

## DESCRIPTION

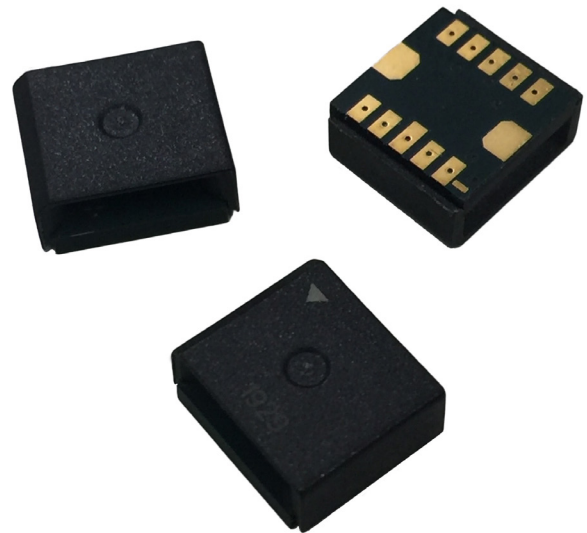
PAV3000 was designed as an economical high-performance air velocity sensor for thermal management in even the most space constrained locations such as data center server farms. Unlike thermistor based solutions, the Posifa MEMS sensor core is minimally affected by ambient temperature changes and provides instant real time feedback on proper air flow at the server blades.

PAV3000 features Posifa's third-generation thermal flow die, benefiting from the latest innovations in microfabrication. The sensor die uses a pair of thermopiles to detect changes in temperature gradient caused by mass flow, delivering excellent signal-to-noise and repeatability. The "solid state" thermal isolation structure on the sensor die eliminates the need for surface cavity or fragile membrane used in competing technologies, making the sensor resistant to clogging and pressure shock.

The PAV3000 series is surface mountable (SMD) and provides a digital I2C output.

## APPLICATIONS

- Data Center Thermal Management
- HVAC VAV Damper Control
- HVAC Filter Monitoring



## FEATURES

- Unsurpassed performance in a robust and cost effective package
- "Solid state" sensing core (no surface cavity or fragile membrane) resistant to clogging and pressure shock
- No moving parts
- Fast response times (125 ms typ)
- Excellent repeatability (1% FS)
- SMD packaging

## MAXIMUM RATINGS

- Operating Temperature: -25 to 85 °C
- Storage Temperature: -40 to 90 °C
- Humidity: 0 to 100% RH, non-condensing

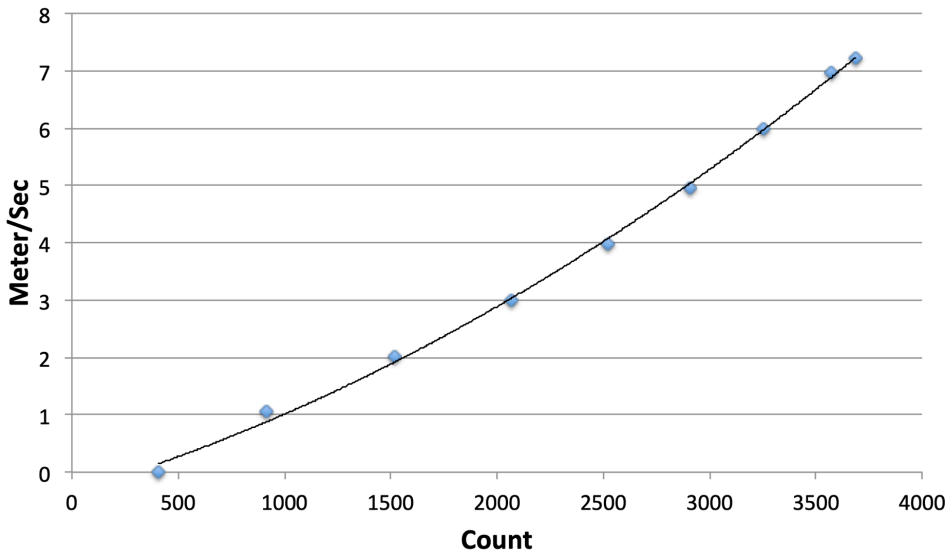
## SPECIFICATIONS

Test Conditions:  $V_{in}=3.3\pm 0.01VDC$ ,  $T_a=25^{\circ}C$ . Relative Humidity:  $40\% < RH < 60\%$

SPECIFICATIONS	MIN	TYP	MAX	UNIT	CONDITIONS
PAV3005D	0		7	m/sec	
PAV3015D	0		15	m/sec	
Output Count	409 to 3686			Count	
Resolution		12		Bit	
Repeatability		1%		F.S.	
Accuracy		5%		F.S.	
Response Time		125		mSec	
Supply Voltage		3.3		VDC	
Supply Current		13		mA	

