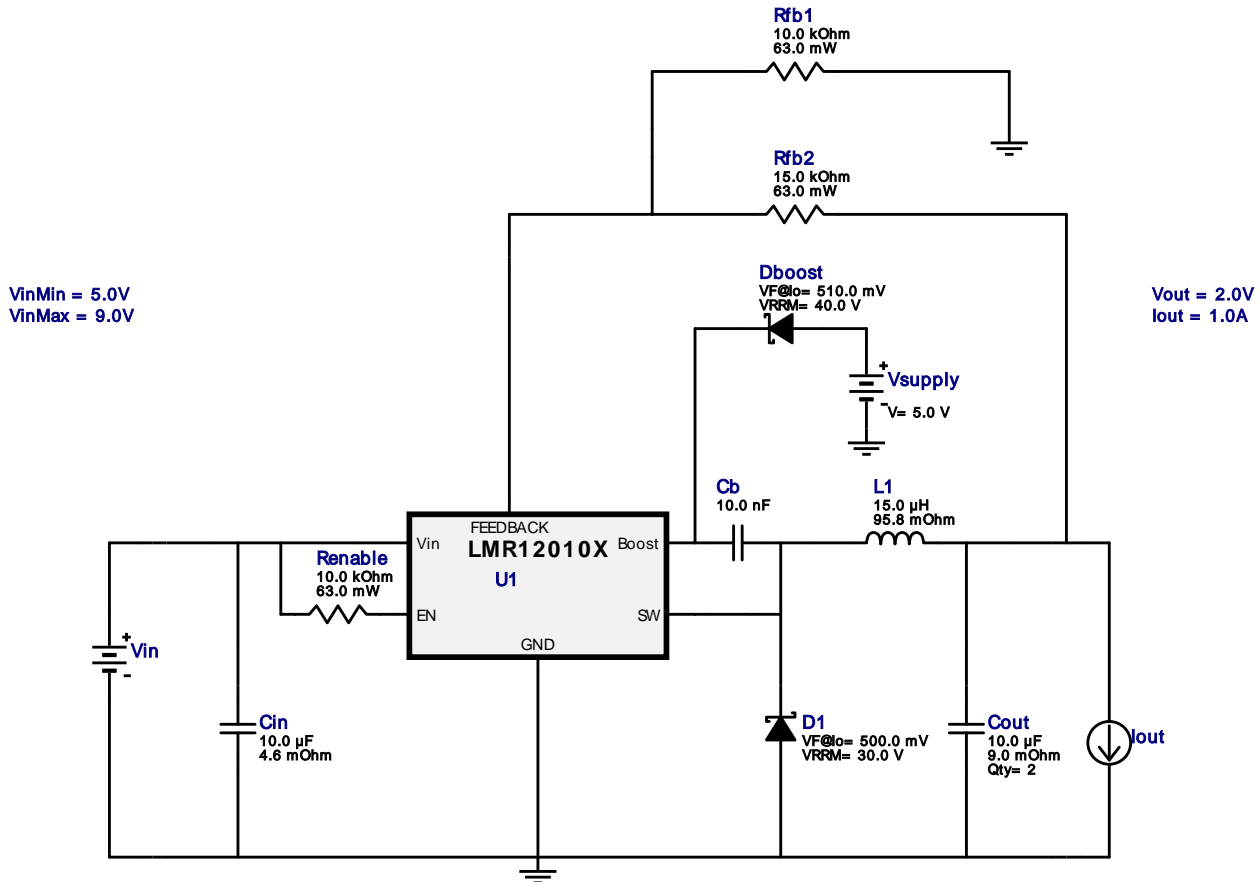








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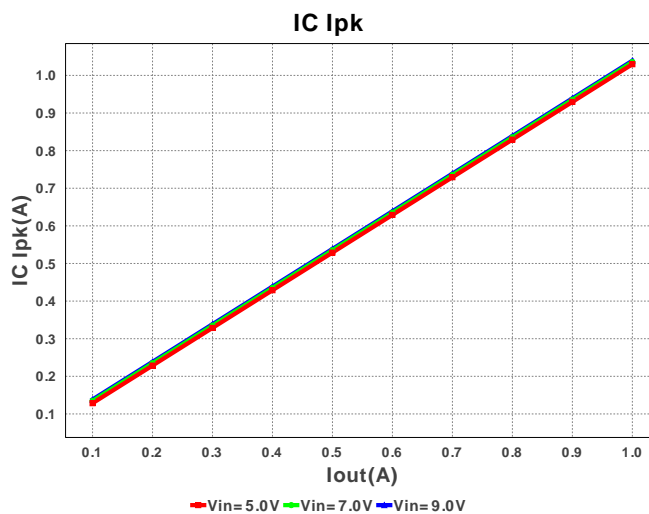
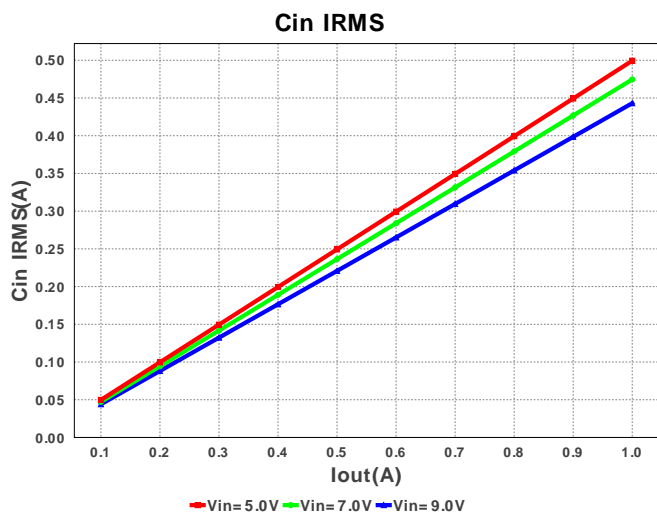
