

# VFOV500 Series

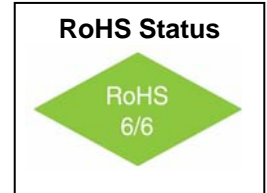
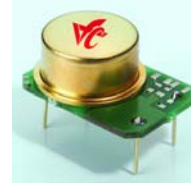
## OCXO - Ultra Miniature, Ultra Low Power

### HCMOS / SINEWAVE



#### Features

- 30MHz to 120MHz Frequency Range
  - Industry's smallest OCXO
  - Fastest Warm-up (<30s)
  - < 120mW power consumption
- Sine Wave or HCMOS output
- Low Phase Noise Fundamental mode



#### Applications

- PLL reference for Telecommunication Systems
- Microwave Communications / RADAR signal source
- Portable Equipment
- Instrumentation / Test and Measurement

Replaces Valpey Fisher Part Number(s): VFT14A, VFT14AS, VFT8S

#### Electrical Specifications

Parameter	Symbol	Condition	Min	Typ	Max	Unit	Note
Frequency Range	F		30		120	MHz	
Frequency Stability	$\Delta F/F$	Vs. Operating Temp. E: -30°C to +70°C		± 50		ppb	STD option shown. See "How to Order" Chart below
		Vs. Supply Voltage		±5		ppb	Ref. Vcc typ.
		Vs. Aging / Day Vs. Aging / Year		5 0.3		ppb ppm	after 30 days
Operating Temperature Range	T		-30°		+70°	°C	STD option shown. See "How to Order" Chart below
Allan Variance		1s		20e-12			
SSB Phase Noise		10Hz 100Hz 1KHz 10KHz 100KHz		-95 -125 -152 -160 -160		dBc/Hz	For 100MHz Oscillator
Retrace		After 30 min.			±20	ppb	
G-sensitivity		worst direction			±1	ppb/g	
Supply Voltage	Vcc		4.75 3.14	5.0 3.3	5.25 3.47	V	
Power Consumption	P	steady state, 25°C steady state, -30°C start-up		0.12 1.2 0.7	0.23 1.5 1.0	W	
Warm up time	$\tau$	to 0.1ppm accuracy	15	30	60	Sec.	

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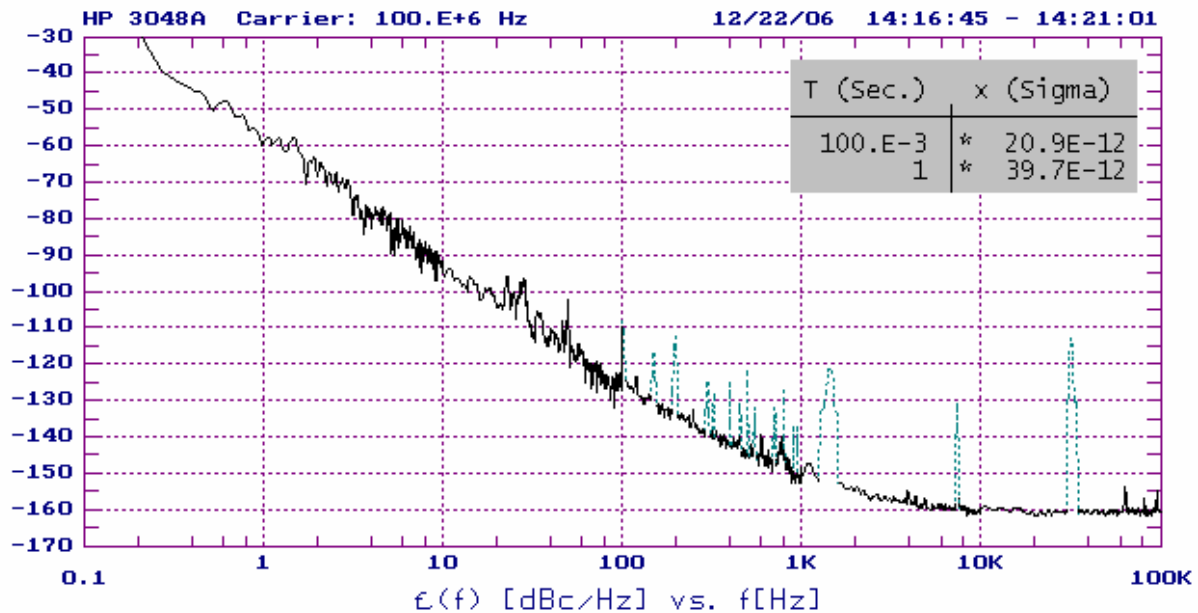
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#### Electrical Specifications

Parameter	Symbol	Condition	Min	Typ	Max	Unit	Note
HCMOS / TTL Output Levels		HCMOS/TTL	10KOhm / 15pF				Order Code H
	V <sub>H</sub>	V <sub>CC</sub> = 5 V <sub>CC</sub> =3.3V	3.9 2.4			V	
	V <sub>L</sub>				0.4	V	
Rise / Fall time		At 100MHz			3	ns	
Duty Cycle			45		55	%	
Sine-Wave Output		V <sub>CC</sub> =5 or 12V	+6	+8	+10	dBm	Order Code S
	R <sub>L</sub>			50		Ω	
Harmonics					-25	dBc	
Sub-Harmonics					none		fundamental
Control Voltage	V <sub>c</sub>	V <sub>CC</sub> = 5 V <sub>CC</sub> =3.3V	0 0		4.3 2.8	V	
Pull Range		from nominal F	±0.5	±1		ppm	At 100MHz
Deviation slope		Monotonic, Positive		0.4		ppm/ V	
Reference output	V <sub>ref</sub>	V <sub>CC</sub> = 5 V <sub>CC</sub> =3.3V	4.19 2.73	4.3 2.8	4.41 2.87	V	



