

VFJA911

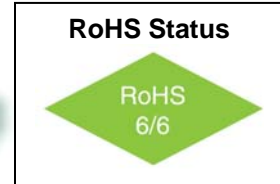
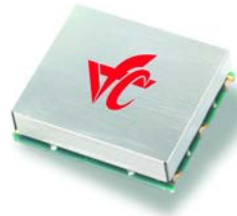
25 MHz Jitter Attenuator

LVPECL Output



Features

- LVPECL output
- Ultra Low Jitter: 0.25ps RMS
- Phase Noise: -138 dBc/Hz @ 1KHz
- Free-run mode
- No external components required

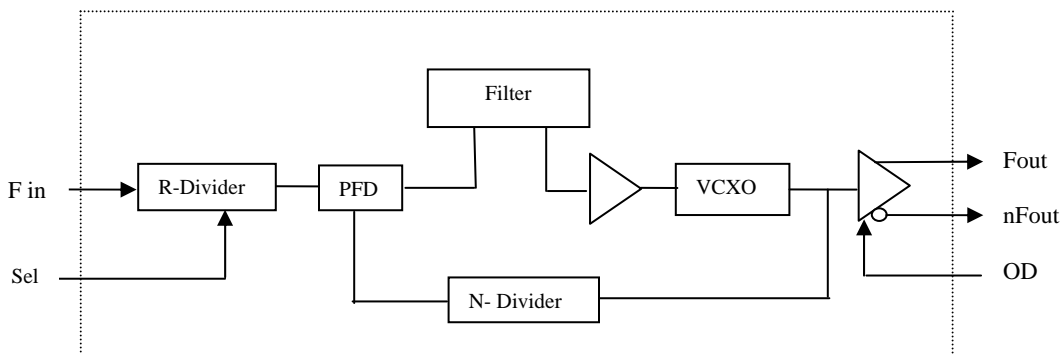


Applications

- Synchronous Ethernet

Description

The VFJA911 is a Jitter Attenuator that provides an LVPECL output 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 135mW. The VFJA911 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}	50 Ohm to V _{cc} -2V or Thevenin Equivalent	V _{cc} -0.96		V _{cc} -0.81	V	
Output Level Logic "0"	V _{ol}		V _{cc} -1.85		V _{cc} -1.65	V	
Jitter RMS		12KHz to 20MHz		0.25		ps	
SSB Phase Noise	Φ _n	100Hz 1KHz 10KHz 100KHz		-118 -138 -145 -153		dBc/Hz	@ 25 MHz
APR			± 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				LVC MOS
Output Disable	OD		Logic "1" = Output Disabled Logic "0" or Floating = Output Enabled				LVC MOS
Supply Voltage	V _{cc}		3.15	3.30	3.45	V	
Input Current	I _{cc}			40	45	mA	
Operating Temperature Range	T _a		-40°		+85°	°C	



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Environmental and Mechanical

Parameter	Specification
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 5×10^{-8} atm.cc/s of helium (crystal only)

Connection Diagram

Mechanical Outline

Pin #	Description
1	Fin
2	N/C
3	Sel
4	Vcc
5	Gnd
6	nFout
7	Fout
8	Output Disable
9	Vcc
10	Gnd

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

Table 1

