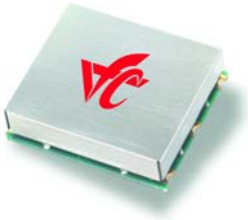
VFJA100
Jitter Attenuator to 1GHz
25.4x22mm SMD, PECL/LVPECL

Valpey Fisher Corporation
High Frequency, Low Phase Noise Timing Solutions

Features

- **1.0 GHz Output** Frequency Range
- Ultra Low Jitter: <0.200 ps
- Meets OC-192 Jitter transfer, generation, and tolerance
- Low Power: <220mW typical
- Low Profile SMD package
- Compliant with Telcordia GR-1244-CORE, GR-253-CORE, ITU-T G.813, and ITU-T G.8261



RoHS Status

RoHS 6/6

Applications

- Sonet / SDH / ATM
- 10 Gigabit Ethernet
- Forward Error Correction (FEC)

Description

The VFJA100 is a Jitter Attenuator capable of providing an output frequency up to 1 GHz. An internal synthesizer locks to the input reference clock and multiplies it up to the desired output frequency. The output frequency is determined by a VCXO designed for a wide pull range. An internal voltage regulator offers improved stability and noise performance. The output is configured as a differential LVPECL signal and requires external termination resistors. The VFJA100 is available in a 25.4mm x 22 mm surface mount package.

Electrical Specifications

Parameter	Symbol	Condition	Min	Typ	Max	Unit	Note
Input Frequency	Fref		0.008		100	MHz	
Output Frequency	Fout		50		1000	MHz	
Operating Temperature Range	T		0° -40°		70° +85°	°C	*Order Code B* *Order Code G*
Output		Signal	PECL / LVPECL				
Supply Voltage	Vcc		3.15	3.30	3.45	V	
Jitter		12KHz to 20MHz		0.2	0.8	ps	
SSB Phase Noise		100Hz 1KHz 10KHz 100KHz		-90 -118 -142 -145		dBc/Hz	@ 622.08MHz

Electrical Specifications

Parameter	Symbol	Condition	Min	Typ	Max	Unit	Note
Supply Current	Icc	50 Ohm Load		62	75	mA	
Load	50 Ohm to Vcc-2V or Thevenin Equivalent						
Duty Cycle		@ 50%	45	50	55	%	
Logic "1" Level	Voh		Vcc-0.96		Vcc-0.81	V	
Logic "0" Level	Vol		Vcc-1.85		Vcc-1.65	V	
Lock Range			50	100		ppm	
Input Level		AC Coupled Internally	0.4		3.3	V p-p	
Enable / Disable Function	Input HIGH (>2.5V): DISABLED Input LOW (<0.5V) or floating: ACTIVE						LVCMOS
Enable / Disable Time	Te/Td				100	ns	

Absolute Maximum Ratings

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

How to Order

VFJA100 — [ ] — **Output FREQUENCY, XXXX.XXXX MHz** — **Input FREQUENCY XXX.XXXX MHz**

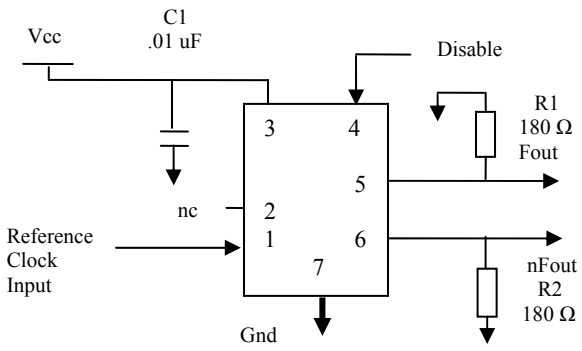
Temperature Range

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

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 $5x10^{-8}$ atm.cc/s of helium (crystal only)

Connection Diagram



Pin #	Connection
1	Vref
2	N/C
3	Vcc
4	Disable
5	Fout
6	$\overline{\text{Fout}}$
7	GND

Mechanical Outline