

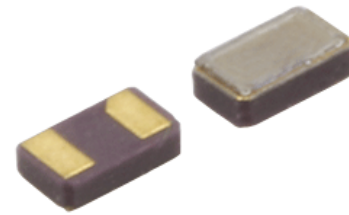


# TF20 Series

## Tuning Fork Crystal

### Features

- 32.7680kHz Frequency Reference
- Tuning Fork Crystal Design
- Hermetic Ceramic Surface Mount Package
- Ideal for High Density Circuit Boards
- Frequency Tolerance,  $\pm 20$ ppm Standard
- Parabolic Temperature Coefficient
- Tape and Reel Packaging, EIA-418



Part Dimensions:  
2.0 x 1.2 x 0.6mm • 4.5926mg

### Applications

- Real Time Clock Reference
- FPGAs & Microcontrollers
- Wearable Electronics
- IoT Applications
- Consumer Electronics
- Healthcare Devices
- Smart Meters
- Instrumentation

### Description

CTS TF20 Series is ideal for supporting wide range of electronic designs requiring a Real Time Clock reference. This series will support general commercial and industrial applications.

### Ordering Information

Model		Frequency Tolerance	Load Capacitance	Frequency Code [kHz]	Packaging
TF	20	2	P	32K7680	R
Code Package		Code Capacitance		Code Packing	
20 2.0x1.2mm		P 12.5pF		R 3k pcs./reel	
		J 9pF			
		V 7pF			
		W 5pF			
		Code @ +25°C		Code Frequency	
		2 $\pm 20$ ppm		Product Frequency Code <sup>1</sup>	
		1 $\pm 10$ ppm			

Notes:

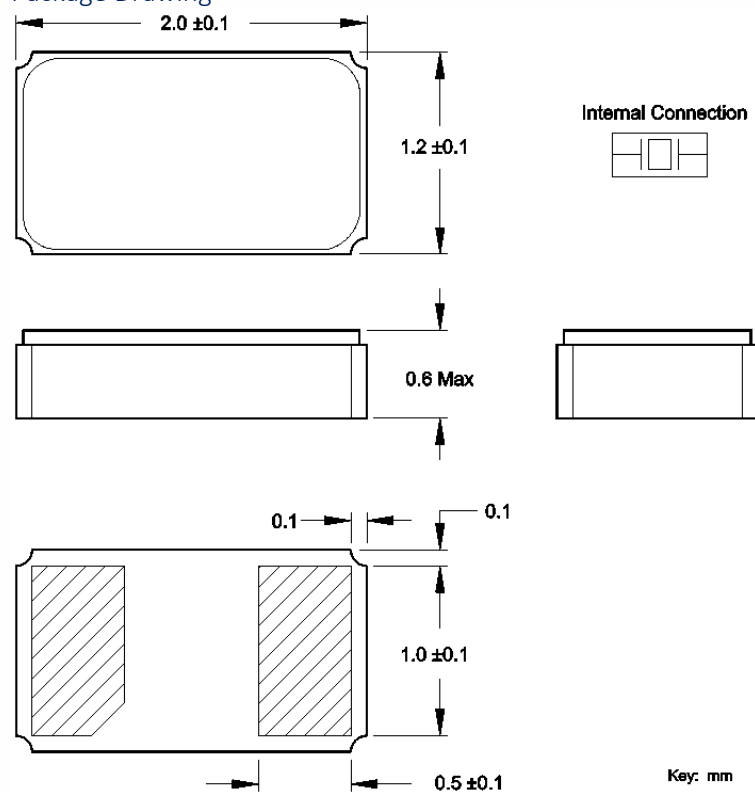
- 1] Frequency is recorded with two leading digits before the 'K' and 4 significant digits after the 'K' [including zeros].

**Not all performance combinations and frequencies may be available.**  
**Contact your local CTS Representative or CTS Customer Service for availability.**

This product is specified for use only in standard commercial applications. Supplier disclaims all express and implied warranties and liability in connection with any use of this product in any non-commercial applications or in any application that may expose the product to conditions that are outside of the tolerances provided in its specification.

## Mechanical Specifications

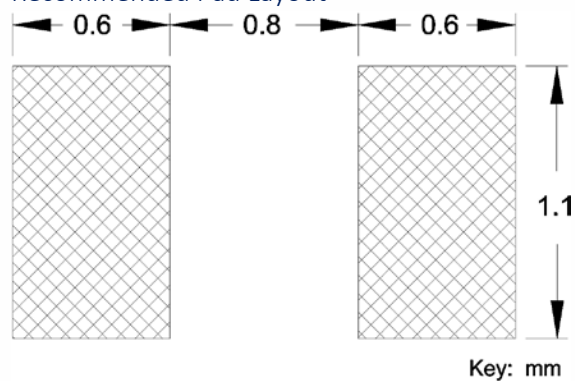
### Package Drawing



### Marking Information

Refer to document 016-0071-0, TF Marking Guide, for marking format by product family.

### Recommended Pad Layout



### Notes

1. JEDEC termination code (e4). Barrier-plating is nickel [Ni] with gold [Au] flash plate.
2. Reflow conditions per JEDEC J-STD-020; +260°C maximum, 20 seconds.
3. MSL = 1.