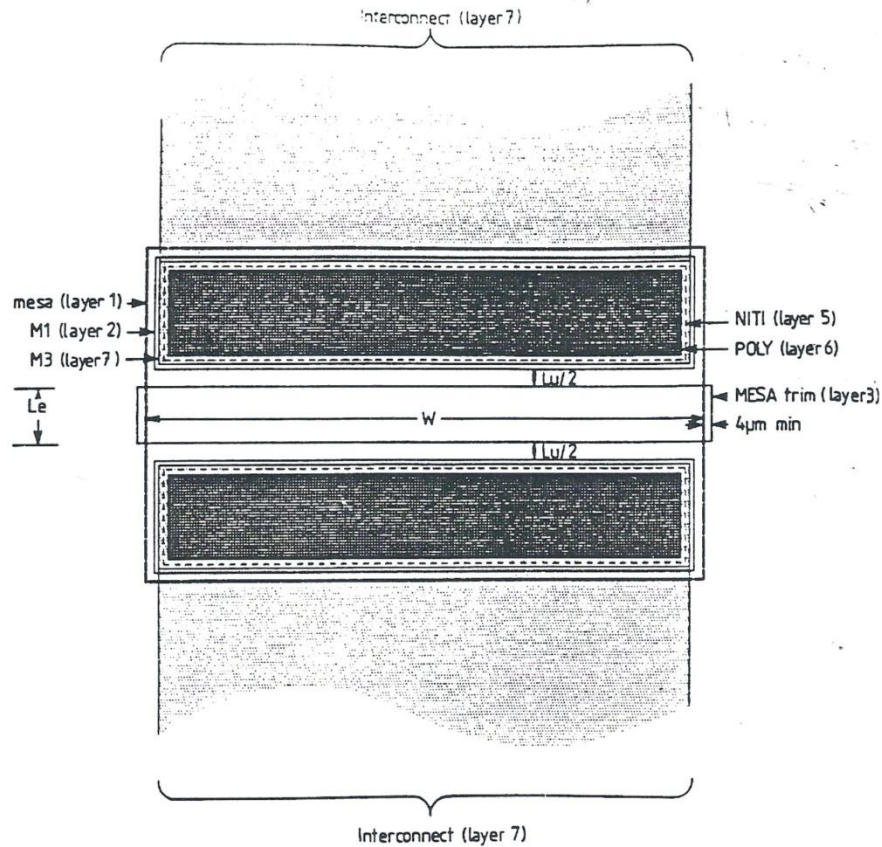


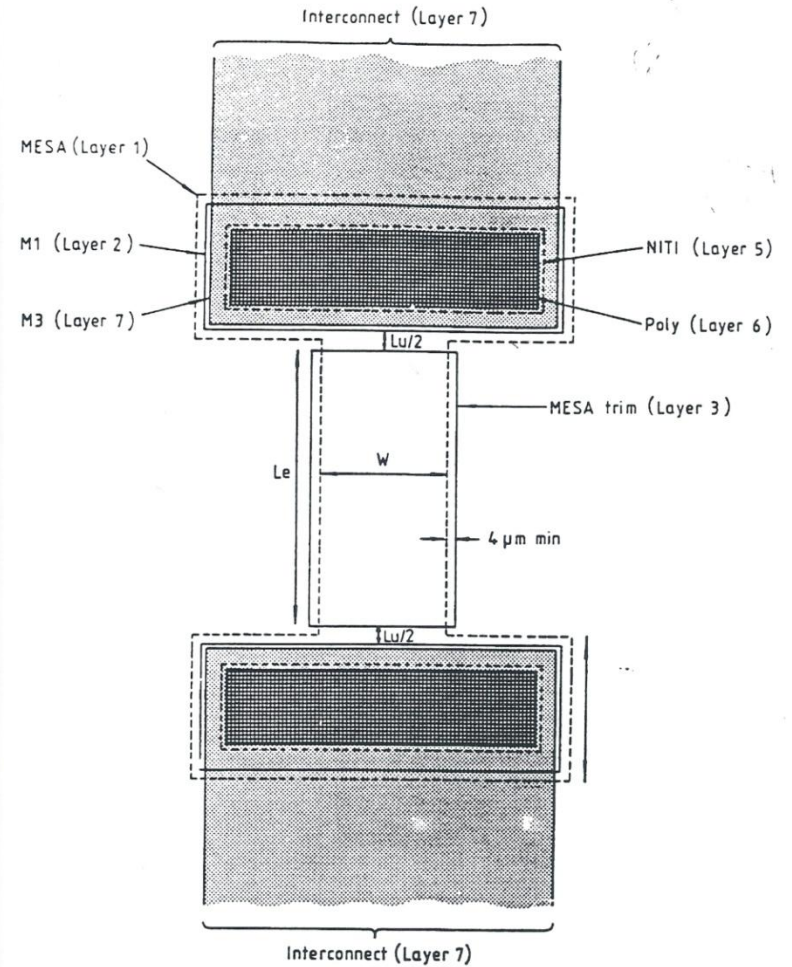
REZISTOARE MMIC

MMIC 4

DOUA TIPURI DE REZISTOARE MESA



