

I²C-Bus Programmable Crystal Oscillator (SPXO)

Output: LV-PECL

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

- User-specified one startup frequency, 7-bit I²C
- User Programming: I²C Interface
- High frequency fundamental tone crystal, Low jitter PLL technology
- Available field oscillator programmer "SG-Writer II"

Application

- OTN, BTS, Test Instrument

*The I²C-Bus is a trademark of NXP Semiconductors



Product Number
X1G005031xxxx00



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	tr / tf	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.

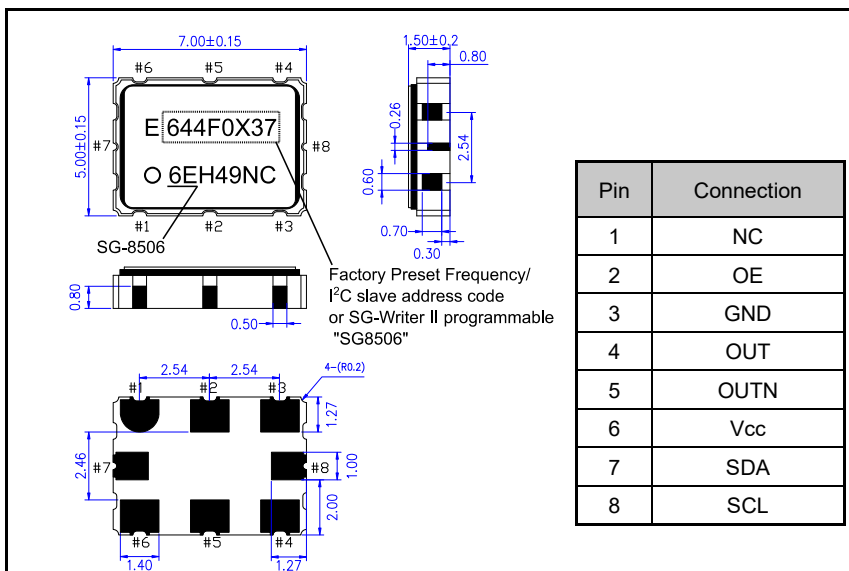
Product Name SG-8506 CA 156.2MHz 0x37 A P R L Z
(Standard form) ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨

- 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 to +85 °C L ±50 × 10 ⁻⁶ /-40 to +85 °C	F Fix (OUT="L", OUTN="H") Z High-Z

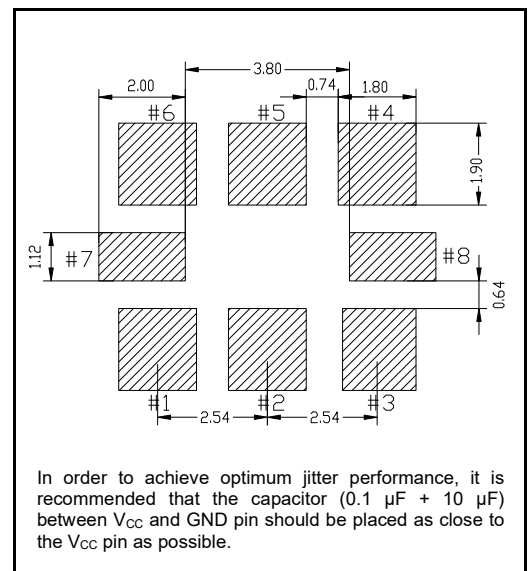
External dimensions

(Unit: mm)

