



High stability and low phase noise

Crystal Oscillators

Product profile

CX5228A is a high stability and low phase noise thermostatic crystal oscillator, which is manufactured by special high Q crystal resonator with leading-edge technology, and can operate at temperatures from -20°C to +70°C, with an aging rate of better than 3E-10/day, and with a preferred phase noise of up to -126dBc/Hz at 1Hz. It is suitable for high-performance instruments for communication, navigation, radar, reconnaissance, etc., as well as for hi-end grade audio systems.

Product features

- Operating temperature range -20°C ~+70°C
- Near-end phase noise up to $\leq -123\text{dBc/Hz}@1\text{Hz}$
- Frequency stability ADEV, the lowest up to $1.2\text{E}-13/1\text{s}$
- +12VDC power supply

Application area



Atomic Signal
Purification
Phase-Locked
Loops



Detection



Communication



hi-end
Audio clock

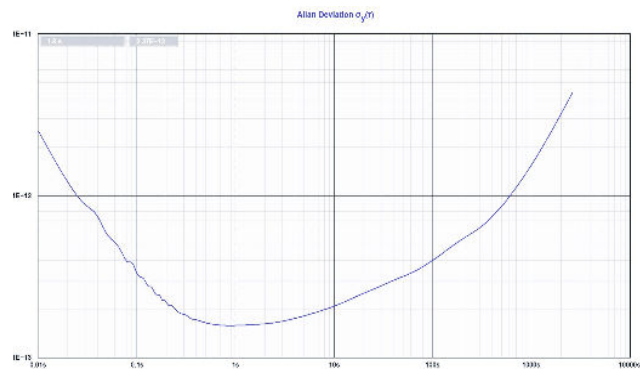


Measuring and
testing instruments



Radar

Typical curve



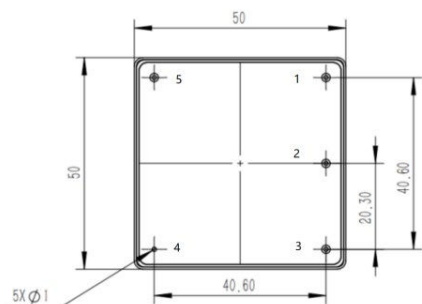
Typical value of the frequency stability:	100ms: 3.5×10^{-13}	1s: 1.5×10^{-13}
	10s: 2.0×10^{-13}	100s: 4.0×10^{-13}
	1000s: 1.5×10^{-12}	



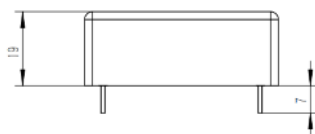
Typical values of the phase noise:	1Hz: -121dBc/Hz	10Hz: -148dBc/Hz
	100Hz: -163dBc/Hz <td>1kHz: -169dBc/Hz </td>	1kHz: -169dBc/Hz
	10kHz: -170dBc/Hz <td>100kHz: -170dBc/Hz </td>	100kHz: -170dBc/Hz

Test Item		Technical Indicators			
Frequency stability	1s@10MHz	Standard	Option A1	Option A2	Option A3
		$\leq 5 \times 10^{-13}$	$\leq 3 \times 10^{-13}$	$\leq 2 \times 10^{-13}$	$\leq 1.5 \times 10^{-13}$
Phase noise dBc/Hz		Standard	OptionB1	OptionB2	OptionB3
	1Hz*	≤ -113	≤ -116	≤ -118	≤ -123
	10Hz	≤ -140	≤ -143	≤ -145	≤ -145
	100Hz	≤ -150	≤ -155	≤ -155	≤ -155
	1kHz	≤ -155	≤ -160	≤ -160	≤ -160
	10kHz	≤ -163	≤ -165	≤ -165	≤ -165
	100kHz	≤ -163	≤ -165	≤ -165	≤ -165
Aging rate (Measured after 30day of continuous aging)		Standard		OptionC1	
	1day	$\leq 5 \times 10^{-10}$		$\leq 3 \times 10^{-10}$	
	1 month	$\leq 5 \times 10^{-9}$			
	The first year	$\leq 5 \times 10^{-8}$			
	Ten years	$\leq 2.5 \times 10^{-7}$			
Frequency control	Pressure control voltage range	0~5V, Positive slope			
	Frequency regulation range	$\geq \pm 2.5 \times 10^{-7}$			
Temperature frequency characteristics		$\leq \pm 5 \times 10^{-9}$			
Voltage frequency characteristics		$\leq \pm 5 \times 10^{-10}$			
Load frequency characteristics		$\leq \pm 5 \times 10^{-10}$			
Wave shape		Sine wave			
Output power		$\geq 5\text{dBm}$			
Output impedance		50Ω			
Harmonic		$\leq -40\text{dBc}$			
Clutter		$\leq -80\text{dBc}$			
Working temperature		-20°C ~+70°C			
Storage temperature		-40°C ~+85°C			
Power supply		+12VDC			
Electric current		$\leq 0.6\text{A}$			
External Dimension		50mm×50mm×19mm			

External Dimension



Unit: mm



Pin Definition:

- 1: 0-5V frequency pressure control
- 2: + 5V reference voltage output
- 3: 10 MHz sine output
- 4: The ground
- 5: + 12V power supply