Product Overview

NB6L295M: Dual Channel Programmable Delay Line with CML Output

For complete documentation, see the data sheet.

The NB6L295M is a Dual Channel Programmable Delay Chip designed primarily for Clock or Data deskewing and timing adjustment. The NB6L295M is versatile in that two individual variable delay channels, PD0 and PD1, can be configured in one of two operating modes, a Dual Delay or an Extended Delay. In the Dual Delay Mode, each channel has a programmable delay section which is designed using a matrix of gates and a chain of multiplexers. There is a fixed minimum delay of 3.2 ns per channel. The Extended Delay Mode amounts to the additive delay of PD0 plus PD1 and is accomplished with the Serial Data Interface MSEL bit set High. This will internally cascade the output of PD0 into the input of PD1. Therefore, the Extended Delay path starts at the IN0/IN0 inputs, flows through PD0, cascades to the PD1 and outputs through Q1/Q1. There is a fixed minimum delay of 6.0 ns for the Extended Delay Mode. The required delay is accomplished by programming each delay channel via a 3-pin Serial Data Interface, described in the application section. The digitally selectable delay has an increment resolution of typically 11 ps with a net programmable delay range of either 0 ns to 6 ns per channel in Dual Delay Mode; or from 0 ns to 11.2 ns for the Extended Delay Mode. The Multi-Level Inputs can be driven directly by differential LVPECL, LVDS or CML logic levels; or by single ended LVPECL, LVCMOS or LVTTL. A single enable pin is available to control both inputs. The SDI input pins are controlled by LVCMOS or LVTTL level signals. The NB6L295M 16 mA CML output contains temperature compensation circuitry. This device is offered in a 4 mm x 4 mm 24-pin QFN Pb-free package. The NB6L295M is a member of the ECLinPS MAX family of high performance products.

Features

- Linearity +/- 20ps Maximum
- Maximum Input Clock Frequency >1.5 GHz Typical
- Programmable Range: 0 ns to 6 ns Dual Mode; Programmable Range: 0 ns to 11 ns Entended Mode;
- Delay Range: 3.2 ns to 9.0 ns Dual Mode; Delay Range: 6.2 ns to 17.8 ns Extended Mode
- 11 ps Delay Increments
- INx/INxb Inputs Accept LVPECL, LVDS Levels
- 3-Wire Serial Data Interface (SDI)

Applications

- Automated Test Equipment (ATE)Adjustable signal path delays

Part Electrical Specifications

Product	Compliance	Status	Input Level	Output Level	V_{CC} Typ (V)	f_{Max} Typ (MHz)	$t_{d(prog)}$ Min (ns)	$t_{d(prog)}$ Max (ns)	$t_{d(step)}$ Typ (ps)	t_{jitter} Typ (ps)	t_R & t_F Max (ps)	Package Type
NB6L295MMNG	Pb-free Halide free	Active	ECL CML CMOS LVDS	CML	2.5 3.3	1500	0	6.9	8.4	2	150	QFN-24
NB6L295MMNTXG	Pb-free Halide free	Active	CMOS CML LVDS ECL	CML	2.5 3.3	1500	0	6.9	8.4	2	150	QFN-24

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

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