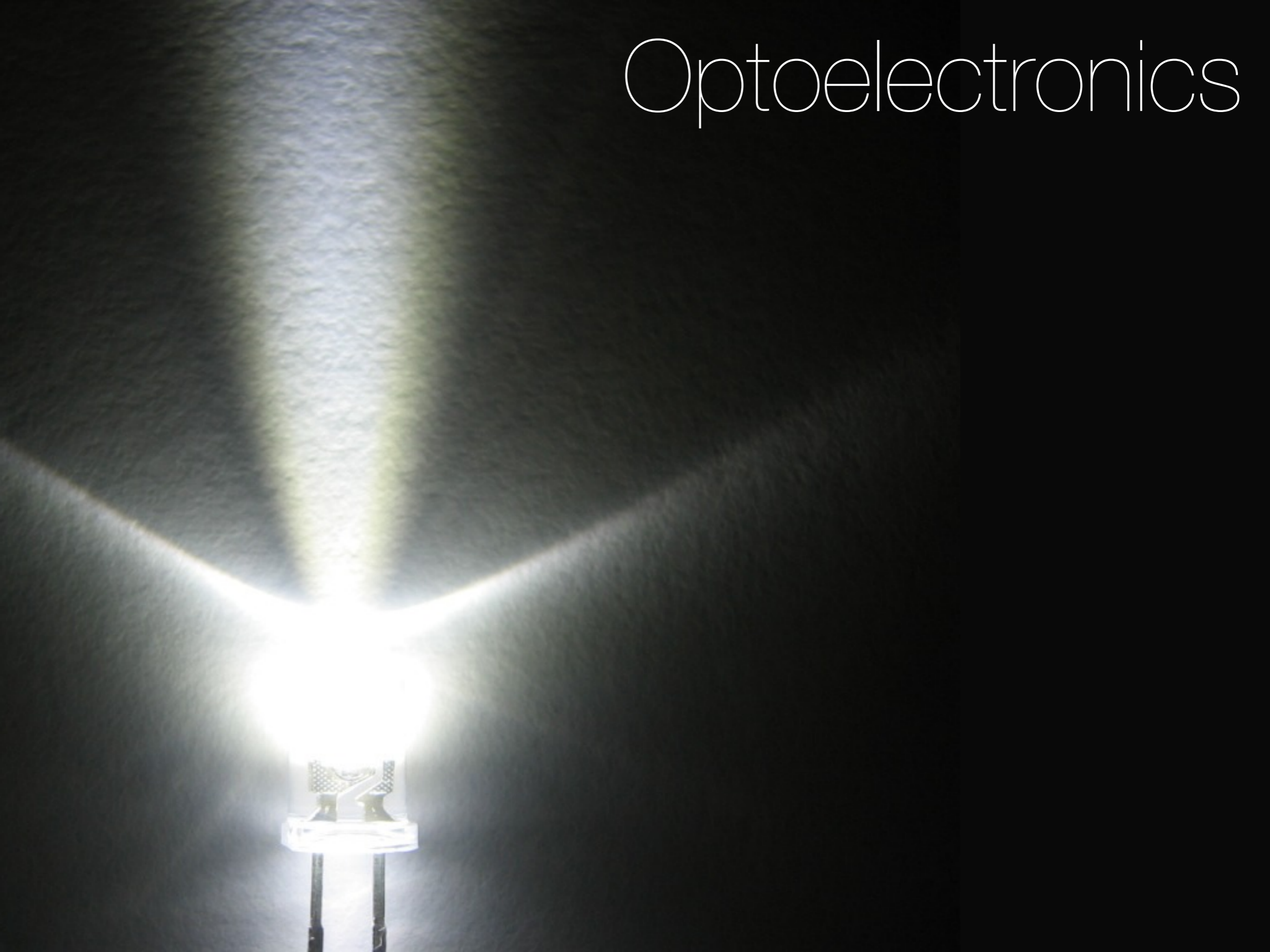


ROBOTICS

SAAST



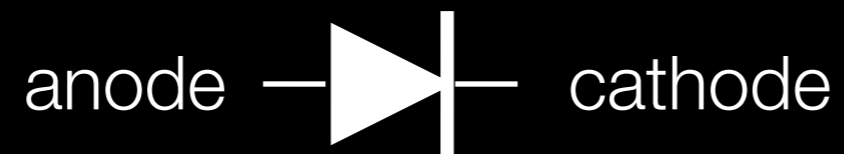
Optoelectronics



di•ode |'dī,ōd|

noun Electronics

a semiconductor device which allows current to flow in only one direction.

