

Power on Reset

SPECIFICATION

1 FEATURES

- TSMC018 SiGe BiCMOS 0.18 μm
- Low current consumption
- Small layout area
- Supported foundries: TSMC, UMC, Global Foundries, SMIC, iHP, AMS, Vanguard, SiTerra

2 APPLICATION

- Power on reset

3 OVERVIEW

The power on reset consists of a Schmitt trigger and simple logic for forced reset input, which is forced asynchronous reset. Output port is $\overline{\text{Reset}}$, that means it is low to set flip-flop in particular state.

The block is fabricated in TSMC018 SiGe BiCMOS 0.18 μm .

4 STRUCTURE

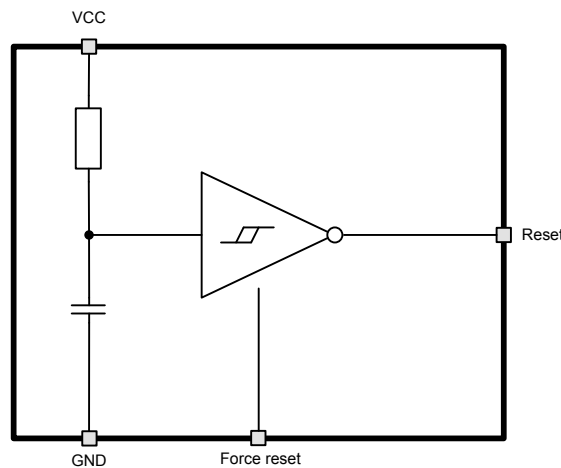


Figure 1: Power on Reset structure.

5 PIN DESCRIPTION

Name	Direction	Description
ResetPad	I	Forced asynchronous reset. Active high.
ResetN	O	Output reset. Active - low, high level in normal mode.
VCC	IO	Supply voltage
GND	IO	Ground

6 LAYOUT DESCRIPTION

Power on Reset dimensions are given in the table 1.

Table 1: Block dimensions.

Dimension	Value	Unit
Height	80	μm
Width	110	μm

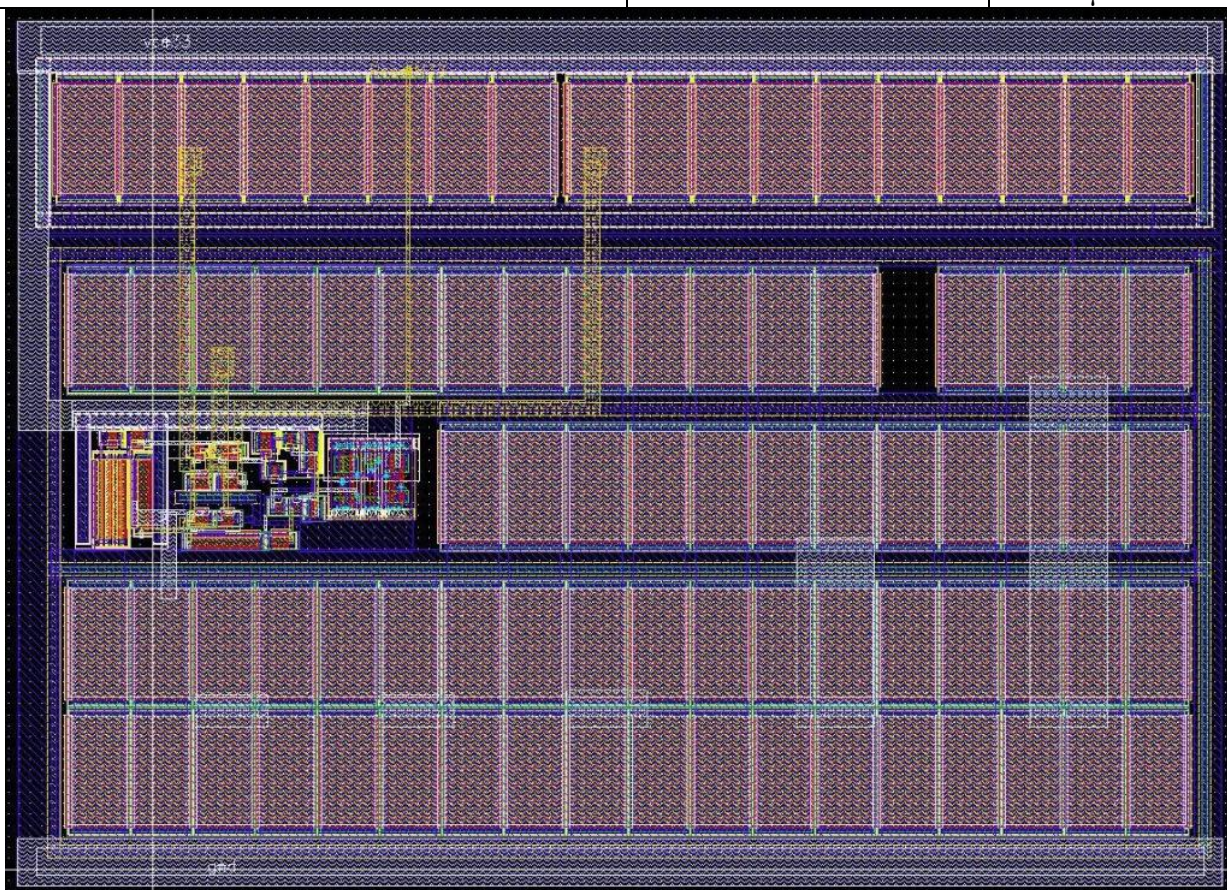


Figure 2: Power on Reset layout view.

7 OPERATING CHARACTERISTICS

7.1 TECHNICAL CHARACTERISTICS

Technology _____ TSMC018 SiGe BiCMOS
 Status _____ silicon proven
 Area _____ 0.01 mm²

7.2 ELECTRICAL CHARACTERISTICS

The values of electrical characteristics are specified for $V_{cc} = 3.0 \div 3.6$ V и $T = -40 \div +85^{\circ}\text{C}$. Typical values are at $V_{cc} = 3.3$ V, $T = +27^{\circ}\text{C}$, unless otherwise specified.

Parameter	Symbol	Condition	Value			Unit
			min	typ	max	
Supply voltage	V_{cc}	-	3.0	3.3	3.6	V
Operating temperature range	T	-	-40	+27	+85	$^{\circ}\text{C}$
Reset threshold voltage	V_{TH}	-	2.5	2.52	2.74	V
Vcc to reset delay	t_{pd}	-	26	50	89	μs
Reset output voltage low	V_{OL}				0.46	V
Vcc suply current	I_{CC}	-	-	-	0.5	nA
Input logic-level high	V_{IH}	Digital inputs	$0.9V_{cc}$	-	$1.1V_{cc}$	V
Input logic-level low	V_{IL}		-0.2	-	0.2	V

8 DELIVERABLES

IP contents:

- Schematic or NetList
- Layout or blackbox
- Extracted view (optional)
- GDSII
- DRC, LVS, antenna report
- Test bench with saved configurations (optional)
- Documentation