

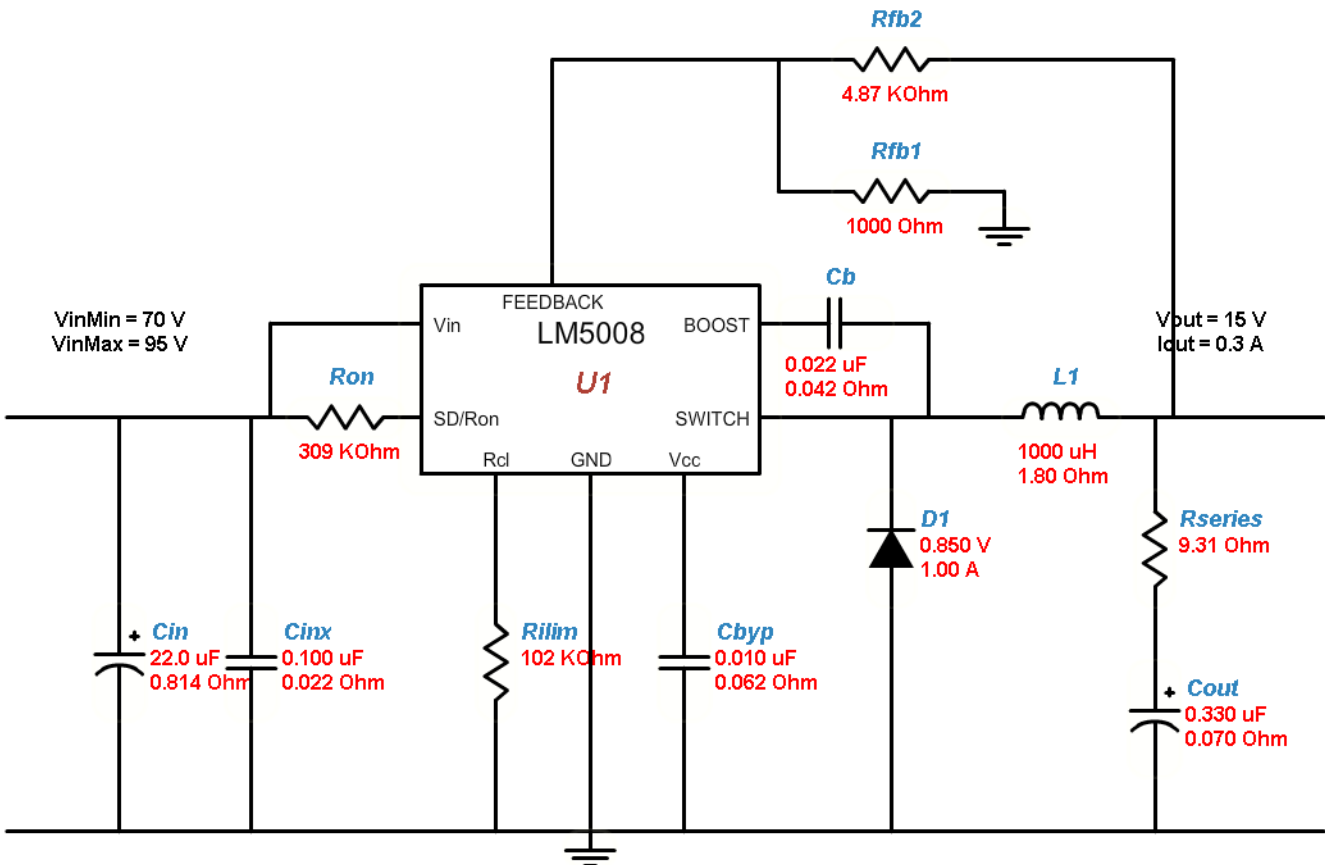
Design 15 - LM5008AMM

Introduction







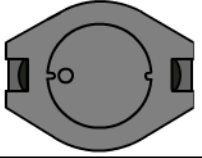
Design Specifications

IC	LM5008	Vout	15 V	Optimization Factor	0
VinMin	70 V	Iout	0.3 A	pricefactor	0
VinMax	95 V	ta	30	SoftStart Time	0 milli second