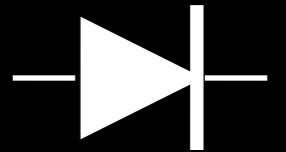


current flows from anode to cathode

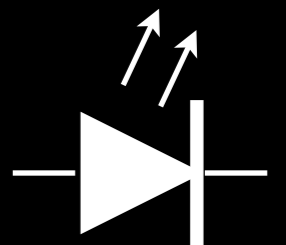
fixed voltage drop (typ. 0.6V)

reverse breakdown

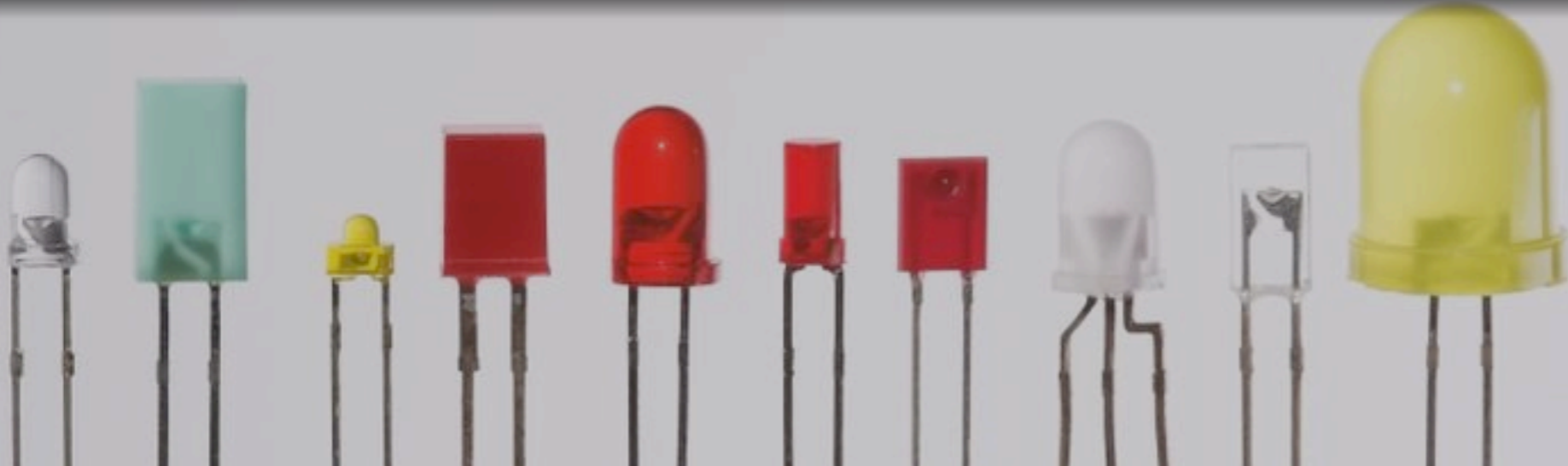
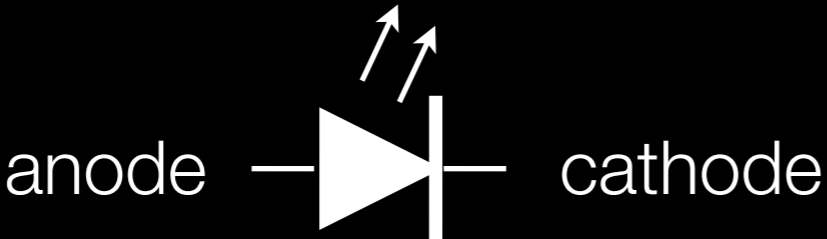
diode



