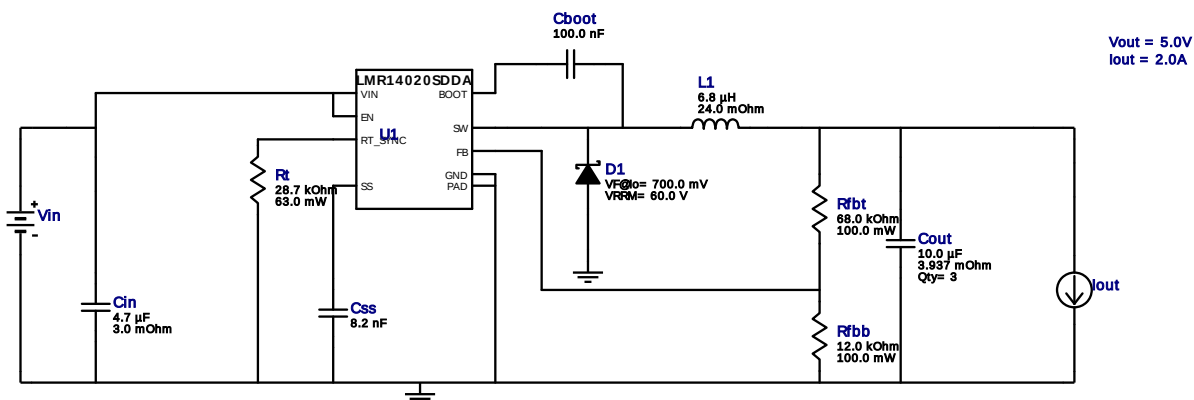


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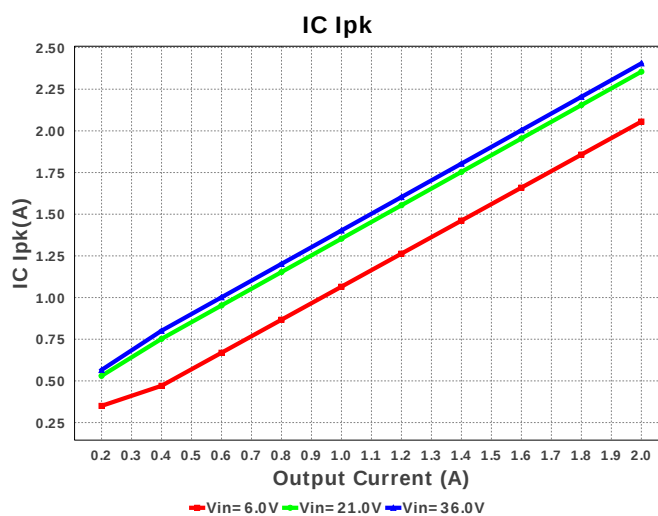
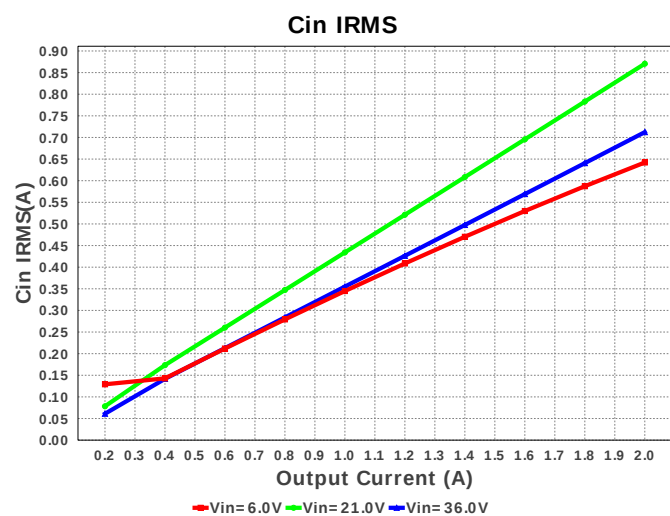
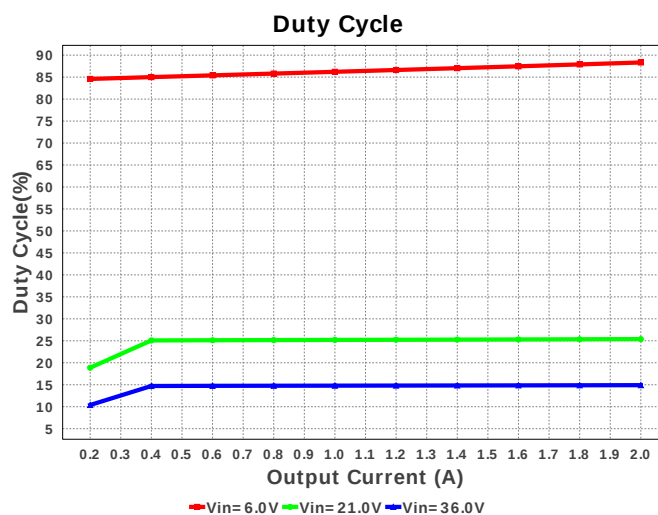
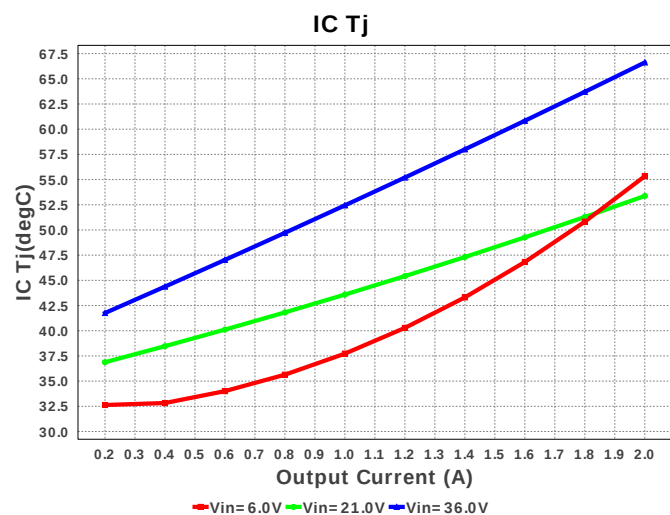
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LMR14020SDDAR 6.0V-36.0V to 5.00V @ 2.0001874999999996A

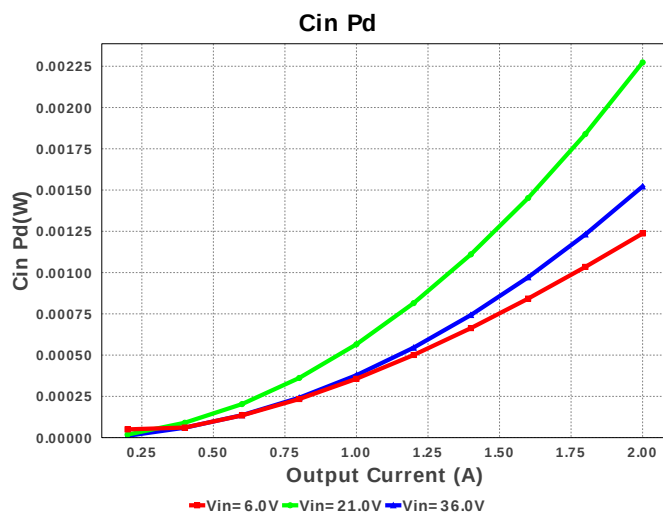
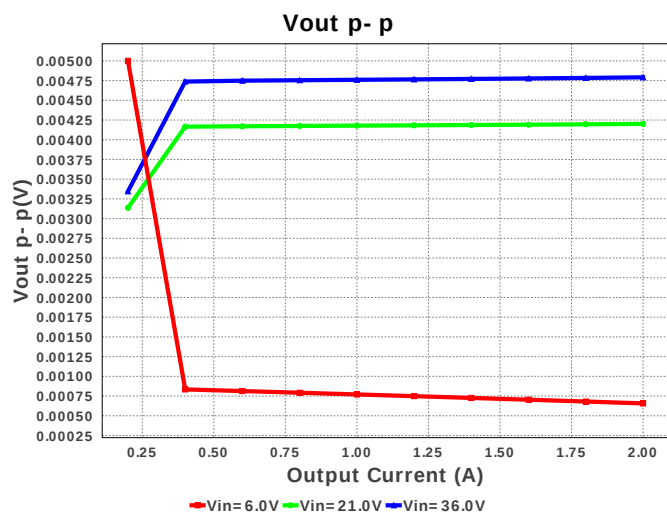
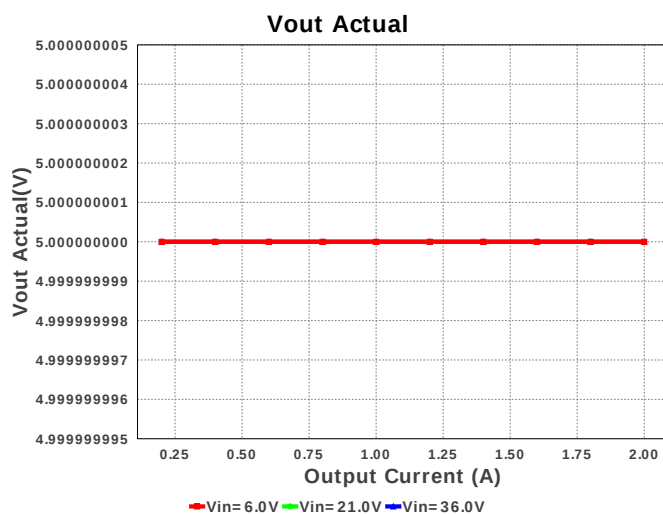
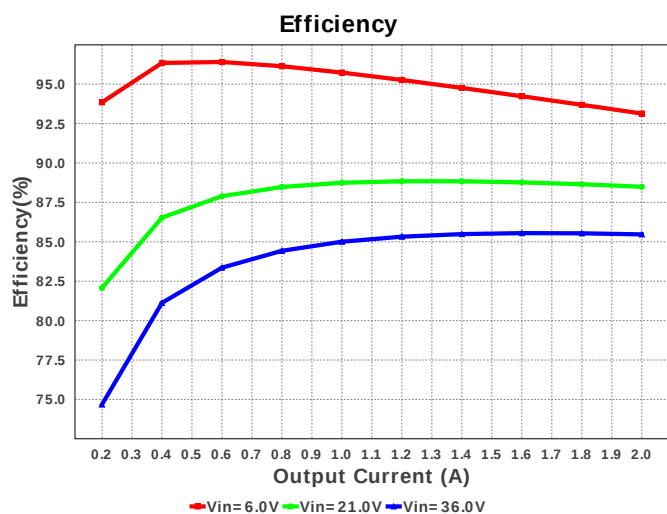
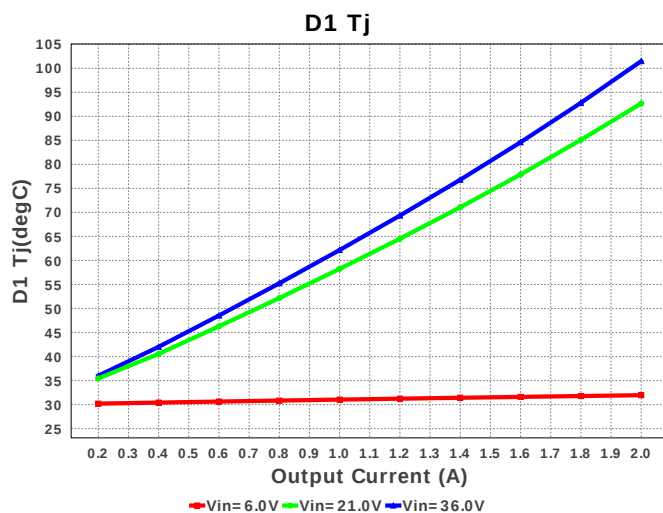