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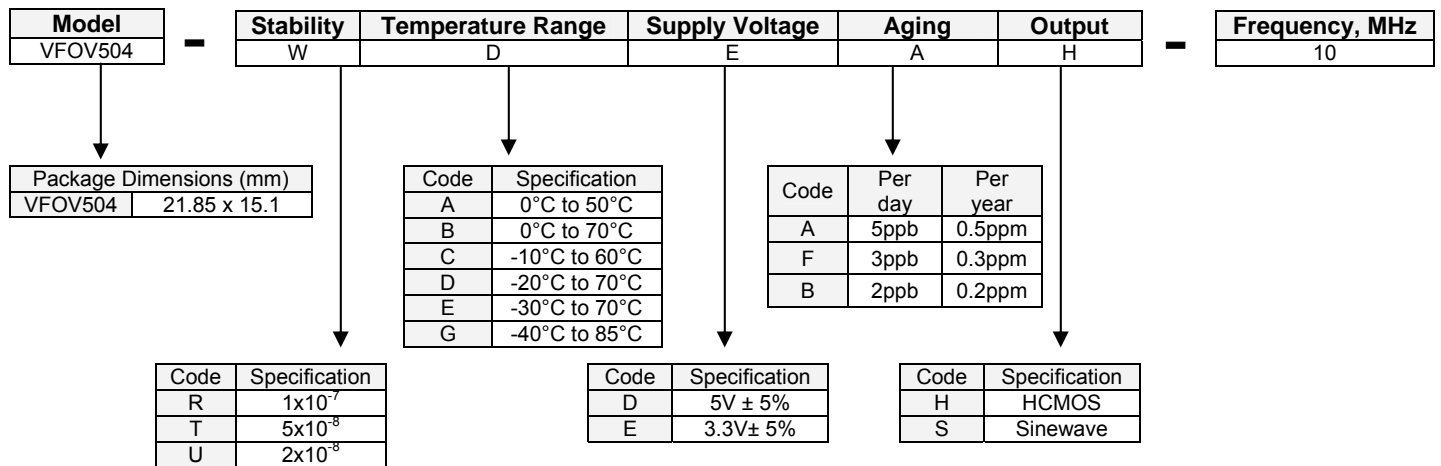
### Absolute Maximum Ratings

Parameter	Symbol	Condition	Min	Typ	Max	Unit	Note
Supply Break Down Voltage	V <sub>cc</sub>		-0.5		V <sub>cc</sub> +20%	V	
Control Voltage	V <sub>c</sub>		-1		9	V	

### Environmental and Mechanical

Parameter	Specification
Storage Temperature	-60°C to +90°C
Humidity	Hermetically Sealed
Mechanical Shock	Per MIL-STD-202, 30g, half sine, 11ms
Vibration	Per MIL-STD-202, 10g swept Sine to 2000Hz
Soldering Conditions	260°C for 10s

### How to Order



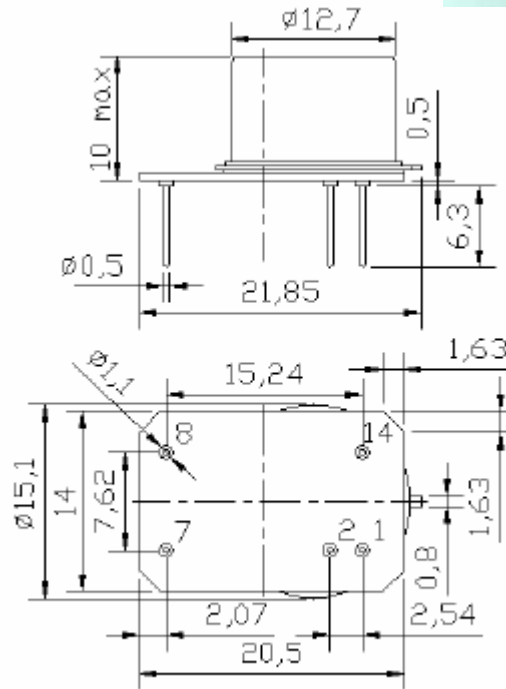
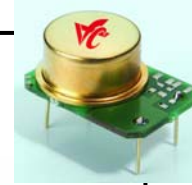
### Available Frequency Stabilities over Operating Temperature Ranges

Order Code	Temperature Range	Stability		
		1x10 <sup>-7</sup>	5x10 <sup>-8</sup>	2x10 <sup>-8</sup>
A	0°C to 50°C	*	*	*
B	0°C to 70°C	*	*	
C	-10°C to 60°C	*	*	*
D	-20°C to 70°C	*	*	
E	-30°C to 70°C	*	*	
G	-40°C to 85°C	*		

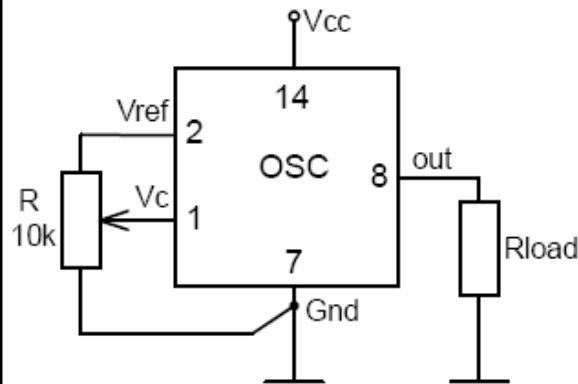
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**Package**

**VFOV504**



All tolerances 0.254mm ( 0.1" )



Pin	Connection
1	Vcontrol
2	Vref.
7	GND
8	Output
14	Vcc