

Development of the World's Smallest Voltage Controlled Crystal Oscillator (VCXO), DSV221S

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DAISHINKU Corporation (President :Sohei Hasegawa) announces the development of the DSV221S, the world's smallest Voltage Controlled Crystal Oscillator (VCXO).

Since one-segment broadcasting had started in 2006, it has been in high demand and mounted on Mobile communication equipment, such as mobile phones and PCs, and automobiles. This equipment has become smaller with a higher expectation by the industry, as well as the products made with these. The DSV221S is the world's smallest VCXO, its size is 2.5*2.0*0.82 (0.9mm max.). The oscillator was developed and specially suited for use in Tuner modules for one-segment broadcasting of mobile phones as well as other products.

Compared with its conventional 3225 size, the volume is reduced by 53% (0.0088cc to 0.0041cc), and the area is reduced by 37% (8.0mm² to 5.0mm²). The downsizing makes high density packaging possible.

As for securing the frequency adjustment range, which is more difficult in downsizing, adopting the newly developed Oscillating Circuit IC and the crystal resonator made it possible to expand more than $\pm 100 \times 10^{-6}$ min ($\pm 90 \times 10^{-6}$ with 3225 size). It also can expand operating temperature range from -30 deg.C to +80 deg.C (-10 deg.C to +70 deg.C with 3225 size). The expansion made it easier to use the oscillator under more extreme conditions than its conventional model.

The oscillator can operate at +1.8V supply voltage. The DSV221S provides a very low current consumption of up to 1.0mA operating at +1.8V supply voltage. The oscillator is an environmental responsive product which is lead-free and RoHS compliant.

[Product]

DSV221S

[Features]

Ultra miniature: 2520size (2.5*2.0mm), height 0.82mm (0.9mm max.)

Output Frequency Range: 27 MHz *Eventually expanded in future

Supply Voltage: 1.8V/2.8V/3.3V

Frequency Adjustment Range: $\pm 100 \times 10^{-6}$ min.

Operating Temperature Range: -30 deg.C to +85 deg.C

Lead-free and RoHS Compliant

[Applications]

Tuner modules for one-segment broadcasting (for mobile phones), Media Player, PND (Personal Navigation Device), DSC (Digital Still Camera), DVC (Digital Video Camera), HDTV (PDP, LC)

[Mass Production]

September, 2008

[Sample Price]

800 yen Samples are available now.

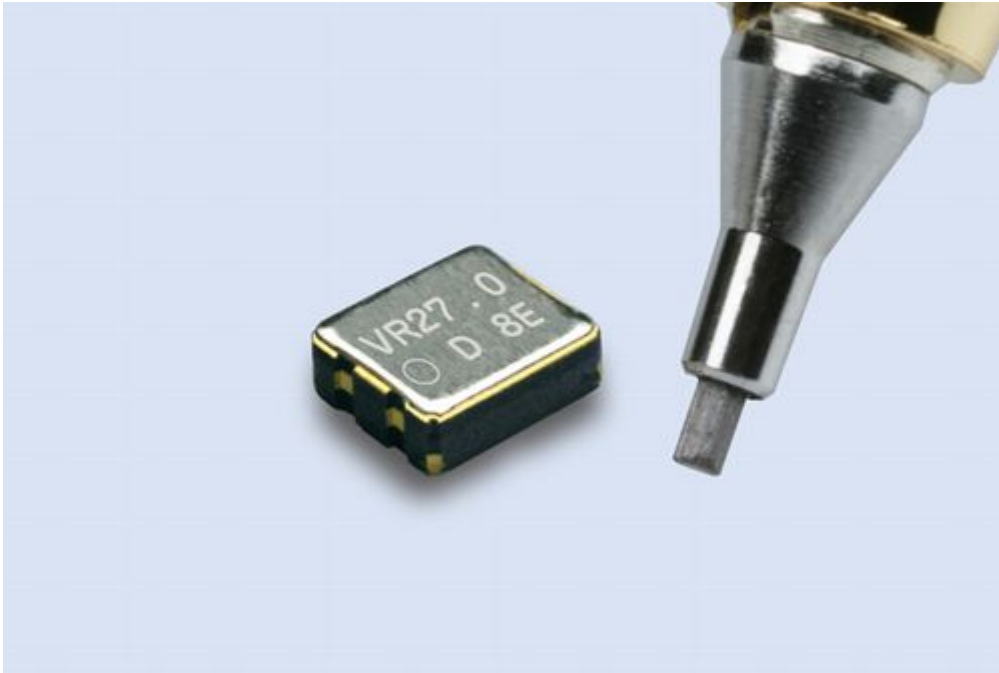
[Manufacturing Capacity]

5 hundred thousand/month

[Electrical Specification]

| Item | Legend | Specification | Condition |
|-------------------------|-------------------|--|--|
| Output Frequency Range | f _o | 27MHz | |
| Supply Voltage | V _{dd} | 1.8V±5%, 2.8V±5%, 3.3V±5% | * Choose any one of the voltage |
| Frequency Tolerance | f _{tol} | ±40×10 ⁻⁶ max. | V _{dd} ±5% T _{use} = -30 to +85 deg.C |
| Frequency Control Range | f _{cont} | ±100×10 ⁻⁶ min. Positive slope | V _{cont} = 0.5 × V _{dd} ±0.5×V _{dd} |
| Current Consumption | I _{dd} | 1.0mA max. | 1.8V, No Load |
| | | 1.5mA max. | 2.8V, No Load |
| | | 1.8mA max. | 3.3V, No Load |
| Wave Form (at CL=15pF) | | | |
| Symmetry | - | 50±5% | 0.5×V _{dd} Level |
| Rise Time | t _r | 10 ns max. | 0.1×V _{dd} to 0.9×V _{dd} |
| Fall Time | t _f | 10 ns max. | 0.1×V _{dd} to 0.9×V _{dd} |
| 0 Level Output Voltage | V _{ol} | 0.1×V _{dd} max. | |
| 1 Level output Voltage | V _{oh} | 0.9×V _{dd} min. | |

[Product Photograph]



[Dimensions]

