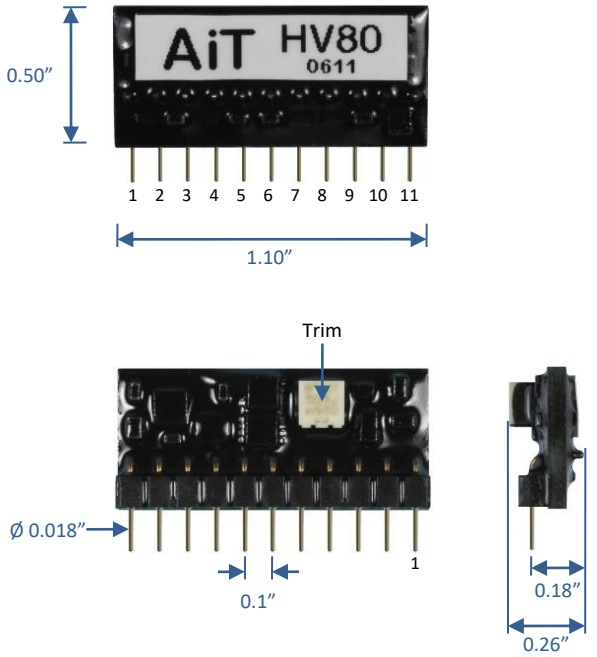
Features

- **<10V to 80V adjustable output**
- **0 to +2.5V output control voltage**
- **4mA output current**
- **0.01% load regulation at 2mA**
- **Precision +2.5V voltage reference**
- **Adjustable over-current shutdown**
- **Output voltage monitor**
- **Output current monitor**



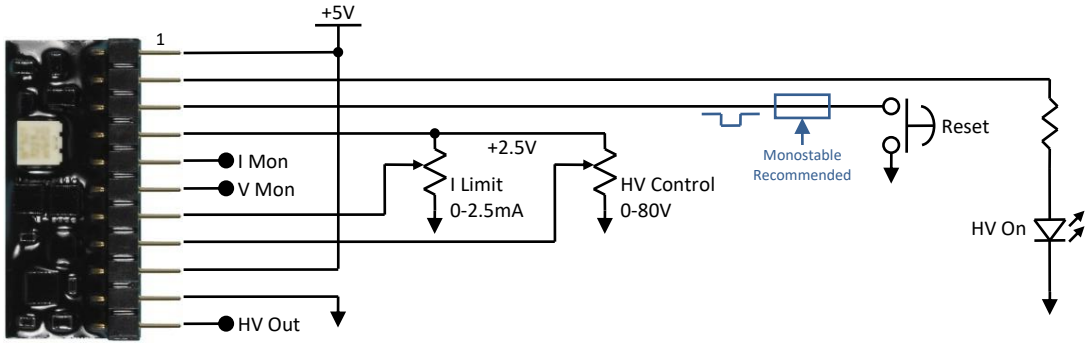
Pin	Function	Signal Range	Signal Type
1	Enable	0V = off, +5V = on	TTL input
2	HV On	0V = off, +5V = on	TTL output
3	#Reset	0V = Reset	TTL input
4	Voltage Reference	+2.5V	Analog output
5	HV Current Monitor	0V to +4V	Analog output
6	HV Voltage Monitor	0V to +2.5V	Analog output
7	HV Current Limit	0V to +4V	Analog input
8	HV Control	0V to +2.5V	Analog input
9	Power	+5V	Power
10	Ground	Ground	Ground
11	HV Output	0V to +80V	Analog output

Specifications

HV Output	<10 V to 80 V DC *
Output current	4 mA max.
Load regulation	0.01% @ 2mA; 0.02% @ 4mA
Setpoint error	< 0.01%
Initial accuracy	< 0.05%
Trimmed accuracy	< 0.01%
Trim potentiometer	11 turns
Trim range	±0.4%
Ripple and noise	<5mV @ 80V, 4mA, 1µF load
Output Capacitance	0.47 µF
HV Control Voltage (input)	0 to +2.5V = 0 to +80V out
Input impedance	10 MΩ
HV Voltage Monitor (output)	0 to +2.5V = 0 to +80V out
Output current	20 mA max.
Initial accuracy	0.05% (trimmable)
HV Current Monitor (output)	0 to +4V = 0 to +4mA out
Output current	20 mA max.
Accuracy	10% min.
HV Current limit (input)	0 to +4V = 0 to +4mA out
Input impedance	50K pull-up to +2.5V
Over-current fault	Latches off HV until reset
#Reset (TTL input)	Resets HV fault, enables HV
Input impedance	10K pull-up to +5V
Sensitivity	Level, active low
Enable (TTL input)	Enables HV80 input power
Input impedance	10K
Sensitivity	Level, active high
HV On (TTL output)	+5V = HV enabled, no fault 0V = HV disabled with fault
Output current	20mA max.
Voltage Reference (output)	+2.5V
Output current	10 mA
Initial accuracy	0.1%
Temperature coeff.	2.5 ppm/°C typ.
Input Power Requirements	
Voltage	+5V DC
Current with no load	15 mA
Current with full load	150 mA
Input fuse	0.4A, cycle power to reset
SIP Header	11 pin
Pin pitch	0.1”
Pin diameter	0.018”
Contact finish	10µ gold
Mechanical	
Dimensions	1.10” x 0.50” x 0.26”
Encapsulation	Thermally conductive epoxy

* Operation below 10V has degraded regulation and increased output ripple

Typical Connection Diagram



Application Notes

- No input fuse is needed. No input capacitor is needed. No HV output series resistor is needed.
- *HV Control* sets to 0V when disconnected
- *HV Current Limit* sets to +2.5V (2.5 mA limit) when disconnected
- Over-current fault circuit is enabled when *#Reset* is disconnected
- *Enable* sets to 0V when disconnected. *Enable* controls power to the entire HV80 circuit
- Connecting *#Reset* to ground permanently disables the over-current shutdown circuit
- If connecting the *HV Current Monitor* or the *HV Voltage Monitor* to field wiring or test points then output series resistors are recommended
- *#Reset* may be driven directly by a switch (de-bounced). An edge-sensitive monostable circuit is recommended in order to control the disable time of the over-current shutdown circuit. A monostable circuit should be designed to provide a pulse width sufficient to charge the load capacitance.
- The input fuse may disable the HV80 if an internal fault (*ex:* short-circuit) draws a high current or if the output over-current shutdown circuit is unable to respond (*ex:* fast load current transient or disabled over-current circuit). The fuse is reset by removing the input power.

The over-current shutdown circuit is designed to protect the HV power supply from damaging load currents. It is not designed to protect other equipment or personnel.

Safety Information

WARNING – High Voltage

- High voltage may be present during operation
- High voltage stored on capacitors may be present after power is removed
- Improper handling may result in personnel injury or equipment damage

This high-voltage device must be used only by personnel trained and qualified in safe handling, installation, and operation of high-voltage equipment.

CAUTION – Electrostatic Discharge (ESD) Sensitivity

The circuit board can be damaged by electrostatic discharge. Observe precautions for handling electrostatic sensitive devices. Handle only at static-safe workstations.

Indoor Use Only

Do not operate this product in a wet/damp environment. Do not operate in an explosive atmosphere.

Use of this product, and AiT Instruments' liability related to use of this product, is further governed by AiT Instruments' standard terms and conditions of sale, which were provided upon purchase of this product.