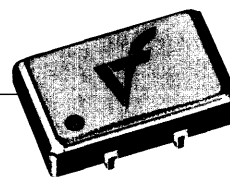


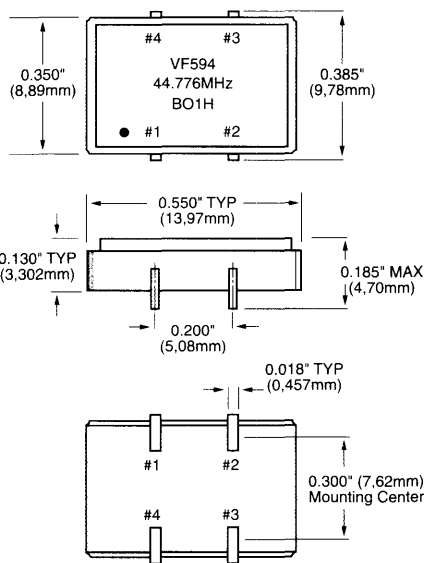
# VF594



## 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



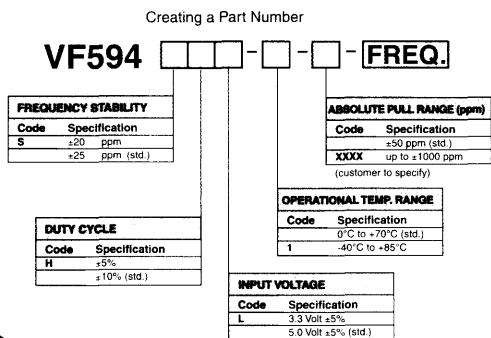
All dimensions are typical unless otherwise specified.

Parameter	Symb	Condition	Min	Typ	Max	Unit	Note	
Absolute Max. Ratings	Input Break Down Voltage	V <sub>cc</sub>	-0.5		7.0	V		
	Storage Temp.	T <sub>s</sub>	-55		+85	°C		
	Control Voltage	V <sub>c</sub>	-1		9	V		
Electrical	Frequency Range	F	1.54		160	MHz		
	Frequency Stability	$\Delta F/F$	Vs. Temp., V <sub>cc</sub>		$\pm 25$		ppm	
	Input Voltage	V <sub>cc</sub>	4.75 3.15	5.00 3.30	5.25 3.45	V	Std. LV Opt.	
	Input Current	I <sub>cc</sub>	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	T <sub>r</sub> /T <sub>f</sub>	20% to 80%			6	ns	2
	Logic "1" Level	V <sub>oh</sub>	Max Load	0.9V <sub>cc</sub>				
	Logic "0" Level	V <sub>ol</sub>	Max Load			0.1V <sub>cc</sub>		
	Start-up Time	T <sub>s</sub>			2	10	ms	
	Phase Jitter		1 $\sigma$			1	ps	f <sub>j</sub> >1KHz
	Modulation BW		@V <sub>c</sub> = 2.5V	10			KHz	@-3db
	Input Impedance		f <sub>m</sub> <10KHz	50			KOhm	
	Control Voltage	V <sub>c</sub>	V <sub>cc</sub> = 5.0V V <sub>cc</sub> = 3.3V	0.0 0.0	2.50 1.65	5.00 3.30	V	3
	Deviation Slope		Monotonic, Positive		50 75		ppm/V	V <sub>cc</sub> = 5.0V V <sub>cc</sub> = 3.3V
Absolute Pull Range	APR		$\pm 50$			ppm		
Linearity					$\pm 20$	%	4	
Setability (V <sub>c</sub> for center freq)	V <sub>c0</sub>	@25°C, F <sub>nom</sub>	2.00 1.20	2.50 1.65	3.00 2.10	V	V <sub>cc</sub> = 5.0V V <sub>cc</sub> = 3.3V	
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.							
Hermetic Seal	Leak rate less than 5 x 10 <sup>-6</sup> atm.cc/s of helium							
Pin Out	Pin #1-Voltage Control			Pin #2-Ground, Case				
	Pin #3-Output			Pin #4-Vcc				

Notes:

1. Tighter duty cycle available.
2. Frequency dependent. Shorter at higher frequencies
3. 0V to 5V control voltage available for V<sub>cc</sub> 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.



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.