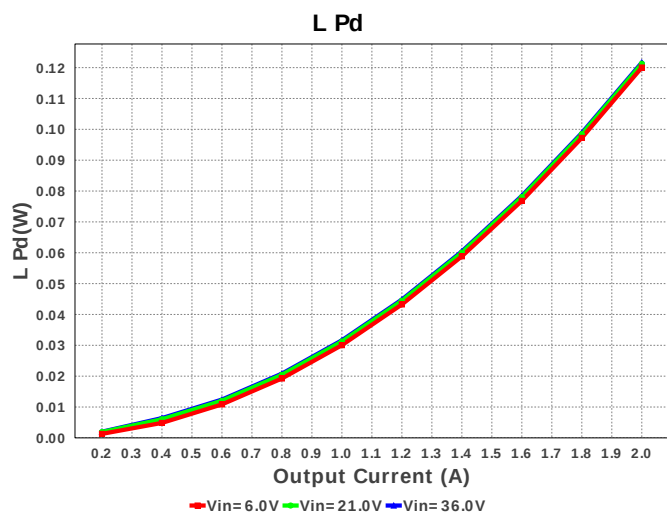


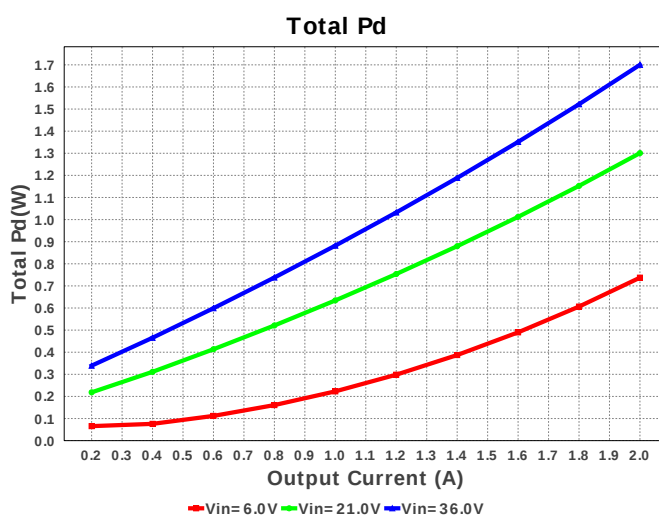
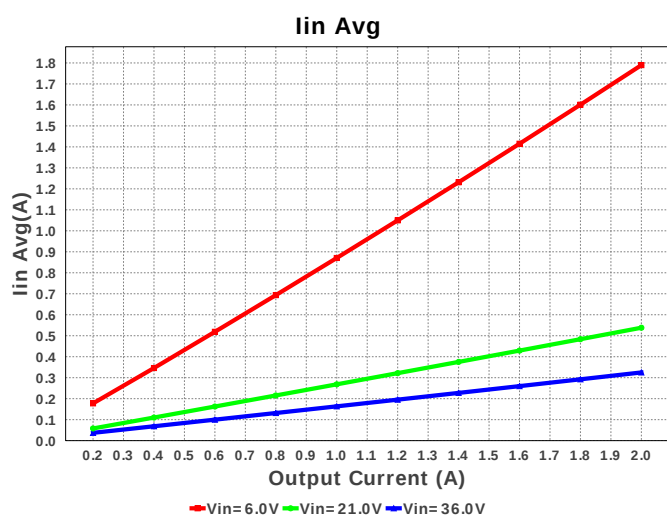
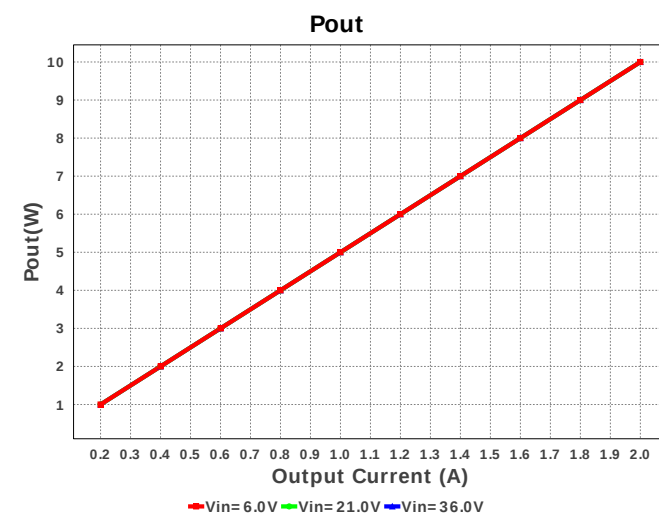
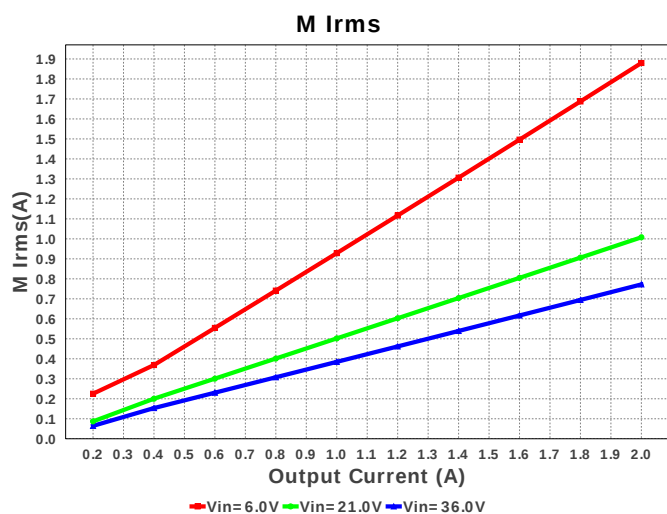
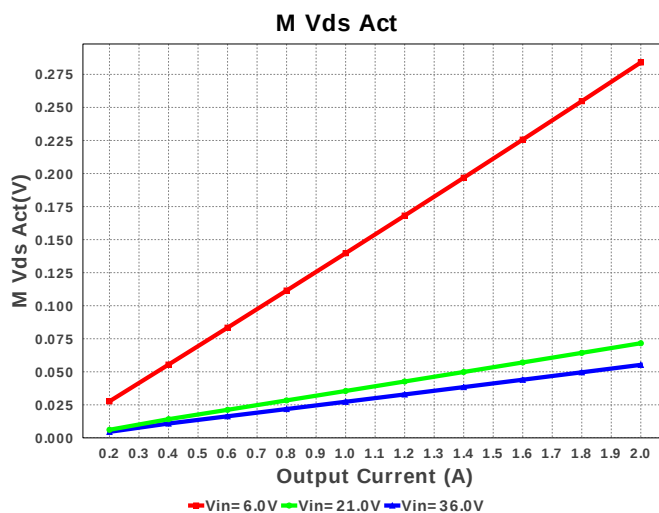
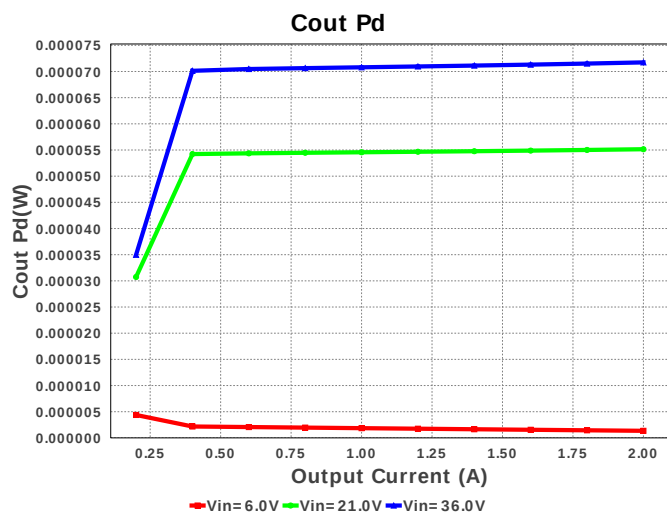
Electrical BOM

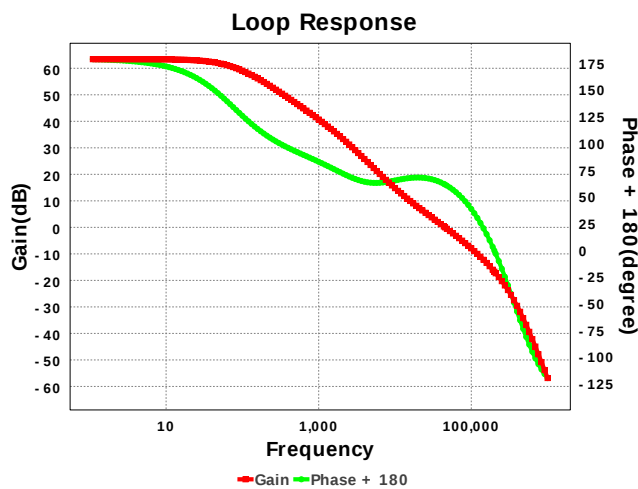
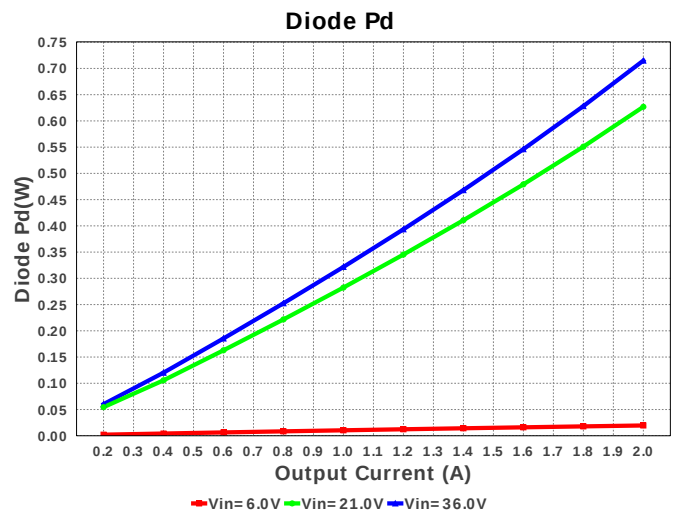
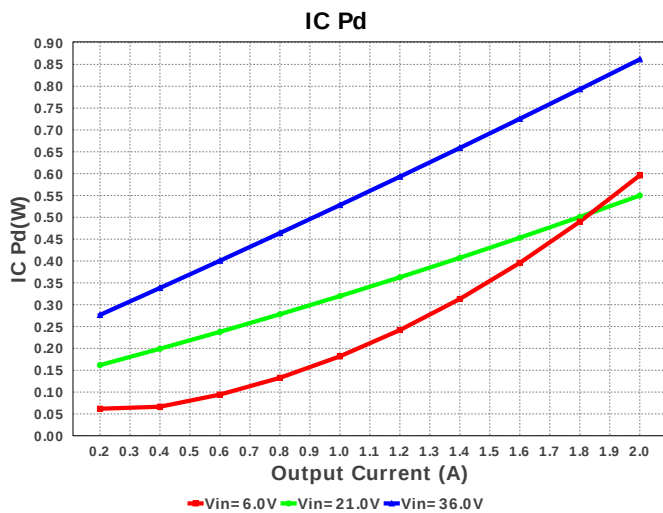
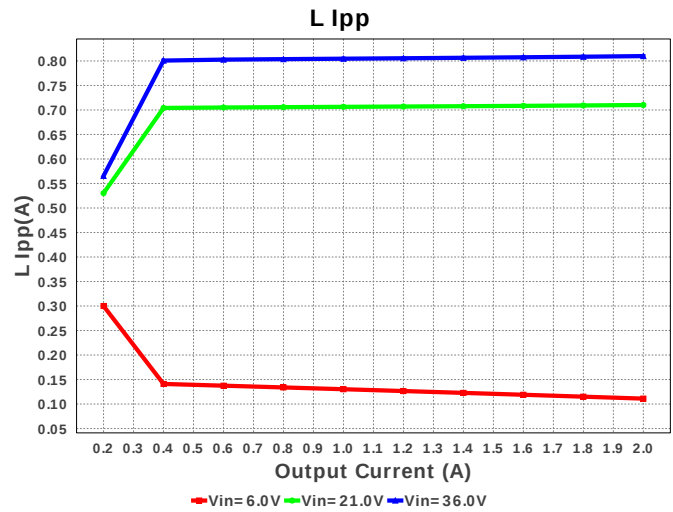
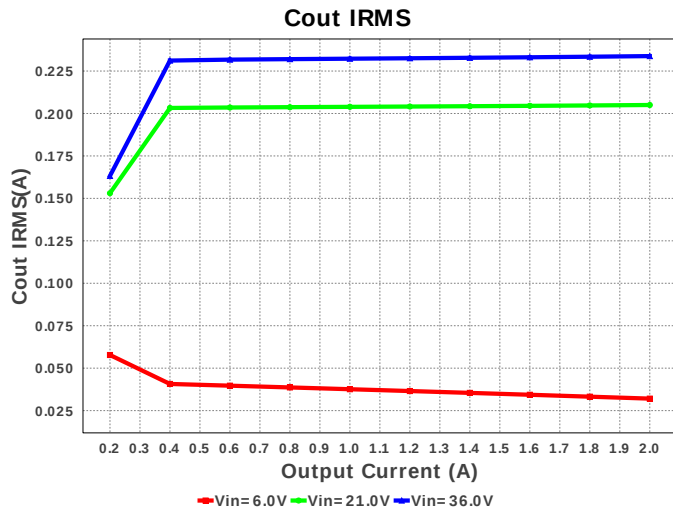
