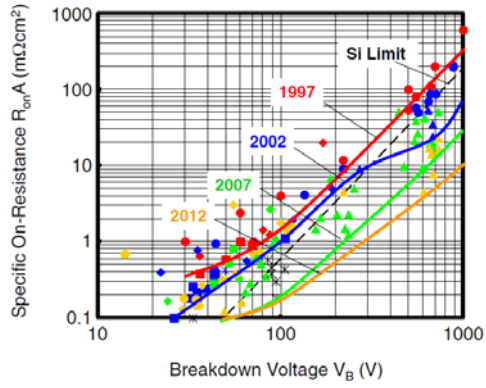




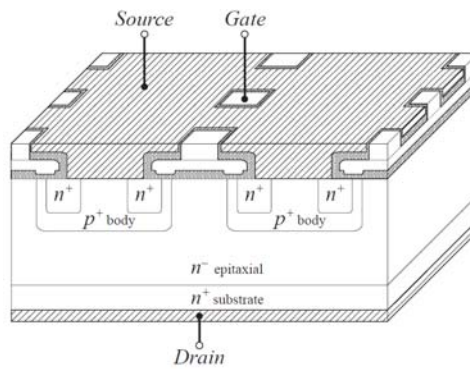
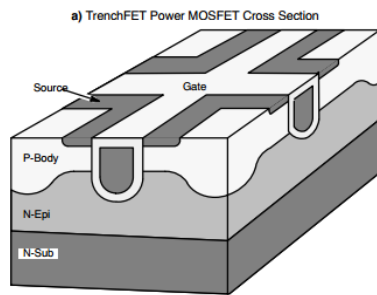
# Si Limits



W. Saito, "Power device trends for high-power density operation of power electronics system"



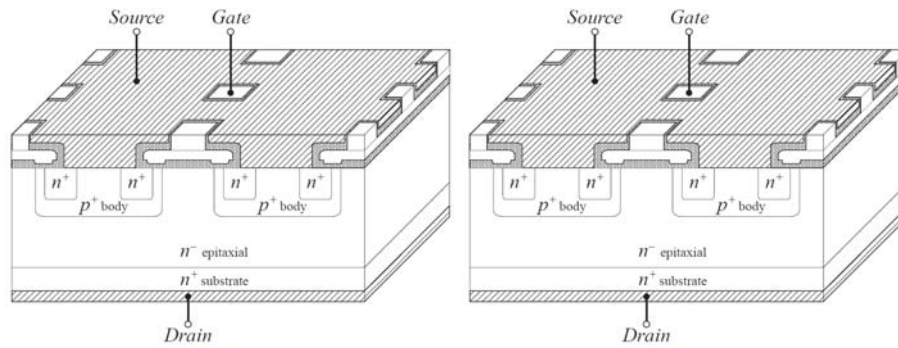
# Trench MOSFETs



J. Brown & G. Moxey, "Power MOSFET Basics: Understanding MOSFET Characteristics Associated With The Figure of Merit"



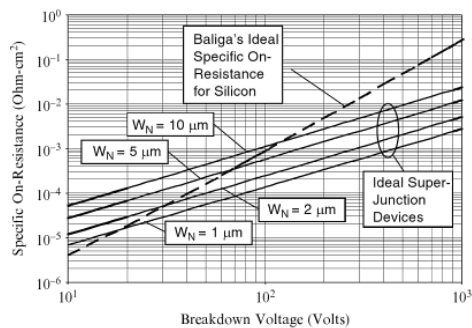
## Superjunction MOSFETs



## Charge Coupling



# Charge Coupled FOM



Baliga, B J, "Advanced Power MOSFET Concepts"



# SJ MOSFET Experimental Potential

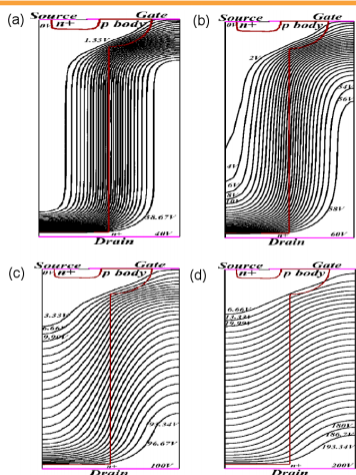


Fig. 3. Potential contours in the CoolMOS structure for (a)  $V_{DS} = 40$  V, (b)  $V_{DS} = 60$  V, (c)  $V_{DS} = 100$  V, and (d)  $V_{DS} = 200$  V for  $V_{GS} = 0$  V.

P. Kondekar et al., "Study of the Degradation of the Breakdown Voltage of a Super-Junction Power MOSFET due to Charge Imbalance"



# Additional MOS Capacitors

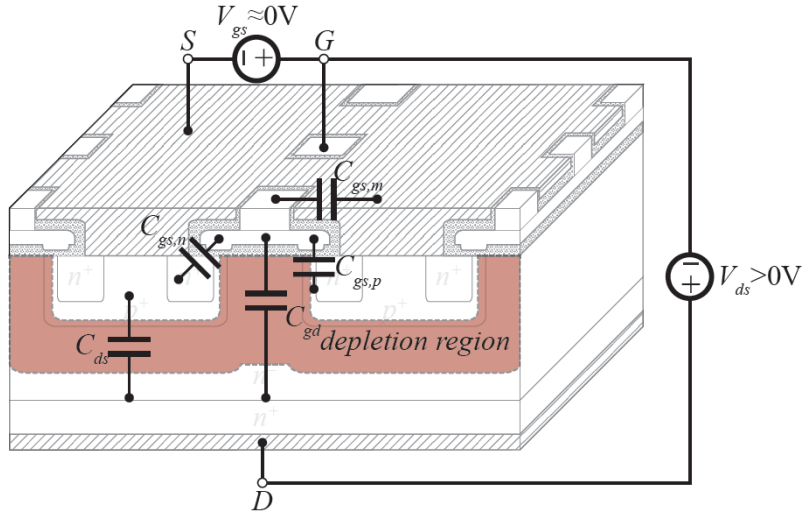


Figure 5. Capacitance Characteristics

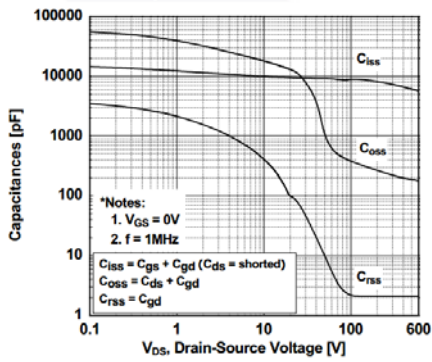


Figure 6. Gate Charge Characteristics

