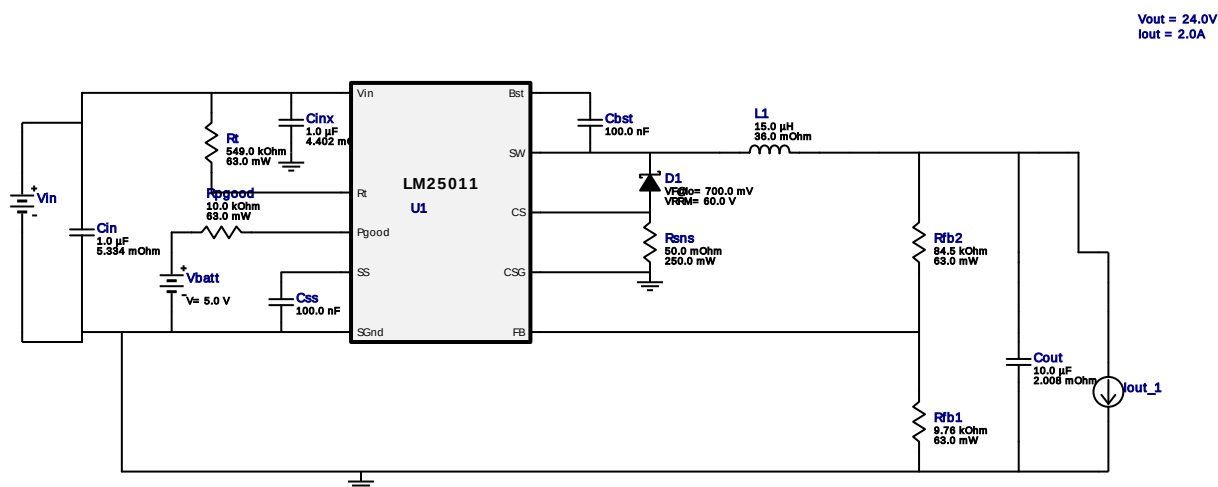


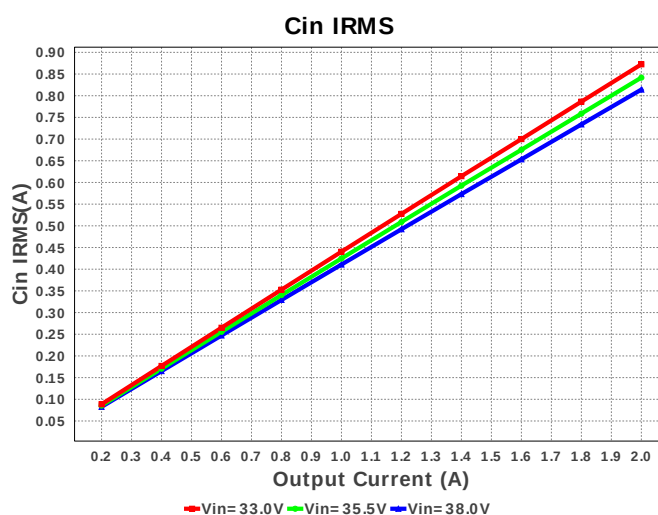
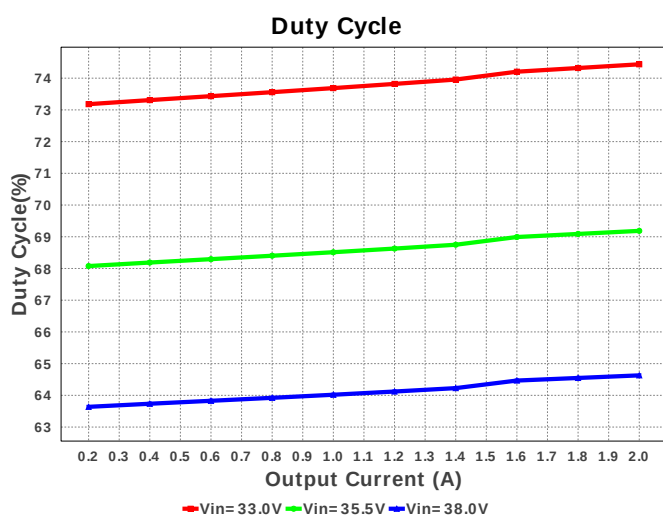
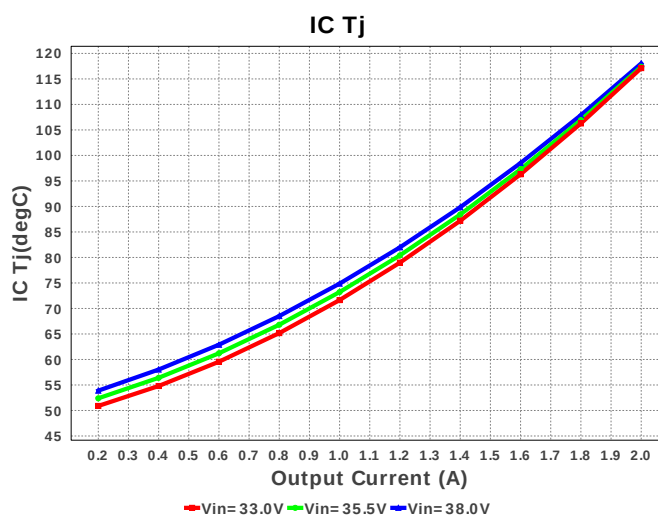
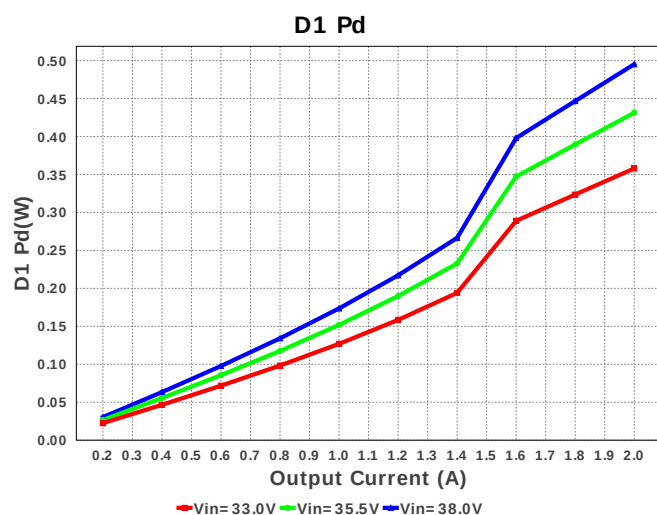
Design : 4800957/11 LM25011MYX/NOPB
LM25011MYX/NOPB 33.0V-38.0V to 24.00V @ 2.0A

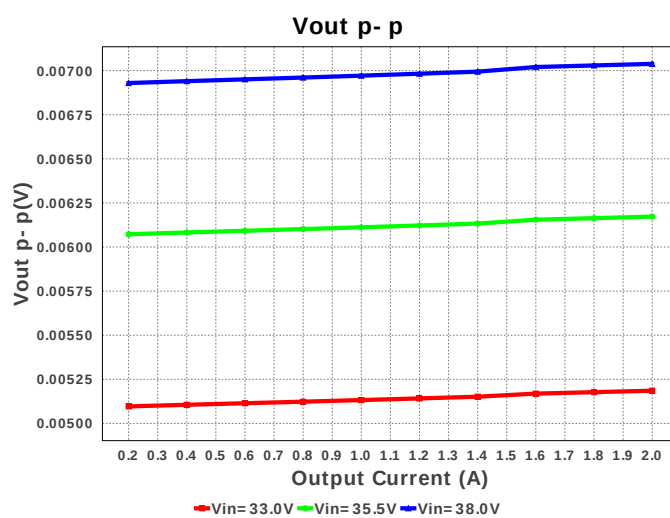
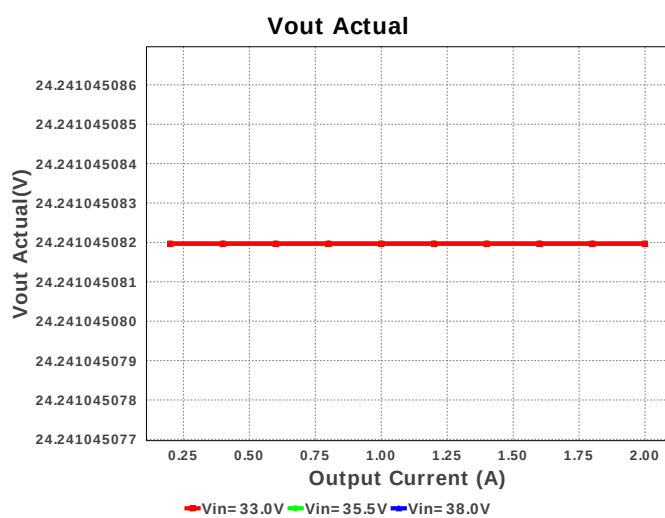
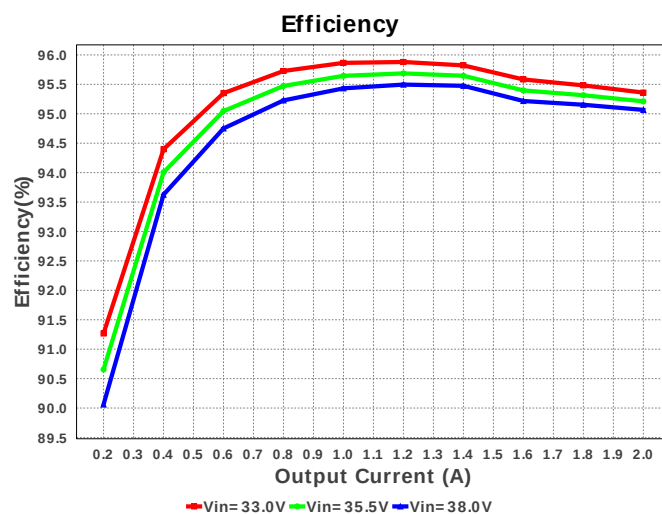
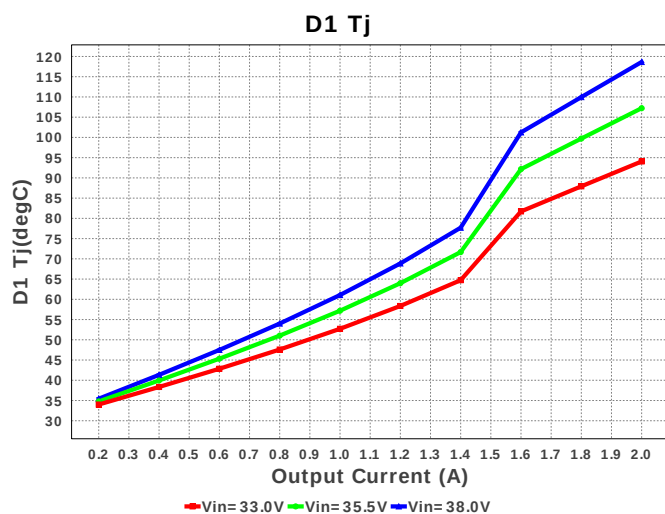
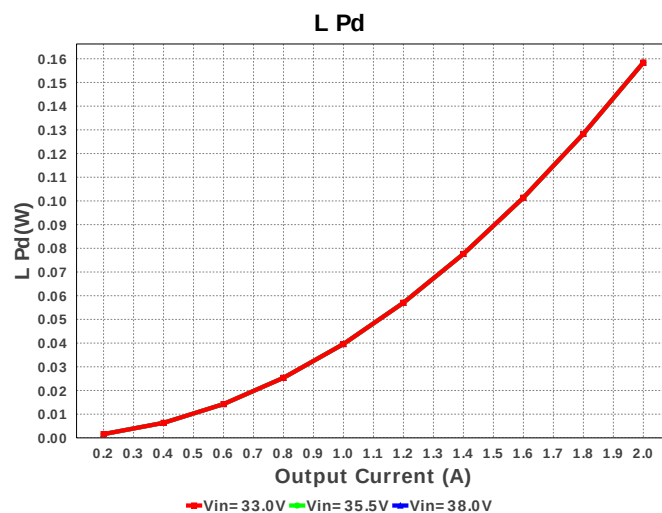
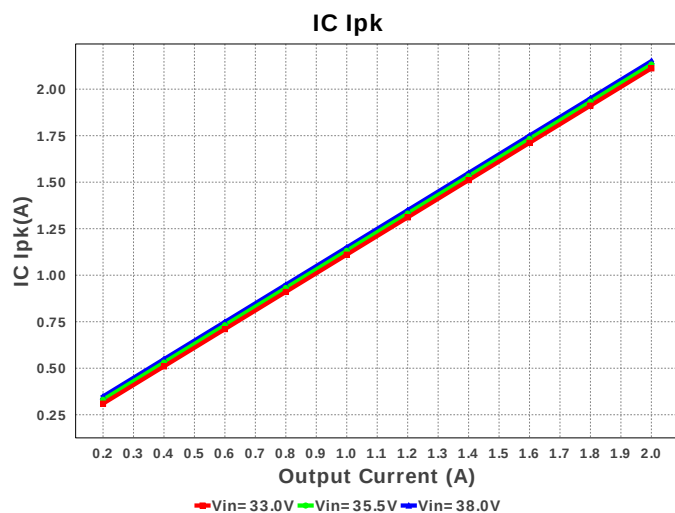


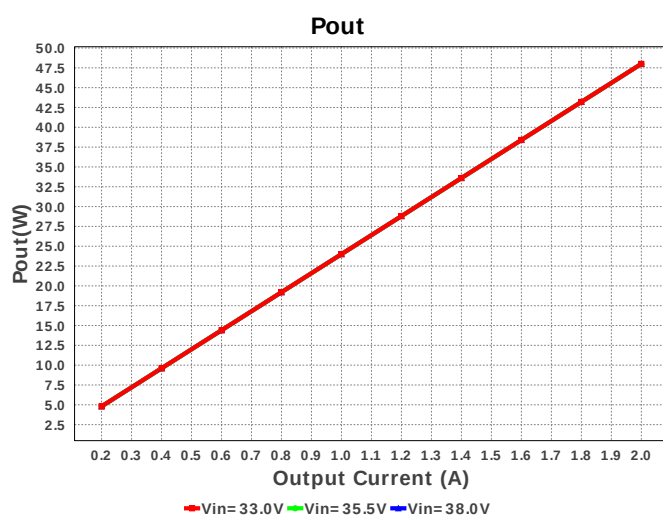
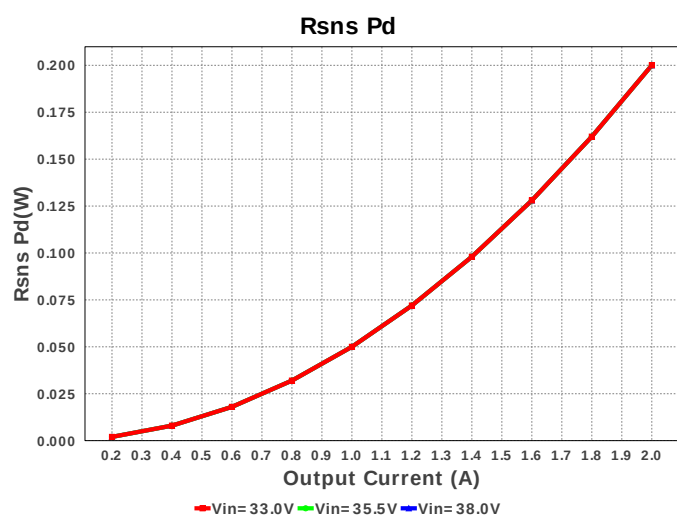
