

## Supplementary Materials

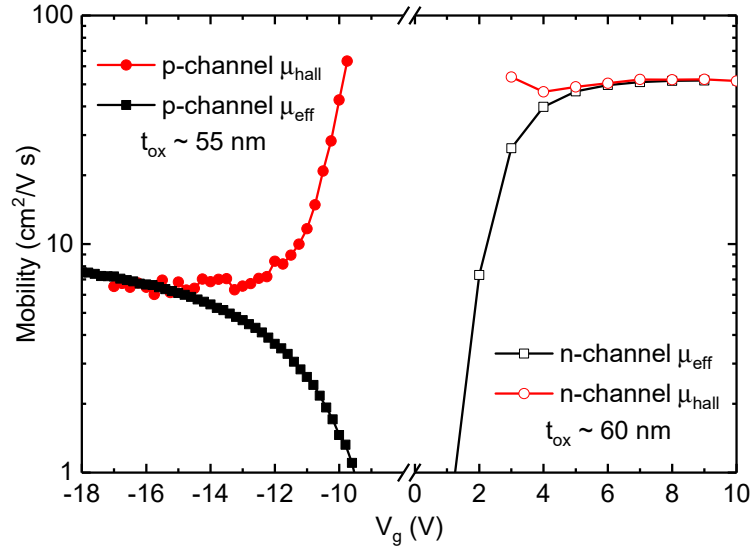


Figure S1: Field effect and Hall mobility for nitrided n- and p-channel MOSFETs at room temperature and zero body bias as a function of gate voltage. The oxide thicknesses are 55 and 60 nm for n- and p-channel MOSFETs respectively.

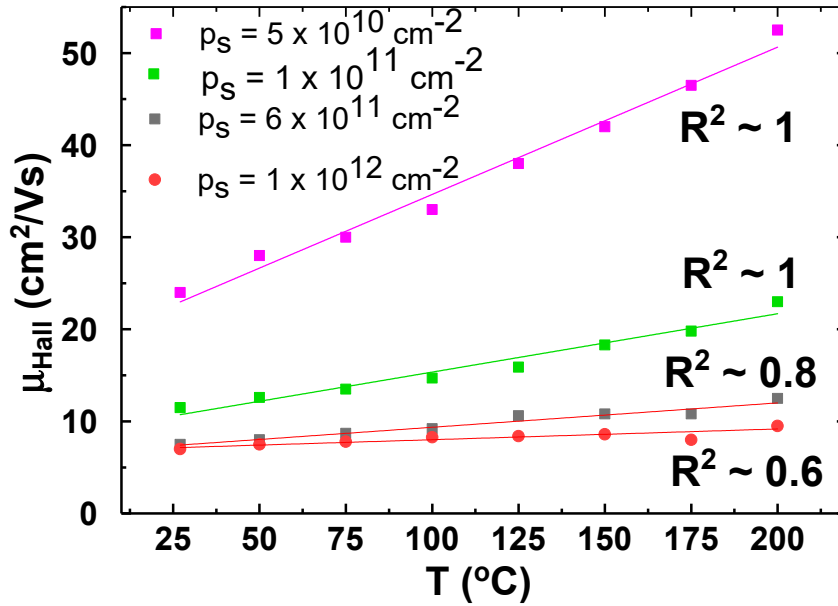


Figure S2: Temperature dependence of the Hall mobility for p-channel MOSFET at different carrier concentration. At  $p_s = 1 \times 10^{12} \text{ cm}^{-2}$ , the fitting parameter  $R^2$  can be seen to deviate from 1, showing surface roughness scattering regime.

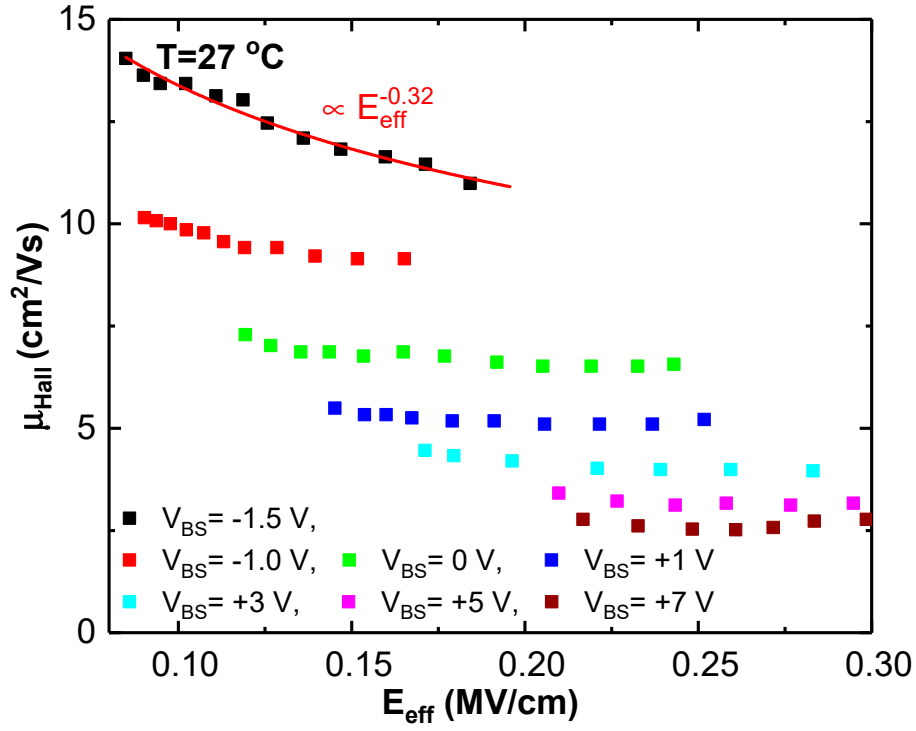


Figure S3: Hole mobility versus transverse electric field for different body biases at room temperature. The curve for  $V_{\text{BS}} = -1.5\text{ V}$  shows a dependence of  $E_{\text{eff}}^{-1/3}$  which is an indication of phonon scattering.