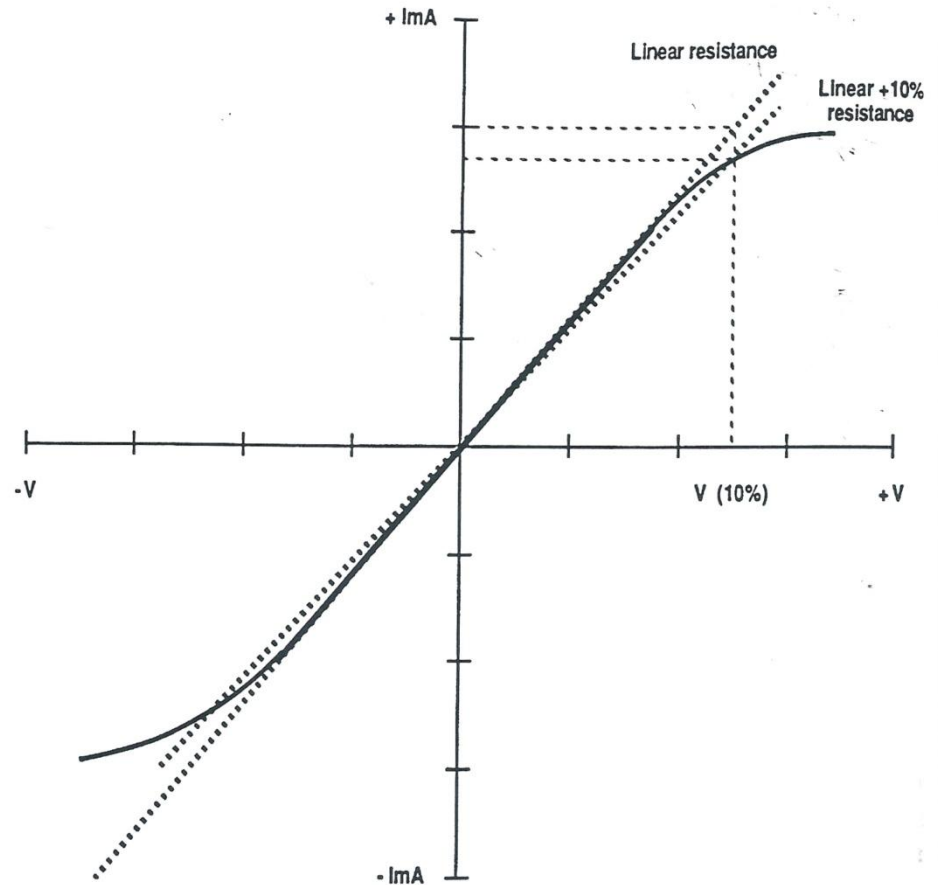
Lu: length of unetched material
 Le: length of etched material
 W: width of mesa resistor



