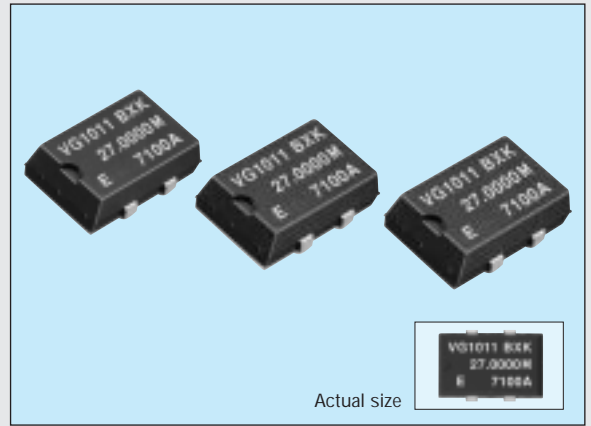


VOLTAGE-CONTROLLED CRYSTAL OSCILLATOR

VG-1011JA 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



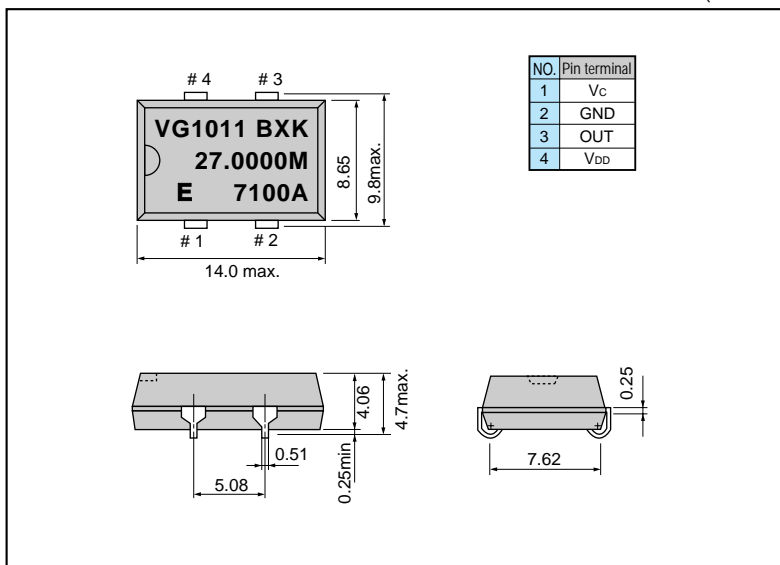
Specifications (characteristics)

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}	-0.5V to +7.0V
	Operating voltage	V_{DD}	5.0V \pm 0.5V
Temperature range	Storage temperature	T_{STG}	-55°C to +125°C
	Operating temperature	T_{OPR}	As per below table
Soldering condition	T_{SOL}	Twice at under 260°C within 10 sec.	
Frequency stability	$\Delta f/f_0$	As per below table	
Current consumption	I_{OP}	10mA max.	No load condition
Pull range	Δf_c	As per below table	$V_c=2.5\pm 2.0V$
Input resistance	Z_{IN}	10M Ω min.	DC Level
Frequency change polarity		Positive polarity	$V_c=0.5$ to 4.5V
Duty	$t_{w/l}$	40% to 60%	1.4V or 1/2VDD level
Output voltage	V_{OH}	$V_{DD}-0.4V$ min.	$I_{OH}=-0.8mA$
	V_{OL}	0.4V max.	$I_{OL}=1.6mA$
Output load condition (fan out)	N/CL	2TTL or 15pF max.	TTL load/C-MOS load
Output rise time	t_{TLH}	8ns. max.	C-MOS load: 20% \rightarrow 80% V_{DD}
		5ns. max.	TTL load: 0.4V \rightarrow 2.4V
Output fall time	t_{THL}	8ns. max.	C-MOS load: 80% \rightarrow 20% V_{DD}
		5ns. max.	TTL load: 2.4V \rightarrow 0.4V
Oscillation start up time	t_{OSC}	4ms. max.	Time at 4.5V to be 0 sec.
Aging	f_a	$\pm 5ppm$ max.	$T_a=25^\circ C$, $V_{DD}=5V$, first year
Shock resistance	S.R.	$\pm 5ppm$ 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

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

External dimensions

(Unit: mm)



Stability / Temperature range

Pull range

Stability	No.	Temperature range		
		-20°C to 70°C	-30°C to 75°C	-40°C to 85°C
$\pm 15ppm$	S	-	B	-
$\pm 20ppm$	A	G, K, N	-	-
$\pm 25ppm$	B	-	-	G, K, N

No.	Pull range
B	$\pm 20ppm$ min.
G	$\pm 50ppm$ min.
K	$\pm 75ppm$ min.
N	$\pm 100ppm$ min.

Please consult us for AVN type device.

Recommended soldering pattern

(Unit: mm)

