

Operating Conditions

Vin	12	V
Vout1	1	V
Iout1	7	A
Vout2	1.8	V
Iout2	7	A
Switching Frequency CH1-CH2	460-620	KHz
Mode	PFM/PWM	

Bill of Materials

Ref	Qty	Description
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ICs

U1	1	IC MB39A214A
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Capacitors

C1	1	Capacitor 4.7uF, 24V
C5	1	Capacitor 100nF
C6	1	Capacitor 100nF
C7	1	Capacitor 100nF, 24V, 1mΩ
C12	1	Capacitor 3.3nF
C13	1	Capacitor 3.3nF
C1A	1	Capacitor 10uF, 24V, 1mΩ
C2A	1	Capacitor 180uF, 1.5V, 25mΩ
C3A	1	Capacitor 10uF, 24V, 1mΩ
C4A	1	Capacitor 120uF, 2.7V, 25mΩ
C1B	1	Capacitor 10uF, 24V, 1mΩ
C2B	1	Capacitor 1nF, 1.5V
C3B	1	Capacitor 10uF, 24V, 1mΩ
C4B	1	Capacitor 1nF, 2.7V

Inductors

L1	1	Inductor 680nH, 5.5mΩ
L2	1	Inductor 820nH, 8mΩ

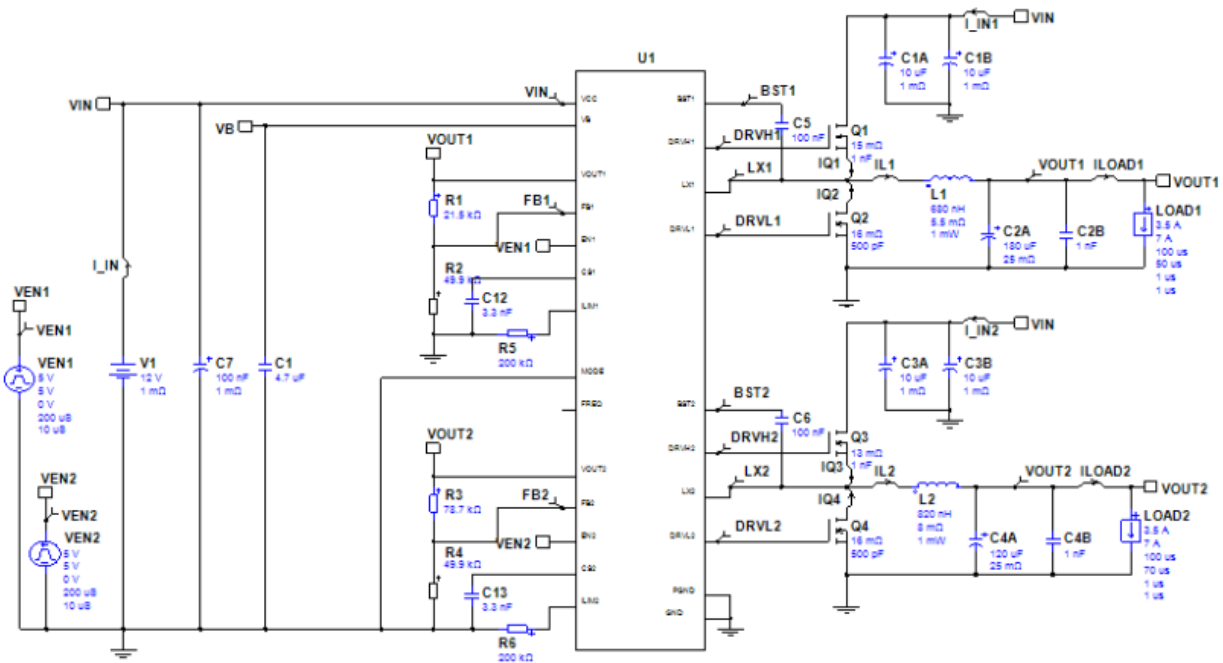
FETs

Q1	1	nMOSFET 15mΩ, 12V
Q2	1	nMOSFET 16mΩ, 12V
Q3	1	nMOSFET 13mΩ, 12V
Q4	1	nMOSFET 16mΩ, 12V

Resistors

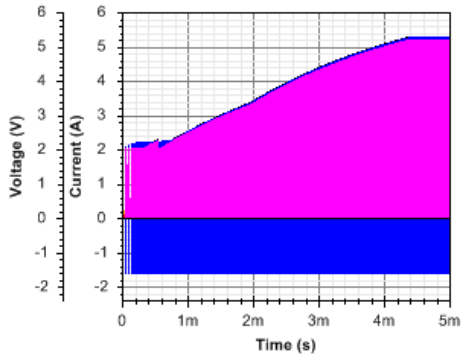
R1	1	Resistor 21.5kΩ
R2	1	Resistor 49.9kΩ
R3	1	Resistor 78.7kΩ
R4	1	Resistor 49.9kΩ
R5	1	Resistor 200kΩ
R6	1	Resistor 200kΩ

