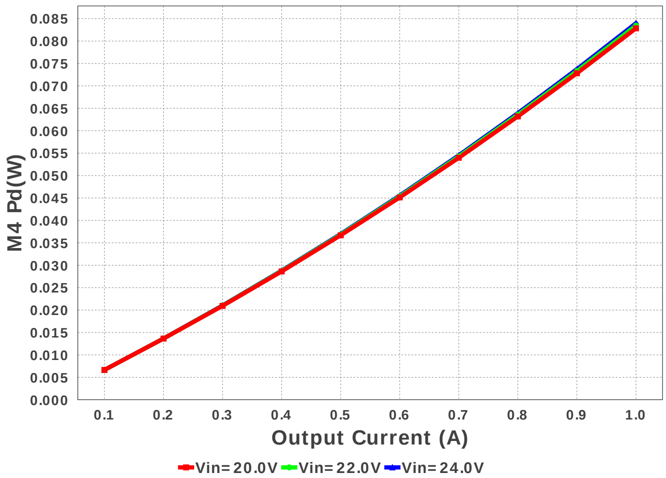

M3 TjOP
M3 TjOP(degC)
47.25
47.00
46.75
46.50
46.25
46.00
45.75
45.50
45.25
0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9 1.0
Output Current (A)
Vin=20.0V Vin=22.0V Vin=24.0V


M1 PdCond
M1 PdCond(W)
0.0060
0.0055
0.0050
0.0045
0.0040
0.0035
0.0030
0.0025
0.0020
0.0015
0.0010
0.0005
0.0000
0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9 1.0
Output Current (A)
Vin=20.0V Vin=22.0V Vin=24.0V

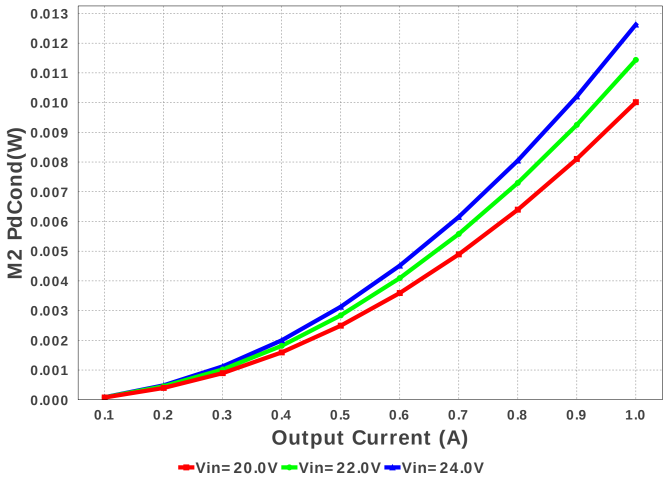

Cout_ch1 Pd
Cout_ch1 Pd(W)
0.000016
0.000015
0.000014
0.000013
0.000012
0.000011
0.000010
0.000009
0.000008
0.000007
0.000006
0.000005
0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9 1.0
Output Current (A)
Vin=20.0V Vin=22.0V Vin=24.0V


Vout1 p- p
Vout1 p- p(V)
0.00650
0.00625
0.00600
0.00575
0.00550
0.00525
0.00500
0.00475
0.00450
0.00425
0.00400
0.00375
0.1 0.2 0.3 0.4 0.5 0.6 0.7 0.8 0.9 1.0
Output Current (A)
Vin=20.0V Vin=22.0V Vin=24.0V

