

VF290 Series Dual Output CMOS Compatible High Temperature Hybrid Crystal Clock Oscillators

Valpey-Fisher's VF290 series of full-size CMOS compatible high temperature oscillators designates a family of oscillators with two outputs from one device. These outputs are dependent in that one output is a binary divider of the other output on a pin specified by the user. The oscillator uses a single crystal. Typical dividers are binary — 2, 4, 8, 16 ... 4,096. The specifications of these dual output CMOS compatible high temperature oscillators is the same as those of Valpey-Fisher's VF190 series of single output oscillators.

Specifications

Frequency Range	500 KHz to 20.000 MHz			
Output:	CMOS compatible			
Symmetry	40/60 to 60/40% ($C_L = 15\text{pf}$ @ $V_O = \frac{1}{2}V_{DD}$) *1" Source Current: 120 μ A *0" Sink Current: 360 μ A			
Logic Voltage	V_{OH} (Logic "1"): $V_{DD} - 1.0\text{ V}$ @ 50.0 K ohm load to GND V_{OL} (Logic "0"): $+0.5\text{ V}$ @ 50.0 K ohm load to V_{DD}			
Rise & Fall Times	90.0 ns max. (250 KHz to 5.000 MHz) 20.0 ns max. (5.000 MHz to 20.000 MHz)			
Input Voltage	+5 to +15VDC, $\pm 10\%$			
Input Current @ 25°C (max., unloaded)		+5V	+10V	+15V
	250 KHz to 5.000 MHz	2.0 mA	9.0 mA	14.0 mA
	5.000MHz to 20.000 MHz	10.0 mA	18.0 mA	25.0 mA
Storage Temperature	-55°C to +200°C			
Operating Temperature	-55°C to +200°C			
Stability	.01% (100 ppm) at designated temperatures			
Package	See Oscillator Package Chart.			

Electrical Connections

	VF290	VF291	VF292
Input Voltage	PIN 14	PIN 4	PIN 14
Output*	PIN 8	PIN 5	PIN 1
Case & Ground	PIN 7	PIN 7	PIN 8
No Connection	PINS 1-6, 9-13	PINS 1-3, 6, 8-14	PINS 3-7, 9-13

*plus another pin specified by the user

Operating Temperature Range Options

VF Type Number	Temperature Range (°C)				
	-25 to +150 Option 1	-20 to +175 Option 2	0 to +200 Option 3	-20 to +200 Option 4	-55 to +200 Option 5
VF290	VF290-1	VF290-2	VF290-3	VF290-4	VF290-5
VF291	VF291-1	VF291-2	VF291-3	VF291-4	VF291-5
VF292	VF292-1	VF292-2	VF292-3	VF292-4	VF292-5