

# VFOV200 Series

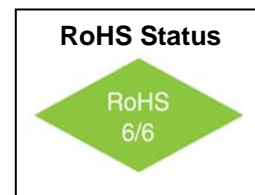
## OCXO – High Frequency, High Stability

### HCMOS / SINEWAVE



#### Features

- 5MHz to 250MHz Frequency Range
- High Stability ( up to 5ppb over -40~+85°C )
- Sine Wave or HCMOS output
- Multiple package options



#### Applications

- PLL reference for Telecommunication Systems
- Stratum 3E clock systems
- Base station reference source
- GPS holdover
- Instrumentation / Test and Measurement

Replaces Valpey Fisher Part Number(s): VFTCS, VFTCR, VFTCE, and VFTCI

#### Electrical Specifications

Parameter	Symbol	Condition	Min	Typ	Max	Unit	Note
Frequency Range	F		5		250	MHz	
Frequency Stability	$\Delta F/F$	Vs. Operating Temp. E: -30°C to +70°C		$\pm 10$		ppb	STD option shown. See "How to Order" Chart below
		Vs. Supply Voltage		$\pm 1$		ppb	Ref. Vcc typ.
		Vs. Aging / Day Vs. Aging / Year		0.5 0.1		ppb ppm	after 30 days 0.2ppb available
Operating Temperature Range	T		-30°		+70°	°C	STD option shown. See "How to Order" Chart below
Allan Variance		1s		10e-12			
SSB Phase Noise		10Hz 100Hz 1KHz 10KHz 100KHz		-125 -143 -150 -158 -160		dBc/Hz	For 10MHz Oscillator  (For 100MHz see plot next page)
Retrace		After 30 min.			$\pm 10$	ppb	
G-sensitivity		worst direction			$\pm 1$	ppb/g	
Supply Voltage	Vcc		11.4 4.75 3.10	12.0 5.0 3.3	12.6 5.25 3.50	V	
Power Consumption	P	steady state, 25°C steady state, -30°C start-up		1.0 2.0 3.2	1.2 2.2 3.5	W	
Warm up time	$\tau$	to 0.1ppm accuracy		2	3	min	



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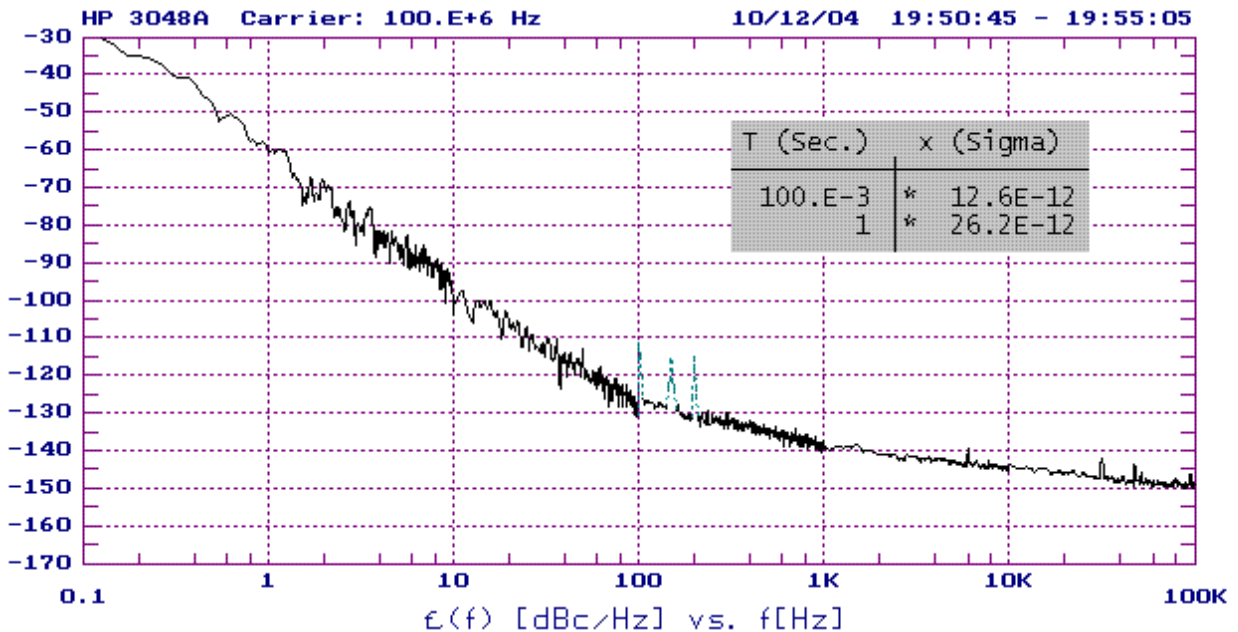
### HCMOS / SINEWAVE



