

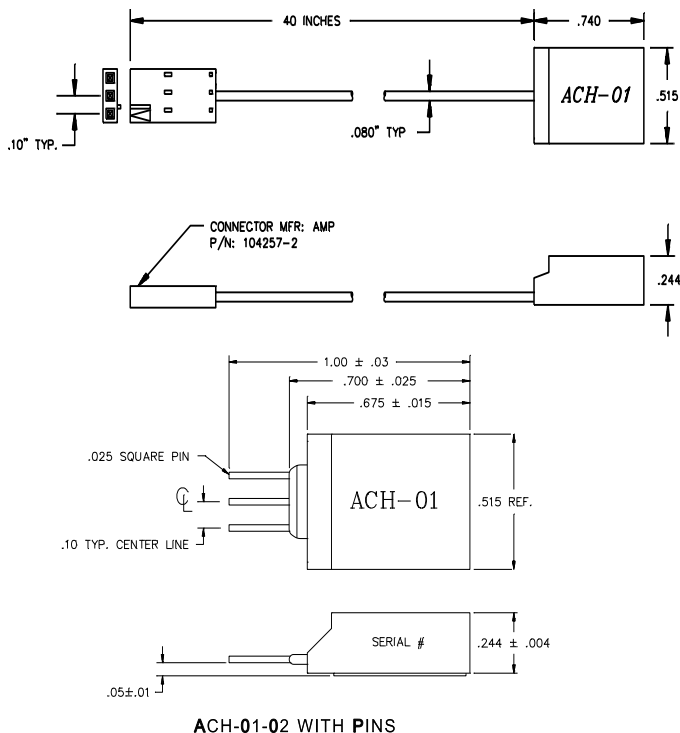
# ACCELEROMETER ACH-01

## SPECIFICATIONS

- Piezoelectric Accelerometer
- Wide Bandwidth; AC Coupled
- Ultra Low Power
- High G Ranges

The **ACH-01** is an inexpensive, general purpose accelerometer with outstanding performance characteristics. The use of piezoelectric polymer film in the ACH-01 provides many cost/performance advantages that allow it to be used in a wide range of applications where the use of traditional accelerometer technology is impractical. It is specifically designed for high volume applications which require the permanent installation of an accelerometer.

## dimensions

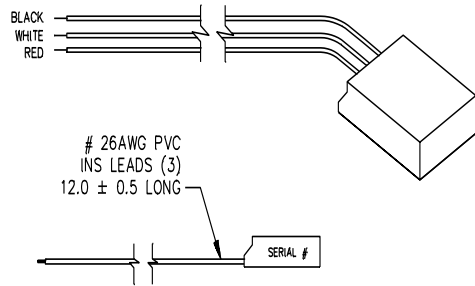


## FEATURES

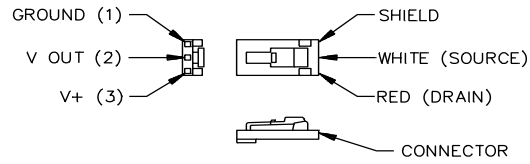
- Wide Frequency Response
- Excellent Phase Response
- Small Temperature Dependence
- Wide Supply Voltage Range
- Excellent Linearity
- Very High Resonant Frequency
- Wide Dynamic Range
- Low Transverse Sensitivity
- Wide Temperature Range
- Low Impedance Output
- Ultra Low Power

## APPLICATIONS

- Machine Health Monitoring
- Model Analysis
- Automotive Sensors
- Appliances
- Feedback Control Systems



ACH-01-04 WITH WIRES



CONNECTOR DETAIL

## PERFORMANCE SPECIFICATIONS

PERFORMANCE (T=25EC)	Symbol	Min	Typ	Max	Units
Sensitivity	$M_o$	7	9	11	mV/g
Lower Frequency Limit (1)	$f_l$	--	2	5	Hz
Upper Frequency Limit(1)	$f_u$	10	20	--	kHz
Equivalent Noise Floor					
10Hz		--	130	--	$\mu g/\sqrt{Hz}$
100Hz		--	20	--	
1kHz		--	6	--	
Dynamic Range	--	$\nabla 150$	--	--	g
Linearity	--	--	0.1	1.0	%
Transverse Sensitivity	$M_t$	--	2.0	5	%
Resonant Frequency	$f_o$	--	35	--	kHz
Phase Deviation ( $\nabla 5E$ Limit)(6)	$\theta$	10	--	10	kHz
Drain Voltage (6)	V+	3	--	40	Volts
Supply Current (6)	$I_{dss}$	30	--	90	$\mu A$
Output Impedance (6)	--	--	20	--	k $\Omega$

### ENVIRONMENTAL CHARACTERISTICS

Operating Temperature (2)	$T_o$	-40	--	85	EC
Storage Temperature	$T_s$	-40	--	85	EC
Maximum Shock Level	$A_m$	1000	--	--	g
Base Strain Sensitivity (3)	--	--	0.3	--	$g/\mu\epsilon$
Transient Temp Sensitivity (4)	--	--	0.35	--	$g/EC$

### PHYSICAL CHARACTERISTICS

Weight (5) Cable	W	--	8	--	grams
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(1)  $\nabla 3$  dB limit