Schematic



Bill of Materials

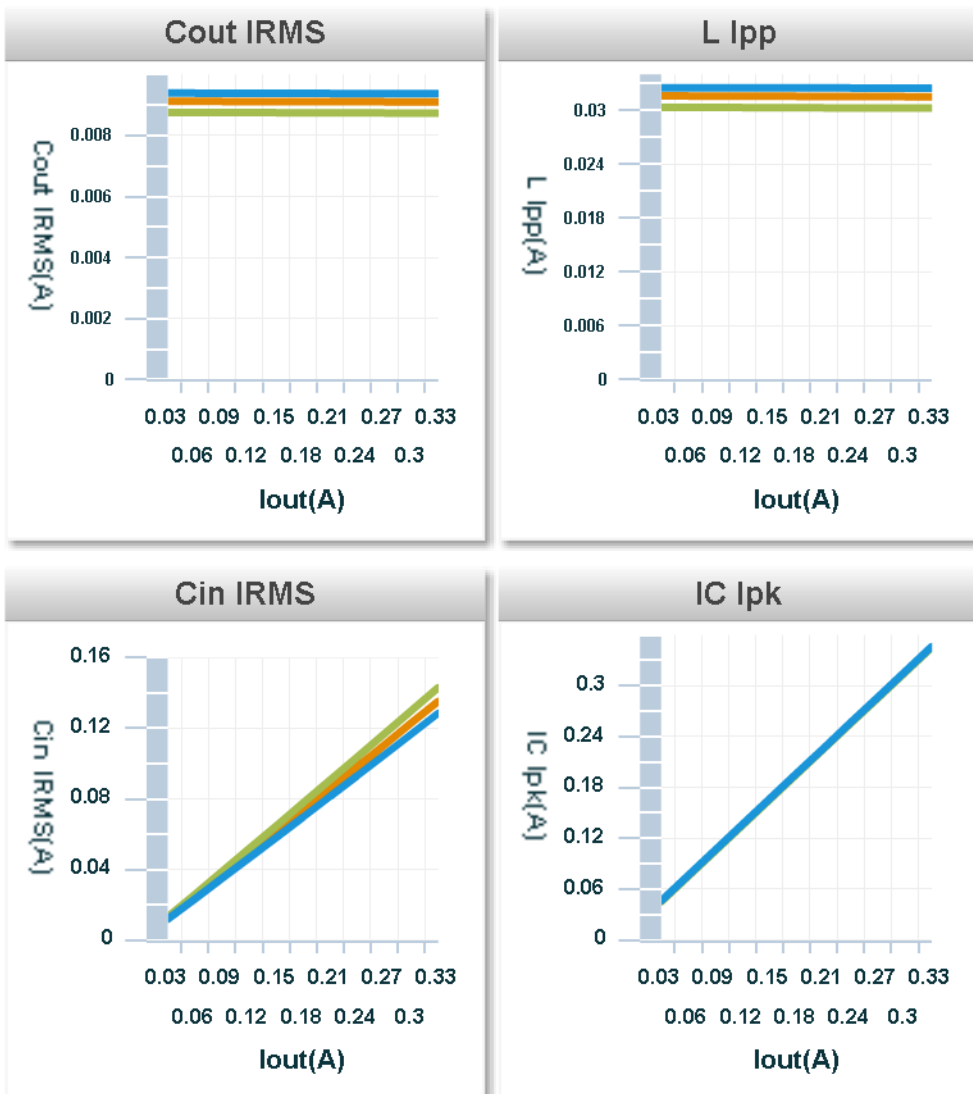
Part	Manufacturer	Part Number	Quantity	Price	Attributes	Top View
Cb	TDK	C1005X7R1C223K	1	0.01	Cap=22nF, ESR=0.042Ohm, VDC=16V	
Cbyp	TDK	C1005X7R1E103K	1	0.01	Cap=10nF, ESR=0.062Ohm, VDC=25V	
Cin	Panasonic	EEUED2D220	1	0.18	Cap=22uF, ESR=0.814Ohm, VDC=200V	
Cinx	TDK	C3216X7R2E104K	1	0.09	Cap=100nF, ESR=0.022Ohm, VDC=250V	
Cout	Kemet	C1206C334K3RACTU	1	0.05	Cap=330nF, ESR=0.07Ohm, VDC=25V	
D1	Diodes Inc.	DFLS1200-7	1	0.28	VFatlo=0.85V, Io=1A, VRRM=200V	
L1	Bourns	SDR1806-102KL	1	0.3	L=1mH, DCR=1.8Ohm, IDC=0.5A	
Rfb1	Vishay-Dale	CRCW04021K00FKED	1	0.01	Resistance=1000Ohm, Tolerance=1%, Power=0.063W	
Rfb2	Vishay-Dale	CRCW04024K87FKED	1	0.01	Resistance=4.87KOhm, Tolerance=1%, Power=0.063W	
Rilim	Vishay-Dale	CRCW0402102KFKED	1	0.01	Resistance=102KOhm, Tolerance=1%, Power=0.063W	
Ron	Vishay-Dale	CRCW0402309KFKED	1	0.01	Resistance=309KOhm, Tolerance=1%, Power=0.063W	
Rseries	Vishay-Dale	CRCW04029R31FNED	1	0.01	Resistance=9.31Ohm,	

