



Crystal oscillator

SEIKO EPSON CORPORATION

I²C-Bus Programmable Crystal Oscillator (SPXO)

Output: LV-PECL



Product Number
X1G005031xxxx00

SG-8506CA

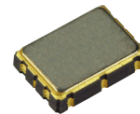
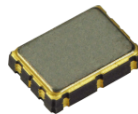
- Frequency range : 50 MHz to 800 MHz
- Supply voltage : 2.5 V to 3.3 V
- External dimensions : 7.0 × 5.0 × 1.5 mm (8 pins)

Features

- Programmable frequency by 7-bit I²C slave address
- High frequency fundamental tone crystal, Low jitter PLL technology
- Available field oscillator programmer "SG-Writer II"

Application

- OTN, BTS, Test Instrument



Specifications (characteristics)

Item	Symbol	Specifications	Conditions / Remarks
Output frequency range	f _o	50 MHz to 800 MHz	It can be changed by I ² C
Supply voltage	V _{CC}	2.5 V - 0.125 V to 3.3 V + 0.33 V	-
Storage temperature	T _{stg}	-55 °C to +125 °C	Store as bare product after packing
Operating temperature	T _{use}	-40 °C to +85 °C	-
Frequency tolerance *1	f _{tol}	K : ±31.5 × 10 ⁻⁶	Customized Product (Option)
		L : ±50 × 10 ⁻⁶	
Current consumption	I _{CC}	90 mA Max.	OE Active, L_ECL=50 Ω
		40 mA Max.	OE Inactive, Output Standby: Hi-Z mode
Disable current	I _{dis}	70 mA Max.	OE Inactive, Output Standby: Fix mode
Symmetry	SYM	45 % to 55 %	At outputs crossing point
Output voltage	V _{OH}	V _{CC} - 1.025 V Min.	DC characteristics
	V _{OL}	V _{CC} - 1.62 V Max.	
Output load condition	L_ECL	50 Ω	Termination to V _{CC} - 2.0 V
Input voltage	V _{IH}	70% V _{CC} Min.	OE, SDA and SCL
	V _{IL}	30% V _{CC} Max.	
Rise time / Fall time	t _r / t _f	400 ps Max.	Between 20% and 80% of (V _{OH} - V _{OL})
Start-up time	t _{str}	10 ms Max.	Time at minimum supply voltage to be 0 s
Setting time for frequency change	t _{SET1}	1.5 ms Max.	From setting NEW_FREQ bit to output new frequency

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

Product Name SG-8506 CA 156.2MHz 0x37 A P R L Z
(Standard form) ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨

① Model, ② Package type,

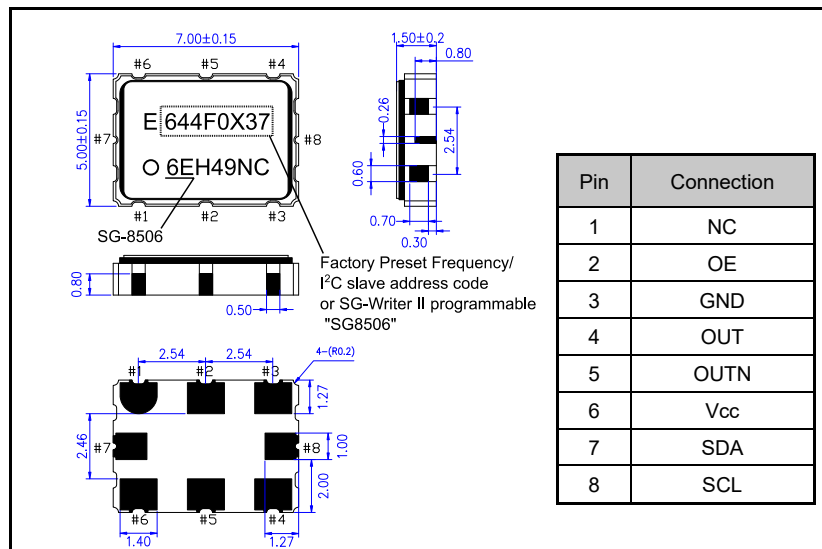
③ Power-on default output frequency (50 ~ 800 MHz), ④ I²C slave address, ⑤ Internal crystal frequency,

⑥ Output enable pin Polarity, ⑦ Supply voltage/Output format, ⑧ Frequency tolerance/Operating temperature, ⑨ Output standby type

⑤ Internal crystal frequency	⑥ Output enable pin Polarity	⑦ Supply voltage/Output format	⑧ Frequency tolerance/Operating temperature	⑨ Output standby type
A 114.1444 MHz	P Active High Q Active Low	R 2.5 V ~ 3.3 V/LVPECL	K ±31.5 × 10 ⁻⁶ /-40 °C to +85 °C L ±50 × 10 ⁻⁶ /-40 °C to +85 °C	F Fix (OUT="L", OUTN="H") Z High-Z

