

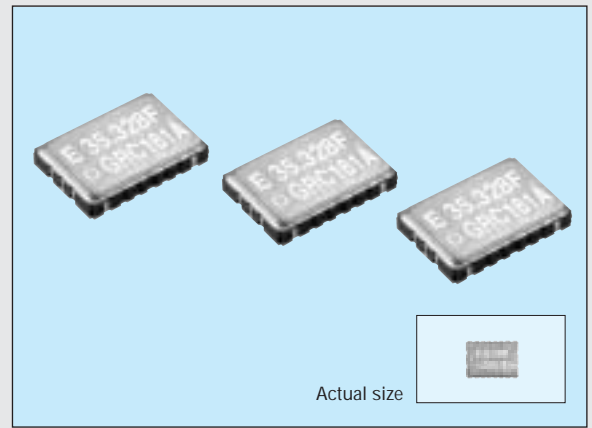
VOLTAGE-CONTROLLED CRYSTAL OSCILLATOR

VG-4231CA

Product number (please refer to page 2)

Q3614CA0xxxxx00

- High accuracy and high reliability due to trimmerless design.
- Well designed internal construction realizes as good as general - purpose ICs heat resistance performance.
- Use of CMOS IC assures low current consumption.
- Excellent shock resistance and environmental capability.
- Supply voltage: 5.0 V(DRH / GRH), 3.3 V(DRC / GRC)
- Output enable function(OE) can be used for low current consumption applications.

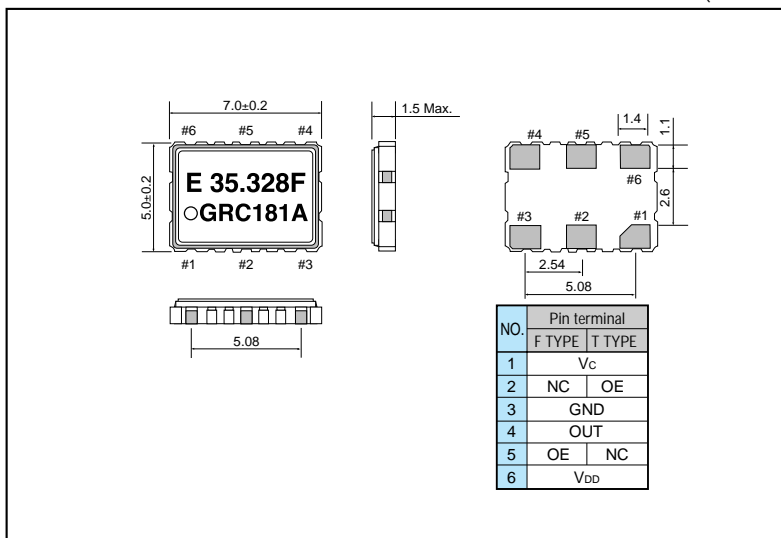


Specifications (characteristics)

Item	Symbol	Specifications		Remarks
		DRH / GRH	DRC / GRC	
Output frequency range	f_0	16.0000 MHz to 41.0000 MHz		Please contact us for inquiries about the available frequency.
Power source voltage	Max. supply voltage	V_{DD-GND}		-0.3 V to +7.0 V
	Operating voltage	V_{DD}	H : 5.0 V \pm 0.5 V C : 3.3 V \pm 0.3 V	
Temperature range	Storage temperature	T_{STG}		-40 °C to +125 °C
	Operating temperature	T_{OPR}		
Frequency stability	$\Delta f/f_0$	As per below table		VC=2.5 V(DRH / GRH) / VC=1.65 V(DRC / GRC)
Current consumption	I_{OP}	20 mA Max.	10 mA Max.	No load condition
Output disable current	I_{OE}	15 mA Max.	7 mA Max.	OE=GND
Pull range	Δf_c	R : $\pm 130 \times 10^{-6}$		VC=2.5 \pm 2.0 V(DRH / GRH) / VC=1.65 \pm 1.50 V(DRC / GRC)
Modulation Characteristics	BW	± 15 kHz Min.		± 3 dB at 1kHz
Absolute pull range	APR	D : $\pm 80 \times 10^{-6}$ Min		
		G : $\pm 65 \times 10^{-6}$ Min		
Input resistance	Z_{IN}	50 k Ω Min.		DC Level
Frequency change polarity		Positive polarity		
Duty	t_w/t	40 % to 60 %		1/2 V_{DD} level
Output voltage	V_{OH}	$V_{DD}-0.4$ V Min.		$I_{OH} = -0.8$ mA(DRC / GRC) / $I_{OH} = -4$ mA(DRH / GRH)
	V_{OL}	0.4 V Max.		$I_{OL} = 3.2$ mA(DRC / GRC) / $I_{OL} = 4$ mA(DRH / GRH)
Output load condition (fan out)	N/CL	15 pF Max.		CMOS load
Output enable/disable input voltage	V_{IH}	0.7 V_{DD} Min.		OE terminal
	V_{IL}	0.3 V_{DD} Max.		
Output rise time	t_{TLH}	4 ns Max.		CMOS load: 20 % \rightarrow 80 % V_{DD} level
Output fall time	t_{THL}	4 ns Max.		CMOS load: 80 % \rightarrow 20 % V_{DD} level
Oscillation start up time	t_{OSC}	10 ms Max.		Time at 0.9 V_{DD} to be 0 s
Aging	fa	$\pm 10 \times 10^{-6}$ Max.		$T_a = +25$ °C, 10 year

External dimensions

(Unit: mm)



Stability / Temperature range

	Stability	Temperature range
DRC / DRH	$\pm 35 \times 10^{-6}$	-20 °C to +70 °C
GRC / GRH	$\pm 50 \times 10^{-6}$	-40 °C to +85 °C

Recommended soldering pattern

(Unit: mm)

