VOLTAGE -CONTROLLED CRYSTAL OSCILLATOR (VCXO)
OUTPUT : CMOS

VG - 4231CB

- Frequency range : 1 MHz to 81 MHz
- Supply voltage : 3.3 V
- Absolute pull range : ±50 × 10^{-6}
- Function : Output enable (OE)
- External dimensions: 5.0 × 3.2 × 1.2 mm

Pb Free RoHS Compliant

Product Number (please contact us)
VG-4231CB: X1G002861xxxx00



Actual size



Specifications (characteristics)

Item	Symbol	Specifications	Conditions / Remarks
Output frequency range	f_0	1.000 MHz to 81.000 MHz	Please contact us about available frequencies.
Supply voltage	V_{CC}	C: 3.3 V ±0.165 V	
Storage temperature range	T_stg	-40 °C to +85 °C	Storage as single product.
Operating temperature range	T_use	G: -40 to +85°C, J: -20 to +70°C, K: 0 to +70°C	
Frequency tolerance	f_tol	±50 × 10^{-6} Max.	
Current consumption	I_{CC}	10 mA Max.	No load condition.
Absolute pull range	APR	G : ±50 × 10^{-6} Min.	V_C=1.65 V±1.5 V
Input resistance	Rin	10 MΩ Min.	DC level
Frequency change polarity	—	Positive slope	V_C=0.15 to 3.15 V
Symmetry	SYM	45 % to 55 %	50 % V_{CC} level
Output voltage	V_{OH}	V_{CC} to 0.4 V Min.	I_{OH} = -0.8 mA
	V_{OL}	0.4 V Max.	I_{OL} = 3.2 mA
Output load condition (CMOS)	L_CMOS	15 pF Max.	
Input voltage	V_{IH}	70 % V_{CC} Min.	
	V_{IL}	30 % V_{CC} Max.	
Rise time / Fall time	tr / tf	6 ns Max.	20 % V_{CC} to 80 % Vcc level
Start-up time	t_str	10 ms Max.	Time at minimum supply voltage to be 0 s
Frequency aging	f_aging	This is included in frequency tolerance specification.	+25 °C, V_{CC}=3.3 V, 20 years (f_0 ≤ 60MHz), +25 °C, V_{CC}=3.3 V, 10 years (60MHz < f_0)

* Please keep V_C pin open or ground while powering up V_{CC}.

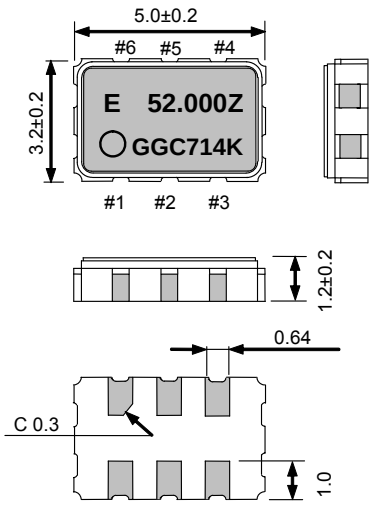
Product Name (Standard form): VG-4231 CB 52.000000MHz G G C Z
① ② ③ ④⑤⑥⑦
①Model ②Package type ③Frequency ④Operating temperature range
⑤Absolute pull range ⑥Supply voltage (C: 3.3V Typ.) ⑦Function

④Operating temperature range	
G	-40 to +85°C
J	-20 to +70°C
K	0 to +70°C

⑤Absolute pull range	
G	±50 × 10^{-6} Min.

⑦Function	
Z	Output enable

External dimensions (Unit: mm)

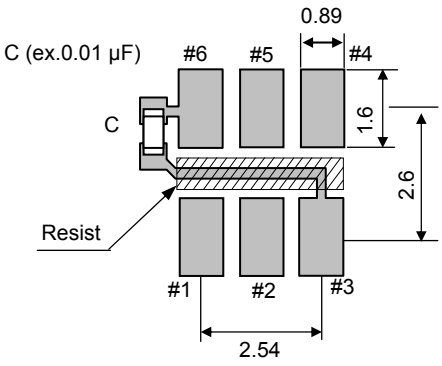


Pin map

Pin	Connection
1	Vc
2	OE
3	GND
4	OUT
5	N.C.
6	Vcc

OE pin = "H" or "open": Specified frequency output.
OE pin = "L": Output is high impedance.

Footprint (Recommended) (Unit: mm)



To maintain stable operation, provide a 0.01uF to 0.1uF by-pass capacitor at a location as near as possible to the power source terminal of the crystal product (between Vcc - GND).

PROMOTION OF ENVIRONMENTAL MANAGEMENT SYSTEM CONFORMING TO INTERNATIONAL STANDARDS

At Seiko Epson, all environmental initiatives operate under the Plan-Do-Check-Action (PDCA) cycle designed to achieve continuous improvements. The environmental management system (EMS) operates under the ISO 14001 environmental management standard.

All of our major manufacturing and non-manufacturing sites, in Japan and overseas, completed the acquisition of ISO 14001 certification.

ISO 14000 is an international standard for environmental management that was established by the International Standards Organization in 1996 against the background of growing concern regarding global warming, destruction of the ozone layer, and global deforestation.

WORKING FOR HIGH QUALITY

In order provide high quality and reliable products and services than meet customer needs,

Seiko Epson made early efforts towards obtaining ISO9000 series certification and has acquired ISO9001 for all business establishments in Japan and abroad. We have also acquired ISO/TS 16949 certification that is requested strongly by major automotive manufacturers as standard.

ISO/TS16949 is the international standard that added the sector-specific supplemental requirements for automotive industry based on ISO9001.

►Explanation of the mark that are using it for the catalog

Pb Free	►Pb free.
RoHS Compliant	►Complies with EU RoHS directive. *About the products without the Pb-free mark. Contains Pb in products exempted by EU RoHS directive. (Contains Pb in sealing glass, high melting temperature type solder or other.)
For Automotive	►Designed for automotive applications such as Car Multimedia, Body Electronics, Remote Keyless Entry etc.
Automotive Safety	►Designed for automotive applications related to driving safety (Engine Control Unit, Air Bag, ESC etc).

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