

# CTS CORPORATION

## KNIGHTS DIVISION

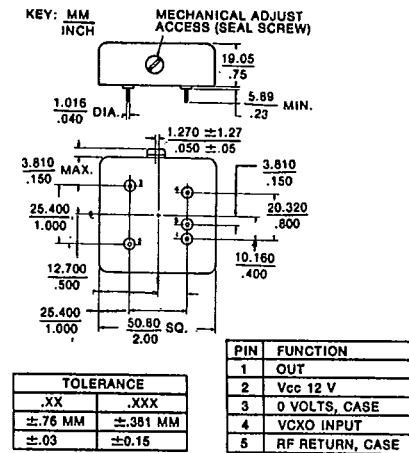
SPECIALISTS IN FREQUENCY MANAGEMENT

400 Reimann Ave., Sandwich, IL 60548 • 815/786-8411 • TWX 910-642-0860 Cable CTS  
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## Precision Crystal Oscillators

T-50-09

### JKVXO-220 HIGH STABILITY TCVCXO

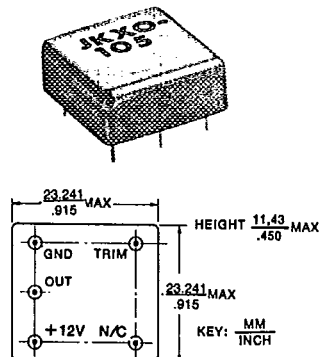


Designed for telecommunications use in phase locked and digital frequency locked loop applications where tight stability is needed during unlocked operation. Deviation range, temp. stability and aging rate combine to provide a highly stable TCVCXO with excellent free running stability and reference locking capability over an extremely long life.

#### SPECIFICATIONS

- Frequency range: 1 MHz to 25 MHz
- Excellent long term Aging: <4 ppm in 20 yrs.
- Operating range: 0 to +50°C or 0 to +70°C.
- $\pm 3 \times 10^{-7} \Delta F$  vs. temp. at any deviation voltage setting.
- Deviation:  $\pm 10$  to  $\pm 15$  ppm for 0 to +10V input, centered at +5 VDC.
- TTL or HCMOS output.
- Available with or without trim access port.
- +12V supply (other voltages available).

### JKXO-105 HYBRID TCXO



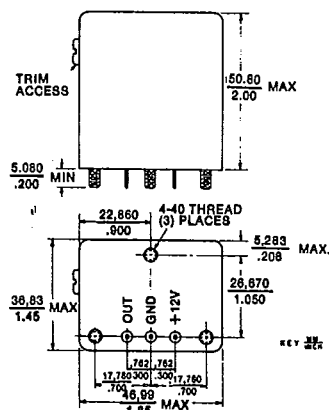
#### SPECIFICATIONS

The JKXO-105 is a subminiature TCXO designed to meet the requirements of modern battery operated systems. Its small size (0.32 cubic inches) and very low power consumption combine to form state-of-the-art TCXO performance for industry and military applications.

- Frequency range: 10 MHz to 20 MHz
- Temp. Stability: -1)  $\pm 1 \times 10^{-6}$ , 0 to +70°C.  
-2)  $\pm 2 \times 10^{-6}$ , -28 to +70°C.  
-3)  $\pm 2 \times 10^{-6}$ , -55 to +85°C.
- Input: +12 VDC  $\pm 5\%$  at 2.2 mA typ., 3 mA max.
- Output: Sinewave 1 vp-p into 1 K $\Omega$ .
- Stability vs time:  $\pm 1 \times 10^{-6}$ /yr.
- Stability vs. voltage:  $\pm 5 \times 10^{-9}$ /0.1 volt change.
- External trim sufficient for 10 yrs. aging via external resistor.

ADD "T" or "H" to  
Part number for  
TTL or HCMOS  
output signal—5V  
supply required

### JKXO-200 HIGH STABILITY TCXO — 5 MHz\*



\* CONTACT FACTORY FOR OTHER FREQUENCIES.

The JKXO-200 is a precision TCXO designed to maintain state-of-the-art stability during variations in environment and electrical inputs. Temperature hysteresis, temperature slew, trim adjust effects and aging have been minimized. The very low power consumption and rugged construction make this oscillator ideal for battery operated portable use. The JKXO-200 can be manufactured using Hi-Rel military components providing an ultra stable TCXO capable of surviving the harshest of military environments.

#### CONDENSED SPECIFICATIONS

	-2
Frequency vs. temp. -55°C to +85°C including hysteresis	$\pm 5 \times 10^{-7}$
1°C/min temp. slew -55°C to +85°C including trim adjust effect	$\pm 7 \times 10^{-7}$
Stability vs. time	$\pm 3 \times 10^{-7}$ 1st yr $\pm 8 \times 10^{-7}$ 5 yrs
Stability vs. voltage (12V $\pm 1$ V)	$\pm 5 \times 10^{-9}$
Output level: 50 $\Omega$ load	50 mV RMS
1000 $\Omega$ load	150 mV RMS
Warm up to within $\pm 5 \times 10^{-8}$	10 seconds max.
Input power at +12V	50 mW max.