MEMS Sensors: Examples of Application

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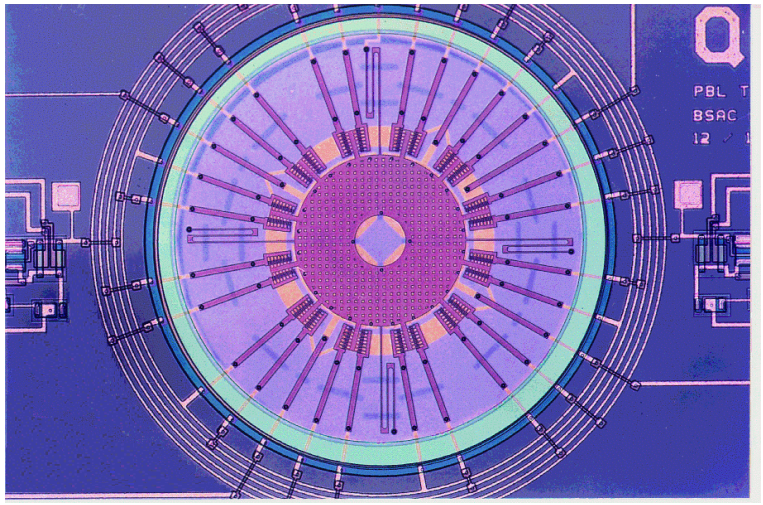

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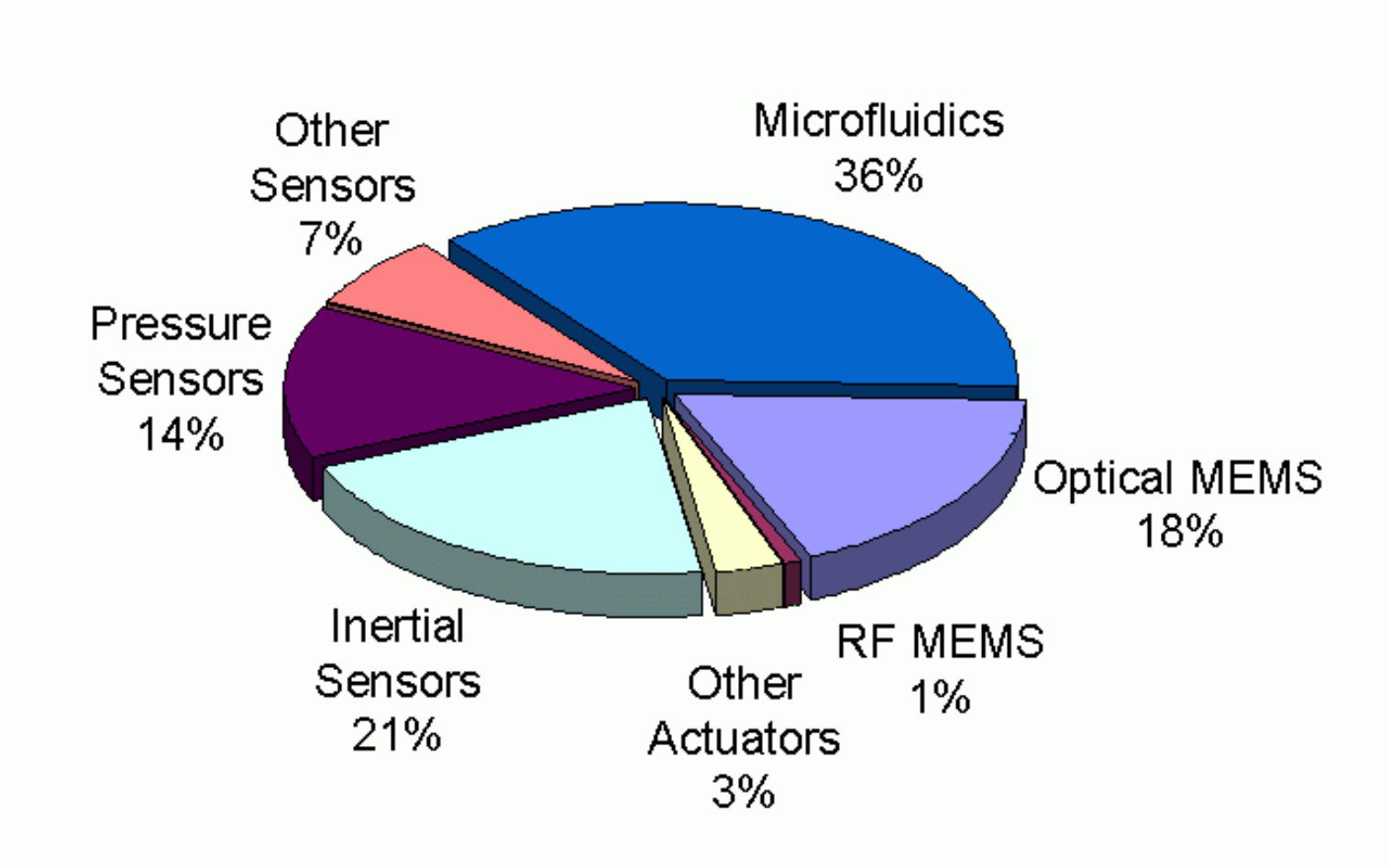
Introduction.

Industry Statistics

2002 MEMS Market Share Estimate
Source: In-Stat/MDR, 7/03



Market for Established Product Types

World Market 1996

	units (millions)	$ (millions)
HDD heads	530	4500
inkjet printheads	100	4400
heart pacemakers	0,5	1000
in vitro diagnostics	700	450
hearing aids	4	1150
pressure sensors	115	600
chemical sensors	100	300
infrared imagers	0,01	220
accelerometers	24	240
gyroscopes	6	150
magnetoresistive sensors	15	20
Totals	1595	13,033