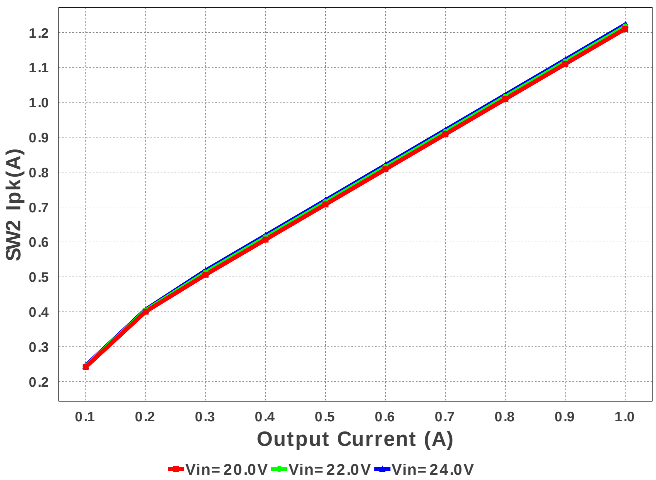
M4 Pd



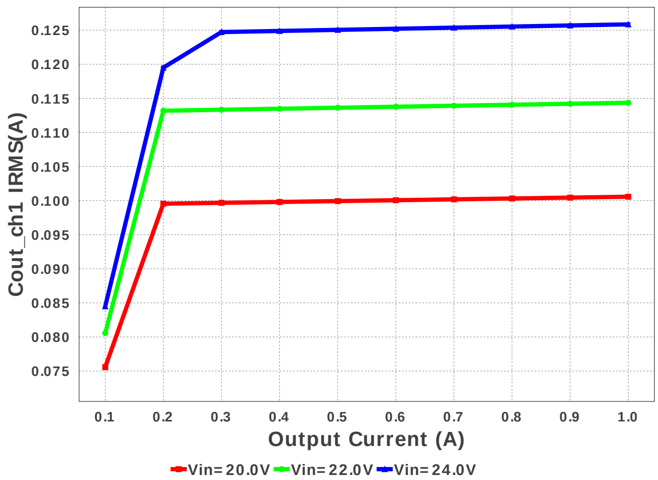
M2 PdCond



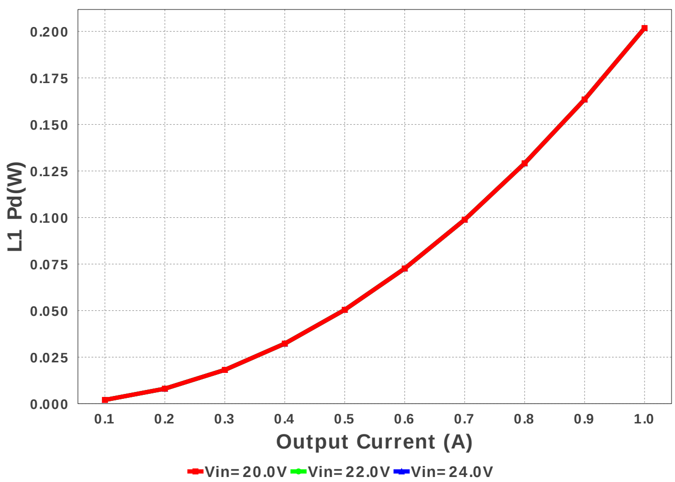
SW2 Ipk



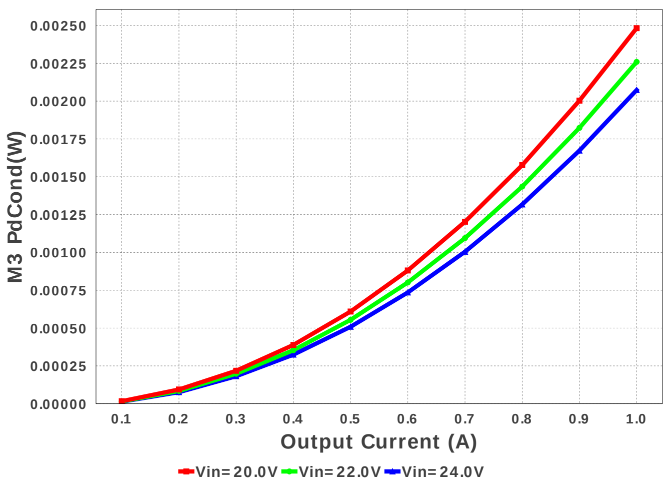
Cout_ch1 IRMS

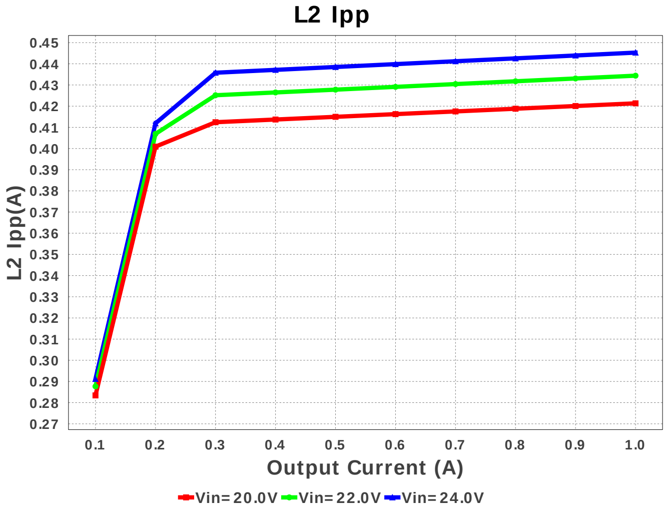


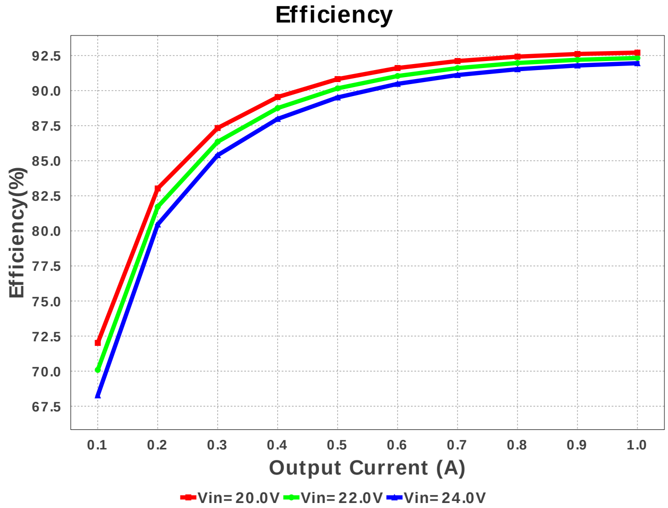
L1 Pd

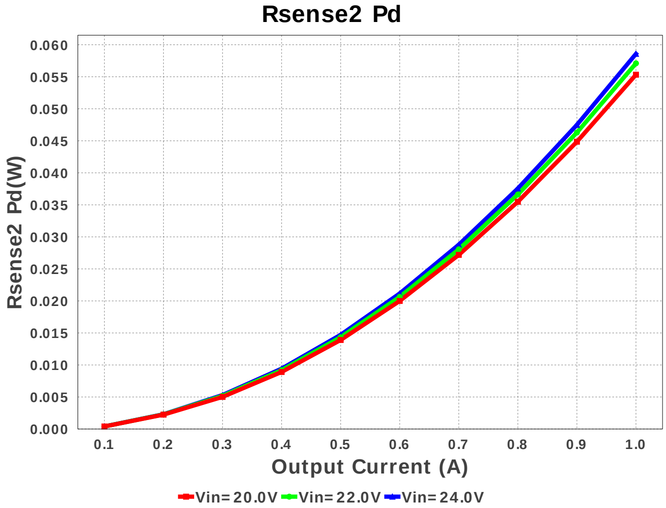


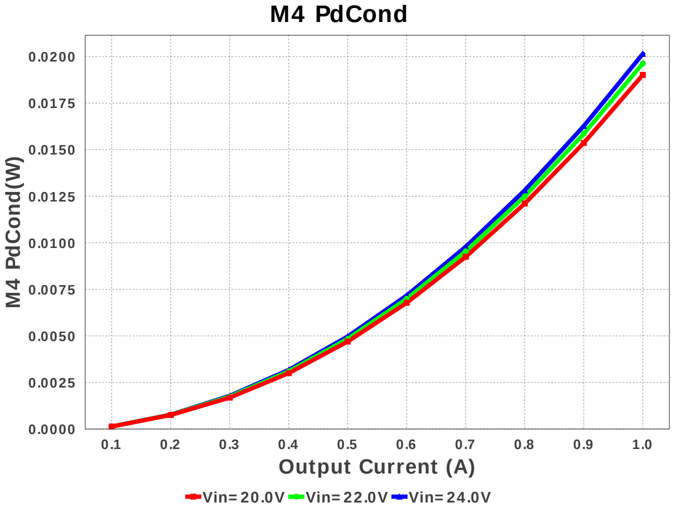
M3 PdCond

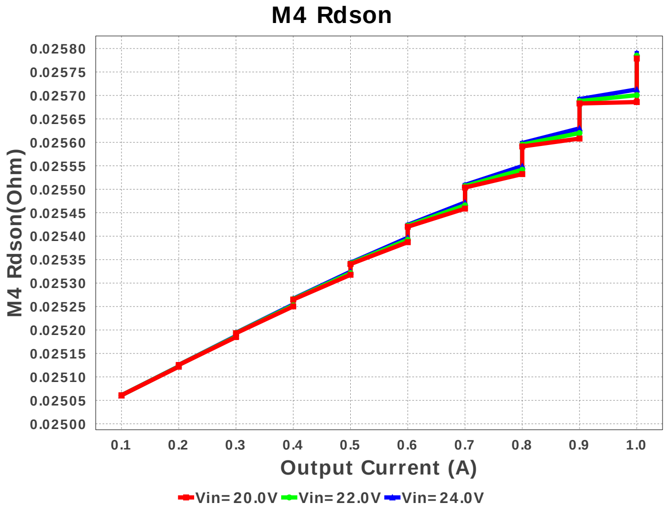


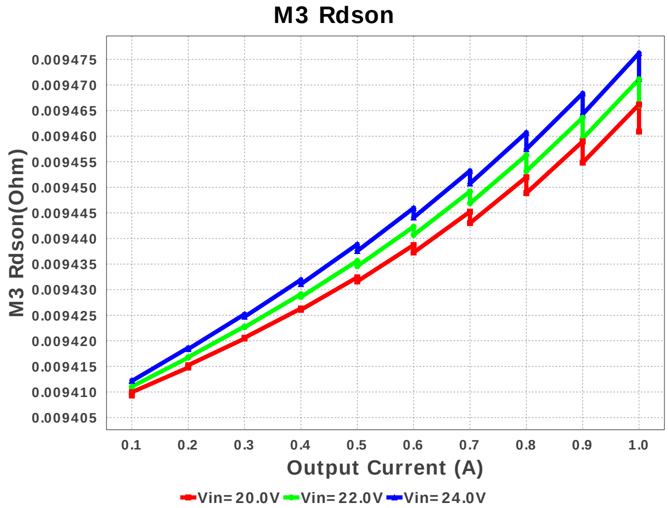

L2 Ipp
L2 Ipp(A)
Output Current (A)
Vin=20.0V Vin=22.0V Vin=24.0V

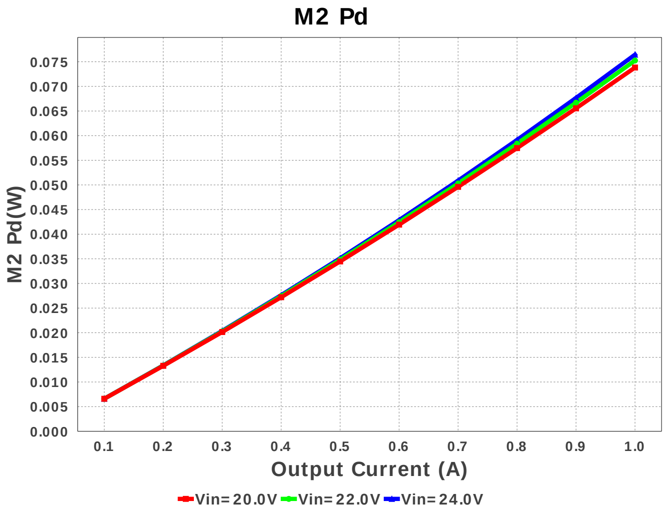

Efficiency
Efficiency(%)
Output Current (A)
Vin=20.0V Vin=22.0V Vin=24.0V

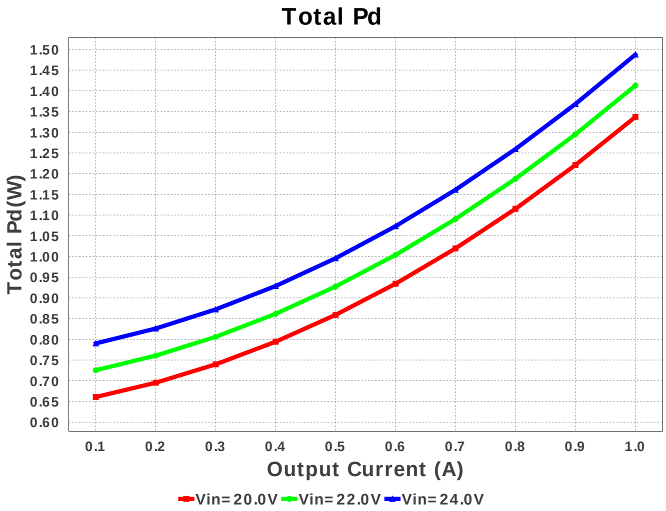

Rsense2 Pd
Rsense2 Pd(W)
Output Current (A)
Vin=20.0V Vin=22.0V Vin=24.0V

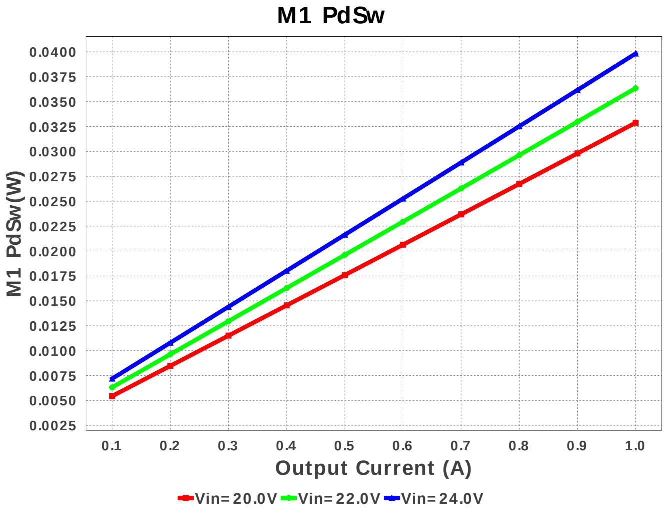

M4 PdCond
M4 PdCond(W)
Output Current (A)
Vin=20.0V Vin=22.0V Vin=24.0V

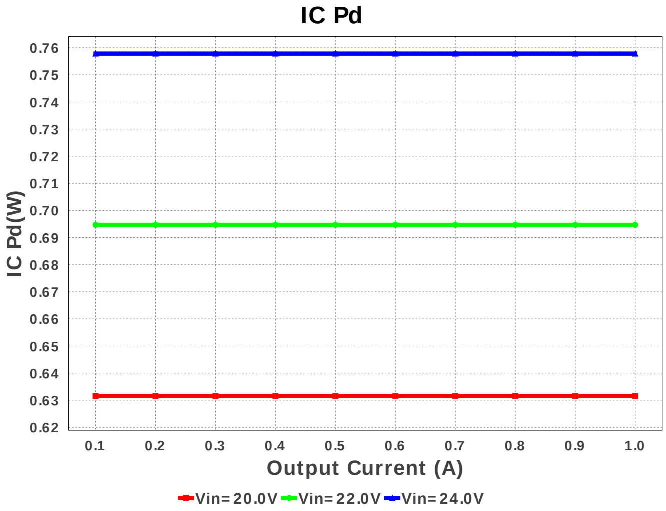

M4 Rdson
M4 Rdson(Ohm)
Output Current (A)
Vin=20.0V Vin=22.0V Vin=24.0V

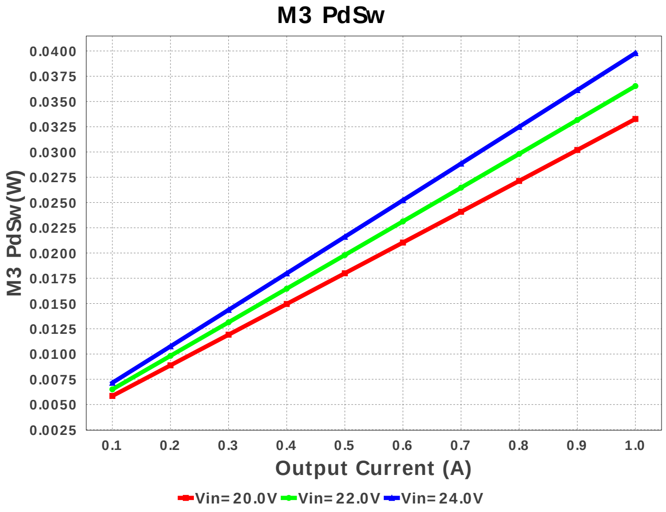

M3 Rdson
M3 Rdson(Ohm)
Output Current (A)