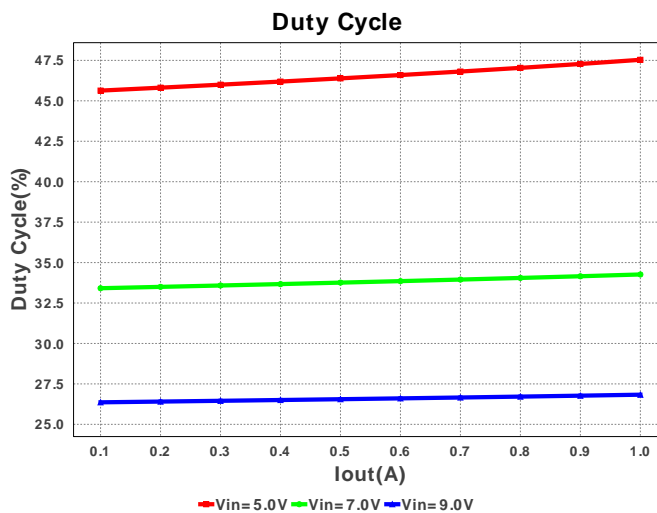
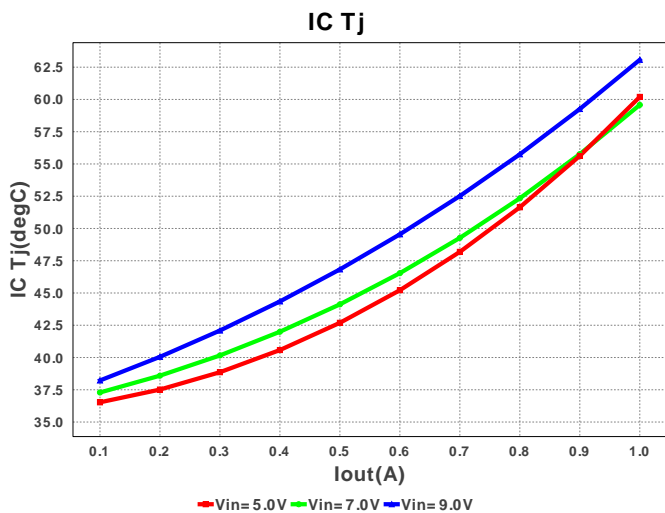
 Design : 3816206/166 LMR12010XMK/NOPB
 LMR12010XMK/NOPB 5.0V-9.0V to 2.0V @ 1.0A


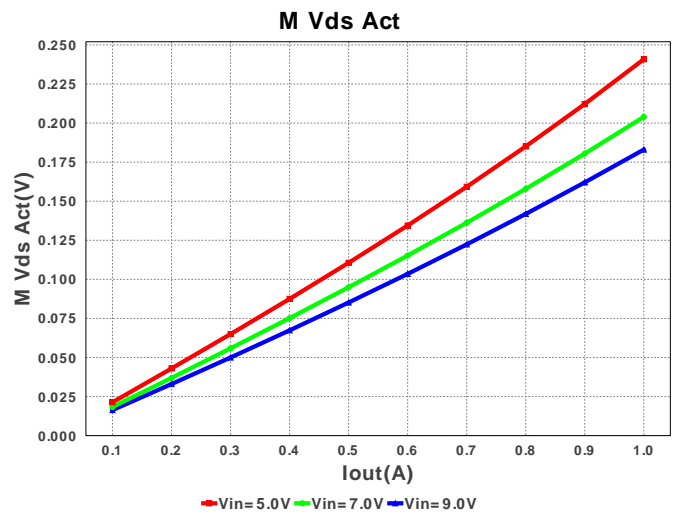
