



PLETRONICS
www.pletronics.com

32.768K XO Series

Unveiling the Precision and Power-Efficiency of the Pletronics SM22K/33K/44K 32.768KHz CMOS Crystal Oscillator Series



Introduction

In the ever-evolving landscape of portable, wearable, and battery-operated devices, the demand for compact, energy-efficient components has never been greater. Pletronics SM22K/33K/44K 32.768KHz CMOS Crystal Oscillator series emerges as a beacon of precision, featuring a diverse package size lineup, outstanding frequency stability, and remarkably low power consumption. This article explores the key attributes of this series, emphasizing its role as a superior real-time clock reference for modern electronic applications.

1. Tiny Size (SM22K: 2.05 x 1.65mm)

The SM22K/33K/44K series boasts a versatile package size lineup, catering to the diverse needs of design engineers. Available in compact dimensions of 2.05 x 1.65mm, 2.5 x 2.0mm, and 3.2 x 2.5mm, these oscillators provide flexibility without compromising on performance. The range of package sizes ensures seamless integration into a wide array of applications, from tiny wearables to more substantial portable devices.

2. Excellent Frequency Stability (as good as $\pm 20\text{ppm}$ for -40°C to 85°C)

At the heart of this oscillator series lies its exceptional frequency stability, setting new benchmarks in precision timekeeping. With frequency stability as low as $\pm 20\text{ppm}$, this series delivers unparalleled accuracy, ensuring reliable and consistent timekeeping in various operating conditions. This feature makes it an ideal choice for applications where precision is paramount, such as medical devices, industrial sensors, and communication equipment.

3. Low Power Consumption (Max Current Consumption: 35 μA)

One of the defining characteristics of the 32.768KHz CMOS Crystal Oscillator series is its remarkably low power consumption. Operating with a maximum current consumption of just 35 μA , these oscillators contribute significantly to the overall energy efficiency of electronic devices. This is particularly crucial for battery-operated and wearable devices, where power conservation directly impacts the device's lifespan and usability.

Real-Time Clock Reference

The series' precise frequency stability and low power consumption make it an excellent choice as a real-time clock reference in modern electronics. Real-time clocks are critical for maintaining accurate timekeeping in applications ranging from fitness trackers and smartwatches to IoT devices and medical monitors. The SM22K/33K/44K 32.768KHz CMOS Crystal Oscillator series ensures that these devices can operate with precision while maximizing battery life.

Conclusion

In conclusion, the SM22K/33K/44K 32.768KHz CMOS Crystal Oscillator series stands out as a powerhouse in the realm of precision timekeeping for portable, wearable, and battery-operated devices. Its diverse package size lineup, outstanding frequency stability, and low power consumption make it a compelling choice for design engineers seeking top-notch components for their cutting-edge applications. As technology continues to advance, this oscillator series paves the way for more reliable and energy-efficient electronic devices across various industries.

Product table

Product Series	Output Logic	Frequency	ICC Max (μA)	Vcc (V)	Package Size (mm)
SM22K	CMOS	32.768KHz	35	1.6 ~ 3.63V	2.05 x 1.65
SM33K	CMOS	32.768KHz	35	1.6 ~ 3.63V	2.5 x 2.0
SM44K	CMOS	32.768KHz	35	1.6 ~ 3.63V	3.2 x 2.5

IMPORTANT NOTICE AND DISCLAIMER

Pletronics Incorporated (PLE) reserves the right to make corrections, improvements, modifications and other changes to this product at anytime. PLE reserves the right to discontinue any product or service without notice. Customers are responsible for obtaining the latest relevant information before placing orders and should verify that such information is current and complete. All products are sold subject to PLE's terms and conditions of sale supplied at the time of order acknowledgment.

PLE warrants performance of this product to the specifications applicable at the time of sale in accordance with PLE's limited warranty. Testing and other quality control techniques are used to the extent PLE deems necessary to support this warranty. Except where mandated by specific contractual documents, testing of all parameters of each product is not necessarily performed.

PLE assumes no liability for application assistance or customer product design. Customers are responsible for their products and applications using PLE components. To minimize the risks associated with the customer products and applications, customers should provide adequate design and operating safeguards.

PLE products are not designed, intended, authorized or warranted to be suitable for use in life support applications, weapons, weapon systems or space applications, devices or systems or other critical applications that may involve potential risks of death, personal injury or severe property or environmental damage. Inclusion of PLE products in such applications is understood to be fully at the risk of the customer. Use of PLE products in such applications requires the written approval of an appropriate PLE officer. Questions concerning potential risk applications should be directed to PLE.

PLE does not warrant or represent that any license, either express or implied, is granted under any PLE patent right, copyright, artwork or other intellectual property right relating to any combination, machine or process which PLE product or services are used. Information published by PLE regarding third-party products or services does not constitute a license from PLE to use such products or services or a warranty or endorsement thereof. Use of such information may require a license from a third party under the patents or other intellectual property of the third party, or a license from PLE under the patents or other intellectual property of PLE.

