

Figure 1. Physical Photos of AM01HV12VN1KV1MAP

### FEATURES

- Low Power Consumption
- High Efficiency
- High Stability
- Output Current and Voltage Monitors
- Small Output Ripple, Time Drift, and Temperature Drift
- Overload and Short Circuit Protection
- Continuous Linear Adjustment for Output Voltage
- Metal Enclosure for Zero EMIS
- Easy Control and Installation
- Customizable

### APPLICATIONS

AM01HV12VN1KV1MAP is a high stability high voltage power supply, ideal for photomultiplier tube, optical measurement, light control technology, detectors, ion beam implantation, capacitor charging, electron beam welding, nuclear physics, withstand voltage test, medical equipment, precision instruments, etc.

### DESCRIPTION

AM01HV12VN1KV1MAP is a combination of switching step-up technology and linear regulation, which converts the low input voltage into a stable high output voltage. It comes with output short-circuit protection and a wide range of output voltage adjustments. This high voltage power supply also features ultra-small size, light weight, moisture proof, shockproof, metal enclosure, and zero EMIs. **SHUTDOWN**

### MODE OPERATION

A logic low <0.8V or a 0V on the SDN pin will turn the device off. When SDN is in logic high >1.2V or left unconnected, the product is working well.

### SAFETY PRECAUTIONS

The internal protection circuit is provided in the high voltage power supply, but the high voltage short circuit shall be avoided.

Make sure the circuit is insulated perfectly, especially between the high voltage output and the surroundings so as to avoid electronic shock.



**SPECIFICATIONS**

Table 1. Characteristics. T<sub>A</sub> = 25°C, unless otherwise noted

Parameter	Symbol	Condition	Min.	Typ.	Max.	Unit/Note
Input Voltage	V <sub>IN</sub>		11	12	13	V
Quiescent Input Current	I <sub>INQQ</sub>	I <sub>OUT</sub> = 0mA	40	50	60	mA
Full Load Input Current	I <sub>INFLD</sub>	I <sub>OUT</sub> = 2.0mA	200	250	300	mA
Input Voltage Regulation Ratio	ΔV <sub>OUT</sub> /ΔV <sub>IN</sub>	V <sub>IN</sub> = 11V to 13V		0.005		%
Output Voltage	V <sub>OUT</sub>	I <sub>OUT</sub> = 0 to 1.0mA	0		-1000	V
Maximum Output Current	I <sub>OUTMAX</sub>	V <sub>IN</sub> = 11V to 13V			1.0	mA
Stability of Reference Voltage	V <sub>REF</sub>	0 ~ 50°C	4.95	5	5.05	V
Load				1		MΩ
Regulation Mode			0 ~ 5V or 10k potentiometer			
Control Input vs. Output Linearity	ΔV <sub>REF</sub> /ΔV <sub>OUT</sub>			<0.1		%
Load Regulation Rate		0 to 1.0mA		≤0.01		%
Output voltage ripple	V <sub>OUT,RP</sub>			<0.001		%V <sub>P-P</sub>
Monitor Voltage	V <sub>MON</sub>	V <sub>OUT</sub> = 0 ~ -1kV	0		2	V
Monitor Current	I <sub>MON</sub>	I <sub>OUT</sub> = 0 ~ 1.0mA	0		2	V
Instantaneous Short Circuit Current	I <sub>SC</sub>			<500		mA
Shutdown Supply Current	I <sub>SHDN</sub>				18	mA
Shutdown Logic Input Current	I <sub>LOGIC</sub>				3	uA
Shutdown Logic Low	V <sub>INL</sub>			<0.8		V
Shutdown Logic High	V <sub>INH</sub>			≥1.2		V
Full Load Efficiency	η			≥80		%
Temperature Coefficient	TCV <sub>O</sub>	0 ~ 50°C		<0.01		%/°C
Time Drift	Short Time Drift	After 30 min. warm-up		<0.01		%/h
	Long Time Drift			<0.05		%/d
Operating Temperature Range	T <sub>opr</sub>		0		50	°C
Storage Temperature Range	T <sub>stg</sub>		-40		85	°C
External Dimensions			45×23×15			mm
Weight				30		g
				0.07		lbs
				1.06		Oz



