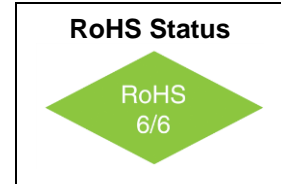
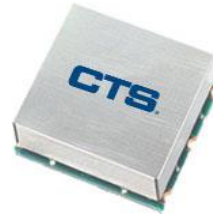


VFJA922

Jitter Attenuator with 25MHz and 156.25 MHz Output Frequencies

Features

- 2 LVCMOS outputs at 25 MHz
- 1 LVPECL output at 156.25 MHz
- Ultra Low Jitter 0.25ps RMS
- Free-run mode
- No external components required

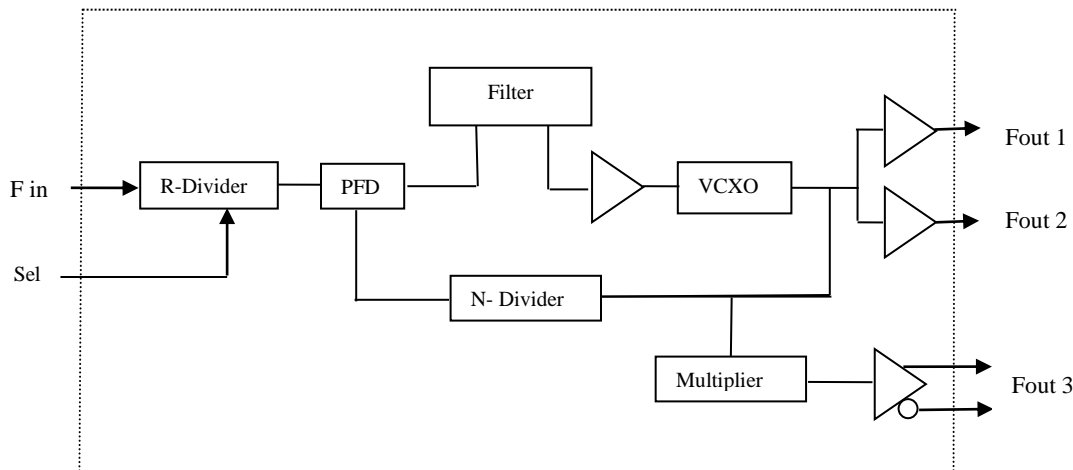


Applications

- Synchronous Ethernet

Description

The VFJA922 is a Jitter Attenuator that provides two LVCMOS outputs at 25MHz and one LVPECL output at 156.25 MHz. 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 nominal output frequency and is not locked to the input reference clock. The VFJA922 is available in a 19.5 mm x 15.5 mm surface mount package.



Block Diagram

VFJA922

Jitter Attenuator with 25MHz and 156.25 MHz Output Frequencies



Absolute Maximum Ratings

Parameter	Symbol	Condition	Min	Typ	Max	Unit	Note
Supply Break Down Voltage	V _{cc}		-0.5		+4.6	V	
Storage Temperature	T _s		-55		+95	°C	

Electrical Specifications

VFJA922

Jitter Attenuator with 25MHz and 156.25 MHz Output Frequencies



Parameter	Symbol	Condition	Min	Typ	Max	Unit	Note	
Output Frequency	Fout 1 Fout 2			25.0		MHz		
Output Frequency	Fout 3			156.25		MHz		
Input Frequency	Fin	Slew Rate 2.5V / ns (min)		25.0		MHz		
Input Level	Vin	AC coupled internally	0.4		3.3	V p-p		
Fout 1 & 2 Output Level Logic "1"	Voh 1,2	IOH = 8 mA	Vcc-.1		Vcc	V		
Fout 1 & 2 Output Level Logic "0"	Vol 1,2	IOL = 8 mA	0.0		0.3	V		
Fout 3 Output Level Logic "1"	Voh 3	50 Ohm to Vcc-2V or Thevenin Equivalent	Vcc-1.145		Vcc-0.845	V		
Fout 3 Output Level Logic "0"	Vol 3		Vcc-1.945		Vcc-1.645	V		
Jitter RMS		12KHz to 20MHz			0.3	ps	@ 25 MHz	
					0.3		@ 156.25MHz	
SSB Phase Noise	Φn	100Hz 1KHz 10KHz 100KHz		-120 -140 -150 -160		dBc/Hz	@ 25 MHz	
APR			± 100			ppm		
Free-run Accuracy		-40°C to +85°C		60		ppm		
Modulation BW			10			Hz		
Duty Cycle		@ 50%	45	50	55	%		
Rise / Fall Time	Tr/Tf	20% to 80%			0.6	ns		
Start up time				2	3	s		
Select Input	Sel		Logic "1" (> 2.5 V) = Free Run Mode Logic "0" (< .4 V) = External Input Reference					Table 1
Supply Voltage	Vcc		3.15	3.30	3.45	V		
Input Current	Icc			100	130	mA		
Operating Temperature Range	Ta		-40°		+85°	°C		

