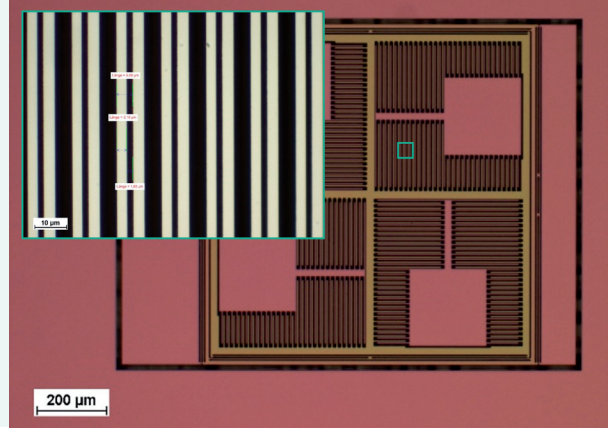
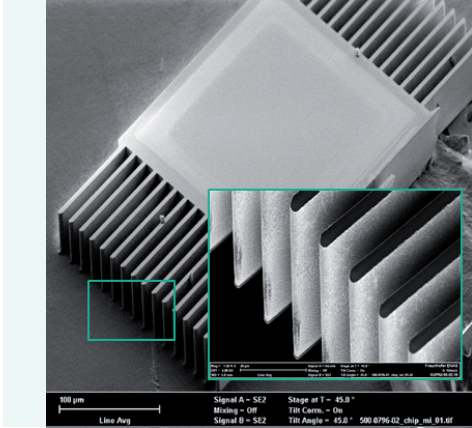


# TWO-AXIS ACCELERATION SENSOR FOR MEDICAL APPLICATIONS



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All information contained in this datasheet is preliminary and subject to change. Furthermore, the described systems, materials and processes are not commercial products.*

The sensing device is a two axis micromechanical acceleration sensor with capacitive detection. The MEMS is fabricated using the BDRIE technology. BDRIE stands for Bonding and Deep Reactive Ion Etching. The MEMS core die has a

dimension of (1 x 1) mm<sup>2</sup>. The complete die size is (1.2 x 1.5) mm<sup>2</sup>. Each axis has two differential capacitances to extract the acceleration data. The table below summarizes the target specification for the accelerometer.

Description	Sign	Value	Unit
Measurement range	±	5	g
Natural frequency	~	2	kHz
Number of axis		2	
Number of electrodes per axis		2	
Base capacitance of one electrode	~	2.5	pF
Capacitive sensitivity of one electrode	>	50	fF/g
Spring stiffness (x direction)		3.6	N/m
Spring stiffness (y direction)		5.8	N/m
Typical polarization voltage	<	1.3	Volt
Dimension L x W		1.2 x 1.5	mm
Thickness		645	µm
Mass	~	3	mg