#### 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 or 12V V <sub>cc</sub> =3.3V	3.9 2.4			V	
	V <sub>L</sub>				0.4	V	
Rise / Fall time		At 100MHz			10	ns	
Duty Cycle			45		55	%	
Sine-Wave Output Levels		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		Frequency <30Mhz Frequency >30MHz	None		-40	dBc	**Multiplied fundamental
Control Voltage	V <sub>c</sub>	V <sub>cc</sub> = 5 or 12V 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 or 12V V <sub>cc</sub> =3.3V	4.19 2.73	4.3 2.8	4.41 2.87	V	

\*\* High frequency fundamental ( up to 120MHz ) available without sub-harmonics. Please refer to VFOV100



100MHz output with internal multiplied 20MHz fundamental Crystal

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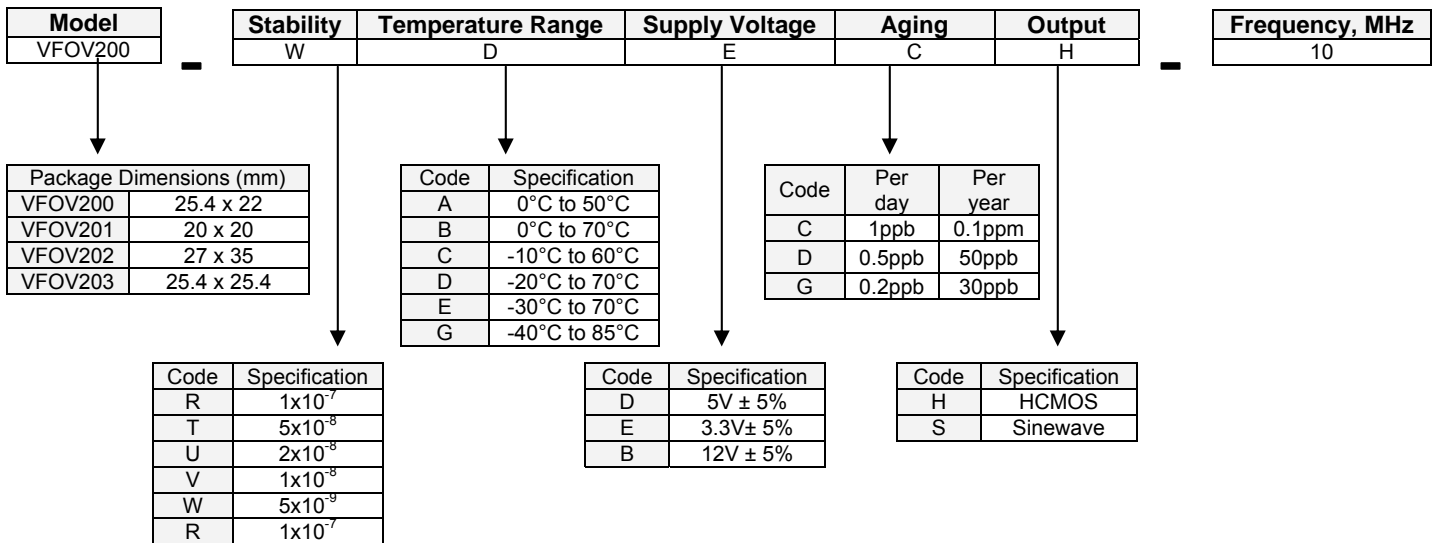
#### Absolute Maximum Ratings