LED



Light-Emitting Diodes



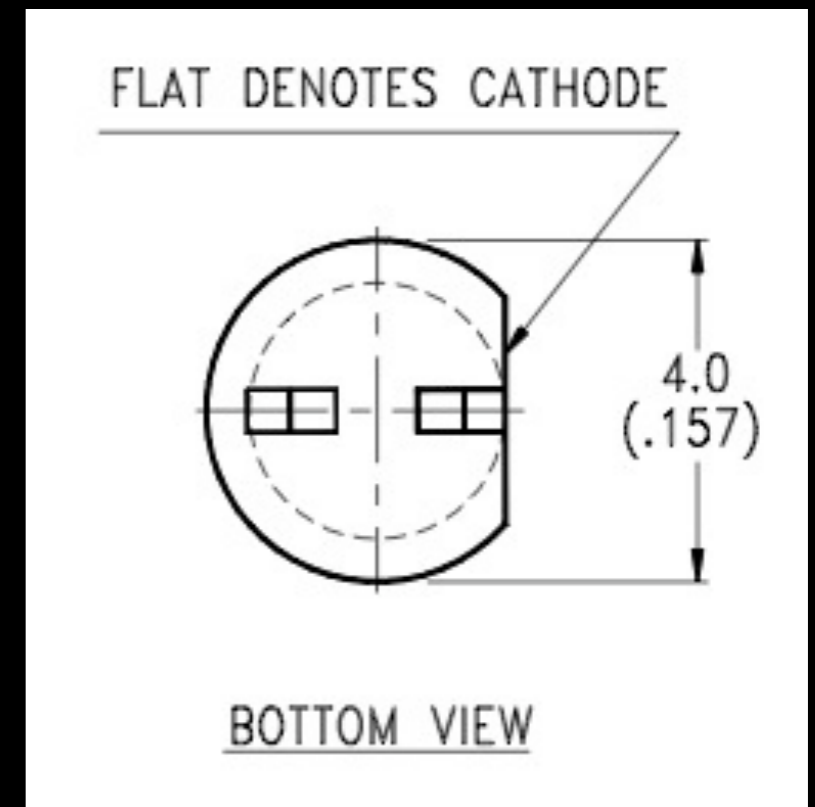
LTE-4206 IR LED

peak wavelength = 940 nm (IR)

max continuous forward current = 60 mA

typ. forward voltage = 1.2V

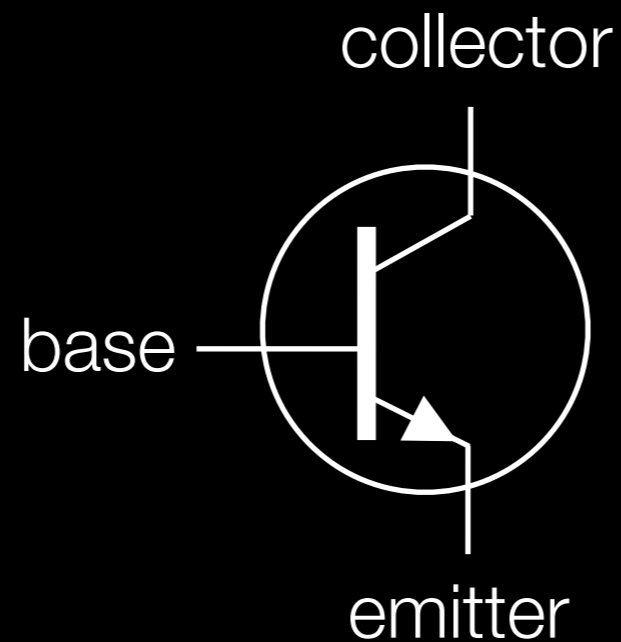
reverse breakdown voltage = 5V



tran•sis•tor | tran'zistər |

noun Electronics

a semiconductor device used to amplify signals, wherein a voltage or current applied to one terminal changes the current flowing through another pair of terminals.



