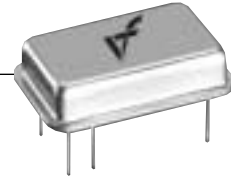


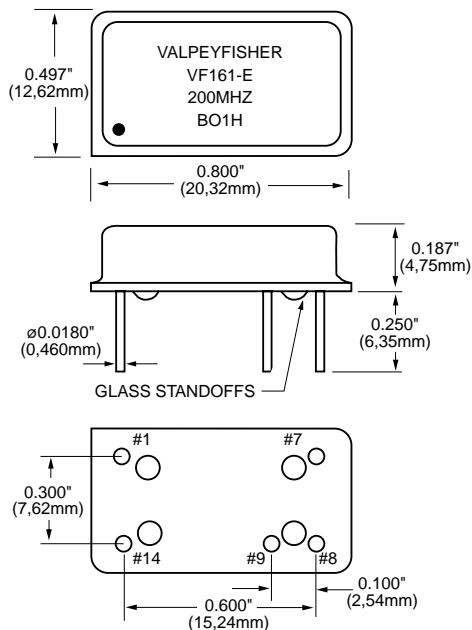
# VF160-E/VF161-E

## 10KH ECL/PECL Compatible Enable/Disable Clock Oscillator



### FEATURES

- Enable/Disable Output
- Industrial Temperature Range
- In-house "Inverted Mesa" Crystal Technology for Higher Frequencies
- Wide Frequency Range
- Very Low Phase Jitter



All dimensions are typical unless otherwise specified.

Creating a Part Number  
**VF160/161** [ ] [ ] [ ] - [ ] - **E** - **FREQ.**

FREQUENCY STABILITY		LEAD CONFIGURATION	
Code	Specification	Code	Specification
S	±20 ppm	G	Gull Wing
A	±25 ppm		Through Hole (std.)
B	±50 ppm		
	±100 ppm (std.)		

DUTY CYCLE		OUTPUT	
Code	Specification	Code	Specification
HH	±2.5%	C	Complementary
	±5%		Single output (std.)

OPERATIONAL TEMP. RANGE	
Code	Specification
1	0°C to +70°C (std.)
	-40°C to +85°C

INPUT VOLTAGE	
Code	Specification
L	3.3 Volt ±5%
	5.0 Volt ±5% (std.)

Example: VF161SHHL-1CE-200MHz: Frequency Stability ±20ppm, Duty Cycle ±2.5%, Input Voltage 3.3 Volt ±5%, Operating Temperature -40°C to +85°C, Complementary Output, Enable/Disable, Frequency 200.000MHz.

	Absolute Max. Ratings							
	Parameter	Symb	Condition	Min	Typ	Max	Unit	Note
Electrical	Input Break Down Voltage	Vcc-Vee		-0.5		7.0	V	
	Storage Temp.	Ts		-40		+85	°C	
	Frequency Range	F		10		300	MHz	
	Frequency Stability	ΔF/F	Overall Conditions Including: Calibration, temp., aging 10 yrs. shock, vibration			±100	ppm	1
	Input Voltage	Vcc Vcc Vee	PECL LVPECL ECL	4.75 3.15 -4.95	5.00 3.30 -5.20	5.25 3.45 -5.45	V	VF161E VF161L-E VF160E
	Input Current	Icc/Iee	50 Ohm Load			80	mA	
	Load	50 Ohm to Vcc-2V or Thevenin Equiv. Bias required						
	Duty Cycle		@50%	45	50	55	%	2
	Rise/Fall Time	Tr/Tf	20% to 80%			1.5	ns	
	Logic "1" Level	Voh	@Vcc = 5.0V @Vee = -5.2V @Vcc = 3.3V	4.04 -0.96 2.59		4.19 -0.81 2.74	V	PECL ECL LVPECL
Logic "0" Level	Vol	@Vcc = 5.0V @Vee = -5.2V @Vcc = 3.3V	3.15 -1.85 1.45		3.25 -1.65 1.55	V	PECL ECL LVPECL	
Start-up Time	Ts			2	10	ms		
Phase Jitter		1σ			1	ps	fj>1KHz	
Enable/Disable Function	Control input "Vee" or floating		- Enable					
	Control input "High"		- Disable Low					
Environmental and Mechanical	Operating Temperature Range	0°C to +70°C (-40°C to +85°C available)						
	Mechanical Shock	Per MIL-STD-202, Method 213, Cond. E						
	Thermal Shock	Per MIL-STD-883, Method 1011, Cond. A						
	Vibration	Per MIL-STD-883, Method 2007, Cond. A						
	Soldering Conditions	260°C, for 10s, Max.						
	Hermetic Seal	Leak rate less than 5 x 10 <sup>-8</sup> atm.cc/s of helium						
Electrical Connections	Pin Out	Pin #1-Enable/Disable Control Pin #7-Ground, Case (PECL)/Vee (ECL) Pin #8-Output Pin #9-Optional - Complementary output Pin #14-Vcc (PECL)/Ground, Case (ECL)						

#### Notes:

1. Standard frequency stability (±20, ±25, ±50, others available).
2. Tighter duty cycles available. Measure @ 50% of the voltage swing.
3. Pin #9 omitted if complementary output is not specified.

All specifications are subject to change without notice.