Customize LM5148RGYR - 24V-24V to 19.00V @ 8.5A

Input: DC 24 V - 24 V Output: 19 V at 8.5 A Temp: 30 °C Change

Summary

Efficiency: 97.9%
BOM Cost: $3.53
Footprint: 415 mm²

CHANGE OPTIMIZATION

Configuration Options

Spread Spectrum: Enabled

IQ Mode: PFM Mode

Compensation Type: External

OUTPUT_CAP_TYPE: Ceramic

User Preferred Frequency
Switching Frequency: 1.07 MHz (0.1 - 2.25)

Custom Load Transient Specs
Transient response voltage change(% Vout): 3 % (0.1 - 10)
Transient response current step: 4.25 A (0.085 - 8.5)

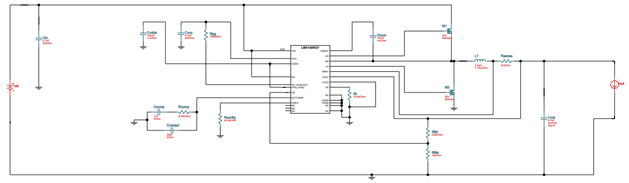
Custom Output specs
Max Vout Ripple: 1 % (0.5 - 10)

Enable Ideal Fets

REDESIGN

SCHEMATIC BILL OF MATERIALS

Click a component to find out more information or select an alternate part.



OPERATING VALUES CHARTS

Vin (V): 24 V (24 - 24) Iout (A): 8.5 A (0 - 8.5) RECALCULATE

Categories

System Information | IC | Capacitor | Inductor | Mosfet | Power | All

Name	Value	Description
Vout Actual	18.88 V	Vout Actual calculated based on selected voltage divider resistors
Vout Tolerance	3.21%	Vout Tolerance based on IC Tolerance (no load) and voltage divider resistors if applicable
Total BOM	$3.53	Total BOM Cost
BOM Count	21	Total Design BOM count
Vout	19 V	Operational Output Voltage
Duty Cycle	79.75%	Duty cycle
Efficiency	97.9%	Steady state efficiency
Frequency	1.07 MHz	Switching frequency
Pout	161.5 W	Total output power
Mode	CCM	Conduction Mode
Vout p-p	9.97 mV	Peak-to-peak output ripple voltage
Vin p-p	502.73 mV	Peak-to-peak input voltage
Phase Marg	59.86 °	Bode Plot Phase Margin
Cross Freq	102.53 kHz	Bode plot crossover frequency
Low Freq Gain	100.58 dB	Gain at 1Hz
Gain Marg	-12.12 dB	Bode Plot Gain Margin
Vout Ripple requirement used for Cout calculations	1.00%	Custom maximum output ripple requirement that was used for Cout selection(% of Vout).
Overshoot Value	121.6 mV	Theoretical Vout Overshoot Value
Undershoot Value	526.24 mV	Theoretical Vout Undershoot Value
Vout transient requirement used for Cout calculations	3.00%	Custom Transient voltage change requirement that was used for Cout selection (% of Vout).
Iout transient step used for Cout calculations	4.25 A	Custom Transient current step requirement that was used for Cout selection (A).
FootPrint	415 mm²	Total Foot Print Area of BOM components
Vin	24 V	Vin operating point
Iout	8.5 A	Iout operating point

Note: All above values are estimates. For more accurate values, please run electrical simulation.