## **Temperature Compensated Crystal Oscillator**

- Excellent frequency stability •
- Wide operating temperature range
- Clipped sine output, tight specifications and an internal trimmer
- Suited for communications equipment, cellular radios, and instrumentation.

## **Specifications:**

Operating Temperature: $0^{\circ}C \sim +50^{\circ}C$ $-A$ $-10^{\circ}C \sim +60^{\circ}C$ $-B$ $-20^{\circ}C \sim +70^{\circ}C$ $-C$ $-30^{\circ}C - +75^{\circ}C$ $-D$ $-40^{\circ}C \sim +85^{\circ}C$ $-E$ Storage Temperature: $-40^{\circ}C \sim +85^{\circ}C$ Frequency Stability: $\pm 5.0 \text{ ppm}$ $\pm 3.0 \text{ ppm}$ $\pm 2.5 \text{ ppm}$ $\pm 2.5 \text{ ppm}$ $\pm 2.6 \text{ ppm}$ $\pm 1.5 \text{ ppm}$ $\pm 1.0 \text{ ppm}$ $\pm 1.0 \text{ ppm}$ $\pm 0.3 \text{ ppm at voltage \pm 5\%Vs. Load:\pm 0.2 \text{ ppm at load \pm 10\%Vs. Shipping:\pm 0.5 \text{ ppm at 25^{\circ}C \pm 2^{\circ}CAging:\pm 1.0 \text{ ppm} max first yearOutput Level:1.0 \text{ Vp-p min}Output Level:1.0 \text{ Vp-p min}Output Load:10 \text{ K}\Omega // 10 \text{ pF}Frequency Adjustment:\pm 3.0 \text{ ppm min with internal trimmer}Supply Voltage:+3.0 \text{ VDC} (\pm 0.2\%)+5.0 \text{ VDC} (\pm 0.3\%)-P$	
Frequency Stability: Vs. Temperature: $\pm 5.0$ ppm $\pm 3.0$ ppm $\pm 2.5$ ppm $\pm 2.5$ ppm $\pm 2.0$ ppm $\pm 1.5$ ppm $\pm 1.5$ ppm $\pm 1.0$ ppm Vs. Input Voltage: $\pm 0.3$ ppm at voltage $\pm 5\%$ Vs. Load: $\pm 0.2$ ppm at load $\pm 10\%$ Vs. Shipping: $\pm 0.5$ ppm at $25^{\circ}C \pm 2^{\circ}C$ Aging: $\pm 1.0$ ppm max first yearImage: $\frac{1}{1.0}$ VP-p min Output Level: $1.0$ Vp-p min Output Load: $10$ K $\Omega$ // 10 pF Frequency Adjustment: $\pm 3.0$ ppm min with internal trimmerImage: $\frac{1}{2.24\pm0.3}$ Supply Voltage: $\pm 3.0$ VDC ( $\pm 0.2\%$ ) $10$ K $\Omega$ // 10 pF	
Vs. Temperature: $\pm 5.0 \text{ ppm}$ $\pm 3.0 \text{ ppm}$ $\pm 2.5 \text{ ppm}$ $\pm 2.5 \text{ ppm}$ $\pm 2.0 \text{ ppm}$ $\pm 1.5 \text{ ppm}$ $\pm 1.0 \text{ ppm}$ Vs. Input Voltage: $\pm 0.3 \text{ ppm}$ at voltage $\pm 5\%$ Vs. Load: $\pm 0.2 \text{ ppm}$ at load $\pm 10\%$ Vs. Shipping: $\pm 0.5 \text{ ppm}$ at $25^{\circ}\text{C} \pm 2^{\circ}\text{C}$ Aging: $\pm 1.0 \text{ ppm}$ max first year Output Level: $1.0 \text{ Vp-p}$ min Output Level: $1.0 \text{ Vp-p}$ min Output Load: $10 \text{ K}\Omega // 10 \text{ pF}$ Frequency Adjustment: $\pm 3.0 \text{ ppm}$ min with internal trimmer Supply Voltage: $+3.0 \text{ VDC} (\pm 0.2\%)$	
Vs. Temperature: $\pm 5.0 \text{ ppm}$ $\pm 3.0 \text{ ppm}$ $\pm 2.5 \text{ ppm}$ $\pm 2.5 \text{ ppm}$ $\pm 2.0 \text{ ppm}$ $\pm 1.5 \text{ ppm}$ $\pm 1.5 \text{ ppm}$ $\pm 1.0 \text{ ppm}$ Vs. Input Voltage: $\pm 0.3 \text{ ppm}$ at voltage $\pm 5\%$ Vs. Load: $\pm 0.2 \text{ ppm}$ at load $\pm 10\%$ Vs. Shipping: $\pm 0.5 \text{ ppm}$ at $25^{\circ}\text{C} \pm 2^{\circ}\text{C}$ Aging: $\pm 1.0 \text{ ppm}$ max first year Output Level: $1.0 \text{ Vp-p}$ min Output Load: $10 \text{ K}\Omega // 10 \text{ pF}$ Frequency Adjustment: $\pm 3.0 \text{ ppm}$ min with internal trimmer Supply Voltage: $+3.0 \text{ VDC} (\pm 0.2\%)$	
Output Waveform:Clipped-SineOutput Load: $10 \text{ K}\Omega // 10 \text{ pF}$ Frequency Adjustment: $\pm 3.0 \text{ ppm min with internal trimmer}$ Supply Voltage: $+3.0 \text{ VDC } (\pm 0.2\%)$	0.01 0.01
Output Waveform:Clipped-SineOutput Load: $10 \text{ K}\Omega // 10 \text{ pF}$ Frequency Adjustment: $\pm 3.0 \text{ ppm min with internal trimmer}$ Supply Voltage: $+3.0 \text{ VDC } (\pm 0.2\%)$	
Output Load: 10 KΩ // 10 pF 7 8 8 7 8 7 14 <td>Configuratio</td>	Configuratio
B 8   Frequency Adjustment: ± 3.0 ppm min with internal trimmer 14   Supply Voltage: +3.0 VDC (± 0.2%) 14	VC or NG Ground
Supply Voltage: +3.0 VDC (± 0.2%)	Output Supply Vol
	All dim
Supply Current: 3.0 mA max Ordering Information	n

Note:

Other frequencies, stabilities, and operating temperature ranges available. 1. 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. **TO500** 

4.0±0.2

TO-A

Pin	Configurations
1	VC or NG
7	Ground
8	Output
14	Supply VDD

mensions are in mm

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

i.e. TO500B2.0-8.0MHz ±2.0ppm, -10°C~+60°C, 3.0V Or TO500B1.5P-8.0MHz ±1.5ppm, -10°C~+60°C, 5.0V

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