

### KEY FEATURES

- Switching Power Module for PCB Mountable
- Fully Encapsulated Plastic Case
- Universal Input Range 90-264VAC, 47-440 Hz
- Single and Dual Output
- Low Ripple and Noise
- Isolation Class II
- Maximum No-Load Watts < 0.3W
- CE , UL Approval



### ELECTRICAL SPECIFICATIONS

| Model No. ( Single Output )                  | AOC-3.3S  | AOC-5S | AOC-8S | AOC-9S                       | AOC-12S | AOC-14S | AOC-15S | AOC-24S                 |
|--|---|--------|--------|------------------------------|---------|---------|---------|-------------------------|
| Max Output Wattage (W)                       | 3.96W   | 4W     | 4W     | 4W                           | 4W      | 4W      | 4W      | 4W                      |
| Input  | Voltage   |        |        |                              |         |         |         |                         |
|  | 90-264 VAC or 120-370 VDC   |        |        |                              |         |         |         |                         |
|  | Frequency (Hz)  |        |        |                              |         |         |         |                         |
|  | 47-440 Hz   |        |        |                              |         |         |         |                         |
|  | Current (Full load)   |        |        |                              |         |         |         |                         |
|  | 75 mA max. (115 VAC) / 55 mA max. (230 VAC)                             |        |        |                              |         |         |         |                         |
| Inrush Current (<500us)                      |   |        |        |                              |         |         |         |                         |
| 15 A max. (115 VAC) / 25 A max. (230 VAC)    |   |        |        |                              |         |         |         |                         |
| Leakage Current                              |   |        |        |                              |         |         |         |                         |
| 0.3 mA max.                                  |   |        |        |                              |         |         |         |                         |
| External Fuse (recommend)                    |   |        |        |                              |         |         |         |                         |
| 1 A slow blow type                           |   |        |        |                              |         |         |         |                         |
| Output                                       | Voltage (V.DC.)   |        |        |                              |         |         |         |                         |
|  | 3.3V  | 5V     | 8V     | 9V                           | 12V     | 14V     | 15V     | 24V                     |
|  | Voltage Accuracy  |        |        |                              |         |         |         |                         |
|  | ±2%   |        |        |                              |         |         |         |                         |
|  | Current (mA) max  |        |        |                              |         |         |         |                         |
|  | 1200  | 800    | 500    | 444                          | 333     | 286     | 267     | 167                     |
|  | Line Regulation (LL-HL) (typ.)  |        |        |                              |         |         |         |                         |
|  | ±0.2%   |        |        |                              |         |         |         |                         |
|  | Load Regulation (0-100%) (typ.)   |        |        |                              |         | ±0.5%.  |         |                         |
|  | ±1%.  |        |        |                              |         |         |         |                         |
|  | Minimum Load  |        |        |                              |         |         |         |                         |
|  | 0%  |        |        |                              |         |         |         |                         |
| Maximum Capacitive Load                      |   |        |        |                              |         |         |         |                         |
| 14000uF                                      | 8000uF  | 2700uF | 2400uF | 1000uF                       | 750uF   | 700uF   | 220uF   |                         |
| Ripple                                       |   |        |        | 3.3S~15S : <100mV max (Vp-p) |         |         |         | 24S : <150mV max (Vp-p) |
| Noise  |   |        |        | 3.3S~15S : <150mV max (Vp-p) |         |         |         | 24S : <200mV max (Vp-p) |
| Efficiency                                   |   |        |        |                              |         |         |         |                         |
| 70%  | 72%   | 76%    | 76%    | 76%                          | 76%     | 76%     | 77%     |                         |
| Hold-up Time                                 |   |        |        |                              |         |         |         |                         |
| 15 ms min.                                   |   |        |        |                              |         |         |         |                         |
| Switching Frequency                          |   |        |        |                              |         |         |         |                         |
| 132±8 KHz                                    |   |        |        |                              |         |         |         |                         |
| Protection                                   | Over Power Protection   |        |        |                              |         |         |         |                         |
|  | Hiccup technique, auto-recovery   |        |        |                              |         |         |         |                         |
|  | Over Voltage Protection   |        |        |                              |         |         |         |                         |
| Zener diode clamp                            |   |        |        |                              |         |         |         |                         |
| Short Circuit Protection                     |   |        |        |                              |         |         |         |                         |
| Hiccup mode, indefinite (automatic recovery) |   |        |        |                              |         |         |         |                         |
| Isolation                                    | Input-Output (V.AC)   |        |        |                              |         |         |         |                         |
| 3000V  |   |        |        |                              |         |         |         |                         |
| Environment                                  | Operating Temperature   |        |        |                              |         |         |         |                         |
|  | -40°C...+70°C ( with derating )   |        |        |                              |         |         |         |                         |
|  | Storage Temperature   |        |        |                              |         |         |         |                         |
|  | -40°C...+125°C  |        |        |                              |         |         |         |                         |
|  | Temperature Coefficient   |        |        |                              |         |         |         |                         |
| ±0.02%/°C                                    |   |        |        |                              |         |         |         |                         |
| Humidity                                     |   |        |        |                              |         |         |         |                         |
| 95% RH                                       |   |        |        |                              |         |         |         |                         |
| MTBF   |   |        |        |                              |         |         |         |                         |
| >350,000 h @ 25°C (MIL-HDBK-217F)            |   |        |        |                              |         |         |         |                         |
| Physical                                     | Dimension (L x W x H)   |        |        |                              |         |         |         |                         |
|  | 1.44 x 1.07 x 0.67 Inches ( 36.66 x 27.16 x 17.1 mm ) Tolerance ±0.5 mm |        |        |                              |         |         |         |                         |
|  | Case Material   |        |        |                              |         |         |         |                         |
|  | Plastic resin with Fiberglass (flammability to UL 94V-0)                |        |        |                              |         |         |         |                         |
| Weight                                       |   |        |        |                              |         |         |         |                         |
| 26 g   |   |        |        |                              |         |         |         |                         |
| Cooling Method                               |   |        |        |                              |         |         |         |                         |
| Free air convection                          |   |        |        |                              |         |         |         |                         |
| Safety                                       | Agency Approvals  |        |        |                              |         |         |         |                         |
| UL , cUL , CE                                |   |        |        |                              |         |         |         |                         |
| EMC  | EMI (Conducted & Radiated Emission)                                     |        |        |                              |         |         |         |                         |
|  | EN 55022 class B  |        |        |                              |         |         |         |                         |
| EMS (Noise Immunity)                         |   |        |        |                              |         |         |         |                         |
| EN 55024                                     |   |        |        |                              |         |         |         |                         |

