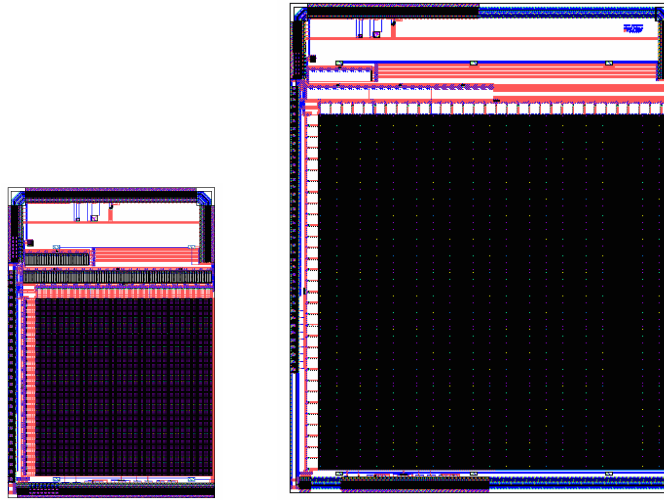


Modulator Chips

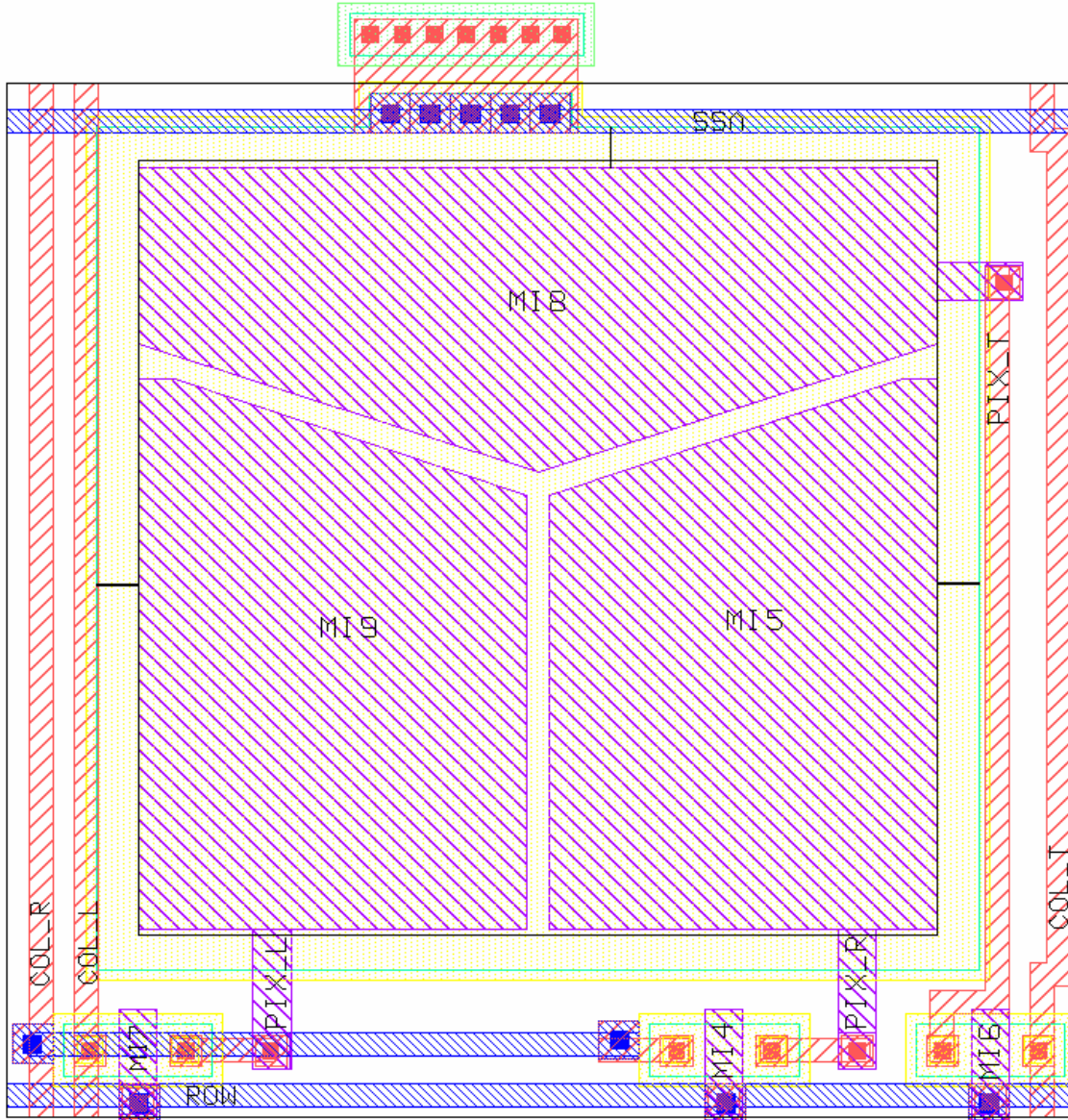
Modulator chips typically have metallic electrodes that are used to modulate a material for display applications, or move a MEMs device. We have examples of both shown here.

