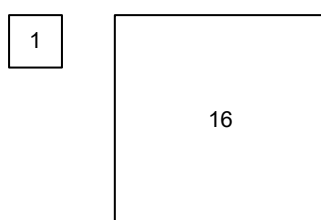




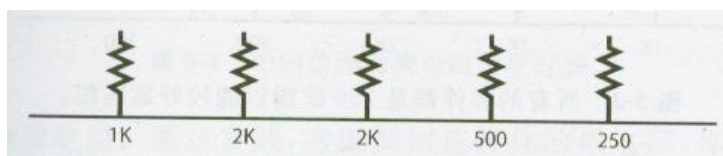
## 思考题

1. 简述 MOS 器件一些重要的二级效应如体效应、沟道长度调制效应、亚阈值电导对器件和电路特性的影响，及在设计中对此采取的应对措施。
2. 试根据你对集成电路工艺的理解，借助剖面图分别对标准 CMOS 的工艺过程加以描述和说明。若要在 CMOS 工艺中实现 Bipolar 三极管，如何兼容实现？
3. 图（a）是两个比值为 16 的电容版图设计方案，请对该方案的可实现性加以评说。

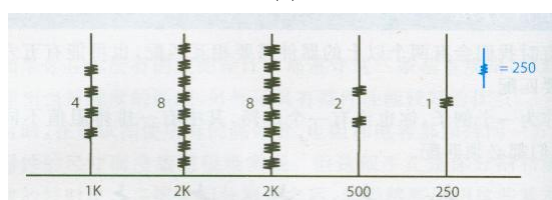


(a)

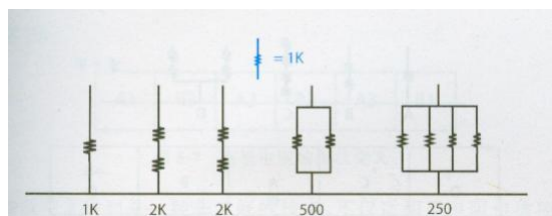
4. Have a circuit with row after row of different value resistors, that all must match shown in Fig. 2(a). Now have several layout strategy shown in Fig.2(b) and (c). Which one is better? Give your reasons.



(a)



(b)



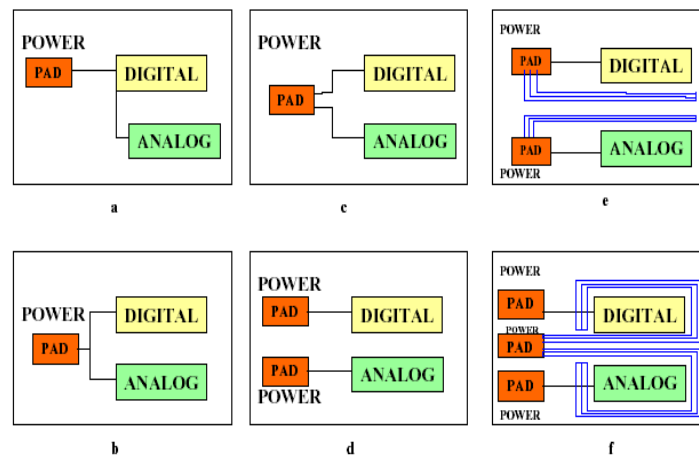
(c)

Fig. 2

5. What is so called analog GND and digital GND in mixed signal integrated circuits?

Please explain the reason to lay out them separately in mixed signal chips.

C. Coupling from power line



6. 图2列举了数种实现电阻分割的方法。选择达到2:1比例的最好版图。并说明其他选择为什么不合适。