TESTING DATA

High voltage power supply testing data (Test condition: the load is 1 MΩ)

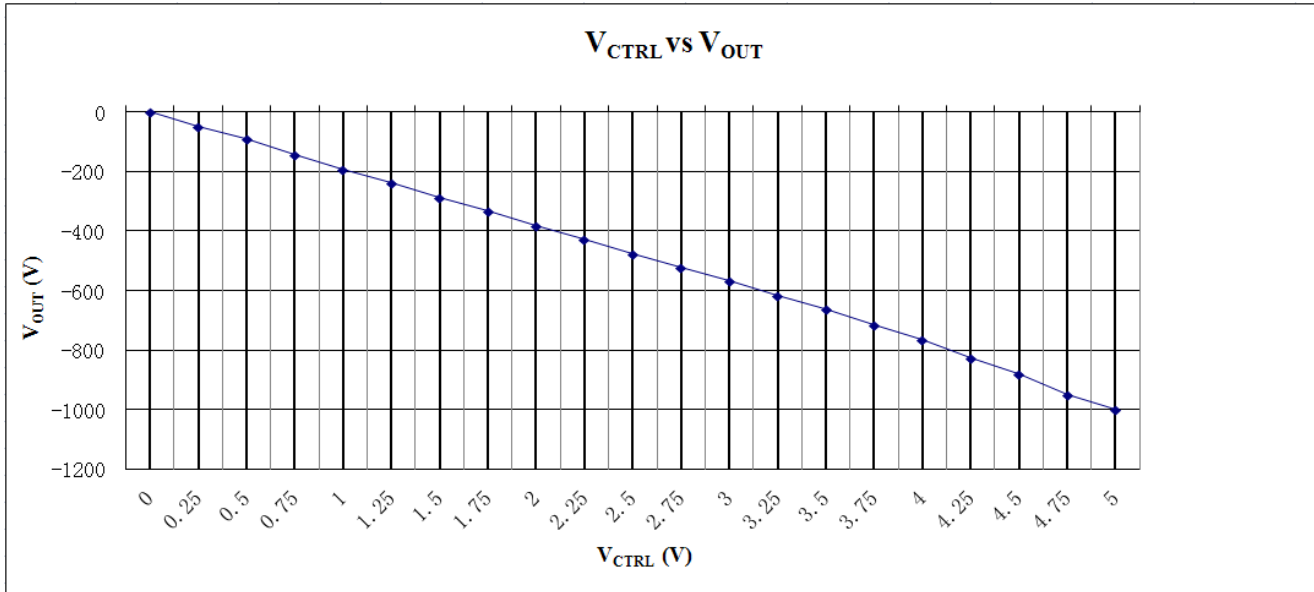
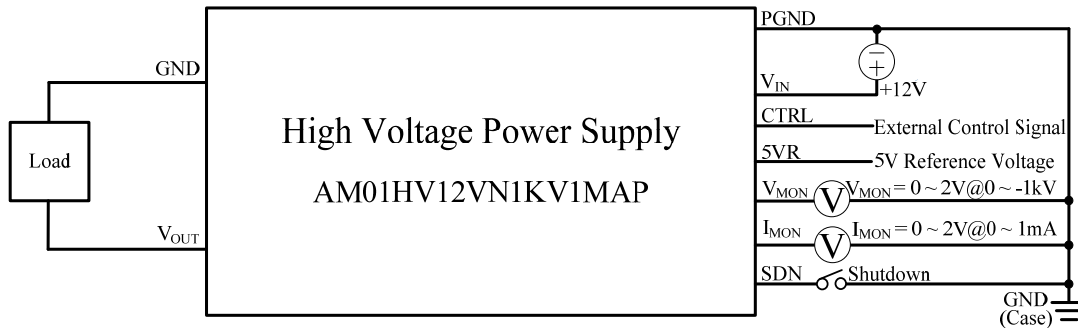


