

NOR2 datasheet

KEY

Intrinsic Delay (ns)

Transition	XL	X1	X2	X4
A -- Y/	0.0426	0.0403	0.0347	0.0351
A -- Y\	0.0213	0.0196	0.0183	0.0187
B -- Y/	0.0536	0.0519	0.0485	0.0473
B -- Y\	0.0259	0.0244	0.0247	0.0245

average parasitic delay = 29.95 ps

Kload (ns / pF)

Transition	XL	X1	X2	X4
A -- Y/	9.4704	6.7329	3.3656	1.6550
A -- Y\	3.5015	2.3672	1.2659	0.6330
B -- Y/	9.4589	6.7278	3.3647	1.6542
B -- Y\	3.5124	2.3779	1.2717	0.6357

average = 4.55 $\frac{ps}{fF}$

Pin Capacitance (fF)

Pin	XL	X1	X2	X4
A	3.3	4.5	8.3	16.9
B	2.9	4.0	8.5	16.0

$C_{in} = 4.5 fF$

AC Power (uW / MHz)

Pin	XL	X1	X2	X4
A	0.0110	0.0143	0.0276	0.0545
B	0.0139	0.0182	0.0385	0.0728

$$\text{delay} = (30.0 + 4.55 \cdot C_{load}) \text{ ps}$$

$$h = \frac{C_{load}}{C_{in}}$$

$$\hookrightarrow C_{load} = C_{in} \cdot h$$

$$\text{delay} = 30.0 + \underbrace{(4.55)(4.5)}_{20.5} \cdot h \text{ ps}$$

$$\text{delay} = 30.0 + 20.5 \cdot h \text{ (ps)}$$

use: $\tau = 12.4 \text{ ps}$

$$\frac{\text{delay}}{\tau} = \frac{2.42}{p} + \frac{1.65 \cdot h}{g \cdot h}$$