

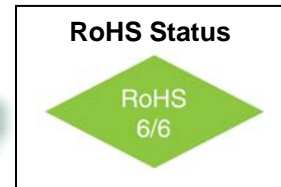
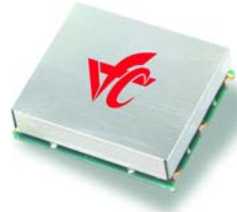
VFJA410

Quad Input

Jitter Attenuator to 200 MHz

Features

- 10 MHz to 200MHz Output Frequency Range
- 8 KHz to 800 MHz Input Frequency Range
- Ultra Low Jitter and Phase Noise: -120 dBc/Hz @ 1KHz
- Low Power: < 150mW typical

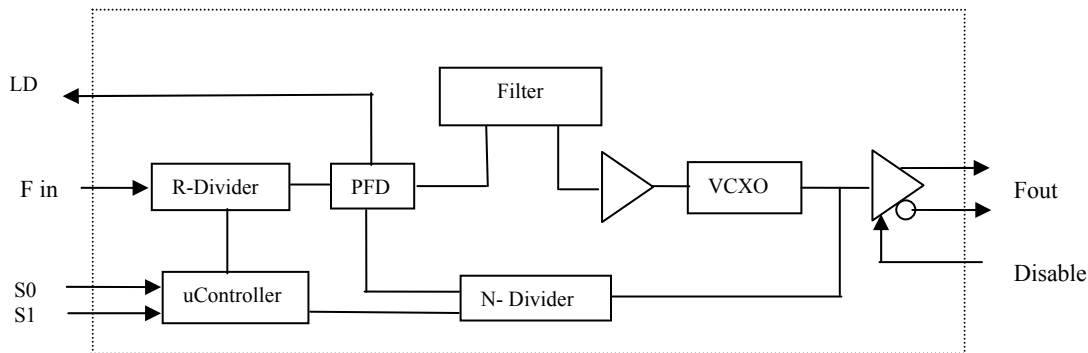


Applications

- Sonet / SDH / ATM
- 10 Gigabit Ethernet
- Wireless Infrastructure

Description

The VFJA410 is a Jitter Attenuator capable of providing an output frequency up to 200 MHz. Two select inputs [S1,S0] allow the user to select 1 of 4 preset input frequencies. A Lock Detect signal indicates when the output signal is frequency locked to the input. Operating with a +3.3 volt power supply the device typically consumes 150 mW. The output is configured as a differential LVPECL signal and requires external termination resistors. The VFJA410 is available in a 19.5mm x 15.5 mm 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}		10		200	MHz		
Input Frequency Range	F _{in}		0.008		800	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		
Phase Jitter		12KHz to 20MHz		0.20	0.5	ps(rms)		
SSB Phase Noise	Φ _n	100Hz 1KHz 10KHz 100KHz		-100 -130 -145 -150		dBc/Hz	@ 155.52MHz	
APR			± 32			ppm		
Modulation BW			10			Hz	Note 1	
Duty Cycle		@ 50%	45	50	55	%		
Rise / Fall Time	Tr/Tf	20% to 80%			0.6	ns		
Start up time				2	10	ms		
Supply Voltage	V _{cc}		3.15	3.30	3.45	V		
Input Current	I _{cc}			45	55	mA		
Operating Temperature Range	T _a		0° -40°		+70° +85°	°C	Order code B Order code G	
Lock Detect	LD	Output HIGH (> 2.5 V) : In Lock; Output LOW (< .5V): Out of Lock						LVC MOS
Enable / Disable Function		Input HIGH (>2.5V): Output Disabled Input LOW (<0.5V) or floating: Output Enabled						LVC MOS
Enable / Disable Time	Te/Td				100	ns		

Notes:

1. Consult factory for Bandwidth options



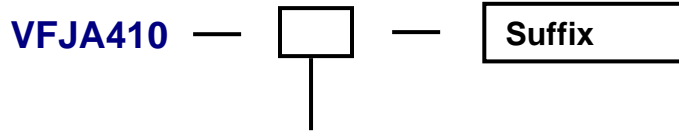
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How to Order



Temperature Range	
Code	Specification
B	0°C to 70°C
G	-40°C to 85°C

Once Input and Output frequencies have been submitted and approved, the Factory will assign a part number.