Vin=20.0V Vin=22.0V Vin=24.0V

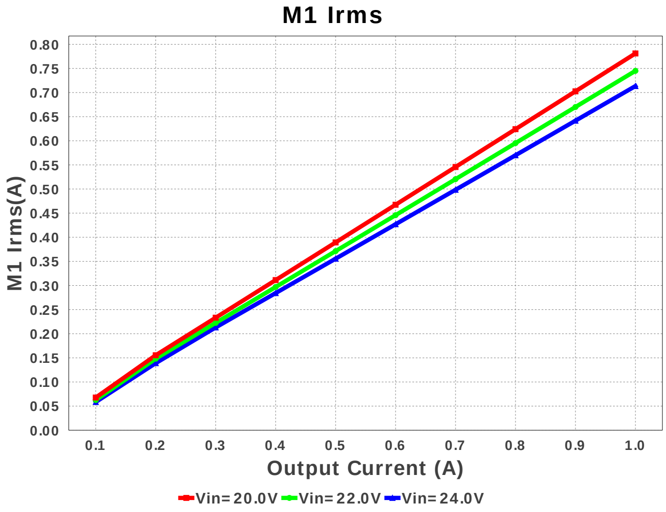

M2 Pd
M2 Pd(W)
Output Current (A)
Vin=20.0V Vin=22.0V Vin=24.0V

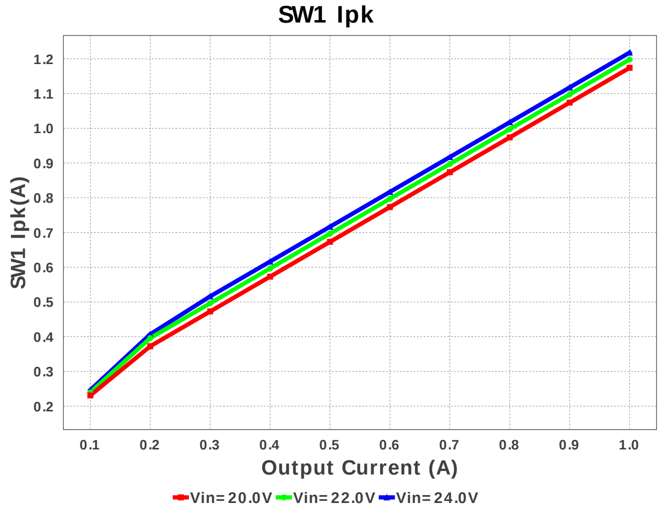

Total Pd
Total Pd(W)
Output Current (A)
Vin=20.0V Vin=22.0V Vin=24.0V

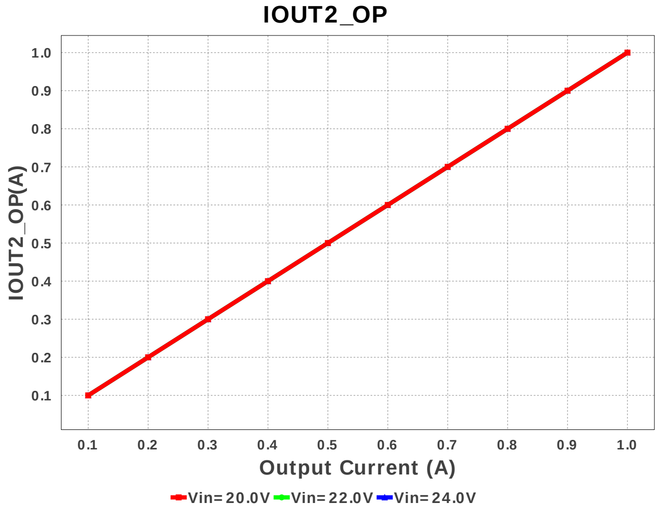

M1 PdSw
M1 PdSw(W)
Output Current (A)
Vin=20.0V Vin=22.0V Vin=24.0V

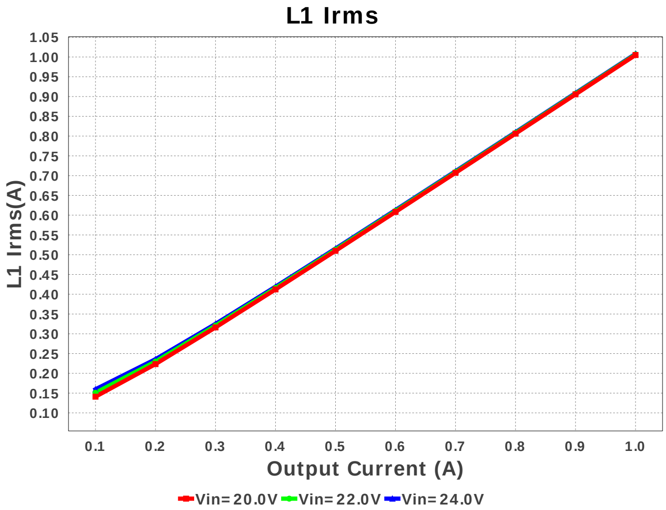

IC Pd
IC Pd(W)
Output Current (A)
Vin=20.0V Vin=22.0V Vin=24.0V

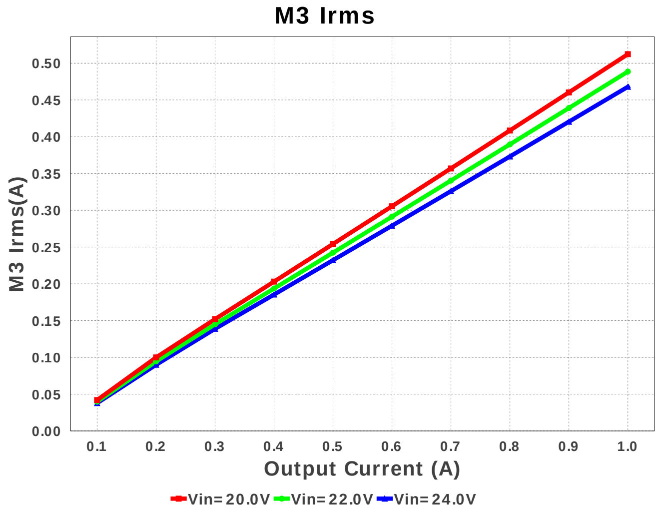

M3 PdSw
M3 PdSw(W)
Output Current (A)
Vin=20.0V Vin=22.0V Vin=24.0V

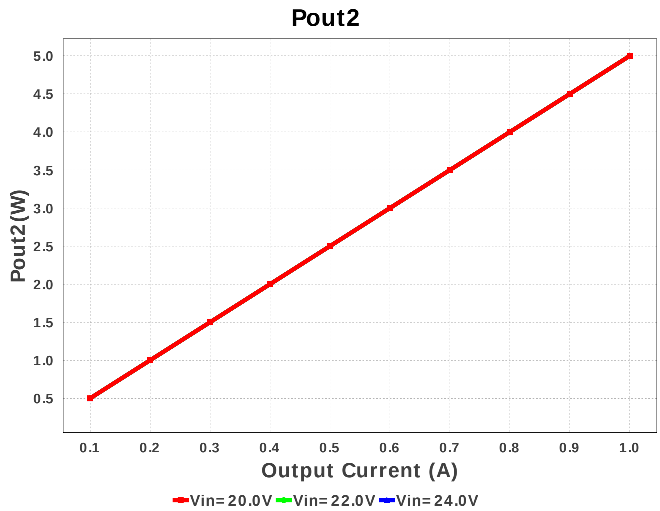

M1 Irms
M1 Irms(A)
Output Current (A)
Vin=20.0V Vin=22.0V Vin=24.0V

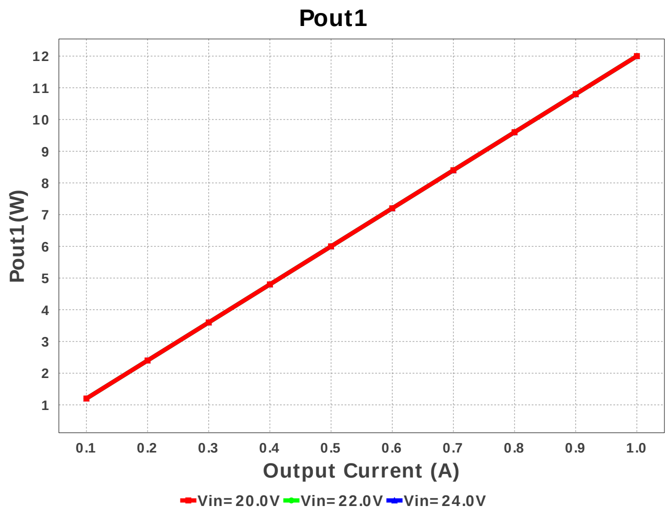

SW1 Ipk
SW1 Ipk(A)
Output Current (A)
Vin= 20.0V Vin= 22.0V Vin= 24.0V

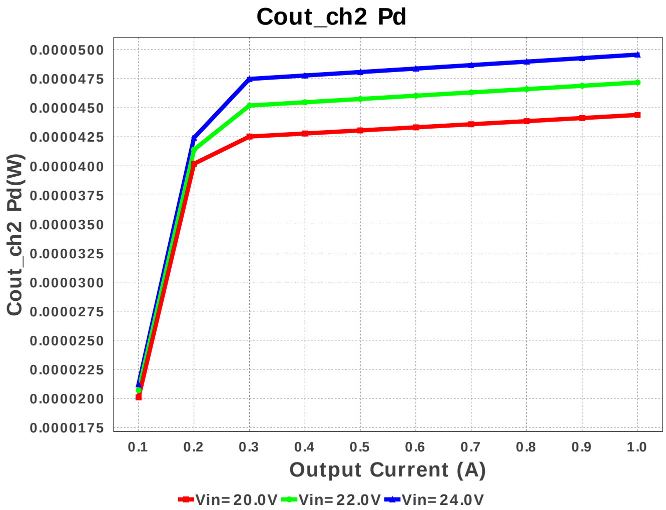

IOUT2_OP
IOUT2_OP(A)
Output Current (A)
Vin= 20.0V Vin= 22.0V Vin= 24.0V

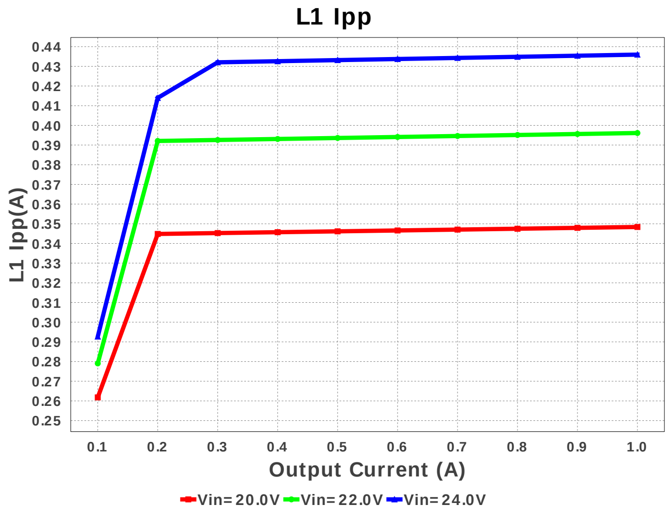

L1 Irms
L1 Irms(A)
Output Current (A)
Vin= 20.0V Vin= 22.0V Vin= 24.0V

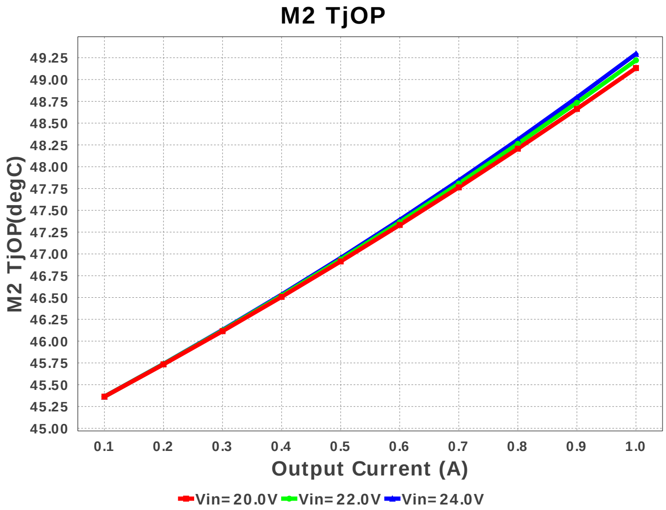

M3 Irms
M3 Irms(A)
Output Current (A)
