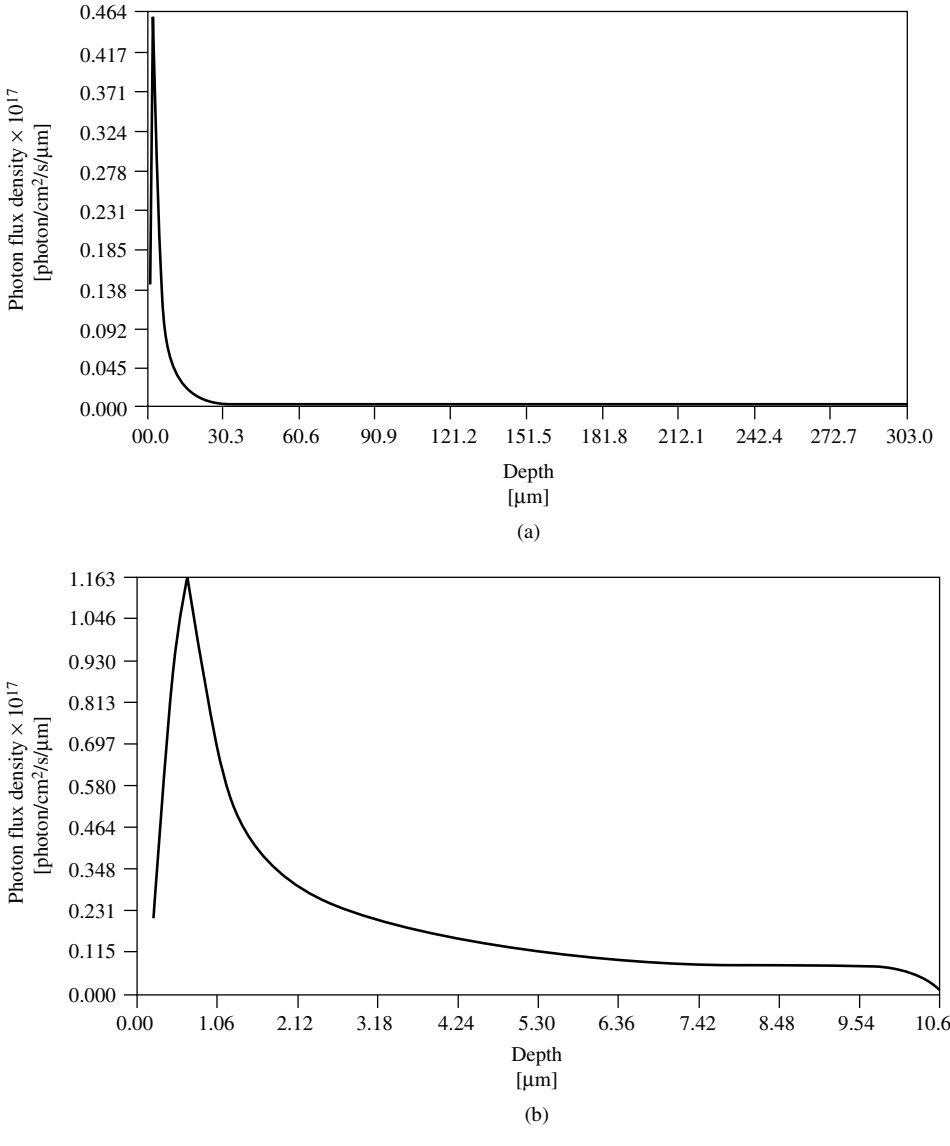

Figure 8.5 Calculated photon flux absorbed within the thickness of a (a) 300-μm wafer; and (b) 10-μm thin film. Both structures have double-sided texture and an Al back-reflector

times higher at each interface; implying that carrier generation at the interfaces of the thinner cell is about three times higher. Consequently, for the same surface-recombination velocity, the carrier recombination for the thinner cell will be 3 times higher. Therefore, it is imperative that an efficient TF-Si cell design will minimize contributions from all components of surface-related recombination.

It is important to recognize that there can be several contributions to the surface recombination in a solar cell (in addition to that from the cell-air interface). These