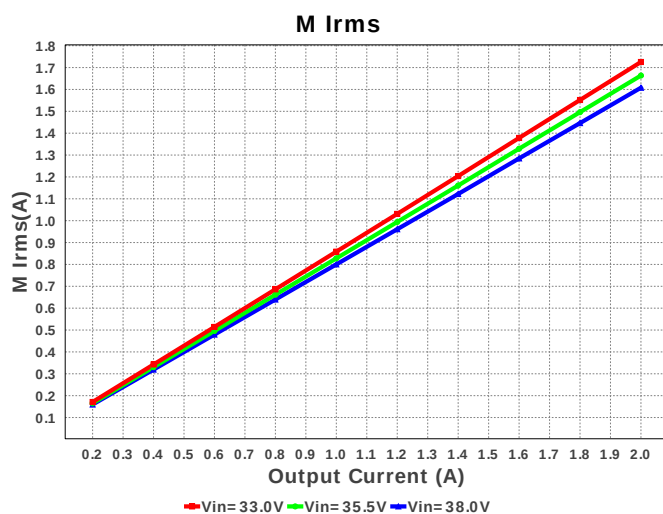
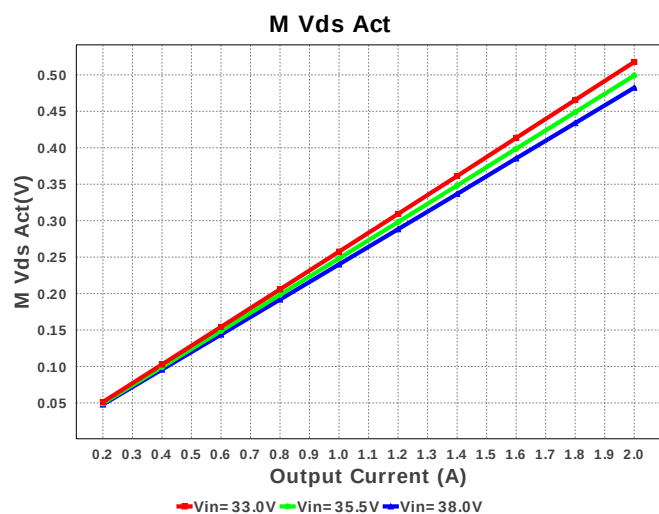
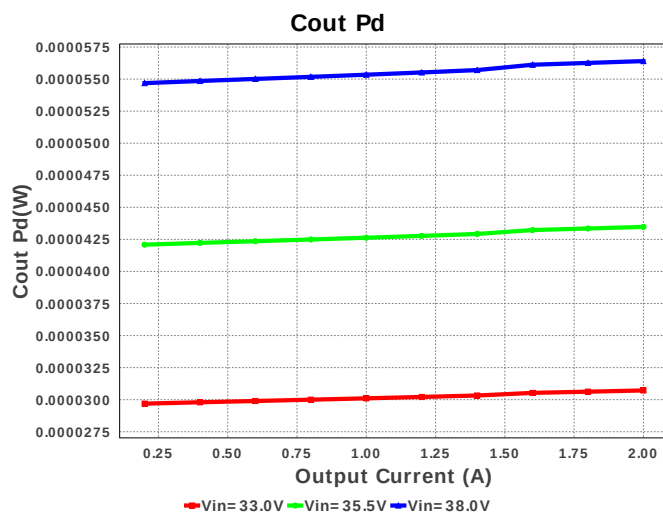
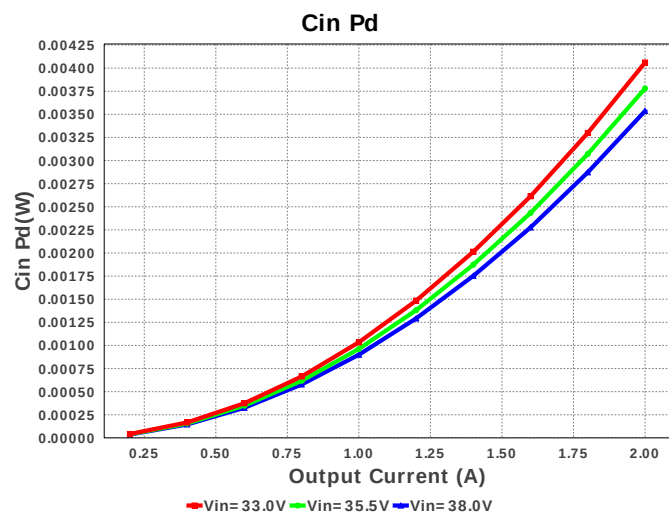
Electrical BOM

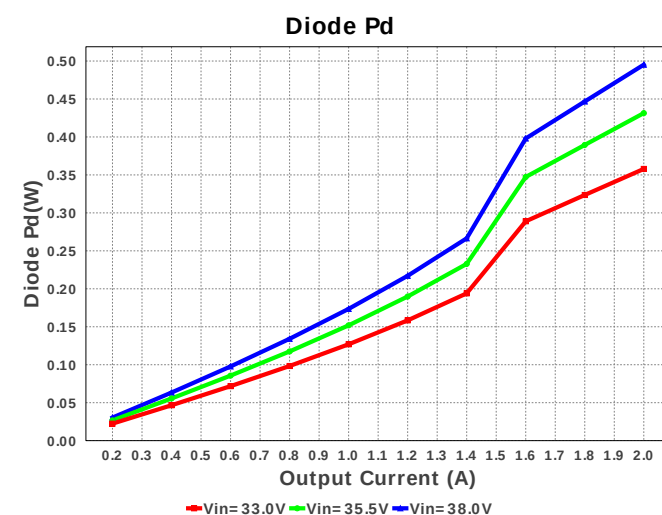
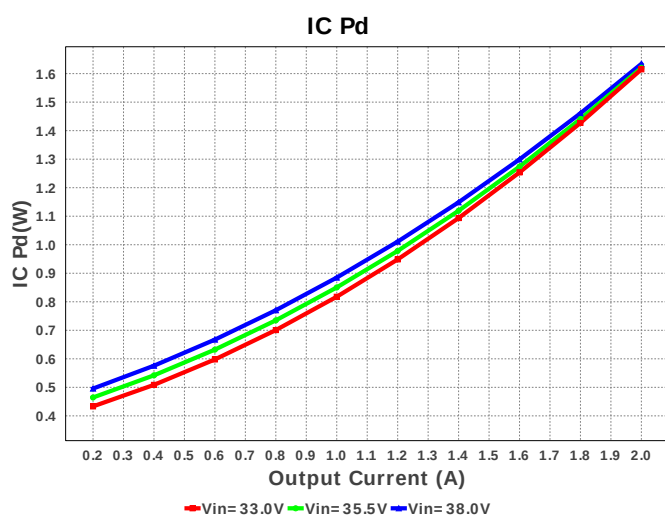
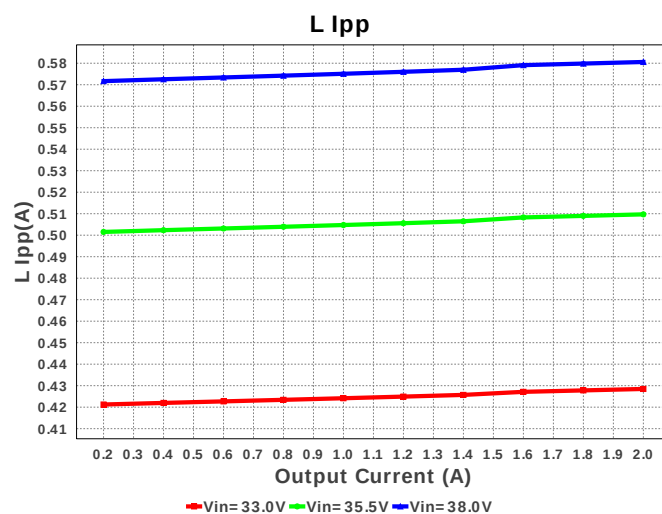
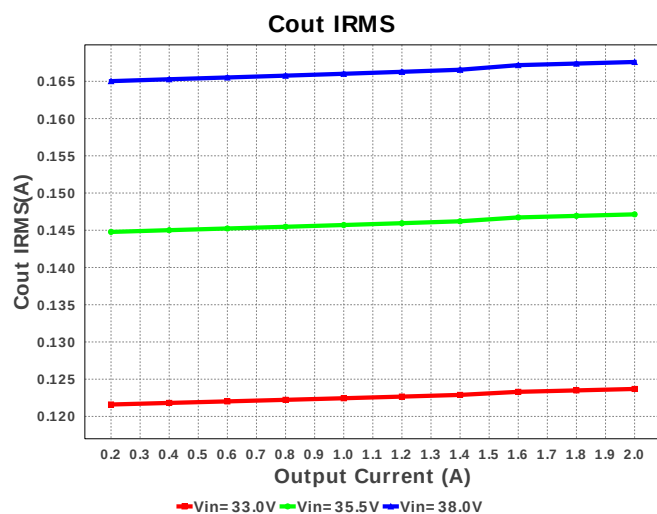
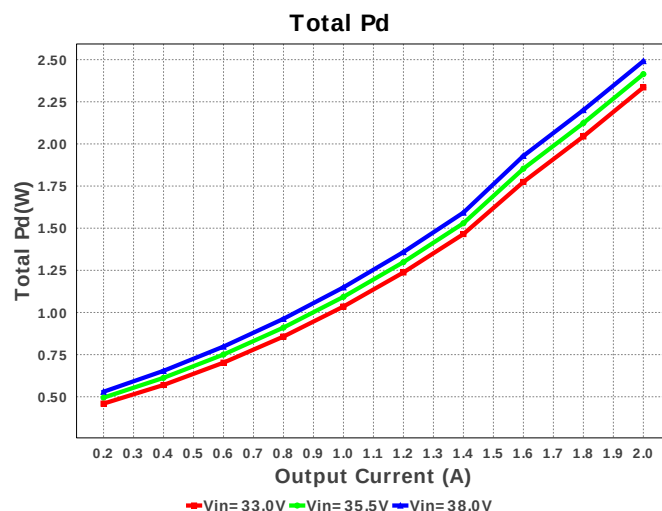
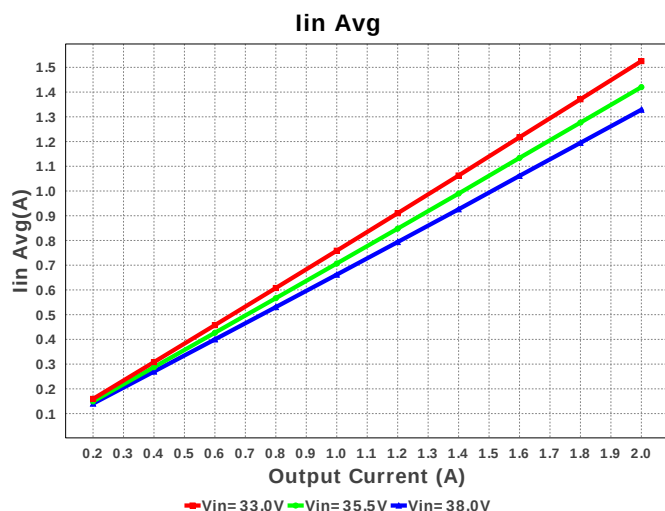
#	Name	Manufacturer	Part Number	Properties	Qty	Price	Footprint
1.	Cbst	MuRata	GRM21BR71E104KA01L Series= X7R	Cap= 100.0 nF VDC= 25.0 V IRMS= 0.0 A	1	\$0.01	 0805 7 mm ²