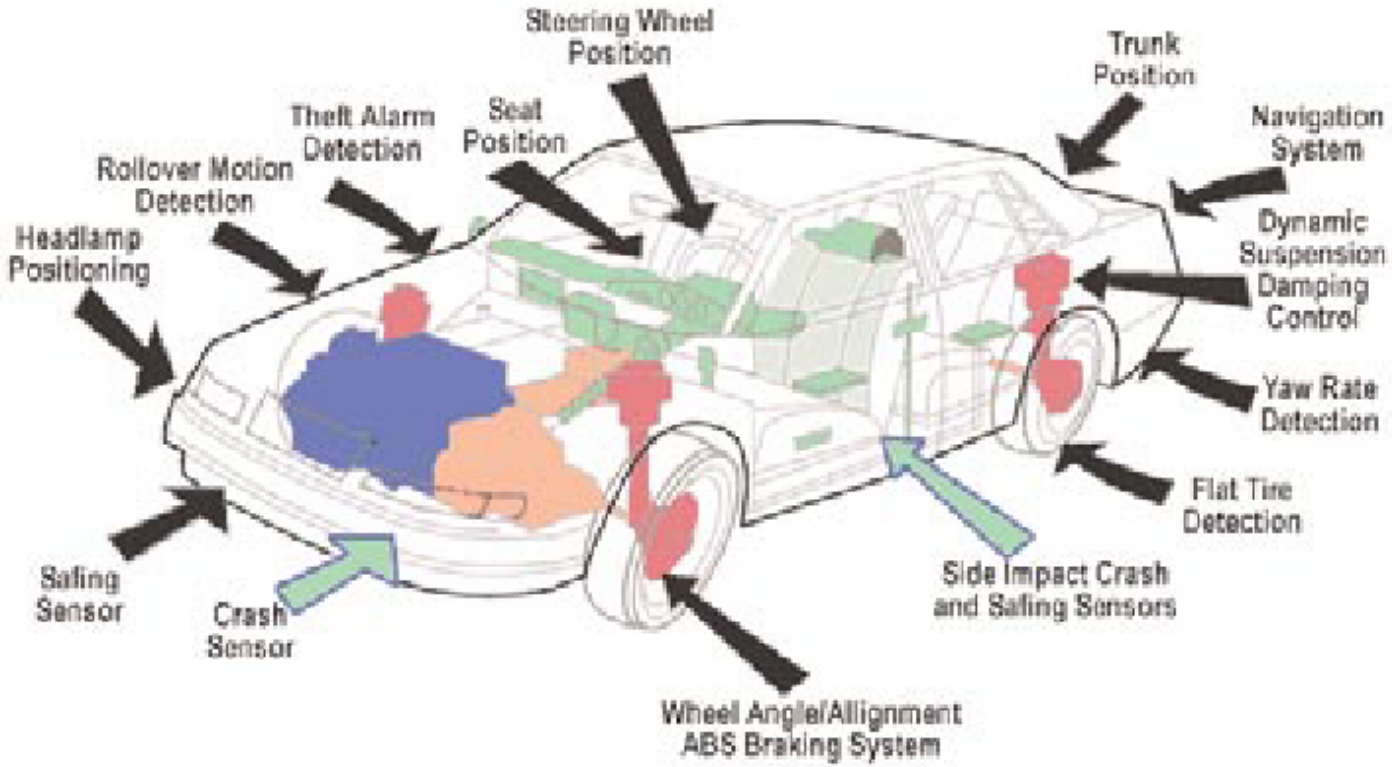
Source: NEXUS (1998)