VFJA922

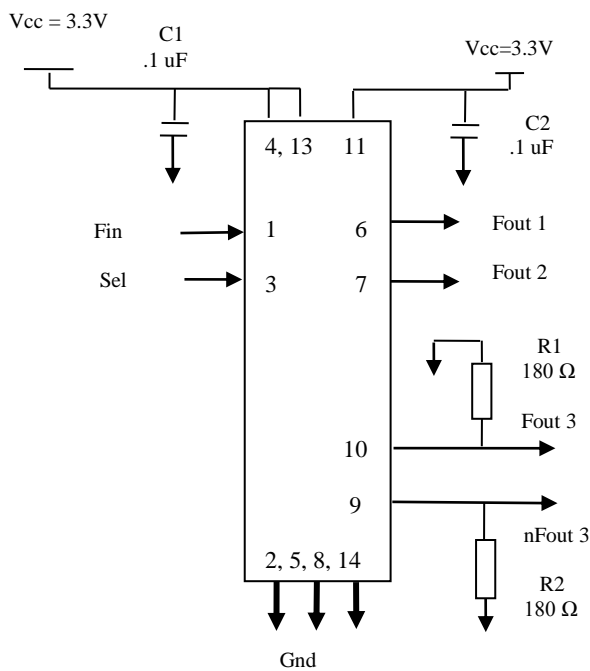
Jitter Attenuator with 25MHz and 156.25 MHz Output Frequencies



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



Pin Assignments

Pin #	Description
1	Fin
2	Gnd
3	Sel
4	Vcc
5	Gnd
6	Fout 1
7	Fout 2
8	Gnd
9	nFout 3
10	Fout 3
11	Vcc
12	N/C
13	Vcc
14	Gnd

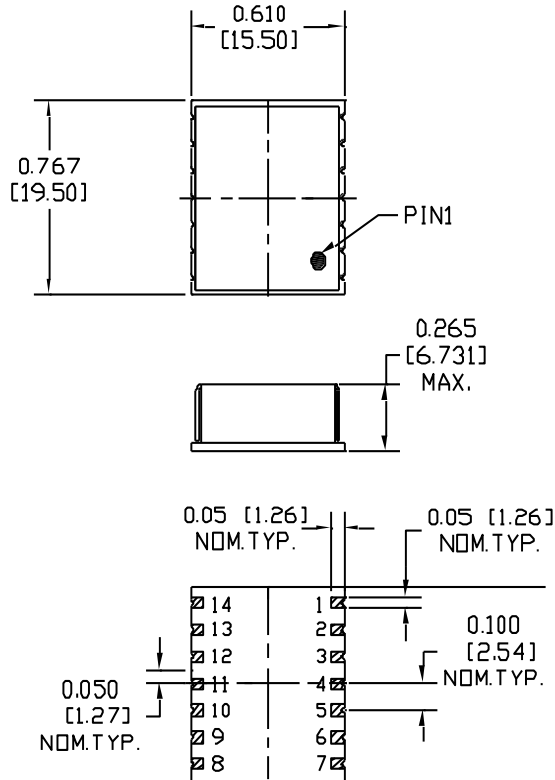
Table 1

Sel	Input Frequency (MHz)	Output Frequency (MHz)
0	25.00 MHz	25.00 & 156.25
1	Free-run Mode	25.00 & 156.25

VFJA922

Jitter Attenuator with 25MHz and 156.25 MHz Output Frequencies

Mechanical Outline



Recommended Pad Layout

