

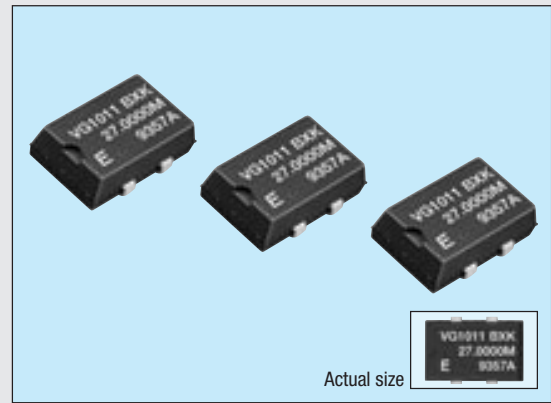
VOLTAGE-CONTROLLED CRYSTAL OSCILLATOR

VG-1011JA

Product number (please refer to page 4)

Q3602JA0xxxx00

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



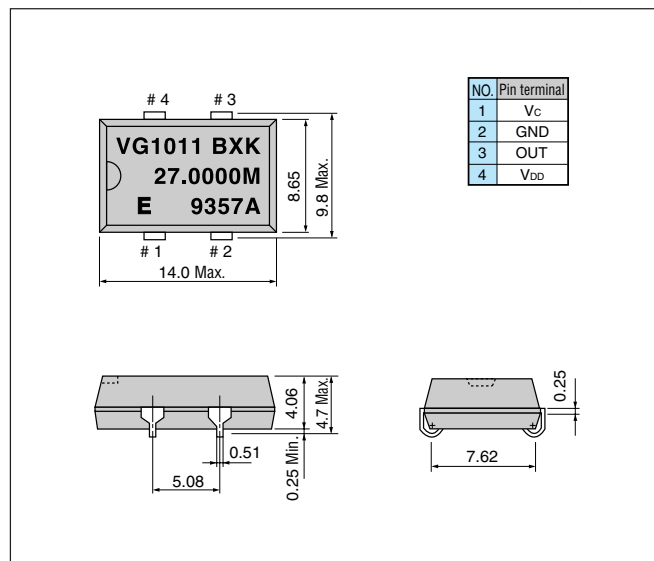
■ Specifications (characteristics)

Item	Symbol	Specifications	Remarks
Output frequency range	f_0	1.5000 MHz to 28.63636 MHz *	
Power source voltage	Max. supply voltage	V _{DD} -GND	-0.5 V to +7.0 V
	Operating voltage	V _{DD}	5.0 V ±0.5 V
Temperature range	Storage temperature	T _{STG}	-55 °C to +125 °C
	Operating temperature	T _{OPR}	As per below table *
Frequency stability	$\Delta f/f_0$	As per below table *	
Current consumption	I _{OP}	10 mA Max.	No load condition
Pull range	Δf_c	As per below table *	V _C = 2.5 ±2.0 V
Input resistance	Z _{IN}	10 M Ω Min.	DC Level
Frequency change polarity		Positive polarity	V _C = 0.5 to 4.5 V
Duty	t _w / t	40 % to 60 %	1.4 V or 50 % V _{DD} level
Output voltage	V _{OH}	V _{DD} -0.4 V Min.	I _{OH} = -0.8 mA
	V _{OL}	0.4 V Max.	I _{OL} = 1.6 mA
Output load condition (fan out)	C _L	2 TTL or 15 pF Max.	TTL load / CMOS load
Output rise time	t _r	8 ns Max.	CMOS load: 20 % → 80 % V _{DD}
		5 ns Max.	TTL load: 0.4 V → 2.4 V
Output fall time	t _f	8 ns Max.	CMOS load: 80 % → 20 % V _{DD}
		5 ns Max.	TTL load: 2.4 V → 0.4 V
Oscillation start up time	t _{OSC}	4 ms Max.	Time at 4.5 V to be 0 s
Aging	f _a	±5 x 10 ⁻⁶ Max.	T _a = +25 °C, V _{DD} = 5 V, first year
Shock resistance	S.R.	±5 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

Note: * Please contact us for inquiries about operating temperature, frequency stability, pull range.

■ External dimensions

(Unit: mm)



■ Stability / Temperature range

■ Pull range

Stability	Temperature range			Pull range
	-20 °C to +70 °C	-30 °C to +75 °C	-40 °C to +85 °C	
±15 x 10 ⁻⁶	V	W	X	B ±20 x 10 ⁻⁶ Min.
±20 x 10 ⁻⁶	S	B	-	G ±50 x 10 ⁻⁶ Min.
±25 x 10 ⁻⁶	A	G, K, N	-	K ±75 x 10 ⁻⁶ Min.
	B	-	G, K, N	N ±100 x 10 ⁻⁶ Min.

*Please contact us for inquiries about the available frequency.

■ Recommended soldering pattern

(Unit: mm)

