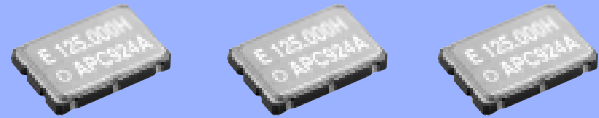


## CRYSTAL OSCILLATOR LOW-JITTER SAW OSCILLATOR

# EG-2101CA

- Frequency range : 62.5 MHz to 99.999 MHz
- Supply voltage : 3.3 V
- Output : Differential LV-PECL
- Function : Output enable(OE)
- Thickness : 1.2 mm Typ.
- Very low jitter and low phase noise by SAW unit.



Actual size



### Specifications (characteristics)

Item	Symbol	Specifications	Remarks
Output frequency range	$f_0$	62.500 MHz to 99.999 MHz	Please contact us for inquiries regarding available frequencies
Supply voltage	V <sub>CC</sub>	3.3 V $\pm 0.15$ V	
Temperature range	Storage temperature	T <sub>stg</sub>	-40 °C to +100 °C
	Operating temperature	T <sub>use</sub>	0 °C to +70 °C
Frequency tolerance	F <sub>tol(osc)</sub>	$\pm 50 \times 10^{-6}$ , $\pm 100 \times 10^{-6}$	0 °C to +70 °C *1
Current consumption	I <sub>CC</sub>	60 mA Max.	OE=V <sub>CC</sub> , R <sub>L</sub> =50 $\Omega$
Output disable current	I <sub>OE</sub>	25 mA Max.	OE=GND
Symmetry *3	SYM	D:47.5 % to 52.5 %	DCH,DCY,DCZ at outputs crossing point
High output voltage	V <sub>OH</sub>	2.35 V Typ. V <sub>CC</sub> -1.025 to V <sub>CC</sub> -0.88	DC characteristics
Low output voltage	V <sub>OL</sub>	1.60 V Typ. V <sub>CC</sub> -1.81 to V <sub>CC</sub> -1.62	
Output load condition	R <sub>L</sub>	50 $\Omega$	Terminated to V <sub>CC</sub> -2.0 V
High input voltage	V <sub>IH</sub>	70 % V <sub>CC</sub> Min.	OE terminal
Low input voltage	V <sub>IL</sub>	30 % V <sub>CC</sub> Max.	OE terminal
Output rise and fall time	t <sub>r</sub> / t <sub>f</sub>	600 ps Max.	20 % to 80 % (V <sub>OH</sub> -V <sub>OL</sub> )
Oscillation start up time	t <sub>OSC</sub>	10 ms Max.	Time at minimum supply voltage to be 0 s
Jitter *2	t <sub>DJ</sub>	0.2 ps Typ.	Deterministic Jitter
	t <sub>RJ</sub>	3 ps Typ.	Random Jitter
	t <sub>RMS</sub>	3 ps Typ.	$\sigma$ (RMS of total distribution)
	t <sub>P-P</sub>	25 ps Typ.	Peak to Peak
	t <sub>acc</sub>	4 ps Typ.	Accumulated Jitter( $\sigma$ ) n=2 to 50000 cycles
Phase Jitter	t <sub>PJ</sub>	0.05 $\times 10^{-3}$ UI Typ.	Offset frequency: 12 kHz to 20 MHz
		1 ps Max.	
Frequency aging *3	F <sub>aging</sub>	$\pm 5 \times 10^{-6}$ / year Max.	+25 °C, First year, V <sub>CC</sub> =3.3 V

\*1 As per below table

\*2 Based on DTS-2075 Digital timing system made from WAVECREST with jitter analysis software VISI6.

\*3 Except : PCH,DCH

Details of frequency tolerance	Output mode (Symmetry)	
	H: $\pm 100 \times 10^{-6}$ (0 °C to +70 °C)*4	D: Symmetry 50 $\pm 2.5$ %
Y: $\pm 100 \times 10^{-6}$ (0 °C to +70 °C) *5	DCH	
Z: $\pm 50 \times 10^{-6}$ (0 °C to +70 °C)*6	DCY	
	DCZ	

