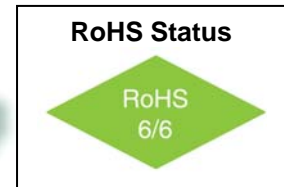
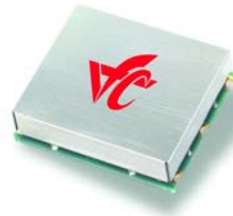


VFJA430 Jitter Attenuator with 3 Input Frequency Selections plus Free Run Mode



Features

- Free Run Mode
- 8 KHz to 200 MHz Input Frequency Range
- Ultra Low Jitter and Phase Noise: -152 dBc/Hz @ 100KHz
- Low Power: < 150mW typical

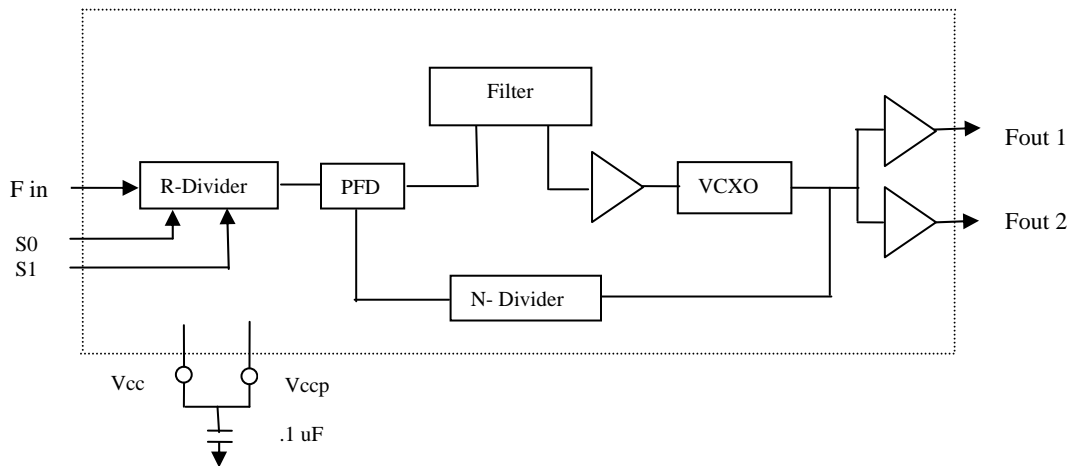


Applications

- Synchronous Ethernet
- Wireless Infrastructure

Description

The VFJA430 is a Jitter Attenuator that provides two LVCMOS outputs at the specified frequency. Two select inputs [S1,S0] allow the user to select 1 of 3 preset input frequencies or Free Run Mode. In Free Run mode the device outputs the nominal frequency and is not locked to the input reference frequency. Operating with a +3.3 volt power supply the device typically consumes 150 mW. The VFJA430 is available in a 19.5mm x 15.5 mm surface mount package.



Block Diagram

VFJA430 Jitter Attenuator with 3 Input Frequency Selections plus Free Run Mode



Absolute Maximum Ratings

| Parameter | Symbol | Condition | Min | Typ | Max | Unit | Note |
|---------------------------|--------|-----------|------|-----|-------|------|------|
| Supply Break Down Voltage | Vcc | | -0.5 | | 5.5 | V | |
| Storage Temperature | Ts | | -55 | | +105° | °C | |

