



WTL oven Controlled Crystal Oscillators typically consist of a precision quartz crystal, oscillator circuitry, temperature sensor, a heating element, oven circuitry of which all are contained inside of an insulated oven block.

Therefore, the quartz crystal can be maintained at a constant temperature to insure frequency stability of ± 0.1 to ± 0.001 ppm over temperature and with improved aging of 0.002 to 0.0005 ppm per day and 0.5 to 0.003 ppm per year frequency deviation.

Please review the WTL standard and custom design OCXO's. This will help you create the most cost effective oscillator design that will satisfy your circuit requirements.

You may fax or call our toll free number, 1-800-900-9825 (XTAL) for more details.



OCXO

WTL Part No.:		WTL 7001	WTL 7002	WTL 7003	WTL 7004
Specifications		Electrical Parameters			
Frequency:	MHz	13.000000	25.920000	50.000000	11.111200
Pulling Range:		0V / -2/-4 ppm	0.5 V / <1 ppm	0 V / -5/-12 ppm	-4 V / + 1.5/ + 4 ppm
	25°C	5.0 V / < 0.25 ppm	2. V / < 1 ppm	2.5 V / < 1 ppm	0 V / < 0.5 ppm
		10 V / + 2/ + 4 ppm	5.0 V / + 9/ + 12 ppm	5.0 V / + 5/ + 12 ppm	+ 4 V / - 1.5/ -4 ppm
Operating Temperature Range	°C	0/+ 70°C	0/+ 70°C	0/+ 70°C	0/+ 65°C
Frequency Stability	ppm	<0.1	<0.1	<0.1	<0.2
Supply Voltage	Volt	12 ± 10%	5 ± 5%	12 ± 10%	12 ± 5%
Current Drain Max.	mA	< 200	< 600	< 200	< 200
After Warm-Up	mA	< 90	< 100	< 100	< 100
Warm-Up Time		< 4 min.	< 4 min.	< 4 min.	< 10 min.
Output Signal		HCMOS	HCMOS	HCMOS	> 3 V _{ss}
Duty Cycle	%	45/55	40/60	40/60	
Operable Temperature Range	°C	-20/+ 80	-40/+ 75	-20/+ 80	-10/+ 75
Frequency Range	MHz	10.0 - 20.0	10.0 - 28.0	25.0 - 55.0	8.0 - 20.0
Aging Per Day	• 10 ⁹	< 1	< 10	< 10	< 10
Aging Per Year	ppm	< 0.1	< 0.5	< 0.5	< 0.5
Case Style		WC - 08	25.7 x 25.7 x 13.5 mm	WC - 08	62 x 62 x 20.0 mm



OCXO

WTL Part No.:		WTL 7100	WTL 7200	WTL 7300
Specifications		Electrical Parameters		
Frequency Range:		10 ~ 30 MHz	10 ~ 30 MHz	1 ~ 30 MHz
Operating Temperature Range		-20...+ 70°C	-20...+ 70°C	-20...+ 70°C
Min. Frequency Stability	Withing Operating Temp. Range	$\pm 1 \cdot 10^{-7} \sim \pm 2,5 \cdot 10^{-8}$	$\pm 2,5 \cdot 10^{-8} \sim \pm 1 \cdot 10^{-8}$	$\pm 5 \cdot 10^{-7}$
	Supply Voltage	$\pm 1 \cdot 10^{-8}$	$\pm 5 \cdot 10^{-8}$	$\pm 1 \cdot 10^{-7}$
	Load Change	$\pm 1 \cdot 10^{-9} (Z_L \pm 10\%)$	$\pm 1 \cdot 10^{-9} (Z_L \pm 10\%)$	$\pm 1 \cdot 10^{-8} (Z_L \pm 10\%)$
Max. Phase Noise	x(1 Hz/100 Hz/10 kHz) [dBc/Hz]	-75 / - 130 / - 145	- 75 / - 130 / - 145	n.d.
Max. Aging	Per Day after 30 Days of Operation	$\pm 1 \cdot 10^{-9}$	$\pm 1 \cdot 10^{-9}$	n.d.
	Per Year	$\pm 5 \cdot 10^{-7}$	$\pm 1 \cdot 10^{-7}$	$\pm 1 \cdot 10^{-6}$
Frequency Correction		$\pm 12 \cdot 10^{-6}$	$\pm 5 \cdot 10^{-6} \sim \pm 2 \cdot 10^{-6}$	$\pm 80 \cdot 10^{-6} \sim \pm 20 \cdot 10^{-6}$
	W/Ext. Potentiometer / Control Voltage	22 k Ω / 0 ... 4 V	22 k Ω / 0 ... 4 V	22 k Ω / 0 ... 4 V
Output Signal	Sinus-Amplitude / Load	-	-	-
	Level / Load / Duty Cycle	CMOS / L < 0.4 V.H > 4.0 V / 1 k Ω / 40 ... 60%		
Supply Voltage	typ. / min...max	12V \pm 10%	5V \pm 5%; 12V \pm 10%	5V \pm 5%
Max. Power Consumption	at 25 °C	800 mW	800 mW	900 mW
	During Warm-Up	2400 mW	2400 mW	2400 mW
Max. Warm-Up Time at 25 °C		4 min.	4 min.	4 min.
Case Style		WC-15	WC-15	WC-O2 / 10 mmh