Operating Values

Name	Value	Category	Description
Cout IRMS	9.42mA	Current	Output capacitor RMS ripple current
L Ipp	0.03A	Current	Peak-to-peak inductor ripple current
Cin IRMS	0.11A	Current	Input capacitor RMS ripple current
IC Ipk	0.31A	Current	Peak switch current in IC
Iin Avg	0.05A	Current	Average input current
Total BOM	2.72\$	General	Total BOM price
Mode	CCM	General	Conduction Mode
FootPrint	391mm ²	General	Total Foot Print Area of BOM components
Pout	4.5W	General	Total output power
Frequency	457KHz	General	Switching frequency
BOM Count	13	General	Total BOM count
ICThetaJA	200degC/W	Op_point	IC junction-to-ambient thermal resistance
IC Tj	56.2degC	Op_point	IC junction temperature
IOUT_OP	0.3A	Op_point	Iout operating point
Duty Cycle	18.6%	Op_point	Duty cycle
Efficiency	89.1%	Op_point	Steady state efficiency
VIN_OP	95V	Op_point	Vin operating point
M_Irms_Act	0.12A	Op_point	Q Iavg
ton_Act	407n	Op_point	
Vout p-p	0.30V	Op_point	Peak-to-peak output ripple voltage
M_Vds_Act	0.15V	Op_point	
Cout Pd	824uW	Power	Output capacitor power dissipation
Diode Pd	0.20W	Power	Diode power dissipation
IC Pd	0.13W	Power	IC power dissipation
Cin Pd	0.01W	Power	Input capacitor power dissipation
Total Pd	0.55W	Power	Total Power Dissipation
L Pd	0.20W	Power	Inductor power dissipation