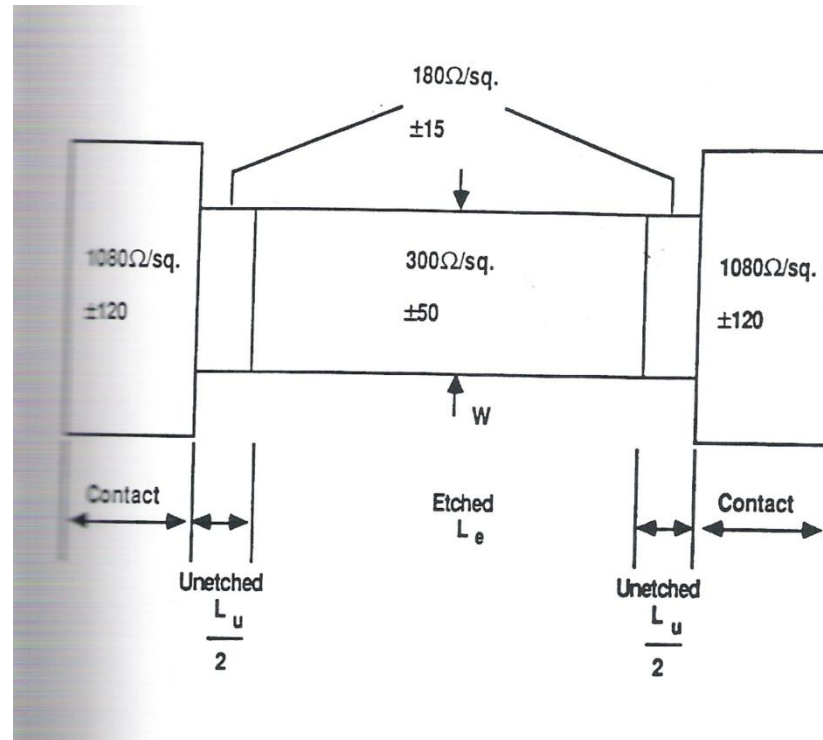
Lu: length of unetched material
 Le: length of etched material
 W: width of mesa resistor

Caracteristici de c.c.

$$L_{e\min} = 4V^2 (\mu m)$$

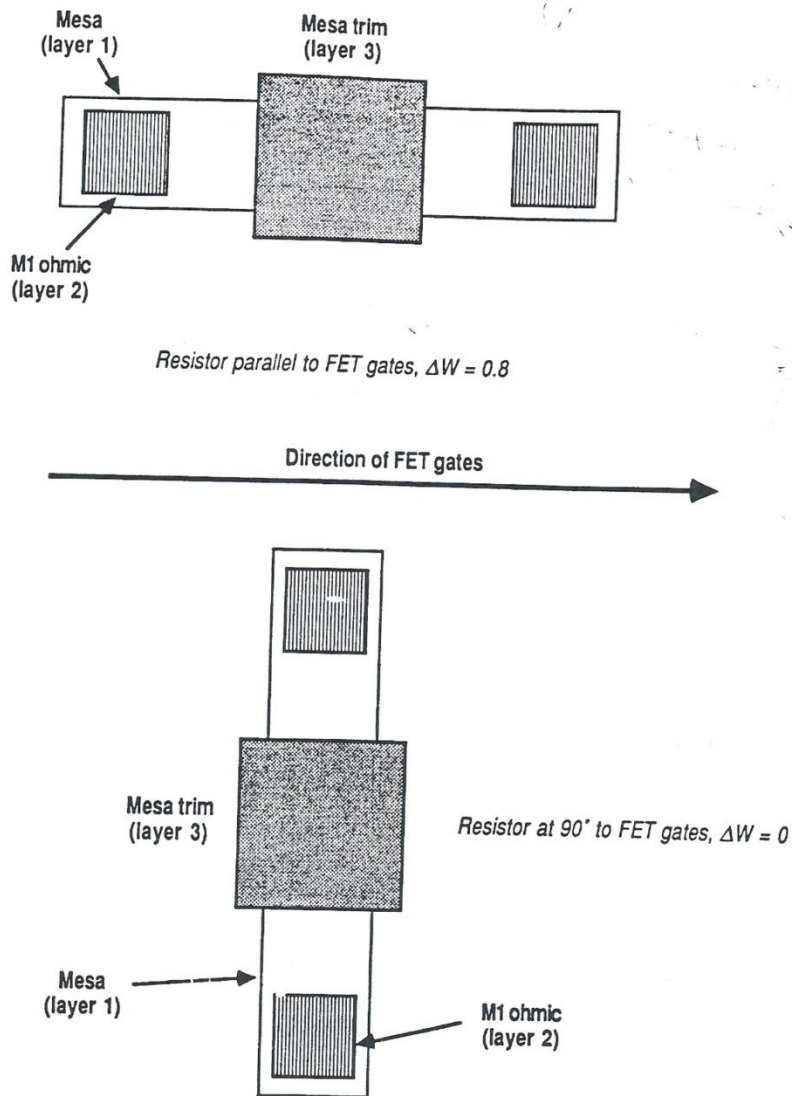


Calculul rezistentei de c.c.



