

5.

CLKBUFXL: $T_{PHL}-T_{PLH}$ 小

BUFXL: $T_{PHL}-T_{PLH}$ 大

6.

CLKBUFXL:

$$T_{PLH}: 0.058 + 5.274 * 0.1 = 0.5854(\text{ns}), T_{PHL} = 0.064 + 4.661 * 0.1 = 0.5301(\text{ns})$$

BUFXL:

$$T_{PLH}: 0.059 + 5.775 * 0.1 = 0.6365(\text{ns}), T_{PHL} = 0.084 + 3.417 * 0.1 = 0.4258(\text{ns})$$

7.

$D = \frac{W}{T}$ where D is the duty cycle, W is the pulse width (pulse active time), and T is

the total period of the signal.

$$W_9 = 5 - 9 * (0.5854 - 0.5301) = 4.5023$$

$$W_{10} = W_9 - (0.058 - 0.064) = 4.5083$$

$$\text{duty cycle} = W_{10} / 10 * 100\% = 45.083\%$$

8.

$$W_9 = 5 - 9 * (0.6365 - 0.4258) = 3.1037$$

$$W_{10} = W_9 - (0.059 - 0.084) = 3.1287$$

$$\text{duty cycle} = W_{10} / 10 * 100\% = 31.287\%$$

10.

A:

$$T_{PHL}: 1.115 + 0.024 * 20 = 1.595(\text{ns})$$

$$T_{PLH}: 1.150 + 0.025 * 20 = 1.65(\text{ns})$$

OE:

$$T_{PHL}: 1.172 + 0.024 * 20 = 1.652(\text{ns})$$

$$T_{PLH}: 1.151 + 0.025 * 20 = 1.651(\text{ns})$$

13.

$$\text{max capacitance} = 0.150000(\text{pF})$$

$$\text{leakage power} = 247.448682(\text{pW})$$

15.

$$\text{max capacitance} = 0.150000(\text{pF})$$

$$\text{leakage power} = 5.896343(\text{pW})$$

20.

max width:

met1:9.0, met2:9.0, met3:9.0, met4:9.0, met5:9.0, met6:9.0

pitch setup:

met1:0.560, met2:0.660, met3:0.560, met4:0.660, met5:0.560, met6:1.320

21.

OBS

LAYER met1 ;

RECT 5.530 2.160 9.610 2.560 ;

RECT 4.140 2.210 5.530 2.510 ;

RECT 4.050 1.490 4.140 3.290 ;

RECT 3.840 1.390 4.050 3.290 ;

RECT 2.370 1.390 3.840 1.790 ;

RECT 3.740 2.840 3.840 3.290 ;

RECT 2.670 2.840 3.740 3.140 ;

RECT 1.500 2.070 3.600 2.470 ;

RECT 2.270 2.840 2.670 3.820 ;

RECT 1.260 1.390 1.500 2.990 ;

RECT 0.970 1.390 1.260 1.790 ;

RECT 1.220 2.750 1.260 2.990 ;

RECT 0.820 2.750 1.220 3.150 ;

END