Vin= 20.0V Vin= 22.0V Vin= 24.0V

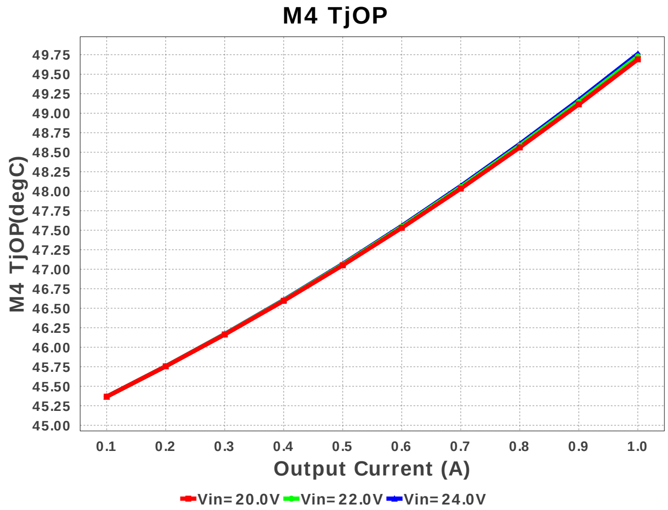

Pout2
Pout2(W)
Output Current (A)
Vin= 20.0V Vin= 22.0V Vin= 24.0V

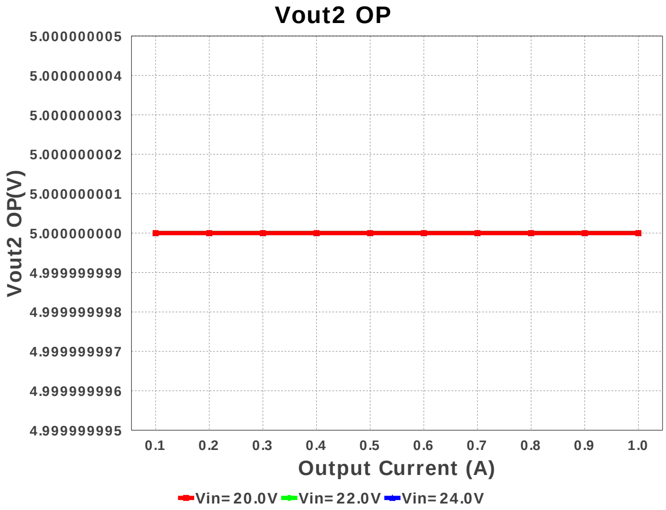

Pout1
Pout1(W)
Output Current (A)
Vin= 20.0V Vin= 22.0V Vin= 24.0V

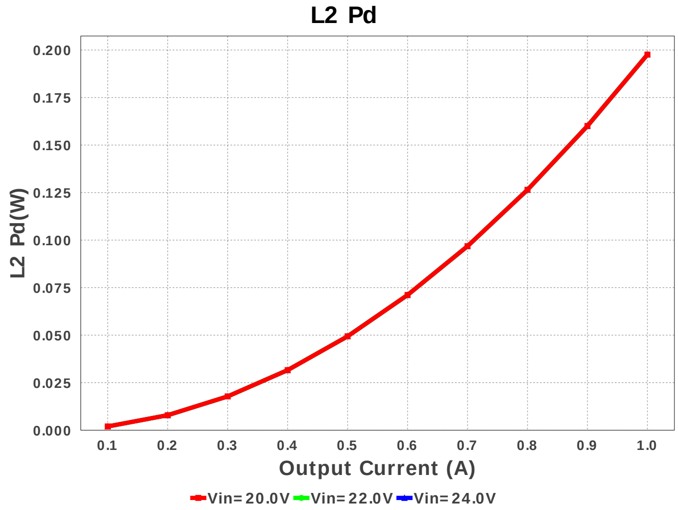

Cout_ch2 Pd
Cout_ch2 Pd(W)
Output Current (A)
Vin=20.0V Vin=22.0V Vin=24.0V

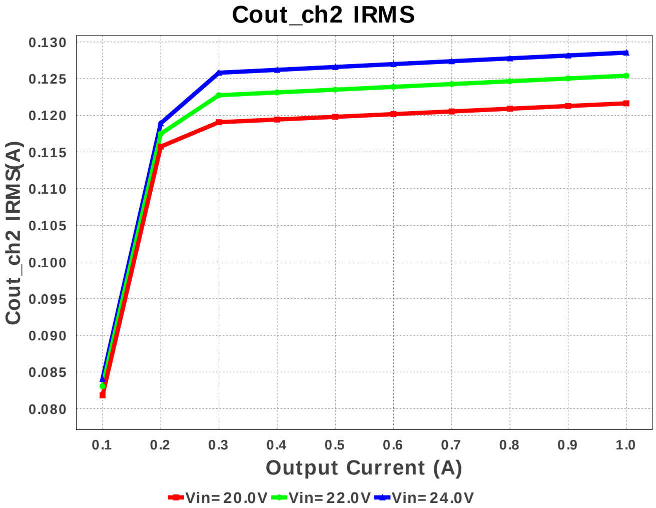

L1 Ipp
L1 Ipp(A)
Output Current (A)
Vin=20.0V Vin=22.0V Vin=24.0V

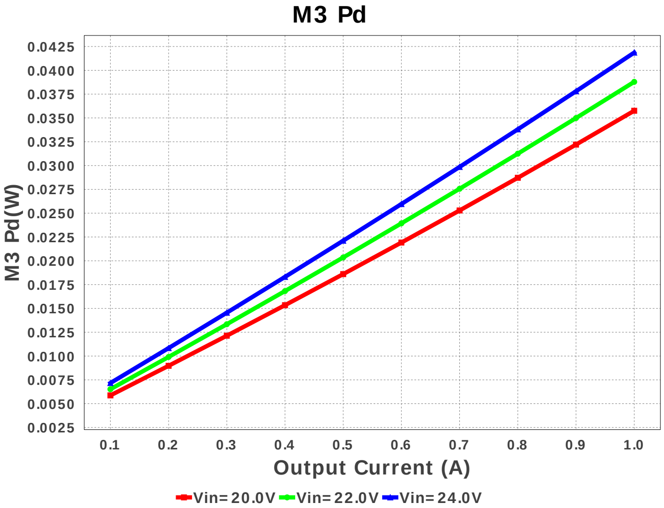

M2 TjOP
M2 TjOP(degC)
Output Current (A)
Vin=20.0V Vin=22.0V Vin=24.0V

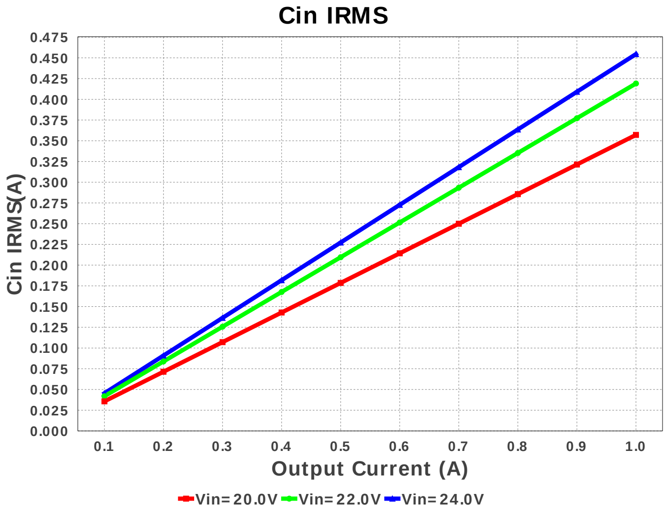

M4 TjOP
M4 TjOP(degC)
Output Current (A)
Vin=20.0V Vin=22.0V Vin=24.0V


Vout2 OP
Vout2 OP(V)
Output Current (A)
Vin=20.0V Vin=22.0V Vin=24.0V


L2 Pd
L2 Pd(W)
Output Current (A)
Vin=20.0V Vin=22.0V Vin=24.0V







Operating Values

#	Name	Value	Category	Description
1.	Cin IRMS	454.496 mA	Current	Input capacitor RMS ripple current
2.	Cout_ch1 IRMS	125.847 mA	Current	Output Channel 1 Capacitor RMS ripple current
3.	Cout_ch2 IRMS	128.574 mA	Current	Output Channel 2 Capacitor RMS ripple current
