

AP-AS series

Compact
module

High Speed and High Voltage Amplifier Module



AS series is a fast response high voltage operational amplifier module. Matsusada's long experience and expertise in HVPS field has made this high precision, high reliable product possible in the market.

AP series provides 250Hz to 3kHz, and produces high voltage output in sine waves, triangle waves, saw tooth waves and square waves proportional to the input wave type. 10 different models are available in this series. We also take a custom orders according to your requirements.

Compact and high performance module

FEATURES

1. Wide Output Range

The wide lineup by frequency, output voltage and output polarity will enable users to select the best suitable model for various application among 10 different models.

2. Fast Responsibility Maximum 30kHz

AS series achieved the higher speed and wider bandwidth of maximum 30kHz. 5 time faster than AP series.

3. Desired output waveform reference to input waveform.

External control voltage to BNC input terminal on front panel, -10V to +10V, controls the high voltage output with desired waveform.

4. Compact module type

The compact size is ideal for developing compact products and systems as integrated module. The encapsulation molding which is well resistive to moisture, dust, vibration or impact gain the reliability of the product.

5. 24V input voltage

Simple operation with only 24V input voltage and -10V to +10V control voltage.

6. High reliability

With Matsusada's unique technology and know-how developed by HV DCPS technologies, we provide highly reliable and safe products.

7. All-Solid-State

Longer life time with all-solid-state configuration.

APPLICATIONS

- Beam deflection
- Insulation and breakdown voltage test
- Electro photography process
- Various Electrostatic tests
- Corona discharge
- Electrostatic chuck
- Electro viscosity fluid

LINEUP

Output voltage (Vdc)	Current (mA)	MODEL	Frequency Response(-3dB)*	Case No.	MODEL	Frequency Response(-3dB)		Slew Rate (full scale)	Case No.
						full scale	10% of full scale		
-300 to +300	10	AP-0.3B10	DC to 2kHz	C6A	AS-0.3B10	DC to 12kHz	DC to 24kHz	12V/μs	C6A
-600 to +600	5	AP-0.6B5	DC to 2kHz		AS-0.6B5	DC to 6kHz	DC to 12kHz		
-1k to +1k	3	AP-1B3	DC to 1kHz	C6E	AS-1B3	DC to 3.5kHz	DC to 7kHz		C6E
-1.5k to +1.5k	2	AP-1.5B2	DC to 500Hz		AS-1.5B2	DC to 2.5kHz	DC to 5kHz		
-3k to +3k	1	AP-3B1	DC to 250Hz	C7	AS-3B1	DC to 1.5kHz	DC to 3kHz		C7

* Reference value calculated from slew rate 12V/μsec

SPECIFICATIONS

Input voltage	24Vdc $\pm 5\%$ 0.6A typ.
Output voltage control	External voltage source Vcon-in -10V to +10V *1 (input impedance : $\geq 10k\Omega$)
Regulation	Line: $\pm 0.1\%$ ($\pm 5\%$ line change) Load: 0.1%(10% to 100% load change) *2
Ripple	$\leq 0.025\%$ rms *2
Stability	0.016%/Hr typ. *2
Protection	Protection against Input reverse connection, and intermittent output short circuit *3
Operating Temp.	0°C to +45°C
Storage Temp.	-20°C to +60°C
Humidity	20 to 80%RH(no condensation)
Input-Output terminals	Input/Pin Terminal Output/High Voltage lead wire 500mm(1.6feet)

*1) Offset voltage : within 0.5% of rated output at Vcon-in = 0V

*2) Value at maximum rated output with resistive load and DC output.

*3) Single are shall be within 5sec and not to be repeated.