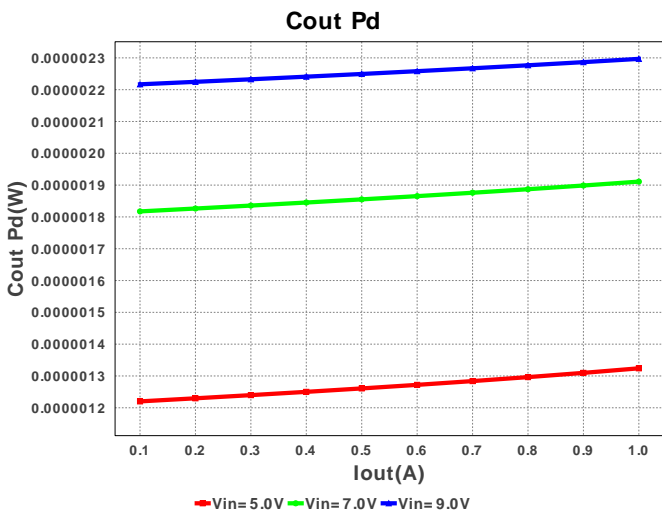
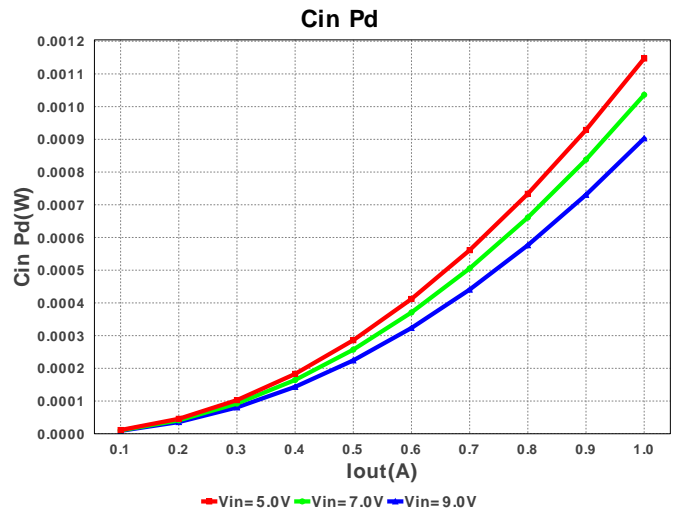
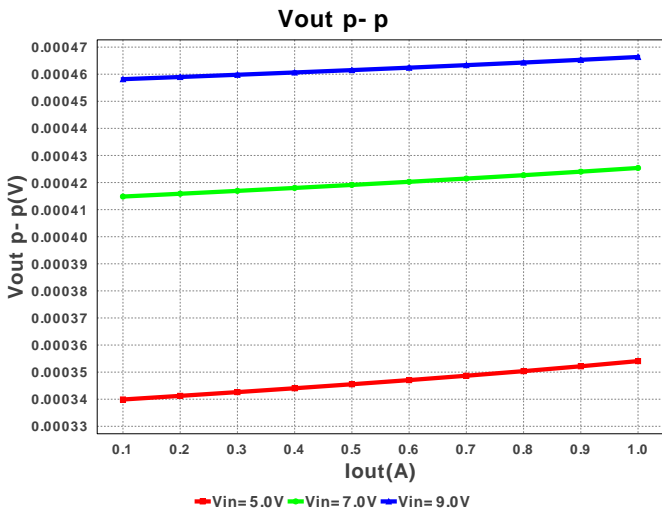
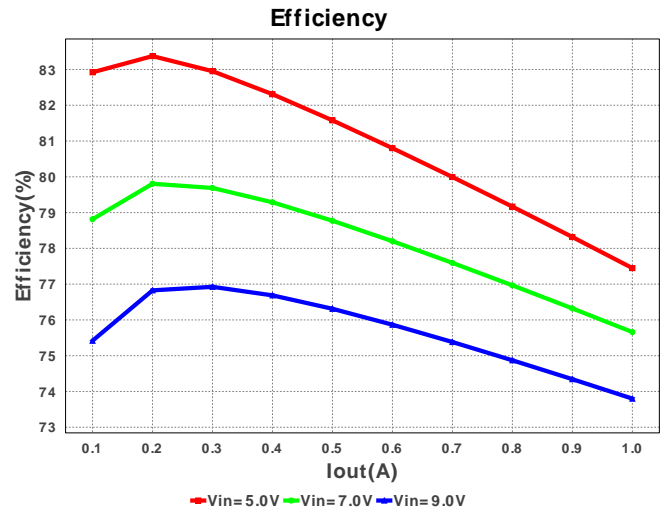