4.	Iin Avg	770.39 mA	Current	Average input current
5.	L1 Ipp	435.948 mA	Current	Peak-to-peak inductor ripple current
6.	L1 Irms	1.008 A	Current	Inductor ripple current
7.	L2 Ipp	445.394 mA	Current	Inductor 2 peak to peak current
8.	L2 Irms	1.008 A	Current	Inductor ripple current
9.	M1 Irms	713.432 mA	Current	MOSFET RMS ripple current
10.	M2 Irms	700.724 mA	Current	MOSFET RMS ripple current
11.	M3 Irms	467.946 mA	Current	MOSFET RMS ripple current
12.	M4 Irms	883.757 mA	Current	MOSFET RMS ripple current
13.	SW1 Ipk	1.218 A	Current	Peak switch current
14.	SW2 Ipk	1.223 A	Current	Peak switch current
15.	BOM Count	43	General	Total Design BOM count
16.	FootPrint	488.0 mm^2	General	Total Foot Print Area of BOM components
17.	Frequency	424.559 kHz	General	Switching frequency
18.	IC Tolerance	12.0 mV	General	IC Feedback Tolerance
19.	Pout1	12.0 W	General	Channel 1 output Power
20.	Pout2	5.002 W	General	Channel 2 output Power
21.	Total BOM	$6.66	General	Total BOM Cost
22.	M3 TjOP	47.31 degC	Op_Point	M3 MOSFET junction temperature
23.	M4 TjOP	49.761 degC	Op_Point	M4 MOSFET junction temperature