Frequent short shall shorten the life time and to be avoided

★ No instruction manuals for module type power supply

OPTIONS

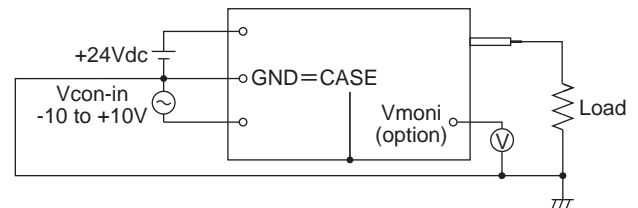
-L2 Output voltage monitor

Output Voltage (kV)	0.3	0.6	1k	1.5k	3k
	-0.3 to +0.3	-0.6 to +0.6	-1k to +1k	-1.5k to +1.5k	-3k to +3k
monitor / V-out	1V / 100V	1V / 1kV			

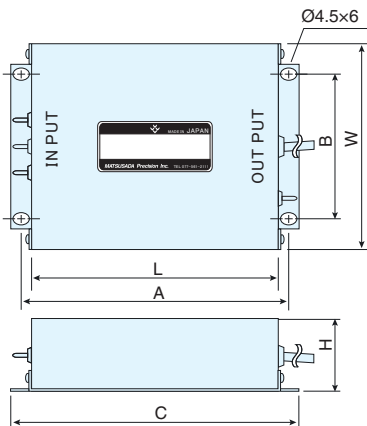
Please use the voltage meter which input impedance is $\geq 10M\Omega$. (Accuracy : $\pm 2.5\%$ /Full scale)

*When ordering, please suffix L Mark(option mark) to the model number. {e.g.} AS-0.3B10-L2

CONNECTION



DIMENSIONS inch(mm)



Case No.	Mounting hole pitch		C	W	L	H	Weight (g) approx
	A	B					
C6A	6.69 (170)	2.75 (70)	7.08 (180)	3.94 (100)	6.3 (160)	1.5 (38)	1400
C6E	7.67 (195)	3.54 (90)	8.07 (205)	4.73 (120)	7.28 (185)	1.7 (43)	2100
C7	7.67 (195)	4.8 (122)	8.07 (205)	5.99 (152)	7.28 (185)	1.7 (43)	2600

Warranty

We warrant that products contained in this catalog (hereinafter, the "Products") are free from defects in material and workmanship under normal use for a period of one (1) year from the date of shipment thereof. However, the warranty period for X-ray detectors and X-ray source shall be either one (1) year from the date of shipment or 1,000 hours, whichever shorter. The above warranty shall not apply to any Product which, at our sole judgment, has been: i) Repaired or altered by persons unauthorized by us; or ii) Connected, installed, adjusted or used otherwise than in accordance with the instructions furnished by us (including being used in an inappropriate installation environment, such as in corrosive gas, high temperature and humidity). We are not liable for any loss, damage or failure of the Products after the shipment thereof caused by external factors such as disasters. If any Product is shown to be defective as satisfactory to us, we, at our sole discretion, repair or replace such defective Products at no cost to the purchaser. We assume no liability to the purchaser or any third party for special, incidental, consequential, or other damages resulting from a breach of the foregoing warranty. This warranty excludes any and all other warranties not set forth herein, express or implied, including without limitation the implied warranties of merchantability or fitness for a particular purpose. The Products are not designed and produced for such applications as requiring extremely high reliability and safety, or involving human lives (such as nuclear power, aerospace, social infrastructure facility, medical equipment, etc.). The use under such environment is not covered by this warranty and may require additional design and manufacturing processes.



Matsusada Precision Inc.

For products www.matsusada.com/product

For contact www.matsusada.com/contact

San Jose Office : 2570 N. First Street Suite 200 San Jose, CA 95131

Tel: +1-408-273-4573 Fax: +1-408-273-4673

New York Office : 80 Orville Drive Suite 100 Bohemia, NY 11716

Tel: +1-631-244-1407 Fax: +1-631-244-1496

Dallas Office : 5430 LBJ Freeway, Suite 1200 Dallas, TX 75240

Tel: +1-972-663-9336 Fax: +1-972-663-9337

International Office : Osaka-City, Osaka Japan

Tel: +81-6-6150-5088 Fax: +81-6-6150-5089

Headquarters : 745 Aoji-cho Kusatsu Shiga 525-0041 Japan

Tel: +81-77-561-2111 Fax: +81-77-561-2113

01.047.0505