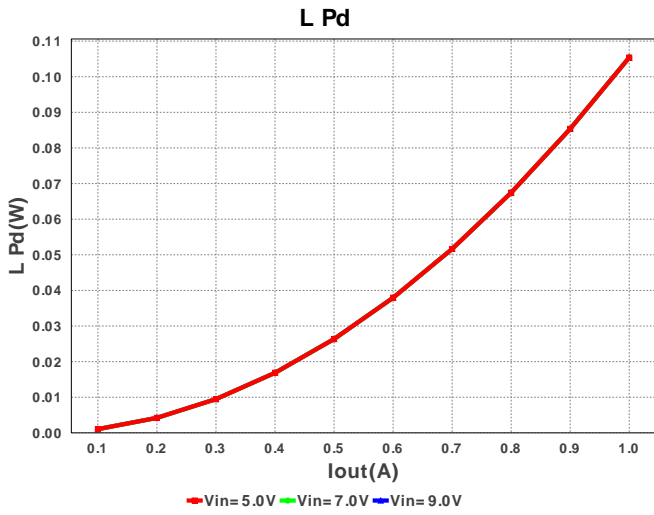
1. The Boost pin voltage must be supplied from a source of less than 5.5V. Recommended methods are described in the LM2734 datasheet Application Information.

