

Product Overview

NBSG16: SiGe Differential Driver / Receiver with RSECL Outputs

For complete documentation, see the data sheet.

The NBSG16 is a differential receiver/driver targeted for high frequency applications. The device is functionally equivalent to the EP16 and LVEP16 devices with much higher bandwidth and lower EMI capabilities.

Inputs incorporate internal 50-ohm termination resistors and accept NECL (Negative ECL), PECL (Positive ECL), HSTL, LVTTTL, LVCMOS, CML, or LVDS. Outputs are RSECL (Reduced Swing ECL), 400 mV.

The V_{BB} and V_{MM} pins are internally generated voltage supplies available to this device only. The V_{BB} is used as a reference voltage for single-ended NECL or PECL inputs and the V_{MM} pin is used as a reference voltage for LVCMOS inputs. For all single-ended input conditions, the unused complementary differential input is connected to V_{BB} or V_{MM} as a switching reference voltage. V_{BB} or V_{MM} may also rebias AC coupled inputs. When used, decouple V_{BB} and V_{MM} via a 0.01 uF capacitor and limit current sourcing or sinking to 0.5 mA. When not used, V_{BB} and V_{MM} outputs should be left open.

Features

- Maximum Input Clock Frequency > 12 GHz Typical
- Maximum Input Data Rate > 12 Gb/s Typical
- 120 ps Typical Propagation Delay
- 40 ps Typical Rise and Fall Times
- RSPECL Output with Operating Range: $V_{CC} = 2.375$ V to 3.465 V with $V_{EE} = 0$ V
- RSNECL Output with RSNECL or NECL Inputs with Operating Range: $V_{CC} = 0$ V with $V_{EE} = -2.375$ V to -3.465 V
- RSECL Output Level (400 mV Peak-to-Peak Output), Differential Output Only
- 50 Ω Internal Input Termination Resistors
- V_{BB} and V_{MM} Reference Voltage Output
- Compatible with Existing 2.5 V/3.3 V LVEP, EP, and LVEL Devices

For more features, see the data sheet

Applications

- SONET OC-192 / SDH STM-64 Optical Interface
- 10 Gigabit Ethernet
- Optical Networking Equipment
- Advance Test Equipment
- Ultra High Speed Terabit Routers

End Products

- ATE Instrumentation, Networking

Part Electrical Specifications

Product	Compliance	Status	Type	Channels	Input / Output Ratio	Input Level	Output Level	V_{CC} Typ (V)	t_{jitter}^R MS Typ (ps)	$t_{skew}^{(o)}$ Max (ps)	t_{pd} Typ (ns)	t_R & t_F Max (ps)	f_{max}^{Clock} Typ (MHz)	f_{max}^{Data} Typ (Mbps)	Package Type
NBSG16MNG	Pb-free Halide free	Active	Signal Driver	1	1:1	ECL LVDS CML TTL CMOS	RSECL	2.5 3.3	0.2 0.3		0.12	50	12000	12000	QFN-16

For more information please contact your local sales support at www.onsemi.com.

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