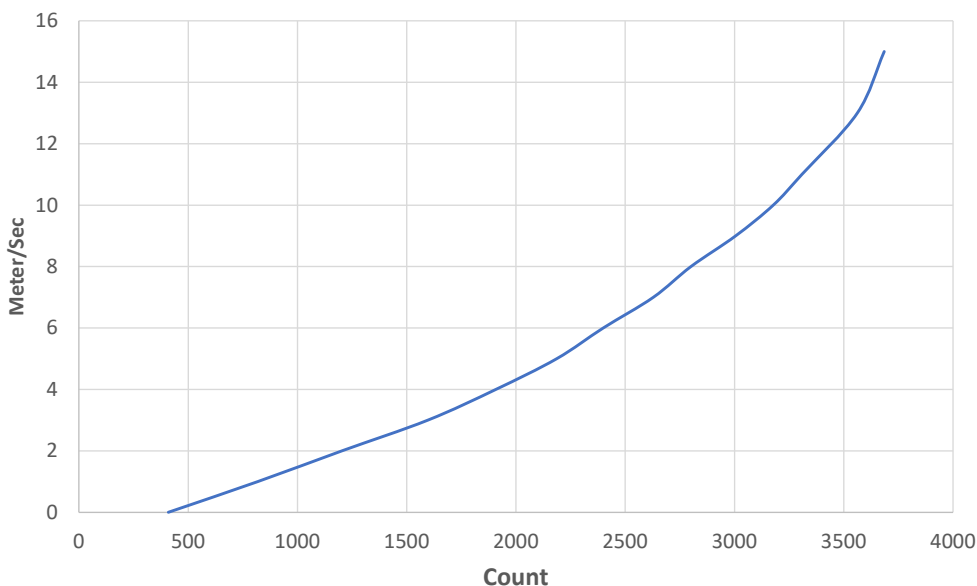
## OUTPUT DESCRIPTION

PAV3005 (Vin = 3.3 VDC)



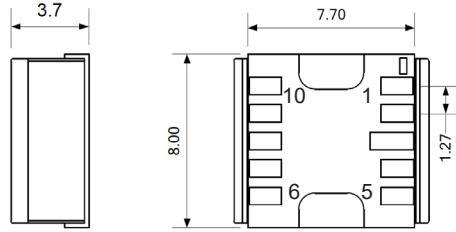
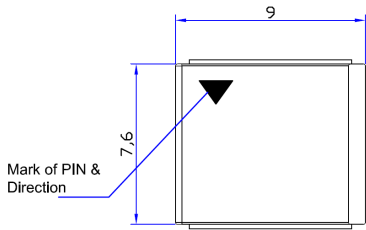
Wind Speed (m/sec)	Output (Count)
0	409
1.07	915
2.01	1522
3.00	2066
3.97	2523
4.96	2908
5.98	3256
6.99	3572
7.23	3686

PAV3015D (Vin = 3.3V)



Wind Speed (m/sec)	Output (Count)
0	409
2	1203
3	1597
4	1908
5	2187
6	2400
7	2629
8	2801
9	3006
10	3178
11	3309
13	3563
15	3686

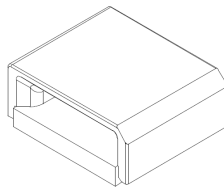
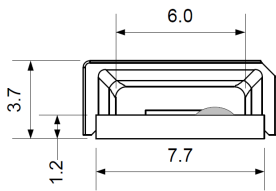
### PACKAGE DIMENSIONS



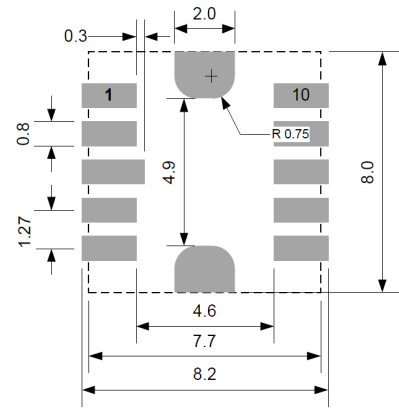
Air flow direction is from pad 1 to pad 5

Pad	Description
1	V <sub>OREG</sub>
2	V <sub>DD</sub>
3	V <sub>SS</sub>
4	N.C.
5	N.C.
6	SDA
7	SCL
8	AN1
9	AN0
10	V <sub>CM</sub>

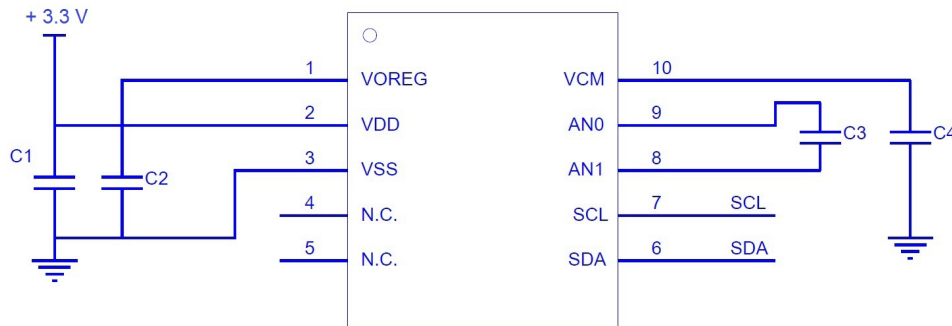
Note: N.C. pins must be left floating



Unit: mm  
Contact Posifa for sensor CAD model

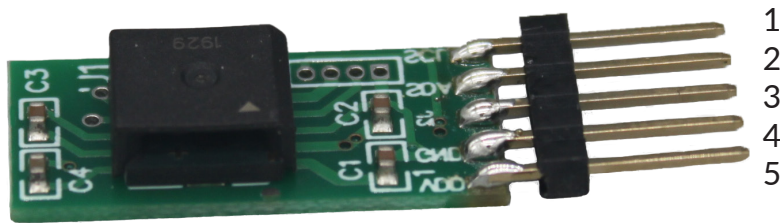


### APPLICATION CIRCUIT



Notes:  
1. C1, C2 & C3 are 0.1uF, C4 is 1uF

## EVALUATION BOARD



1	SCL
2	SDA
3	N/C
4	GND
5	VDD (3.3V)

## ORDERING INFORMATION

PART NUMBER	SPECIFICATIONS
PAV3005D	7 m/sec, I <sup>2</sup> C, non-linear, SMD
PAV3015D	15 m/sec, I <sup>2</sup> C, non-linear, SMD
PAV3000EVB	Evaluation board based on PAV3015D

Please contact Posifa or your local distributor to place an order.