1

a

Line Reg @ FL = 1.66%

Load reg @ Vin = 15V .33%

b

Power dissipation = 9.22V \* 1.5A = 13.83W  
Max Case Temp = ~130C  
Heat sink size = (130C-50C)/13.83W = 5.78 C/W

c

Calculate the heat sink size for a short-circuit output.

Calculate short-circuit current.

d

Dropout voltage (full load): 10.3V

Differential dropout Voltage (full load): 10.3/8.7 = 1.18

Dropout voltage (no load): 10.7V

Differential dropout Voltage (no load): 10.7/8.97 = 1.19

e

No load quiescent current: 53.5mA (15Vin)

Modify resistor values for higher q current and measure load regulation at Vin = 15V

f

Isc = 2.124A  
V = 1.56V

Power Dissipation = 2.04A \* (18V – 1.56V) = 33.54W   
Max Case Temp = ~90C  
Heat sink size = (90C-50C)/33.54W = 1.19 C/W

2

VACinmin = 115V