



- HIGH STABILITY:10PPM/HR
- ULTRA LOW NOISE 10PPM
- ULTRA LOW TEMPERATURE COEFFICIENT 10PPM/°C
- SIX-SIDED SHIELDED
- EXTERNAL POTENTIOMETER OR AN EXTERNAL VOLTAGE REFERENCE
- CUSTOMIZATION AVAILABLE



60X40X17

A
MICRO-MODULES

INTRODUCTION

Wisman's MDA series of high voltage 1~5W micro-modules that provide output voltages ranging from 0.3kV to 30kV. MDA modules are compact six-sided shielded modules with ultra-low noise, high stability and ultra-low temperature coefficient. All models are provided with external potentiometer or an external voltage monitoring panel. This series modules have protection functions including over current protection, arc fault protection and short circuit protection.

TYPICAL APPLICATIONS

Mass spectrometry photomultiplier tubes (PMT), solid state detectors, Piezo crystal devices, ultrasonic transducers, microchannel plates (MCP), spectroscopy, scintillation counters, electron multiplier detectors, nuclear Instruments, electrophoresis, semiconductor testing, DNA sequencing, radiation counter, electron and ion beams, electrostatic chuck, high voltage, bias hipot testing, precision lenses, image intensifiers, semiconductor testing, chemical applications, laboratory applications, industrial application supplies.

MDA SELECTION TABLE

| kV | mA | P(W) | MODEL | kV | mA | P(W) | MODEL | kV | mA | P(W) | MODEL | kV | mA | P(W) | MODEL |
|-----|------|------|-----------|------|-----|------|------------|-----|------|------|-----------|-----|------|------|-----------|
| 0.3 | 3.3 | 1 | MDA 0.3*1 | 1 | 1 | 1 | MDA 1*1 | 1.5 | 0.67 | 1 | MDA 1.5*1 | 2.5 | 0.4 | 1 | MDA 2.5*1 |
| | 6.7 | 2 | MDA 0.3*2 | | 2 | 2 | MDA 1*2 | | 1.33 | 2 | MDA 1.5*2 | | 0.8 | 2 | MDA 2.5*2 |
| | 10 | 3 | MDA 0.3*3 | | 3 | 3 | MDA 1*3 | | 2 | 3 | MDA 1.5*3 | | 1.2 | 3 | MDA 2.5*3 |
| | 13 | 4 | MDA 0.3*4 | | 4 | 4 | MDA 1*4 | | 2.67 | 4 | MDA 1.5*4 | | 1.6 | 4 | MDA 2.5*4 |
| | 16.7 | 5 | MDA 0.3*5 | | 5 | 5 | MDA 1*5 | | 3.33 | 5 | MDA 1.5*5 | | 2 | 5 | MDA 2.5*5 |
| 0.5 | 2 | 1 | MDA 0.5*1 | 1.25 | 0.8 | 1 | MDA 1.25*1 | 2 | 0.5 | 1 | MDA 2*1 | 3 | 0.33 | 1 | MDA 3*1 |
| | 4 | 2 | MDA 0.5*2 | | 1.6 | 2 | MDA 1.25*2 | | 1.1 | 2 | MDA 2*2 | | 0.67 | 2 | MDA 3*2 |
| | 6 | 3 | MDA 0.5*3 | | 2.4 | 3 | MDA 1.25*3 | | 1.5 | 3 | MDA 2*3 | | 1 | 3 | MDA 3*3 |
| | 8 | 4 | MDA 0.5*4 | | 3.2 | 4 | MDA 1.25*4 | | 2 | 4 | MDA 2*4 | | 1.25 | 4 | MDA 3*4 |
| | 10 | 5 | MDA 0.5*5 | | 4 | 5 | MDA 1.25*5 | | 2.5 | 5 | MDA 2*5 | | 1.67 | 5 | MDA 3*5 |

MDA SELECTION EXAMPLE

| | | | | | | | | | |
|---------------|-----------------------------|--|--------------------------|-------------------------------------|---|--|---|-------------------------------------|---|
| MDA | 4 | * | 5 | VP | 5 | VM | 5 | LS | 24 |
| Series Number | Maximum Output Voltage (kV) | Option Output Polarity P:positive N:negative | Maximum Output Power (W) | Option Programming Voltage given | Option Programming Proportion 10:0~+10Vdc=0 to max. output 5:0~+5Vdc=0 to max. output | Option Monitor VM: Voltage Monitor IM: Current Monitor | Option Monitor Proportion 10:0~+10Vdc=0 to max. output 5:0~+5Vdc=0 to max. output | Option Start Way Low level start | Option Input Voltage 24:+24Vdc input 15:+15Vdc input 12:+12Vdc input |

