

```
go devedit
DevEdit version="2.1" library="1.15"

work.area left=0 top=-0.1 right=16.0 bottom=7.0

# SILVACO Library V1.15

region reg=1 mat=Silicon color=0xffb2 pattern=0x9 \
  points="0,3.2 3.74,3.2 6,0 10,0 12.26,3.2 16,3.2 16,6.5 0,6.5 0,3.2"
#
constr.mesh region=1 default

region reg=2 mat=SiO2 color=0xffff96 pattern=0x9 \
  points="0,6.5 16,6.5 16,7 0,7 0,6.5"
#
constr.mesh region=2 default

# Set Meshing Parameters
#
base.mesh height=0.1 width=0.25
#
#bound.cond !apply max.slope=28 max.ratio=300 rnd.unit=5e-05 line.straightening=1 align.points
#when=automatic
#
imp.refine min.spacing=0.02
#
constr.mesh max.angle=90 max.ratio=3000 max.height=1 \
  max.width=1 min.height=0.001 min.width=0.001
#
constr.mesh type=Semiconductor default
#
constr.mesh region=1 default
#
constr.mesh region=2 default
#
# Perform mesh operations
#
Mesh Mode=MeshBuild
refine mode=Both x1=0 y1=4.3 x2=3.25 y2=4.5
refine mode=Both x1=3.23 y1=3.2 x2=3.25 y2=4.3
refine mode=Both x1=12.75 y1=4.3 x2=16 y2=4.5
refine mode=Both x1=12.75 y1=3.2 x2=12.77 y2=4.3
```

```
imp.refine min.spacing=0.02

constr.mesh max.angle=90 max.ratio=3000 max.height=1 \
    max.width=1 min.height=0.001 min.width=0.001
#
constr.mesh type=Semiconductor default
#
constr.mesh type=Metal default
#
constr.mesh type=Other default

base.mesh height=0.1 width=0.25

#bound.cond !apply max.slope=28 max.ratio=300 rnd.unit=5e-05 line.straightening=1 align.Points
#when=automatic

structure outf=si_modulator.str

go atlas

#
elec num=1 name=cathode x.min= 6.1 x.max= 9.9 y.min=0 y.max=0
elec num=2 name=anode x.min= 0 x.max= 3.16 y.min=3.2 y.max=3.2
elec num=3 name=anode x.min= 12.84 x.max= 16.0 y.min=3.2 y.max=3.2
#
doping uniform x.min= 0 x.max= 3.24 y.min=3.2 y.max=4.4 n.type conc=5.e18
doping uniform x.min= 12.76 x.max= 16.0 y.min=3.2 y.max=4.4 n.type conc=5e18
doping uniform x.min= 6.0 x.max= 10.0 y.min=0.0 y.max=0.5 p.type conc=5.e18

#
# Interface charge
interface qf=0

# MATERIAL MODELS
models optr fldmob fermi consrh auger ni.fermi temperature=300
#
# BIAS

output con.band val.band e.field j.total flowlines
solve init
```

```
save outf=Si_modulator_v1.str
#
solve vcathode=0 vanode=0
save outf=Si_modulator_v2.str
#
solve vstep = 0.05 name=cathode vfinal=0.5
solve vstep = 0.1 name=cathode vfinal=0.9
#
save outf=Si_modulator_v3.str

quit
```