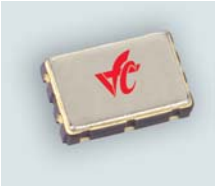
VFHV570
Extended Temperature/COTS
VCXO 5x7mm SMD, CMOS

Valpey Fisher Corporation
Uncompromised Precision

Features

- 1MHz to 80MHz frequency range
- -55°C to +175°C operating temperature range
- <0.2ps RMS Jitter over 12kHz to 20MHz
- APR min ± 100ppm
- Start-up time is less than 5ms
- Ultra low jitter



RoHS Status

RoHS 6/6

Applications

- Industrial
- Military
- High Temperature Commercial

Electrical Specifications

Parameter	Symbol	Condition	Min	Typ	Max	Unit	Note
Frequency Range	F		1		80	MHz	
Frequency Stability	ΔF/F	Includes operating temperature, change of input voltage, change of load, shock and vibration		± 50		ppm	-40°C to +125°C -55+85C
Aging		First Year After First Year		3 1		ppm ppm	
Pull Range	APR	Vc 1.65 ± 1.65V	±100	±110		ppm	3.3V
		Vc 2.5 ± 2.5V	±100	±110			5.0V
Operating Temperature	T		-55		+175	°C	See ordering information
Supply Voltage	Vcc		3.0 4.5	3.3 5.0	3.6 5.5	V	
Supply Current	Icc		3.0		5.0	mA	*CL=15 pF* *V_{DD}= 3.6V*
			4.0		7.0		*CL=15 pF* *V_{DD}= 5.5V*

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Parameter	Symbol	Condition	Min	Typ	Max	Unit	Note
Current Consumption	I_{DDD}	CL=15pF, V_{DD}=3.6V, 5.5V OE=0V, F0=27MHz		1	2	mA	*@ output disable*
Output Off Leak	I_O	OE=0V			10	µA	*@ output disable*
"H" Input Current	I_{IH}	$V_{IN}=V_{DD}$			1	µA	
"L" Input Current	I_{IL}	$V_{IN}=V_{SS}$		1.3	10	µA	
"H" Output Voltage	V_{OH}	I_{OH}=-5mA	V_{DD}-0.4			V	I_{OH}=-3mA
"L" Output Voltage	V_{OL}	I_{OL}=-5mA			0.4	V	I_{OH}=3mA
Rise & Fall Times		CMOS, 15pF	3.0		6.0	ns	+125°C
RMS Jitter 12KHz to 20MHz	1σ			<0.2		ps	
Phase Noise		10Hz 100Hz 1kHz 10kHz 100kHz 1MHz		-65 -94 -120 -142 -155 -159		dBc/Hz	@ 50MHz
Input Impedance	V_C Impedance	Pad 1, Vc	5* 100			MOhm KOhm	Order Code H* Order Code B
Start-up Time	Ts				5	ms	
Duty Cycle		CMOS @50% V_{DD}		48/52	45/55	%	
Control Voltage	Vc		0		3.3	V	3.3V
			0		5.0		5.0V
Modulation Bandwidth	Fc		15	20		kHz	3.3V
			15	20			5.0V
Pulling Linearity	F_{LIN}			10	15	%	
Tristate	Input HIGH (>2.5V) or floating: Input LOW (<0.5V):		ACTIVE HIGH IMPEDANCE				

*Available for 3.3V only.

Absolute Maximum Rating

Parameter	Symbol	Condition	Min	Typ	Max	Unit	Note
Supply Voltage	V_{DD}		V_{SS} -0.5		7	V	
Input Voltage	V_{IN}	All Input Pin	V_{SS} -0.5		V_{DD}+0.5	V	
Output Voltage	V_{OUT}		V_{SS} -0.5		V_{DD}+0.5	V	
Power Dissipation	I_{OUT}				30	mA	
ESD		MM		±200			
		HBM		±2000			

Environmental and Mechanical Conditions

Parameter	Specification
Shock	1000 Gs, 0.35 ms, ½ sine wave, 3 shocks in each plane
Vibration	10-2000 Hz of 0.06" d.a. or 20Gs, whichever is less
Humidity	Resistant to 85° R.H. at 85°C
Leak	Per MIL-STD-883, Method 1014, Cond. A1 and Cond. C
Case	Hermetically sealed ceramic LCC
Pads	39 microinch of gold over nickel
Resistance to Solvents	Per MIL-STD-202, Method 215
Marking	Epoxy ink or laser engraved

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How to Order:

VFHV570 – [E] [R] [ ] – FREQUENCY

Voltage

Code	Specification
D	5.0V
E	3.3V

Temperature Range

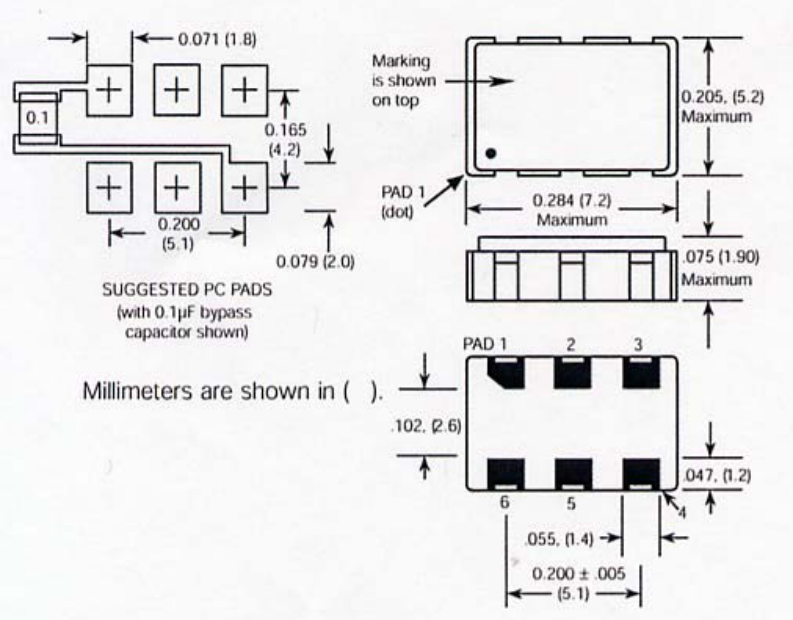
Code	Specification
R	-40°C to +175°C
L	-55°C to +125°C
H	-55°C to +85°C
K	0°C to +175°C

Input Impedance

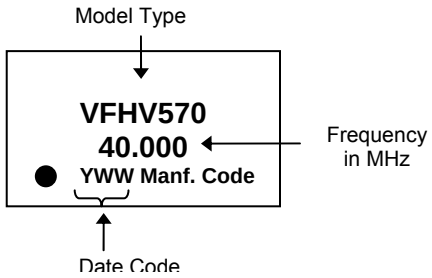
Code	Specification
H	5MOhm*
B	100KOhm

*3.3V only

Pin #	Connections
1	Vc
2	Tristate
3	Ground, Case
4	Output
5	N/C
6	Vcc



Marking Specification



Phase Noise Plot at 50MHz