Electrical Specifications

| Parameter | Symbol | Condition | Min | Typ | Max | Unit | Note |
|-----------------------------|----------------|----------------------------------|-------|------------------------------|------|---------|-------------|
| Output Frequency Range | Fout | | | 25 | | MHz | |
| Input Frequency Range | Fin | | .008 | | 200 | MHz | See Table 1 |
| Input Level | Vin | AC coupled internally | 1.0 | | 3.3 | V p-p | Note 2 |
| Output Level Logic "1" | Voh | I _{OH} = 8 mA | Vcc-6 | | Vcc | V | |
| Output Level Logic "0" | Vol | I _{OL} = 8 mA | 0.0 | | .3 | V | |
| Phase Jitter | | 12KHz to 20MHz | | 0.20 | | ps(rms) | |
| SSB Phase Noise | φ _n | 100Hz 1KHz 10KHz 100KHz | | -102 -132 -147 -152 | | dBc/Hz | @ 125 MHz |
| APR | | | ± 32 | | | ppm | |
| Free-run Accuracy | | -40°C to +85°C | | ±30 | ±50 | 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 | Vcc | | 3.15 | 3.30 | 3.45 | V | |
| Input Current | Icc | | | 45 | 55 | mA | |
| Operating Temperature Range | Ta | | -40° | | +85° | °C | |

Notes:

1. Consult factory for other bandwidth options.
2. For 2MHz > Fin < 20 MHz , ensure SR > 50 V/μs; For 8KHz > Fin < 2MHz, ensure Slew Rate > 2.5V / ns

Jitter Attenuator with 3 Input Frequency Selections plus Free Run Mode



How to Order

VFJA430 — Suffix (See Table 1)

Table 1

| P/N suffix | S1:S0 | Input Frequency (MHz) | Output Frequency (MHz) | P/N suffix | S1:S0 | Input Frequency (MHz) | Output Frequency (MHz) |
|------------|-------|-----------------------|------------------------|------------|-------|-----------------------|------------------------|
| -001 | 00 | Free-run Mode | 125.0 | -002 | 00 | Free-run Mode | 25.00 |
| | 01 | 19.44 | 125.0 | | 01 | 1.544 | 25.00 |
| | 10 | 25.0 | 125.0 | | 10 | 2.048 | 25.00 |
| | 11 | 125.0 | 125.0 | | 11 | 25.00 | 25.00 |

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

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) |

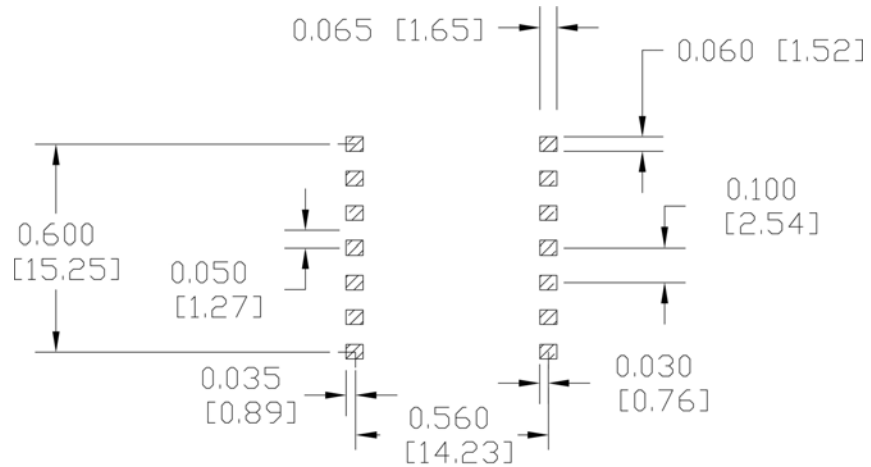
VFJA430 Jitter Attenuator with 3 Input Frequency Selections plus Free Run Mode



| Pin # | Description |
|-------|-------------|
| 1 | Fin |
| 2 | DNC |
| 3 | Vccp* |
| 4 | Vcc |
| 5 | S1 |
| 6 | DNC |
| 7 | S0 |
| 8 | Gnd |
| 9 | N/C |
| 10 | N/C |
| 11 | Fout 2 |
| 12 | Fout 1 |
| 13 | N/C |
| 14 | Gnd |

* Connect pin #3 to pin #4 and add .1 uF

Mechanical Outline



Connection Diagram