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>	1x10 <sup>-8</sup>	5x10 <sup>-9</sup>	2x10 <sup>-9</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	*	*	*	*	◇	

◇ Only available below 30Mhz

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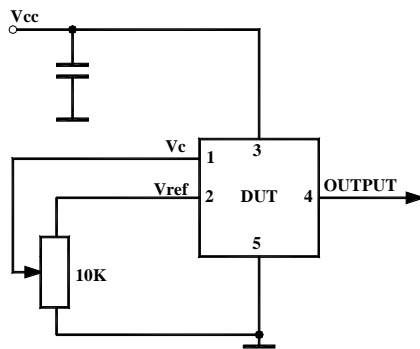
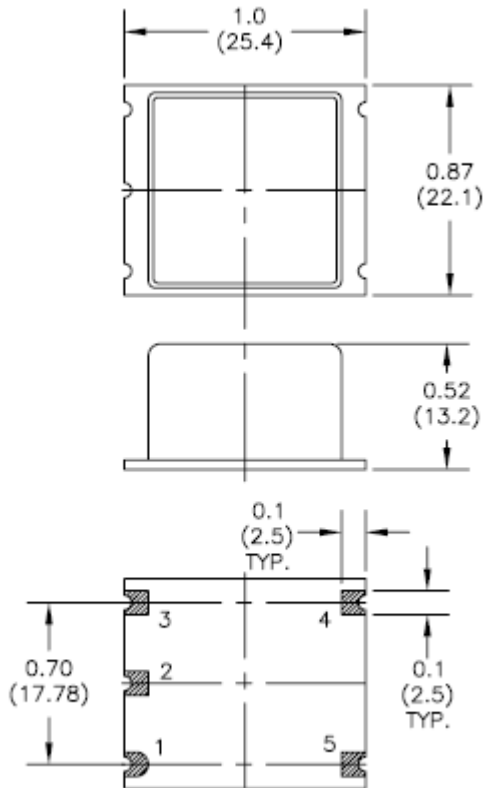
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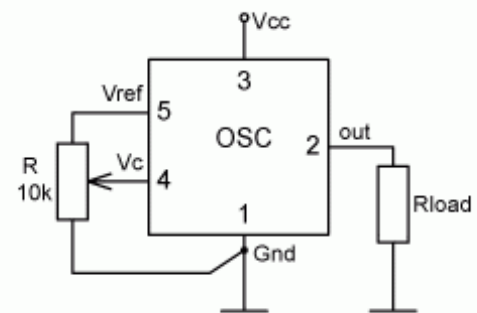
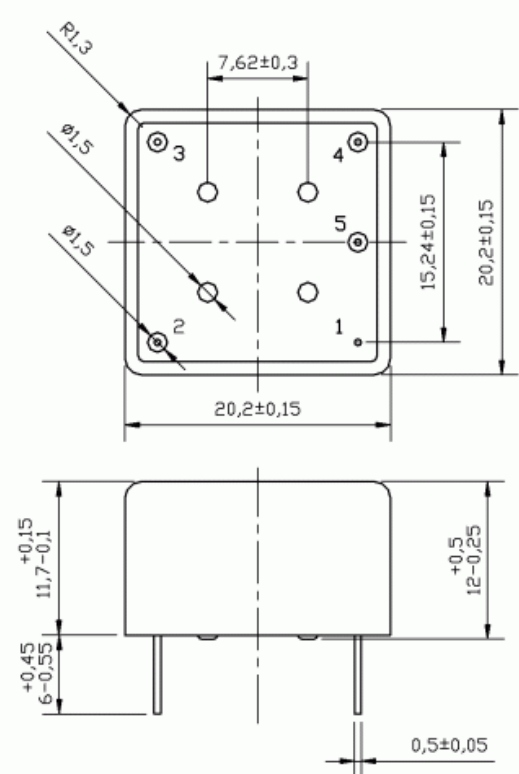
#### Package Options