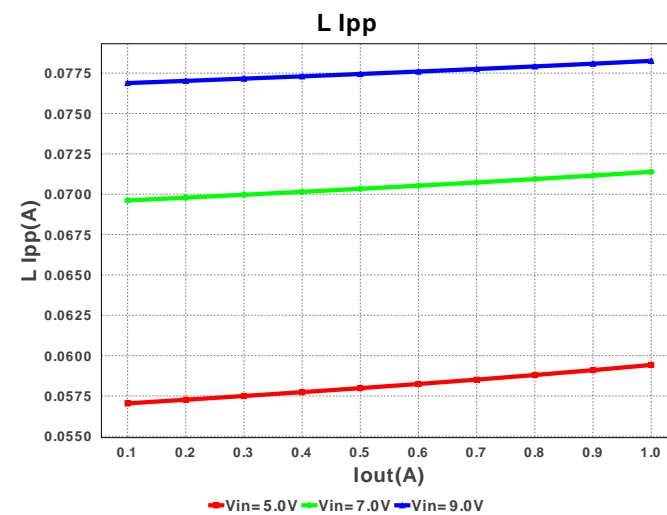
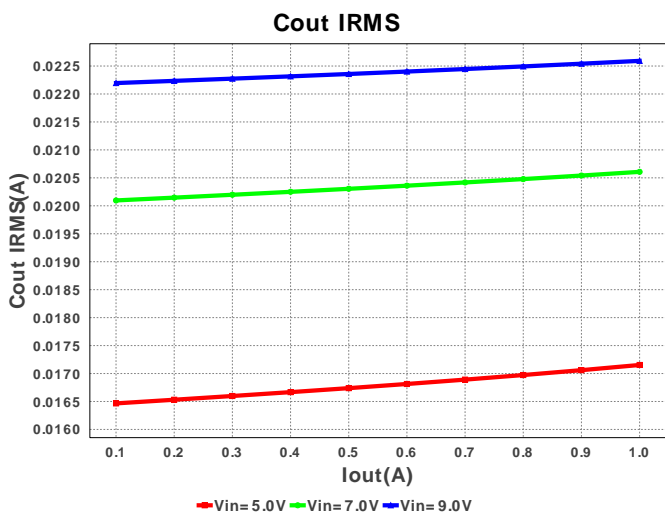
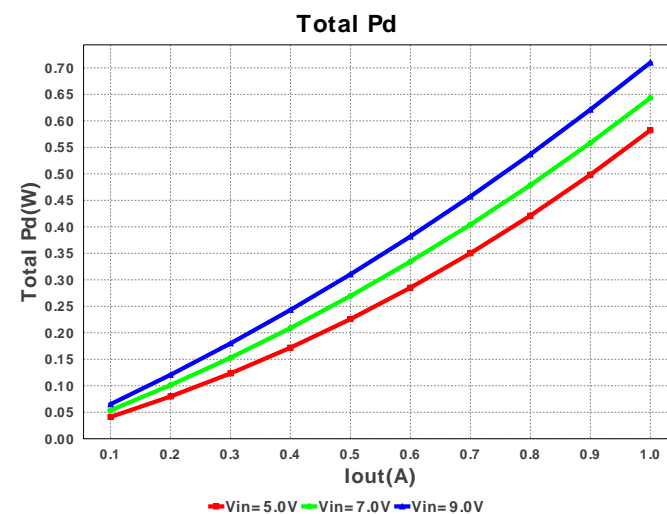
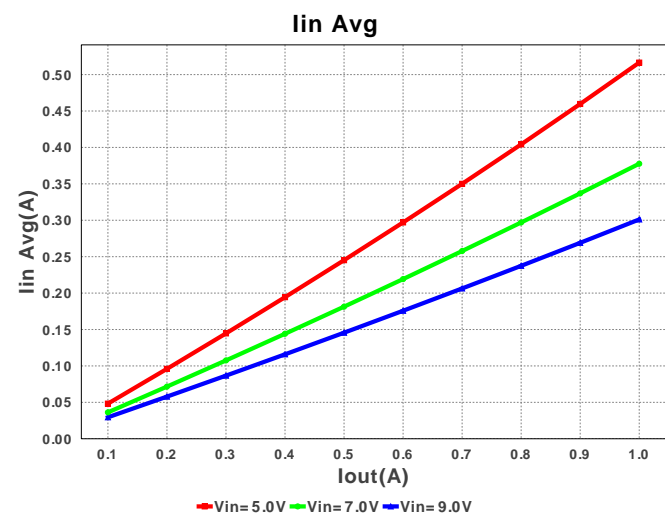
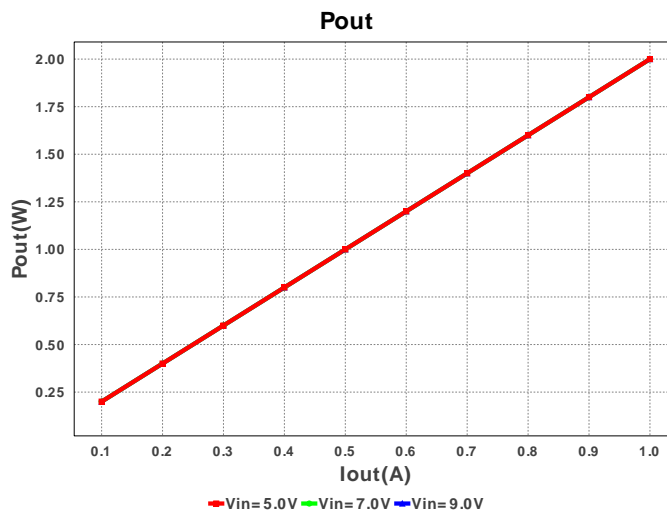
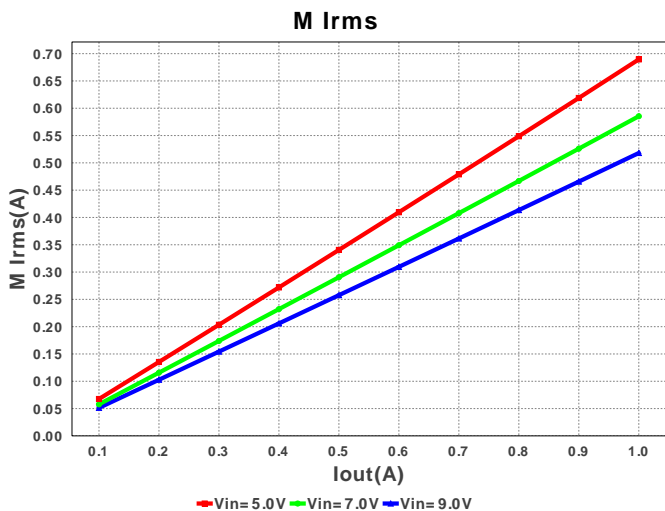
Electrical BOM

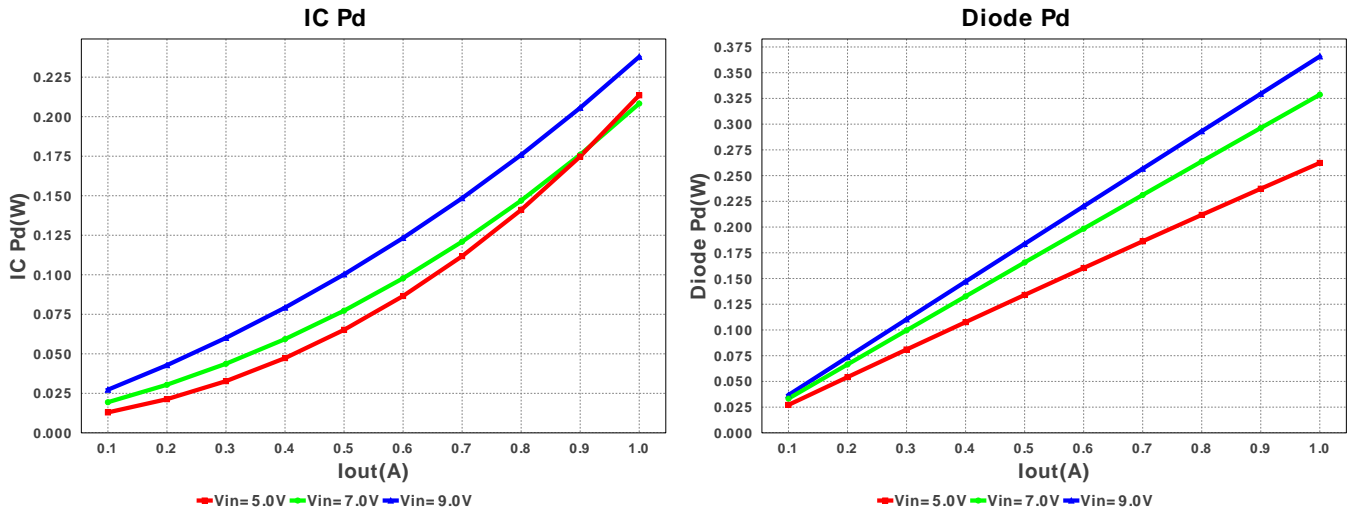
#	Name	Manufacturer	Part Number	Properties	Qty	Price	Footprint
1.	Cb	MuRata	GRM216R71H103KA01D Series= X7R	Cap= 10.0 nF VDC= 50.0 V IRMS= 0.0 A	1	\$0.01	 0805 7mm2
2.	Cin	TDK	C3216X5R1C106KT Series= X5R	Cap= 10.0 uF ESR= 4.6 mOhm VDC= 16.0 V IRMS= 2.7 A	1	\$0.08	 1206 11mm2
3.	Cout	MuRata	GRM188R60J106ME47D Series= X5R	Cap= 10.0 uF ESR= 9.0 mOhm VDC= 6.3 V IRMS= 2.74 A	2	\$0.03	 0603 5mm2
4.	D1	Diodes Inc.	B130-13-F	VF@Io= 500.0 mV VRRM= 30.0 V	1	\$0.06	 SMA 37mm2
5.	Dboost	ON Semiconductor	MBR0540T1G	VF@Io= 510.0 mV VRRM= 40.0 V	1	\$0.06	 SOD-123 13mm2
6.	L1	Bourns	SRN6045-150M	L= 15.0 uH DCR= 95.8 mOhm	1	\$0.16	 SRN6045 64mm2

#	Name	Manufacturer	Part Number	Properties	Qty	Price	Footprint
7.	Renale	Vishay-Dale	CRCW040210K0FKED Series= CRCW..e3	Res= 10.0 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	0402 3mm2