2.	Cin	MuRata	GRM31CR72A105KA01L Series= X7R	Cap= 1.0 uF ESR= 5.334 mOhm VDC= 100.0 V IRMS= 1.55432 A	1	\$0.11	 1206_190 11 mm ²
3.	Cinx	MuRata	GRM21BR71H105KA12L Series= X7R	Cap= 1.0 uF ESR= 4.402 mOhm VDC= 50.0 V IRMS= 1.677 A	1	\$0.05	 0805 7 mm ²
4.	Cout	MuRata	GRM32ER7YA106KA12L Series= X7R	Cap= 10.0 uF ESR= 2.008 mOhm VDC= 35.0 V IRMS= 4.6772 A	1	\$0.22	 1210_280 15 mm ²
5.	Css	MuRata	GRM21BR71E104KA01L Series= X7R	Cap= 100.0 nF VDC= 25.0 V IRMS= 0.0 A	1	\$0.01	 0805 7 mm ²
6.	D1	Diodes Inc.	B160-13-F	VF@Io= 700.0 mV VRRM= 60.0 V	1	\$0.05	 SMA 37 mm ²
7.	L1	Bourns	SRR1208-150ML	L= 15.0 uH DCR= 36.0 mOhm	1	\$0.37	 SRR1208 216 mm ²