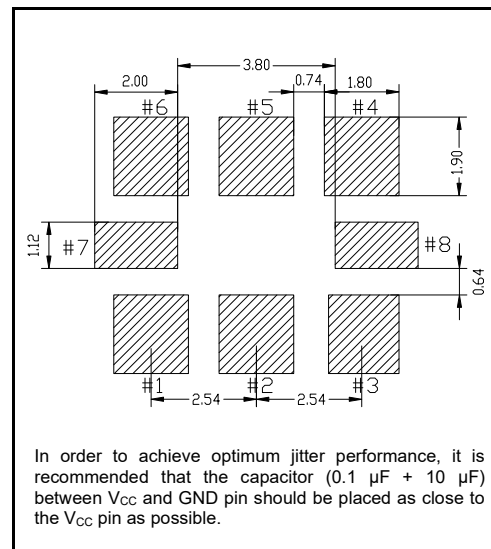
External dimensions

(Unit: mm)



Footprint (Recommended)

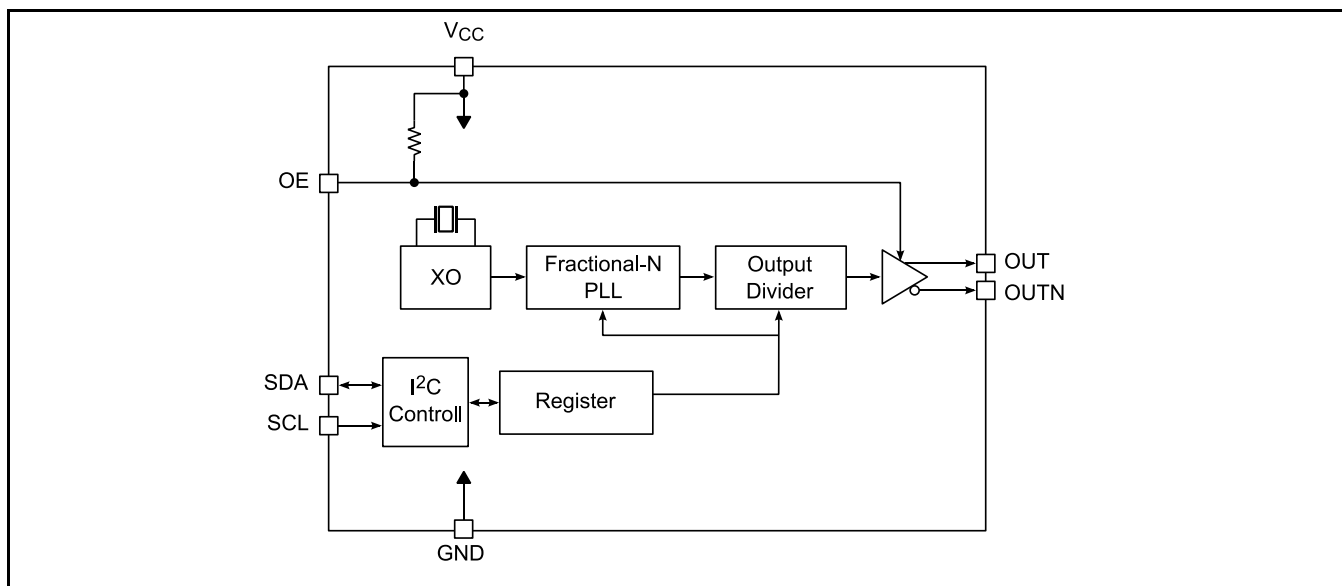
(Unit: mm)



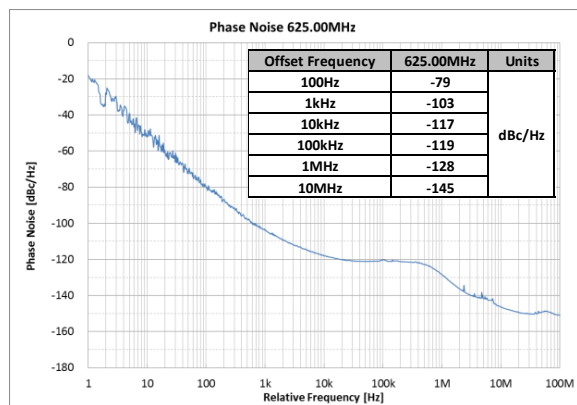
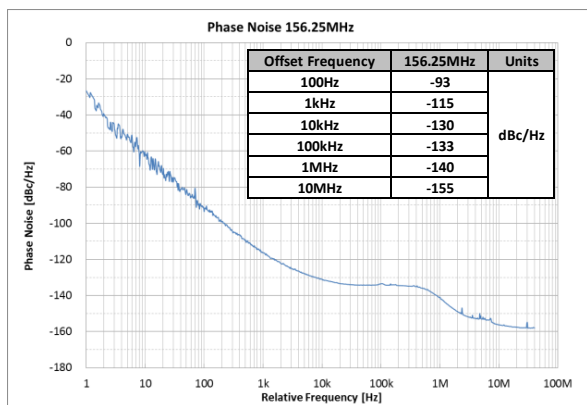
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Block diagram



Phase Noise



Phase Jitter

	Offset Frequency	100.00 MHz	125.00 MHz	156.25 MHz	250.00 MHz	312.50 MHz	500.00 MHz	625.00 MHz
Phase jitter *2 Typ.	12 kHz to 20 MHz	0.31 ps	0.30 ps	0.26 ps	0.26 ps	0.29 ps	0.28 ps	0.29 ps

*2 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

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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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	► 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.
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