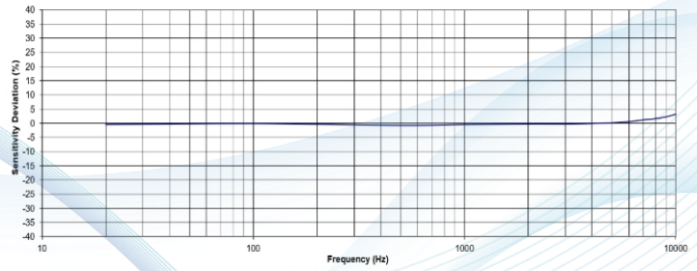




G45AS is an IEPE embedded accelerometer permitting simultaneous shock and vibration measurements. G45AS features an annular shear ceramic crystal which exhibits excellent output stability over time. The accelerometer incorporates an internal circuit in a two-wire IEPE system which transmits its low impedance voltage output through the same cable that supplies the constant current power. Signal ground is connected to the outer case of the unit. Isolated mounting washer or housing are available. Polarity inversion protection for the amplify circuit is inherent in the circuit design. The stainless-steel construction provides a lightweight hermetic housing. TO-5 three pins configuration are convenient for structure assembly and electrical connection. Compact columnar configuration is fit with most of the impact testing device. G45AS provides wide frequency response, which is ideal for dynamic vibration and shock measurement especially for lightweight structures.

**Features:**

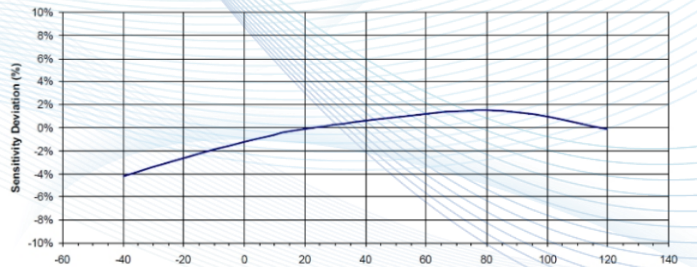
- Miniature size
- TO-5 connector pin
- Wide temperature range
- Wide frequency response
- Adhesive mounting
- Annular shear mode



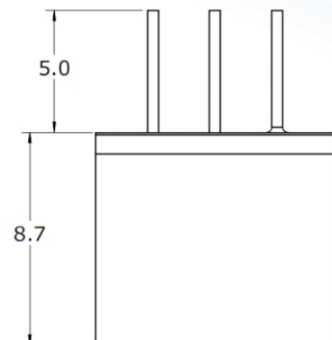
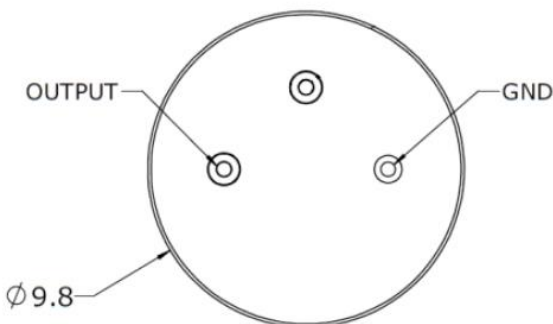
Typical Frequency Response

**Application:**

- Vibration testing
- Machine health monitoring
- Embedded device
- Industrial IoT
- Wireless device