LTR-4206 NPN Phototransistor

peak wavelength = 940 nm (IR)

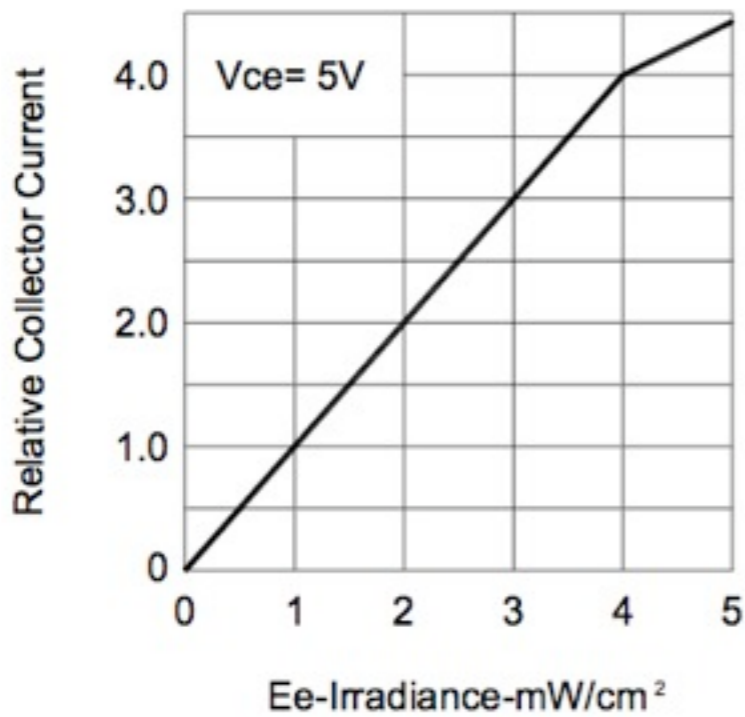
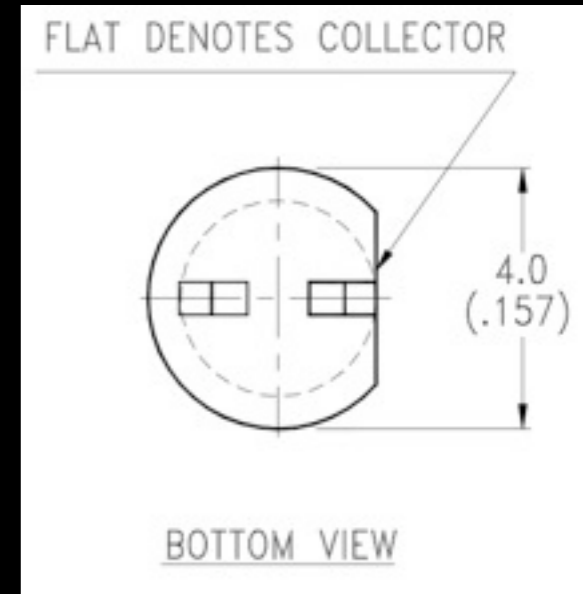
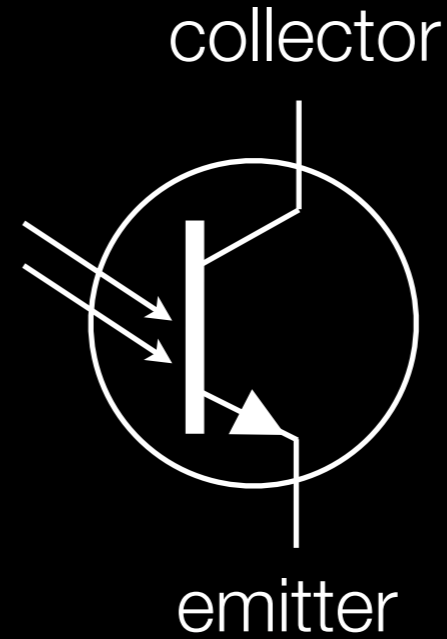


