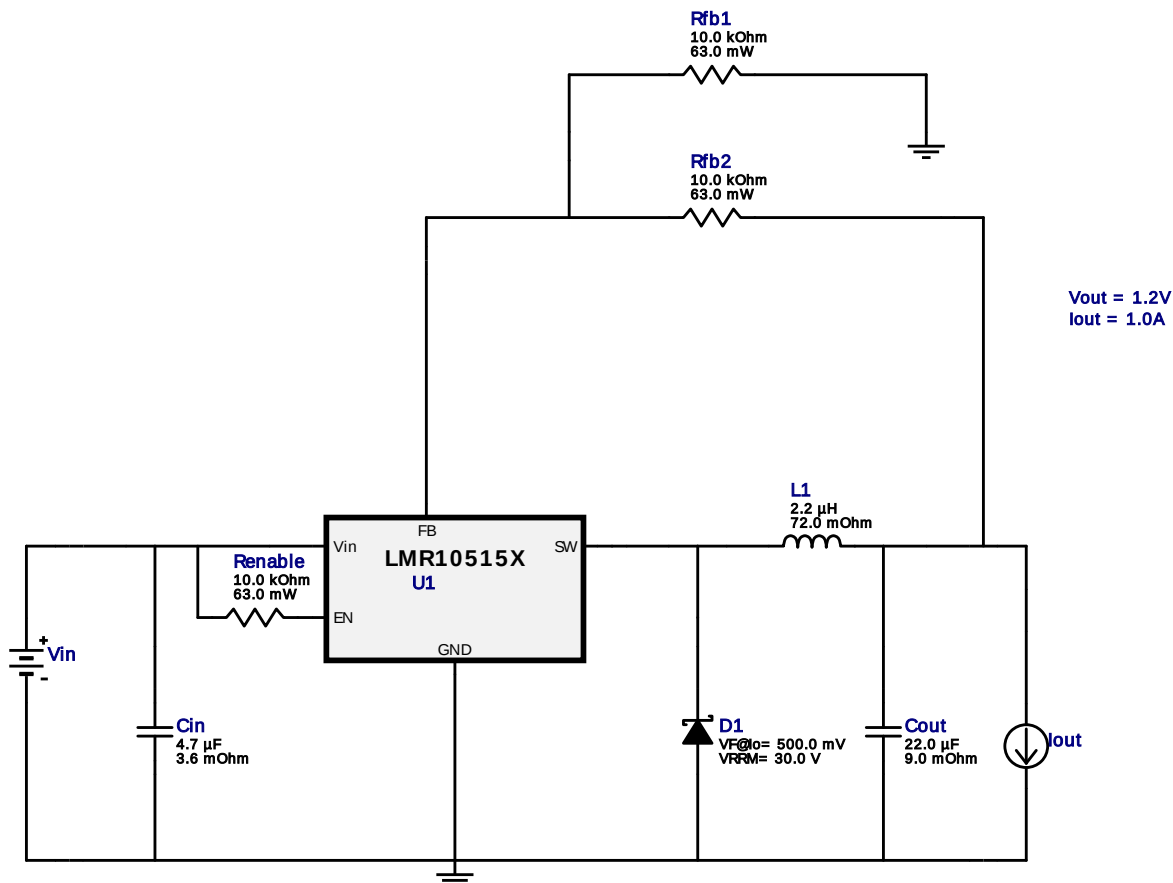


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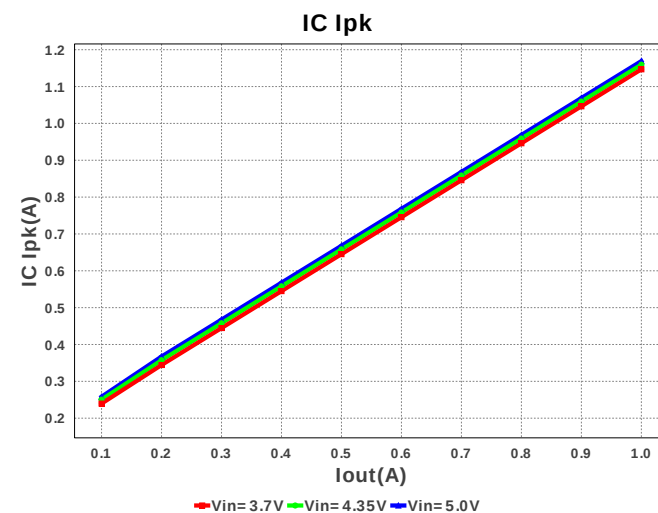
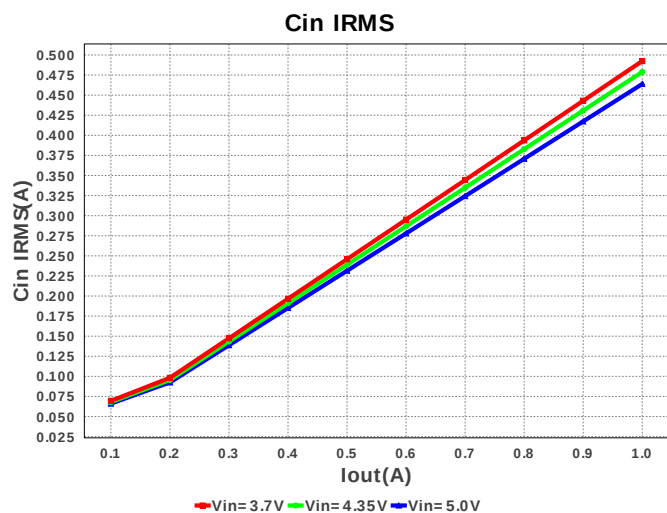
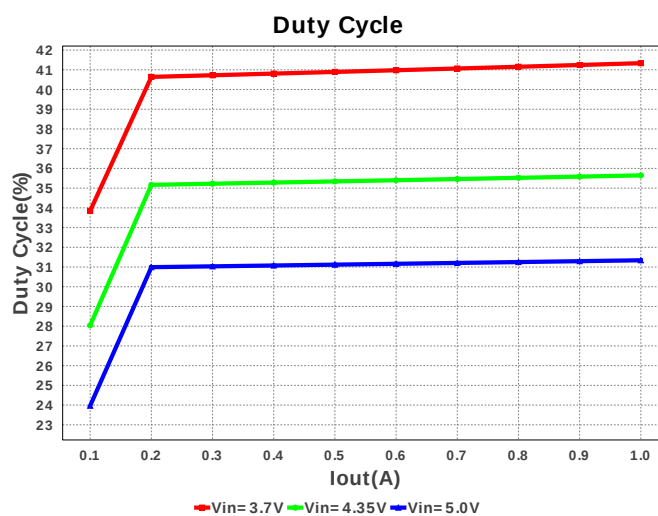
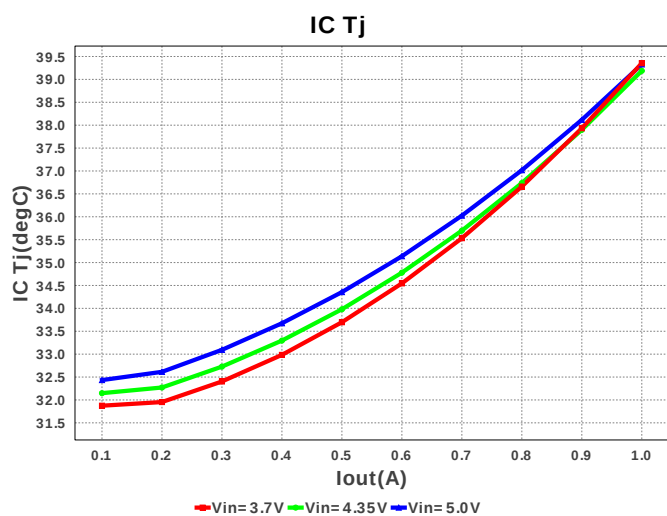
Design : 906020/16 LMR10515XMF/NOPB
LMR10515XMF/NOPB 3.7V-5.0V to 1.2V @ 1.0A

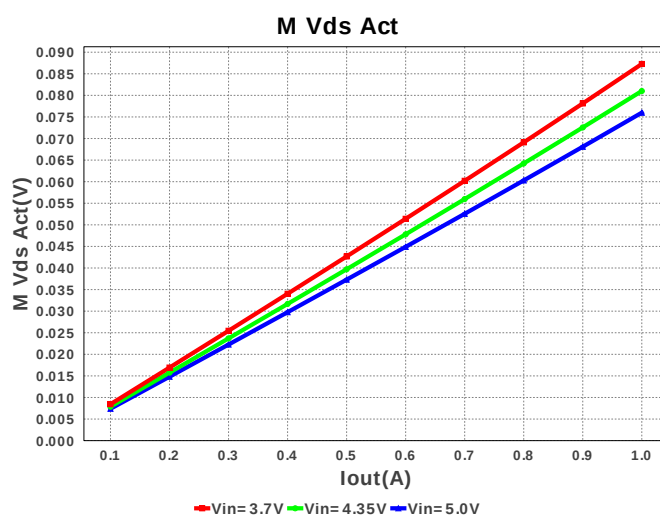
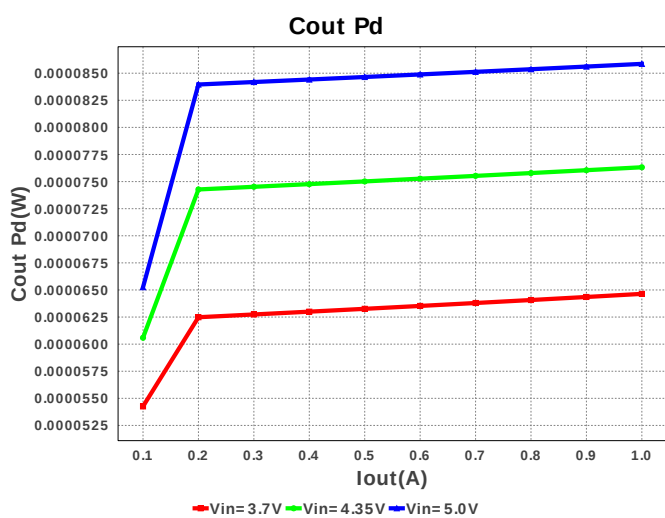
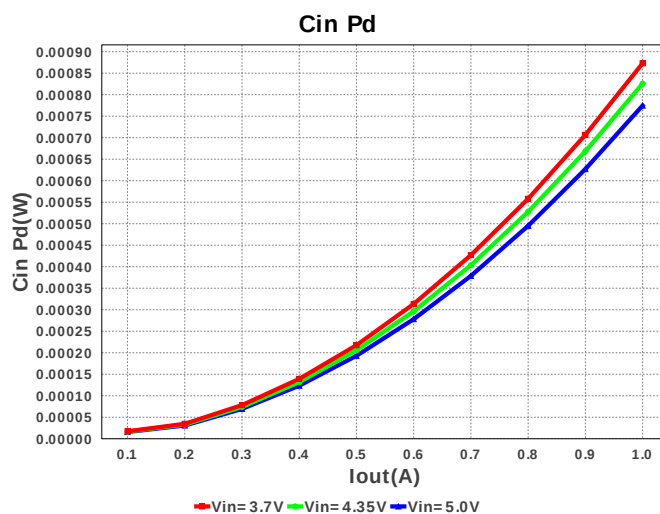
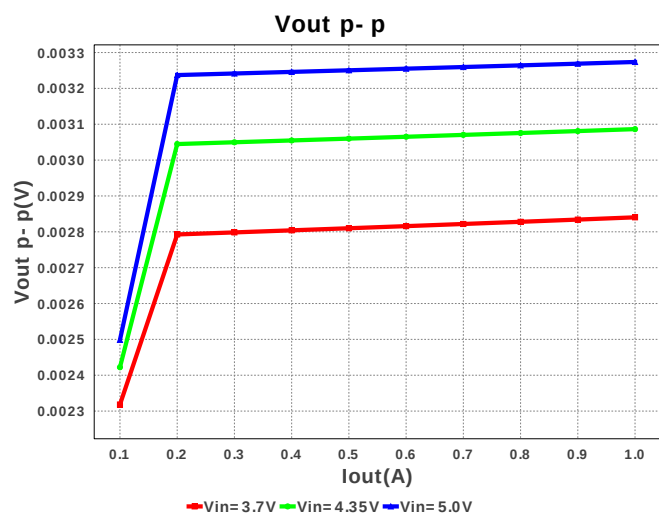
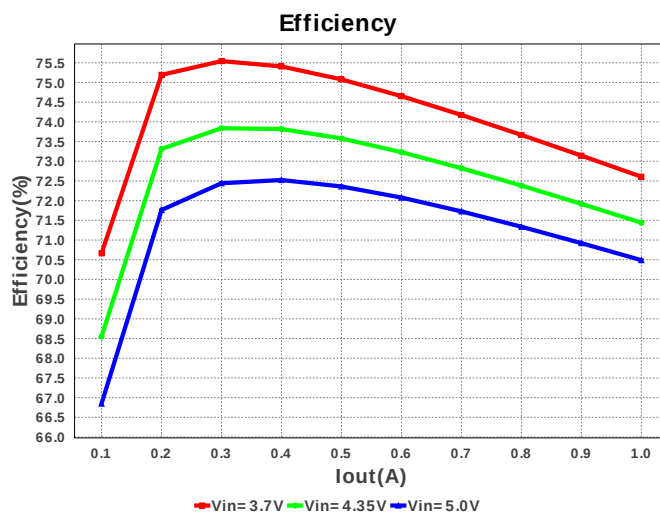
