

# AC/DC converter



Micro SMPS

www.easypower.in

## AC/ DC converter



- **Universal Input: 110- 260 VAC**
- **Dual Output: +12 and -12 VDC**
- **Full Isolation 1kV**
- **PCB mountable**
- **Compact IP Protected**

SO12VPN Micro SMPS – a compact size power converter offered by *EASY POWER*. It features universal input voltage, taking AC/DC voltage, low power consumption, high reliability, and safer isolation.

| Input Specification             |                     |                                   |      |      |      |
|---------------------------------|---------------------|-----------------------------------|------|------|------|
| Item                            | Operating condition | Min.                              | Typ. | Max. | Unit |
| Input Voltage Range             | AC input            | 110                               |      | 260  | VAC  |
| Input Voltage Range             | DC input            | 270                               |      | 300  | VDC  |
| Input frequency                 |                     | 50                                |      | 50   | Hz   |
| Leakage current                 |                     | 0.1 mA RMS typ. 230 VAC/50 Hz     |      |      |      |
| Recommended external input fuse |                     | 1A/ 250V, slow fusing, necessary. |      |      |      |

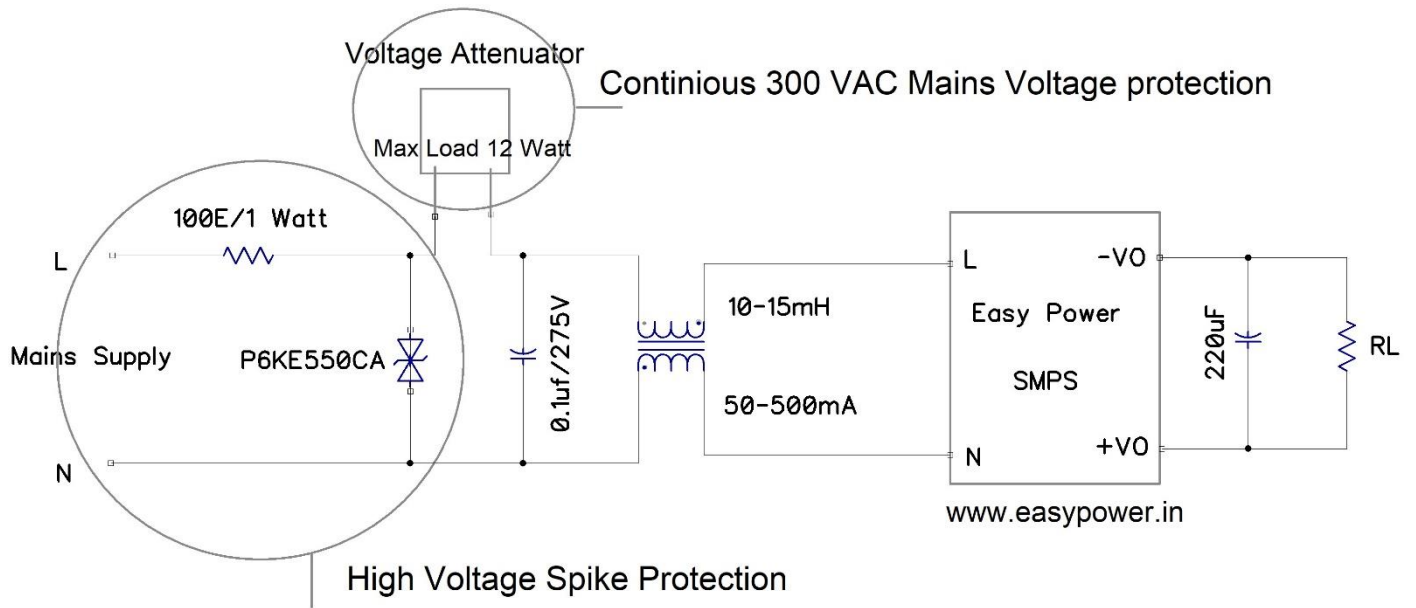
| Output Specification              |                                  |                          |       |     |      |
|-----------------------------------|----------------------------------|--------------------------|-------|-----|------|
| Item                              | Operating conditions             | Min.                     | Typ.  | Max | Unit |
| Output voltage accuracy           | +12V, -12V output                | -                        | ±0.2  | -   | %    |
| Line regulation                   | Full load                        | -                        | ±0.5  | -   |      |
| Load regulation                   | 0% - 100% load                   | -                        | ±0.5  | -   |      |
| Ripple & Noise                    | 20 MHz bandwidth (Pk – Pk) value | 50                       | 50    | 500 | mV   |
| Output Current                    | +12 VDC                          | 100                      | -     | 500 | mA   |
|                                   | -12 VDC                          | -                        | -     | 150 | mA   |
| Temperature drift coefficient     |                                  | -                        | ±0.02 | -   | %/°C |
| Min Load                          |                                  | 0                        | -     | 0   | %    |
| Isolation voltage – Input voltage | Test time: 1min                  | 1000                     | -     | -   | VAC  |
| Operating Temperature             |                                  | 0                        | -     | +50 | °C   |
| Storage Temperature               |                                  | 0                        | -     | +60 | °C   |
| Storage Humidity                  |                                  | -                        | -     | 90  | %RH  |
| Welding Temperature               | Wave soldering                   | 260 ± 5°C; time 5 – 10s  |       |     |      |
|                                   | Manual welding                   | 360 ± 10 °C; time 3 – 5s |       |     |      |
| Switching frequency               |                                  | -                        | 100   | -   | kHz  |

