

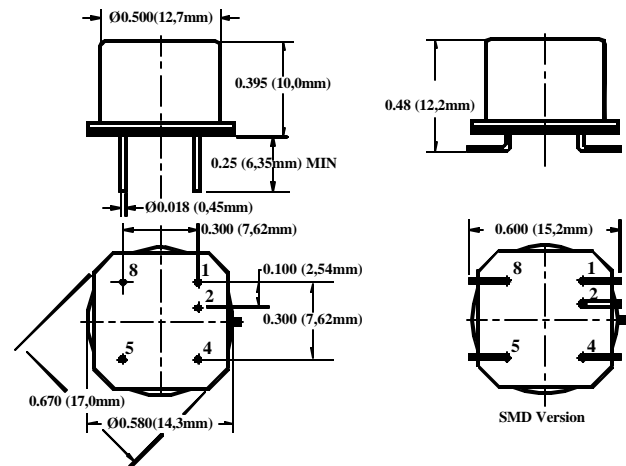
## VFT8S Series

### Micro-miniature, Evacuated

### Product Data Sheet

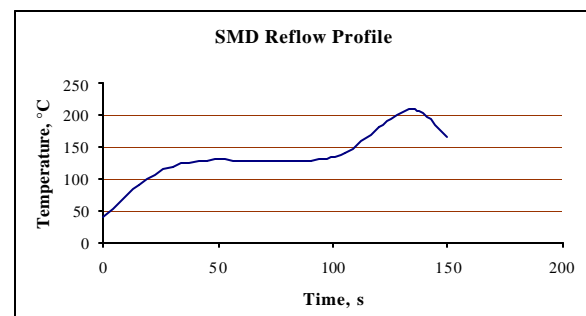
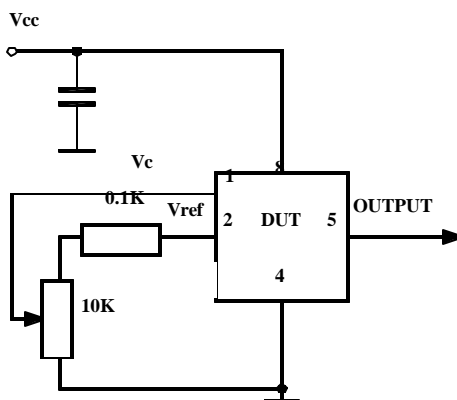
#### Features

- Smallest OCXO available ( $< 1 \text{ cm}^3$ , 2g weight)
- SC-cut crystal
- High Vacuum Sealed Enclosure
- Extremely Low Power Consumption ( $< 100 \text{ mW}$ )
- Very Fast Warm-up Time (30s)
- Low Cost
- Low Aging ( $5 \times 10^{-10}$  /day,  $5 \times 10^{-8}$  /year)
- Very Low Phase Noise ( $-160 \text{ dBc/Hz TYP}$ )
- HCMOS/TTL output
- “Gull-Wing” SMD Version Available
- 4.8 MHz to 50 MHz Frequencies Available
- “Half-size”, DIL-8 compatible pinout



#### Applications

- Telecommunications
- Data Communications
- Battery Powered Systems and Equipment
- GPS
- Instrumentation
- SARSAT Beacons



# VFT8S Series

## Micro-miniature, Evacuated



### Specifications:

Parameter	Symb	Condition	Min	Typ	Max	Unit	Note
<b>Absolute Maximum Ratings</b>							
Input Break Down Voltage	V <sub>cc</sub>		-0.5		13.0	V	
Storage temper.	T <sub>s</sub>		-40		85	°C	
Control Voltage	V <sub>c</sub>		-1		9	V	

### Electrical

Frequency	F		4.8	10.000	50	MHz	
Frequency stability	ΔF/F	vs. Temp.		±100		ppb	See chart below
		vs. Supply		1	5	ppb/V	
		Calibration		±0.5		ppm	No VCXO
Aging		per day per year		1E-9 1E-7			after 30 days
Allan Variance		.1s to 10s		1E-11			
SSB Phase Noise		10 Hz		-120		dBc/Hz	Deteriorates by 20LogN at higher Frequencies
		100 Hz		-145			
		10 KHz		-160			
Retrace		After 30 minutes			±20	ppb	
G-sensitivity		worst direction			±1.0	ppb/G	
Input Voltage	V <sub>cc</sub>		4.75	5.0	5.25	V	3.3V±5% optional
Input Current	I <sub>cc</sub>	steady state, 25°C steady state, -30°C start-up current		25/35 70/120 130/150	35/40	mA	5V/3.3V supply
Load		10KOhm//15pF					
Warm-up time	τ	to 0.1ppm accuracy		35		s	
Output Waveform		HCMOS/TTL compatible					
* Control voltage	V <sub>c</sub>		0		4.0 2.8	V	For 3.3V supply
* Pull range		from nominal F	±0.3	±0.5		ppm	
* Deviation slope		Monotonic, posit		0.15		ppm/V	
* Setability	V <sub>c0</sub>	@25°C, F <sub>nom</sub> .	1.0 .8	2.0 1.4	3.0 2.0	V	

All parameters for 10 MHz

### Environmental and Mechanical

Operating temp. range	-30°C to 70°C Standard, Other options – see chart below
Mechanical Shock	Per MIL-STD-202, 30G, 11ms
Vibration	Per MIL-STD-202, 5G to 2000 Hz
Soldering Conditions	Leads Temperature 260°C, for 10s, Max, 230°C for 30s Max SMD profile
Hermetic Seal	Leak rate less than 1x10 <sup>-8</sup> atm.cm/s of helium

### Electrical Connections

Pin Out	Pin 1- V <sub>c</sub> ; Pin 2- V <sub>ref</sub> ; Pin 3- N/C; Pin 4- Case, GND; Pin5 – Output; Pin 8- V <sub>cc</sub>
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## Creating a Part Number

VFT8S