MDA SPECIFICATIONS

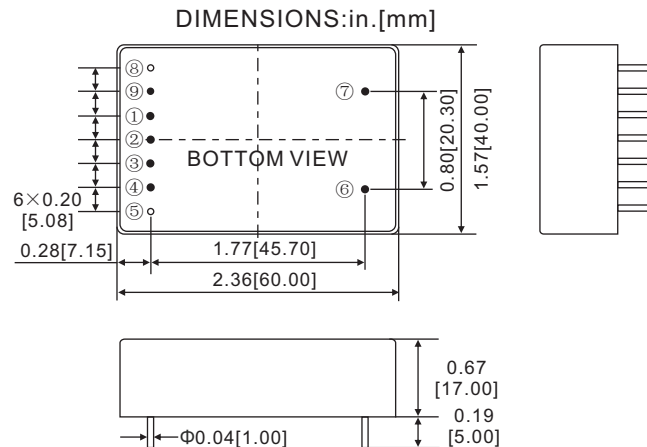
| PARAMETER | DESCRIBE |
|-------------------------|--|
| Input Voltage | +24Vdc ± 2%, input current ≤ 500mA. +15Vdc ± 2%, +12Vdc ± 2% Input voltage. |
| Output | 0.3kV, 0.5kV, 1kV, 1.25kV, 1.5kV, 2kV, 2.5kV, 3kV Multiple high voltage output options. |
| Stability | 0.001%/hr after a 30 minute warm-up period. |
| Temperature Coefficient | ≤ 10ppm/°C. |
| Ripple | 0.001% p-p of maximum output voltage. 0.01% p-p of maximum output voltage. |
| Voltage Programming | By external 20kΩ potentiometer or external voltage control(Vp-in) 0 ~ +5 Vdc. Zin = 100kΩ. |
| Voltage Monitor | 0 ~ +5Vdc=0 to 100% output. Zout = 20kΩ. Accuracy=± 1% . |
| Voltage Line Regulation | ±0.001% for ±2% change in input voltage. |
| Voltage Load Regulation | ±0.01% of MAX output voltage, no load to full load. |
| Operating Temperature | 0°C~+50°C. (-55°C~+125°C can be customized) |
| Storage Temperature | -40°C~+85°C. |
| Humidity | 0%~90% RH, non-condensing. |
| Cooling | Convection cooled. |
| Dimensions | 2.36" Dx 1.57" W x 0.67" H (17mm x 40mm x 60mm). |
| Weight | 65g. |

A MICRO-MODULES

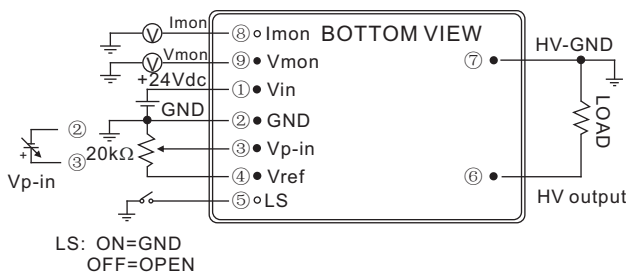
MDA PIN INFORMATION

| PIN | DESCRIPTION |
|-----|--|
| 1 | Power Input+15Vdc ± 2%,Option+24Vdc ± 2%, +12Vdc ± 2%. |
| 2 | Power/Signal GND |
| 3 | Control Voltage Input,0 to 5Vdc=0 to max,Zin=100kΩ. |
| 4 | +5Vdc Reference |
| 5 | LS:ON=GND,OFF=OPEN(OPTION) |
| 6 | High Voltage Output |
| 7 | High Voltage GND |
| 8 | Output Current Monitor(OPTION) |
| 9 | Output Voltage Monitor(OPTION) |

MDA DIMENSIONS



MDA CONNECTION DIAGRAM



- PIN ②, ⑦ and case are internally connected, and should be always grounded.
- External potentiometer of T.C ≅ 100ppm/°C, PC ≅ 1/4W is recommended.
- ③, ⑧, are for option.

CHARACTERISTICS OF OUTPUT VOLTAGE SETTING