#	Name	Manufacturer	Part Number	Properties	Qty	Price	Footprint
1.	Cboot	Taiyo Yuden	HMK212B7104KG-T Series= X7R	Cap= 100.0 nF VDC= 100.0 V IRMS= 0.0 A	1	\$0.03	 0805 7 mm ²
2.	Cin	MuRata	GRM31CR71H475KA12L Series= X7R	Cap= 4.7 uF ESR= 3.0 mOhm VDC= 50.0 V IRMS= 4.98 A	1	\$0.07	 1206 11 mm ²
3.	Cout	MuRata	GRM219R61A106KE44D Series= X5R	Cap= 10.0 uF ESR= 3.937 mOhm VDC= 10.0 V IRMS= 2.7713 A	3	\$0.03	 0805 7 mm ²
4.	Css	MuRata	GRM155R71C822KA01D Series= X7R	Cap= 8.2 nF VDC= 16.0 V IRMS= 0.0 A	1	\$0.01	 0402 3 mm ²
5.	D1	Diodes Inc.	B360A-13-F	VF@Io= 700.0 mV VRRM= 60.0 V	1	\$0.12	 SMA 37 mm ²
6.	L1	TDK	VLP8040T-6R8M	L= 6.8 uH DCR= 24.0 mOhm	1	\$0.22	 VLP8040 113 mm ²
