

Product Overview

NBSG86A: SiGe Differential Smart Gate, 2.5 V / 3.3 V, with Output Level Select

For complete documentation, see the data sheet.

The NBSG86A is a multi-function differential Logic Gate which can be configured as an AND/NAND, OR/NOR, XOR/XNOR, or 2:1 MUX. This device is part of the GigaComm family of high performance Silicon Germanium products. The device is housed in a low profile 4x4 mm, 16-pin, flip-chip BGA or a 3x3 mm 16 pin QFN package.

Differential inputs incorporate internal 50-ohm termination resistors and accept NECL (Negative ECL), PECL (Positive ECL), LVCMOS/LVTTL, CML, or LVDS. The OLS input is used to program the peak-to-peak output amplitude between 0 and 800 mV in five discrete steps.

The NBSG86A employs input clamping circuitry so that under open input conditions (D_x , $Dbar_x$, VTD_x , $VTDbar_x$, $VTSEL$) the outputs of the device will remain stable.

Features

- Maximum Input Clock Frequency > 8 GHz Typical
- Maximum Data Input Rate > 8 Gb/s Typical
- 165 ps Typical Propagation Delay
- 40 ps Typical Rise and Fall Times
- Selectable Swing PECL Output with Operating Range: $V_{CC} = 2.375\text{ V to }3.465\text{ V}$ with $V_{EE} = 0\text{ V}$
- Selectable Swing NECL Output with NECL Inputs with Operating Range: $V_{CC} = 0\text{ V}$ with $V_{EE} = -2.375\text{ V to }-3.465\text{ V}$
- 50Ω Internal Input Termination Resistors
- Selectable Output Level Select (0 V, 200 mV, 400 mV, 600 mV, or 800 mV Peak-to-Peak Output)

End Products

| Part Electrical Specifications | | | | | | | | | | | | |
|--------------------------------|------------------------|--------|-----------|----------|-------------|--------------|------------------|-------------------------|-------------------|-----------------------|------------------------|--------------|
| Product | Compliance | Status | Type | Channels | Input Level | Output Level | V_{CC} Typ (V) | $f_{Toggle\ Max}$ (MHz) | t_{pd} Typ (ns) | t_{jitter} Typ (ps) | t_R & t_F Max (ps) | Package Type |
| NBSG86AMNG | Pb-free Halide free | Active | SmartGate | 1 | TTL | RSECL | 3.3 | 8000 | 0.165 | 0.5 | 65 | QFN-16 |
| | | | | | CMOS | | 2.5 | | | | | |
| | | | | | LVDS | | | | | | | |
| | | | | | CML | | | | | | | |
| | | | | | ECL | | | | | | | |
| NBSG86AMNHTBG | Pb-free Halide free | Active | SmartGate | 1 | TTL | RSECL | 3.3 | 8000 | 0.165 | 0.5 | 65 | QFN-16 |
| | | | | | CMOS | | 2.5 | | | | | |
| | | | | | LVDS | | | | | | | |
| | | | | | ECL | | | | | | | |
| | | | | | CML | | | | | | | |

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