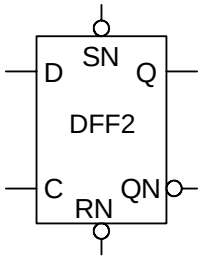
DFF2 is a fast, static, master-slave D flip-flop with 2x drive strength. SET and RESET are asynchronous and active low.

## Truth Table

| SN | RN | D | C | Q | QN |
|---|---|---|---|---|---|
| L | H | X | X | H | L |
| H | L | X | X | L | H |
| H | H | H | ↑ | H | L |
| H | H | L | ↑ | L | H |
| H | H | X | ↓ | no change | |
| L | L | X | X | illegal | |




## Capacitance

| | Ci (pF) |
|---|---|
| D | 0.020 |
| C | 0.020 |
| SN | 0.034 |
| RN | 0.041 |

## Area

2.30 mils$^2$

## Power

7.19 µW/MHz

Delay [ns] = tpd.. = f(SL, L) with SL = Input Slope [ns] ; L = Output Load [pF]
Output Slope [ns] = op_sl.. = f(L) with L = Output Load [pF]

AC Characteristics : Tj = 25°C VDD = 3.3V Typical Process

## AC Characteristics

| Characteristics | Symbol | SL = 0.1 | | | SL = 2.0 | | |
|---|---|---|---|---|---|---|---|
| | | L = 0.2 | L = 1.4 | L = 2.0 | L = 0.2 | L = 1.4 | L = 2.0 |
| Delay C to Q | tpdcqr | 0.88 | 1.84 | 2.29 | 1.04 | 2.00 | 2.46 |
| | tpdcqf | 0.80 | 1.71 | 2.15 | 0.96 | 1.88 | 2.31 |
| Delay C to QN | tpdcqnr | 1.20 | 2.14 | 2.65 | 1.37 | 2.31 | 2.82 |
| | tpdcqnf | 1.18 | 2.09 | 2.54 | 1.35 | 2.25 | 2.70 |
| Delay SN to Q | tpdsnq | 0.88 | 1.83 | 2.32 | 1.20 | 2.18 | 2.65 |
| Delay SN to QN | tpdsnqn | 1.18 | 2.07 | 2.50 | 1.50 | 2.40 | 2.83 |
| Delay RN to Q | tpdrnq | 2.15 | 3.04 | 3.49 | 2.34 | 3.25 | 3.67 |
| Delay RN to QN | tpdrnqn | 0.95 | 1.88 | 2.33 | 1.27 | 2.22 | 2.67 |
| Output Slope C to Q | op_slcqr | 0.67 | 3.51 | 5.01 | 0.67 | 3.53 | 5.03 |
| | op_slcqf | 0.60 | 2.85 | 4.25 | 0.61 | 3.00 | 4.08 |
| Output Slope C to QN | op_slcqnr | 0.71 | 3.55 | 5.08 | 0.71 | 3.60 | 5.00 |
| | op_slcqnf | 0.58 | 2.93 | 4.03 | 0.56 | 2.93 | 4.03 |
| Output Slope SN to Q | op_slsnq | 0.73 | 3.70 | 5.11 | 0.71 | 3.63 | 5.25 |
| Output Slope SN to QN | op_slsnqn | 0.60 | 2.88 | 4.08 | 0.58 | 2.91 | 4.12 |
| Output Slope RN to Q | op_slrnq | 0.66 | 3.05 | 4.13 | 0.65 | 2.95 | 4.06 |
| Output Slope RN to QN | op_slrnqn | 0.70 | 3.48 | 5.12 | 0.70 | 3.58 | 5.11 |

| Characteristics | | Symbol | [ns] | Characteristics | | Symbol | [ns] |
|---|---|---|---|---|---|---|---|
| Min D Setup Time to C | High | tsudch | 0.16 | Min D Hold Time to C | High | thdch | 0.00 |
| | Low | tsudcl | 0.16 | | Low | thdcl | 0.00 |
| Min SN Setup Time to C | Low | tsusnc | 0.00 | Min SN Hold Time to C | Low | thsnc | 0.51 |
| Min RN Setup Time to C | Low | tsurnc | 0.00 | Min RN Hold Time to C | Low | thrnc | 1.33 |
| Min C Width | High | twch | 0.48 | | | | |
| | Low | twcl | 0.88 | | | | |
| Min SN Width | Low | twsn | 1.07 | | | | |
| Min RN Width | Low | twrn | 3.91 | | | | |