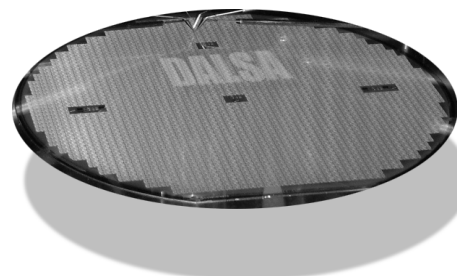


C20F 2.0 μ m 5/40V CMOS Process

C20F Overview

- Thick gate oxide
- Double poly, two layer metal
- P-type epitaxy over p+ substrate
- Allows the integration of 5V CMOS with 40V CMOS which can operate with 40V on both gate and drain.



Features

- Full integration of 5V and 40V mixed signal CMOS on the same die
- Single and double drain extensions on 40V NMOS and 40V PMOS
- 40V double poly capacitor
- High Value (10k Ω /sq) and Low TCR poly resistor options
- Mixed signal Cadence Foundry Design Kit (FDK) available

Mixed Signal Capabilities

- 40V double poly capacitor (0.48fF/ μ m²)
- High value poly resistor option (10k Ω /sq)
- 5V 2 μ m CMOS
- 40V CMOS Propagation delay:-1.15nS/stage for single extended
- 2.0nS/stage for double extended

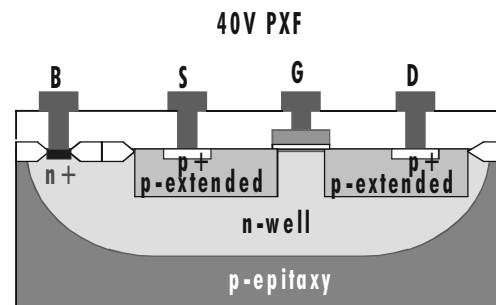
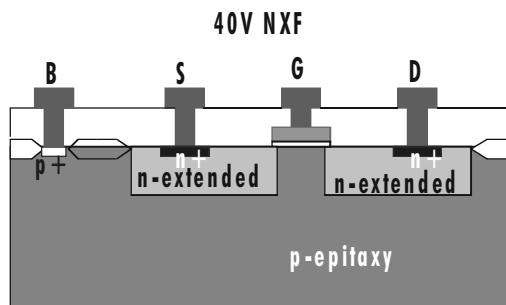
Applications

- EL displays
- CCD Drivers
- Motor Control
- Instrumentation
- Telecom line cards

Layout Rules

Layer	Width (μ m)	Space (μ m)
Poly 1	2	2.5
Poly 2	2	2
Contact	2 x 2	2
Metal 1	2.0	2.0
Via	2.4 x 2.4	2.0
Metal 2	2.8	2.4

Simplified Cross-Section of 40V CMOS

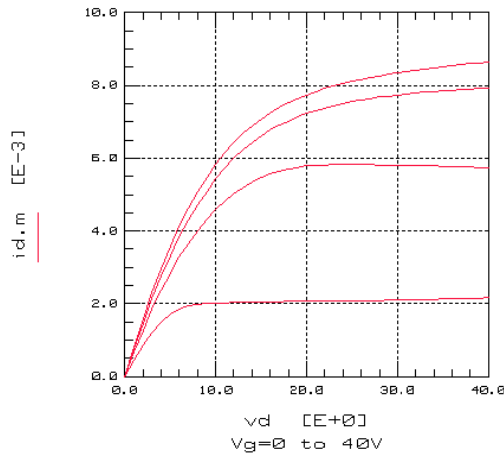


26-Sep-02
03-70-00148-00
www.dalsa.com

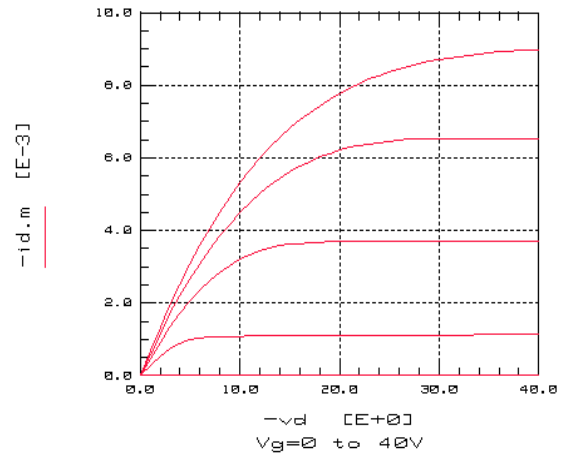
Electrical Parameters of Representative Transistors

Parameter	5V NMOS	5V PMOS	40V NMOS	40V PMOS
W x L (μ m)	50 X 2	50 X 2	50 X 10	50 X 6
VT (V)	1.3	1.7	1.3	1.6
I _{ds} (mA)	3.0	0.9	9.5	9.0
Bvdss (V)	15	18	79	46
I _{sub} (μ A/ μ m)	0.0006	-	1.94	-
RON (Ω)	589	2200	1100	1400

Double Extended 40V NMOS
(L = 10 μ m, W = 50 μ m)



Double Extended 40V PMOS
(L = 6 μ m, W = 50 μ m)



For More Information

DALSA Semiconductor

18 Blvd de l'aéroport
Bromont
Quebec Canada
J2L 1S7

Tel : +01 800 718 9701
Fax : +01 450 534 3201
e-mail: sales@dalsasemi.com
www.dalsasemi.com