Accelerometers

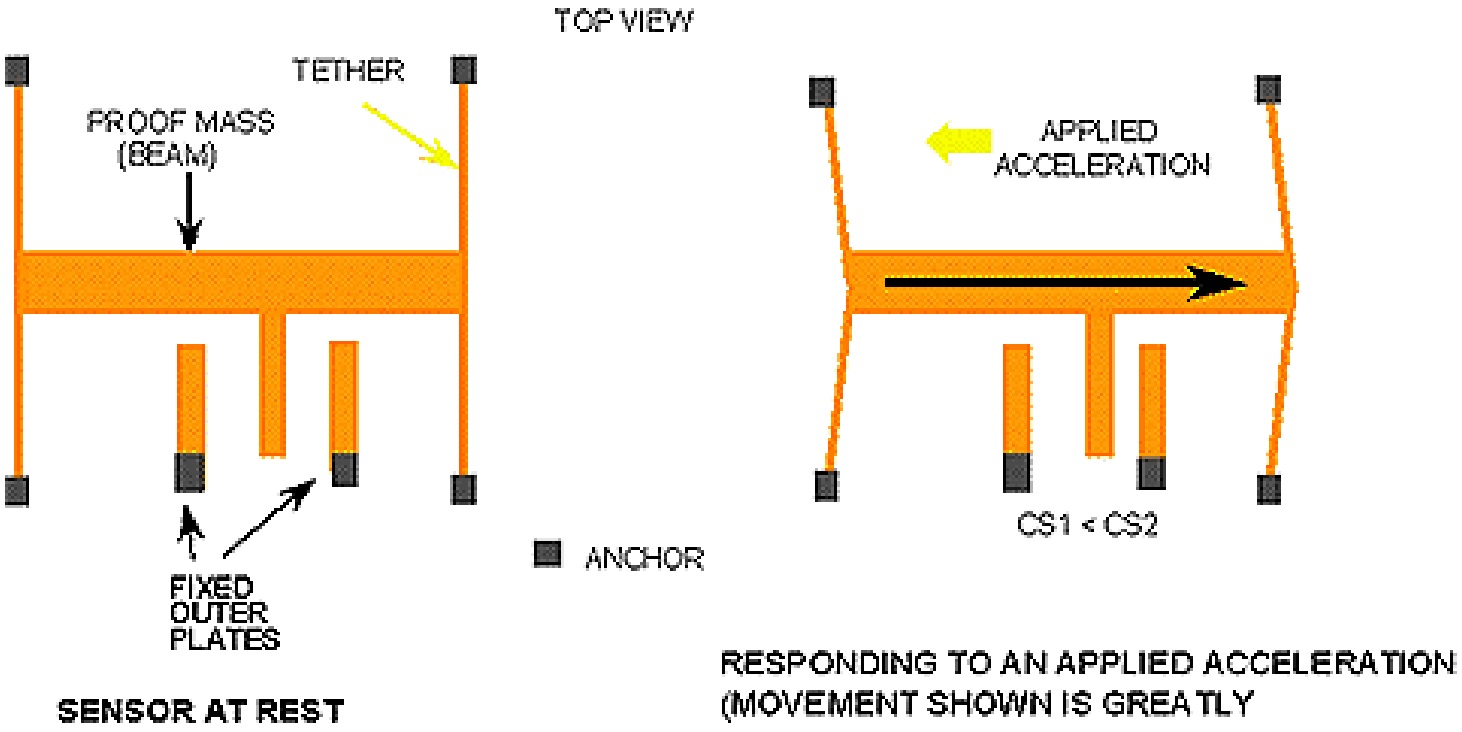
Application areas: 3 x A

- Automotive
- Aerospace
- Army

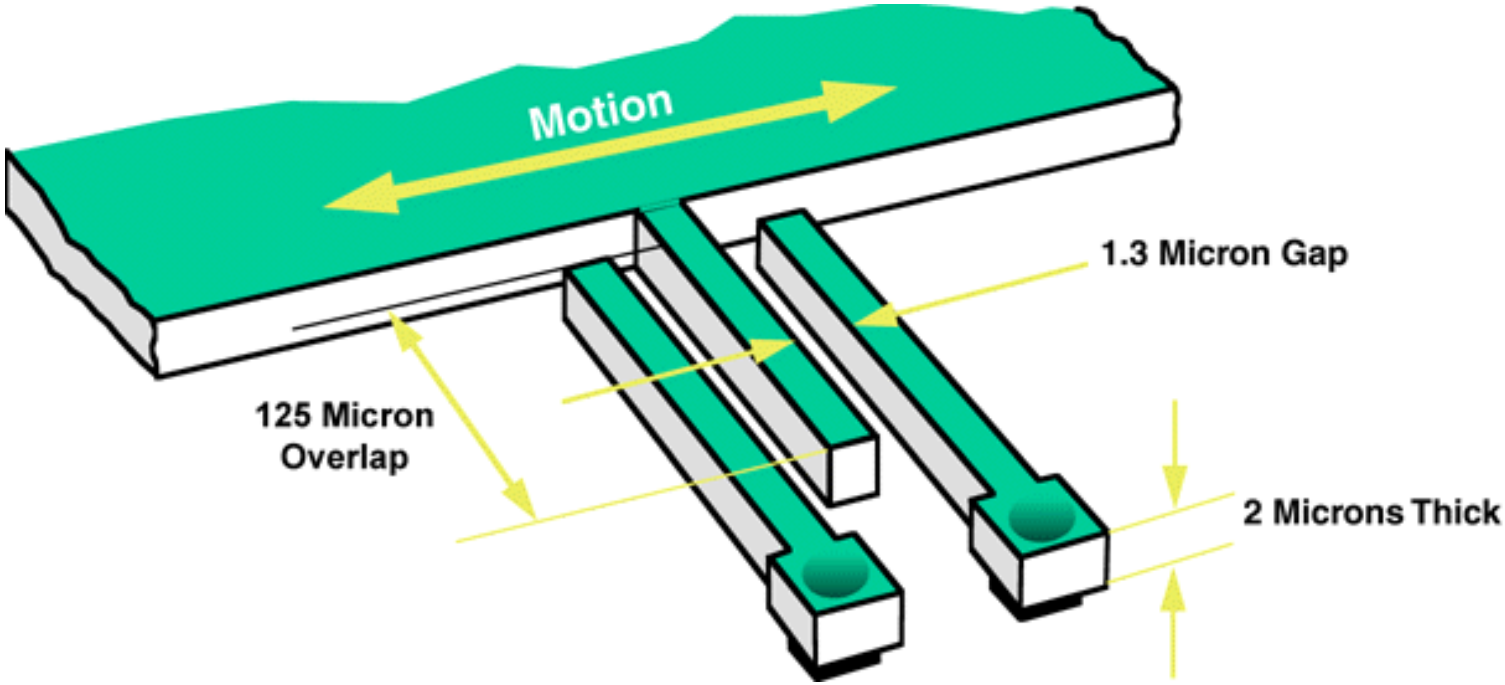
Automotive


Steering Wheel Position
Trunk Position
Theft Alarm Detection
Seat Position
Navigation System
Rollover Motion Detection
Dynamic Suspension Damping Control
Headlamp Positioning
Yaw Rate Detection
Flat Tire Detection
Safing Sensor
Crash Sensor
Side Impact Crash and Safing Sensors
Wheel Angle/Allignment ABS Braking System

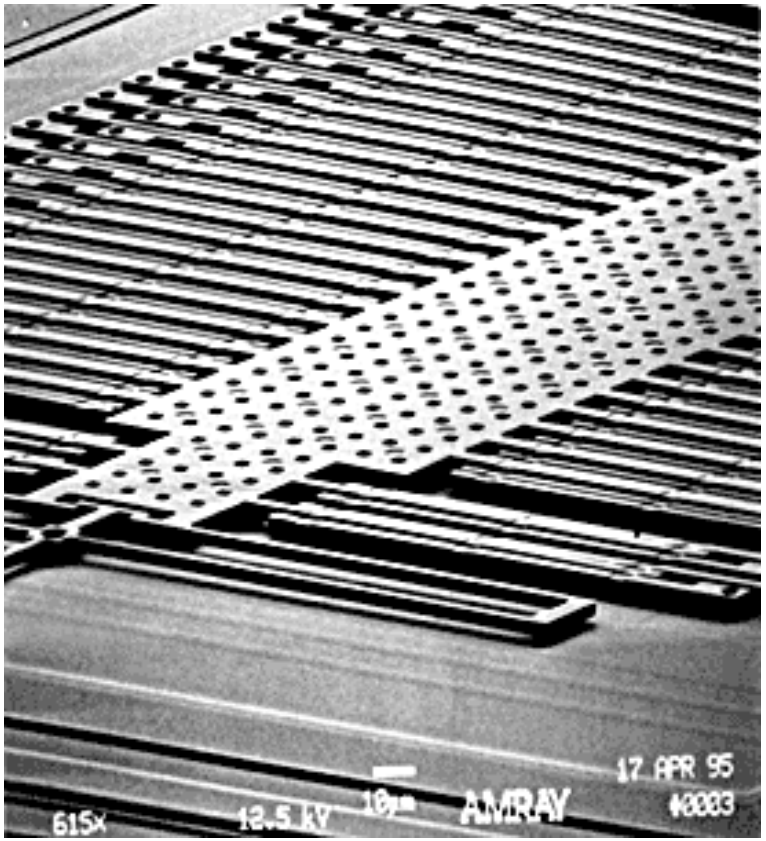
ADXL 202: Principle of operation

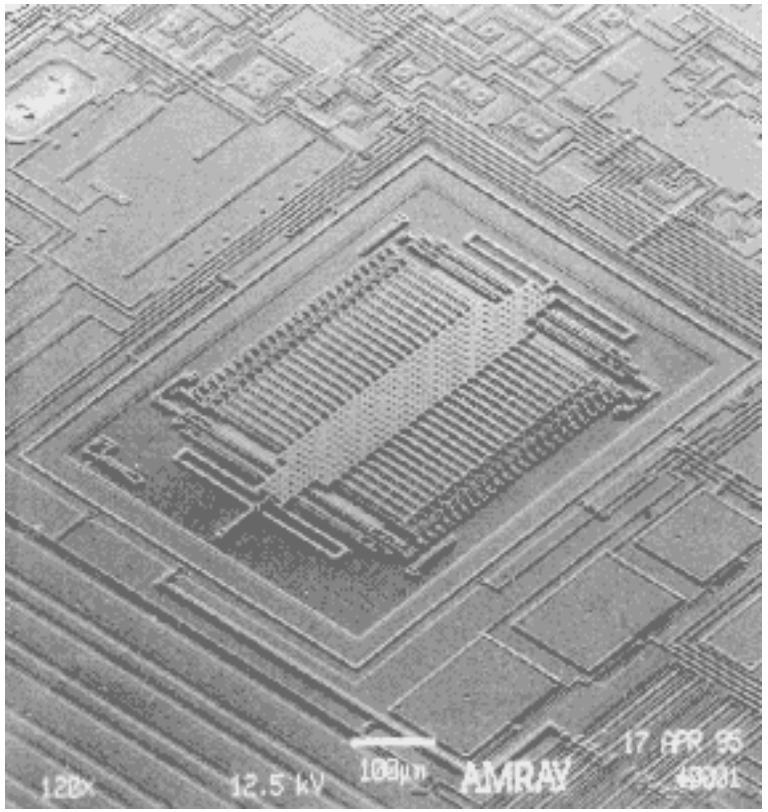


ADXL 202: Dimensions.

