iT4016
Clock Phase Delay With Buffered Output

Description

The iT4016 is a clock phase delay with buffered output that provides a voltage-variable phase shift that allows the user to align data and clock signals with high precision. The RF output is constant over all phase shift setting s because of the limiting action of the output buffer amplifier. The insertion phase and output level are also stabilized over temperature and input level changes through the use of GaAs varactor diodes and thin-film ceramic circuits. Typical uses include clock delay shifters for optical timing circuits, power combining networks, and test and measurement applications.

Features

- Wideband signal handling: 9 GHz to 12.5 GHz
- 360 deg. minimum phase shift range
- Output amplitude: 1.7 Vpp typical limited output
- AC coupled input and output
- Input: 0.2 Vpp to 1.4 Vpp
- Temperature-stable amplitude and phase response

Performance and Electrical Characteristics (9 to 12.5 GHz)

Parameter	Min.	Typ.	Max	Units
Output level (Vpp)	1.5		1.9	V
Phase adjustment range	360	380		deg.
Insertion delay variation with case temperature (0°C - 85° C)		+.05		ps/°C
Insertion delay variation with input level (Any 3-dB change in input level, 0.2 to 1.4 Vpp)		+/-3		ps
Control voltage input (360-deg. phase change)	-15		0	V
DC voltage operating supply (at 130 mA max.)	4.5	5.0	15	V
Operating input level (Vpp)	0.2		1.4	V
Output harmonics (at maximum input level)			-20	dBc
Input/output reflection		-10		dB

iTerra Communications
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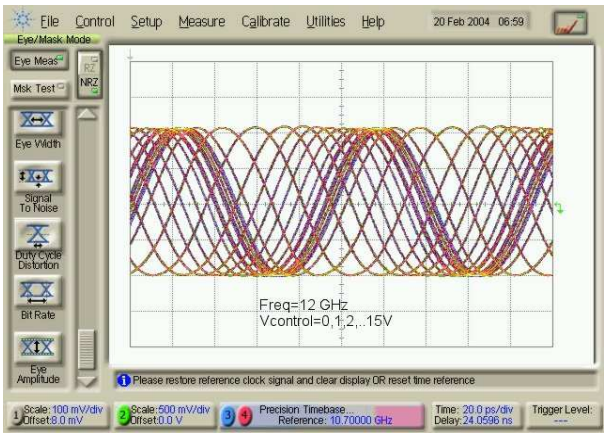
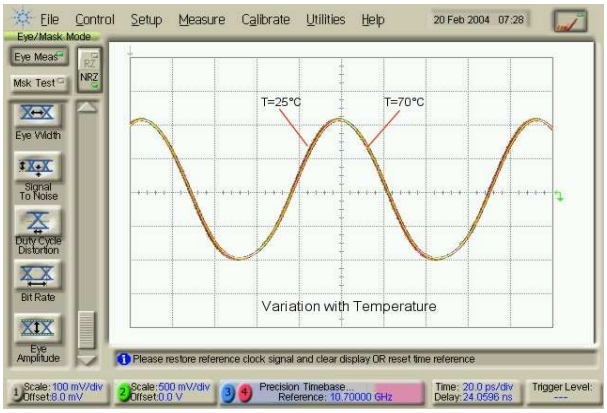
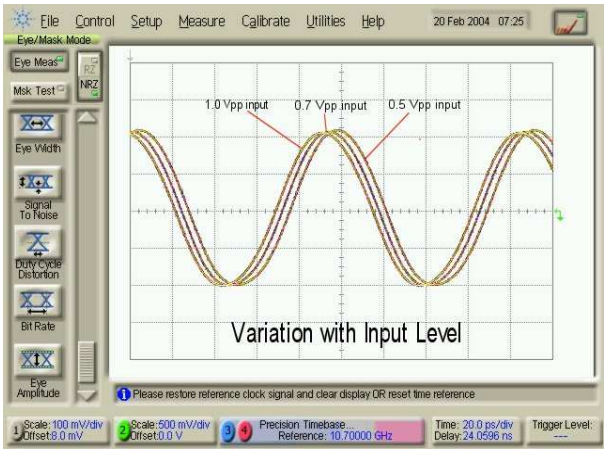
Typical Time Domain Performance



