

# VFJA910

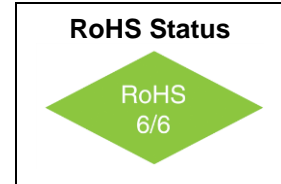
## 25MHz Jitter Attenuator

### Dual LVCMOS Output



#### Features

- 2 LVCMOS outputs
- Ultra Low Jitter 0.20ps RMS
- Phase Noise: -140 dBc/Hz @ 1kHz
- Low Power: < 120mW typical
- Free-run mode
- No external components required

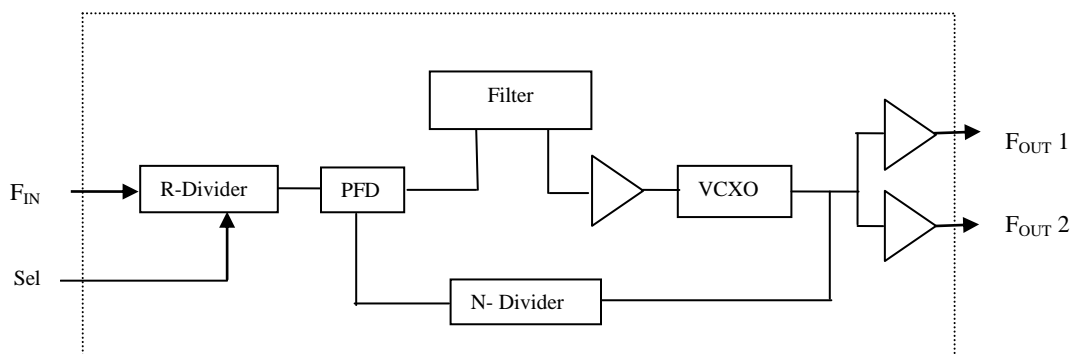


#### Applications

- Synchronous Ethernet

#### Description

The VFJA910 is a Jitter Attenuator that provides two LVCMOS outputs with a frequency of 25MHz. With less than 0.4 dBc of jitter peaking the device allows for cascading multiple stages within the network. A select input [Sel] allows the user to switch from the external input reference to a free-run mode. In free-run mode the device outputs a 25MHz clock that is not locked to the input reference frequency. Operating with a +3.3 volt power supply the device typically consumes 120mW. The VFJA910 is available in a 15.0mm x 13.0mm surface mount package.



Block Diagram



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#### Absolute Maximum Ratings

Parameter	Symbol	Condition	Min	Typ	Max	Unit	Note
Supply Break Down Voltage	$V_{CC}$		-0.5		5.5	V	
Storage Temperature	$T_S$		-55		+105	°C	

#### Electrical Specifications

Parameter	Symbol	Condition	Min	Typ	Max	Unit	Note
Output Frequency Range	$F_{OUT}$			25.0		MHz	
Input Frequency Range	$F_{IN}$	Slew Rate 2.5V / ns (min)		25.0		MHz	
Input Level	$V_{IN}$	AC coupled internally	0.4		3.3	$V_{P-P}$	
Output Level Logic "1"	$V_{OH}$	$I_{OH} = 8 \text{ mA}$	$V_{CC}-0.1$		$V_{CC}$	V	
Output Level Logic "0"	$V_{OL}$	$I_{OL} = 8 \text{ mA}$	0.0		0.3	V	
Jitter RMS		12kHz to 20MHz		200	300	fs	
SSB Phase Noise	$\phi_n$	100Hz 1kHz 10kHz 100kHz 1MHz		-102 -131 -149 -153 -160		dBc/Hz	@ 25 MHz
APR			$\pm 100$			ppm	
Free-run Accuracy		-40°C to +85°C		60		ppm	
Modulation BW			30			Hz	Note 1
Duty Cycle		@ 50%	45	50	55	%	
Rise / Fall Time	$T_R/T_F$	20% to 80%			0.6	ns	
Start up time				2	10	ms	
Select Input	Sel		Logic "1" = Free Run Mode Logic "0" = External Input Reference				LVCMOS
Supply Voltage	$V_{CC}$		3.15	3.30	3.45	V	
Input Current	$I_{CC}$			30	40	mA	
Operating Temperature Range	$T_A$		-40		+85	°C	



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#### Environmental and Mechanical Conditions

Parameter	Condition
Mechanical Shock	Per MIL-STD-202, Method 213, Condition E
Thermal Shock	Per MIL-STD-883, Method 1011, Condition A
Vibration	Per MIL-STD-883, Method 2007, Condition A
Soldering Conditions	260°C for 10s max
Hermetic Seal	Leak rate less than $5 \times 10^{-8}$ atm.cc/s of helium (crystal only)

#### Connection Diagram

#### Mechanical Outline

Pin #	Description
1	Fin
2	N/C
3	Sel
4	V <sub>CC</sub>
5	Gnd
6	F <sub>OUT 2</sub>
7	F <sub>OUT 1</sub>
8	N/C
9	V <sub>CC</sub>
10	Gnd

#### Table 1

Sel	Input Frequency (MHz)	Output Frequency (MHz)
0	25.00 MHz	25.00
1	Free-run Mode	25.00