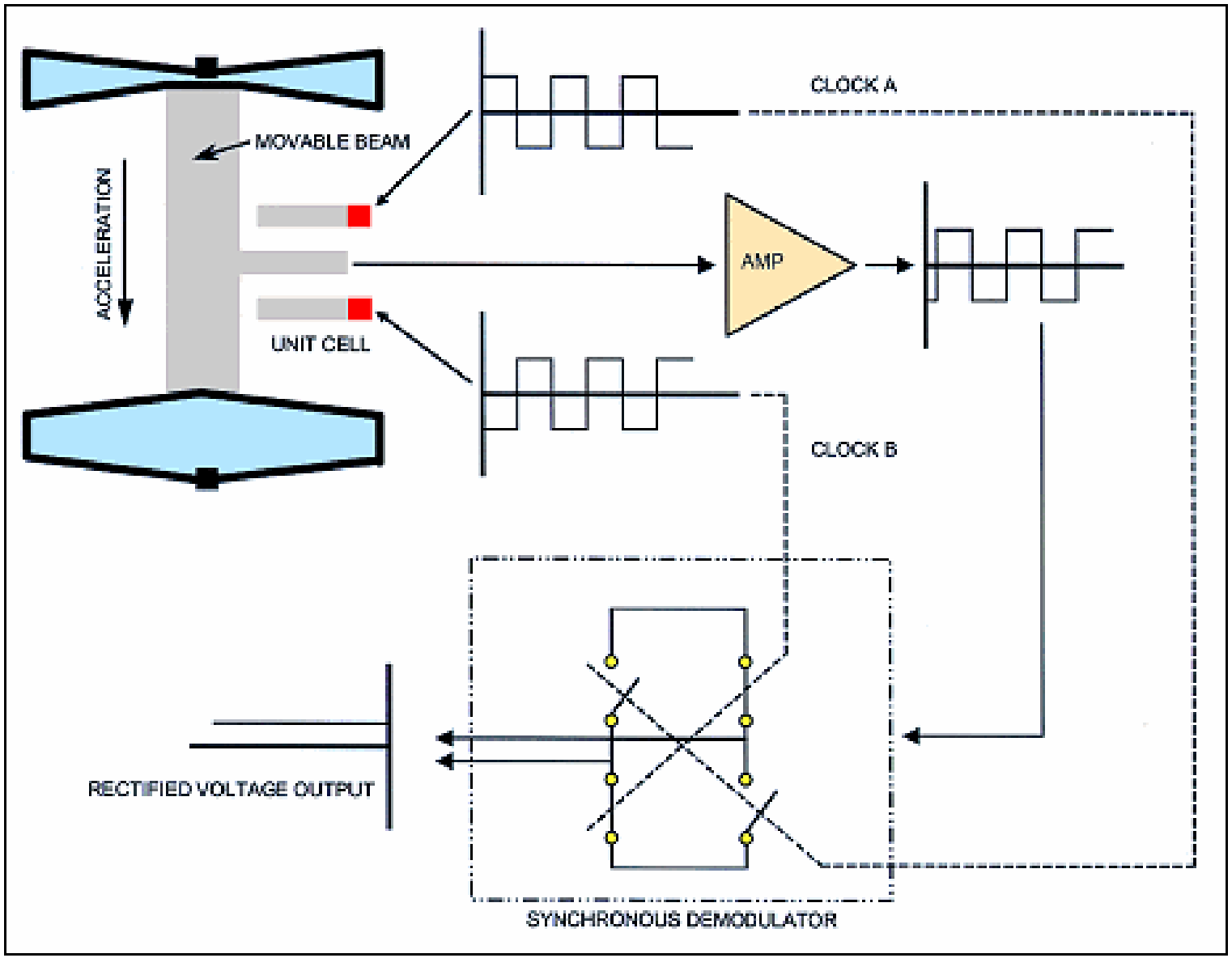


ADXL 202: SEM Photos.

