

INTRODUCTION

KDHM-A series ultra-miniature high voltage output feedback-control regulated DC-DC power modules that are specifically designed for electronic devices, instruments, and sensors for industrial, military, and aerospace applications. It features a small dimension, low power consumption, fast response, moisture resistance, impact resistance, high reliability, high efficiency, and steady performance. The module's dimensions are measured at 12mm × 12mm × 12mm, which is less than the size of a US quarter. It is one of the smallest packages among the high-voltage power supply modules with an output voltage of up to ±500VDC.

KDHM-A series high-voltage modules feature low output ripple, high output stability, broad range adjustable output, and built-in output short-circuit protection. The output voltage stability and load regulation rate are lower than 0.5%. The output voltage is continuously adjustable from 0V to the designed target voltage and the voltage regulation linearity is higher than 99%.

KDHM-A high voltage module's input has three voltage range options of 5V, 12V, or 24V (up to 28V), with 0 ~ ±500V continuous adjustable voltage output. There are two voltage control modes: Direct voltage control and external potentiometer control. There are multiple voltage output options to choose from for part selection, including: 0 ~ ±100V, 0 ~ ±200V, 0 ~ ±300V, 0 ~ ±400V, 0 ~ ±500V

FEATURE

- ✓ Ultra-small volume: 12mm×12mm×12mm, international standard pin spacing
- ✓ Wide input voltage range
- ✓ Fast transient response characteristics
- ✓ 0 ~ ±500V continuously adjustable output voltage
- ✓ Ultra-low output ripple and high output accuracy
- ✓ Short circuit protection
- ✓ External direct 0 ~ 2.5V control input for output voltage control
- ✓ The reference voltage source (+2.5V) provides for the output control.
- ✓ Impact resistance, moisture-proof, Cooper EMC shield casing



APPLICATION

Photomultiplier tube, nuclear radiation detection, fire detection, security monitoring, petroleum industry instrumentation, ionization chamber, proportional counter, laser power supply, RF power supply, Geiger Maitreya (G-M) counter, electrophoresis, lens, mass spectrometer, scintillator, electron beam, ion beam, electrostatic printing, high voltage bias, and other medical and chemical, scientific experiments and industrial applications.

PARAMETERS

Parameter	Description
Production grade	G: Industrial grade J: Military grade

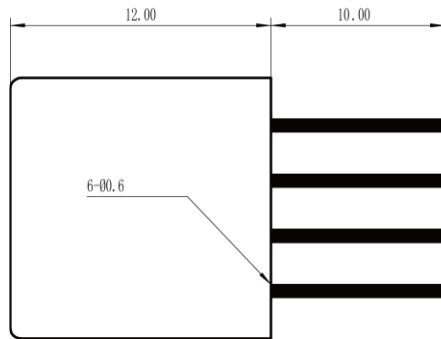
Input voltage	DC 5V(4.5V ~ 7V); 12V(11V ~ 16V); 24V(21V ~ 28V)
Output voltage	DC 0 ~ ±100V; 0 ~ ±200V; 0 ~ ±300V; 0 ~ ±500V
Output current	DC 0.5mA ~ 2mA
Ripple/Noise(p-p)	≤10mVp_p ~ 50mVp-p(Full range input voltage, full range load)
Output drift	≤0.5% (Input Voltage in the nominal range, the output load in 20% ~ 80% variation)
Control Linearity	≤0.1% (Input Voltage in the nominal range, the output load in 0% ~ 100% variation)
Output voltage control mode	Direct Voltage control / External potentiometer control
Voltage Reference output	DC +2.5V
Short circuit protection	Yes
Operating temperature	G: -20°C ~ +65°C J: -40°C ~ +85°C
Storage temperature	-55°C ~ +125°C
Temperature stability	≤40PPM/°C
Operating humidity	20% ~ 90% RH
Pin treatment	Gold-plated pin type
Package	DIP, fully enclosed high thermal conductivity, resin-sealed metal casing
Dimensions	L: 12mm, W: 12mm, H: 12mm
Weight	5±1g

