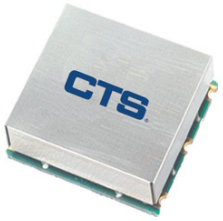
VFJA100
Jitter Attenuator to 1GHz
25.4x22mm SMD, PECL/LVPECL

CTS ELECTRONIC COMPONENTS

Features

- 1.0 GHz output frequency range
- Ultra low jitter: <0.2ps
- 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 1GHz. An internal synthesizer locks to the input reference clock and multiplies it up to the desired output frequency. 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 22mm surface mount package.

Electrical Specifications

Parameter	Symbol	Condition	Min	Typ	Max	Unit	Note
Input Frequency	F_{REF}		0.008		100	MHz	Note 2
Output Frequency	F_{OUT}		50		1000	MHz	
Operating Temperature Range	T		0 -40		70 +85	°C	*Order Code B* *Order Code G*
Output		Signal	PECL / LVPECL				
Supply Voltage	V_{CC}		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

Notes:
1. Consult factory for Bandwidth and Lock Range options
2. For Fin < 20 MHz , ensure SR > 50 V/µs

Electrical Specifications

Parameter	Symbol	Condition	Min	Typ	Max	Unit	Note
Supply Current	I_{CC}	50 Ohms Load		62	75	mA	
Load	50 Ohms to V_{CC}-2V or Thevenin Equivalent						
Duty Cycle		@ 50%	45	50	55	%	
Logic "1" Level	V_{OH}		V_{CC}-0.96		V_{CC}-0.81	V	
Logic "0" Level	V_{OL}		V_{CC}-1.85		V_{CC}-1.65	V	
Lock Range			20			ppm	Note 1
Input Level		AC Coupled Internally	1.0		3.3	V_{P-P}	
Enable / Disable Function	Input HIGH (>2.5V): DISABLED Input LOW (<0.5V) or floating: ACTIVE						LVCMOS
Enable / Disable Time	T_E/T_D				100	ns	

Absolute Maximum Ratings

Parameter	Symbol	Condition	Min	Typ	Max	Unit	Note
Supply Voltage	V_{CC}		-0.5		+5.5	V	
Storage Temperature	T_S		-55		+105°	°C	

How to Order

VFJA100 — ☐ — **Output FREQUENCY, XXXX.XXXX MHz** — **Input FREQUENCY XXX.XXXX MHz**

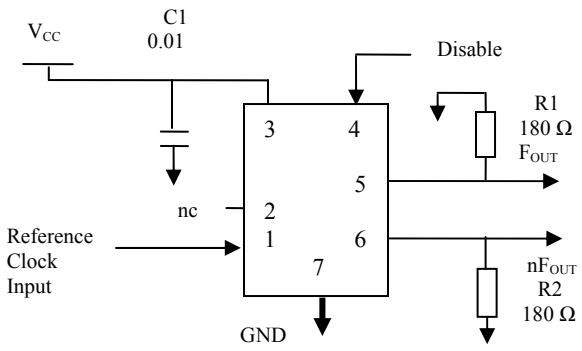
Temperature Range

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

Environmental and Mechanical Conditions

Parameter	Condition
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	V_{REF}
2	N/C
3	V_{CC}
4	Disable
5	F_{OUT}
6	$\overline{F_{OUT}}$
7	GND

Mechanical Outline