

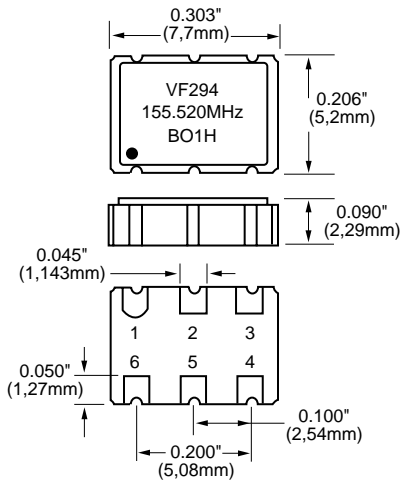
# VF194/VF294 Series

## HCMOS/TTL Hybrid VCXO Surface Mount Ceramic Package Tristate Output Standard



### FEATURES

- Very Low Phase Jitter
- Industrial Temperature Range
- High Reliability
- Wide Frequency Range
- Miniature Package
- 3.3V supply available



All dimensions are typical unless otherwise specified.

Creating a Part Number

**VF194/294** [ ] [ ] - [ ] - [ ] - **FREQ.**

FREQUENCY STABILITY	
Code	Specification
S	±20 ppm (std.)

ABSOLUTE PULL RANGE (ppm)	
Code	Specification
XXX	Specify Deviation MIN. (MAX. ±100 PPM)

OPERATIONAL TEMP. RANGE	
Code	Specification
1	-40°C to +85°C (std.)

DUTY CYCLE	
Code	Specification
H	±5%
	±10% (std.)

INPUT VOLTAGE	
Code	Specification
L	3.3 Volt ±5%
	5.0 Volt ±5% (std.)

Example: VF194-1-100-77.76MHz: Frequency Stability ±25ppm, Duty Cycle ±10%, Input Voltage 5.0 Volt ±5%, Operating Temperature -40°C to +85°C, Absolute Pull Range (ppm) ±100min. Output Tristate Control Pin #5, Frequency 77.76MHz.

#### Notes:

1. Current is frequency and load dependent.
2. Tighter duty cycle available.
3. ±100ppm available at some frequencies. ±32ppm for some frequencies at 3.3V is the only option.
4. 0-5V control voltage available for Vcc 3.3V. Nominal control voltage is 2.5V and setability is ±0.5V in this case.
5. For higher frequency Tr/Tf is shorter.

Parameter	Symb	Condition	Min	Typ	Max	Unit	Note
<b>Absolute Max. Ratings</b>							
Input Break Down Voltage	Vcc		-0.5		7.0	V	
Storage Temp.	Ts		-55		+125	°C	
Control Voltage	Vc		-1		9	V	
Frequency Range	F		1.5		160	MHz	
Frequency Stability	ΔF/F	vs. Temp., Vcc			±25	ppm	
Input Voltage	Vcc		4.75 3.15	5.00 3.30	5.25 3.45	V	Standard LV Opt.
Input Current	Icc	No load			30	mA	1
Load	10 TTL gates or 50pF						
Duty Cycle		@1.4V	40	50	60	%	2
Rise/Fall Time	Tr/Tf	20% to 80% 0.4V to 2.4V			6 4	ns	5
Logic "1" Level	Voh	Max Load	0.9Vcc			V	
Logic "0" Level	Vol	Max Load			0.1Vcc	V	
Start-up Time	Ts			2	10	ms	
Phase Jitter		1σ, F<52 MHz 1σ, F>52 MHz			1 20	ps	fj>1KHz
Modulation BW	fm	@Vc = 2.5V	10			KHz	@-3db
Input Impedance		fm<10KHz	50			KOhm	
Control Voltage	Vc	Vcc = 5.0V Vcc = 3.3V	0 0		5.0V 3.3V	V	4
Absolute Pull Range	APR	Overall	±50			ppm	3
Deviation Slope		Monotonic, positive		50		ppm/V	
Linearity					±20	%	
Setability (Vc for center freq)	Vc0	@25°C, Fnominal	2.00 1.25	2.50 1.65	3.00 2.05	V	Vcc = 5.0V Vcc = 3.3V
Tristate Function	Input HIGH (>2.5V) or floating: ACTIVE Input LOW (<0.5V): INFINITE IMPEDANCE						
Enable/Disable Time					100	ns	
<b>Environmental and Mechanical</b>							
Operating Temperature Range	0°C to +70°C (-40°C to +85°C available)						
Mechanical Shock	Per MIL-STD-202, Method 213, Cond. E						
Thermal Shock	Per MIL-STD-883, Method 1011, Cond. A						
Vibration	Per MIL-STD-883, Method 2007, Cond. A						
Soldering Conditions	230°C, for 90s, Max.						
Hermetic Seal	Leak rate less than 5 x 10 <sup>-8</sup> atm.cc/s of helium						
<b>Electrical Connections</b>							
Pin Out	Pin #1-Voltage Control Pin #3-Ground, Case Pin #5-Tristate (194), N/C (294)		Pin #2-N/C (194) Tristate (294) Pin #4-Output Pin #6-Vcc				

All specifications are subject to change without notice.