## Discription :

A **solid-state relay** (**SSR**) is an electronic switching device that switches on or off when a small external voltage is applied across its control terminals . SSRs consist of a sensor which responds to an appropriate input(control signal), a solid-state electronic switching device which switches power to the load circuitry, and a coupling mechanism to enable the control signal to activate this switch without mechanical part.

a small input voltage,(3 to 32 volts DC) can be used to control a much large output voltage,or current.For example 220V, 8Amps.

This makes them ideal for common microcontrollers such as Arduino,ESP,ARM and...

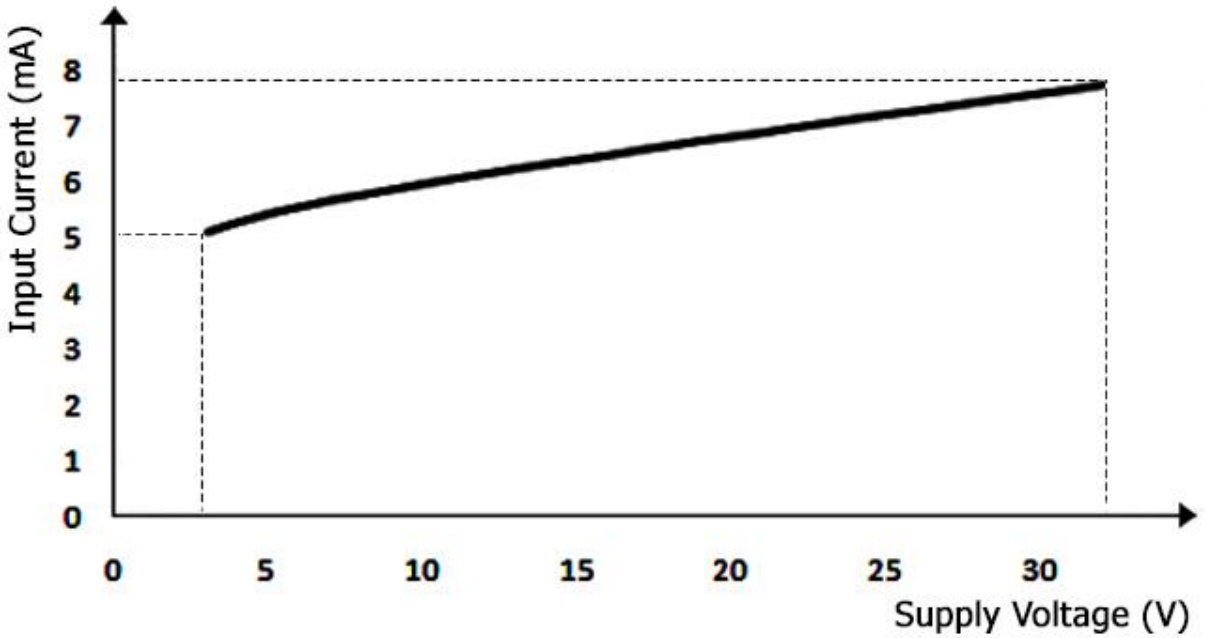
## Advantages :

- Totally silent operation
- SSRs switch faster than electromechanical relays
- Increased lifetime, even if it is activated many times, as there are no moving parts to wear and no contacts to pit or build up carbon.
- No sparking , allows it to be used in explosive environments , where it is critical that no spark is generated during switching.
- LED control input indicator
- Zero-cross switch type,Zero-crossing SSR is ideal for most commercial and industrial loads, such as resistive heating elements , lamps , motors , ballasts , and any other load.
- It has a snubber circuitry, a snubber circuit presents different functions such as: Aid circuit for turn-off commutation, Fast transient voltage suppressor, Overvoltage limiter at turn-off commutation in case of inductive load with low RMS current
- Optical isolation between input circuit and output circuit.
- It has a heatsink for the uninterrupted activity with different loads.
- It has a phoenix connector for connecting the load and the AC voltage to the board.

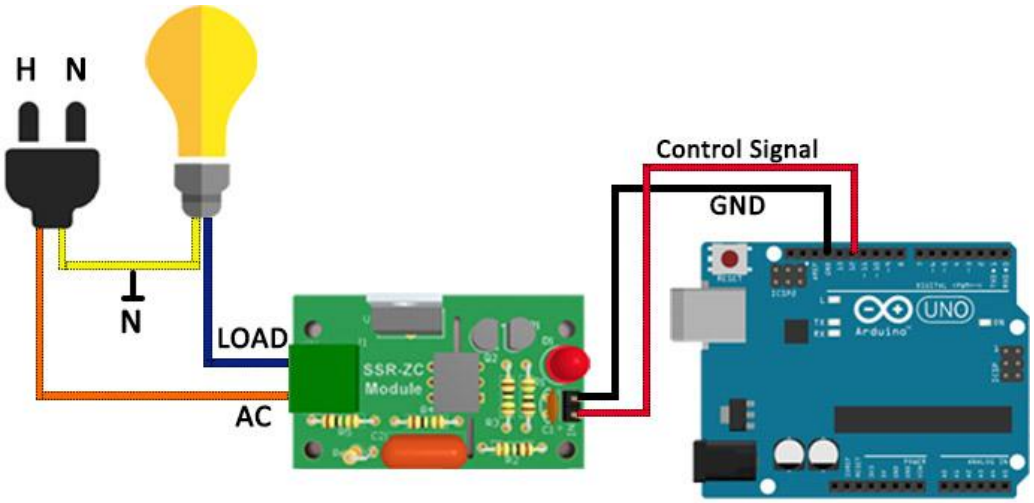
## Technical specifications :

