



$$V_{out} = 1.25 (1 + (R2 / R1))$$

Load Current $I_L = 0.190 \text{ A}$ at 9.5 v

Drop-out voltage $< 2 \text{ v}$ at -25°C and up

$$\begin{aligned} \text{Power dissipation } P_{diss} &= ((V_{in} - V_{out}) \times I_L) + (V_{in} \times I_G) \\ &= ((14.5 - 9.5) \times 0.190) + (14.5 \times 0.0001) = 0.95 \text{ W} \end{aligned}$$

$$\begin{aligned} \text{Max allowable temp rise} &= T_{J(\text{Max})} - T_{\text{Ambient}} = T_{A(\text{Max})} \\ &= 125 - 65 = 60^\circ\text{C} \end{aligned}$$

$$\begin{aligned} \text{Max allowable thermal resistance } \Theta_{JA} &= \frac{T_{A(\text{Max})}}{P_{diss}} = \frac{60}{0.95} = 63 > 50^\circ\text{C/W} \\ &\text{Package rating} \end{aligned}$$

Heatsink not needed, but added for safety

Cooling Fan Speed Reducer

