

**Typical Applications**

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

**Features**

*EFC Standard  
Low Profile Standard Package  
Hermetically Sealed Package  
Surface Mount Options Available  
Stratum III Option Available*

**Frequency Range**

**1 MHz – 30 MHz**

**Parameters**

**Model Numbers**

Operating Temperature Range	Frequency Stability * (ppm)	Clipped Sine Wave (1 Vpp min. into 1kΩ)	Square Wave (CMOS)
0....50°C	± 0.5 ppm ± 1.0 ppm ± 2.0 ppm	959VAA 959VAB 959VAD	959VHAA 959VHAB 959VHAD
0.....70°C	± 1.0 ppm ± 2.5 ppm ± 5.0 ppm	959VDB 959VDE 959VDF	959VHDB 959VHDE 959VHDF
-20....+70°C	± 1.0 ppm ± 1.5 ppm ± 2.0 ppm ± 2.5 ppm	959VBB 959VBC 959VBD 959VBE	959VHBB 959VHBC 959VHBD 959VHBE
-30....+70°C	± 1.0 ppm ± 2.0 ppm ± 2.5 ppm	959VCB 959VCD 959VCE	959VHCB 959VHCD 959VHCE
-40....+85°C	± 1.0 ppm ± 2.0 ppm ± 2.5 ppm	959VEB 959VED 959VEE	959VHEB 959VHED 959VHEE

**Additional Parameters**

Supply Voltage: +5 Vdc ± 5%  
 Current  
     Clipped Sinewave: 2 mA to 6 mA  
     CMOS: 10 mA to 60 mA  
 Aging: ± 1 ppm/year  
 Mechanical Frequency Control: ± 3.5 ppm min.  
 Electrical Frequency Control  
     Voltage Range: 0.5 to 4.5 Vdc  
     Deviation: ± 8 ppm min.  
                     (others available)  
     Slope: Positive  
     Input Impedance: > 10 kohms

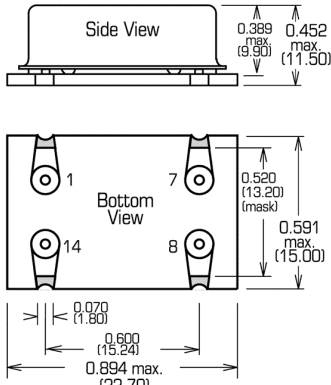
**Typical Phase Noise @ 10 MHz**

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

\* Stratum III option of ±4.6 ppm total for all conditions over 20 years available.

**Enclosures**

**SMT "S" Package**

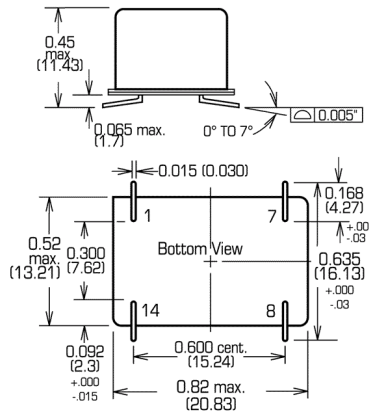


**PIN CONNECTIONS**

- 1 - Voltage Control or N/C
- 7 - GND
- 8 - RF Output
- 14 - Supply Voltage

Dimensions: Inches (mm)

**Gullwing "G" Package**

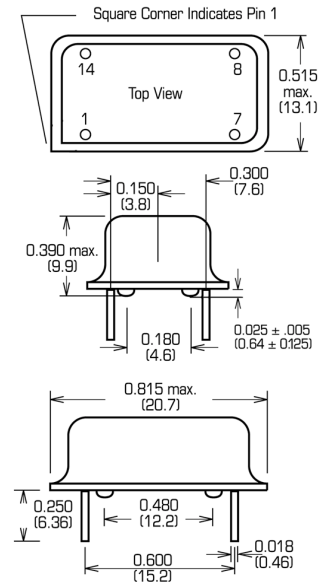


**PIN CONNECTIONS**

- 1 - EFC or N/C
- 7 - GND/Case
- 8 - RF Output
- 14 - Supply Voltage

Dimensions: Inches (mm)

**Through-hole "T" Package**



**PIN CONNECTIONS**

- 1 - EFC when specified (Pin 1 eliminated when not required.)
- 7 - GND
- 8 - RF Output
- 14 - Supply Voltage

Dimensions: Inches (mm)

Model	EFC	Waveshape Freq. Stab. Temp. Range	Package Code	Frequency
959	Blank = No EFC V= EVC Option	HAA	T = Through-hole S = SMT G = Gullwing	10M00000

Typical P/N = 959VHAAT10

Unless otherwise specified, any TCXO ordered without either Mechanical or Electrical Trim capability shall have a frequency calibration tolerance at Room Temperature of  $\pm 2$ ppm and the frequency stability tolerance over temperature will be from that measured value.