VOLTAGE-CONTROLLED CRYSTAL OSCILLATOR (VCXO)

Pb Free RoHS Compliant

Product Number
VG5032EDN: X1G004911xxxxxx
VG5032VDN: X1G004951xxxxxx

VG5032EDN
VG5032VDN

- Frequency range : 85 MHz to 170 MHz
- Supply voltage : 3.3 V
- Absolute pull range : 50 × 10^{-6} Min.
- External dimensions : 5.0 × 3.2 × 1.3 t (mm) Typ.
- Operation temperature : +85 C / +105 °C
- Function : Output Enable(OE), Active High
- Output : LV-PECL or LVDS

Specifications (characteristics)

Item	Symbol	LV-PECL VG5032EDN	LVDS VG5032VDN	Conditions / Remarks
Output frequency range	fo	85 MHz to 170 MHz		Please contact us for inquiries regarding available frequencies.
Supply voltage	V_{CC}	3.3 V ± 0.165 V		
Storage temperature	T_stg	-55 C to +125 C		Store as bare product.
Operating temperature	T_use	G: -40 C to +85 C, H: -40 C to +105 C		
Frequency tolerance	f_tol	±50 × 10^{-6} Max.		Includes initial tolerance, temperature change, V_{CC} change and 10years aging at +25 C. At V_C=1.65V, reference to f0
Absolute Pull range *1	APR	±50 × 10^{-6} Min.		V_C = 0 V to 3.3 V reference to f0
Input resistance	Rin	10 MΩ Min.		DC level
Current consumption	I_{CC}	60 mA Max.	30 mA Max.	OE = V_{CC}, LVPECL: 50 Ω, LVDS: 100 Ω
Symmetry	SYM	45 % to 55 %		LV-PECL: at V_{CC} - 1.30 V, V_C = 1/2V_{CC} LVDS: at outputs crossing point
Output voltage	V_{OH}	V_{CC} - 1.1 V Min.	–	LV-PECL: DC characteristics
	V_{OL}	V_{CC} - 1.5 V Max.	–	
	V_{OD}	–	250 mV to 450mV	V_{OD1}, V_{OD2} LVDS: DC characteristics
	V_{OS}	–	1.15 V to 1.35 V	V_{OS1}, V_{OS2}
Output load condition	L_ECL	50 Ω	–	LV-PECL: Terminated to V_{CC} - 2.0 V
	L_LVDS	–	100 Ω	LVDS: Connected between OUT to $\overline{OUT}$
Input voltage	V_{IH}	70 % V_{CC} Min.		OE terminal
	V_{IL}	30 % V_{CC} Max.		
Rise time / Fall time	tr / tf	0.5 ns Max.		LV-PECL: at 20 % to 80 % output swing
		0.3 ns Max.		LVDS: at 20 % and 80 % of Differential Output peek to peek voltage
Start-up time	t_str	10 ms Max.		Time at minimum supply voltage to be 0 s
Phase Jitter	t_{PJ}	0.3 ps Max.		Offset Frequency 12 kHz to 20 MHz

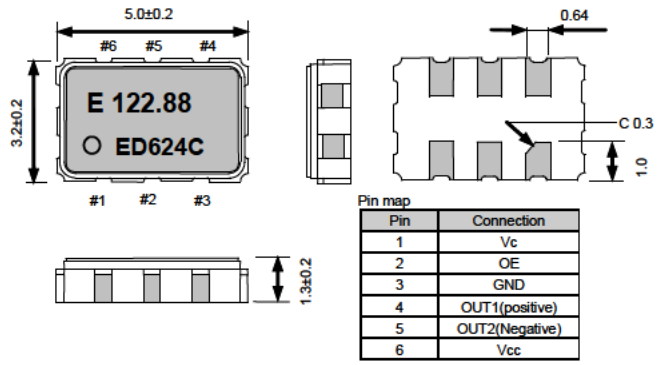
*1 Absolute pull range = Frequency control range- Frequency tolerance
* Please keep Vc pin open or ground while powering up V_{CC}.

Product name (Standard form)

VG5032 EDN 122.880000 MHz C J G H B A
① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨

①Model ②Output (E: LV-PECL, V: LVDS) ③Frequency ④Supply voltage (C: 3.3 V Typ)
⑤Frequency tolerance (J: ±50 × 10^{-6} Max.) ⑥Operating temperature (G: -40 to +85°C, H: -40 to +105°C)
⑦OE Function (H: Active High) ⑧Absolute Pull Range (B: ±50 × 10^{-6} Min.) ⑨Output Standby Type (A: High-Z)

External dimensions (Unit:mm)

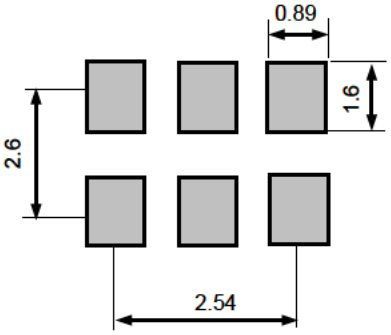


Pin map

Pin	Connection
1	Vc
2	OE
3	GND
4	OUT1(positive)
5	OUT2(Negative)
6	Vcc

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

Footprint (Recommended) (Unit:mm)



In order to achieve optimum jitter performance, it is recommended that the capacitor (0.1 µF + 10 µF) between V_{CC} and GND pin should be placed as close to the V_{CC} 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 IATF 16949 certification that is requested strongly by major automotive manufacturers as standard.

IATF 16949 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).