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"e-news" The ECS Newsletter

Frequency Control Solutions That Meet The Needs Of The Future . . . Today!

Fourth Edition, May, 2001

Product Feature of the Month Miniature VCXO's!



The ECS-VXO-93 (3.3V) and ECS-VXO-95 (5.0V) are miniature VCXO's (Voltage Controlled Crystal Oscillators) with the tri-state function for ICT in a ceramic/metal SMD package. The low profile package is ideal for today's

advanced portable PC and instrumentation applications.

Start up time of 4 milliseconds and a frequency linearity (Positive Slope) of +/-10/15%. This seam welded package comes 1,000 units per tape and reel. Please contact ECS for pricing and availability.

FAQ'S

Why is there more than one holder designator for the same package?

There are several ways to seal a crystal or oscillator package: Resistance weld, seam sealed and epoxy sealing. Depending on the sealing method, it is important to designate the enclosure accordingly.

What information is necessary to order a crystal?

The minimum information needed is the holder/package, frequency, and correlation (series resonant, or load capacitance if parallel resonant) All other specifications will be per our standard specifications for the indicated package type. All specifications that differ from our standard parameters must also be supplied when ordered.

In many instances, furnishing the sales representative with a competitor part number will also allow us to cross the needed parameters.

What causes a product to be classified as NCNR (Non-Cancelable/Non-Returnable)?

Unlike capacitors, diodes and coils, crystals and clock oscillators have parameters that can make them very customer specific. The main reason we classify a component NCNR would be for a custom frequency.

Market Watch Optimistic?

Several weeks ago, some industry analysts said the crystal and oscillator market may have seen the worst of the current decline and could start swinging up for a modest recovery in the second or third quarter. Those forecasts may turn out to be too optimistic.

The depth of this problem is illustrated by continued decline in sales prices for crystals and oscillators. All sectors fell, led by new orders, component purchases and a sharp drop in production. OEM's and EMS companies are turning back previously scheduled deliveries, which is another sign that this slump seems to be getting deeper. If an improvement does not occur soon, the industry may be looking at a long and sustained slump.

Tech Sector Sleeping Crystals???

Sleeping crystals is a well-known phenomenon in the Crystal industry. At least for some of us.

The Crystal will NOT start, but after the crystal is started by some mechanical or electrical excitation, it works fine for some time, then after some unknown time (usually with power removed), it sleeps again--- -- not functioning.

The time that it begins to sleep again is unpredictable. It could be minutes or months.

Decades ago, electronic circuits worked at higher voltages and lower frequencies. Hence, crystals operated at higher drive levels. (1000mW or above) Thus in years past, the sleeping phenomenon was not at problem. Today, applications are more demanding:

- Lower voltage application circuits result in lower drive levels.
- With higher operating frequencies there is phase lag in the circuit
- Applications now demand faster start up time. VGA display cards, USB devices with hot swappable features, battery operated devices, mobile phones and pagers that switch on and off in millisecond cycles so as to save battery power.

The root cause of sleeping crystals is contamination in

(i.e. It cannot be used for anyone else.) Developing custom frequencies can be very time consuming due to special processing and the like. Once this component is sealed, we no longer have a home for it.

Values for capacitors and the like have basic fundamental parameters and can be used in multiple applications. Another parameter that classifies a crystal product as NCNR would be special lead forming, third lead attachment and or any other cosmetic alterations to the enclosure.

At the time of quoting, ECS is very specific about quoting NCNR when a component meets the described criteria above. Other requirements may also constitute NCNR from time to time, but you will be notified at the time of quoting that the product is custom. We have developed a form that must be signed by the customer at the time of order that clarifies the matter of NCNR.

If you have any questions about this matter, please contact your sales representative.

the various production stages. Contamination is not only dirt particles, but also traces of moisture, gases, oils and the like. The cost of controlling contamination in all phases of production is high and is difficult to locate the source of contamination.

Many crystal manufactures do not know how to avoid sleeping crystals and this is why many of them do not like to discuss this topic.

ECS has developed a test in the production process to look for sleeping crystals. An explanation of this test is very detailed and will be discussed in another newsletter. In summary, the test compares the ratio of ESR, and frequency change between the minimum and maximum drive levels.



Test Laboratory at ECS, Inc.

Excess Inventory>>>>>>that needs to find a home

Due to over zealous forecasts by OEM's and EMS companies, ECS has been blessed with some excess inventory.

This product can be procured at very attractive prices. Please contact an ECS sales representative for a quote.

The list of excess inventory is [available on our website](#).

Lead-times>>>>Where do we go from here?

A table showing showing the latest in lead-times is [available on our website](#). Forecasted trends are for the next 2 quarters.

Archived Newsletters

Starting this month, ECS will archive all newsletters on our web site for those whom may have missed a previous issue. Archived newsletters may be viewed by visiting the [NEWS](#) section of our website.

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