

**Typical Applications**

*PCS Base Stations  
Land Mobile Radio  
Cellular Telephony  
Radio in the Local Loop  
Test Equipment  
Avionics*

**Features**

*High Frequency  
3.3 Volt Supply  
Low Profile Package  
Standard 4-Pin DIP Package  
Mechanical Control, EFC Optional  
Surface Mount Options Available*

**Frequency Range**

**> 30 MHz – 200 MHz**

**Parameters**

		<b>Model Numbers</b>		
		<b>Clipped Sine Wave (1 Vpp min. into 1kΩ)</b>	<b>Square Wave (CMOS)</b>	
<b>Operating Temperature Range</b>	<b>Frequency Stability (ppm)</b>			
	0....50°C	± 1.0 ppm ± 2.0 ppm	978WCB 978WAD 978WHCB 978WHAD	
0.....70°C	± 2.5 ppm ± 5.0 ppm	978WDE 978WDF	978WHDE 978WHDF	
	-20....+70°C	± 2.0 ppm ± 2.5 ppm	978WBD 978WBE	978WHBD 978WHBE
-30....+70°C		± 1.0 ppm ± 2.0 ppm ± 2.5 ppm	978WCB 978WCD 978WCE	978WHCB 978WHCD 978WHCE
	-40....+85°C	± 1.0 ppm ± 2.0 ppm ± 2.5 ppm	978WEB 978WED 978WEE	978WHEB 978WHED 978WHEE

Note: Model 978W custom versions available with output waveforms of ACMOS, SINE, ECL & PECL

**Additional Parameters**

Supply Voltage: +3.3 Vdc ± 5%  
 Current  
     Clipped Sinewave: 2 mA to 6 mA  
     CMOS: 5 mA to 40 mA  
 Aging: ± 1 ppm/year  
 Mechanical Frequency Control: ± 3.5 ppm min.  
 Electrical Frequency Control  
     Voltage Range: 0 to 3 Vdc  
     Deviation: ± 8 ppm min.  
                     (others available)  
     Slope: Positive  
     Input Impedance: > 10 kohms

**Typical Phase Noise @ 40 MHz**

1Hz Offset <- 55 dBc / Hz  
 10Hz Offset <-90 dBc / Hz  
 100Hz Offset <-120 dBc / Hz  
 1kHz Offset <-140dBc / Hz  
 10kHz Offset <-150dBc / Hz

**Enclosures**

<p align="center"><b>SMT "S" Package</b></p>	<p align="center"><b>Gullwing "G" Package</b></p>	<p align="center"><b>Through-hole "T" Package</b></p>
<p align="center"><b>Pin Connections</b></p> <ul style="list-style-type: none"> <li>1 Voltage Control or N/C</li> <li>7 GND</li> <li>8 RF Output</li> <li>14 Vcc</li> </ul> <p align="right">Dimensions: Inches (mm)</p>	<p align="center"><b>Pin Connections</b></p> <ul style="list-style-type: none"> <li>1 Voltage Control or N/C</li> <li>7 GND</li> <li>8 RF Output</li> <li>14 Vcc</li> </ul> <p align="right">Dimensions: Inches (mm)</p>	<p align="center"><b>Pin Connections</b></p> <ul style="list-style-type: none"> <li>1 EFC when specified</li> <li>7 GND</li> <li>8 RF Output</li> <li>14 Supply Voltage</li> </ul> <p align="right">Dimensions: Inches (mm)</p>

Model	EFC	Waveshape Freq. Stab. Temp. Range	Package Code	Frequency
978W	Blank = No EFC V= EVC Option	WHAB	T = Through-hole S = SMT G = Gullwing	40M00000

\* Typical P/N = 978VWHABT40

Note: Package is non-hermetic