24.	Vout Actual	12.0 V	Op_Point	Vout Actual calculated based on selected voltage divider resistors
25.	Duty Cycle 1	50.899 %	Op_point	Duty cycle for Channel 1
26.	Duty Cycle 2	21.897 %	Op_point	Duty cycle for Channel 2
27.	Efficiency	91.955 %	Op_point	Steady state efficiency
28.	IC Tj	75.314 degC	Op_point	IC junction temperature
29.	IOUT1_OP	1.0 A	Op_point	Iout1 operating point
30.	IOUT2_OP	1.0 A	Op_point	Iout2 operating point
31.	M1 TjOP	47.473 degC	Op_point	M1 MOSFET junction temperature

#	Name	Value	Category	Description
32.	M2 TjOP	49.294 degC	Op_point	M2 MOSFET junction temperature
33.	VIN_OP	24.0 V	Op_point	Vin operating point
34.	Vout1 OP	12.0 V	Op_point	Operational Voltage 1
35.	Vout1 p-p	6.48 mV	Op_point	Peak-to-peak output1 ripple voltage
36.	Vout2 OP	5.002 V	Op_point	Operational Voltage 2
37.	Vout2 p-p	4.571 mV	Op_point	Peak-to-peak output2 ripple voltage
38.	Cin Pd	207.393 µW	Power	Input capacitor power dissipation
39.	Cout_ch1 Pd	16.34 µW	Power	Ouput channel 1 capacitor power dissipation
40.	Cout_ch2 Pd	49.594 µW	Power	Ouput channel 2 capacitor power dissipation
