


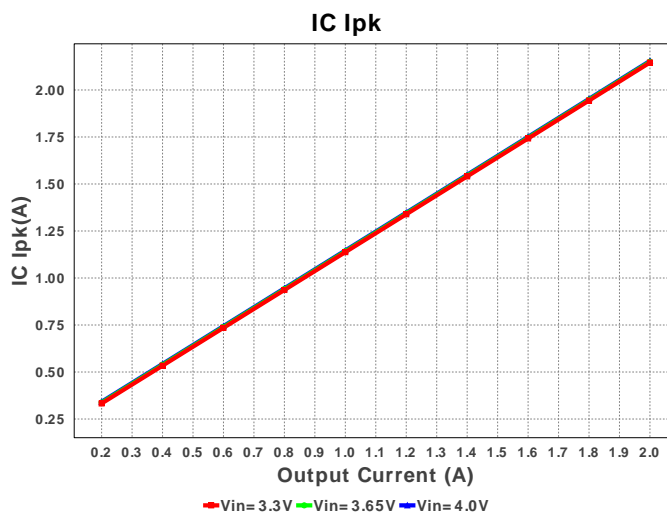
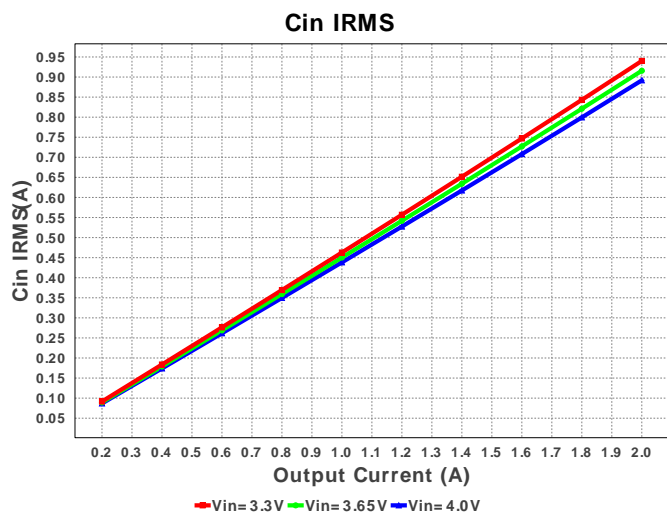
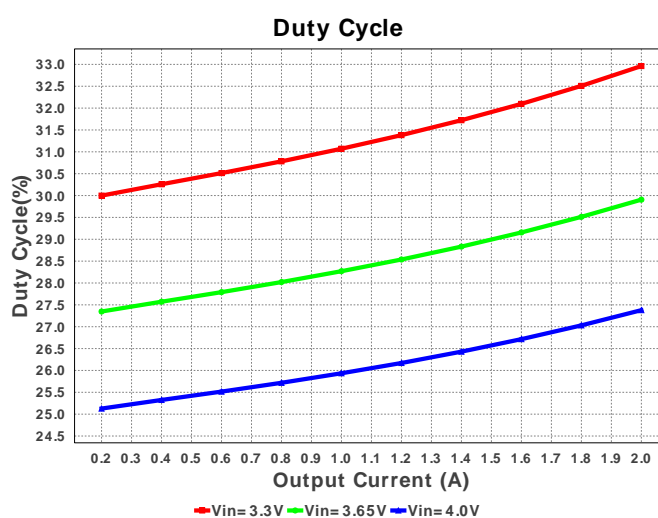
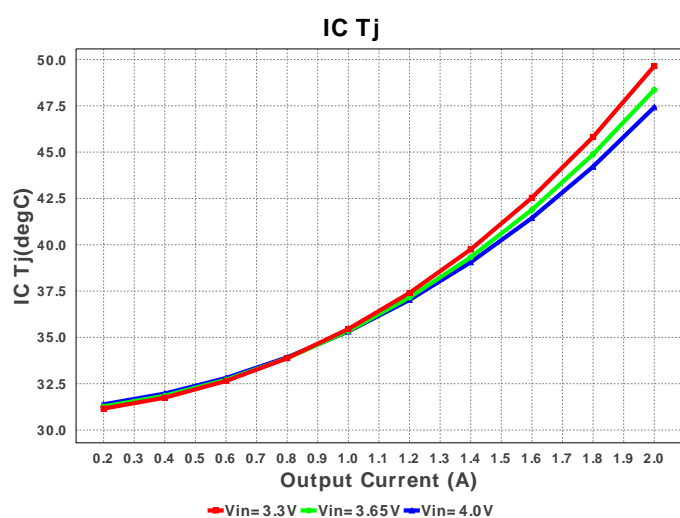
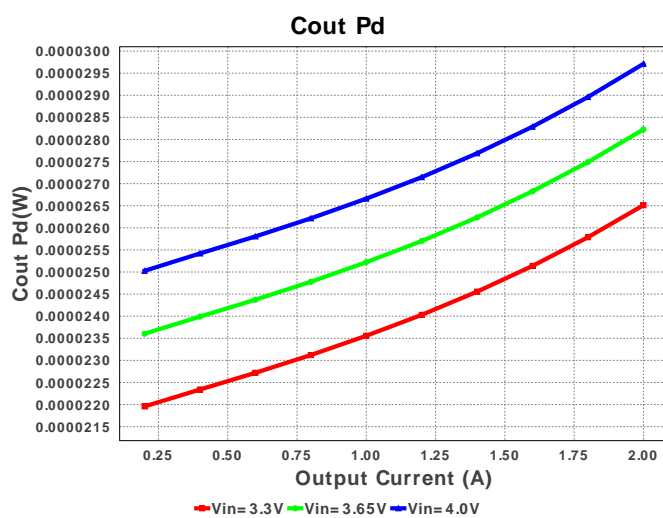
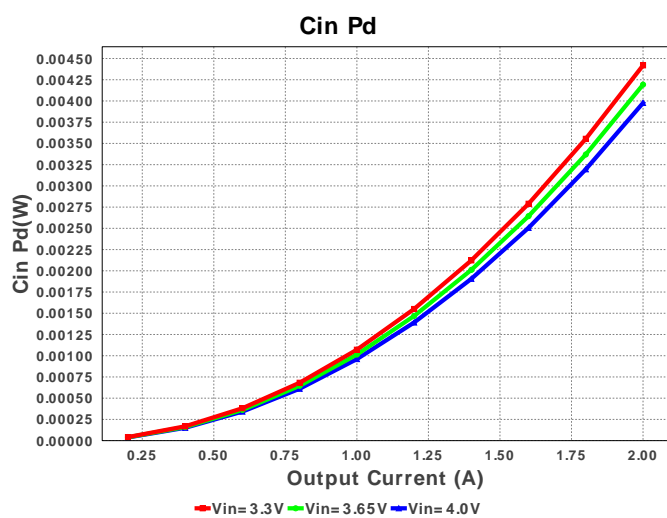
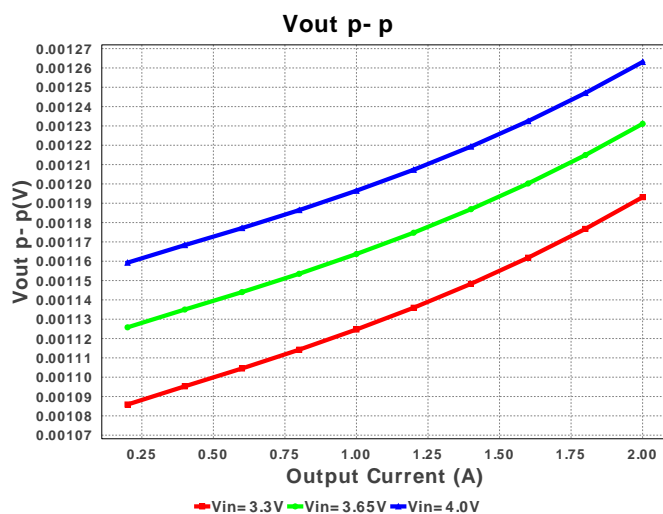
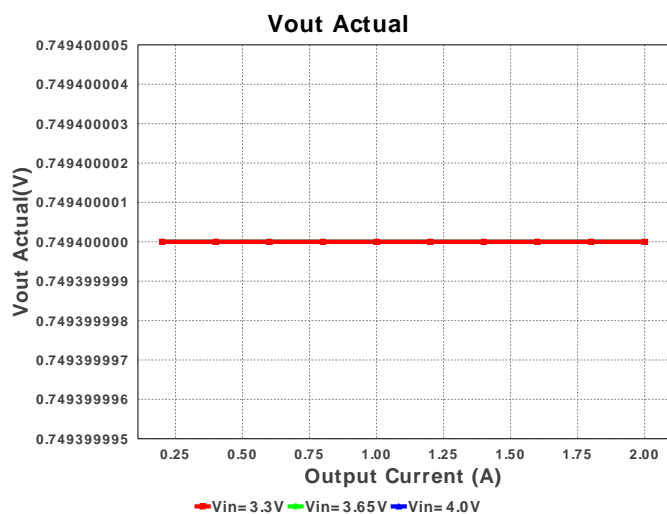
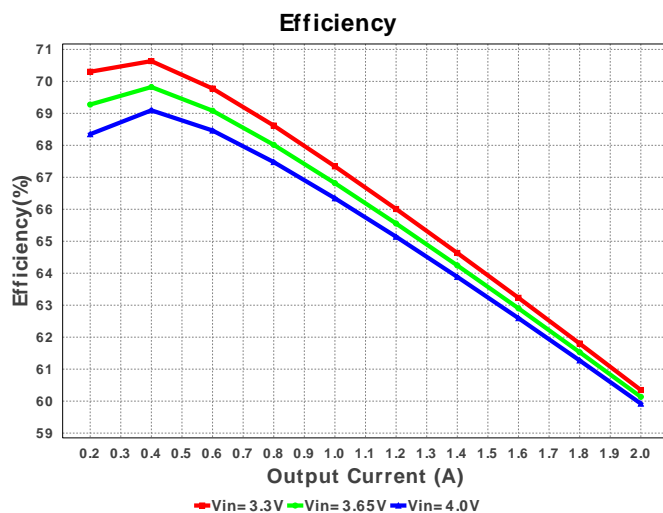
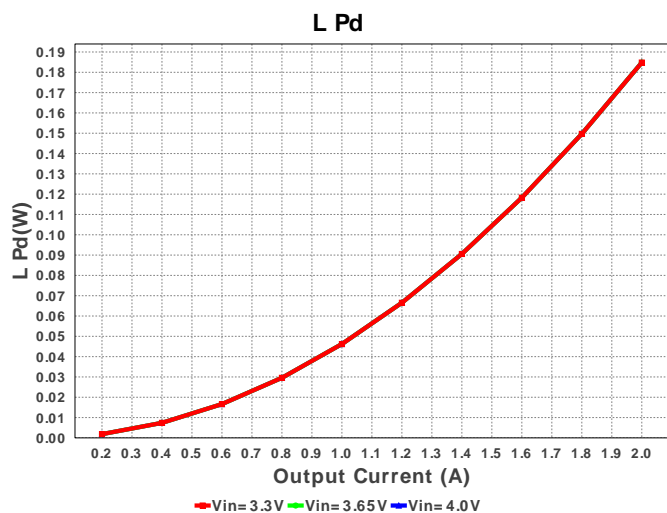


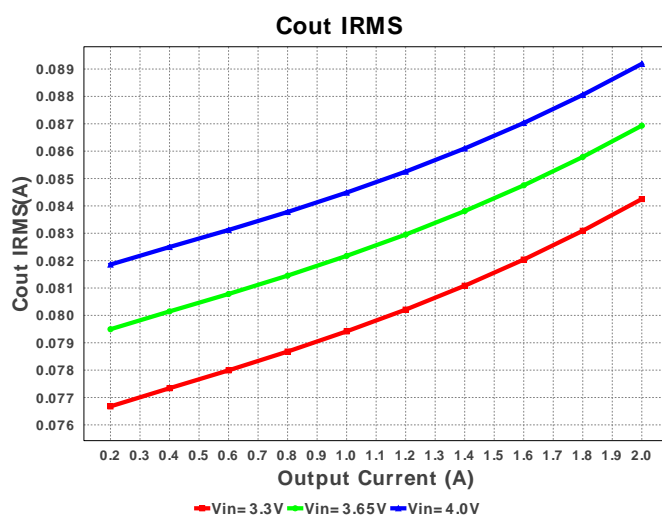
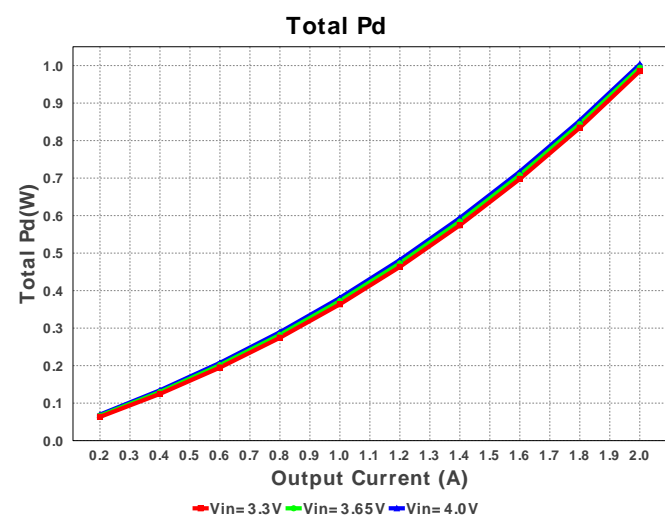
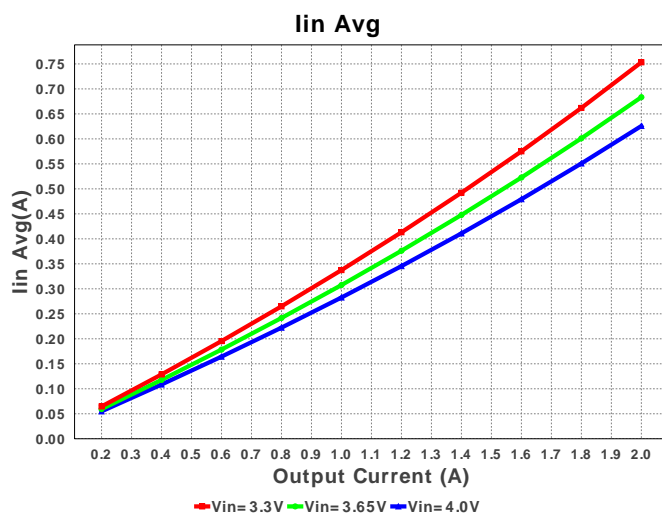
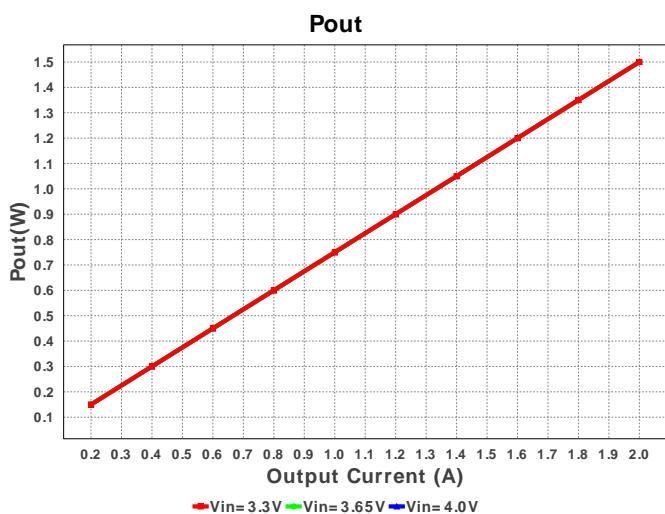
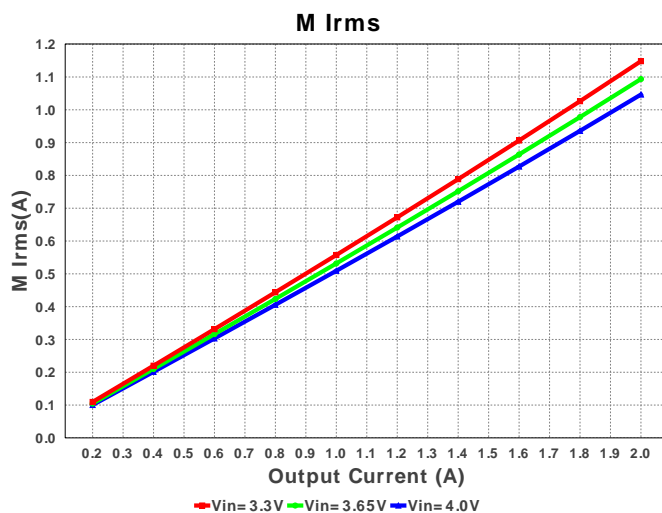
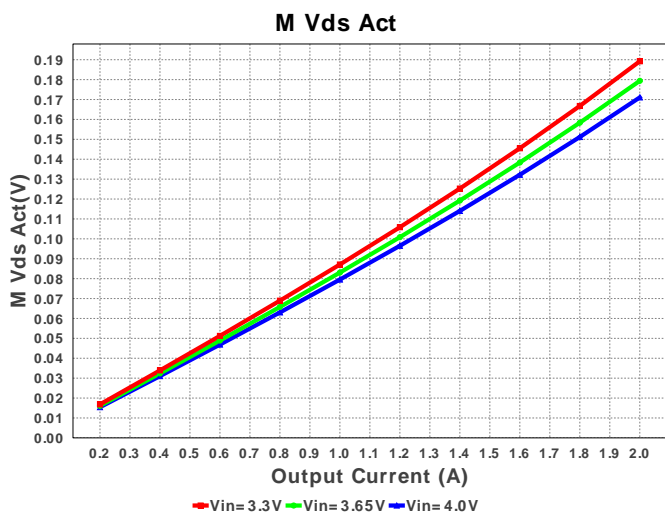