8.	Rfb1	Vishay-Dale	CRCW040210K0FKED Series= CRCW..e3	Res= 10.0 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	0402 3mm2
9.	Rfb2	Vishay-Dale	CRCW040215K0FKED Series= CRCW..e3	Res= 15.0 kOhm Power= 63.0 mW Tolerance= 1.0%	1	\$0.01	0402 3mm2
10.	U1	Texas Instruments	LMR12010XMK/NOPB	Switcher	1	\$0.80	MK06A 11mm2









Operating Values

#	Name	Value	Category	Description
1.	Cin IRMS	443.089 mA	Current	Input capacitor RMS ripple current
2.	Cout IRMS	22.592 mA	Current	Output capacitor RMS ripple current
3.	IC Ipk	1.039 A	Current	Peak switch current in IC
4.	Iin Avg	301.11 mA	Current	Average input current
5.	L Ipp	78.262 mA	Current	Peak-to-peak inductor ripple current
6.	M Irms	518.003 mA	Current	MOSFET RMS current
7.	BOM Count	11	General	Total Design BOM count
8.	FootPrint	161.0 mm ²	General	Total Foot Print Area of BOM components
9.	Frequency	1.6 MHz	General	Switching frequency
10.	IC Tolerance	16.0 mV	General	IC Feedback Tolerance
11.	M Vds Act	183.011 mV	General	
12.	Pout	2.0 W	General	Total output power
13.	Total BOM	\$1.26	General	Total BOM Cost
14.	Duty Cycle	26.833 %	Op_point	Duty cycle
