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 By David A. Hodges, Horace G. Jackson, Resve A. Saleh.

USEFUL DESIGN PARAMETERS (simplified)

Name	Symbol	0.18 μm		0.13 μm		Units
		NMOS	PMOS	NMOS	PMOS	
Channel Length (rounded for convenience)	L	200	200	100	100	nm
Supply Voltage	V_{DD}	1.8	1.8	1.2	1.2	V
Oxide Thickness	t_{ox}	35	35	22	22	\AA
Oxide Capacitance	C_{ox}	1.0	1.0	1.6	1.6	$\mu\text{F}/\text{cm}^2$
Threshold Voltage	V_{TO}	0.5	-0.5	0.4	-0.4	V
Body-Effect Term	γ	0.3	0.3	0.2	0.2	$\text{V}^{1/2}$
Fermi Potential	$2 \phi_F $	0.84	0.84	0.88	0.88	V
Junction Capacitance Coefficient	C_{j0}	1.6	1.6	1.6	1.6	$\text{fF}/\mu\text{m}^2$
Built-In Junction Potential	ϕ_B	0.9	0.9	1.0	1.0	V
Grading Coefficient	m	0.5	0.5	0.5	0.5	—
Nominal Mobility (low vertical field)	μ_0	540	180	540	180	$\text{cm}^2/\text{V-s}$
Effective Mobility (high vertical field)	μ_e	270	70	270	70	$\text{cm}^2/\text{V-s}$
Critical Field	E_c	6×10^4	24×10^4	6×10^4	24×10^4	V/cm
Critical Field $\times L$	$E_c L$	1.2	4.8	0.6	2.4	V
Effective Resistance	R_{eff}	12.5	30	12.5	30	$\text{k}\Omega/\square$

Name	Symbol	Value	Units
Gate Capacitance Coefficient	C_g	2	$\text{fF}/\mu\text{m}$
Self Capacitance Coefficient	C_{eff}	1	$\text{fF}/\mu\text{m}$
Wire Capacitance Coefficient	C_w	0.1-0.25	$\text{fF}/\mu\text{m}$
Al Wire Resistance	R_{\square}	25-60	$\text{m}\Omega/\square$
Cu Wire Resistance	R_{\square}	20-40	$\text{m}\Omega/\square$
Wire Inductance	L_{eff}	40-50	$\text{pH}/\mu\text{m}$