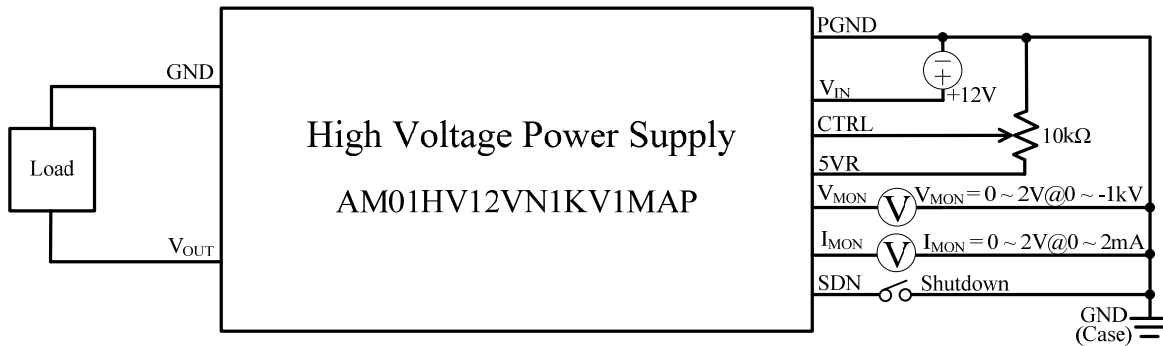
Figure 2. V\_CTRL vs. V\_OUT

THE CONNECTION DIAGRAM OF MODULE'S PERIPHERAL CIRCUIT



- \*5VR: 5V reference voltage can only be used as the power supply for the potentiometer, not for any other parts.
- \*SDN: Shutdown Logic Low SDN < 0.8V or 0V on the SDN pin will turn off the high voltage output.  
Shutdown Logic High SDN > 1.2V or left unconnected will turn on the high voltage output.
- \*The PGND and GND are connected inside with the case and should be well grounded.

Figure 3. Controlled by External Source



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Shutdown Logic High SDN > 1.2V or left unconnected will turn on the high voltage output.
- \*The PGND and GND are connected inside with the case and should be well grounded.

