

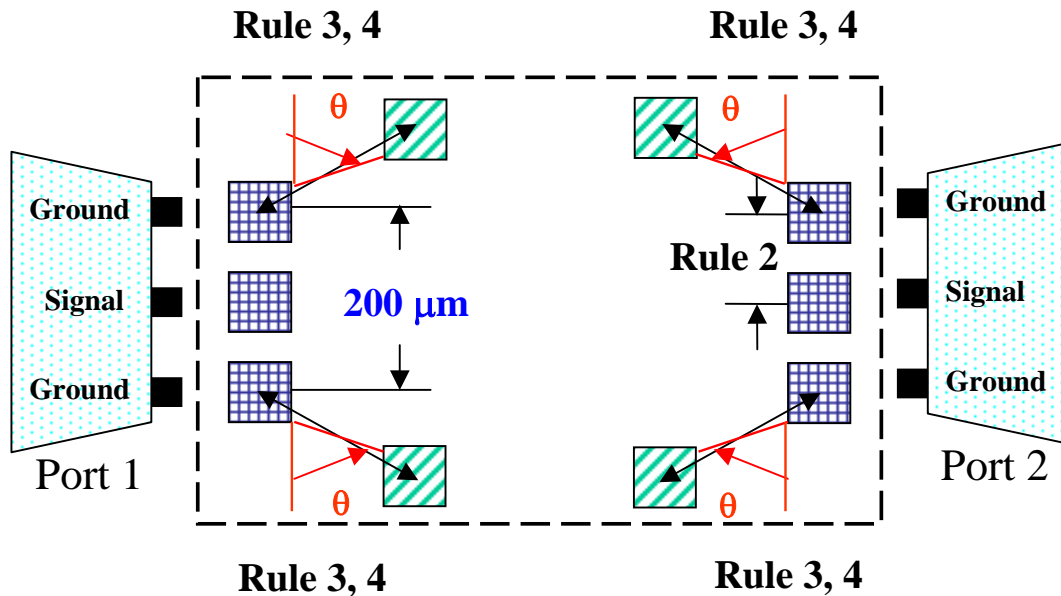
Layout Rules for On-Wafer RFIC Measurements

Please note that layout rules would vary according to your measurement requirements.

Layout Rules for On-Wafer RFIC Measurement

On-Wafer RFIC Measurement

Configuration 1: Two face-to-face RF ports with at most four DC pads



Rule 1 \Rightarrow Minimum pad size :
50μm×50μm

Rule 2 \Rightarrow **100μm** pitch **only** for RF pads (center-to-center)

Rule 3 \Rightarrow Minimum safety distance between the outmost RF pad and its nearby DC pad (if exists): **200μm center-to-center**

Rule 4 \Rightarrow The Fan Angle between the RF ground pad and its nearby DC pad (if exists) : **0 to 90°**

(The Fan Angle is defined in the left figure as symbol θ .)

Rule 5 \Rightarrow Any GSG RF pad set can be substituted by a **GSGSG (100μm pitch)** RF pad set for power or spectrum-related measurements.

On-Wafer RFIC Measurement

Configuration 2: Two face-to-face RF ports with one 3-pin/ 6-pin/ 9-pin DC pad set at one side and at most two DC pads at the other side

Rule 1 \Rightarrow Minimum pad size : $50\mu\text{m} \times 50\mu\text{m}$

Rule 2 \Rightarrow $100\mu\text{m}$ pitch only for RF pads (center-to-center)

Rule 3 \Rightarrow Minimum safety distance between the outmost RF pad and its nearby DC pad (if exists): $200\mu\text{m}$ center-to-center