8.	Rfb1	Vishay-Dale	CRCW04029K76FKED Series= CRCW..e3	Res= 9.76 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	 0402 3 mm ²
9.	Rfb2	Vishay-Dale	CRCW040284K5FKED Series= CRCW..e3	Res= 84.5 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	 0402 3 mm ²

#	Name	Manufacturer	Part Number	Properties	Qty	Price	Footprint
10.	Rpgood	Vishay-Dale	CRCW040210K0FKED Series= CRCW..e3	Res= 10.0 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	 0402 3 mm ²
11.	Rsns	Bourns	CRM0805-FW-R050ELF Series= ?	Res= 50.0 mOhm Power= 250.0 mW Tolerance= 1.0%	1	\$0.10	 0805 7 mm ²
12.	Rt	Vishay-Dale	CRCW0402549KFKED Series= CRCW..e3	Res= 549.0 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	 0402 3 mm ²
13.	U1	Texas Instruments	LM25011MYX/NOPB	Switcher	1	\$0.95	 MUC10A 24 mm ²









Operating Values

#	Name	Value	Category	Description
1.	Cin IRMS	814.183 mA	Current	Input capacitor RMS ripple current
2.	Cout IRMS	167.599 mA	Current	Output capacitor RMS ripple current
3.	IC Ipk	2.29 A	Current	Peak switch current in IC
4.	Iin Avg	1.329 A	Current	Average input current
5.	L Ipp	580.58 mA	Current	Peak-to-peak inductor ripple current
6.	M1 Irms	1.608 A	Current	Q lavg
7.	BOM Count	13	General	Total Design BOM count
8.	FootPrint	342.0 mm ²	General	Total Foot Print Area of BOM components
