



Features and Benefits

- High frequency stability(up to ± 5 ppm over -40°C to $+85^{\circ}\text{C}$)
- Very low power consumption (up to 6 mA)
- Available voltage control function
- 5V CMOS output

Typical Applications

- Cellular and Wireless Communication
- GPS and WiMax Applications
- Mobile Devices

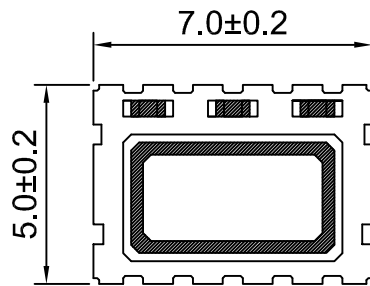
Description

TCXO7500AL-10MHz-A offers high frequency stability and low power consumption with available voltage control function all in a compact SMD package design.

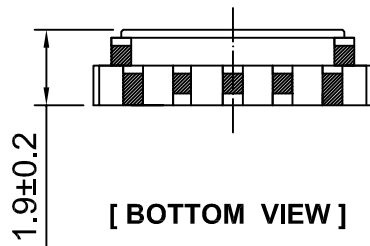
Mechanical Drawing & Pin Connections

Drawing No: MD150004-3

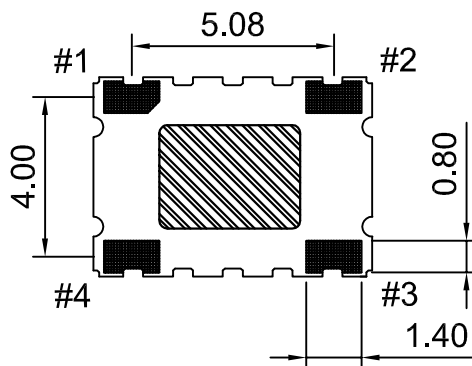
[TOP VIEW]



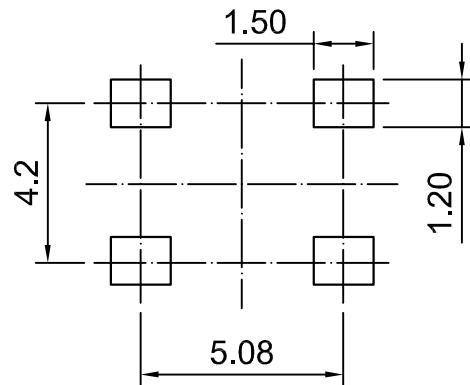
[SIDE VIEW]



[BOTTOM VIEW]



[Solder pattern]



PIN	FUNCTION
#1	NC/GND
#2	GND
#3	Output
#4	VDD

Unit in mm
1mm = 0.0394 inches



Specifications

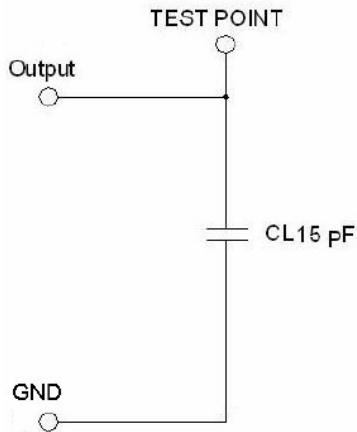
Oscillator Specification	Sym	Condition	Value			Unit	Note
			Min.	Typ.	Max.		
Nominal Frequency				10		MHz	
Output Waveform			CMOS				
Output Load Capacitance		Operating range		10 10		kΩ pF	
Duty Cycle		Measured at 50% V _{DD} trigger level	45	50	55	%	
Rise / Fall Time		CMOS logic output at 10% to 90%			6	ns	
Start Time					2	ms	
Power Supply							
Supply Voltage	V _s		4.835	5.000	5.165	V	
Current Consumption		At maximum supply voltage			6	mA	
Frequency Stability							
Nominal Frequency Stability		Frequency at +25°C, 1 hour after 2 times reflow	-5.0		+5.0	ppm	
Vs Operating Temperature		Referenced to frequency at +25°C	-5.0		+5.0	ppm	
Vs Supply Voltage changes	V _s	±5% at +25°C	-0.2		+0.2	ppm	
Aging Per Year		@ +25°C	-1.0		+1.0	ppm	
Phase Noise		100 Hz offset			-130	dBc / Hz	
		1 KHz offset			-145		
		10 KHz offset			-154		
Environmental Conditions							
Operating Temperature Range		The operating temperature range over which the frequency stability is measured	-40		+85	°C	
Storage Temperature Range			-40		+85	°C	

