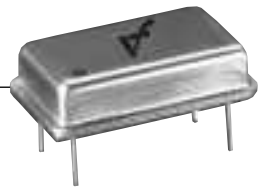
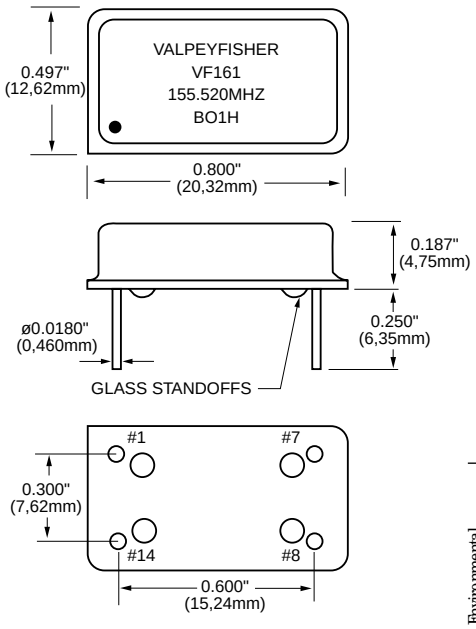
VF160/161



10KH ECL/PECL Compatible Clock Oscillator

FEATURES

- Very Low Phase Jitter
- Industrial Temperature Range
- In–house "Inverted Mesa" Crystal Technology for Higher Frequencies
- Wide Frequency Range
- Low Cost



All dimensions are typical unless otherwise specified.

	Parameter	Symb	Condition	Min	Typ	Max	Unit	Note
Absolute Max. Ratings	Input Break Down Voltage	Vcc–Vee		–0.5		7.0	V	
	Storage Temp.	Ts		–40		+85	°C	
Electrical	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	VF161 VF161L VF160
	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

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^{-8} atm.cc/s of helium
Electrical Connections	Pin Out	Pin #1–Complementary Output Pin #7–Ground, Case (PECL)/Vee (ECL) Pin #8–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.

All specifications are subject to change without notice.

Creating a Part Number

VF160/161 □□□-□□-FREQ.

FREQUENCY STABILITY	
Code	Specification
S	±20 ppm
A	±25 ppm
B	±50 ppm
	±100 ppm (std.)

LEAD CONFIGURATION	
Code	Specification
G	Gull Wing
	Through Hole (std.)

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

DUTY CYCLE	
Code	Specification
HH	±2.5%
	±5% (std.)

INPUT VOLTAGE	
Code	Specification
L	3.3 Volt ±5% (161 only)
	5.0 Volt ±5% (std.)

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

ValpeyFisher 75 South Street, Hopkinton, MA 01748 800-982-5737 508-435-6831 Fax: 508-435-5289 www.valpeyfisher.com