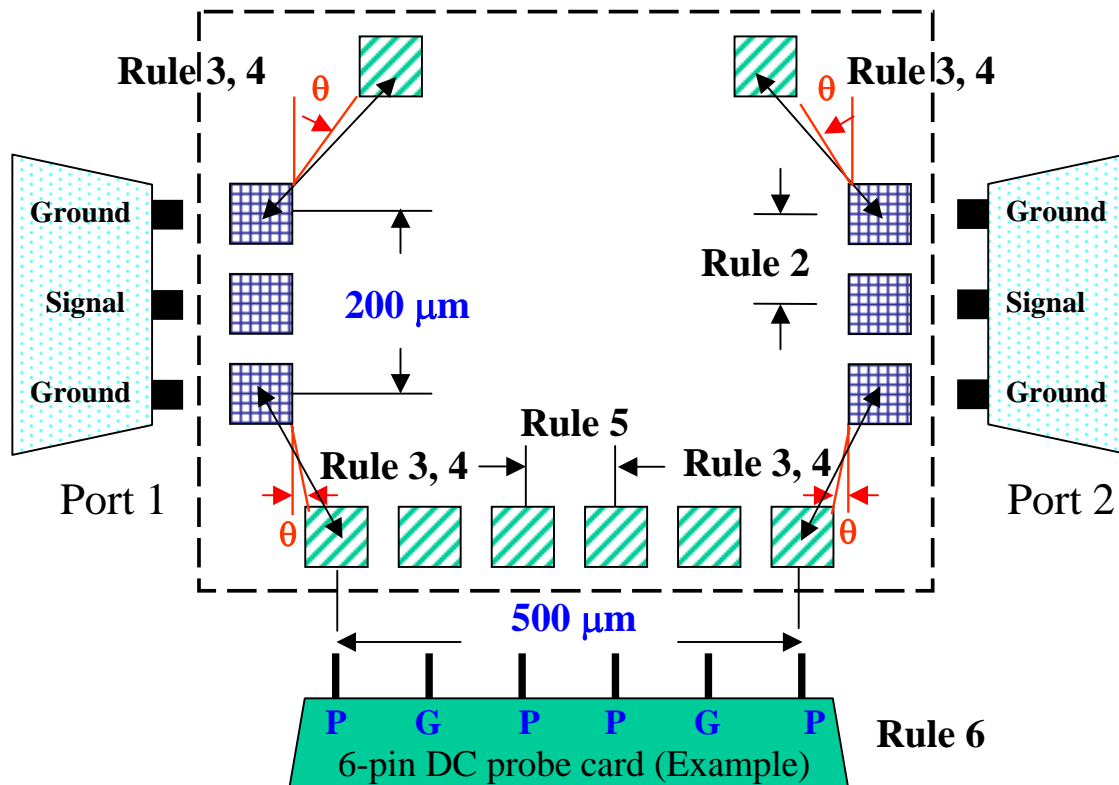
Rule 4 \Rightarrow The Fan Angle between the RF ground pad and its nearby DC pad (if exists) : 0 to 90°
(The Fan Angle is defined in the left figure as symbol θ .)

Rule 5 \Rightarrow $100\mu\text{m}$ pitch only for the DC pad set (center-to-center)

Rule 6 \Rightarrow PGP/PGPPGP/PGPPGPPGP configuration only for DC probe card (P: power, G:Ground)

