

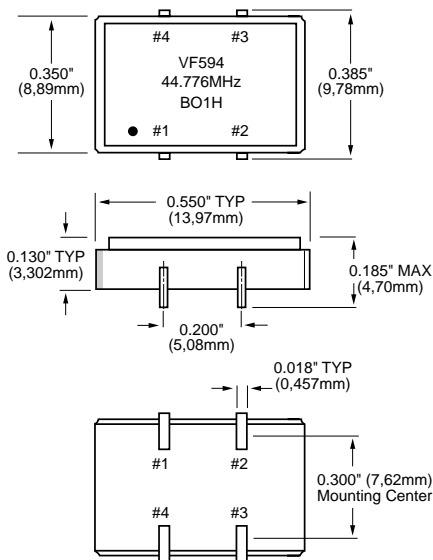
# VF594



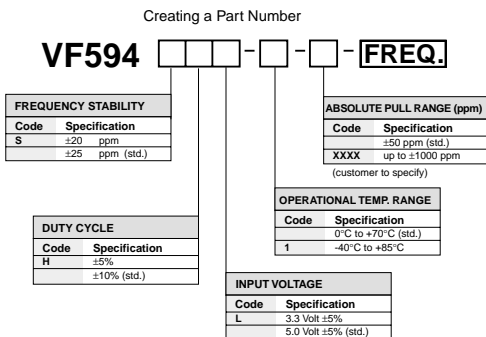
## HCMOS/TTL Compatible Surface Mount Ceramic Package

### FEATURES

- Wide Frequency Range
- Very Low Phase Jitter at All Frequencies
- Wide Pullability ( $\pm 1000$ ppm available at some frequencies)
- EMI Shielded
- Standard Footprint
- Wide Operating Temperature



All dimensions are typical unless otherwise specified.



Example: VF594-77.76MHz; Frequency Stability  $\pm 25$ ppm, Duty Cycle  $\pm 10\%$ , Input Voltage 5.0 Volt  $\pm 5\%$ , Operating Temperature 0°C to +70°C, APR  $\pm 50$ ppm, Frequency 77.76MHz.

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		+85	°C		
	Control Voltage	Vc	-1		9	V		
Electrical	Frequency Range	F	1.54		160	MHz		
	Frequency Stability	$\Delta F/F$	Vs. Temp., Vcc		$\pm 25$	ppm		
	Input Voltage	Vcc		4.75 3.15	5.00 3.30	5.25 3.45	V	Std. LV Opt.
	Input Current	Icc	No Load		12		mA	@20MHz
	Load	10 TTL gates or 50pF MAX, AC coupled 50 Ohm termination recommended @ Freq. >54 MHz						
	Duty Cycle		@1.4V	40	50	60	%	1
	Rise/Fall Time	Tr/Tf	20% to 80%			6	ns	2
	Logic "1" Level	Voh	Max Load	0.9Vcc				
	Logic "0" Level	Vol	Max Load			0.1Vcc		
	Start-up Time	Ts			2	10	ms	
	Phase Jitter		1 $\sigma$			1	ps	fj>1KHz
	Modulation BW		@Vc = 2.5V	10			KHz	@-3db
Input Impedance		fm<10KHz	50			KOhm		
Control Voltage	Vc	Vcc = 5.0V Vcc = 3.3V	0.0 0.0	2.50 1.65	5.00 3.30	V	3	
Deviation Slope		Monotonic, Positive		50 75		ppm/V	Vcc = 5.0V Vcc = 3.3V	
Absolute Pull Range	APR		$\pm 50$			ppm		
Linearity					$\pm 20$	%	4	
Setability (Vc for center freq)	Vc0	@25°C, Fnom.	2.00 1.20	2.50 1.65	3.00 2.10	V	Vcc = 5.0V Vcc = 3.3V	
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	260°C, for 10s, Max; 230°C, for 90s, Max.						
Electrical Connections	Hermetic Seal	Leak rate less than $5 \times 10^{-8}$ atm.cc/s of helium						
	Pin Out	Pin #1-Voltage Control Pin #3-Output		Pin #2-Ground, Case Pin #4-Vcc				

Notes:

1. Tighter duty cycle available.
2. Frequency dependent. Shorter at higher frequencies
3. 0V to 5V control voltage available for Vcc 3.3V. Nominal Control Voltage is 2.5V and Setability is  $\pm 0.5V$  in this case.
4. 10% and 5% available.

All specifications are subject to change without notice.