

## Temperature Compensated Crystal Oscillator

- Excellent frequency stability
- Ultra miniature size SMD, reflow soldering available
- Clipped sine output, tight specifications and an internal trimmer
- Suited for communications equipment, cellular radios, and instrumentation.

TO520

### Specifications:

**Frequency Range:** 10.000 MHz ~ 20.0000 MHz

**Operating Temperature:**

0°C ~ +55°C	- A
-10°C ~ +60°C	- B
-20°C ~ +70°C	- C
-30°C ~ +75°C	- D
0°C ~ +85°C	- E

**Storage Temperature:** -40°C ~ +85°C

### Frequency Stability:

Vs. Temperature:	± 5.0 ppm
	± 3.0 ppm
	± 2.5 ppm
Vs. Input Voltage:	± 0.2 ppm at voltage ± 5%
Vs. Load:	± 0.2 ppm at load ± 10%
Aging:	± 2.0 ppm max first year

### Pulling Range:

V<sub>ss</sub>+0.5V ~ V<sub>cc</sub> -0.5V:5 ~ 15 ppm/V (optional)  
Control Slope: Positive

**Start-Up Time:** 2 ms (typical)

**Output Waveform:** Clipped Sine, 10KΩ//10pF

**Output Voltage:** 0.8 V<sub>p-p</sub> min.

**2<sup>nd</sup> Harmonics:** -15.0 dBc max.

**SSB Phase Noise:** -125 dBc/Hz (offset 1KHz)

**Frequency Adjustment:** ± 3.0 ppm min with internal trimmer

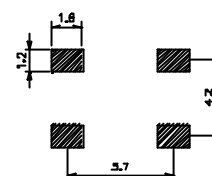
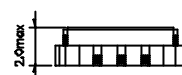
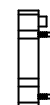
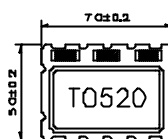
**Supply Voltage:** +3.3 VDC (± 0.2%)  
+5.0 VDC (± 0.3%) - P

**Supply Current:** 2.0 mA max

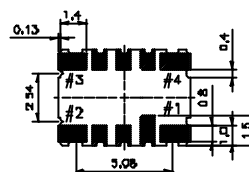
### Note:

1. Other frequencies, stabilities, and operating temperature ranges available. Consult VTC Support for specific requirements.
2. Not all combinations of the above, stabilities, and temperature ranges are available. Consult VTC Support if your requirement is not standard.
3. All specifications subject to change without notice.

### TO-C



Land Pattern



Pin	Configurations
#1	VC or NC
#2	Ground
#3	Output
#4	Supply V <sub>DD</sub>

All dimensions are in mm

### Ordering Information

Product name + Operating Temperature + Stability + Frequency (MHz) + Other Specification Code.

i.e. TO520B2.5-8.0MHz ±2.5ppm/-10°C~+60°C/3.3V  
Or TO520D2.5P-8.0MHz ±2.5ppm/-30°C~+75°C/5.0V