FIG.4 RELATIVE COLLECTOR CURRENT VS IRRADIANCE

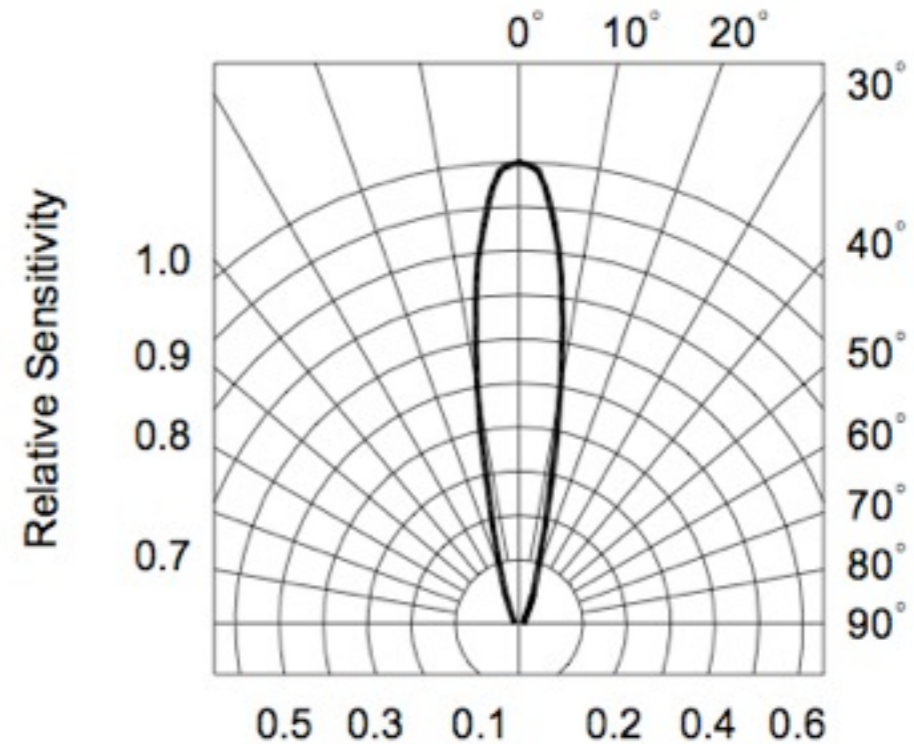


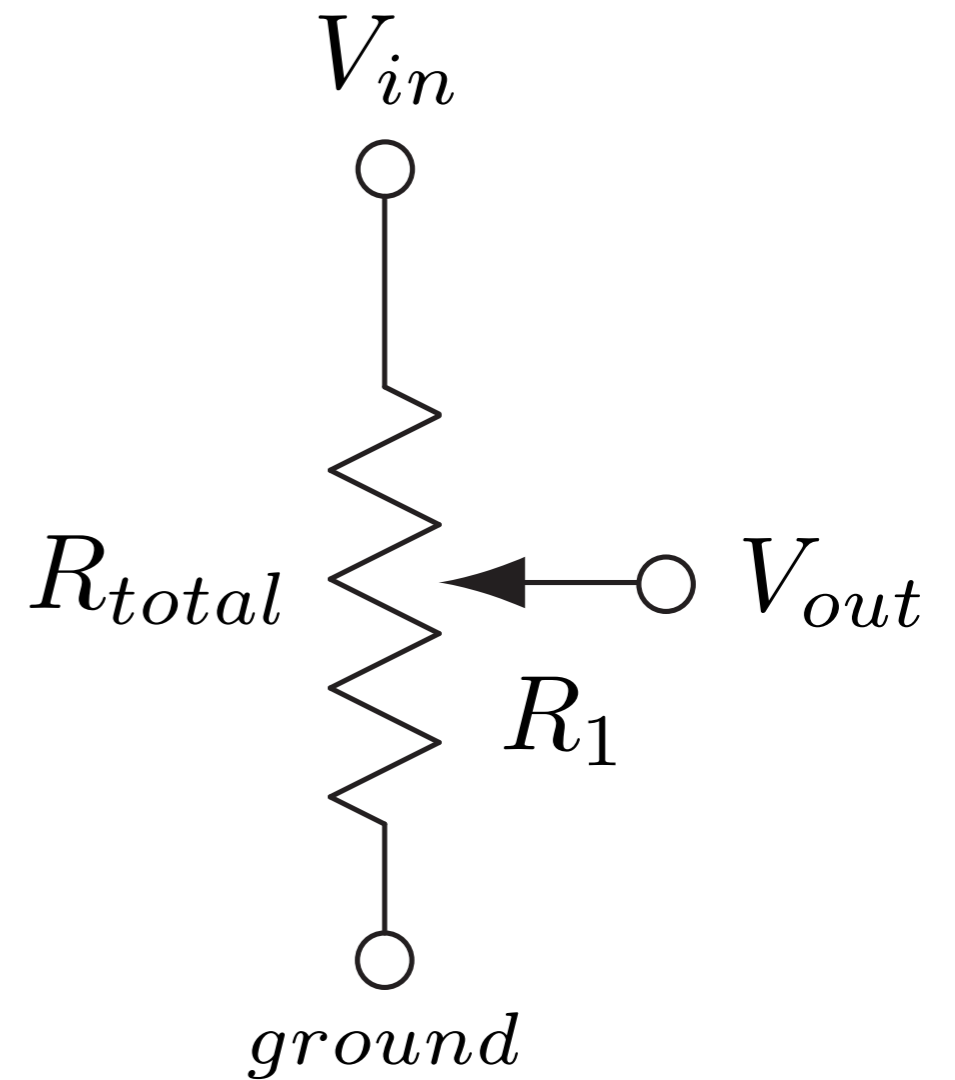
FIG.5 SENSITIVITY DIAGRAM



mechanical sensors

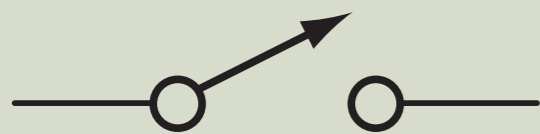
Potentiometer

A three-terminal resistor with a sliding contact that forms an adjustable voltage divider.

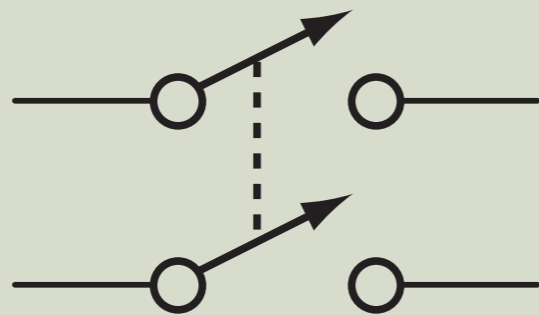


$$V_{out} = \frac{R_1}{R_{total}} V_{in}$$

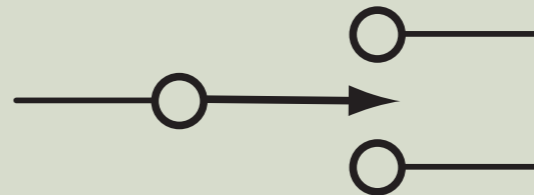
Poles	Number of Circuits	SP (single pole) DP (double pole) MP (multi pole)
Throws	Number of Possible Circuits	ST (single throw) DT (double throw) MT (multi throw)