Sample Frequencies **Table 2**

P/N suffix	S1:S0	Input Frequency (MHz)	Output Frequency (MHz)	P/N suffix	S1:S0	Input Frequency (MHz)	Output Frequency (MHz)
-001	00	622.080	19.44	-002	00	622.080	38.88
	01	644.5314	19.44		01	644.5314	38.88
	10	669.32658	19.44		10	669.32658	38.88
	11	693.48315	19.44		11	693.48315	38.88
-003	00	622.080	77.76	-004	00	622.080	155.52
	01	644.5314	77.76		01	644.5314	155.52
	10	669.32658	77.76		10	669.32658	155.52
	11	693.48315	77.76		11	693.48315	155.52
-005	00	.008	25.00	-006	00	.008	125.00
	01	19.44	25.00		01	19.44	125.00
	10	25	25.00		10	25	125.00
	11	125	25.00		11	125	125.00

Environmental and Mechanical

VFJA410

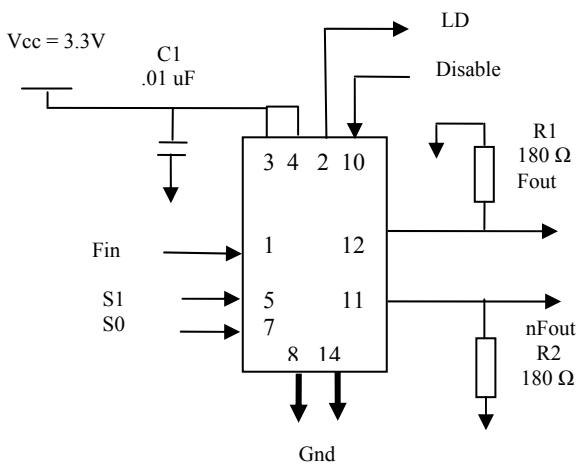
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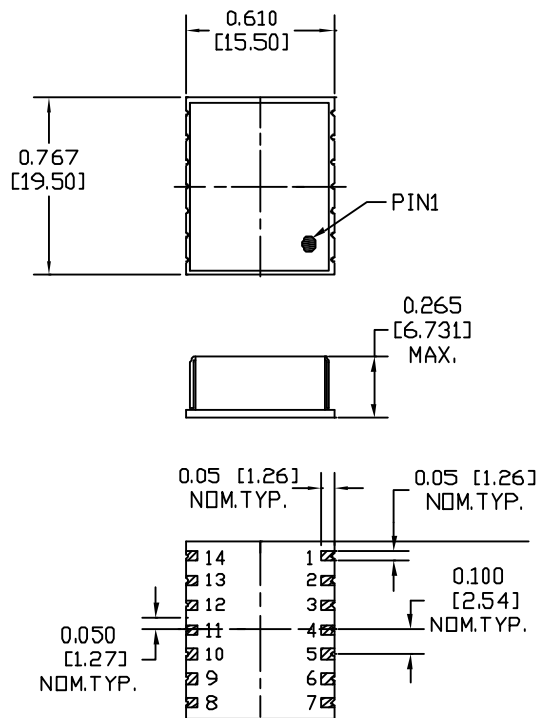


Parameter	Specification
Mechanical Shock	Per MIL-STD-202, Method 213, Condition E
Thermal Shock	Per MIL-STD-883, Method 1011, Condition A
Vibration	Per MIL-STD-883, Method 2007, Condition A
Soldering Conditions	260°C for 10s max
Hermetic Seal	Leak rate less than 5×10^{-8} atm.cc/s of helium (crystal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

Connection Diagram



Mechanical Outline



Pin #	Description
1	Fin
2	Lock Detect
3	Vcc
4	Vcc
5	S1
6	DNC
7	S0
8	Gnd
9	N/C
10	Disable
11	nFout
12	Fout
13	N/C
14	Gnd