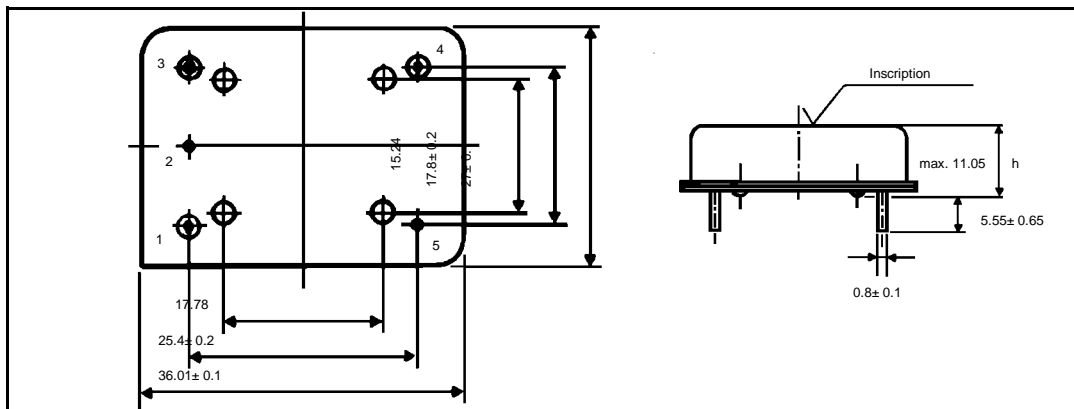


OCXO

WTL Part No.:		WTL 7400	WTL 7500	WTL 7600
Specifications		Electrical Parameters		
Frequency Range:		10 ~ 30 MHz	10 ~ 30 MHz	1 ~ 200 MHz
Operating Temperature Range		-20...+ 70°C	-20...+ 70°C	-20...+ 70°C
Min. Frequency Stability	Within Operating Temp. Range	$\pm 1 \cdot 10^{-7} \sim \pm 2,5 \cdot 10^{-8}$	$\pm 1 \cdot 10^{-7} \sim \pm 5 \cdot 10^{-9}$	$\pm 5 \cdot 10^{-7} \sim \pm 5 \cdot 10^{-8}$
	Supply Voltage	$\pm 1 \cdot 10^{-8}$	$\pm 1 \cdot 10^{-9}$	$\pm 1 \cdot 10^{-8}$
	Load Change	$\pm 1 \cdot 10^{-9} (Z_L \pm 10\%)$	$\pm 5 \cdot 10^{-10} (Z_L \pm 10\%)$	$\pm 5 \cdot 10^{-9}, 50 \Omega \pm 5\%$
Max. Phase Noise	x(1 Hz/100 Hz/10 kHz) [dBc/Hz]	-75 / - 130 / - 145	- 75 / - 130 / - 145	-65 / -90 / - 130
Max. Aging	Per Day after 30 Days of Operation	$\pm 1 \cdot 10^{-9}$	$\pm 1 \cdot 10^{-9}$	$\pm 1 \cdot 10^{-9}$
	Per Year	$\pm 1 \cdot 10^{-7}$	$\pm 1 \cdot 10^{-7}$	$\pm 1 \cdot 10^{-7}$
Frequency Correction		$\pm 5 \cdot 10^{-6} \sim \pm 2 \cdot 10^{-6}$	$\pm 5 \cdot 10^{-6} \sim \pm 2 \cdot 10^{-6}$	$\pm 50 \cdot 10^{-6} \sim \pm 2 \cdot 10^{-6}$
	W/Ext. Potentiometer / Control Voltage	22 k Ω / 0 ... 4 V	22 k Ω / 0 ... 4 V	22 k Ω / 0 ... 4 V
Output Signal	Sinus-Amplitude / Load	-	-	1 V _{SS} \pm 30% / 50 Ω
	Level / Load / Duty Cycle	CMOS / L < 0.4 V.H > 4.0 V / 1 k Ω / 40 ... 60%		
Supply Voltage	typ. / min...max	12V \pm 10%	5V \pm 5%; 12V \pm 10%	12V \pm 10%
Max. Power Consumption	at 25 °C	800 mW	800 mW	800 mW
	During Warm-Up	2400 mW	2400 mW	2400 mW
Max. Warm-Up Time at 25 °C		4 min.	3 min.	3 min.
Case Style		WC - 08	WC-08/19 mmh	WC-08 / 19 mmh.



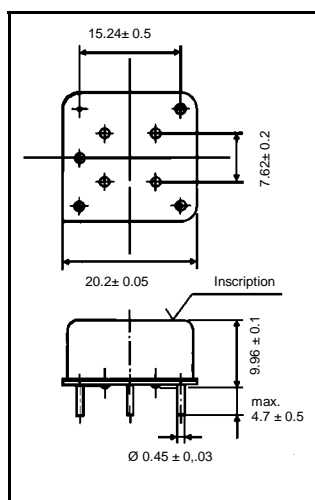
OCXO



WC-08

Pin Connections:

- 1) Voltage Control
- 2) Var. GND / Reference Voltage
- 3) Power Supply
- 4) HF-Out
- 5) GND



WC-15

Pin Connections:

- 1) Power Supply
- 2) HF-Out
- 3) GND
- 4) Voltage Control
- 5) GND

WC-02

Pin Connections:

- 1) Voltage Control
- 7) GND
- 8) HF-Out
- 14) Power Supply

