

VOLTAGE-CONTROLLED CRYSTAL OSCILLATOR

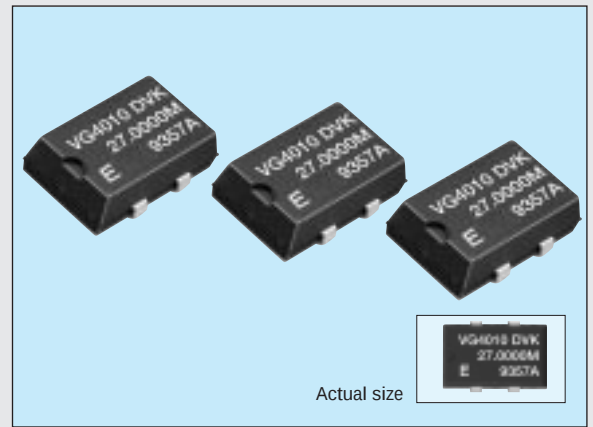
VG-4000JA series

Products number

Q3611JA0xxxxx00

Q3612JA0xxxxx00

- High accuracy and high reliability due to trimmerless design.
- Built-in heat resistive AT-cut crystal provides heat resistance equivalent to that of general-purpose ICs.
- Use of C-MOS IC assures low current consumption.
- Excellent environmental capability.
- Supply voltage: 5 V(VG-4010JA)
- Supply voltage: 3.3 V(VG-4030JA)



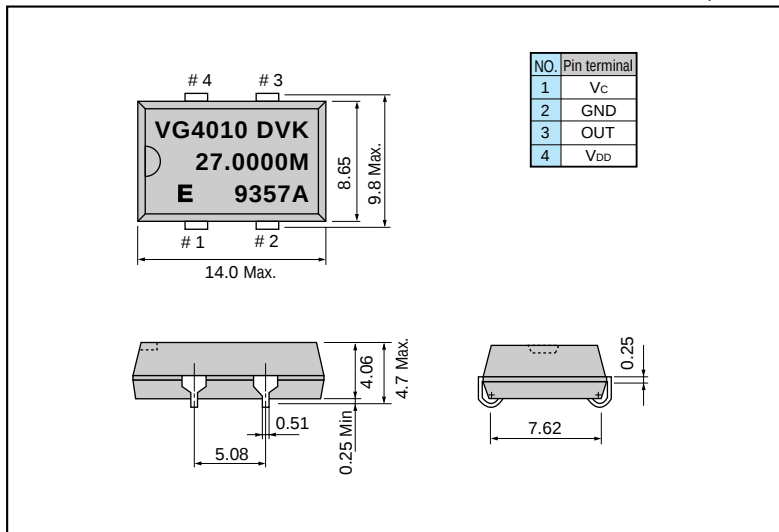
Specifications (characteristics)

Item		Symbol	VG-4010JA DVK	VG-4030JA DVK	Remarks
			Specifications		
Output frequency range		f ₀	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		Δf/f ₀	±35 x 10 ⁻⁶ Max.	±37 x 10 ⁻⁶ Max.	VC=2.5 V(4010JA) / VC=1.8 V(4030JA)
Current consumption		I _{op}	35 mA Max.	18 mA Max.	No load condition
Pull range		Δf _c	±75 x 10 ⁻⁶	As per below table	VC=0.5 to 4.5 V(4010JA) / VC=0.0 to 3.0 V(4030JA)
Input resistance		Z _{IN}	10 MΩ Min.		DC Level
Frequency change polarity			Positive polarity		VC=0.5 to 4.5 V(4010JA) / VC=0.0 to 3.0 V(4030JA)
Duty		t _w /t	45 % to 55 %(40 % to 60 %)	40 % to 60 %	1/2VDD 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/C _L	2 TTL or 30 pF Max.	30 pF Max.	TTL load/C-MOS load
Output rise time	t _{TLH}		5 ns Max.	6 ns Max.	C-MOS load: 20 %→80 % V _{DD} level
			8 ns Max.	—	TTL load: 0.4 V→2.4 V level
Output fall time	t _{THL}		5 ns Max.	6 ns Max.	C-MOS load: 80 %→20 % V _{DD} level
			8 ns Max.	—	TTL load: 2.4 V→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	±5 x 10 ⁻⁶ Max.		T _a =+25 °C, first year
Shock resistance		S.R.	±10 x 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

Vc should be "GND" or "OPEN" when power is on.

External dimensions

(Unit: mm)



Pull range

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

Please contact us for pull range.

Recommended soldering pattern

(Unit: mm)