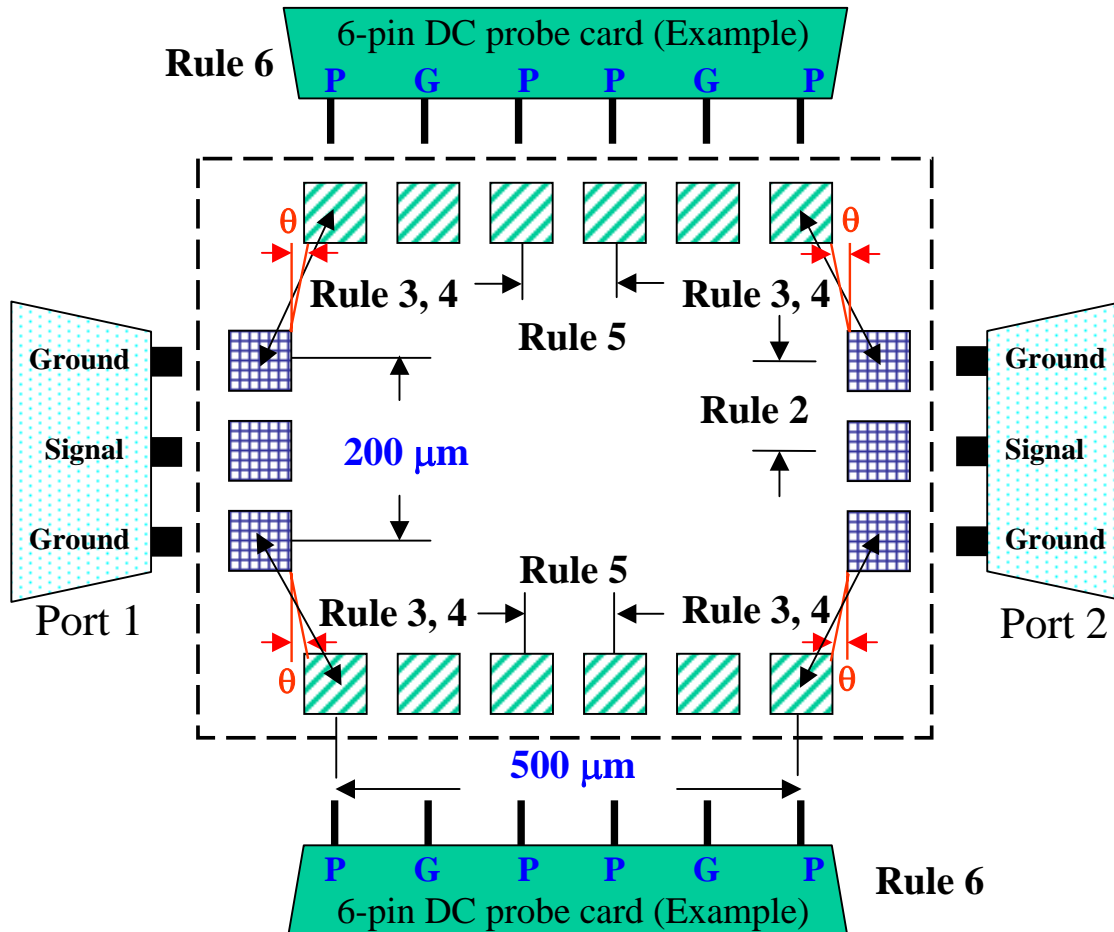
Rule 7 \Rightarrow Any GSG RF pad set can be substituted by a GSGG ($100\mu\text{m}$ pitch) RF pad set for power or spectrum-related measurements.

Rule 8 \Rightarrow The probe arrangements for TOP and BOTTOM sides can be interchangeable with each other.



On-Wafer RFIC Measurement

Configuration 3: Two face-to-face RF ports with two 3-pin/ 6-pin/ 9-pin DC pad sets



Rule 1 ⇒ Minimum pad size :

50μm×50μm

Rule 2 ⇒ **100μm** pitch **only** for RF pads (center-to-center)

Rule 3 ⇒ Minimum safety distance between the outmost RF pad and its nearby DC pad: **200μm** center-to-center

Rule 4 ⇒ The Fan Angle between the RF ground pad and its nearby DC pad (if exists) : **0 to 90°** (The Fan Angle is defined in the left figure as symbol θ.)