(2)  $\nabla 2$  dB from nominal  $M_o$  at 1kHz

(3) @  $250\mu\epsilon$  in base plane

(4) @ 3Hz LLF

(5) Includes 40" cable and connector

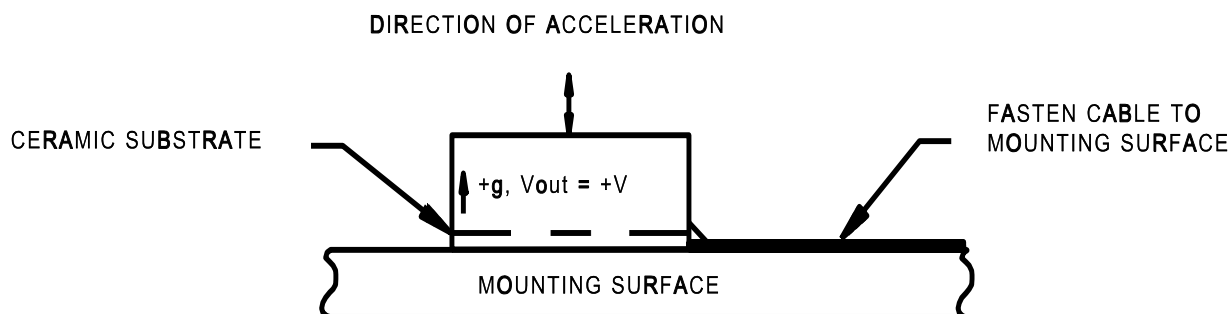
(6) Typical Value

Mounting methods play a critical role in determining the overall performance of any accelerometer. The ACH-01 is no exception. An improperly mounted accelerometer can give erroneous results. We recommend using an Adhesive Mounting Method.

The surface should be flat. The area where the ACH-01 is to be mounted should be thoroughly cleaned to remove any dirt or oil present on the surface. Use a quick setting, viscous methyl cyanoacrylate adhesive such as Loctite's Black Max™ or any epoxy such as Devcon's 5-Minute epoxy. Apply the adhesive sparingly to one surface following the manufacturer's directions. Apply pressure and allow the adhesive to set. Soft adhesives, such as double-sided tape or pressure sensitive adhesives, should not be used since they can adversely affect the ACH-01's performance. Cable should be adhered to the surface.

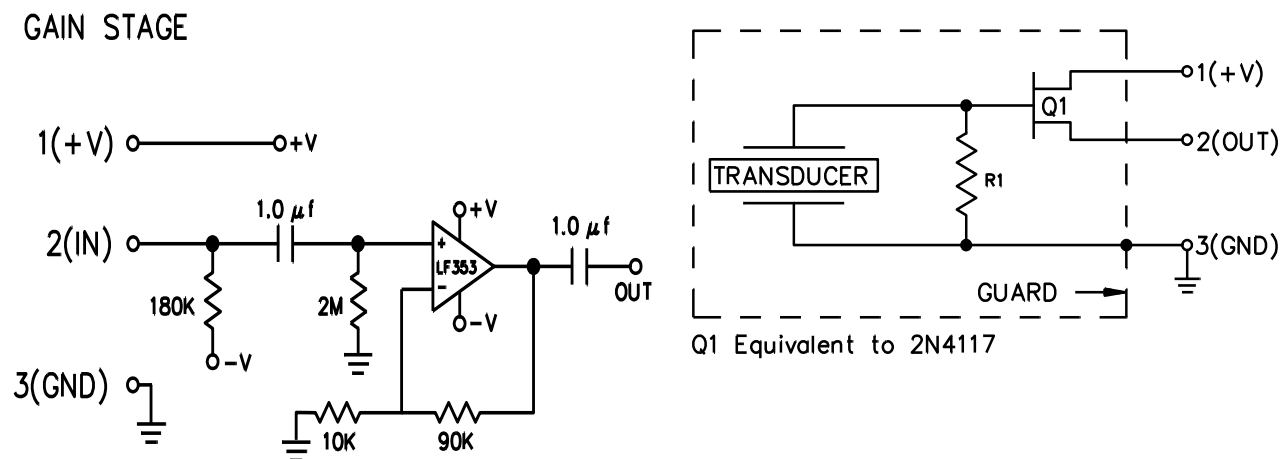
There is an interface amplifier available to simplify connection to the ACH-01, the IB-ACH-01. Please see the appropriate data sheet.

In an effort to keep the product cost low, the ACH-01 uses a ceramic substrate as the mounting base. Because of this, the ACH-01 is susceptible to base strain and temperature transient effects. A mechanically rigid and thermally non-conductive mounting surface is highly recommended to limit these effects. MEAS application engineers are available to recommend various mounting arrangements for your specific application.



## ELECTRICAL INTERFACE CIRCUITS

The accelerometer ACH-01 accommodates various electrical interface circuits. A typical example is provided in the following figure. The ACH-01 equivalent electrical schematic is also shown.



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## ORDERING INFORMATION

Description	Interface	Model No.	Part No.
Accelerometer	Pins	ACH-01-02	0-1000985-0
	Shielded Cable	ACH-01-03	1-1001220-0
	Discrete Wires	ACH-01-04	1-1001497-0
Amplifier	Amplifier Box	IB-ACH-01	1003058

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