Output with control voltage varied from 0 to -15 V (vertical scale: 0.4 V/div)



Output with temperature varied from 25°C to 70°C (vertical scale: 0.4 V/div)



Output with input amplitude varied from 0.5 Vpp to 1.0 Vpp (vertical scale: 0.4 V/div)

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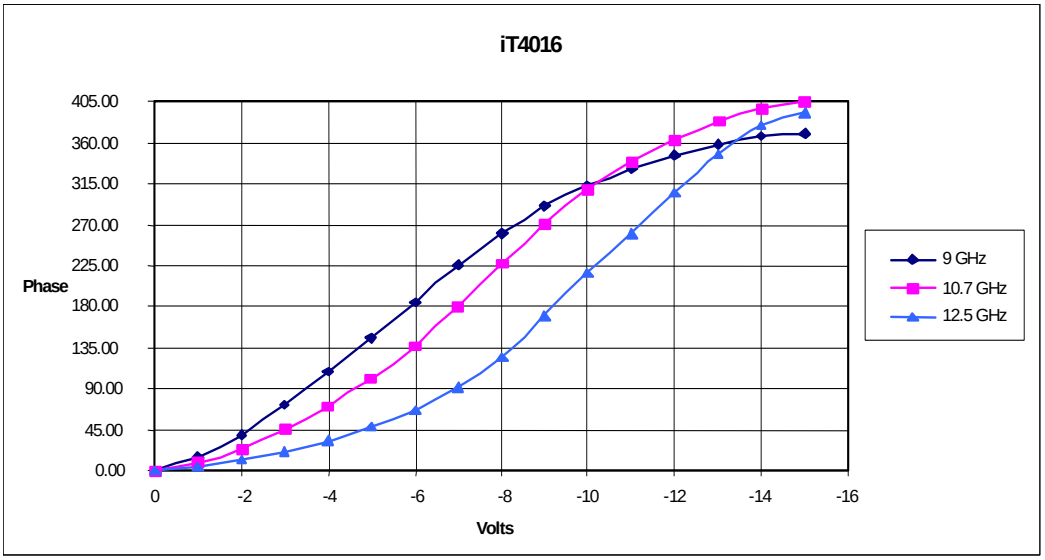
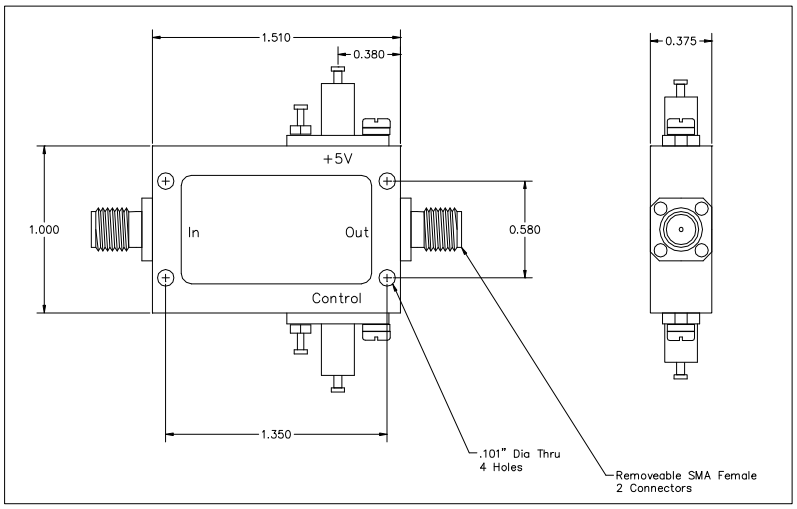
Typical Insertion Phase

At 9,10.7, and 12.5 GHz. Control voltage (X axis) varied from 0 to –15 V



Mechanical Dimensions (in inches)



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