7.	Rfbb	Yageo America	RC0603FR-0712KL Series= ?	Res= 12.0 kOhm Power= 100.0 mW Tolerance= 1.0%	1	\$0.01	 0603 5 mm ²
8.	Rfht	Yageo America	RC0603FR-0768KL Series= ?	Res= 68.0 kOhm Power= 100.0 mW Tolerance= 1.0%	1	\$0.01	 0603 5 mm ²
9.	Rt	Vishay-Dale	CRCW040228K7FKED Series= CRCW..e3	Res= 28.7 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	 0402 3 mm ²

#	Name	Manufacturer	Part Number	Properties	Qty	Price	Footprint
10.	U1	Texas Instruments	LMR14020SDDAR	Switcher	1	\$1.46	 DDA0008E_N 57 mm ²









Operating Values

#	Name	Value	Category	Description
1.	Cin IRMS	712.294 mA	Current	Input capacitor RMS ripple current
2.	Cout IRMS	233.804 mA	Current	Output capacitor RMS ripple current
3.	IC Ipk	2.405 A	Current	Peak switch current in IC
4.	Iin Avg	325.01 mA	Current	Average input current
5.	L Ipp	809.92 mA	Current	Peak-to-peak inductor ripple current
6.	M Irms	772.158 mA	Current	MOSFET RMS current
7.	BOM Count	12	General	Total Design BOM count
8.	FootPrint	261.0 mm ²	General	Total Foot Print Area of BOM components
9.	Frequency	837.457 kHz	General	Switching frequency
10.	IC Tolerance	18.0 mV	General	IC Feedback Tolerance