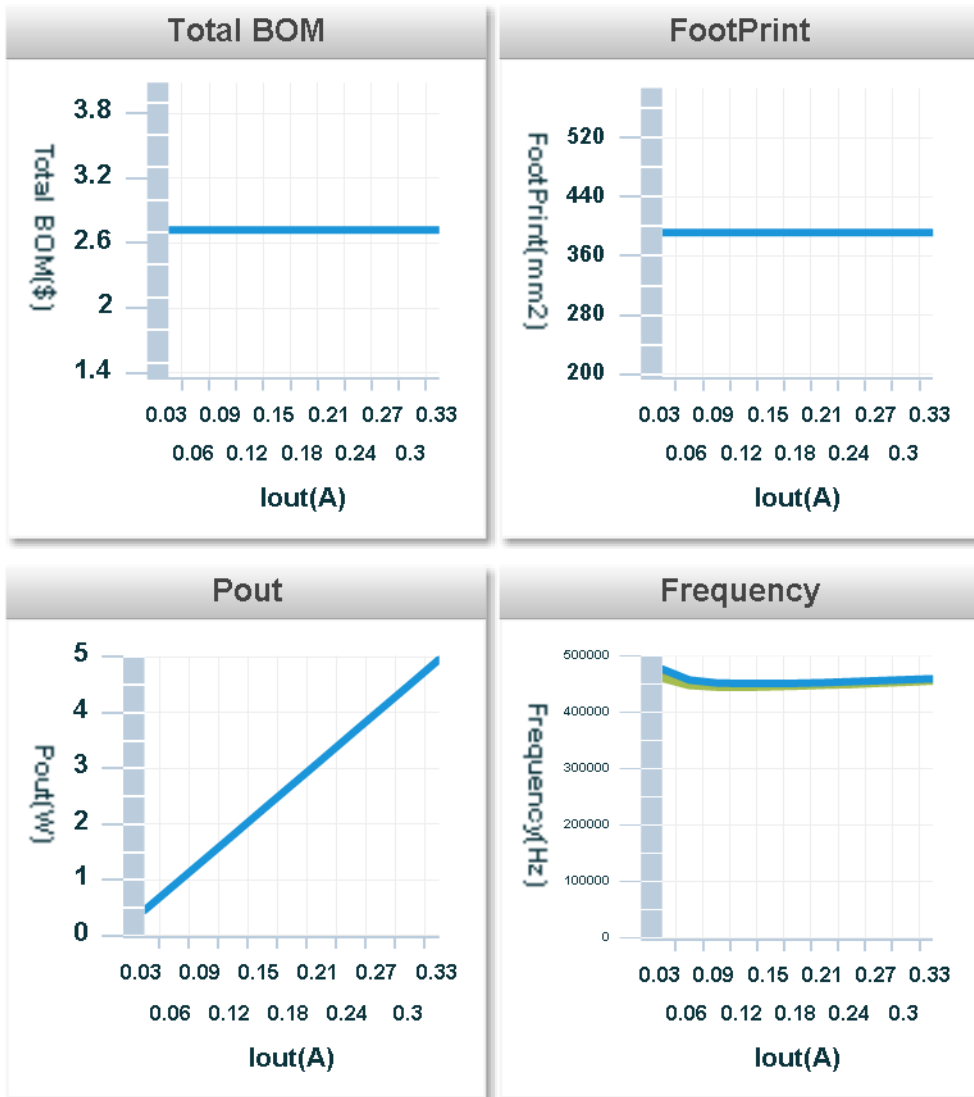
Charts

Current



Charts (Continued)