All specifications valid at nominal input voltage, full load and +25°C after warm-up time unless otherwise stated.

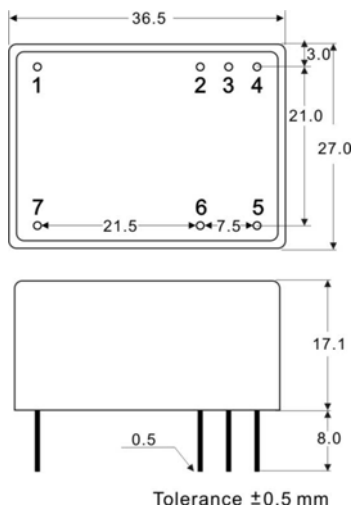
### ELECTRICAL SPECIFICATIONS

| Model No. (Dual Output)                      | AOC-5S3.3S  | AOC-8S5S              | AOC-12S5S               |
|--|---|-----------------------|-------------------------|
| Max Output Wattage (W)                       | 3.5W  | 3.6W                  | 3.6W                    |
| Input  | Voltage   |                       |                         |
|  | 90-264 VAC or 120-370 VDC   |                       |                         |
|  | Frequency (Hz)  |                       |                         |
|  | 47-440 Hz   |                       |                         |
|  | Current (Full load)   |                       |                         |
|  | 85 mA max. (115 VAC) / 65 mA max. (230 VAC)                             |                       |                         |
| Input  | Inrush Current (<500us)   |                       |                         |
|  | 15 A max. (115 VAC) / 25 A max. (230 VAC)                               |                       |                         |
|  | Leakage Current   |                       |                         |
|  | 0.3 mA max.   |                       |                         |
|  | External Fuse (recommend)   |                       |                         |
|  | 1 A slow blow type  |                       |                         |
| Output                                       | Voltage (V.DC.)   |                       | Vo : 5V Vr : 3.3V       |
|  | Voltage Accuracy  |                       | Vo : ±2% Vr : ±5%       |
|  | Current (mA) max  |                       | 600 / 150               |
|  | Line Regulation (LL-HL) (typ.)  |                       | Vo : ±0.2% Vr : ±3%     |
|  | Load Regulation (0-100%) (typ.)   |                       | Vo : ±0.5% Vr : ±5%     |
|  | Minimum Load  |                       | 0%                      |
|  | Maximum Capacitive Load   |                       | Vo : 5600uF Vr : 4700uF |
|  | Ripple  |                       | <100mV max (Vp-p)       |
|  | Noise   |                       | <150mV max (Vp-p)       |
|  | Efficiency  |                       | 73%                     |
|  | Hold-up Time  |                       | 15 ms min.              |
|  | Switching Frequency   |                       | 132±8 KHz               |
|  | Protection  | Over Power Protection |                         |
| Hiccup technique, auto-recovery              |   |                       |                         |
| Over Voltage Protection                      |   |                       |                         |
| Zener diode clamp                            |   |                       |                         |
| Short Circuit Protection                     |   |                       |                         |
| Hiccup mode, indefinite (automatic recovery) |   |                       |                         |
