

**VOLTAGE-CONTROLLED CRYSTAL OSCILLATOR (VCXO)**

OUTPUT : LV-PECL

**NEW**

**VG3225 / 5032EFN**

- Frequency range : 100 MHz to 250 MHz
- Supply voltage : 3.3 V
- Absolute pull range :  $20 \times 10^{-6}$  min /  $50 \times 10^{-6}$  min
- Operating temperature: -40 °C to +85 °C
- : -40 °C to +105 °C (Option)
- Function : Output enable (OE)
- Output : LV-PECL



Product Number (please contact us)  
 VG3225EFN X1G005361xxxx00  
 VG5032EFN X1G005471xxxx00



Actual size

VG3225EFN

VG5032EFN



**Specifications (characteristics)**

Item	Symbol	Specifications	Conditions / Remarks
Output frequency range	f <sub>0</sub>	100 MHz to 250 MHz	Please contact us for inquiries regarding available frequencies.
Supply voltage	VCC	3.3 V ±0.165 V	
Control voltage*	VC	1.65 V ±1.65 V	
Storage temperature	T <sub>stg</sub>	-55 °C to +125 °C	Store as bare product.
Operating temperature	T <sub>use</sub>	G : -40 °C to +85 °C , H : -40 °C to +105 °C	
Frequency tolerance	f <sub>tol</sub>	±50 × 10 <sup>-6</sup> Max.	Includes initial tolerance, temperature change, Vcc change and 10 years aging at +25 °C. At Vc=1.65V, reference to f <sub>0</sub>
Absolute Pull range *1	APR	±50 × 10 <sup>-6</sup> Min	100 MHz ~ 170 MHz
		±20 × 10 <sup>-6</sup> Min	100 MHz ~ 250 MHz
Current consumption	ICC	60 mA Max.	OE= VCC, with output load
Input resistance	R <sub>in</sub>	10 MΩ Min.	DC level
Frequency change polarity	-	Positive slope	VC= 0 to 3.3 V
Symmetry	SYM	45 % to 55 %	At outputs crossing point
Output voltage	VOH	Vcc-1.1 V Min.	DC characteristics
	VOL	Vcc-1.5 V Max.	
Output load condition	L <sub>ECL</sub>	50 Ω	Terminated to VCC-2.0V
Input voltage	VIH	70 % VCC Min.	OE terminal
	VIL	30 % VCC Max.	
Rise/Fall times	Tr / Tf	0.3 ns Max.	20 % ~ 80 % (VOH – VOL)
Oscillation start up time	t <sub>str</sub>	10 ms Max.	Time at minimum supply voltage to be 0 s
Phase Jitter	tPJ	120 fs Max.(122.88 MHz)	Offset Frequency 12kHz to 20MHz
		80 fs Max.(245.76 MHz)	

\*1 Absolute pull range = Frequency control range- Frequency tolerance

\* Please keep Vc pin open or ground while powering up Vcc.

Product name            VG3225\_EFN 122.880000 MHz C J G H B A  
 (Standard form)        ① ② ③                    ④ ⑤ ⑥ ⑦ ⑧ ⑨  
 ① Model   ②Output (E: LV-PECL)   ③Frequency   ④Supply voltage (C: 3.3 V Typ)  
 ⑤Frequency tolerance (J: ±50 × 10<sup>-6</sup> Max.)   ⑥Operating temperature (G: -40 to +85°C)  
 ⑦OE Function (H: Active High)   ⑧Absolute Pull Range (B: ±50 × 10<sup>-6</sup> Min.)   ⑨Output Standby Type ( A: High-Z)

**External dimensions**

(Unit:mm)

3225 size

5032 size

	3225 size	5032 size
a	3.2	5.0
b	2.5	3.2
c	1.05	1.3

Pin	Connection
1	VC
2	OE
3	GND
4	OUT
5	OUT
6	Vcc

Note:  
 OE pin = HIGH or "Open" : Specified frequency output.  
 OE pin = LOW : Output is high impedance

**Footprint (Recommended)**

(Unit:mm)

	3225 size	5032 size
A	1.05	1.60
B	0.92	0.89
C	1.85	2.60
D	2.54	2.54
E	0.80	0.89

In order to achieve optimum jitter performance, it is recommended that the capacitor (0.1 μF + 10 μF) between VCC and GND pin should be placed as close to the VCC pin as possible.

## 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.
	► 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.)
	► Designed for automotive applications such as Car Multimedia, Body Electronics, Remote Keyless Entry etc.
	► Designed for automotive applications related to driving safety (Engine Control Unit, Air Bag, ESC etc ).

## Notice

- This material is subject to change without notice.
- Any part of this material may not be reproduced or duplicated in any form or any means without the written permission of Seiko Epson.
- The information about applied data, circuitry, software, usage, etc. written in this material is intended for reference only. Seiko Epson does not assume any liability for the occurrence of customer damage or infringing on any patent or copyright of a third party. This material does not authorize the licensing for any patent or intellectual copyrights.
- When exporting the products or technology described in this material, you should comply with the applicable export control laws and regulations and follow the procedures required by such laws and regulations.
- You are requested not to use the products (and any technical information furnished, if any) for the development and/or manufacture of weapon of mass destruction or for other military purposes. You are also requested that you would not make the products available to any third party who may use the products for such prohibited purposes.
- These products are intended for general use in electronic equipment. When using them in specific applications that require extremely high reliability, such as the applications stated below, you must obtain permission from Seiko Epson in advance.  
/ Space equipment (artificial satellites, rockets, etc.) / Transportation vehicles and related (automobiles, aircraft, trains, vessels, etc.) / Medical instruments to sustain life / Submarine transmitters / Power stations and related / Fire work equipment and security equipment / traffic control equipment / and others requiring equivalent reliability.
- All brands or product names mentioned herein are trademarks and/or registered trademarks of their respective.

SHENZHEN YIJIN ELECTRONICS CO: LTD TEL: 0755-27876565

18924600166 QQ: 857950243 <http://www.vc-tcxo.com>