41.	IC Pd	757.847 mW	Power	IC power dissipation
42.	L1 Pd	201.77 mW	Power	Inductor power dissipation
43.	L2 Pd	197.596 mW	Power	Inductor power dissipation
44.	M1 Pd	44.644 mW	Power	M1 MOSFET total power dissipation
45.	M1 PdCond	4.823 mW	Power	M1 MOSFET conduction losses
46.	M1 PdSw	39.821 mW	Power	M1 MOSFET switching losses
47.	M2 Pd	76.445 mW	Power	M2 MOSFET total power dissipation
48.	M2 PdCond	12.625 mW	Power	M2 MOSFET conduction losses
49.	M2 PdSw	63.819 mW	Power	M2 MOSFET switching losses
50.	M3 Pd	41.86 mW	Power	M3 MOSFET total power dissipation
51.	M3 PdCond	2.074 mW	Power	M3 MOSFET conduction losses
52.	M3 PdSw	39.786 mW	Power	M3 MOSFET switching losses
53.	M3 Rdson	9.476 mOhm	Power	Drain-Source On-resistance
54.	M3 Rdson	9.471 mOhm	Power	Drain-Source On-resistance
55.	M4 Pd	83.962 mW	Power	M4 MOSFET total power dissipation
56.	M4 PdCond	20.143 mW	Power	M4 MOSFET conduction losses
57.	M4 PdSw	63.819 mW	Power	M4 MOSFET switching losses
58.	M4 Rdson	25.713 mOhm	Power	Drain-Source On-resistance
59.	M4 Rdson	25.79 mOhm	Power	Drain-Source On-resistance
60.	Rsense1 Pd	24.551 mW	Power	Current Limit Sense Resistor Power Dissipation
