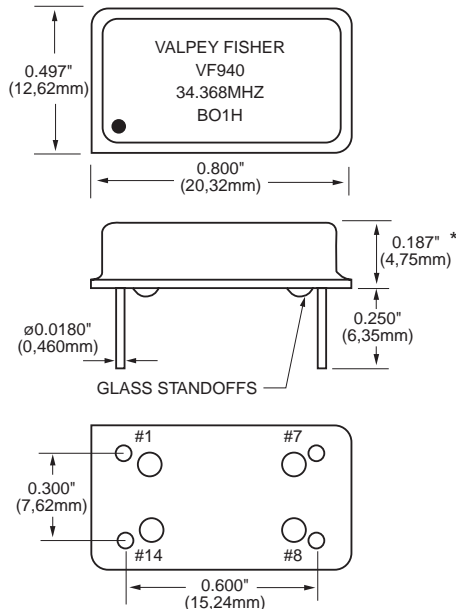


## VF940

HCMOS/TTL Compatible  
VCXO

## FEATURES

- Fundamental Crystal Design
- Very Low Phase Jitter
- Extremely Wide Pulling Range available
- Low Cost



All dimensions are typical unless otherwise specified.  
\*Wide APR may require taller pkg.

Creating a Part Number

**VF940** [ ] - [ ] - [ ] - [ ] - [ ] - **FREQ.**

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

DUTY CYCLE	
Code	Specification
H	50 ±5%
	50 ±10% (std.)

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

ABSOLUTE PULL RANGE (ppm)	
Code	Specification
	±50 ppm MIN. (std.)
XXXX	up to 1000 ppm MAX. (customer specified)

LEAD CONFIGURATION	
Code	Specification
G	Gull Wing Through Hole (std.)

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

Example: VF940SHL-1G-100-34.368MHz; Frequency Stability ±20ppm, Duty Cycle ±5%, Input Voltage 3.3 Volt ±5%, Operating Temperature -40°C to +85°C, Gull Wing, APR ±100ppm, Frequency 34.368MHz.

Parameter	Symb	Condition	Min	Typ	Max	Unit	Note
Input Break Down Voltage	V <sub>cc</sub>		-0.5		7.0	V	
Storage Temp.	T <sub>s</sub>		-40		+85	°C	
Control Voltage	V <sub>c</sub>		-1		9	V	
Frequency Range	F		1.54		200	MHz	
Frequency Stability	ΔF/F	vs. Temp., V <sub>cc</sub>			±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		20		mA	@20MHz
Load	10 TTL gates or 50pF MAX, AC coupled 50 Ohm termination recommended for F>54MHz						
Duty Cycle		@1.4V	40	50	60	%	1
Rise/Fall Time	Tr/Tf	20% to 80%			6 3	ns	F<54MHz F>54MHz
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		1σ			1	ps	f <sub>j</sub> >1KHz
Modulation BW	f <sub>m</sub>	@V <sub>c</sub> 2.5V	10			KHz	@-3db
Input Impedance		f <sub>m</sub> <10KHz	50			KOhm	
Absolute Pull Range	APR	Overall	±50			ppm	2
Deviation Slope		Monotonic, positive		50 ±75		ppm/V	V <sub>cc</sub> =5.0V V <sub>cc</sub> =3.3V
Linearity					±20	%	3
Setability (V <sub>c</sub> for center freq)	V <sub>c0</sub>	@25°C, F <sub>nom</sub> .	2.00 1.25	2.50 1.65	3.00 2.05	V	4 LV opt.
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.						
Hermetic Seal	Leak rate less than 5 x 10 <sup>-8</sup> atm.cc/s of helium						
Pin Out	Pin #1-Voltage Control Pin #8-Output		Pin #7-Ground, Case Pin #14-Vcc				

## Notes:

1. ±5% symmetry available, contact factory for tighter requirements.
2. Up to ±1,000 ppm pull range available at some frequencies.
3. ±10% and ±5% linearity available.
4. 0 to 5V control voltage available for V<sub>cc</sub> 3.3V. Nominal control voltage is 2.5V and setability is ±0.5V in this case.
5. For tristate option see VF940-T series.

All specifications are subject to change without notice.