

ACT Sensor Technology and Plan

Specialists in Image Sensor Process and Design

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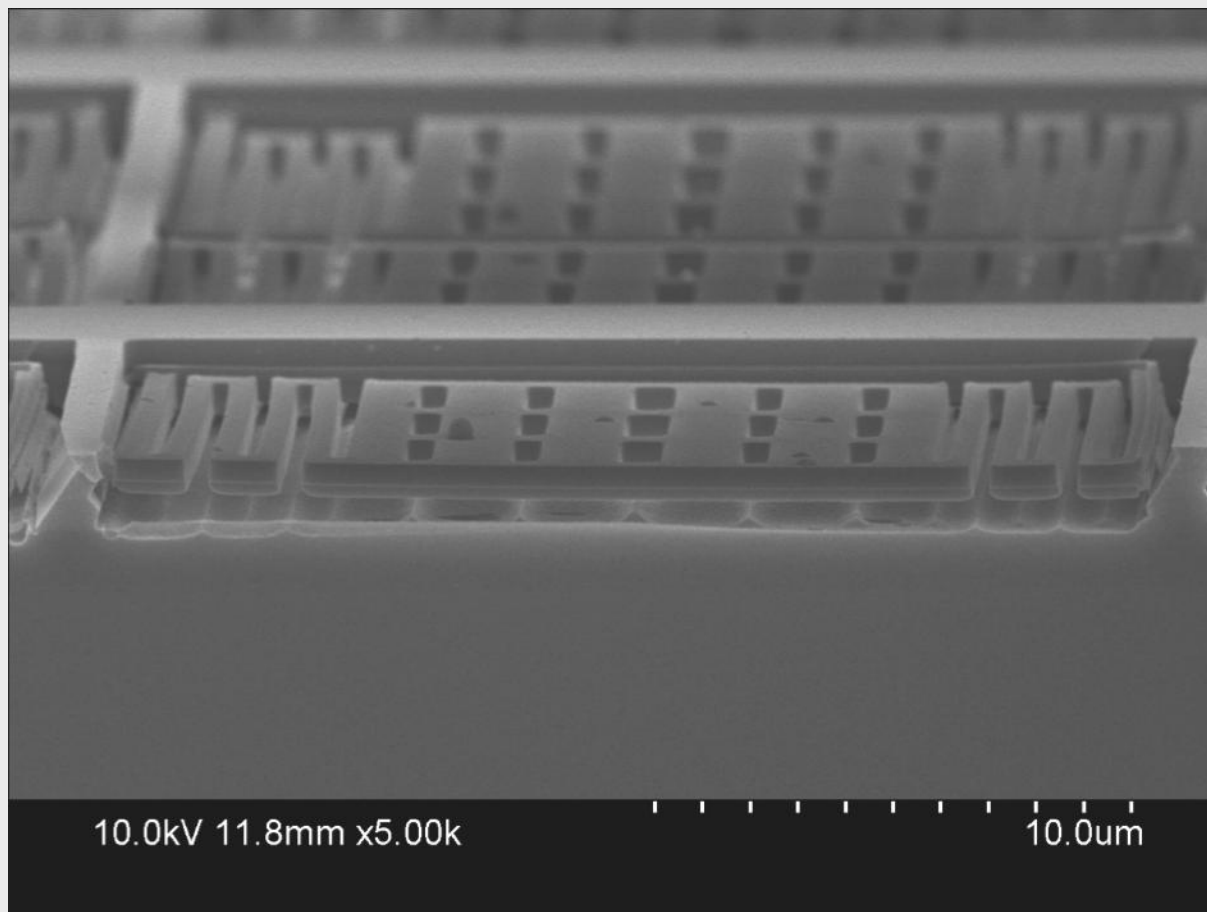
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ACT - Advanced CMOS Thermometer

- Thermal IR bolometer based (8-12 μm band)
 - 10 μm minimum pixel size
 - Fill factor up to 75%
 - Global shutter
- Excellent NEDT performance
 - Thermal reset of the pixel each frame (3×10^{-7} W/K)
 - Zero image lag
 - NEDT – down to 25 mK (f/1.0)
- 100% standard CMOS – MEMS processes
 - Conductive absorber is not required
 - Circuitry can be co-planar with sensor elements or stacked
 - 1.8 V supplies, 5 V max reset
- Similar to SiLM visible sensor in stacking construction
 - One layer for detection
 - One layer for control and processing
- No vacuum packaging required
 - Vacuum is held between two bonded silicon wafers
 - Hermetic to helium

Microbolometer Element



ACT Demonstration Device

- **1/3 resolution HDTV sensor**
 - 640 x 360 pixels
 - Up to 30 fps
 - Global shuttering from $<100 \mu\text{s}$ to $>30 \text{ ms}$
 - Single-tap analog output
- **ACT Plan**
 - Sample images and demonstrations starting 1 Sep 2010
 - Now accepting reservations for demonstration device
 - Now accepting design programs incorporating
 - Other pixel sizes
 - Mount wafer circuitry
 - Other array sizes up to wafer scale
 - Custom absorbers
 - Multispectral detection

For the Latest Information

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