Electrical BOM

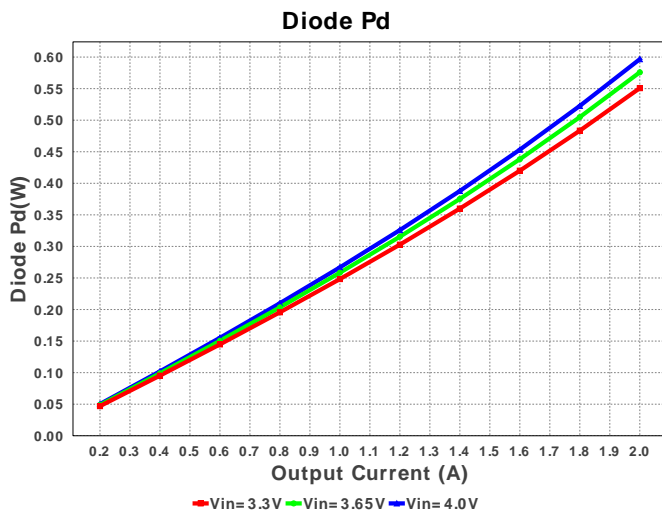
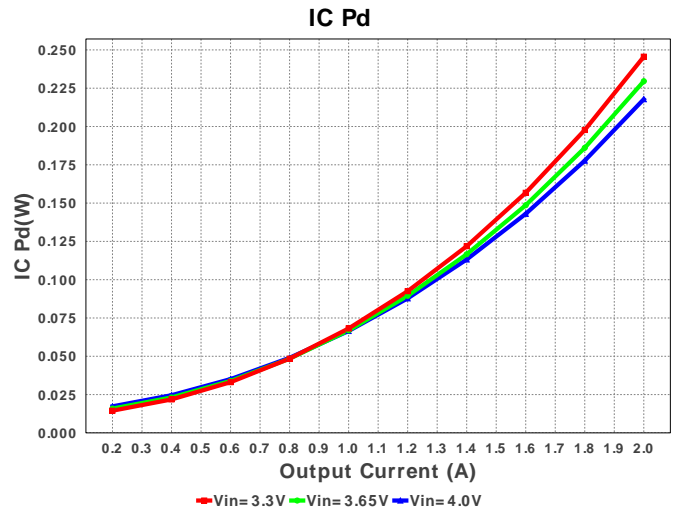
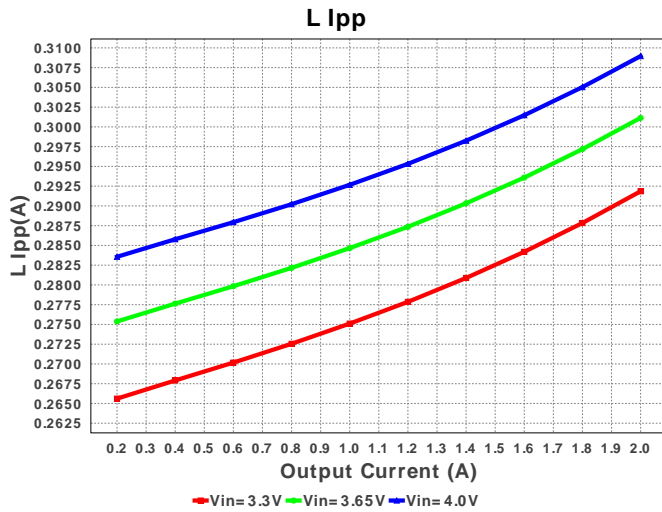
#	Name	Manufacturer	Part Number	Properties	Qty	Price	Footprint
1.	Cin	MuRata	GRM188R60J475KE19D Series= X5R	Cap= 4.7 uF ESR= 5.0 mOhm VDC= 6.3 V IRMS= 2.0 A	1	\$0.01	0603 5 mm ²
2.	Cout	MuRata	GRM31CR60J476KE19L Series= X5R	Cap= 47.0 uF ESR= 3.735 mOhm VDC= 6.3 V IRMS= 4.091 A	1	\$0.10	1206_190 11 mm ²
3.	D1	Diodes Inc.	B340A-13-F	VF@Io= 500.0 mV VRRM= 40.0 V	1	\$0.11	SMA 37 mm ²
4.	L1	Bourns	SDR0403-1R8ML	L= 1.8 uH DCR= 42.0 mOhm	1	\$0.18	SDR0403 28 mm ²