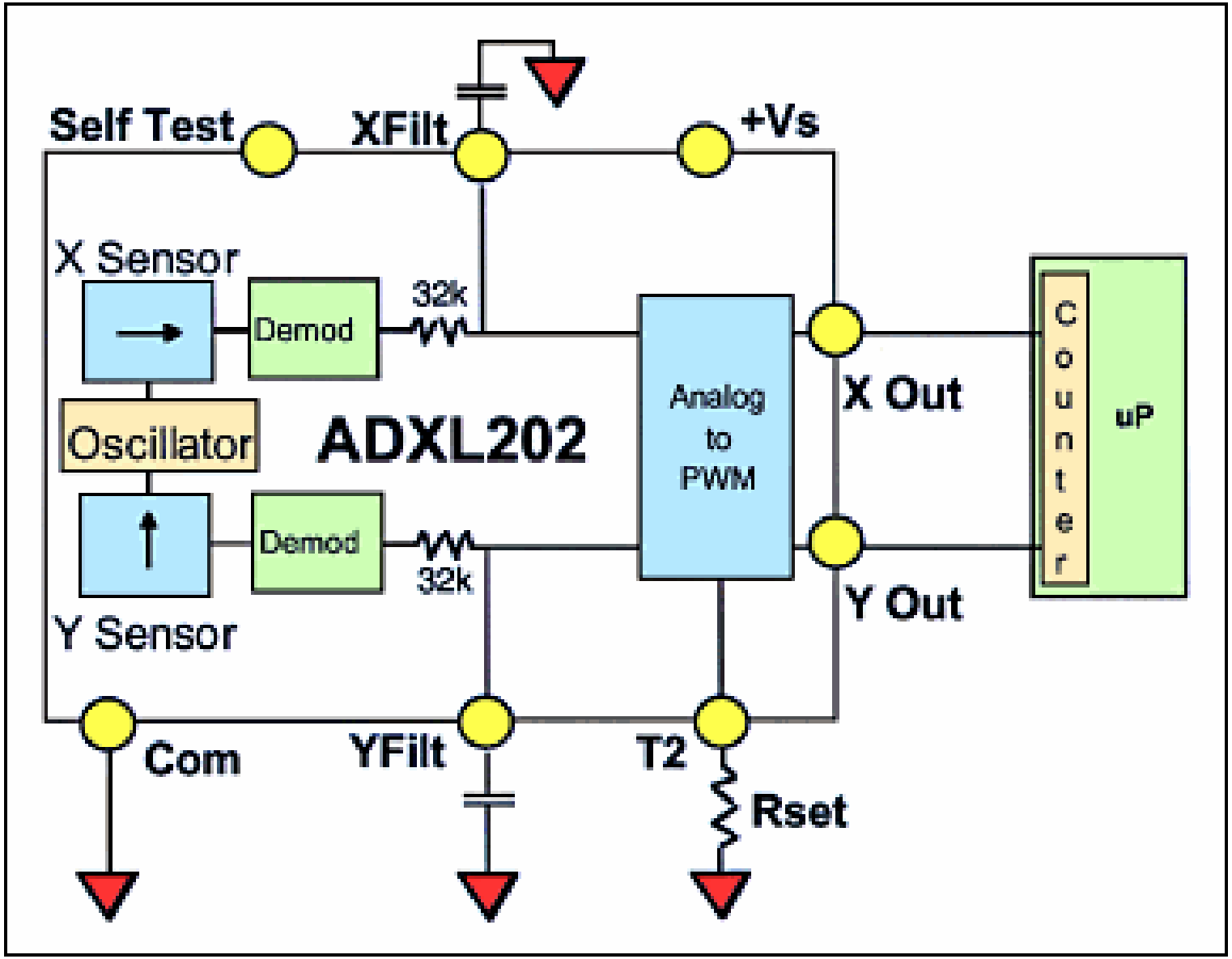




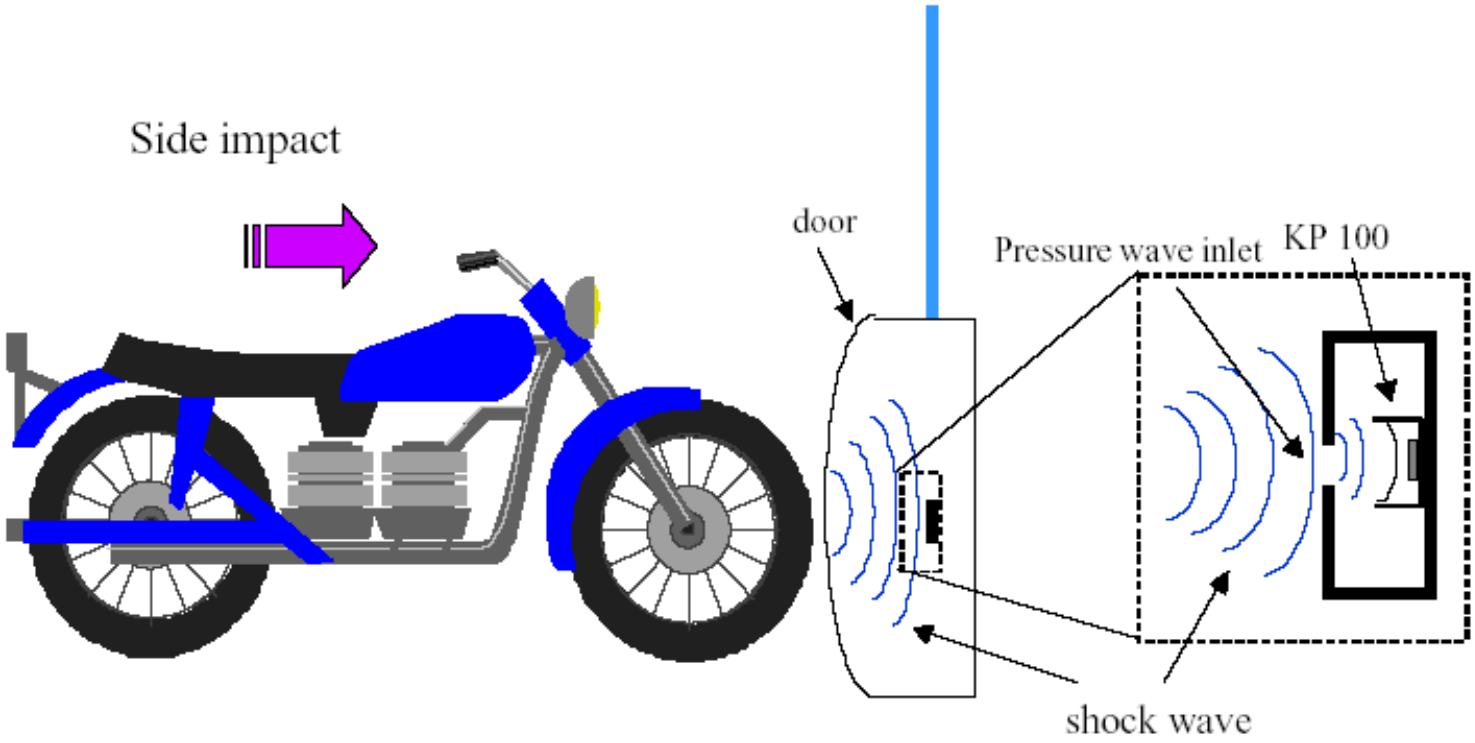
ADXL 202: Signal processing.



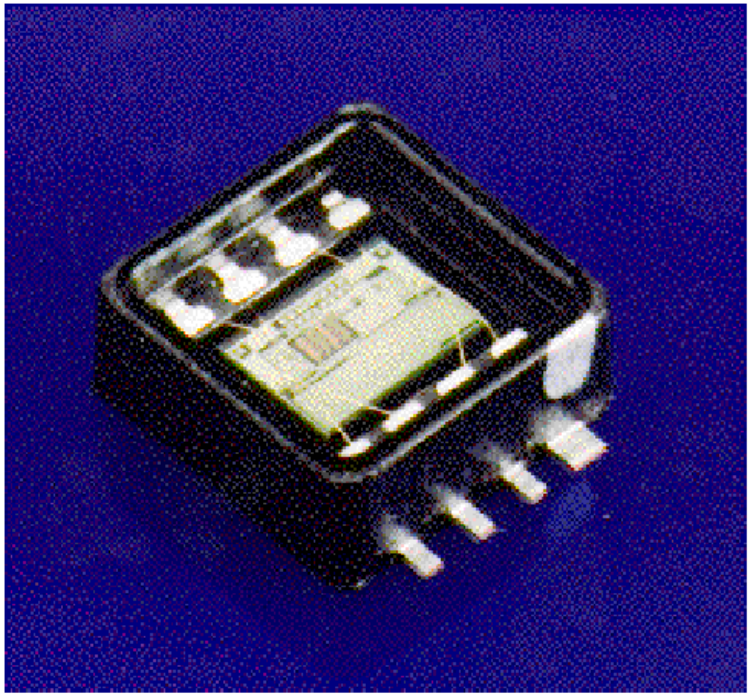
ADXL 202: Circuit diagram.



