

Model Number <b>3503A1020KG</b>	<b>TRIAxIAL HIGH AMPLITUDE MEMS SHOCK ACCELEROMETER</b>	Revision: D ECN #: 47207
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	<u>ENGLISH</u>	<u>SI</u>	
<b>Performance</b>			
Sensitivity(± 50 %)(at 10 VDC excitation)	0.010 mV/g	0.001 mV/(m/s <sup>2</sup> )	[2]
Sensitivity	0.001 mV/V/g	0.0001 mV/V/(m/s <sup>2</sup> )	[7]
Measurement Range	± 0 to 20,000 g	± 0 to 196,100 m/s <sup>2</sup> pk	
Frequency Range(± 1 dB)	0 to 10,000 Hz	0 to 10,000 Hz	
Resonant Frequency	>60 kHz	>60 kHz	
Damping Ratio	5 % Critical	5 % Critical	[1]
Non-Linearity(per 10,000 g (98,100 m/s <sup>2</sup> ))	± 1 %	± 1 %	
Transverse Sensitivity	≤ 3 %	≤ 3 %	
<b>Environmental</b>			
Overload Limit(Shock)	± 60,000 g pk	± 588,000 m/s <sup>2</sup> pk	[5][4]
Overload Limit(Mechanical Stops)	≥ 30 kg	≥ 294,200 m/s <sup>2</sup> pk	
Temperature Range(Operating)	-65 to 250 °F	-54 to 121 °C	
Temperature Coefficient of Sensitivity	-0.11 %/°F	-0.20 %/°C	[1]
Zero g Offset Temperature Shift	± 10 mV	± 10 mV	[6]
Base Strain Sensitivity	0.10 g/με	0.98 (m/s <sup>2</sup> )/με	[1]
<b>Electrical</b>			
Excitation Voltage(Maximum)	15.0 VDC	15.0 VDC	
Current Consumption	<12 mA	<12 mA	
Input Resistance(± 700 Ohm)	2000 Ohm	2000 Ohm	[1][2]
Output Resistance(± 2000 Ohm)	6000 Ohm	6000 Ohm	[1][2]
Offset Voltage	± 40 mVDC	± 40 mVDC	[2]
Settling Time	0.01 sec	0.01 sec	[3]
Electrical Isolation(Base)	≥ 10 <sup>8</sup> Ohm	≥ 10 <sup>8</sup> Ohm	[4]
<b>Physical</b>			
Sensing Element	Piezoresistive MEMS	Piezoresistive MEMS	
Sensing Geometry	Full Active	Full Active	
Housing Material	Titanium	Titanium	
Sealing	Epoxy	Epoxy	
Size (Height x Length x Width)	0.25 in x 0.47 in x 0.47 in	6.35 mm x 11.81 mm x 11.81 mm	
Weight(without cable)	0.1 oz	2.83 gm	[1]
Electrical Connector	Integral Cable	Integral Cable	
Electrical Connection Position	Side	Side	
Cable Type	026 8-conductor cable, shielded PTFE	026 8-conductor cable, shielded PTFE	
Cable Termination	Pigtail Ends	Pigtail Ends	
Cable Length	10 ft	3.05 m	
Mounting	Through Holes (2)	Through Holes (2)	
Mounting Torque	8 in-lb	90 N-cm	

**OPTIONAL VERSIONS**

Optional versions have identical specifications and accessories as listed for the standard model except where noted below. More than one option may be used.

**NOTES:**

[1] Typical.  
 [2] Verified with test data provided on supplied calibration certificate.  
 [3] Settling Time is the maximum time after power-up for the Offset Voltage to be within +/-2% of Measurement Range output of the final offset value. Mounting surface must be at thermal equilibrium.  
 [4] Individually tested to ensure compliance with specified value.  
 [5] Half-sine pulse duration, ≥ 20 μsec.  
 [6] -65 to +250 °F, ref. 75 °F (-54 to +121 °C, ref. 24 °C)  
 [7] Sensitivity is proportional to excitation voltage, and at other excitation values, sensitivity can be predicted from the 10VDC calibrated value with a small (<~.5%) increase in uncertainty.  
 [8] See PCB Declaration of Conformance PS153 for details.

**SUPPLIED ACCESSORIES:**

Model 081A114 MOUNTING SCREW AND WASHER(4-40 x 3/8" SHCS) (2)  
 Model ACS-62T Shock Pulse Calibration of triaxial piezoresistive shock accelerometer to maximum amplitude of 5k g, 10 VDC excitation (1)

Entered: LK	Engineer: NJF	Sales: WDC	Approved: NJF	Spec Number:
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All specifications are at room temperature unless otherwise specified.  
 In the interest of constant product improvement, we reserve the right to change specifications without notice.



**Phone: 716-684-0001**  
**Fax: 716-684-0987**  
**E-Mail: info@pcb.com**