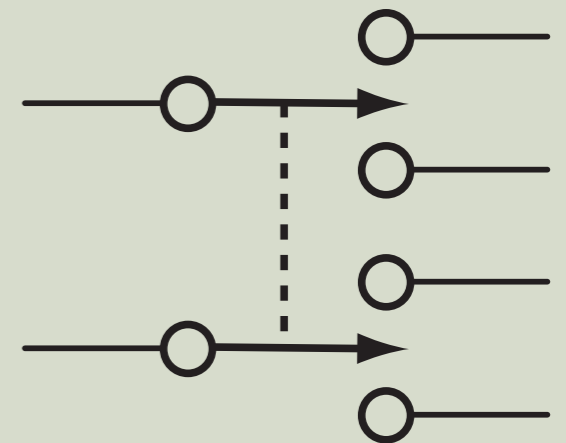
SPST







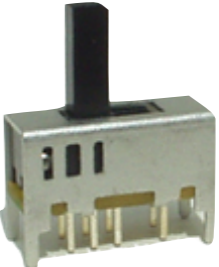

DPST



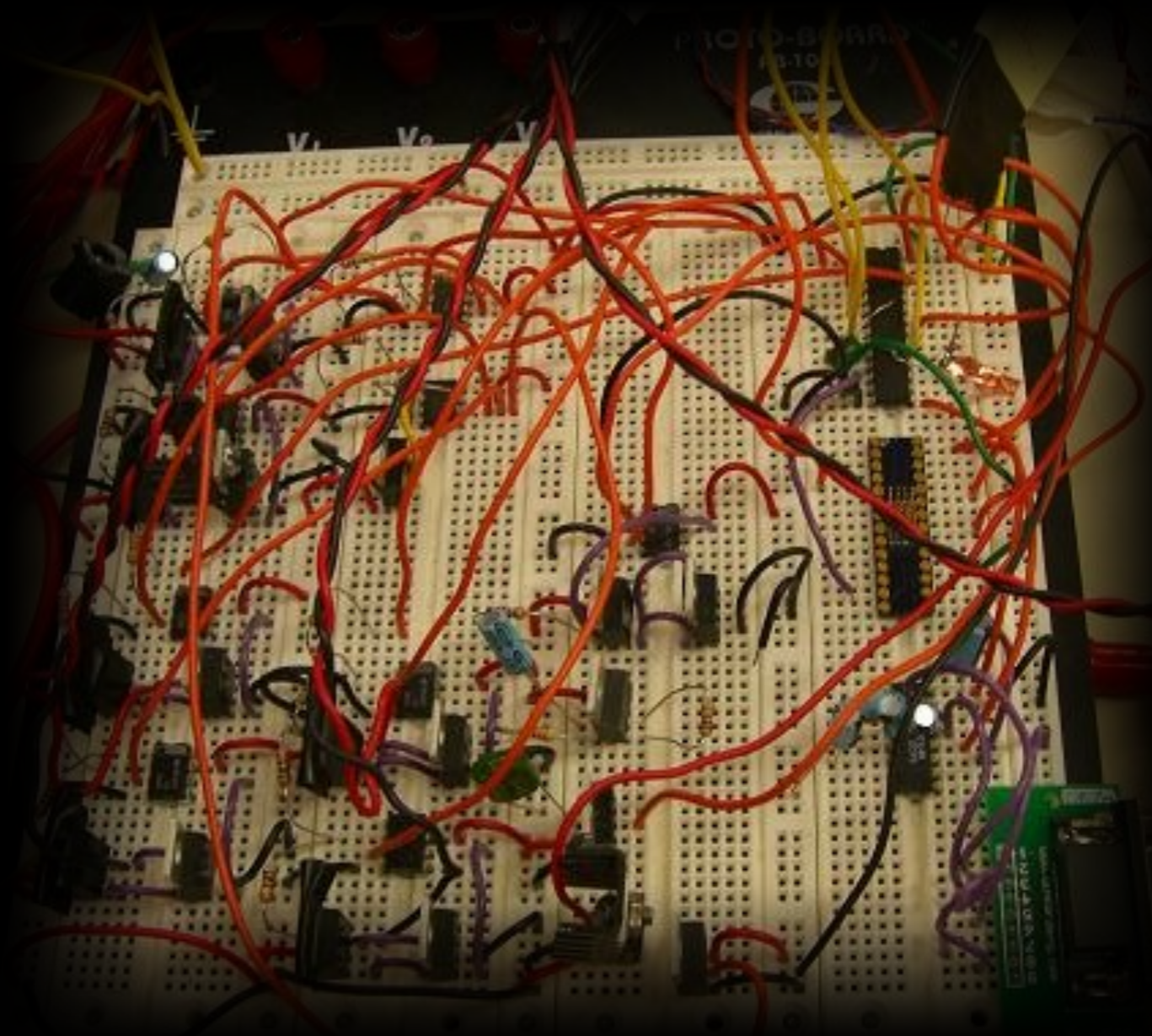
SPDT



DPDT

Momentary	Switch holds state while depressed	
NO	Normally Open Momentary	
NC	Normally Closed Momentary	
Toggle	Two stable positions	
Slide	Linear motion	
Rotary	Dial motion	

Circuit Prototyping



solderless breadboards