Environmental Conditions

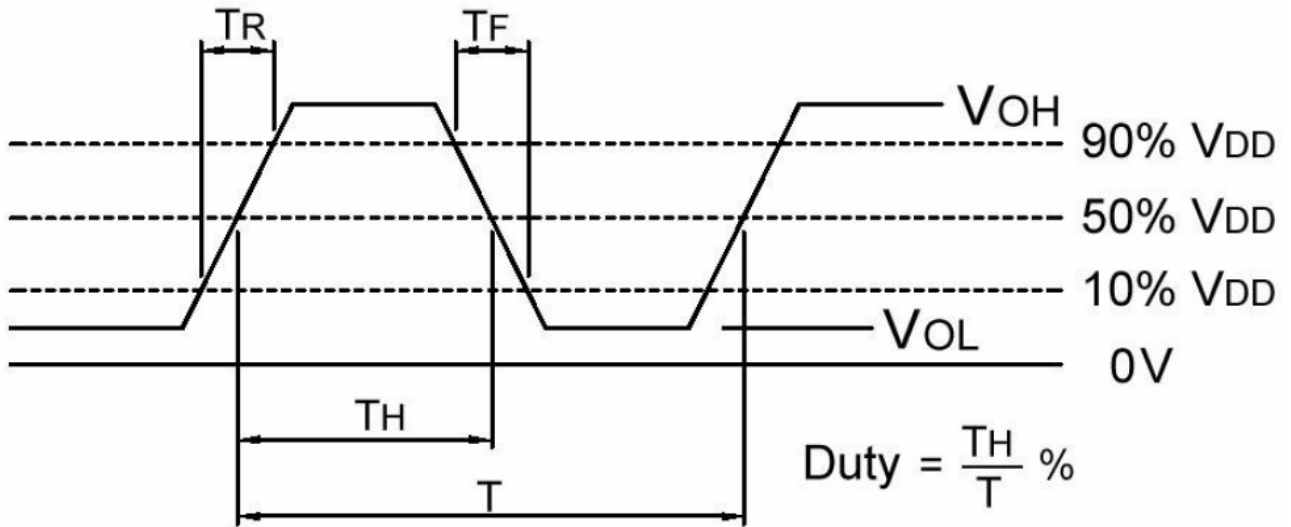
Test	MIL-STD-	JIS	Test Conditions (IEC)
Solderability	883E Method2003.7		Solderability: +235°C ±5°C, 5±0.5S Heat resistance: +260°C ±5°C, 10±1S restoration of 1 hour
Hermeticity	883E Method 1014.10		FC-84 Fluorocarbon, bubble machine
Vibration	883E Method 2007.3		Enable Crystal (10g) from 10-55-10Hz, X, Y, Z horizontal, 1 minute vibration / time, 1 time / 2 hours
Mechanical Shock		C6701	Enable Crystal 50G (490 m/s ²), time = 11 ms, speed = 3.4 m/s half sine wave oscillation
Drop Test	202F Method 213B		75 cm high, 3 times on hard board
Salt Spray		C6701	5% NaCL, +35°C ±2°C chamber, 48 hours, PH 6.5 ~ 7.2
High and Low Temperature Storage	883C Method 1011.8		High temperature: +125°C ±2°C, 1000 hour Low temperature: -40°C ±3°C, 1000 hour
Temperature and Humidity Cycle	883E Method 1005.8		Temperature: -10°C ±2°C, +65°C ±2°C Humidity: 93% ±3%, 1 cycle need 24 hours, 5 cycles
High Temperature and Humidity Storage		C6701	Temperature: +40°C ±2°C Humidity: 85% ±3,-2% Store 96 hours
Aging		C5023	Temperature: +85°C ±2°C, 1000 hours



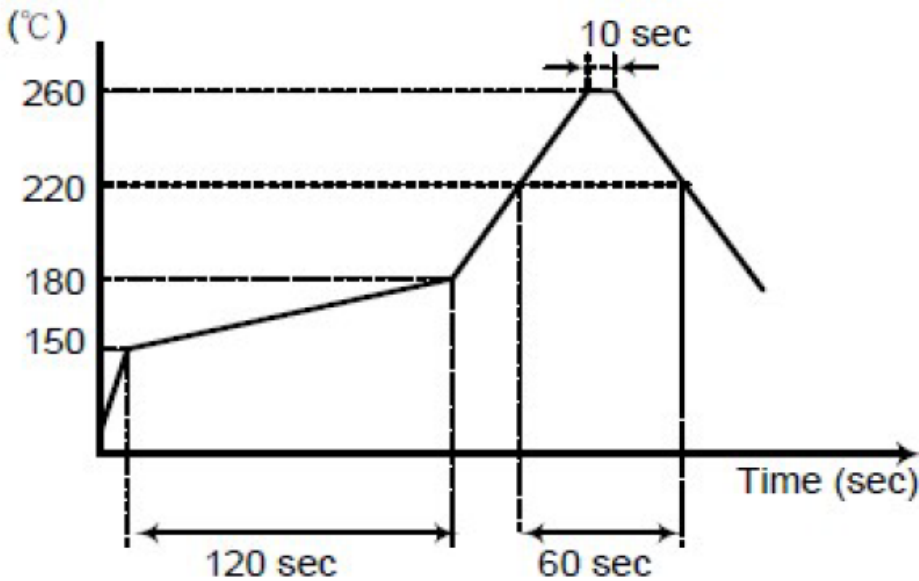
Test Circuit



Output Waveform



Reflow Condition



Total time: 200 sec. Max. Solder melting point: 220°C