2.4.3. **Cross Section AA'**

4. **Rule 3.1**  \( \Rightarrow \text{MIN WIDTH} = 2 \lambda = 0.6 \mu m \)

\[
R_\square = 21.8 \ \Omega / \square
\]

\[
C_{\text{SUBSTRATE}} = 87 \text{aF/\mu m}^2
\]

\[
R = 21.8 \ \frac{1}{W}
\]

\[
C = C_{\text{SUB}} \ WL
\]

\[
\tau = 0.35 RC = 0.35 R_\square C_{\text{SUB}} \left( \frac{L}{W} \right) = 0.35 R_\square C_{\text{SUB}} L^2
\]
\[ T = 0.35 \times (21.8) \times (8.7 \times 10^{-18}) \times (100 \mu m)^2 \]

\[ T = 6.64 \times 10^{-12} \text{ s} = 6.64 \text{ ps} \]

(Actually, \( W \) cancels and is not needed.)

5) From Datasheet, Contact \( R \) to \( p^+ \) is 136.1 \( \Omega \) contact. The source and drain are 2 contacts in series, so

\[ R = 2 \times (136.1) = 272.2 \Omega \]

6)