# Main MOS Spice Parameters

<table>
<thead>
<tr>
<th>Parameter Name</th>
<th>Symbol</th>
<th>SPICE Name</th>
<th>Units</th>
<th>Default Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPICE Model Index</td>
<td>LEVEL</td>
<td>-</td>
<td>1</td>
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</tr>
<tr>
<td>Zero-Bias Threshold Voltage</td>
<td>VT0</td>
<td>VT0</td>
<td>V</td>
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<tr>
<td>Process Transconductance</td>
<td>k'</td>
<td>KP</td>
<td>A/V2</td>
<td>2.E-5</td>
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<tr>
<td>Body-Bias Parameter</td>
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<td>GAMMA</td>
<td>V0.5</td>
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<td>Channel Modulation</td>
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<td>LAMBDA</td>
<td>I/V</td>
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<tr>
<td>Oxide Thickness</td>
<td>tox</td>
<td>TOX</td>
<td>m</td>
<td>1.0E-7</td>
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<tr>
<td>Lateral Diffusion</td>
<td>xd</td>
<td>LD</td>
<td>m</td>
<td>0</td>
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<tr>
<td>Metallurgical Junction Depth</td>
<td>xj</td>
<td>XJ</td>
<td>m</td>
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<tr>
<td>Surface Inversion Potential</td>
<td>2</td>
<td></td>
<td>PHI</td>
<td>V</td>
</tr>
<tr>
<td>Substrate Doping</td>
<td>NA,ND</td>
<td>NSUB</td>
<td>cm-3</td>
<td>0</td>
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<tr>
<td>Surface State Density</td>
<td>Qss/q</td>
<td>NSS</td>
<td>cm-3</td>
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<tr>
<td>Fast Surface State Density</td>
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<td>Total Channel Charge Coefficient</td>
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<td>Type of Gate Material</td>
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<td>Surface Mobility</td>
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<td>U0</td>
<td>cm2/V-sec</td>
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<tr>
<td>Maximum Drift Velocity</td>
<td>vmax</td>
<td>VMAX</td>
<td>m/s</td>
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<td>Mobility Critical Field</td>
<td>xcrit</td>
<td>UCRIT</td>
<td>V/cm</td>
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<td>Critical Field Exponent in Mobility Degradation</td>
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<td>Transverse Field Exponent (mobility)</td>
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## SPICE Parameters for Parasitics

<table>
<thead>
<tr>
<th>Parameter Name</th>
<th>Symbol</th>
<th>SPICE Name</th>
<th>Units</th>
<th>Default Value</th>
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</thead>
<tbody>
<tr>
<td>Source resistance</td>
<td>$R_S$</td>
<td>RS</td>
<td>Ω</td>
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<td>Drain resistance</td>
<td>$R_D$</td>
<td>RD</td>
<td>Ω</td>
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<td>Sheet resistance (Source/Drain)</td>
<td>$R_o$</td>
<td>RSH</td>
<td>$\Omega_o$</td>
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<tr>
<td>Zero Bias Bulk Junction Cap</td>
<td>$C_{j0}$</td>
<td>CJ</td>
<td>F/m²</td>
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<td>Bulk Junction Grading Coeff.</td>
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<td>MJ</td>
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<td>Zero Bias Side Wall Junction Cap</td>
<td>$C_{jsw0}$</td>
<td>CJSW</td>
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<td>Side Wall Grading Coeff.</td>
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<td>MJSW</td>
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<td>Gate-Bulk Overlap Capacitance</td>
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<td>CGBO</td>
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<td>Gate-Source Overlap Capacitance</td>
<td>$C_{gs0}$</td>
<td>CGSO</td>
<td>F/m</td>
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<td>Gate-Drain Overlap Capacitance</td>
<td>$C_{gd0}$</td>
<td>CGDO</td>
<td>F/m</td>
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<tr>
<td>Bulk Junction Leakage Current</td>
<td>$I_S$</td>
<td>IS</td>
<td>A</td>
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<td>Bulk Junction Leakage Current Density</td>
<td>$I_S$</td>
<td>JS</td>
<td>A/m²</td>
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<td>Bulk Junction Potential</td>
<td>$\phi_0$</td>
<td>PB</td>
<td>V</td>
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