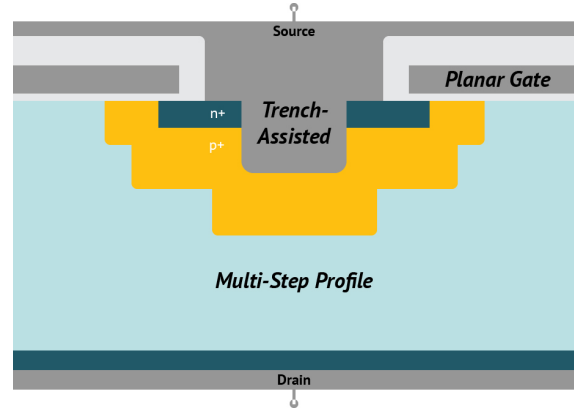


20 Years of SiC Innovation Leadership

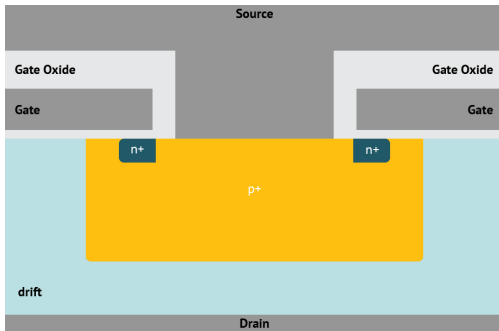
Up to 20% lower $R_{DS(ON)}$ at elevated temperature
Enables lower conduction losses and cooler performance.

Up to 15% lower switching losses
Faster & efficient high frequency switching for higher power density.

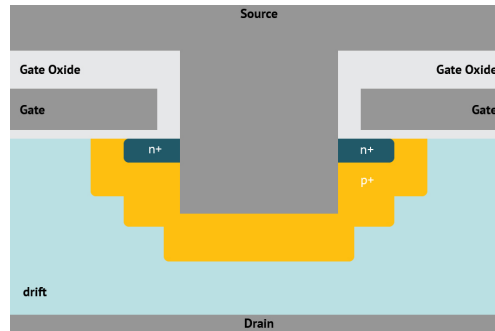
Unparalleled reliability
In high-voltage/temp/humidity, high dv-dt.



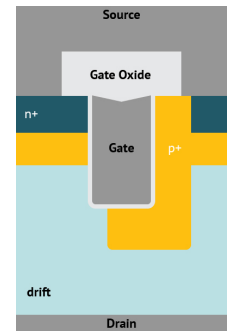
Traditional Planar
(Simple Structure)



Trench-Assisted Planar
(Simple Structure)

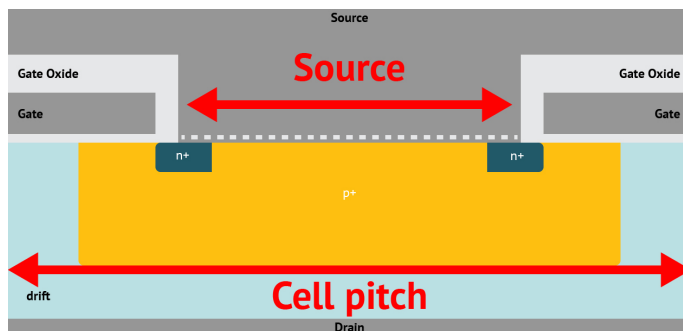


Standard Trench
(Complex Structure)

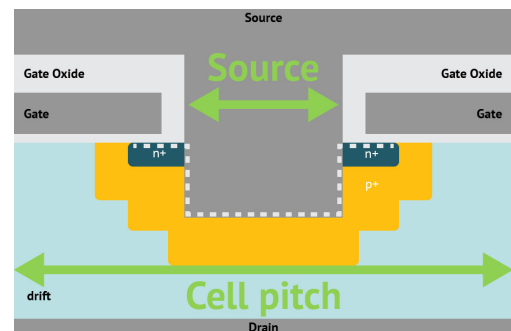


Trench-gate requires 40% more process steps than Planar-gate
Higher production cost & increased complexity for Trench.

