VOLTAGE -CONTROLLED CRYSTAL OSCILLATOR (VCXO)

OUTPUT: LV-PECL

Pb Free RoHS Compliant

Product Number
X1G004551xxxx00

VG7050EBN

- Frequency range : 600 MHz to 800 MHz
- Supply voltage : 2.5 V / 3.3 V
- External dimensions : 7.0 × 5.0 × 1.5 mm (6 pins)
- Absolute Pull Range : ±50 × 10^{-6}Min.,±100 × 10^{-6}Min.
- Function : Output Enable(OE)
- Output : LV-PECL

Specifications (characteristics)

Item	Symbol	Specifications	Conditions / Remarks
Output frequency range	fo	600.000 MHz to 800.000 MHz	Please contact us about available frequencies.
		698.8123 MHz, 753.6211 MHz, 794.7278 MHz	Standard frequency
Supply voltage	Vcc	D: 2.5 V ± 0.125 V, C: 3.3 V ± 0.33 V	
Storage temperature range	T_stg	-55 °C to +125 °C	Store as bare product after packing
Operating temperature range	T_use	G: -40 °C to +85 °C	
Frequency tolerance*1	f_tol	J: ±50 × 10^{-6} Max.	Includes frequency aging (10 years)
Current consumption	Icc	90 mA Max.	
Absolute pull range	APR	B: ±50 × 10^{-6} Min. C: ±100 × 10^{-6} Min.	Vc = 1.65 V ±1.35 V (Vcc = 3.3 V) Vc = 1.25 V ±1.00 V (Vcc = 2.5 V)
Input resistance	Rin	5 MΩ Min.	DC level
Frequency change polarity	-	Positive slope	Vc = 0 V to Vcc
Symmetry	SYM	45 % to 55 %	at outputs cross point
High output voltage	VOH	Vcc - 1.025 V Min.	DC characteristics
Low output voltage	VOL	Vcc - 1.62 V Max.	
Output load condition	L_ECL	50 Ω	Terminated to Vcc - 2.0 V
High input voltage	VIH	70 % Vcc Min.	
Low input voltage	VIL	30 % Vcc Max.	
Rise/Fall times	tr / tf	0.4 ns Max.	between 20 % and 80 % of (V_{OH} - V_{OL})
Oscillation start up time	t_str	10 ms Max.	Time at minimum supply voltage to be 0 s
Phase Jitter	tPJ	0.2 ps Typ.	Offset Frequency 12 kHz to 20 MHz

*1 Frequency tolerance includes initial frequency tolerance, temperature variation, supply voltage change and reflow drift and 10 years aging at +25 ºC.

Product name (Standard form)

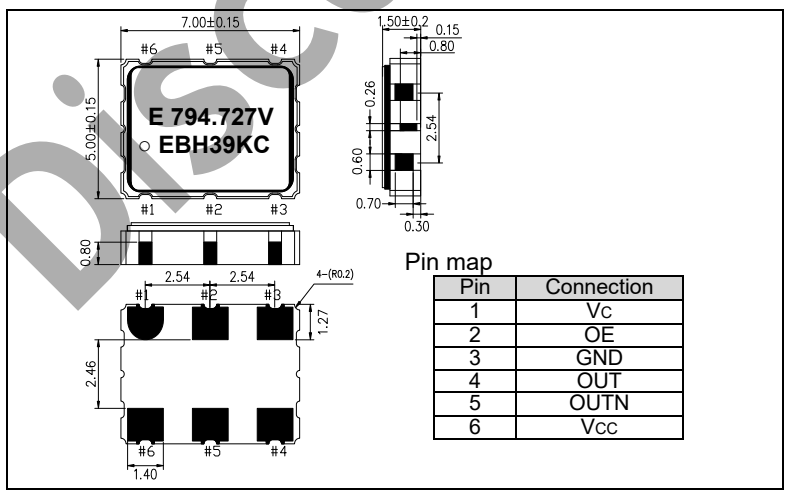
VG7050 EBN ① | 698.812335MHz ③ | C J G H B Z ④⑤⑥⑦⑧⑨

①Model ②Output (E: LV-PECL) ③Frequency ④Supply voltage (C: 3.3 V Typ., D: 2.5 V Typ.)
⑤Frequency tolerance (J: ±50 × 10^{-6} Max.) ⑥Operating temperature (G: -40 to +85°C)
⑦OE Function (H: Active High, L: Active Low) ⑧Absolute Pull Range (B: ±50 × 10^{-6} Min., C: ±100 × 10^{-6} Min.)
⑨Output Standby Type (F: Fix (OUT = "L", OUTN = "H"), Z: High-Z)

OE Function / OE Standby Type

OE Function	OE Standby Type	Output Enable	Output Disable	
		OE pin	OE pin	OUT, OUTN pin
H: High Active	Z: High-Z	"H" or "OPEN"	"L"	High Impedance
L: Low Active		"L" or "OPEN"	"H"	
H: High Active	F: Fix	"H" or "OPEN"	"L"	OUT = "L", OUTN = "H"
L: Low Active		"L" or "OPEN"	"H"	

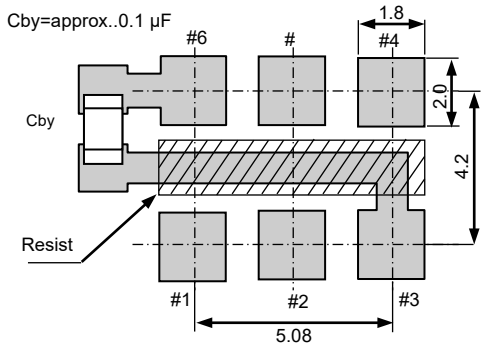
External dimensions (Unit :mm)



Pin map

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

Footprint (Recommended) (Unit :mm)



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

Discontinued Product

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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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).

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