MODEL LIST

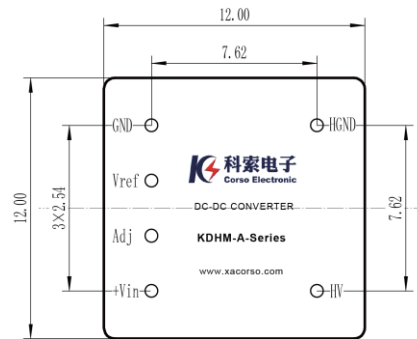
Model Number	Input Voltage	Output Voltage	Ripple (mVp-p)	Output Current	Input Current	
					No Load	Full Load
KDHM-A-5S100P-V	4.5 ~ 7V	0 ~ +100V	≤15mV	0 ~ 2mA	≤10mA	≤90mA
KDHM-A-5S100N-V	4.5 ~ 7V	0 ~ -100V	≤15mV	0 ~ 2mA	≤10mA	≤90mA
KDHM-A-5S200P-V	4.5 ~ 7V	0 ~ +200V	≤15mV	0 ~ 1mA	≤10mA	≤90mA
KDHM-A-5S200N-V	4.5 ~ 7V	0 ~ -200V	≤15mV	0 ~ 1mA	≤10mA	≤90mA
KDHM-A-5S300P-V	4.5 ~ 7V	0 ~ +300V	≤25mV	0 ~ 1mA	≤10mA	≤90mA
KDHM-A-5S300N-V	4.5 ~ 7V	0 ~ -300V	≤25mV	0 ~ 1mA	≤10mA	≤90mA
KDHM-A-5S400P-V	4.5 ~ 7V	0 ~ +400V	≤25mV	0 ~ 0.5mA	≤10mA	≤90mA
KDHM-A-5S400N-V	4.5 ~ 7V	0 ~ -400V	≤25mV	0 ~ 0.5mA	≤10mA	≤90mA
KDHM-A-5S500P-V	4.5 ~ 7V	0 ~ +500V	≤40mV	0 ~ 0.5mA	≤10mA	≤90mA
KDHM-A-5S500N-V	4.5 ~ 7V	0 ~ -500V	≤40mV	0 ~ 0.5mA	≤10mA	≤90mA
KDHM-A-12S100P-V	11 ~ 16V	0 ~ +100V	≤15mV	0 ~ 2mA	≤5mA	≤40mA

KDHM-A-12S100N-V	11 ~ 16V	0 ~ -100V	≤15mV	0 ~ 2mA	≤5mA	≤40mA
KDHM-A-12S200P-V	11 ~ 16V	0 ~ +200V	≤15mV	0 ~ 1mA	≤5mA	≤40mA
KDHM-A-12S200N-V	11 ~ 16V	0 ~ -200V	≤15mV	0 ~ 1mA	≤5mA	≤40mA
KDHM-A-12S300P-V	11 ~ 16V	0 ~ +300V	≤25mV	0 ~ 1mA	≤5mA	≤40mA
KDHM-A-12S300N-V	11 ~ 16V	0 ~ -300V	≤25mV	0 ~ 1mA	≤5mA	≤40mA
KDHM-A-12S400P-V	11 ~ 16V	0 ~ +400V	≤25mV	0 ~ 0.5mA	≤5mA	≤40mA
KDHM-A-12S400N-V	11 ~ 16V	0 ~ -400V	≤25mV	0 ~ 0.5mA	≤5mA	≤40mA
KDHM-A-12S500P-V	11 ~ 16V	0 ~ +500V	≤40mV	0 ~ 0.5mA	≤5mA	≤40mA
KDHM-A-12S500N-V	11 ~ 16V	0 ~ -500V	≤40mV	0 ~ 0.5mA	≤5mA	≤40mA
KDHM-A-24S100P-V	21 ~ 28V	0 ~ +100V	≤15mV	0 ~ 2mA	≤3mA	≤20mA
KDHM-A-24S100N-V	21 ~ 28V	0 ~ -100V	≤15mV	0 ~ 2mA	≤3mA	≤20mA
KDHM-A-24S200P-V	21 ~ 28V	0 ~ +200V	≤25mV	0 ~ 1mA	≤3mA	≤20mA
KDHM-A-24S200N-V	21 ~ 28V	0 ~ -200V	≤25mV	0 ~ 1mA	≤3mA	≤20mA
KDHM-A-24S300P-V	21 ~ 28V	0 ~ +300V	≤25mV	0 ~ 1mA	≤3mA	≤20mA
KDHM-A-24S300N-V	21 ~ 28V	0 ~ -300V	≤25mV	0 ~ 1mA	≤3mA	≤20mA
KDHM-A-24S400P-V	21 ~ 28V	0 ~ +400V	≤40mV	0 ~ 0.5mA	≤3mA	≤20mA
KDHM-A-24S400N-V	21 ~ 28V	0 ~ -400V	≤40mV	0 ~ 0.5mA	≤3mA	≤20mA
KDHM-A-24S500P-V	21 ~ 28V	0 ~ +500V	≤40mV	0 ~ 0.5mA	≤3mA	≤20mA
KDHM-A-24S500N-V	21 ~ 28V	0 ~ -500V	≤40mV	0 ~ 0.5mA	≤3mA	≤20mA

PACKAGING



Unit: mm
Tolerance: ±0.5mm



Top View (Pins are pointing down)

PIN DEFINITION

Pin	Pin Name	Description
1	+Vin	Input positive terminal
2	Adj	Control voltage input (0 ~ 2.5V)

3	Vref	Voltage Reference output (DC +2.5V)
4	GND	GND
5	HV	High voltage positive output
6	HGND	High voltage output GND

WIRING DIAGRAM

1. The output voltage is controlled by external voltage excitation



External control signal: 0 ~ Maximum output voltage can be adjusted continuously by the input voltage control source, ranging from 0 ~ 2.5VDC.

The key factor of the output voltage quality is the stability of the input control voltage source. The control input current is generally less than 200 μ A because of the high input impedance.

2. The output voltage control via the provided voltage reference with a potentiometer



Top View (Pins are pointing down)

Power Input: 5VDC (4.5 ~ 7V), 12VDC (11 ~ 16V), or 24VDC (21 ~ 28V).

NOTE: The potentiometer can be 5K, 10K, or 20K. A 10K multi-revolution precision potentiometer is recommended.

CONTACT US

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