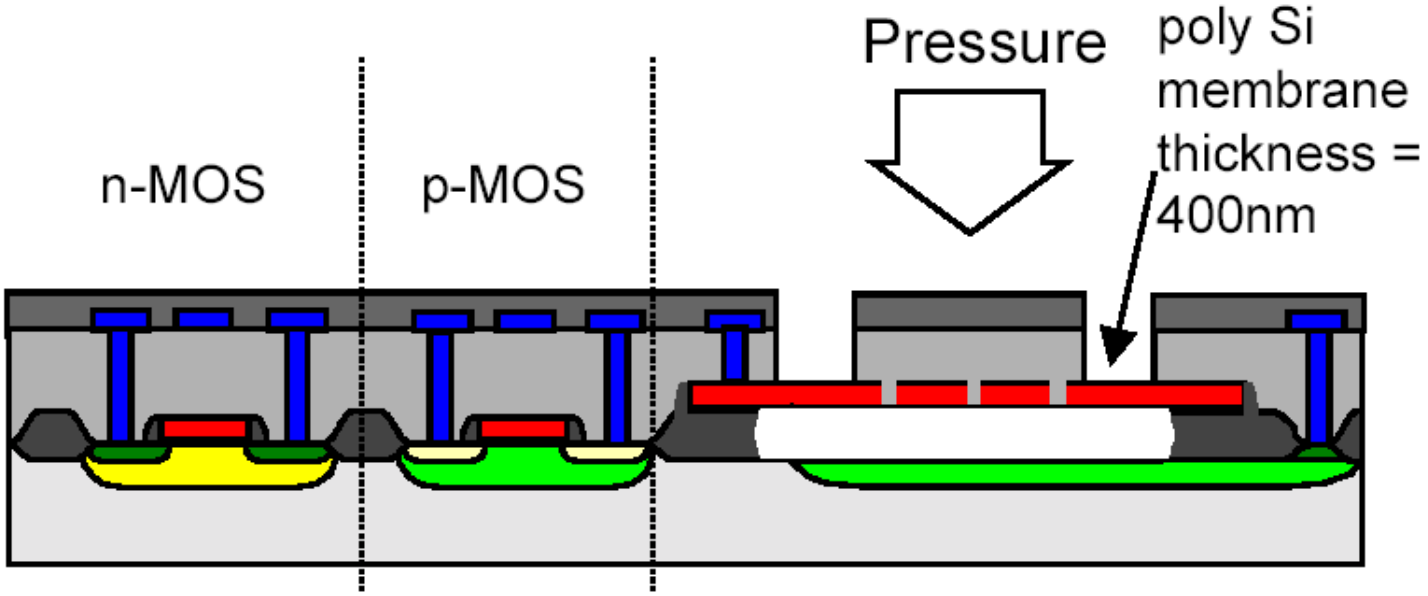
Pressure sensors



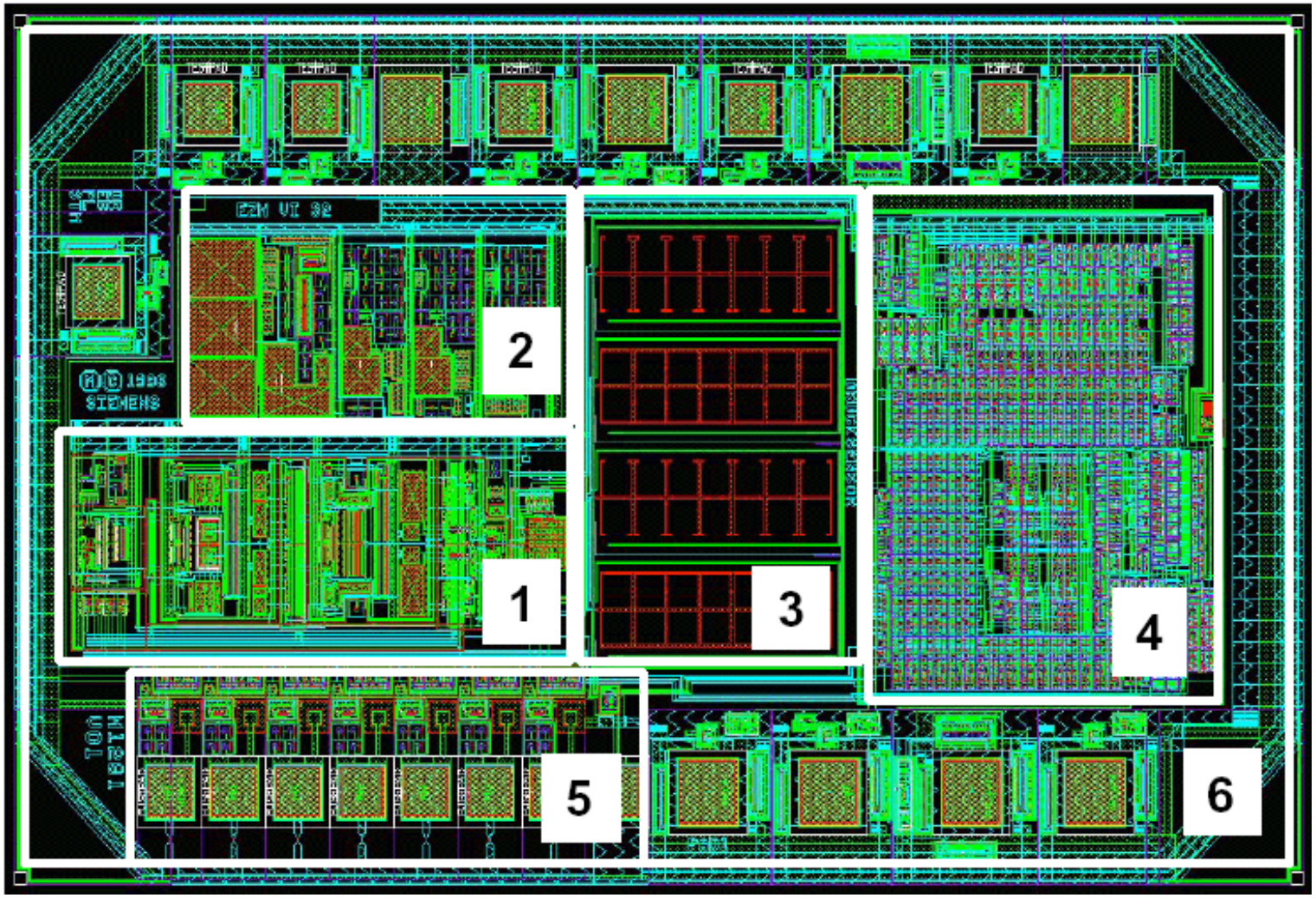
KP100 Pressure sensor



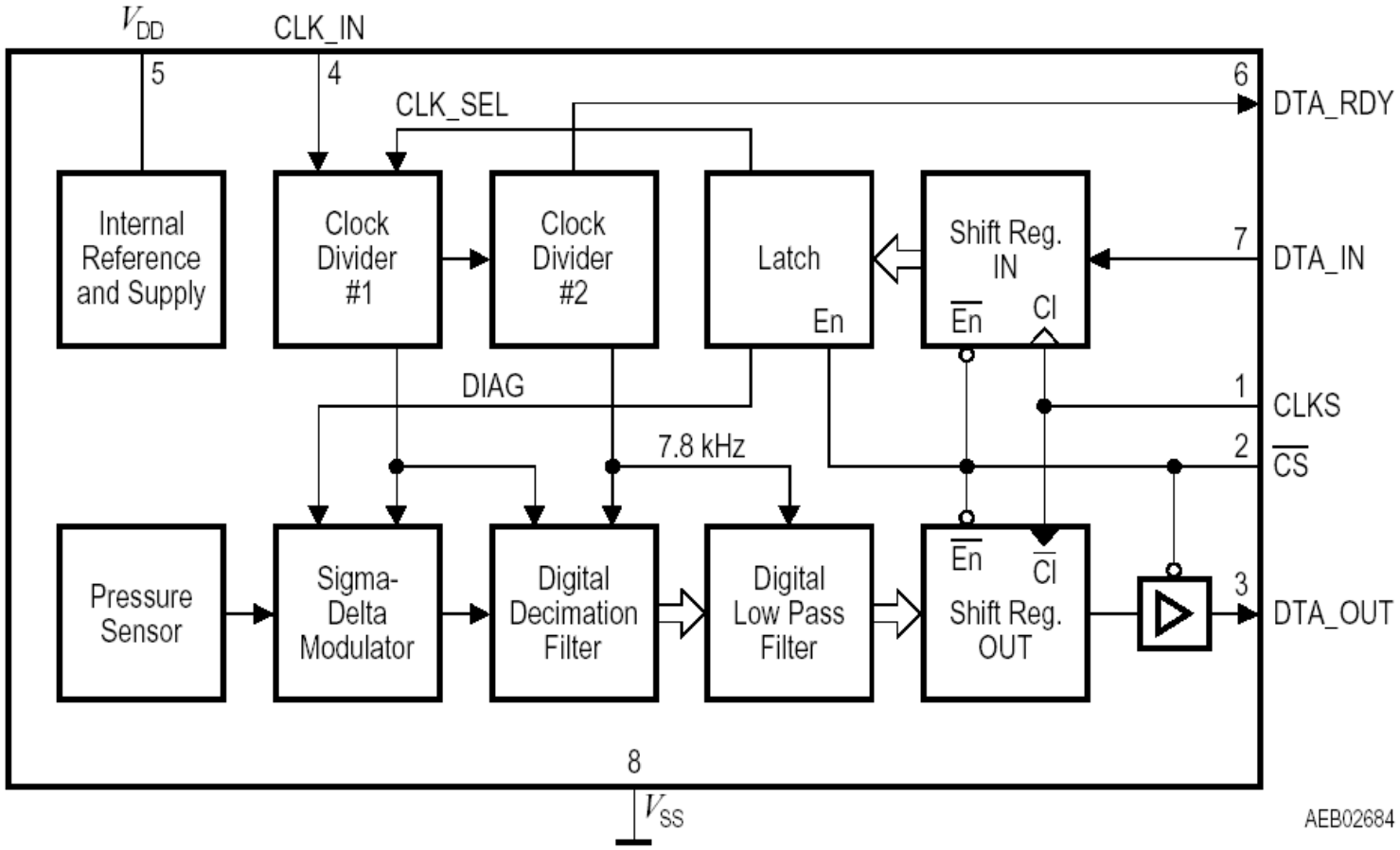
