

# VFT8S

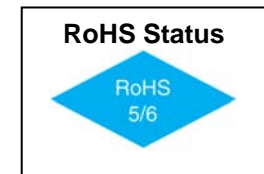
## OCXO Ultra Low Power

### DIL8 Compatible, CMOS / TTL



#### Features

- Extremely Low Power Consumption (<100 mW)
- ± 20ppb Stability over 0°C to 50°C
- Compact DIL-8 Package (14.3 x 14.3mm)
- 35 second Warm-up Time
- Available in through hole and gullwing configuration



#### Applications

- Portable Wireless Communications
- Battery Powered Systems and Equipment
- GPS
- Instrumentation
- SARSAT Beacons

Not recommended for new designs. Please see VFOV400 and VFOV500.

#### Electrical Specifications

Parameter	Symbol	Condition	Min	Typ	Max	Unit	Note
Frequency Range	F		4.8		50	MHz	
Frequency Stability	$\Delta F/F$	Vs. Operating Temperature Vs. Supply Voltage		± 50 ± 1	± 5	ppb ppb/V	See How to Order Chart
		Vs. Aging / Day Vs. Aging / Year		1 100		ppb ppb	After 30 days
Operating Temperature Range	T		0° 0° -20° -40°		+50° +70° +70° +85°	°C	See How to Order Chart for all options
Allan Variance		0.1s to 10s		1 x 10 <sup>-11</sup>			
SSB Phase Noise		10Hz 100Hz 10KHz		-120 -145 -160		dBc/Hz	Deteriorates by 20LogN for higher freq.
Retrace		After 30 minutes			± 20	ppb	
G-sensitivity		Worst Direction			± 1.0	ppb/G	
Supply Current	Icc	Steady state, 25°C Steady state, -30°C Start-Up		25/35 70/120 130/150	35/40	mA	5V / 3.3V
Supply Voltage	Vcc		4.75 3.13	5.00 3.3	5.25 3.46	V	

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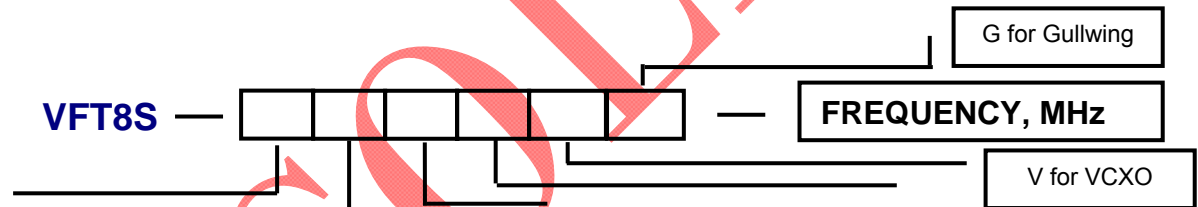
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#### Electrical Specifications

Parameter	Symbol	Condition	Min	Typ	Max	Unit	Note
Output Waveform/Load		CMOS/TTL	10KOhm / 15pF				
Warm-up Time		To 0.1 ppm accuracy		35 40		s	5.0V 3.3V
Power Consumption	P	Steady State @ 25°C		125 115	175 132	mW	5.0V 3.3V
Control Voltage	Vc		0 0		4.0 2.8	V	5.0V 3.3V
Deviation slope		Monotonic, Positive	0.15 ppm/V typical				
Setability	Vco	25°C	1.0 0.8	2.0 1.4	3.0 2.0	V	5.0V 3.3V
Pull Range		From nominal F	± 0.3	± 0.5		ppm	

#### How to Order



Temperature Range	
Code	Specification
A	0°C to 50°C
B	-10°C to 60°C
C	0°C to 70°C
D	-20°C to 70°C
E	-30°C to 70°C
F	-40°C to 85°C

Temperature Stability	
Code	Specification
57	500 ppb
27	200 ppb
17	100 ppb
58	50 ppb
28	20 ppb

Aging	
Code	Specification
L	1.0 ppb/day
S	0.5 ppb/day

Supply Voltage	
Code	Specification
5	5V ± 5%
3	3.3V ± 5%

Available Frequency Stabilities over Operating Temperature Ranges

Code	Temperature Range	200 ppb	100 ppb	50 ppb	20 ppb
A	0°C to 50°C	*	*	*	*
C	0°C to 70°C	*	*	*	
D	-20°C to 70°C	*	*		
F	-40°C to 85°C	*			

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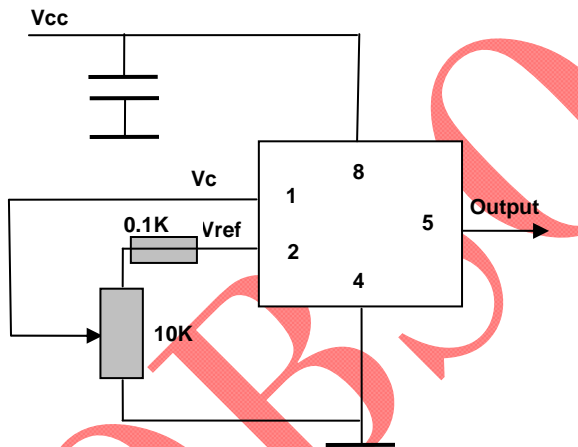


#### Absolute Maximum Ratings

Parameter	Symbol	Condition	Min	Typ	Max	Unit	Note
Supply Break Down Voltage	Vcc		-0.5		+13.0	V	
Storage Temperature	Ts		-40		+85	°C	
Control Voltage	Vc		-1		9	V	

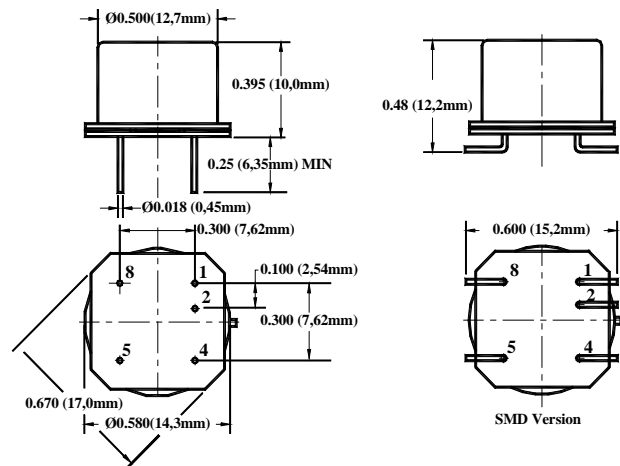
#### Environmental and Mechanical

Parameter	Specification
Mechanical Shock	Per MIL-STD-202, 30G, 11ms
Vibration	Per MIL-STD-202, 5G to 2000Hz
Soldering Conditions	260°C for 10s max
Hermetic Seal	Leak rate less than $1 \times 10^{-8}$ atm.ccm/s of helium, TO-8 only



Pin Connections

Pin #	Connection
1	Vc
2	Vref
4	GND
5	Output
8	Vcc



Outline Drawing