

# VFTCE

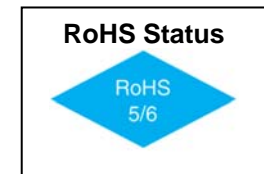
## OCXO Ultra Low Noise

### 35.4 x 26.7 mm SMD, HCMOS / SINE



#### Features

- 4.8MHz to 180MHz Frequency Range
- Low Phase Noise: -160 dBc/Hz @ 10KHz
- Sine Wave or HCMOS/TTL output



#### Applications

- Telecommunication Systems
- Data Communications
- GPS
- Instrumentation

#### Electrical Specifications

Parameter	Sym bol	Condition	Min	Typ	Max	Unit	Note
Frequency Range	F		4.8		180	MHz	
Frequency Stability	$\Delta F/F$	Vs. Operating Temperature 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		$\pm 5$ $\pm 5$ $\pm 5$ $\pm 10$ $\pm 20$ $\pm 50$		ppb	See "How to Order" Chart
		Vs. Supply Voltage		1	5	ppb/V	
		Vs. Aging / Day Vs. Aging / Year		0.5 100		ppb	after 30 days 50ppb available
Operating Temperature Range	T		0° -10° 0° -20° -30° -40°		+50° +60° +70° +70° +70° +80°	°C	
Allan Variance		.1s to 10s		1E-11			
SSB Phase Noise		10Hz 100Hz 10KHz		-120 -150 -160		dBc/Hz	Deteriorates by 20LogN for higher freq.
Retrace		After 30 min.			$\pm 20$	ppb	
G-sensitivity		worst direction			$\pm 1.0$	ppb/G	



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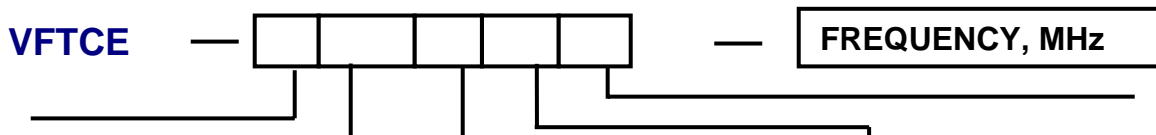
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#### Electrical Specifications

Parameter	Symbol	Condition	Min	Typ	Max	Unit	Note
Output Waveform/Load		Sine HCMOS/TTL	50 Ohm 10KOhm / 15pF				Order Code S Order Code T
Power Consumption	P	steady state, 25°C steady state, -30°C start-up @ -30°C		0.8 1.5 2.5	1	W	
Supply Voltage	Vcc		11.4 4.75 3.14	12.0 5.0 3.3	12.6 5.25 3.47	V	
Warm up time	$\tau$	to 0.1ppm accuracy		2	3	min	
Control Voltage	Vc		0		4.0	V	
Pull Range		from nominal F	$\pm 0.5$	$\pm 1$		ppm	At 10MHz
Deviation slope		Monotonic, Positive		0.4		ppm/V	
Setability	Vc0	25°C	1.0	2.0	3.0	V	

#### 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
17	$1 \times 10^{-7}$
58	$5 \times 10^{-8}$
28	$2 \times 10^{-8}$
18	$1 \times 10^{-8}$
59	$5 \times 10^{-9}$

Aging	
Code	Specification
L	1X10-9/Day
S	5X10-10/Day
P	2X10-10/Day

Supply Voltage	
Code	Specification
5	5V $\pm$ 5%
2	12V $\pm$ 5%
3	3.3V $\pm$ 5%

Output	
Code	Specification
T	TTL
S	Sinewave

**Note: Not all combinations are available. Please consult the factory.**

#### Available Frequency Stabilities over Operating

Code	Temperature Range	$1 \times 10^{-7}$	$5 \times 10^{-8}$	$2 \times 10^{-8}$	$1 \times 10^{-8}$	$5 \times 10^{-9}$
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	*	*	*	*	*



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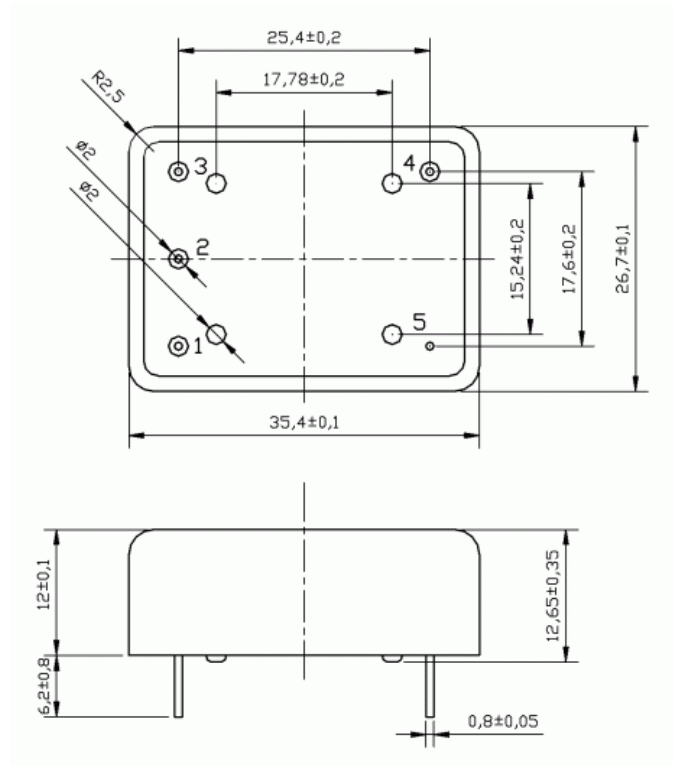
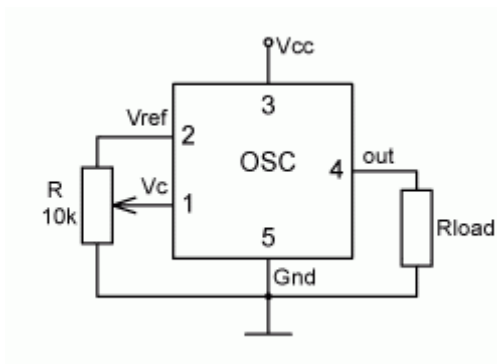


#### Absolute Maximum Ratings

Parameter	Symbol	Condition	Min	Typ	Max	Unit	Note
Supply Break Down Voltage	V <sub>cc</sub>		-0.5		+13	V	
Storage Temperature	T <sub>s</sub>		-40		+85	°C	
Control Voltage	V <sub>c</sub>		-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	230°C for 30s max SMD profile



Pin #	Connections
1	V <sub>c</sub>
2	V <sub>ref</sub>
3	V <sub>cc</sub>
4	Output
5	GND

