# CFPT-4003, -4033, -4005

**ISSUE 2; 11 JUNE 1999**

### Delivery Options

- Please contact our sales office for current leadtimes

### Description

- The CFPT-4000 series of temperature compensated crystal oscillators are housed in a 40 pin LCC. With high stability and tri-state capability, the CFPT-4000 series is ideal where board space and height is at a premium. Operation can be specified in the supply range 3V to 5V, with HCMOS drive frequencies being available from 1.0kHz to 20.0MHz.

### Waveform

- Square HCMOS

### Package Outline

- LCC ceramic seam welded package

### Ageing

- ±1ppm max. in first year
- ±3ppm max. for 10 years
- ±1ppm max. after reflow

### Frequency Stability

- Temperature: see table
- Supply Voltage Variation ±5% ≤ ±0.3ppm
- Load Coefficient 15pF ±5pF ≤ ±0.1ppm

### Frequency Adjustment

- ≥ ±4ppm External Control Voltage 0.25V to 2.5V applied to pin 31 (or 21)
- ≥ ±4ppm External 100kΩ Potentiometer connected between Vref (pin 28) and ground, wiper to pin 31 (or 21)

### Tri-state Control

- Pin 7 open circuit or >0.7Vs enable
- < 0.2Vs tri-state

### Storage Temperature Range

- –55 to +125°C

### Environmental Specification

- Bump: IEC 68-2-29 Test Eb, 1000±10 bumps at 400m/s$^2$ in each of 3 mutually perpendicular planes.
- Vibration: IEC 68-2-6 Test Fc Procedure B4, Duration 12 hours, 10-55Hz 1.5mm D.A., 55-2000Hz at 98m/s$^2$ acceleration
- Shock: IEC 68-2-27 Test Ea, half sine wave, 981m/s$^2$ acceleration, 11ms duration, 3 shocks in each plane
- Sealing: IEC 68-2-17 Test Qk (Fine Leak) and IEC 68-2-17 Test Qc (Gross Leak)

### Marking Includes

- Model number
- Frequency Stability Code /Temperature Range Code
- Frequency
- Date code (Year/Week)
- Static Sensitivity Symbol Δ (denotes pin 1)

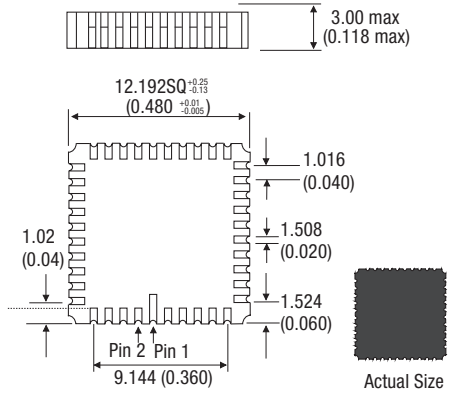
### Minimum Order Information Required

- Discrete Part Number

OR

- Frequency + Model Number + Frequency Stability + Operating Temperature Range

**Outline in mm (inches) - (scale 2:1)**




Please note: dot indicates Pin 1

SURFACE MOUNT TCXOs

## Electrical Specification - limiting values when measured in test circuit

| Frequency Range | Supply Voltage (7.5V max.) | Supply Current (max.) | Output Waveform | Output | Rise Time ($t_r$) (max.) | Fall Time ($t_f$) (max.) | Duty Cycle | Model Number |
|---|---|---|---|---|---|---|---|---|
| 1.0kHz to 20.0MHz | 3.0V±0.15 | 8mA | Square | HCMOS 15pF | 4ns | 4ns | 40/60% | CFPT-4003 |
| 1.0kHz to 20.0MHz | 3.3V±0.17 | 8mA | Square | HCMOS 15pF | 4ns | 4ns | 40/60% | CFPT-4033 |
| 1.0kHz to 20.0MHz | 5.0V±0.25 | 8mA | Square | HCMOS 15pF | 4ns | 4ns | 40/60% | CFPT-4005 |

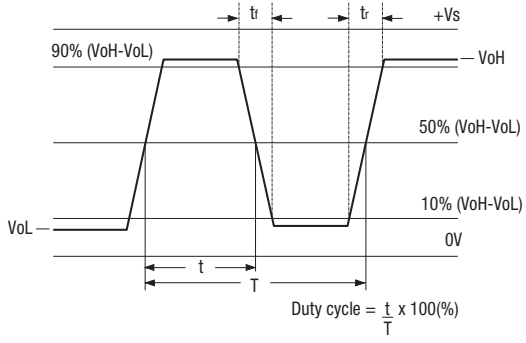
## Frequency Stability Available Over Operating Temperature Ranges

| Operating Temperature Ranges | Frequency Stabilities Vs Operating Temperature Range | | |
|---|---|---|---|
| | ±0.8ppm | ±1.0ppm | ±1.5ppm |
| –20 to 70°C | Code BS | Code FS | Code CS |

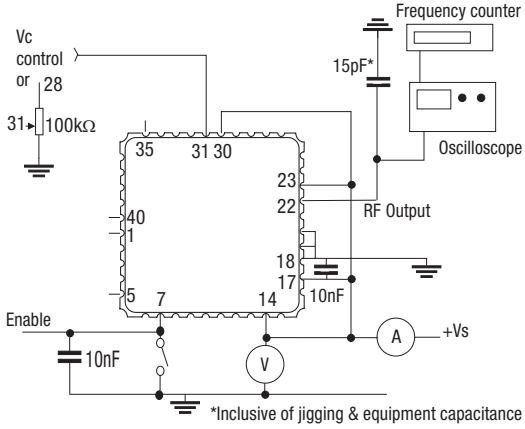
**Ordering Example** 10.0MHz CFPT-4005 BS

Frequency
Model No
Frequency Stability Vs Operating Temperature Code

## Output Waveform - HCMOS




## Test Circuit




## CFPT-4000 Pin Connections

| | |
|---|---|
| 1-6, 8-13,15-16, 25, 27, 29, 32, 35-40 | No connection |
| 7 | Tri-state control |
| 14 | Supply Voltage Vs (Connected internally to 17) |
| 17 | Supply Voltage Vs (Connected internally to 14) |
| 18-20 | Ground (Connected internally to 34) |
| 21 | Control Voltage Vc (Connected internally to 31) |
| 22 | RF Output |
| 23 | Supply Voltage Vs (Connected internally to 30) |
| 24 | DO NOT CONNECT |
| 26 | DO NOT CONNECT |
| 28 | V ref |
| 30 | Supply Voltage Vs (Connected internally to 23) |
| 31 | Control Voltage Vc (Connected internally to 21) |
| 33 | DO NOT CONNECT |
| 34 | |