

FT Standard Cell

$$\text{Cell Height} = (N-1) \cdot \text{Pitch} = 6 \times 5.5 = 33 \mu\text{m}$$

Pitch = 5.5 μm \rightarrow Without via overhang.

$$\text{Cell Height} = y + b + w_p + x + w_n + p + x$$

For $B=1 \Rightarrow \frac{w_p}{w_n} \Rightarrow w_p = w_n$; Cell Height = $1.25 + 2.5 + 2w_p + x + p$

$$33 = 1.25 + 2.5 + 10 + 2w_p$$

$$17.5 + 2w_p = 33$$

Now,

In glaze the minimum width of

w_p/w_n should be 4.5 μm according

to DRC file.

Varying at a step of 0.5 μm .

$$\text{Let } w_p = 7.75 + 0.5 = 8.25 \quad w_n = 7.75 - 0.5 = 7.25 \quad \Rightarrow \beta = \frac{8.25}{7.25} = 1.137 \Rightarrow \beta = 1.137$$

$$w_p = 8.25 \mu\text{m}$$

$$w_n = 7.25 \mu\text{m}$$

$$w_p = 7.75 + 1 = 8.75 \quad w_n = 7.75 - 1 = 6.75 \quad \beta = 1.296$$

$$w_p = 8.75 \mu\text{m}$$

$$w_n = 6.75 \mu\text{m}$$

$$w_p = 7.75 + 1.5 = 9.25 \quad w_n = 7.75 - 1.5 = 6.25 \quad \beta = 1.48$$

$$w_p = 9.25 \mu\text{m}$$

$$w_n = 6.25 \mu\text{m}$$

$$w_p = 7.75 + 2 = 9.75 \quad w_n = 7.75 - 2 = 5.75 \quad \beta = 1.695$$

$$w_p = 9.75 \mu\text{m}$$

$$w_n = 5.75 \mu\text{m}$$

$$w_p = 7.75 + 2.5 = 10.25 \quad w_n = 7.75 - 2.5 = 5.25 \quad \beta = 1.952$$

$$w_p = 10.25 \mu\text{m}$$

$$w_n = 5.25 \mu\text{m}$$

$$w_p = 7.75 + 3 = 10.75 \quad w_n = 7.75 - 3 = 4.75 \quad \beta = 2.263$$

$$w_p = 10.75 \mu\text{m}$$

$$w_n = 4.75 \mu\text{m}$$

Varying at a step of 0.25 μm

$$w_p = 7.75 + 0.25 = 8 \quad w_n = 7.75 - 0.25 = 7.5 \quad \beta = 1.06$$

$$w_p = 8 \mu\text{m}$$

$$w_n = 7.5 \mu\text{m}$$

$$w_p = 7.75 + 0.75 = 8.5 \quad w_n = 7.75 - 0.75 = 7 \quad \beta = 1.214$$

$$w_p = 8.5 \mu\text{m}$$

$$w_n = 7 \mu\text{m}$$

$$w_p = 7.75 + 1.25 = 9 \quad w_n = 7.75 - 1.25 = 6.5 \quad \beta = 1.384$$

$$w_p = 9 \mu\text{m}$$

$$w_n = 6.5 \mu\text{m}$$

$$w_p = 7.75 + 1.75 = 9.5 \quad w_n = 7.75 - 1.75 = 6 \quad \beta = 1.583$$

$$w_p = 9.5 \mu\text{m}$$

$$w_n = 6 \mu\text{m}$$

$$w_p = 7.75 + 2.25 = 10 \quad w_n = 7.75 - 2.25 = 5.5 \quad \beta = 1.818$$

$$w_p = 10 \mu\text{m}$$

$$w_n = 5.5 \mu\text{m}$$

$$w_p = 7.75 + 2.75 = 10.5 \quad w_n = 7.75 - 2.75 = 5 \quad \beta = 2.1$$

$$w_p = 10.5 \mu\text{m}$$

$$w_n = 5 \mu\text{m}$$

$$w_p = 7.75 + 3.25 = 11 \quad w_n = 7.75 - 3.25 = 4.5 \quad \beta = 2.44$$

$$w_p = 11 \mu\text{m}$$

$$w_n = 4.5 \mu\text{m}$$

minimum width

7T Standard Cell.

Cell Height = 23u

Pitch = 5.5u

	WLP	Wm
$\beta = 1$	7.75u	7.75u
$\beta = 1.06$	8u	7.5u
$\beta = 1.137$	8.25u	7.25u
$\beta = 1.214$	8.5u	7u
$\beta = 1.296$	8.75u	6.75u
$\beta = 1.384$	9u	6.5u
$\beta = 1.48$	9.25u	6.25u
$\beta = 1.583$	9.5u	6u
$\beta = 1.695$	9.75u	5.75u
$\beta = 1.818$	10u	5.5u
$\beta = 1.952$	10.25u	5.25u
$\beta = 2.1$	10.5u	5u
$\beta = 2.263$	10.75u	4.75u
$\beta = 2.44$	11u	4.5u

Maximum
Width
According to
CMMRSDR file.

7T Standard cell

$P + CH = 8.5 \mu m \rightarrow$ Considering via overhang
 $Cell Height = 6 \times 8.5 = 51 \mu m$

W/P

W/m

$$B = 1 = 16.75 \mu$$

$$16.75 \mu$$

$$B = 1.03 = 17 \mu$$

$$16.5 \mu$$

$$B = 1.061 = 17.25 \mu$$

$$16.25 \mu$$

$$B = 1.093 = 17.5 \mu$$

$$16 \mu$$

$$B = 1.126 = 17.75 \mu$$

$$15.75 \mu$$

$$B = 1.161 = 18 \mu$$

$$15.5 \mu$$

$$B = 1.196 = 18.25 \mu$$

$$15.25 \mu$$

$$B = 1.23 = 18.5 \mu$$

$$15 \mu$$

$$B = 1.271 = 18.75 \mu$$

$$14.75 \mu$$

$$B = 1.310 = 19 \mu$$

$$14.5 \mu$$

$$B = 1.350 = 19.25 \mu$$

$$14.25 \mu$$

$$B = 1.392 = 19.5 \mu$$

$$14 \mu$$

$$B = 1.436 = 19.75 \mu$$

$$13.75 \mu$$

$$B = 1.481 = 20 \mu$$

$$13.5 \mu$$

$$B = 1.528 = 20.25 \mu$$

$$13.25 \mu$$