

# VFJA434

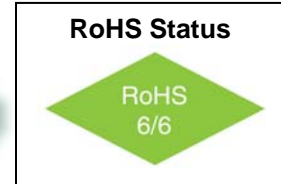
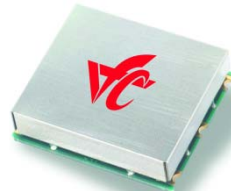
## Quad Input to 200 MHz

### Jitter Attenuator w/ $F_{OUT}$ to 200 MHz



#### Features

- 10 MHz to 200MHz Output Frequency Range
- 8 KHz to 200 MHz Input Frequency Range
- Ultra Low Jitter and Phase Noise: -143 dBc/Hz @ 1KHz
- Low Power: < 150mW typical

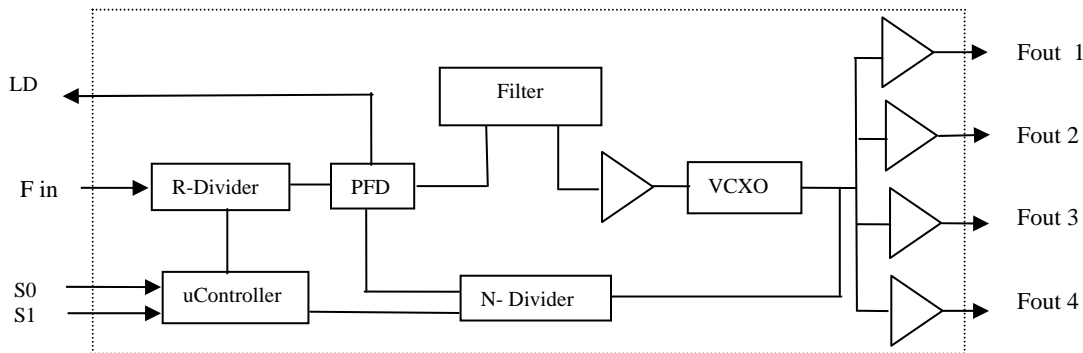


#### Applications

- Sonet / SDH / ATM
- Carrier Ethernet Synchronizers
- Wireless Infrastructure

#### Description

The VFJA434 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 less than 150 mW. The VFJA434 is configured with four LVCMOS output ports. The device 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 <sub>cc</sub>		-0.5		5.5	V	
Storage Temperature	T <sub>s</sub>		-55		+105°	°C	

#### Electrical Specifications

Parameter	Symbol	Condition	Min	Typ	Max	Unit	Note	
Output Frequency Range	F <sub>out</sub>		10		200	MHz		
Input Frequency Range	F <sub>in</sub>		0.008		200	MHz		
Input Level	V <sub>in</sub>	AC coupled internally	0.4		3.3	V p-p		
Output Level Logic "1"	V <sub>oh</sub>	10K Ω // 10 pF	V <sub>cc</sub> -0.1		V <sub>cc</sub>	V		
Output Level Logic "0"	V <sub>ol</sub>		0.0		.1	V		
Phase Jitter		12KHz to 20MHz		0.18	0.35	ps(rms)		
SSB Phase Noise	φ <sub>n</sub>	100Hz 1KHz 10KHz 100KHz		-120 -143 -153 -163		dBc/Hz	@ 25 MHz	
APR			± 32			ppm		
Modulation BW			10			Hz	Note 1	
Duty Cycle		@ 50%	45	50	55	%		
Rise / Fall Time	Tr/Tf	20% to 80%	.8		4.0	ns		
Start up time				2	10	ms		
Supply Voltage	V <sub>cc</sub>		3.15	3.30	3.45	V		
Input Current	I <sub>cc</sub>			45	55	mA		
Operating Temperature Range	T <sub>a</sub>		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

Notes:

1. Consult factory for Bandwidth options

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## Quad Input to 200 MHz

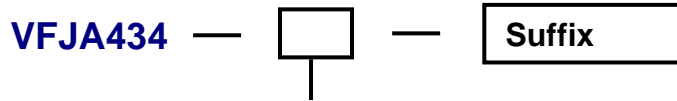
### Jitter Attenuator w/ F<sub>OUT</sub> to 200 MHz



#### 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 5x10 <sup>-8</sup> atm.cc/s of helium (crystal only)

#### 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.

**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	.008	25.00	-002	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
-003	00	24	80.0	-004	00	10	120
	01	24	80.0		01	10	120
	10	24	80.0		10	10	120
	11	24	80.0		11	10	120
-005	00	10	100.00	-006	00		
	01	10	100.00		01		
	10	10	100.00		10		
	11	10	100.00		11		

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## Quad Input to 200 MHz

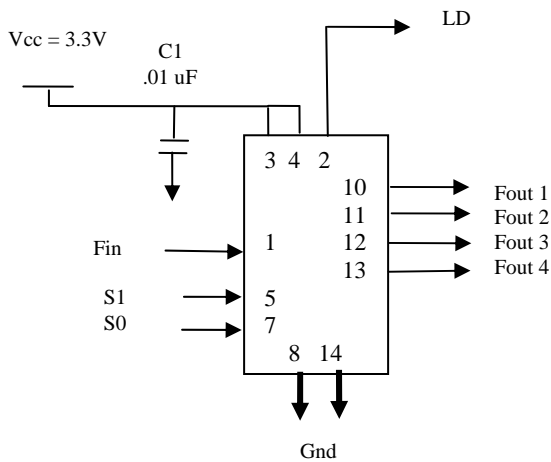
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#### Pin Assignments

Pin #	Symbol	Description	Notes
1	Fin	Input Frequency	
2	LD	Lock Detect	
3	Vccp	Connect to Vcc pin #4	Add .1 uF Capacitor
4	Vcc	3.3 Volt Power Supply	
5	S1	Input Select (msb)	
6	DNC	Do not connect	
7	S0	Input Select (lsb)	
8	Gnd	Ground	
9	n/c	No connection	
10	Fout 1	Output Frequency	
11	Fout 2	Output Frequency	
12	Fout 3	Output Frequency	
13	Fout 4	Output Frequency	
14	Gnd	Ground	

#### Connection Diagram



#### Mechanical Outline