Typical Temperature Response



## Specification:

Dynamic performance	Unit				
Measurement Range	G	50	100	500	1000
Sensitivity $\pm 10\%$	mV/g	100	50	10	5
Frequency Range $\pm 5\%$	Hz	1~7000			
Frequency Range $\pm 3\text{dB}$	Hz	0.5 ~ 20000			
Resonant Frequency	kHz	38			
Transverse Sensitivity	%	<5			
Non-Linearity	% FSO	$\pm 1$			
Shock Limit	g pk	$\pm 5000$			
Environmental parameters					
Operating and Storage Temperature	$^{\circ}\text{C}$	-50~125 $^{\circ}\text{C}$			
Bias Voltage (Room Temp.)	Vdc	8~12			
Bias Voltage (-50~125) $^{\circ}\text{C}$	Vdc	6~13			
Electrical characteristics					
Output Impedance	$\Omega$	< 100			
Full Scale Output Voltage <sub>ea</sub>	V	$\pm 5$			
Insulation Resistance	M $\Omega$	> 100			
Supply Voltage	Vdc	18~30			
Supply Current	mA	2~10			
Physica					
Sensing Element	Piezo Ceramic				
Sensing Geometry	Shear				
Housing Material	316L Stainless Steel				
Ground insulation	By insulation washer				
Grounding	Signal return connected to case				
随机配件					
HS024	Insulation washer				Included
AM003	3 channels IEPE signal conditioner				Optional
AM004	Portable vibration analyzer				Optional

## Circuit Schematic for IEPE Sensors:

IEPE type sensors require a constant current source for proper operation. Various methods can be used to provide constant current. The circuit below is recommended to provide 4 mA constant current at room temperature for powering IEPE sensors. The capacitor at “Sensor +” AC coupled the output signal, blocking the DC voltage. The current temperature coefficient is about 0.25%/deg C.

T1 and T2 can be most of PNP type transistor, such as 3906, 9012 etc.

R1: 165 ohm, sets the constant current level, Decreasing the value will increase the current, and vice versa.

R2: 51k ohm typical. Precision is not critical.

### Ordering information:

**G45AS**

**GGGG**

**ZZZ**

Range

0050=50g

0100=100g

0500=500g

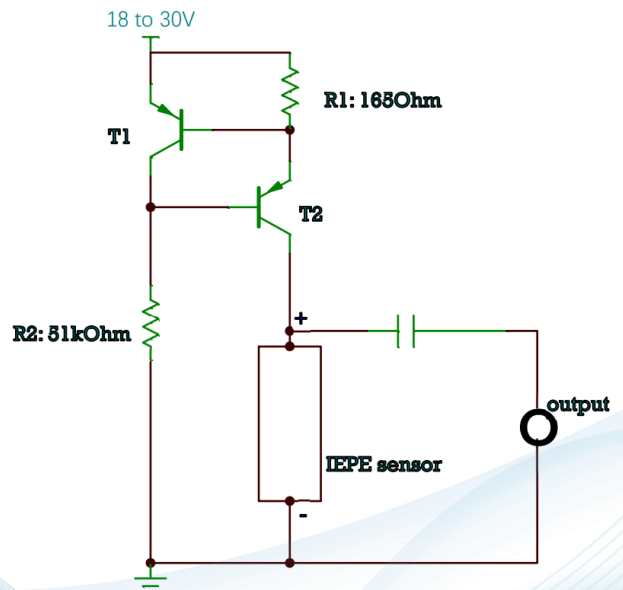
1000=1000g

A=IEPE

E.G:

G45AS-50

Model G45AS, 0050, Connector, No Options



The data contained in this document is intended for the use of technical trainers only.

The customer's technical department is responsible for assessing the suitability of the product for the intended application and the completeness of the product information given in this document in relation to such application.

For further information on products, technology, terms and conditions of delivery and prices, please contact our nearest office ([www.senstechxyz.com](http://www.senstechxyz.com)).

中国大陆  
西安鑫源宇通电子科技有限公司  
陕西省西安市高新区锦业路70号航  
天恒星园区1号厂房一层南  
Tel: 400-780-9688  
[sales@senstechxyz.com](mailto:sales@senstechxyz.com)

中国香港  
深大实业有限公司  
香港新界沙田安平街6号新贸易  
中心B座13楼06室  
Tel: +86 17792099916  
[info@caltropinstruments.com](mailto:info@caltropinstruments.com)

新加坡  
深大实业有限公司  
香港新界沙田安平街6号新贸易  
中心B座13楼06室  
Tel: +86 17792099919  
[info@senstechxyz.com](mailto:info@senstechxyz.com)

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西安鑫源宇通电子科技有限公司 | 400-780-9688  
鑫源宇通——专业的传感和系统解决方案供应商

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