### VFOV200



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

### VFOV201



Pin #	Connection
1	Gnd
2	Output
3	Vcc
4	Vc
5	Vref

# VFOV200 Series


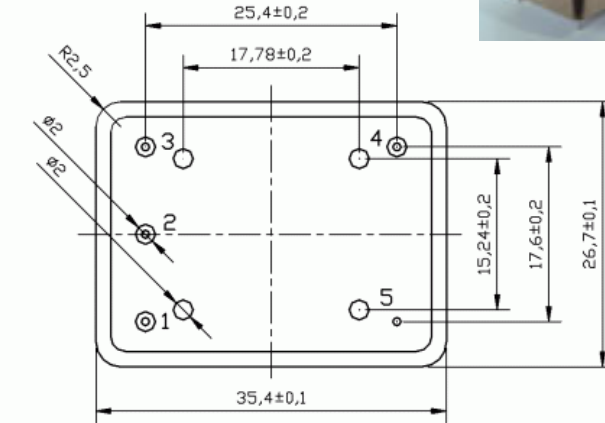
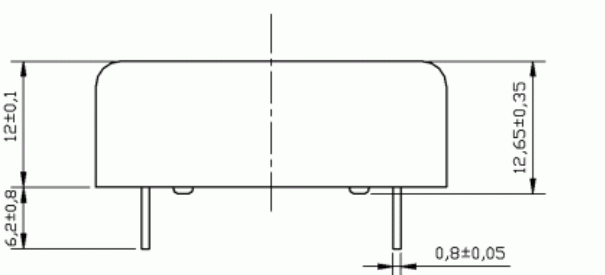
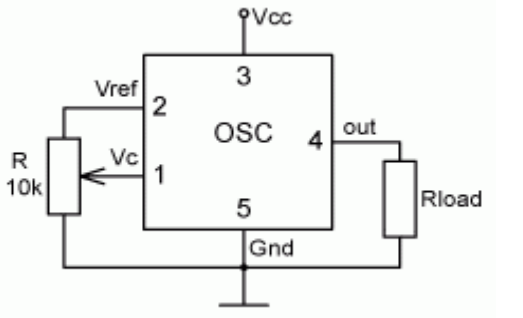
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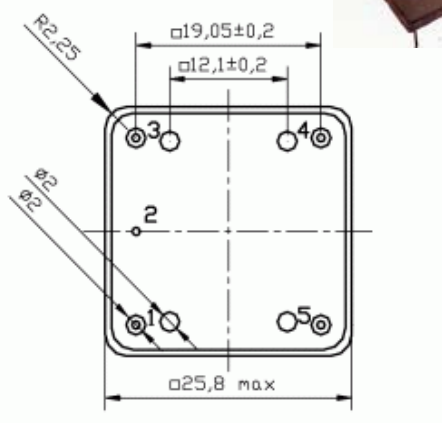
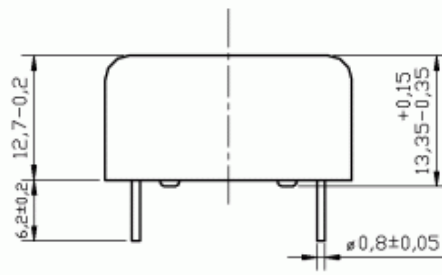
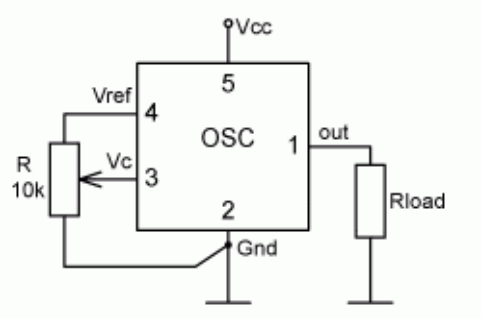
#### Package Options

**VFOV202**

Pin #	Connections
1	Vc
2	Vref
3	Vcc
4	Output
5	GND

**VFOV203**

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