

ECL LOGIC HYBRID CRYSTAL CLOCK OSCILLATORS

VF160 Series ECL Hybrid Crystal Clock Oscillators

Valpey-Fisher's VF160 series designates a family of oscillators compatible with

ECL circuitry often required for finer resolution graphic displays and faster processing speeds. The VF160 part number denotes oscillators that operate at negative input voltage; the VF161 part

number designates devices that operate at positive input voltage. The letter "R" after either the VF160 or VF161 part number indicates an optional pin for input voltage or case ground.

Specifications

	VF160	VF160R	VF161	VF161R
Frequency Range	50 MHz TO 250 MHz			
Input Voltage	PIN7: -5.2 VDC ±5%	PIN14: -5.2 VDC ±5%	PIN14: +5.2 VDC ±5%	PIN7: +5.2 VDC ±5%
Case & Ground	PIN 14	PIN 7	PIN 7	PIN 14
Output:	Complementary 10K series ECL at Pins 1 & 8, no pull down resistors (ie open emitter).		Complementary 10 K series ECL at Pins 1 & 8, no pull down resistors (ie open emitter).	
	Output levels when loaded with 50 Ω to -2.0 VDC and -5.20 VDC: Logic High*: -0.81 VDC max -0.96 VDC min Logic Low*: -1.65 VDC max -1.85 VDC min		Output levels when loaded with 50 Ω to +3.2 VDC and +5.20 VDC: Logic High*: +4.39 VDC max +4.24 VDC min Logic Low*: +3.55 VDC max +3.35 VDC min	
Input Current	60 mA max, unloaded			
Symmetry	60/40 to 40/60% @ V _{BB}			
Rise Time	2.1 nS max @ 25°C			
Fall Time	2.1 nS max @ 25°C			
Storage Temperature	-55°C to +125°C			
Package	See Oscillator Package Chart.			

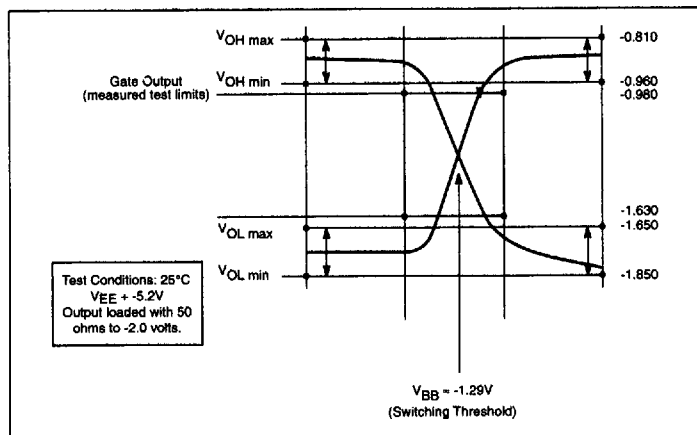
*Output levels are dependent upon supply voltage.

Type Numbers & Options

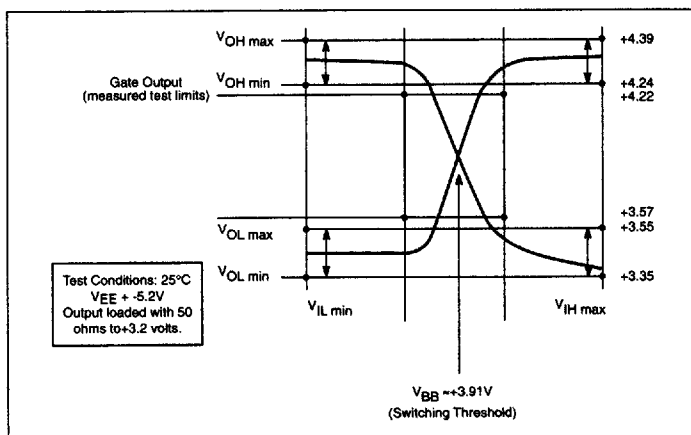
VF Type Number	Frequency Range (MHz)	Stability (%)	Option	Operating Temperature Range (°C)		
				0 to +70 Standard	-40 to +85 Option 1	-55 to +125 Option 2
VF160 VF160R VF161 VF161R	50 to 250	0.0025	A	VF160A	VF160A-1	VF160A-2*
		0.005	B	VF160B	VF160B-1	VF160B-2
		0.01	Standard	VF160	VF160-1	VF160-2
		0.05	C	VF160C	VF160C-1	VF160C-2
		0.25	D	VF160D	VF160D-1	VF160D-2

*-55 to +105°C

VF160 10K ECL Waveform



VF161 10K ECL Waveform



VF160-C Series Enable/Disable ECL Hybrid Clock Oscillator

Valpey-Fisher's VF160-C Enable high/Disable low series of ECL

oscillators allow a user the option of setting an output state for the oscillator. This feature serves multiple purposes in a circuit, one of which is acting as a

functional switch. The specifications of these oscillators with the enable/disable feature are the same as those of Valpey-Fisher's VF160 series ECL oscillators.

Specifications

	VF160 E/D	VF160R E/D	VF161 E/D	VF161R E/D
Frequency Range	50 MHz to 250 MHz			
Input Voltage	PIN7: -5.2 VDC ±5%	PIN14: -5.2 VDC ±5%	PIN14: +5.2 VDC ±5%	PIN7: +5.2 VDC ±5%
Case & Ground	PIN 14	PIN 7	PIN 7	PIN 14
Output:	10K series ECL at Pin 8, no pull down resistors (ie open emitter).		10K series ECL at Pin 8, no pull down resistors (ie open emitter).	
	Output levels when loaded with 50 Ω to -2.0 VDC and -5.20 VDC: Logic High*: -0.81 VDC max -0.96 VDC min Logic Low*: -1.65 VDC max -1.85 VDC min		Output levels when loaded with 50 Ω to +3.2 VDC and +5.20 VDC: Logic High*: +4.39 VDC max +4.24 VDC min Logic Low*: +3.55 VDC max +3.35 VDC min	
Input Current	60 mA max, unloaded			
Input Enable	PIN 1			
Enable/Disable Input Voltage	V _{ih} "1" level V _{il} "0" level	-5.2 Volts Max (VF160 & 160R) +5.2 Volts Max (VF161 & 161R) ---		
Enable/Disable Input Current	I _{ih} "1" level I _{il} "0" level	265 microA max ---		
Symmetry	60/40 to 40/60% @ V _{BB}			
Rise Time	2.1 nS max @ 25° C			
Fall Time	2.1 nS max @ 25° C			
STORAGE TEMPERATURE	-55°C to +125°C			
Package	See Oscillator Package Chart.			

*Output levels are dependent upon supply voltage.

VF160G Series VF160-CG Series Gull Wing ECL Hybrid Crystal Clock Oscillators

Valpey-Fisher offers all the features of its full-size, dual output and enable/disable ECL oscillators in surface mount packages. The leads on standard 14 pin full-size package can be formed in a gull wing configuration to allow the user to get all the specifications available only in the full range of Valpey-Fisher's ECL through-hole oscillators in a holder compatible with surface mount board assembly techniques. See the pages in this catalog on the VF160, and VF160-CG series oscillators for complete specifications.