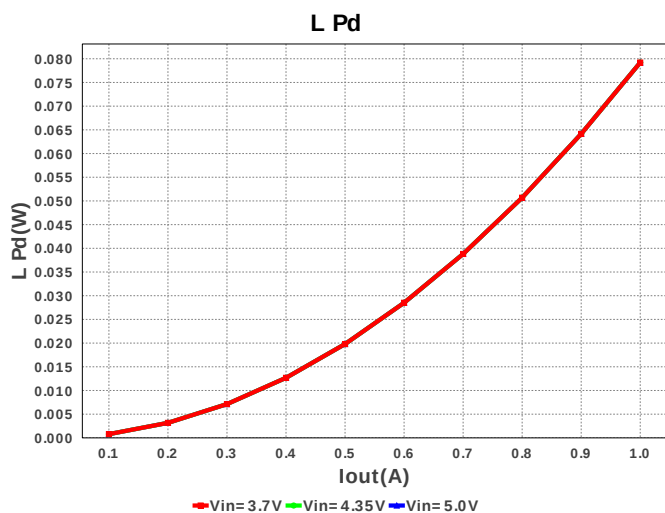


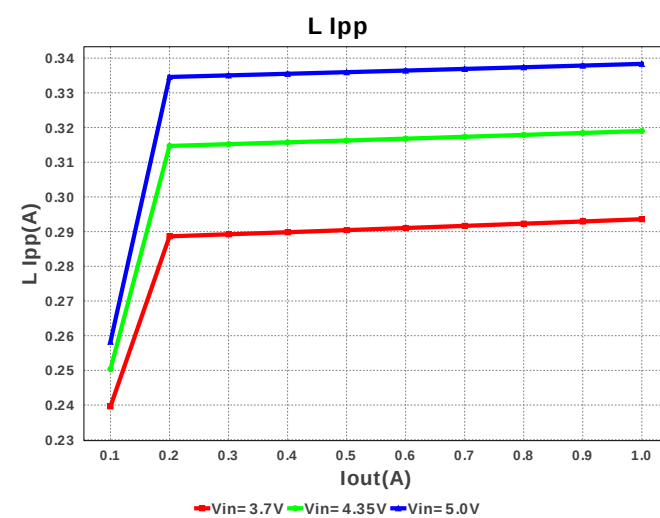
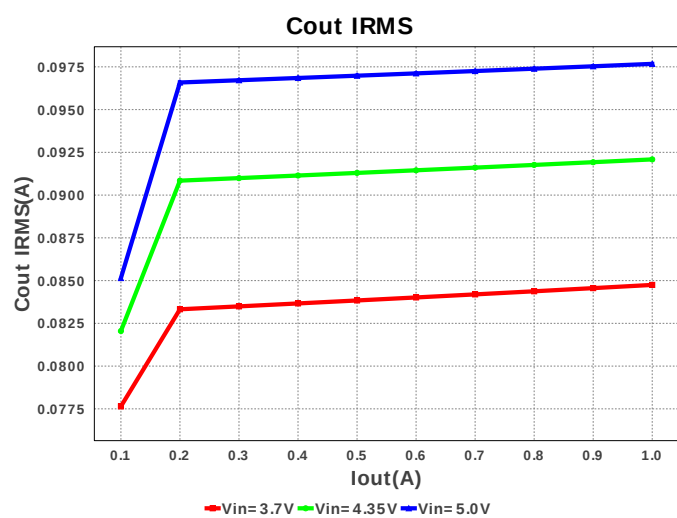
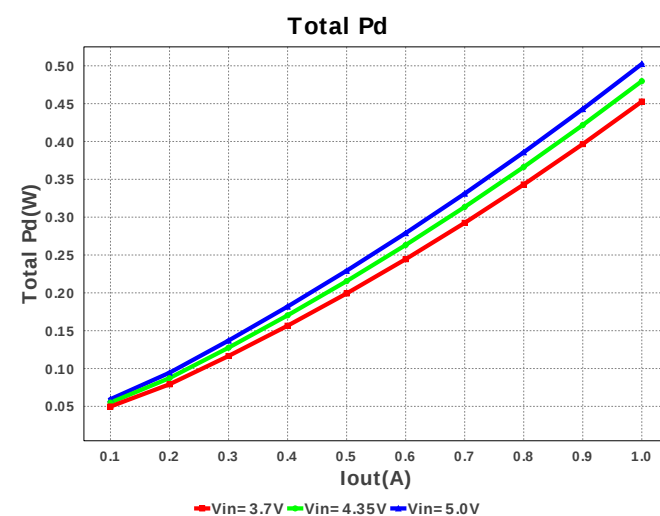
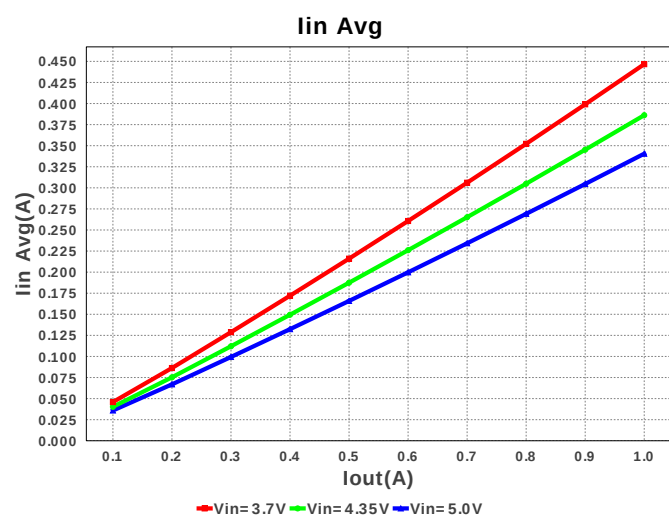
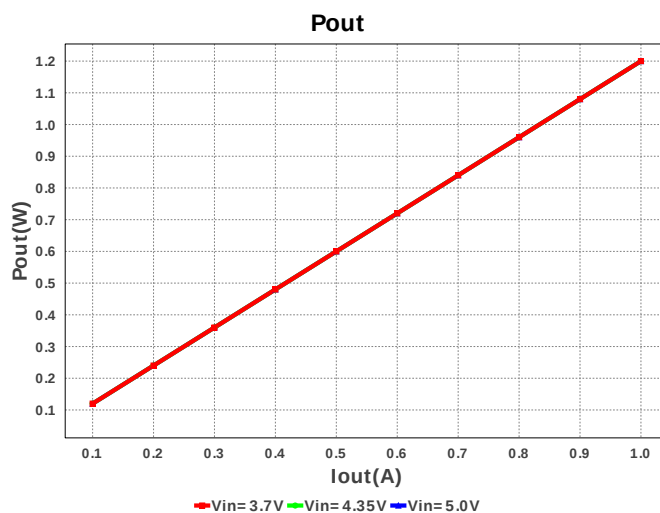
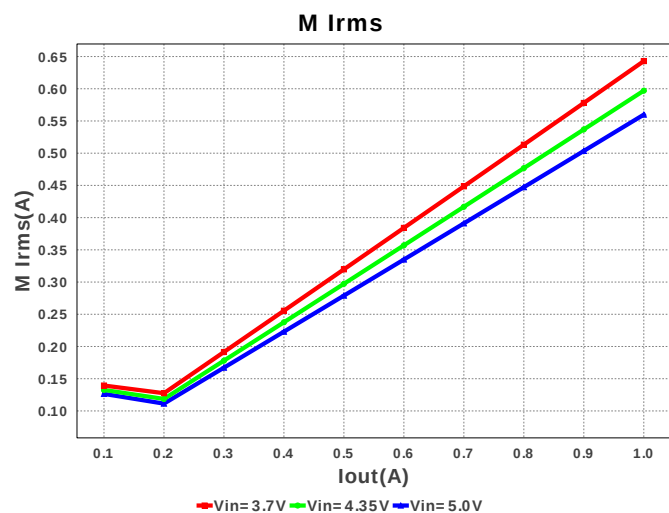
Electrical BOM

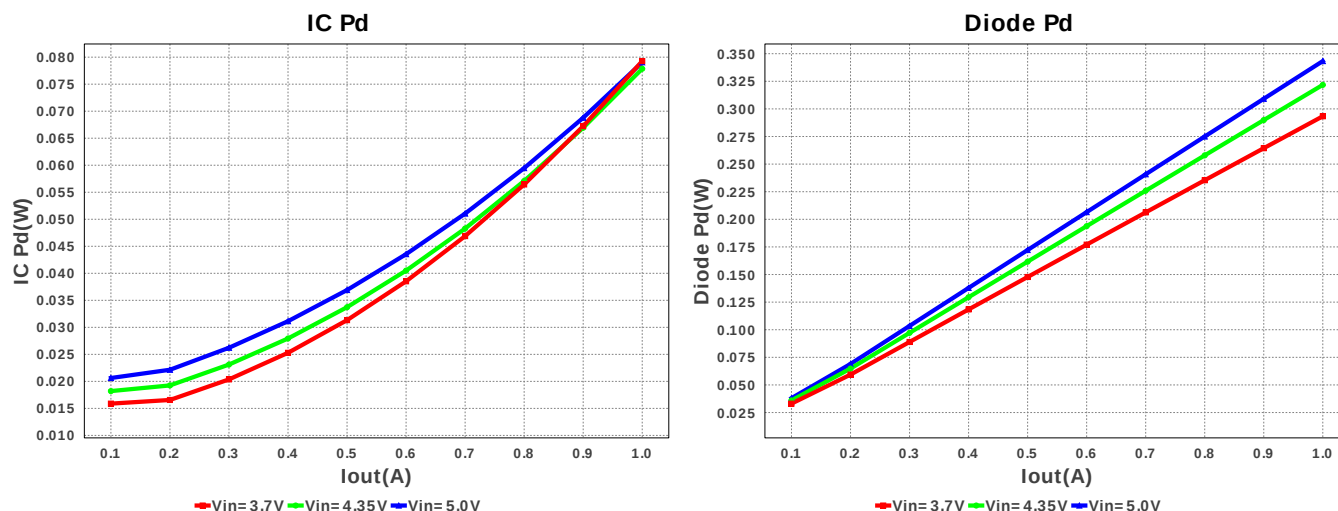
#	Name	Manufacturer	Part Number	Properties	Qty	Price	Footprint
1.	Cin	TDK	C1608X5R0J475M Series= X5R	Cap= 4.7 uF ESR= 3.6 mOhm VDC= 6.3 V IRMS= 1.6 A	1	\$0.03	0603 10 mm ²
