

Lambda-Based CMOS Design Rules

Feature	Rule Description	Minimum Value (in λ)
nMOS/pMOS active width	Minimum width of diffusion (n-active/p-active)	3λ
Active spacing (same type)	Spacing between same type of diffusion regions	3λ
Active to active (n vs p)	Spacing between n-active and p-active	6λ
Poly width	Minimum width of polysilicon line	2λ
Poly spacing (poly to poly)	Minimum spacing between polysilicon lines	2λ
Poly to diffusion spacing	Poly not crossing diffusion	$1-2\lambda$
Poly over active (gate length)	Gate length (poly crossing diffusion)	2λ
Metal1 width	Minimum Metal1 width	3λ
Metal1 spacing	Minimum spacing between Metal1 lines	3λ
Contact size	Width and height of contact	$2\lambda \times 2\lambda$
Contact to contact spacing	Min spacing between adjacent contacts	2λ
Poly to contact spacing	Poly not touching contact	2λ
Active to contact spacing	Edge of active to edge of contact	1λ
Well width (n-well / p-well)	Minimum width of well	12λ
Well spacing (between wells)	n-well to n-well or p-well spacing	9λ
Active to well edge spacing	Edge of diffusion to edge of well	6λ
n-well to poly spacing	If poly is near well edge	6λ

Note: These design rules follow the scalable CMOS λ -rule methodology, commonly used in educational tools like Magic and Microwind.