

**PCB PIEZOTRONICS LAUNCHES NEW MEMS TRIAX SHOCK****ACCELEROMETERS**

PCB Piezotronics, a world leader in vibration, acoustic, pressure, force and torque sensors, has launched a new MEMS triaxial accelerometer designed for use in a wide range of shock applications.

The new PCB series 3503A1020KG contains three single-crystal silicon MEMS (**M**icro **E**lectro **M**echanical **S**ystems) sensing elements in a single titanium package that provides a drop-in triaxial upgrade for competitive single axis products. The units have an integral cable supplied with pigtailed to which optional connectors can be added. Full-bridge signal conditioning is required and can be supplied by the PCB Piezotronics model 482C27 for example. The new triaxial accelerometer is also compatible with existing signal conditioning systems.

Features include mechanical over-range stops to ensure durability, damping of 5% (Q=10) to reduce resonance amplification, negligible zero-shift compared to piezoelectric shock sensors, low power consumption and short warm-up time. The new accelerometers are based on deep reactive ion etched (DRIE) wafers and elements micro-machined by PCB Piezotronics in-house from extremely strong single crystal silicon. The result is a device offering a greatly improved transverse sensitivity and amplitude linearity when compared with conventional piezoelectric PCB's ICP® 350 series devices.

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Specifications include a measurement range of 20,000g (60,000g version to follow), sensitivity of 0.01mV/g at 10V DC supply, excitation (max) 15V DC, settling time of 0.01s, overload limit (shock)  $\pm 60,000g$ , nominal input resistance of  $6000\Omega$ , base strain sensitivity 0.25mV, thermal zero-shift of  $\pm 10mV$ , transverse sensitivity  $\leq 3\%$ , non-linearity of  $\pm 1\%$ , response DC to 10kHz ( $\pm 1dB$ ) and resonant frequency  $> 60kHz$ . Operating temperature range is  $-54$  to  $+121^{\circ}C$ .

Applications include consumer electronics drop testing, pile drivers (e.g. piles for seaside piers), down-hole oil exploration, shot counting for rifles/handguns, jack hammer manufacturers, sporting good manufacturers, penetration tests, weapons data recorders, launch characteristics, explosive environments, armour piercing, blast loading of structures and blast survivability.

#### **About PCB Piezotronics**

PCB Piezotronics is a world leader in the manufacture of piezoelectric quartz sensors, accelerometers and associated electronics for the measurement of dynamic pressure, force and vibration. The company's ICP<sup>®</sup> sensors incorporating microelectronic signal conditioning circuitry within the sensor housing are an industry standard and their widespread popularity has made PCB Piezotronics an enduring success worldwide. The company's mission statement – Total Customer Satisfaction – is not only supported by products that offer outstanding value but also by an industry exclusive Lifetime Warranty Plus.

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