



## VOLTAGE-CONTROLLED CRYSTAL OSCILLATOR (VCXO)

## VG-1201CA

- Frequency range : 1 MHz to 60 MHz
- Supply voltage : 3.3 V(\*\*C) or 5.0 V(\*\*H)
- Function : Output enable(OE)
- External dimensions : 7.0 x 5.0 x 1.4 t (mm) Typ.



Product Number (please contact us)  
Q3603CA0xxxxx00



Actual size



## Specifications (characteristics)

Item	Symbol	Specifications		Remarks
		ANH / AKH / BNH / BKH	ANC / AKC / BNC / BKC	
Output frequency range	f <sub>0</sub>	1.000 MHz to 60.000 MHz		
Supply voltage	V <sub>cc</sub>	H:5.0 V ±0.5 V	C:3.3 V ±0.3 V	
Temperature range	Storage temperature	-40 °C to +125 °C		Store as bare product after unpacking
	Operating temperature	As per below table		
Frequency tolerance	f <sub>tol</sub>	As per below table		
Current consumption	I <sub>cc</sub>	30 mA Max.	25 mA Max.	No load condition
	I <sub>dis</sub>	15 mA Max.	12 mA Max.	
Frequency control range	f <sub>cont</sub>	As per below table		V <sub>c</sub> =2.5 V ±2.0 V(**H) , 1.65 V ±1.50 V(**C)
Modulation characteristics	BW	20 kHz Min.		± 3 dB (at 1 kHz)
Input resistance	R <sub>in</sub>	5 MΩ Min.		DC level
Frequency change polarity	—	Positive polarity		V <sub>c</sub> =0.5 V to 4.5 V(**H) , 0.15 V to 3.15 V(**C)
Symmetry	SYM	40 % to 60 %		CMOS load:50 % V <sub>cc</sub> level
High output voltage	V <sub>OH</sub>	V <sub>cc</sub> -0.4 V Min.		I <sub>OH</sub> = -4 mA
Low output voltage	V <sub>OL</sub>	0.4 V Max.		I <sub>OL</sub> = 4 mA
Output load condition(CMOS)	L <sub>CMOS</sub>	15 pF Max.		CMOS load
Output enable / disable input voltage	V <sub>IH</sub>	70 %V <sub>cc</sub> Min.		OE Terminal
	V <sub>IL</sub>	30 % V <sub>cc</sub> Max.		
Rise time and Fall time	t <sub>r</sub> / t <sub>f</sub>	4 ns Max.		CMOS load: 20 % V <sub>cc</sub> to 80 % V <sub>cc</sub> level
Start-up time	t <sub>str</sub>	10 ms Max.		Time at 90 % V <sub>cc</sub> to be 0 s
Frequency aging	f <sub>aging</sub>	±10 × 10 <sup>-6</sup> Max. *1		+25 °C, 10 years

\*1 50 MHz < f<sub>0</sub> ≤ 60 MHz : ±15 × 10<sup>-6</sup> Max.\* Please keep V<sub>c</sub> pin open or ground while powering up V<sub>cc</sub>.

## Frequency tolerance / Temperature range

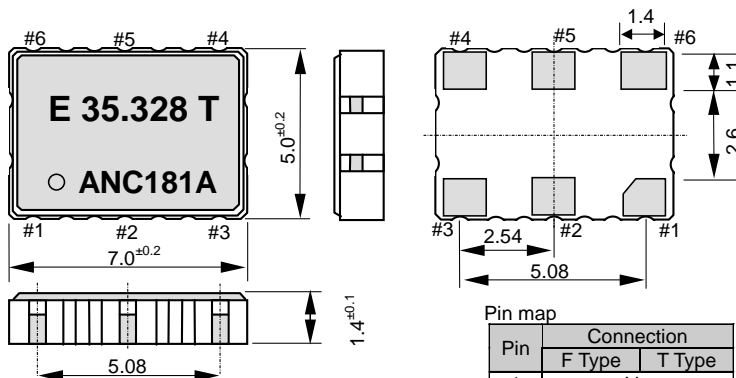
	Frequency tolerance	Temperature range
A	±20 × 10 <sup>-6</sup>	-20 °C to +70 °C
B	±25 × 10 <sup>-6</sup>	-40 °C to +85 °C

## Frequency control range

	Frequency control range	Output frequency range
K	±75 × 10 <sup>-6</sup> Min.	41 MHz < f <sub>0</sub> ≤ 60 MHz
N	±100 × 10 <sup>-6</sup> Min.	1 MHz ≤ f <sub>0</sub> ≤ 41 MHz

## External dimensions

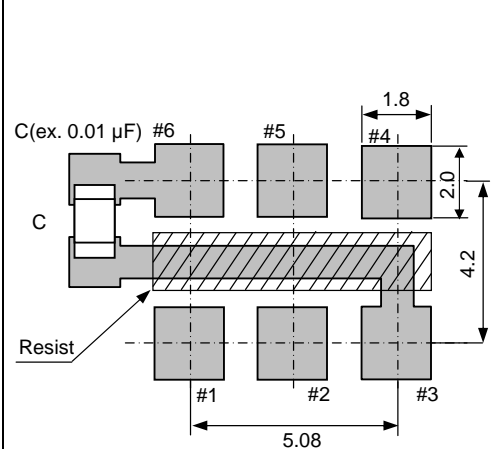
(Unit:mm)



Note.  
OE Pin  
OE pin = "H" or "open" : Specified frequency output.  
OE pin = "L" : Output is high impedance.

## Footprint (Recommended)

(Unit:mm)



To maintain stable operation, provide by-pass capacitor with more than 0.1 μF at a location as near as possible to the power source terminal of the crystal products (between V<sub>cc</sub> - GND).