11.	M Vds Act	55.228 mV	General	Voltage drop across the MosFET

#	Name	Value	Category	Description
12.	Mode	CCM	General	Conduction Mode
13.	Pout	10.0 W	General	Total output power
14.	Total BOM	\$2.03	General	Total BOM Cost
15.	D1 Tj	101.5 degC	Op_Point	D1 junction temperature
16.	Vout Actual	5.0 V	Op_Point	Vout Actual calculated based on selected voltage divider resistors
17.	Vout OP	5.0 V	Op_Point	Operational Output Voltage
18.	Cross Freq	45.273 kHz	Op_point	Bode plot crossover frequency
19.	Duty Cycle	14.905 %	Op_point	Duty cycle
20.	Efficiency	85.469 %	Op_point	Steady state efficiency
21.	IC Tj	66.189 degC	Op_point	IC junction temperature
22.	ICThetaJA	42.0 degC/W	Op_point	IC junction-to-ambient thermal resistance
23.	IOUT_OP	2.0 A	Op_point	Iout operating point
24.	Phase Marg	61.848 deg	Op_point	Bode Plot Phase Margin
25.	VIN_OP	36.0 V	Op_point	Vin operating point
26.	Vout p-p	4.791 mV	Op_point	Peak-to-peak output ripple voltage
27.	Cin Pd	1.522 mW	Power	Input capacitor power dissipation
28.	Cout Pd	71.738 μ W	Power	Output capacitor power dissipation
29.	Diode Pd	715.004 mW	Power	Diode power dissipation
30.	IC Pd	861.632 mW	Power	IC power dissipation
31.	L Pd	121.647 mW	Power	Inductor power dissipation
32.	Total Pd	1.7 W	Power	Total Power Dissipation
33.	Vout Tolerance	4.158 %		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	36.0	Maximum input voltage
3.	VinMin	6.0	Minimum input voltage
4.	Vout	5.0	Output Voltage
5.	base_pn	LMR14020S	Texas Instruments Base Part Number
6.	source	DC	Input Source Type
7.	ta	30.0	Ambient temperature

Design Assistance

1. LMR14020S Product Folder : <http://www.ti.com/product/LMR14020> : contains the data sheet and other resources.

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