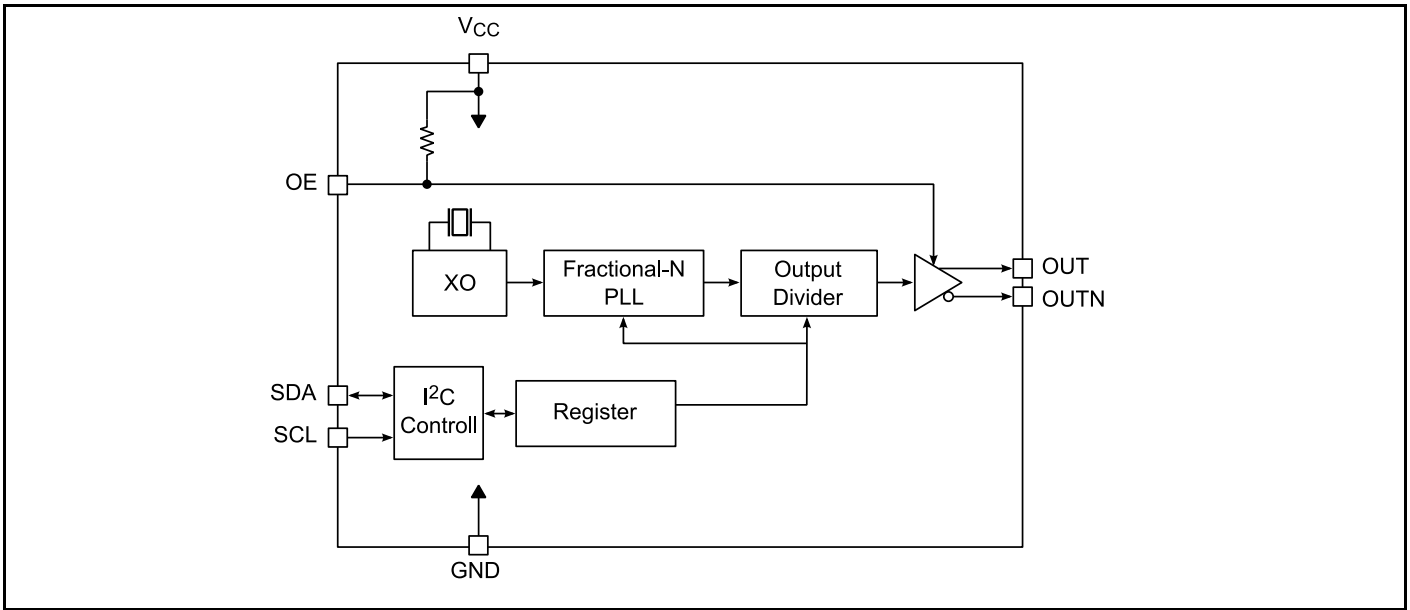


Footprint (Recommended)

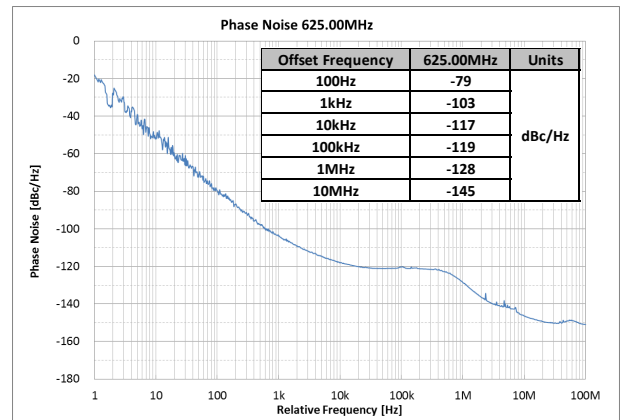
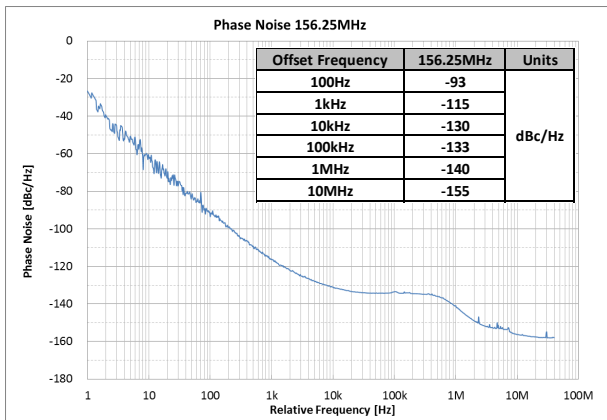
(Unit: mm)



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 Vcc and GND pin should be placed as close to the Vcc 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.

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	► Designed for automotive applications such as Car Multimedia, Body Electronics, Remote Keyless Entry etc.
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