Configured Schematic

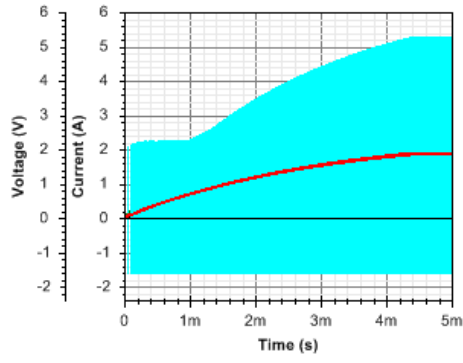


Startup Results

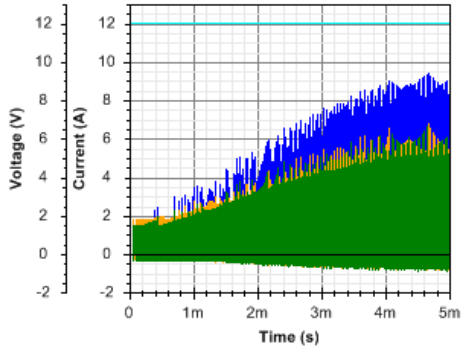
OUTPUT1



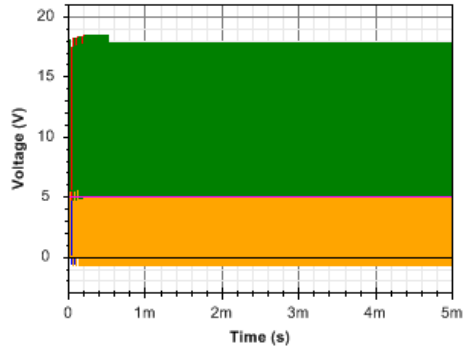
OUTPUT2



INPUT



IC



Efficiency

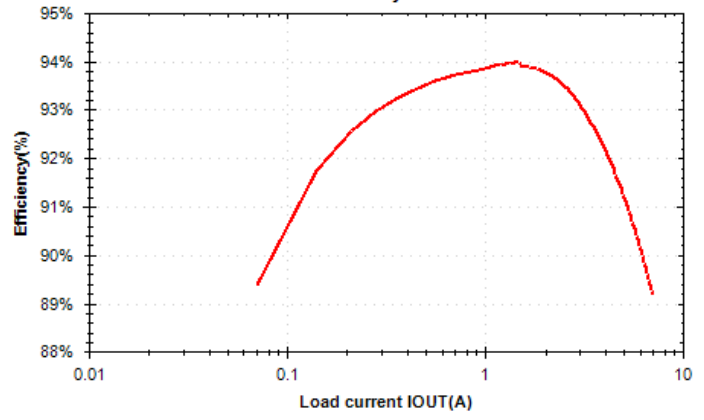
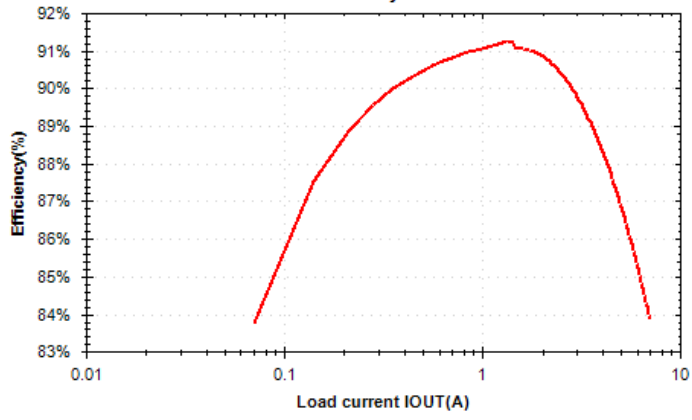
Efficiency for MB39A214A

Channel 1

Channel 2

Efficiency

Efficiency



Losses

Losses

