

ECE 656: Fall 2009
Lecture 8 Homework

- 1) Work out the Seebeck coefficient for a 3D semiconductor assuming that the mfp, λ_0 is independent of energy and show that the result is:

$$S_{3D} = \left(\frac{k_B}{-q} \right) \left(\frac{2\mathcal{F}_1(\eta_F)}{\mathcal{F}_0(\eta_F)} - \eta_F \right)$$