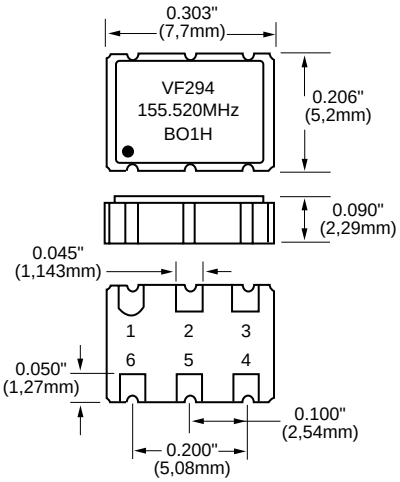
VF194/VF294 Series

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.)

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

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

OPERATIONAL TEMP. RANGE	
Code	Specification
	0°C to +70°C (std.)
1	-40°C to +85°C

ABSOLUTE PULL RANGE (ppm)	
Code	Specification
XXX	Specify Deviation MIN.

(MAX. ±100 PPM)

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
Absolute Max. Ratings	Input Break Down Voltage	Vcc		–0.5		7.0	V	
	Storage Temp.	Ts		–55		+125	°C	
	Control Voltage	Vc		–1		9	V	
Electrical	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	
Environmental and Mechanical	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^{-8} atm.cc/s of helium						
Electrical Connections	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.

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