KP100: Technology



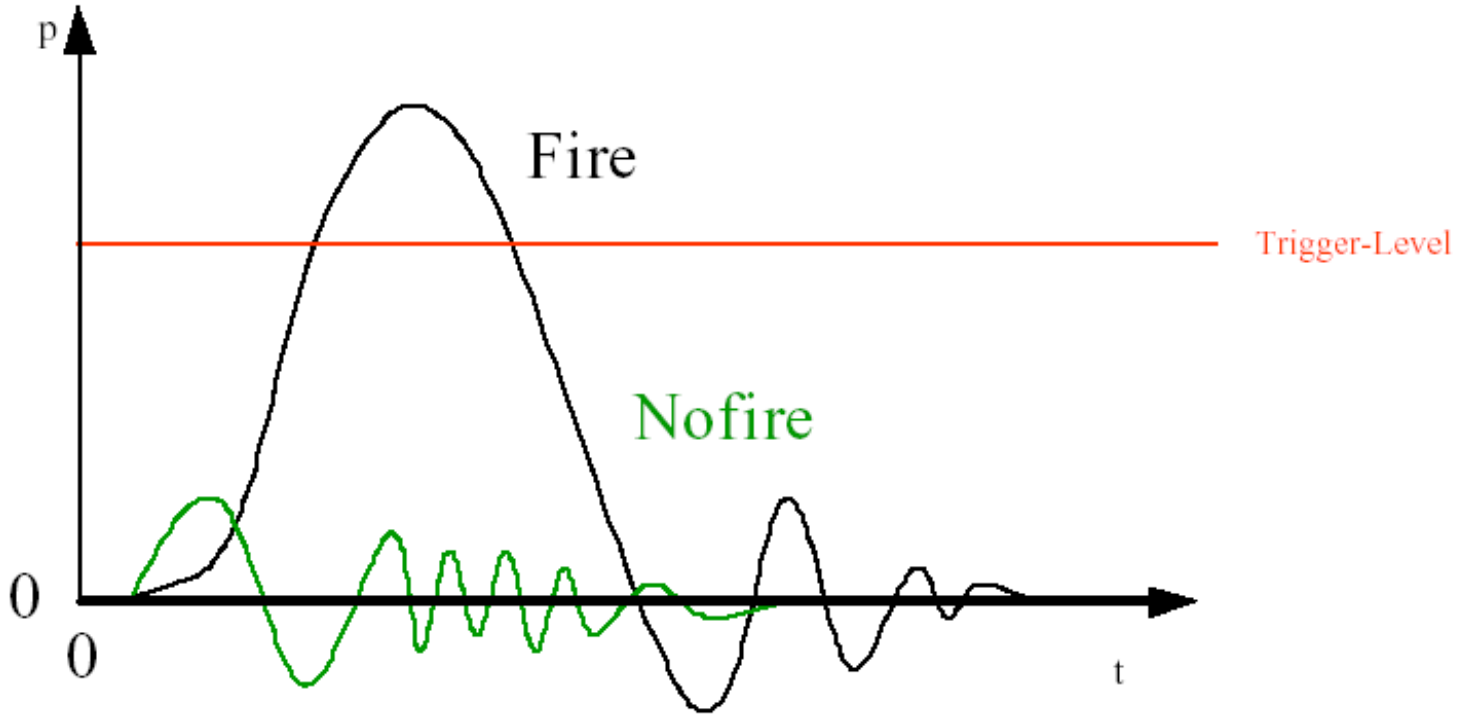
KP100: Photo



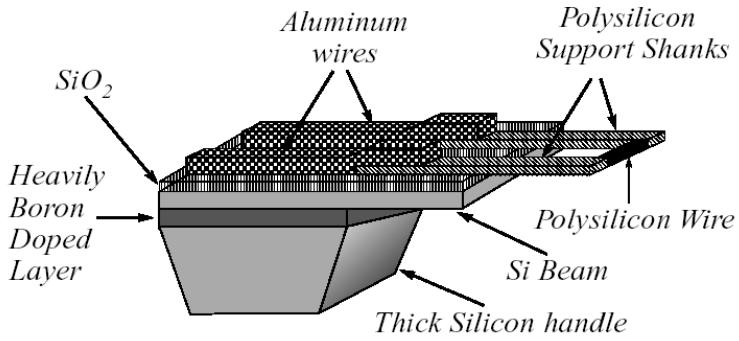
KP100: Circuit diagram

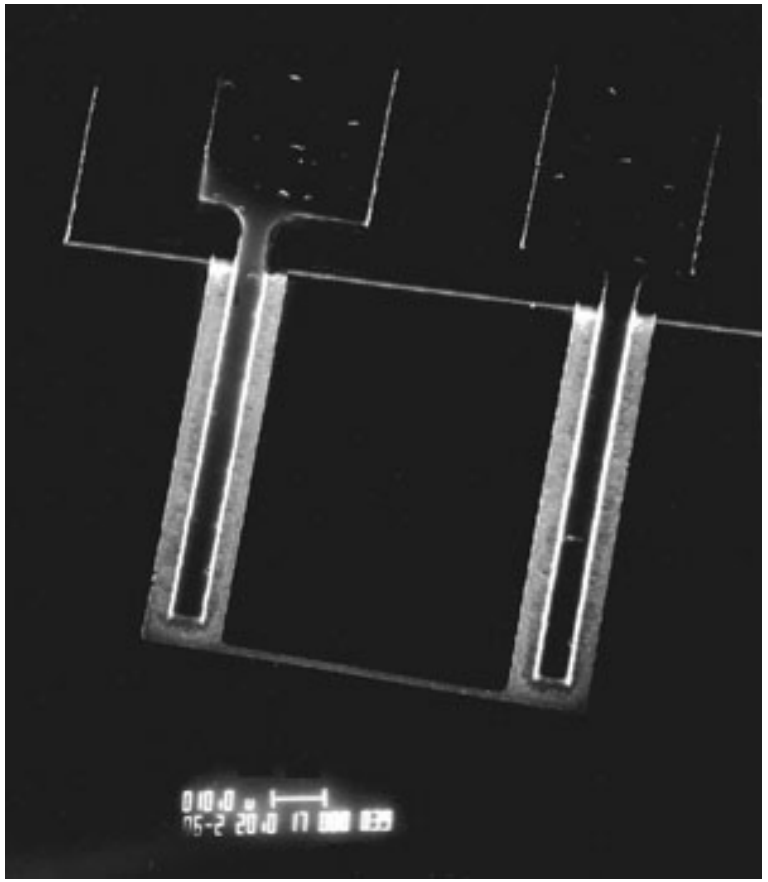