2.	Cout	MuRata	GRM21BR60J226ME39L Series= X5R	Cap= 22.0 uF ESR= 9.0 mOhm VDC= 6.3 V IRMS= 3.5 A	1	\$0.05	0805 13 mm ²
3.	D1	Diodes Inc.	B130-13-F	VF@Io= 500.0 mV VRRM= 30.0 V	1	\$0.06	SMA 37 mm ²
4.	L1	Bourns	SRN3015-2R2M	L= 2.2 uH DCR= 72.0 mOhm	1	\$0.13	SRN3015 25 mm ²
5.	Renale	Vishay-Dale	CRCW040210K0FKED Series= CRCW..e3	Res= 10.0 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	0402 8 mm ²
6.	Rfb1	Vishay-Dale	CRCW040210K0FKED Series= CRCW..e3	Res= 10.0 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	0402 8 mm ²

#	Name	Manufacturer	Part Number	Properties	Qty	Price	Footprint
7.	Rfb2	Vishay-Dale	CRCW040210K0FKED Series= CRCW..e3	Res= 10.0 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	 0402 8 mm ²
8.	U1	Texas Instruments	LMR10515XMF/NOPB	Switcher	1	\$0.35	 MF05A 24 mm ²









Operating Values

#	Name	Value	Category	Description
1.	Cin IRMS	463.884 mA	Current	Input capacitor RMS ripple current
2.	Cout IRMS	97.674 mA	Current	Output capacitor RMS ripple current
3.	IC Ipk	1.169 A	Current	Peak switch current in IC
4.	Iin Avg	340.48 mA	Current	Average input current
