PHOTOTRANSISTORS

Like diodes, all transistors are light-sensitive. Phototransistors are designed specifically to take advantage of this fact. The most-common variant is an NPN bipolar transistor with an exposed base region. Here, light striking the base replaces what would ordinarily be voltage applied to the base -- so, a phototransistor amplifies variations in the light striking it. Note that phototransistors may or may not have a base lead (if they do, the base lead allows you to bias the phototransistor's light response.

For phototransistor selection and comparison information, see the phototransistor section of the BEAM Reference Library's BEAM Pieces collection.

Note that photodiodes also can provide a similar function, although with much lower gain (i.e., photodiodes allow much less current to flow than do phototransistors). You can use this diagram to help you see the difference (both circuits are equivalent):