KP100: Signal processing

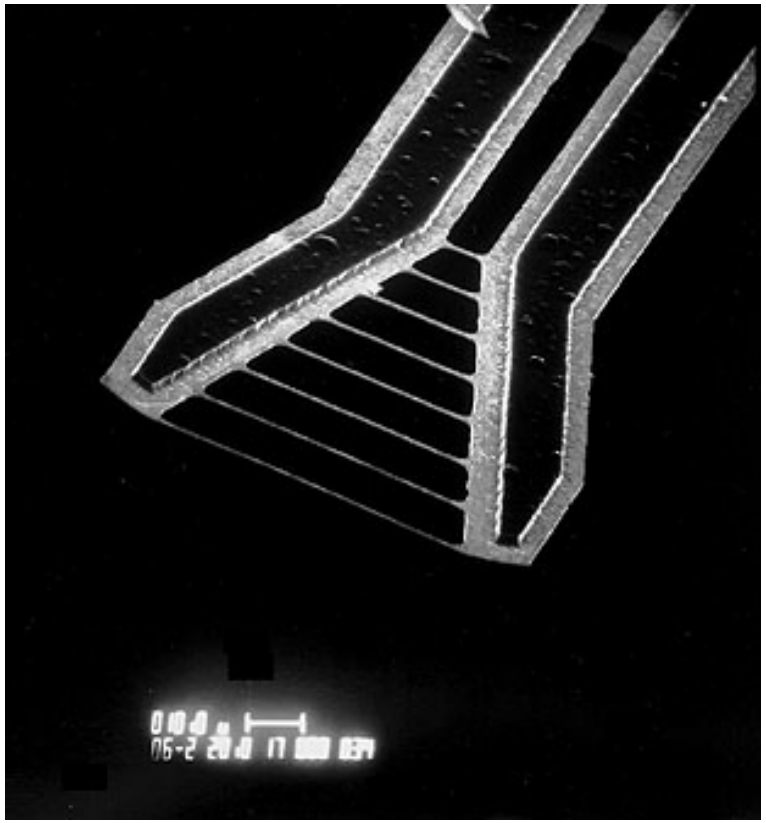


Flow Sensors





Flow Sensors



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