

CMOS COMPATIBLE HIGH TEMPERATURE HYBRID CRYSTAL CLOCK OSCILLATORS

VF190 Series CMOS Compatible High-Temperature Hybrid Crystal Clock Oscillators

Valpey-Fisher's VF190 series designates a family of oscillators compatible with CMOS circuitry that is capable of operating at very high temperatures with low power consumption. Oil well drilling telemetry is an example of an application for the unique combination of characteristics available from this series of oscillators.

Specifications

Frequency Range	500 KHz to 20.000 MHz		
Output:	CMOS compatible		
Symmetry	40/60 to 60/40% $C_L = 15\text{pf @ } V_O = 1/2V_{DD}$ "1" Source Current: 120 μ A "0" Sink Current: 360 μ A		
Logic Voltage	V_{OH} (Logic "1"): $V_{DD} - 1.0\text{ V @ } 50.0\text{ K ohm load to GND}$ V_{OL} (Logic "0"): $+0.5\text{ V @ } 50.0\text{ K ohm load to } V_{DD}$		
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)	250 KHz to 5.000 MHz 5.000 MHz to 20.000 MHz	+5V	+10V
		2.0 mA	9.0 mA
		+15V	+15V
		10.0 mA	18.0 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

	VF190	VF191	VF192
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

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
VF190	VF190-1	VF190-2	VF190-3	VF190-4	VF190-5
VF191	VF191-1	VF191-2	VF191-3	VF191-4	VF191-5
VF192	VF192-1	VF192-2	VF192-3	VF192-4	VF192-5