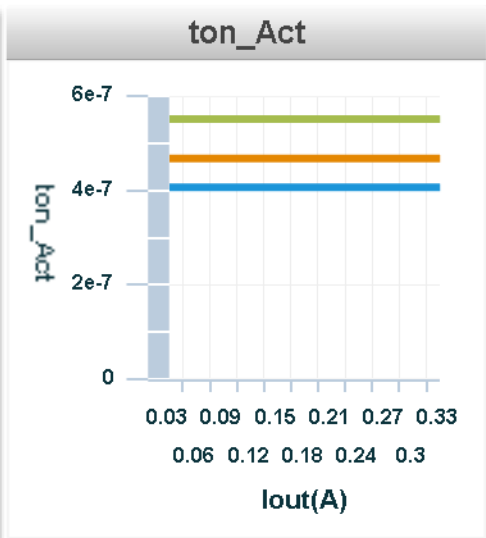
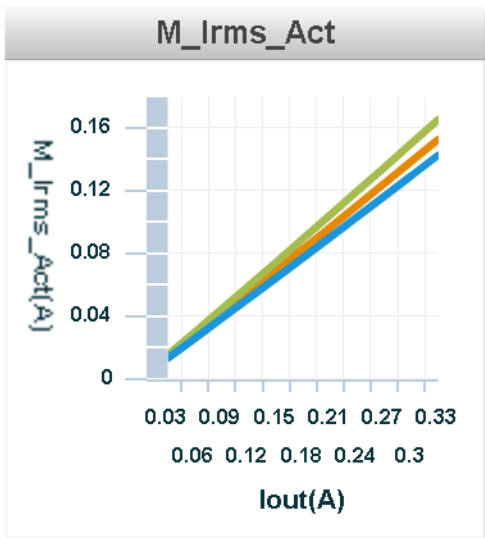
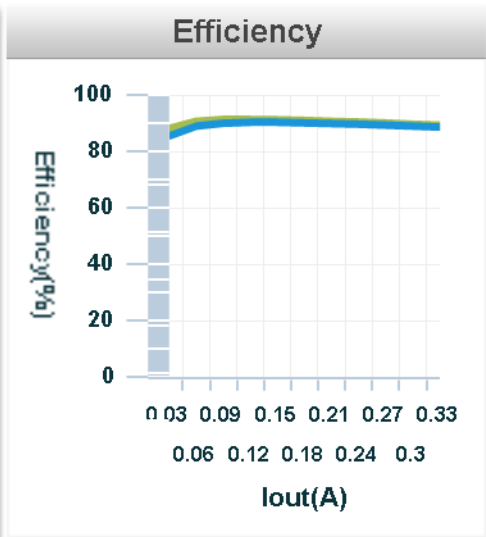
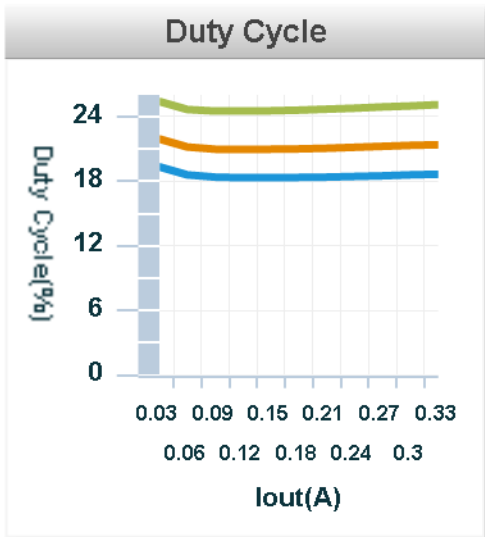
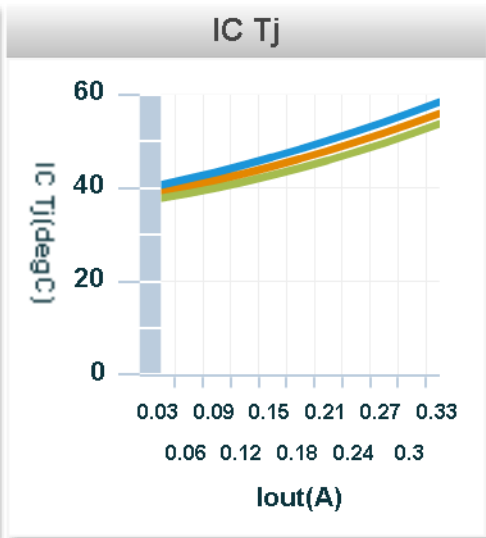
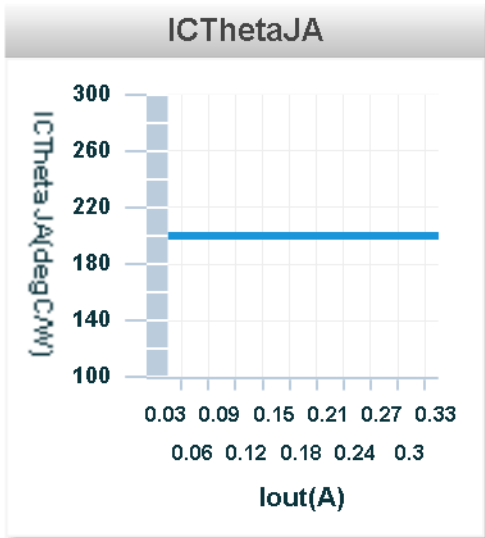
General



Charts (Continued)

Op_point

■ Vin=82.50V ■ Vin=70.00V ■ Vin=95.00V



Charts (Continued)

Power

