

## Process Parameters (0.25 $\mu$ m CMOS)

*The following table shows parameter values for the minimum-sized NMOS and a similarly sized PMOS device in our generic 0.25  $\mu$ m CMOS process. We will use the following parameters in this course.*

**Parameters for manual model of generic 0.25  $\mu$ m CMOS process (minimum sized device).**

	$V_{T0}$ (V)	$\gamma$ (V <sup>0.5</sup> )	$V_{DSAT}$ (V)	$k'$ (A/V <sup>2</sup> )	$\lambda$ (V <sup>-1</sup> )
NMOS	0.43	0.4	0.63	$115 \times 10^{-6}$	0.06
PMOS	-0.4	-0.4	-1	$-30 \times 10^{-6}$	-0.1

**With the above conventions, the  $I_D$  equation presented in the previous viewgraph can be used for PMOS devices with  $I_{Dp}$  defined as the current going into the drain terminal.  $V_{min}$  should be changed to  $V_{max} = \max(V_{GT}, V_{DS}, V_{DSAT})$**