Essentials of MOSFETs

Lecture 2.5: The Virtual Source Model

Short Problem

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Consider an N-channel MOSFET with the following parameters:

$V_{GS} = V_{DS} = V_{DD} = 1\text{ V}$
$V_T = 0.25\text{ V}$
Series resistance: $R_S = R_D = 100\,\Omega - \mu\text{m}$
$I_{ON} = 1\text{ mA}/\mu\text{m}$
$W = 1\ \mu\text{m}$

1) If we could achieve $R_S = R_D = 0\ \Omega$, how much would the on current increase?