| | Parameter | Value | | | Unit |
|---|---|---|---|---|---|
| | | Min | Typ | Max | |
| Output (Load) | Load Switching Voltage | 24 | 230 | 380 | VAC (RMS) |
| | Maximum Peak Repetive Voltage | - | - | 600 | VAC (Peak) |
| | Load Current | - | - | 8 | A (RMS) |
| | One Cycle Surge Current Peak | - | - | 65 | A (Peak) |
| | Off-State leakage Current | - | 0.1 | 0.5 | mA |
| Input (Control) | Isolation Voltage (Opto Triak) | - | 7500 | - | V (Peak) |
| | Control Voltage (Signal Pickup Voltage) | 3 | - | 32 | VDC |
| | Control Current | 5 | - | 7.8 | mA |

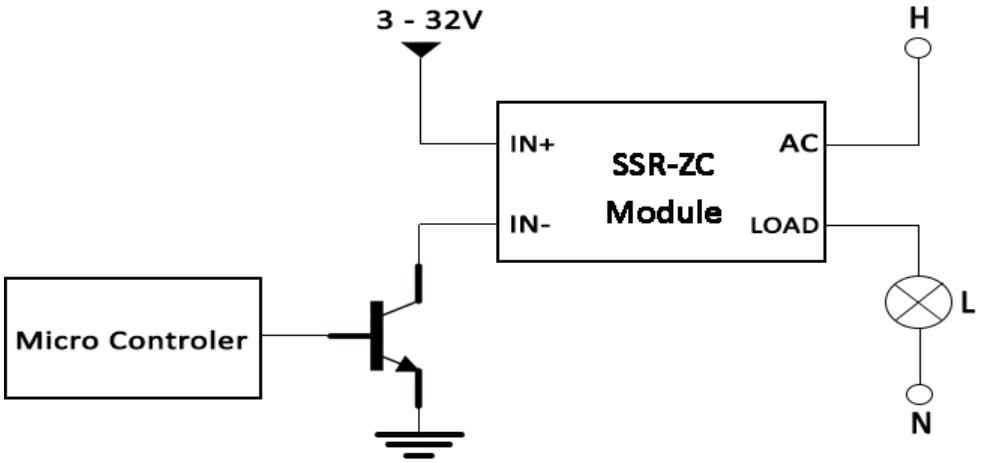
## Input Current VS Supply Voltage :

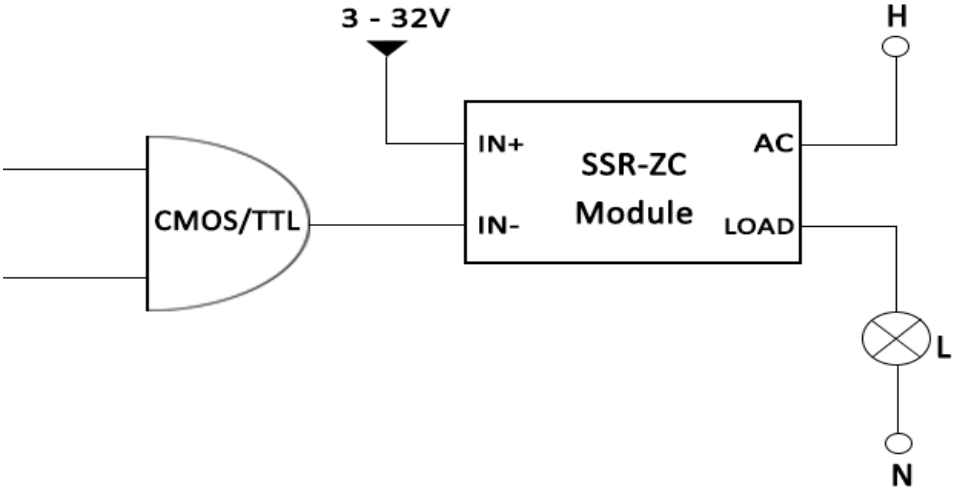


## Arduino Sketch :




## Typical Application Diagram :



**Dimensions :**