15.	Efficiency	73.8 %	Op_point	Steady state efficiency
16.	IC Tj	63.072 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	9.0 V	Op_point	Vin operating point
20.	Vout p-p	466.358 μV	Op_point	Peak-to-peak output ripple voltage
21.	Cin Pd	903.107 μW	Power	Input capacitor power dissipation
22.	Cout Pd	2.297 μW	Power	Output capacitor power dissipation
23.	Diode Pd	365.836 mW	Power	Diode power dissipation
24.	IC Pd	237.9 mW	Power	IC power dissipation
25.	L Pd	105.38 mW	Power	Inductor power dissipation
26.	Total Pd	710.017 mW	Power	Total Power Dissipation

Design Inputs

#	Name	Value	Description
1.	Iout	1.0 A	Maximum Output Current
2.	Iout1	1.0 Amps	Output Current #1
3.	VinMax	9.0 V	Maximum input voltage
4.	VinMin	5.0 V	Minimum input voltage
5.	Vout	2.0 V	Output Voltage
6.	Vout1	2.0 Volt	Output Voltage #1
7.	base_pn	LMR12010X	Texas Instruments Base Part Number
8.	source	DC	Input Source Type
9.	ta	35.0 degC	Ambient temperature

Design Assistance

1. LMR12010X Product Folder : <http://www.ti.com/product/lmr12010> : contains the data sheet and other resources.

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