Traditional Planar
(Non-Optimized)



Trench-Assisted Planar
(Optimized)

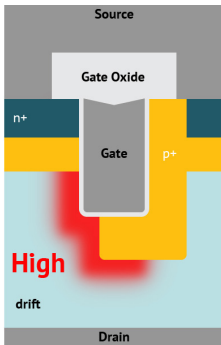


Novel Source contact on trench-side wall
Enables smaller cell-pitch and increased power density.

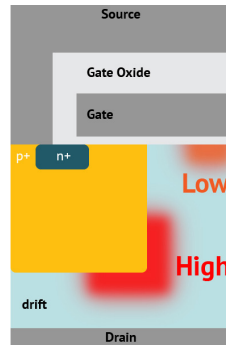
Trench-Assisted Planar Technology



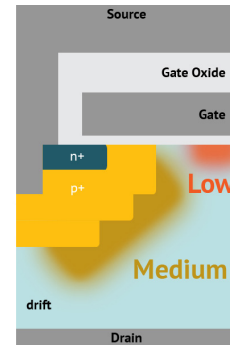
Standard Trench
(Highest Voltage Stress)



Traditional Planar
(Medium Voltage Stress)

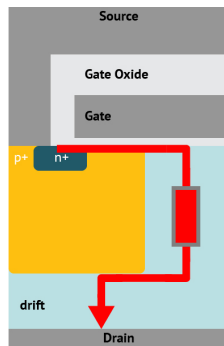


Trench-Assisted Planar
(Lowest Voltage Stress)

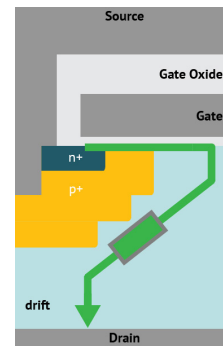


Multi-Step Profile drives smooth electric-field distribution
Increases long term reliability.

Traditional Planar
(High $R_{DS(ON)}$)

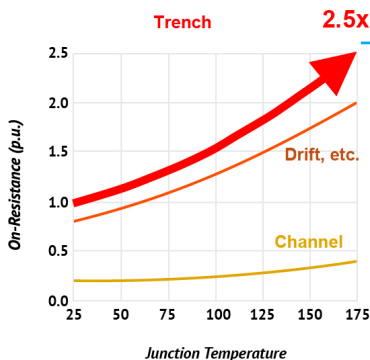


Trench-Assisted Planar
(Low $R_{DS(ON)}$)

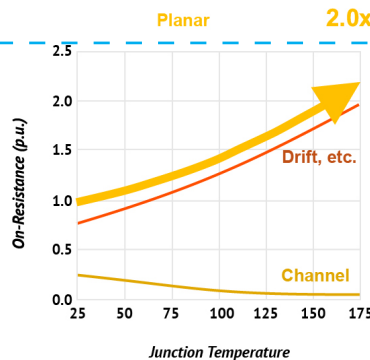


Multi-Step Profile enables better current spreading
Enables lower $R_{DS(ON)}$.

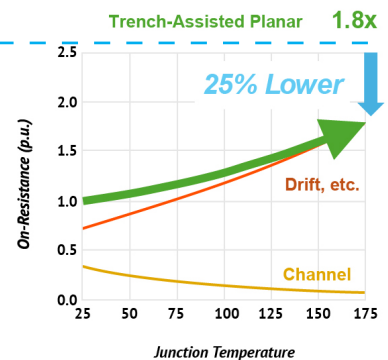
Standard Trench
(High $R_{DS(ON)}$ shift vs temp)



Traditional Planar
(High $R_{DS(ON)}$ shift vs temp)



Trench-Assisted Planar
(Low $R_{DS(ON)}$ shift vs temp)



Optimized for lower $R_{DS(ON)}$ temp shift
Provides up to 20% lower conduction losses.