$$R_{cc} = \frac{300L_e + 180L_u + 1080}{W - \Delta W}$$

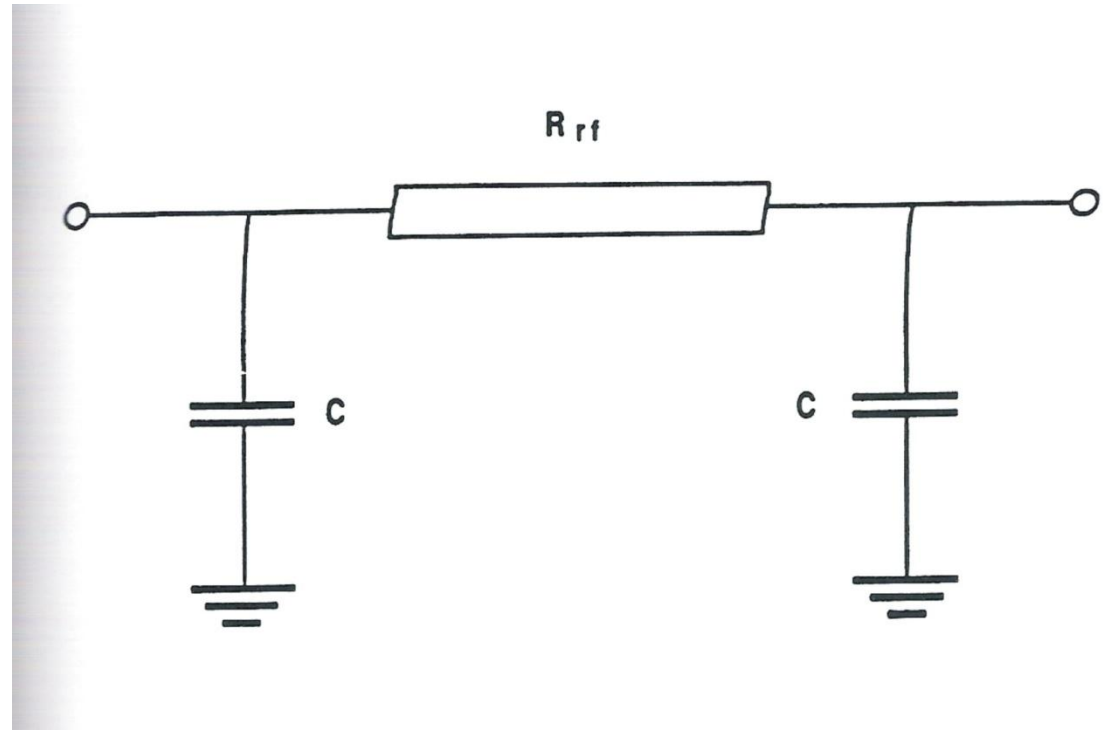
ORIENTAREA REZISTORULUI



Modelul electric

$$R_{rf} = R_{cc} (1 + 0.013 \cdot \text{FREQ})$$

$$C = \frac{l \sqrt{\epsilon_{eff}}}{6cZ_0} (F)$$



Exemplu de proiectare 1

Proiectați un rezistor de 500Ω pentru a fi folosit într-un amplificator pe 3 GHz.
Rezistorul trebuie să treacă 10 mA.

$$L_{e\min} = 4 \times 5^2 = 100 \mu m$$

$$R_{cc} = \frac{500}{1 + (0.013 \times 3)} = 481 \Omega$$

$$W = \frac{(300 \times 100) + (180 \times 12) + 1080}{481} = 69 \mu m$$

Exemplu de proiectare 2

Proiectați un resistor de $10\text{k}\Omega$, de dimensiuni mici, pentru a fi utilizat la polarizarea portii unui FET dintr-un amplificator pe 10 GHz .

$$R_{cc} = \frac{10000}{1 + (0.013 \times 3)} = 8850\Omega$$

$$L_e = \frac{(W - \Delta W) R_{cc} - 180L_u - 1080}{300} = 284\mu m$$

TOLERANTA

$$R_{cc} = \frac{(300 \pm 50) L_e + (180 \pm 15) L_u + (1080 \pm 120)}{W - \Delta W}$$