61.	Rsense2 Pd	58.577 mW	Power	Current Limit Sense Resistor Power Dissipation
62.	Total Pd	1.488 W	Power	Total Power Dissipation
63.	Cross Freq Ch1	37.921 kHz		Bode plot crossover frequency
64.	Cross Freq Ch2	38.279 kHz		Bode plot crossover frequency
65.	Phase Marg Ch1	53.228 deg		Bode Plot Phase Margin
66.	Phase Marg Ch2	55.558 deg		Bode Plot Phase Margin
67.	Vout Tolerance	3.414 %		Vout Tolerance based on IC Tolerance (no load) and voltage divider resistors if applicable

Design Inputs

#	Name	Value	Description
1.	Iout	1.0	Maximum Output Current
2.	Iout1	1.0	Output Current #1
3.	Iout2	1.0	Output Current #2
4.	VinMax	24.0	Maximum input voltage
5.	VinMin	20.0	Minimum input voltage
6.	Vout	12.0	Output Voltage
7.	Vout1	12.0	Output Voltage #1
8.	Vout2	5.0	Output Voltage #2
9.	base_pn	LM25119-Q1	Texas Instruments Base Part Number
10.	source	DC	Input Source Type
11.	ta	45.0	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-Q1 Product Folder : http://www.ti.com/product/LM25119Q : contains the data sheet and other resources.

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