### Physical Specification

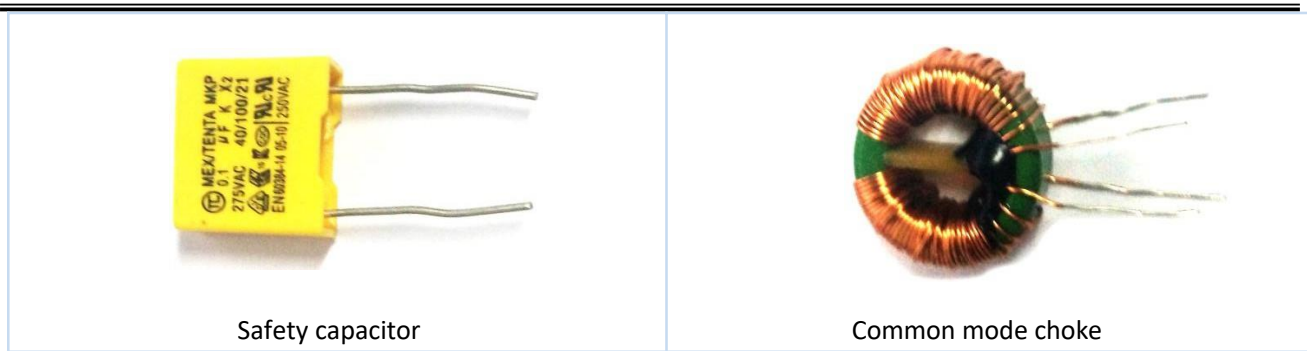
|                     |                              |
|---------------------|------------------------------|
| Casing Material     | Black colour, heat resistant |
| Packaging Dimension | 37.00 x 34.00 x 24.00        |
| Weight              | 50 gm (Typ.)                 |
| Cooling method      | Free air convection          |

Design reference

### Typical Application Diagram -



| Component number/<br>Recommended device | Function   | Value                                 |
|---|--|---------------------------------------|
| Fuse                                    | Protect the circuit from damage when the module is abnormal. | 100E/1Watt                            |
| TVS Diode                               | Protect the module do not damaged in the accumulative surge  | P6KE550CA                             |
| C1/Safety capacitor                     | Filtering safety protection (EMC certification)              | 0.1uF/275Vac                          |
| L1/Common mode choke                    | EMI filtering  | Sense value 10-15mH, current 70-500mA |

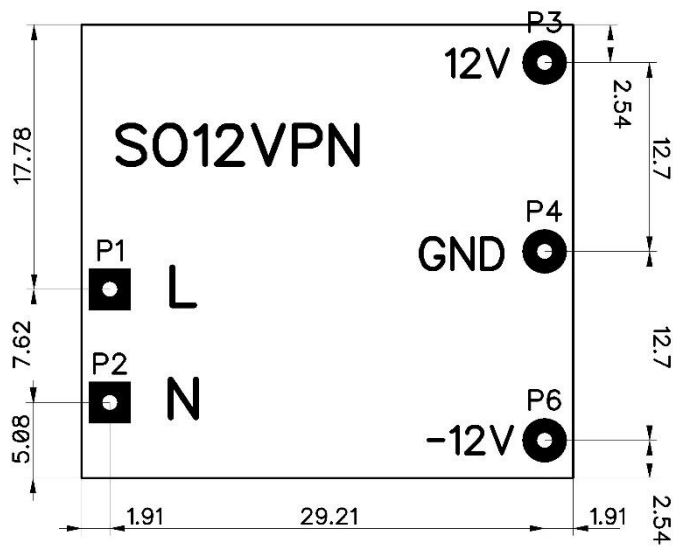


## Output section

| Component number/<br>Recommended device | Function   | Value  |
|---|--|--|
| C2/ Filtering capacitor                 | Filtering the output AC signal can be maintain within 30mV | Aluminum electrolytic capacitors, capacitance range 100-220uF, Pressure drop>75% |
| RL/ Load                                | Load   |  |

Note : C2 filtering capacitor can bring down the output signal from the original 50mV to less than 30mV.

# Footprint:



All Dimensions are in mm

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All holes are of 1 mm in size.

Product height is of 24 mm.

Product width is of 34 mm

Product length is of 37 mm.