| Isolation                                    | Input-Output (V.AC)   |                       |                         |
| 3000V  |   |                       |                         |
| Environment                                  | Operating Temperature   |                       |                         |
|  | -40°C...+70°C ( with derating )   |                       |                         |
|  | Storage Temperature   |                       |                         |
|  | -40°C...+125°C  |                       |                         |
|  | Temperature Coefficient   |                       |                         |
| ±0.02%/°C                                    |   |                       |                         |
| Humidity                                     |   |                       |                         |
| 95% RH                                       |   |                       |                         |
| MTBF   |   |                       |                         |
| >350,000 h @ 25°C (MIL-HDBK-217F)            |   |                       |                         |
| Physical                                     | Dimension (L x W x H)   |                       |                         |
|  | 1.44 x 1.07 x 0.67 Inches ( 36.66 x 27.16 x 17.1 mm ) Tolerance ±0.5 mm |                       |                         |
|  | Case Material   |                       |                         |
|  | Plastic resin with Fiberglass (flammability to UL 94V-0)                |                       |                         |
| Weight                                       |   |                       |                         |
| 26 g   |   |                       |                         |
| Cooling Method                               |   |                       |                         |
| Free air convection                          |   |                       |                         |
| Safety                                       | Agency Approvals  |                       |                         |
| UL , cUL , CE                                |   |                       |                         |
| EMC  | EMI (Conducted & Radiated Emission)                                     |                       |                         |
|  | EN 55022 class B  |                       |                         |
| EMS (Noise Immunity)                         |   |                       |                         |
| EN 55024                                     |   |                       |                         |

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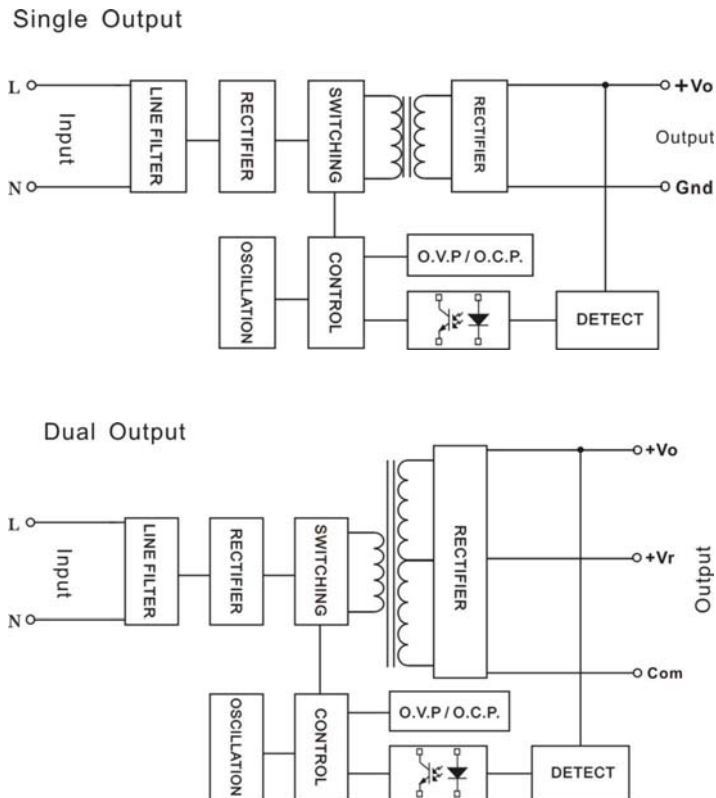
Vo : Measured with 47 µF 25V Ceramic Cap. Cross to output.

## MECHANICAL DIMENSION ( Top View )



| PIN# | Single    | Dual      |
|------|-----------|-----------|
| 1    | NC        | NC        |
| 2    | +Vo       | +Vo       |
| 3    | GND       | COM       |
| 4    | NC        | +Vr       |
| 5    | AC IN (L) | AC IN (L) |
| 6    | AC IN (N) | AC IN (N) |
| 7    | NC        | NC        |

## BLOCK DIAGRAM



## DERATING