5.	L Ipp	338.352 mA	Current	Peak-to-peak inductor ripple current
6.	M1 Irms	559.84 mA	Current	Q lavg
7.	BOM Count	8	General	Total Design BOM count
8.	FootPrint	132.0 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	75.988 mV	General	
12.	Pout	1.2 W	General	Total output power
13.	Total BOM	\$0.65	General	Total BOM Cost
14.	Duty Cycle	31.342 %	Op_point	Duty cycle
15.	Efficiency	70.489 %	Op_point	Steady state efficiency
16.	IC Tj	39.327 degC	Op_point	IC junction temperature
17.	ICThetaJA	118.0 degC/W	Op_point	IC junction-to-ambient thermal resistance
18.	IOUT_OP	1.0 A	Op_point	Iout operating point
19.	VIN_OP	5.0 V	Op_point	Vin operating point
20.	Vout p-p	3.274 mV	Op_point	Peak-to-peak output ripple voltage
21.	Cin Pd	774.678 μW	Power	Input capacitor power dissipation
22.	Cout Pd	85.862 μW	Power	Output capacitor power dissipation
23.	Diode Pd	343.289 mW	Power	Diode power dissipation
24.	IC Pd	79.041 mW	Power	IC power dissipation
25.	L Pd	79.2 mW	Power	Inductor power dissipation
26.	Total Pd	502.395 mW	Power	Total Power Dissipation

Design Inputs

#	Name	Value	Description
1.	Iout	1.0	Maximum Output Current
2.	Iout1	1.0	Output Current #1
3.	VinMax	5.0	Maximum input voltage
4.	VinMin	3.7	Minimum input voltage
5.	Vout	1.2	Output Voltage
6.	Vout1	1.2	Output Voltage #1
7.	base_pn	LMR10515X	Base Product Number
8.	source	DC	Input Source Type
9.	Ta	30.0	Ambient temperature

Design Assistance

1. **LMR10515X** Product Folder : <http://www.ti.com/product/lmr10515> : contains the data sheet and other resources.

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