posifa TECHNOLOGIES | PMT PRECISION MEASUREMENT TECHNOLOGIES
Technical Center and Distribution Partner

PAV3000 Series

AIR VELOCITY SENSOR

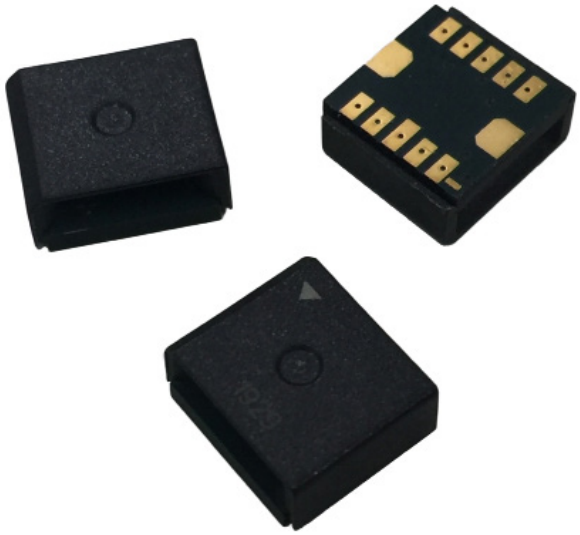
Precision Measurement Technologies | www.pmt-fl.com | sales@pmt-fl.com | 727-532-6144

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

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SPECIFICATIONS

Test Conditions: Vin=3.3±0.01VDC, Ta=25°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	
Null Voltage (V), ±5%	0.5			VDC	
Null Output Count, ±5%	409			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

Air Speed (m/s)	Output (count)
y	x

y = a + b*x + c*x^2

	PAV3005	PAV3015
a	-3.18E-01	1.00E-01
b	8.47E-04	5.06E-05
c	2.52E-07	1.00E-06

PAV3005

Output (count)	Airspeed (m/s)
409	0.00
1160	1.00
1785	2.00
2320	3.00
2785	4.00
3210	5.00
3600	6.00
3965	7.00

PAV3015

Output (count)	Airspeed (m/s)
409	0.00
1355	2.00
1950	4.00
2404	6.00
2785	8.00
3121	10.00
3425	12.00
3703	14.00
3835	15.00

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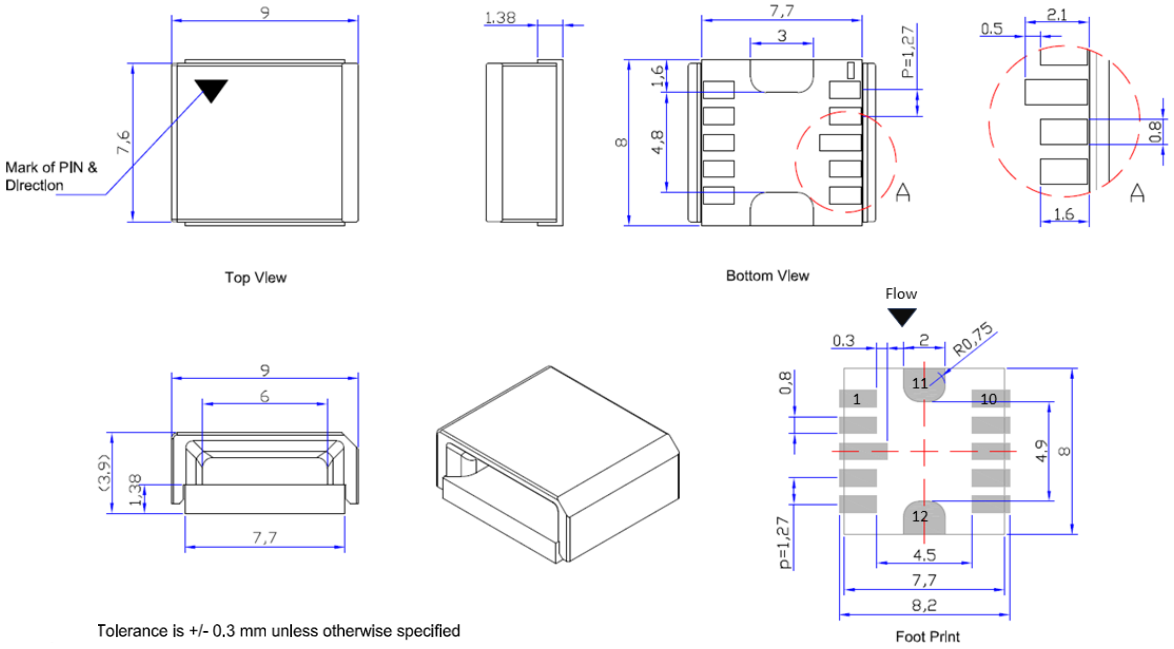
PACKAGE DIMENSIONS

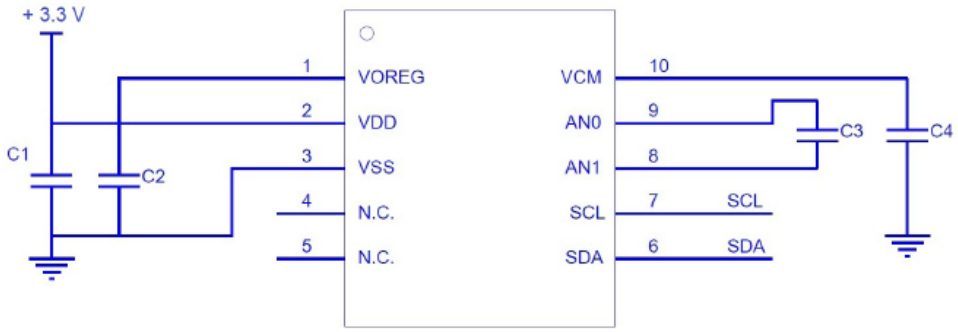
Pad	Description
1	V_{OREG}
2	V_{DD}
3	V_{SS}
4	N.C.
5	N.C.
6	SDA
7	SCL
8	AN1
9	AN0
10	V_{CM}
11	GND
12	GND

Note: N.C. pins must be left floating



Tolerance is +/- 0.3 mm unless otherwise specified

APPLICATION CIRCUIT



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

ORDERING INFORMATION

PART NUMBER	SPECIFICATIONS
PAV3005D	7 m/sec, I^2C, non-linear, SMD
PAV3015D	15 m/sec, I^2C, non-linear, SMD

Please contact Precision Measurement Technologies for technical support, sample requests, pricing and ordering information: call 752-532-6144

CUSTOMIZATION OPTIONS

If the standard product described in this datasheet does not completely meet your needs, please contact Posifa Technologies to discuss other options. Help us understand your application and sensor requirements and we can work together to find the best overall solution.

Technical Center and Distribution Partner:

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Experienced Engineers and FREE Technical Assistance

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