5.	Renable	Vishay-Dale	CRCW040210K0FKED Series= CRCW..e3	Res= 10.0 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	0402 3 mm ²

#	Name	Manufacturer	Part Number	Properties	Qty	Price	Footprint
6.	Rfb1	Vishay-Dale	CRCW040210K0FKED Series= CRCW..e3	Res= 10.0 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	 0402 3 mm ²
7.	Rfb2	Vishay-Dale	CRCW04022K49FKED Series= CRCW..e3	Res= 2.49 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	 0402 3 mm ²
8.	U1	Texas Instruments	LMR10520XSD/NOPB	Switcher	1	\$0.38	 SDE06A 16 mm ²









Operating Values

#	Name	Value	Category	Description
1.	Cin IRMS	892.181 mA	Current	Input capacitor RMS ripple current
2.	Cout IRMS	89.311 mA	Current	Output capacitor RMS ripple current
3.	IC Ipk	2.155 A	Current	Peak switch current in IC
4.	Iin Avg	626.58 mA	Current	Average input current
5.	L Ipp	309.38 mA	Current	Peak-to-peak inductor ripple current
6.	M Irms	1.047 A	Current	MOSFET RMS current
7.	BOM Count	8	General	Total Design BOM count
8.	FootPrint	105.0 mm ²	General	Total Foot Print Area of BOM components
9.	Frequency	1.6 MHz	General	Switching frequency
10.	IC Tolerance	12.0 mV	General	IC Feedback Tolerance
11.	M Vds Act	171.184 mV	General	
12.	Pout	1.5 W	General	Total output power
13.	Total BOM	\$0.81	General	Total BOM Cost