128 x 128 & 256 x 256 Micro mirror MEMS array



Each pixel drives a micro mirror using electro-static forces. Pixels have analog range of motion for high dynamic range performance. 6mm x 9mm & 11.2mm x 14.2mm, High voltage CMOS, complex driver pixel.

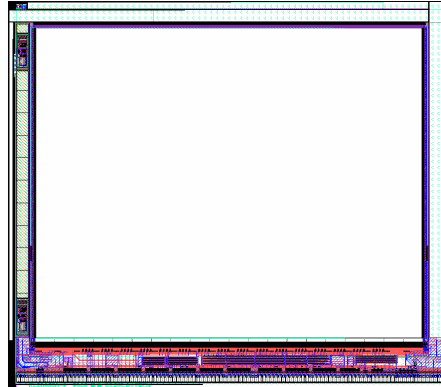
Pixel Layout



Pixel layout at 40x40um.

Black square in the middle denotes region of optical sensitivity. No metal structures are located in this region.

2.6Mpixel LCD/LCOS Microdisplay



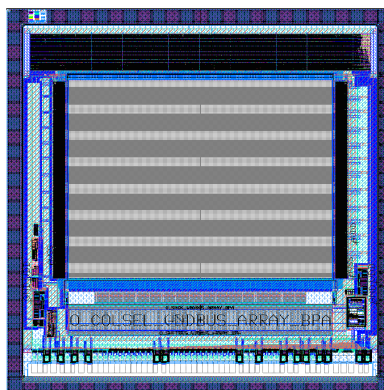
Large array of pixels for driving a small LCD display at high frame rates. 19.3mm x 16.9mm
0.35um CMOS

2Mpixel LCD/LCOS Microdisplay



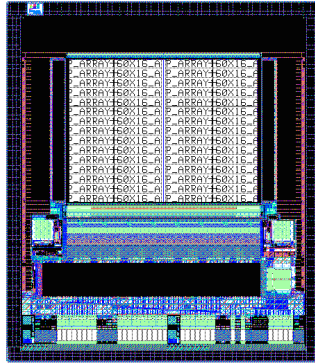
0.35um CMOS, 19.2mm x 13.4mm

400 x 225 LCD/LCOS Microdisplay



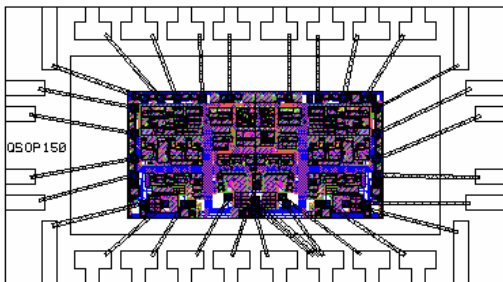
7mm x 7mm, 0.25um CMOS

320 x 240 LCD/LCOS Microdisplay



6.2mm x 7.2mm, 0.25um CMOS

Layout of high voltage chip



We were the first company to perform layout on this 40V 0.6um CMOS process. Worked through 12 revisions of design rule document.