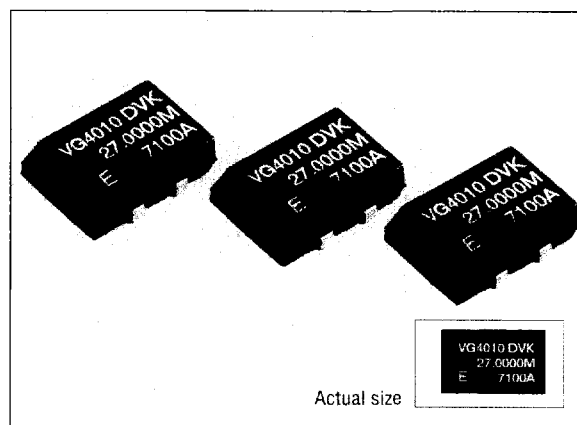


VOLTAGE-CONTROLLED CRYSTAL OSCILLATOR

VG-4000 series

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

**Specifications (characteristics)**

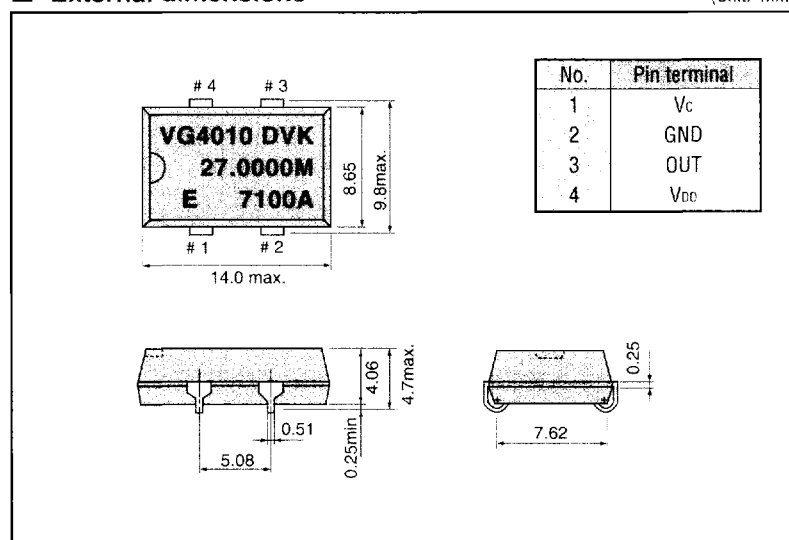
Item		Symbol	VG-4010JA	VG-4030JA	Remarks
			Specifications		
Output frequency range		f ₀	1.5000 MHz to 28.63636 MHz		*
Power source voltage	Max. supply voltage	V _{DD-GND}	-0.5V to +7.0V		
	Operating voltage	V _{DD}	5.0V ±0.25V	3.3V ±0.17V	
Temperature range	Storage temperature	T _{STG}	-55°C to +125°C		
	Operating temperature	T _{OPR}	-20°C to + 70°C(-40°C to + 85°C)		
Soldering condition		T _{SOL}	Twice at under 260°C within 10 sec.		
Frequency stability		Δf/f ₀	±35ppm max.	±37ppm max.	VC=0.5 to 4.5V(4010JA) / VC=0.0 to 3.0V(4030JA)
Current consumption		I _{op}	35mA max.	18mA max.	No load condition
Pull range		Δf _c	±75ppm	As per below table	VC=0.5 to 4.5V(4010JA) / VC=0.0 to 3.0V(4030JA)
Input resistance		Z _{in}	10MΩ min		DC Level
Frequency change polarity			Positive polarity		VC=0.5 to 4.5V(4010JA) / VC=0.0 to 3.0V(4030JA)
Duty		tw/t ₁	45% to 55%(40% to 60%)	40% to 60%	1/2VDD level(1.4V level)
Output voltage	V _{DH}		V _{DD} -0.4V min.		I _{OH} = -0.8mA
	V _{OL}		0.4V max.		I _{OL} =3.2mA
Output load condition (fan out)		N/C _L	2TTL or 30pF max.	30pF max.	TTL load/C-MOS load
Output rise time	t _{TLH}		5ns. max.	6ns. max.	C-MOS load: 20%→80% V _{DD} level
			8ns. max.	—	TTL load: 0.4V→2.4V level
Output fall time	t _{THL}		5ns. max.	6ns. max.	C-MOS load: 20%→80% V _{DD} level
			8ns. max.	—	TTL load: 0.4V→2.4V level
Oscillation start up time		t _{OSC}	10ms. max.		Time at minimum operating voltage to be 0 sec.
Aging		fa	±5ppm max.		Ta=25°C, first year
Shock resistance		S.R.	±10ppm max.		Three drops on a hard board from 75 cm or excitation test with 3000G x 0.3ms x 1/2sine wave in 3 directions

Vc should be "GND" or "OPEN" when power will be turn on.

* Please contact us for inquiries about the available frequency.

External dimensions

(Unit: mm)

**Pull range**

Pull range	Remarks
100ppm	$f_0 < 20$ MHz, VC=0.0 to 3.0V
150ppm	$f_0 \geq 20$ MHz, VC=0.0 to 3.0V

Recommended soldering pattern

(Unit: mm)

