

VOLTAGE-CONTROLLED CRYSTAL OSCILLATOR

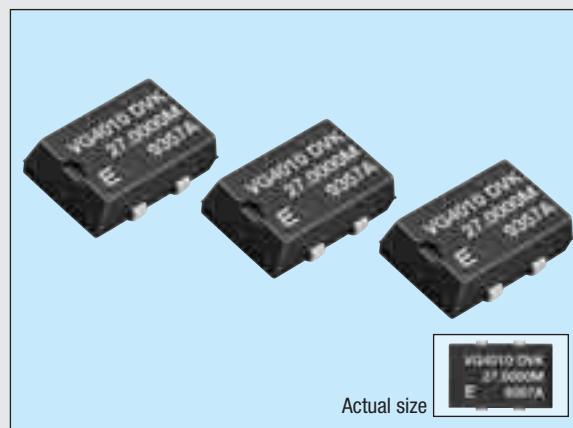
VG-4010JA / 4030JA

Product number (please refer to page 4)

Q3611JA0xxxxx00

Q3612JA0xxxxx00

- High accuracy and high reliability due to trimmerless design.
- Use of CMOS IC assures low current consumption.
- Excellent environmental capability.
- Supply voltage: 5 V (VG-4010JA)
- Supply voltage: 3.3 V (VG-4030JA)
- Available for lead (Pb)-free soldering.
- Available for lead (Pb)-free terminal.

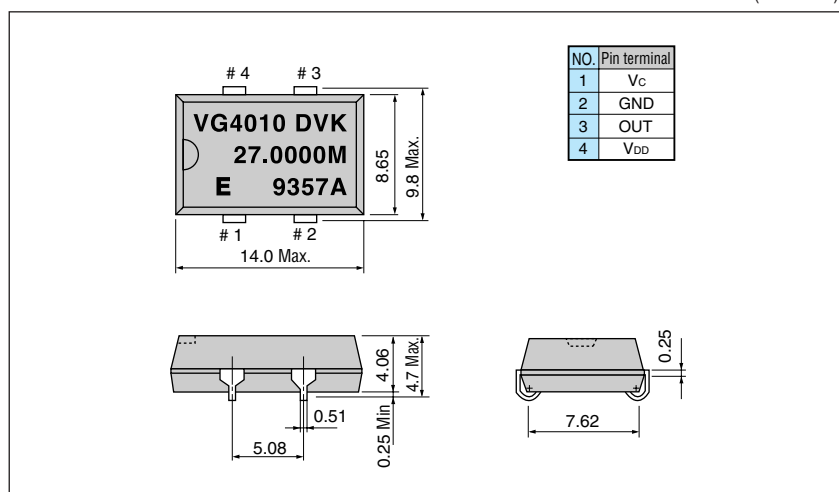


■ Specifications (characteristics)

Item	Symbol	Specifications		Remarks
		VG-4010JA DVK	VG-4030JA DVK	
Output frequency range	f_o	2.0000 MHz to 28.63636 MHz		Please contact us for inquiries about the available frequency.
Power source voltage	Max. supply voltage	V_{DD-GND} -0.5 V to +7.0 V		
	Operating voltage	V_{DD} 5.0 V ± 0.25 V	3.3 V ± 0.17 V	
Temperature range	Storage temperature	T _{STG} -55 °C to +125 °C		Stored as bare product after unpacking
	Operating temperature	T _{OPR} -20 °C to +70 °C		
Frequency stability	$\Delta f/f_o$	$\pm 35 \times 10^{-6}$ Max.	$\pm 37 \times 10^{-6}$ Max.	VC = 2.5 V (VG-4010JA) / VC = 1.8 V (VG-4030JA)
Current consumption	I_{OP}	35 mA Max.	18 mA Max.	No load condition
Pull range	Δf_c	$\pm 75 \times 10^{-6}$	As per below table	VC = 0.5 to 4.5 V (VG-4010JA) / VC = 0.0 to 3.0 V (VG-4030JA)
Input resistance	Z_{IN}	10 M Ω Min.		DC Level
Frequency change polarity		Positive polarity		VC = 0.5 to 4.5 V (VG-4010JA) / VC = 0.0 to 3.0 V (VG-4030JA)
Duty	t_w / t	45 % to 55 % (40 % to 60 %)	40 % to 60 %	1/2 V_{DD} level (1.4 V level)
Output voltage	V_{OH}	$V_{DD} - 0.4$ V Min.		$I_{OH} = -0.8$ mA
	V_{OL}	0.4 V Max.		$I_{OL} = 3.2$ mA
Output load condition (fan out)	N/CL	2 TTL or 30 pF Max.	30 pF Max.	TTL load / CMOS load
Output rise time	t_r	5 ns Max.	6 ns Max.	CMOS load: 20 % \rightarrow 80 % V_{DD} level
		8 ns Max.	–	TTL load: 0.4 V \rightarrow 2.4 V level
Output fall time	t_f	5 ns Max.	6 ns Max.	CMOS load: 80 % \rightarrow 20 % V_{DD} level
		8 ns Max.	–	TTL load: 2.4 V \rightarrow 0.4 V level
Oscillation start up time	t_{OSC}	10 ms Max.		Time at minimum operating voltage to be 0 s
Aging	f_a	$\pm 5 \times 10^{-6}$ Max.		T _a = +25 °C, first year
Shock resistance	S.R.	$\pm 10 \times 10^{-6}$ Max.		Three drops on a hard board from 750 mm or excitation test with 29400 m/s ² x 0.3 ms x 1/2sine wave in 3 directions

■ External dimensions

(Unit: mm)



■ Stability / Temperature range

Pull range	Remarks
180×10^{-6}	Crystal unit's frequency < 20 MHz, V _c = 0.0 to 3.0 V
150×10^{-6}	Crystal unit's frequency \leq 20 MHz, V _c = 0.0 to 3.0 V

■ Recommended soldering pattern

(Unit: mm)

