37. From the expression for $n(K)$ given we may write $n(K) \propto K^{1/2} e^{-K/kT}$. Thus, with $k = 8.62 \times 10^{-5}\,\text{eV/K} = 8.62 \times 10^{-8}\,\text{keV/K}$, we have

$$\begin{aligned}
\frac{n(K)}{n(K_{\text{avg}})} &= \left(\frac{K}{K_{\text{avg}}}\right)^{1/2} e^{-(K-K_{\text{avg}})/kT} \\
&= \left(\frac{5.00\,\text{keV}}{1.94\,\text{keV}}\right)^{1/2} e^{-(5.00\,\text{keV}-1.94\,\text{keV})/[(8.62\times10^{-8}\,\text{keV/K})(1.50\times10^{7}\,\text{K})]} \\
&= 0.151\ .
\end{aligned}$$