

VOLTAGE-CONTROLLED CRYSTAL OSCILLATOR (VCXO)
OUTPUT : LV-PECL, LVDS



Product Number
 VG3225EFN X1G005361xxxx00
 VG5032EFN X1G005471xxxx00
 VG7050EFN X1G005491xxxx00
 VG3225VFN X1G005461xxxx00
 VG5032VFN X1G005481xxxx00
 VG7050VFN X1G005501xxxx00

VG3225 / 5032 / 7050EFN
 VG3225 / 5032 / 7050VFN

- Frequency range : 25 MHz to 250 MHz
- Supply voltage : 3.3 V Typ.
- Output : LV-PECL or LVDS
- Function : Output enable (OE)
- Absolute pull range : $\pm 10 \times 10^{-6}$ Min. / $\pm 20 \times 10^{-6}$ Min. / $\pm 50 \times 10^{-6}$ Min
- Operating temperature : -40 °C to +85 °C / -40 °C to +105 °C

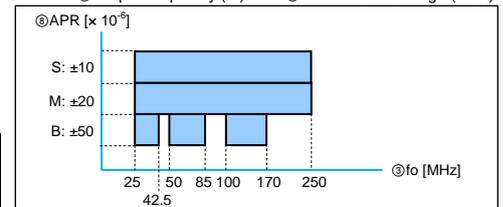


Specifications (characteristics)

Item	Symbol	Specifications		Conditions / Remarks
		LV-PECL VG3225EFN / VG5032EFN / VG7050EFN	LVDS VG3225VFN / VG5032VFN / VG7050VFN	
Output frequency range	f _o	25 MHz to 250 MHz		Please contact us for available frequencies.
Supply voltage	V _{CC}	C: 3.3 V ± 0.165 V		
Control voltage	V _c	1.65 V ± 1.65 V		
Storage temperature	T _{stg}	-55 °C to +125 °C		
Operating temperature	T _{use}	G: -40 °C to +85 °C, H: -40 °C to +105 °C		
Frequency tolerance	f _{tol}	J: ±50 × 10 ⁻⁶ Max.		Includes initial frequency tolerance, temperature variation, supply voltage change and 10 years aging (+25 °C) at V _c = 1.65 V
Absolute Pull range *1	APR	B: ±50 × 10 ⁻⁶ Min.		
		M: ±20 × 10 ⁻⁶ Min.		Full frequency range
		S: ±10 × 10 ⁻⁶ Min.		Full frequency range
Current consumption	I _{CC}	60 mA Max.	25 mA Max.	OE = V _{CC} , L_ECL = 50 Ω or L_LVDS = 100 Ω
Disable current	I _{dis}	25 mA Max.	15 mA Max.	OE = GND
Input impedance	Z _{in}	10 MΩ Min.		DC level
Frequency change polarity	-	Positive slope		V _c = 0 V to 3.3 V
Symmetry	SYM	45 % to 55 %		At output crossing point
Output voltage (LV-PECL)	V _{OH}	V _{CC} - 1.1 V Min.	-	DC characteristics
	V _{OL}	V _{CC} - 1.5 V Max.	-	
Output voltage (LVDS)	V _{OD}	-	250 mV to 450 mV	Differential output voltage, V _{OD1} , V _{OD2}
	V _{OS}	-	1.15 V to 1.35 V	
ECL load condition	L_ECL	50 Ω	-	Terminated to V _{CC} - 2.0 V
LVDS load condition	L_LVDS	-	100 Ω	Connected between OUT to OUT
Input voltage	V _{IH}	70 % V _{CC} Min.		OE terminal
	V _{IL}	30 % V _{CC} Max.		
Rise/Fall times	tr / tf	0.5 ns Max..	0.3 ns Max.	LV-PECL: Between 20 % and 80 % of (V _{OH} - V _{OL}) LVDS: Between 20 % and 80 % of Differential Output peak to peak voltage
Startup time	t _{str}	10 ms Max.		Time at minimum supply voltage to be 0 s
Phase Jitter	tpj	120 fs Max.	160 fs Max.	f _o = 122.88 MHz
		80 fs Max.	80 fs Max.	f _o = 245.76 MHz

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

Figure 1 Available combination of
 ①Output frequency (f_o) and ②Absolute Pull Range (APR)

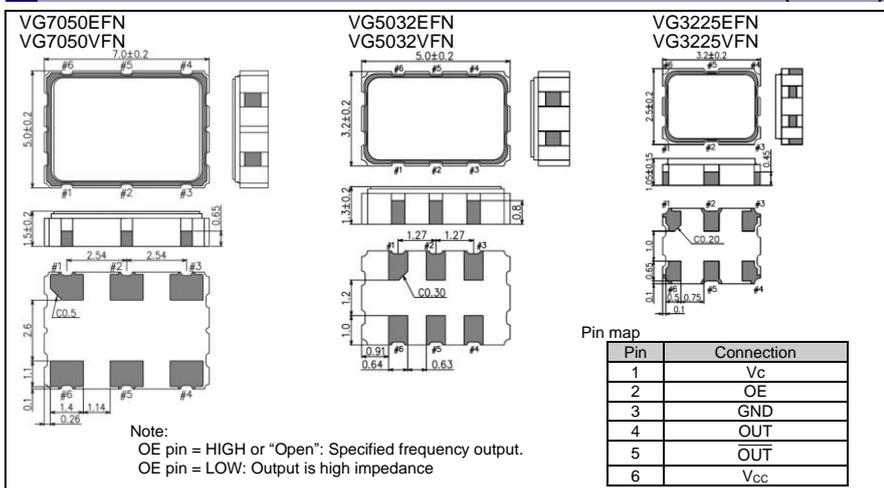


Product Name VG3225 EFN 122.880000MHz C J G H B A
 (Standard form) ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨
 ①Model ②Output (E: LV-PECL, V: LVDS) ③Frequency
 ④Supply voltage (C: 3.3 V Typ.) ⑤Frequency tolerance ⑥Operating temperature
 ⑦OE Function ⑧Absolute Pull Range ⑨Output Standby Type (A: High-Z)

⑤Frequency tolerance	⑥Operating temperature	⑦OE Function	⑧Absolute Pull Range
J ±50 × 10 ⁻⁶	G -40 to +85 °C	H Active High	B ±50 × 10 ⁻⁶
	H -40 to +105 °C		M ±20 × 10 ⁻⁶
			S ±10 × 10 ⁻⁶

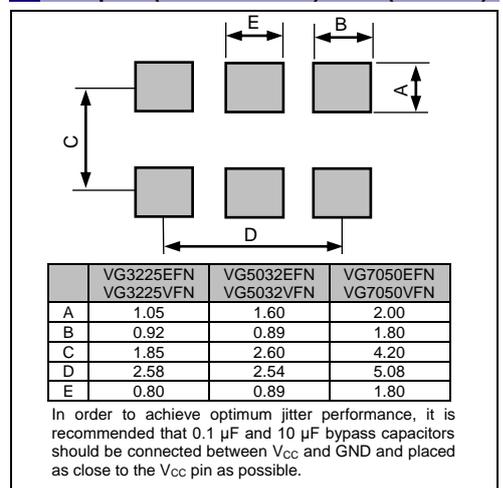
External dimensions

(Unit:mm)



Footprint (Recommended)

(Unit:mm)



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.

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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.
	► 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).

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