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## VOLTAGE-CONTROLLED CRYSTAL OSCILLATOR (VCXO) OUTPUT : LV-PECL



## VG-4512CA

-Frequency range
-Supply voltage
-Absolute pull range

- External dimensions
-Function
-Output

80 MHz to 200 MHz 3.3 V $50 \times 10^{-6}, 100 \times 10^{-6}$ $7.0 \times 5.0 \times 1.6 \mathrm{~mm}$ Output enable (OE) Active High or Low : LV-PECL

## Specifications (characteristics)

| Item | Symbol | Specifications | Conditions / Remarks |
| :---: | :---: | :---: | :---: |
| Output frequency range | f0 | 80.000 MHz to 200.000 MHz | Please contact us about available frequencies. |
| Supply voltage | Vcc | $3.3 \mathrm{~V} \pm 0.165 \mathrm{~V}$ |  |
| Storage temperature | T_stg | $-55^{\circ} \mathrm{C}$ to $+125{ }^{\circ} \mathrm{C}$ | Storage as single product. |
| Operating temperature | T_use | $\mathrm{G}:-40$ to $+85^{\circ} \mathrm{C}, \mathrm{J}:-20$ to $+70^{\circ} \mathrm{C}, \mathrm{K}: 0$ to $+70^{\circ} \mathrm{C}$ |  |
| Frequency tolerance | f_tol | $\pm 50 \times 10^{-6}$ Max. | Includes frequency aging (20 years) |
| Current consumption | Icc | 60 mA Max. | $50 \Omega$ |
| Absolute pull range *1 | APR | $\mathrm{H}: \pm 100 \times 10^{-6}$ Min., G: $\pm 50 \times 10^{-6} \mathrm{Min}$. | $\mathrm{V} \mathrm{c}=1.65 \mathrm{~V} \pm 1.50 \mathrm{~V}$ |
| Input resistance | Rin | $100 \mathrm{k} \Omega$ Min. | DC level |
| Frequency change polarity | - | Positive slope | $\mathrm{V}=0.15$ to 3.15 V |
| Symmetry | SYM | 45 \% to 55 \% | $\mathrm{Vcc}=1.3 \mathrm{~V}, \mathrm{Vc}=1 / 2 \mathrm{Vcc}$ |
| Output voltage | VOH | Vcc-1.1 V Min. |  |
|  | Vol | Vcc-1.5 V Max. |  |
| Output load condition (ECL) | L_ECL | $50 \Omega$ | Terminated to Vcc-2.0V |
| Input voltage | VIH | 70 \% Vcc Min. |  |
|  | VIL | 30 \% Vcc Max. |  |
| Rise time / Fall time | tr / tf | 1.0 ns Max. | between $20 \%$ and $80 \%$ of ( $\mathrm{V}_{\text {OH- }}-\mathrm{V}_{\mathrm{OL}}$ ) |
| Start-up time | t_str | $10 \mathrm{~ms} \mathrm{Max}$. | Time at minimum supply voltage to be 0 s |
| Frequency aging | f_aging | This is included frequency tolerance | $+25^{\circ} \mathrm{C}, \mathrm{Vcc}=3.3 \mathrm{~V}, 20$ years |

${ }^{*}$ Absolute pull range = Frequency control range - Frequency tolerance

* Please keep Vc pin open or ground while powering up Vcc.

(1)Model (2)Package type (3) Frequency (MHz) (4)Operating temperature (5)Absolute pull range © 6 Supply voltage ( $\mathrm{C}: 3.3 \mathrm{~V}$ Typ.) (7)OE function

| $(4)$ Operating temperature |  |
| :--- | :---: |
| G | -40 to $+85^{\circ} \mathrm{C}$ |
| J | -20 to $+70^{\circ} \mathrm{C}$ |
| K | 0 to $+70^{\circ} \mathrm{C}$ |



Footprint (Recommended) (Unit :mm)


To maintain stable operation, provide a 0.01 uF to 0.1 uF by-pass capacitor at a location as near as possible to the power source terminal of the crystal product (between Vcc - GND).

