


I-ANR LIGHT MEASUREMENT WITH PHOTOTRANSISTOR

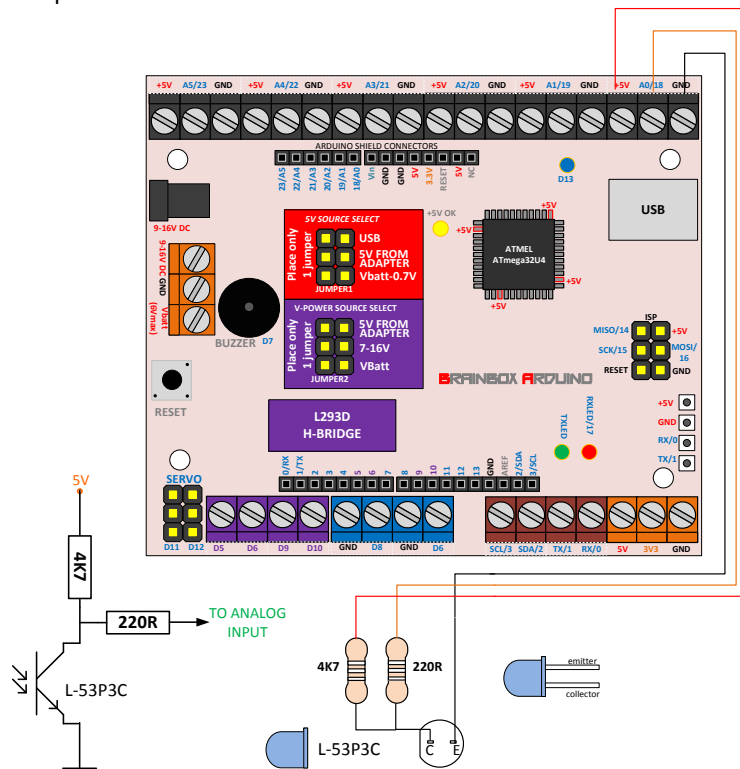
Required knowledge LDR, Ohms Law, Voltage divider



Phototransistor – how transistors work – Ohms law – Voltage divider

L-53P3C datasheet

A phototransistor operates similar to a normal NPN transistor but the base-current is now replaced by light energy. When more light energy reaches the transistor, the transistor will saturate more. We prefer a phototransistor over a LDR to measure light mainly because they are cheaper.



components:

Phototransistor L-53P3C	Farnell: 2290444
Resistor 4K7 – 250mW	

More light -> transistor saturates more -> Less voltage over transistor = less voltage at analog input uC
 Connect the LDR to one of the 6 analog inputs (A0, A1, A2, A3, A4, A5) as you can see in this drawing:

CODE EXAMPLE: 'I-AN'