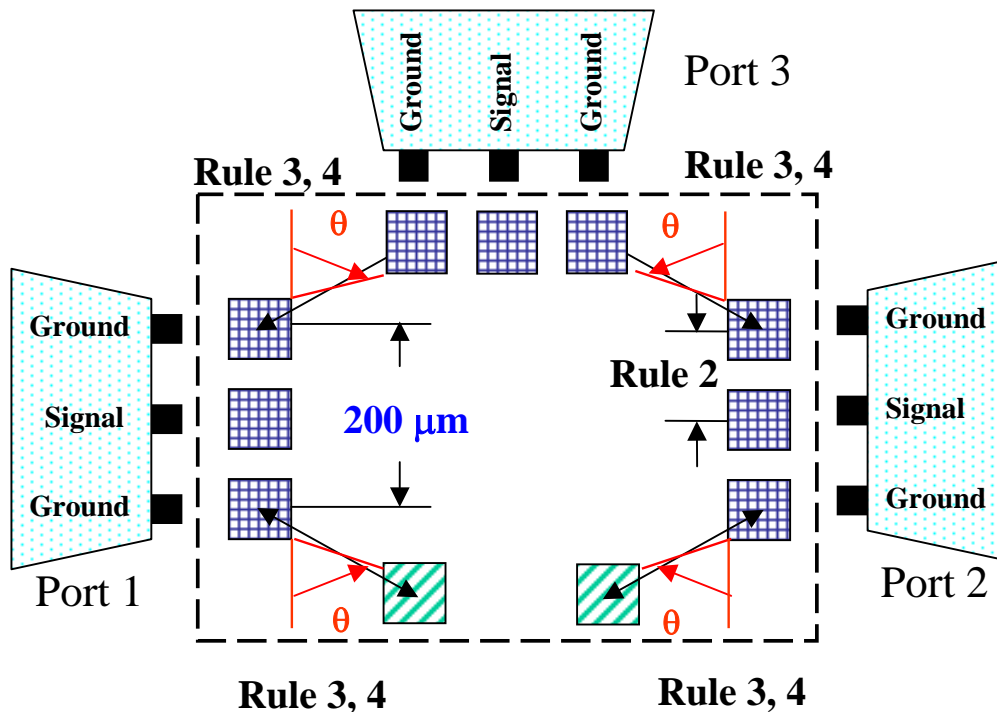
Rule 5 ⇒ **100 μ m** pitch **only** for the DC pad set (center-to-center)

Rule 6 ⇒ **PGP/PGPPGP/PGPPGPPGP** configuration only for DC probe card (**P: power, G:Ground**)

Rule 7 ⇒ Any GSG RF pad set can be substituted by a **GSGSG** (**100μm** pitch) RF pad set for power or spectrum related measurements.

On-Wafer RFIC Measurement

Configuration 4: Three RF ports with at most two DC pads



Rule 1 \Rightarrow Minimum pad size :

$50\mu\text{m} \times 50\mu\text{m}$

Rule 2 \Rightarrow **$100\mu\text{m}$ pitch only** for RF pads (center-to-center)

Rule 3 \Rightarrow Minimum safety distance between the outmost RF pad and its nearby DC pad (if exists): **$200\mu\text{m}$ center-to-center**

Rule 4 \Rightarrow The Fan Angle between the RF ground pad and its nearby DC pad (if exists) : **0 to 90°**

(The Fan Angle is defined in the left figure as symbol θ .)

Rule 5 \Rightarrow Any GSG RF pad set can be substituted by a **GSGG ($100\mu\text{m}$ pitch)** RF pad set for power or spectrum related measurements.

Rule 6 \Rightarrow The probe arrangements for TOP and BOTTOM sides can be interchangeable with each other.

On-Wafer RFIC Measurement

Configuration 5: Three RF ports with one 3-pin/ 6-pin/ 9-pin DC pad set

Rule 1 \Rightarrow Minimum pad size : $50\mu\text{m} \times 50\mu\text{m}$

Rule 2 \Rightarrow $100\mu\text{m}$ pitch **only** for RF pads (center-to-center)

Rule 3 \Rightarrow Minimum safety distance between the outmost RF pad and its nearby DC pad: $200\mu\text{m}$ center-to-center

Rule 4 \Rightarrow The Fan Angle between the RF ground pad and its nearby DC pad (if exists) : 0 to 90°
(The Fan Angle is defined in the left figure as symbol θ .)

Rule 5 \Rightarrow $100\mu\text{m}$ pitch **only** for the DC pad set (center-to-center)

Rule 6 \Rightarrow **PGP/PGPPGP/PGPPGPPGP** configuration only for DC probe card (**P**: power, **G**:Ground)

Rule 7 \Rightarrow Any GSG RF pad set can be substituted by a **GSGSG** ($100\mu\text{m}$ pitch) RF pad set for power or spectrum related measurements.

Rule 8 \Rightarrow The probe arrangements for TOP and BOTTOM sides can be interchangeable with each other.