14.	Vout Actual	749.4 mV	Op_Point	Vout Actual calculated based on selected voltage divider resistors
15.	Duty Cycle	27.416 %	Op_point	Duty cycle
16.	Efficiency	59.849 %	Op_point	Steady state efficiency
17.	IC Tj	47.445 degC	Op_point	IC junction temperature
18.	ICThetaJA	80.0 degC/W	Op_point	IC junction-to-ambient thermal resistance
19.	IOUT_OP	2.0 A	Op_point	Iout operating point
20.	VIN_OP	4.0 V	Op_point	Vin operating point
21.	Vout p-p	1.265 mV	Op_point	Peak-to-peak output ripple voltage
22.	Cin Pd	3.98 mW	Power	Input capacitor power dissipation
23.	Cout Pd	29.792 μ W	Power	Output capacitor power dissipation
24.	Diode Pd	599.425 mW	Power	Diode power dissipation
25.	IC Pd	218.065 mW	Power	IC power dissipation
26.	L Pd	184.8 mW	Power	Inductor power dissipation
27.	Total Pd	1.006 W	Power	Total Power Dissipation
28.	Vout Tolerance	2.411 %		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	4.0	Maximum input voltage
3.	VinMin	3.3	Minimum input voltage
4.	Vout	750.0 m	Output Voltage
5.	base_pn	LMR10520X	Texas Instruments Base Part Number
6.	source	DC	Input Source Type
7.	ta	30.0	Ambient temperature

Design Assistance

1. LMR10520X Product Folder : <http://www.ti.com/product/LMR10520> : contains the data sheet and other resources.

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