9.	Frequency	1.039 MHz	General	Switching frequency
10.	IC Tolerance	50.0 mV	General	IC Feedback Tolerance
11.	M Vds Act	482.356 mV	General	Voltage drop across the MosFET

#	Name	Value	Category	Description
12.	Mode	CCM	General	Conduction Mode
13.	Pout	48.0 W	General	Total output power
14.	Total BOM	\$1.91	General	Total BOM Cost
15.	D1 Tj	118.638 degC	Op_Point	D1 junction temperature
16.	Vout Actual	24.241 V	Op_Point	Vout Actual calculated based on selected voltage divider resistors
17.	Vout OP	24.0 V	Op_Point	Operational Output Voltage
18.	Duty Cycle	64.63 %	Op_point	Duty cycle
19.	Efficiency	95.066 %	Op_point	Steady state efficiency
20.	IC Tj	118.039 degC	Op_point	IC junction temperature
21.	ICThetaJA	48.0 degC/W	Op_point	IC junction-to-ambient thermal resistance
22.	IOUT_OP	2.0 A	Op_point	Iout operating point
23.	VIN_OP	38.0 V	Op_point	Vin operating point
24.	Vout p-p	7.038 mV	Op_point	Peak-to-peak output ripple voltage
25.	Cin Pd	3.536 mW	Power	Input capacitor power dissipation
26.	Cout Pd	56.403 μ W	Power	Output capacitor power dissipation
27.	D1 Pd	495.182 mW	Power	Output Diode Power Dissipation
28.	Diode Pd	495.182 mW	Power	Diode power dissipation
29.	IC Pd	1.834 W	Power	IC power dissipation
30.	L Pd	158.4 mW	Power	Inductor power dissipation
31.	Rsns Pd	50.755 mW	Power	Current Limit Sense Resistor Power Dissipation
32.	Total Pd	2.542 W	Power	Total Power Dissipation
33.	Vout Tolerance	3.839 %		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.	VinMax	38.0	Maximum input voltage
3.	VinMin	33.0	Minimum input voltage
4.	Vout	24.0	Output Voltage
5.	base_pn	LM25011	Base Product Number
6.	source	DC	Input Source Type
7.	Ta	30.0	Ambient temperature

Design Assistance

1. **LM25011** Product Folder : <http://www.ti.com/product/LM25011> : contains the data sheet and other resources.

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