

$$Q = 8.7 \times 10^{-2} \left(\frac{g_{a,\gamma}}{10^{-10} \text{ GeV}^{-1}} \right)^2 \left(\frac{T}{10^7 \text{ K}} \right)^7 F(\kappa^2) \frac{\text{erg}}{\text{s} \cdot \text{cm}^3}$$