Figure 4. Controlled by Potentiometer

**NAMING INSTRUCTIONS**

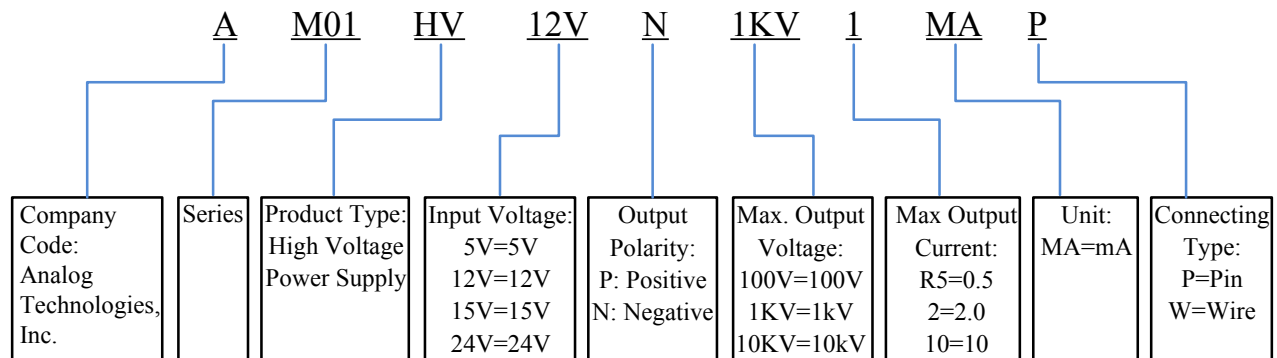


Figure 5. Naming Rules of AM01HV12VN1KV1MAP

**DIMENSIONS**

I. Pin layout

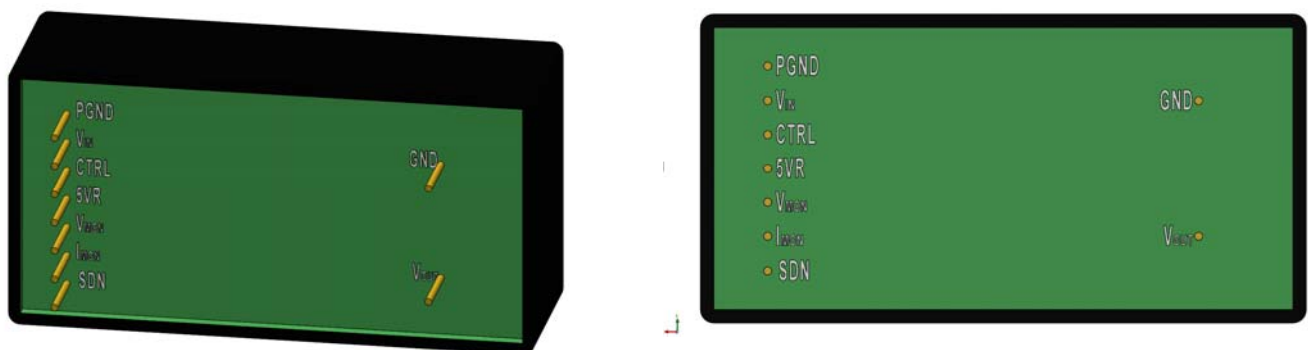


Figure 6. Pin Layout for AM01HV12VN1KV1MAP



II. Dimension of AM01HV12VN1KV1MAP.

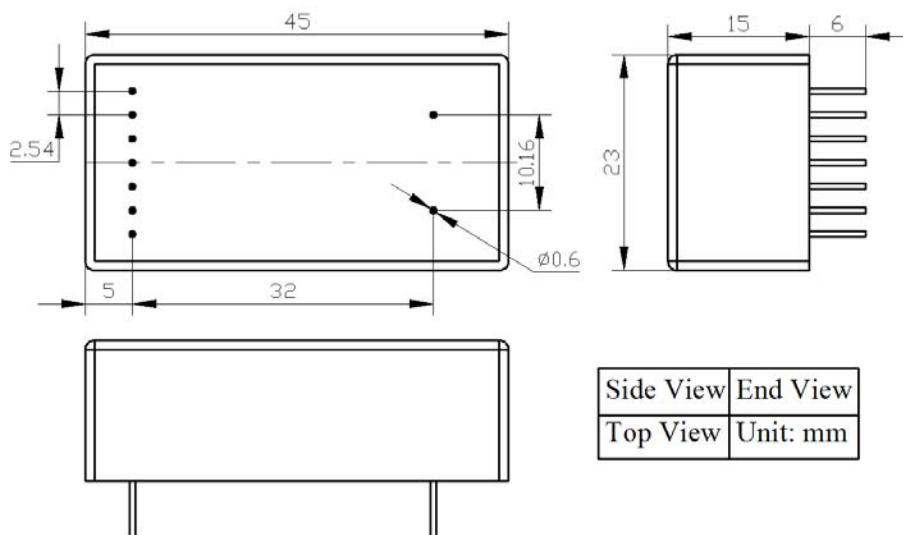


Figure 7. Dimensions for AM01HV12VN1KV1MAP

PRICES

Quantity	1~9pcs	10~49pcs	50~99pcs	≥100pcs
AM01HV12VN1KV1MAP	\$129	\$119	\$109	\$99

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