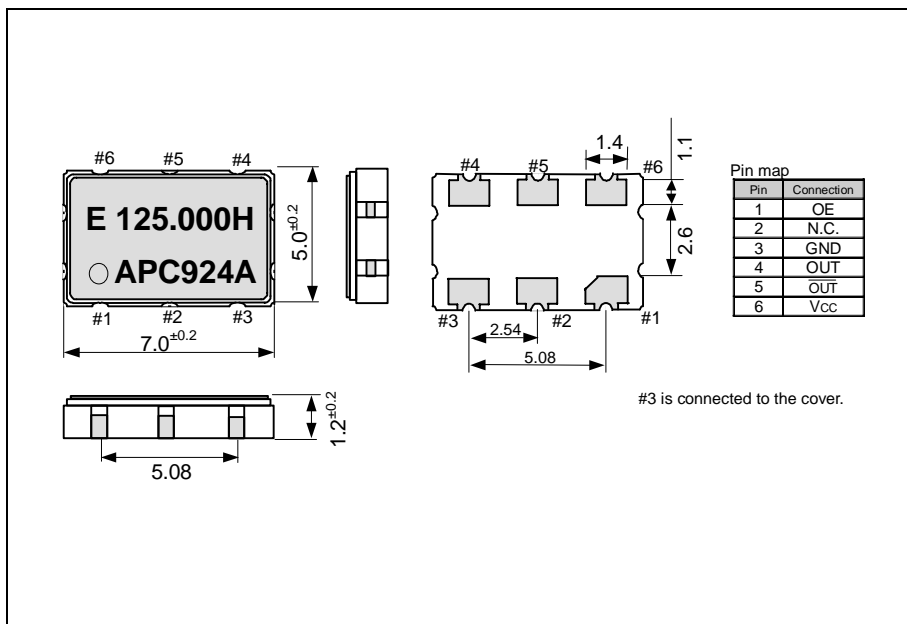
\*4 This includes initial frequency tolerance, temperature variation, supply voltage variation, reflow drift, and aging(+25 °C,10 years).

\*5 This includes initial frequency tolerance, temperature variation, supply voltage variation, and reflow drift(except aging).

\*6 This includes initial frequency tolerance and temperature variation(except supply voltage variation, reflow drift, aging).

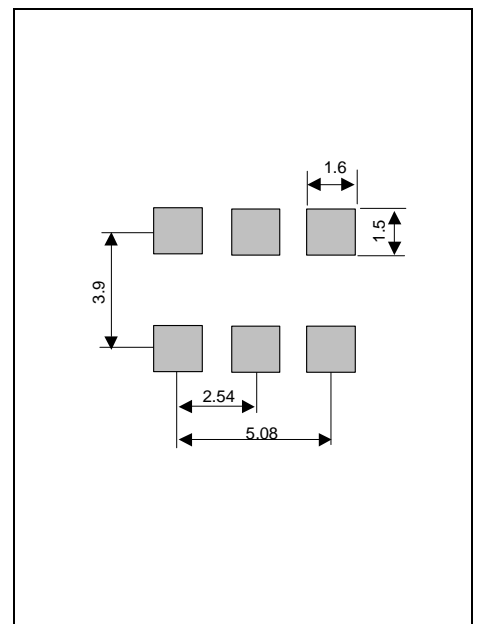
### External dimensions

(Unit:mm)



### Footprint (Recommended)

(Unit:mm)



# “3D STRATEGY” EPSON TOYOCOM

In order to meet customer needs in a rapidly advancing digital, broadband and ubiquitous society, we are committed to offering products that are one step ahead of the market and a rank above the rest in quality. To achieve our goals, we follow a “3D (three device) strategy” designed to drive both horizontal and vertical growth. We will to grow our three device categories of “Timing Devices”, “Sensing Devices” and “Optical Devices”, and expand vertical growth through a combination of products from these categories.

Quartz devices have become crucial in the network environment where products are increasingly intended for broadband, ubiquitous applications and where various types of terminals can transfer information almost immediately via LAN and WAN on a global scale. Epson Toyocom Corporation addresses every single aspect within a network environment. The new corporation offers “Digital Convergence” solutions to problems arising with products for consumer use, such as, core network systems and automotive systems.

## PROMOTION OF ENVIRONMENTAL MANAGEMENT SYSTEM CONFORMING TO INTERNATIONAL STANDARDS

At Epson Toyocom, 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. In the future, new group companies will be expected to acquire the certification around the third year of operations.

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

Epson Toyocom quickly began working to acquire company-wide ISO 9000 series certification, and has acquired ISO 9001 or ISO 9002 certification for all targeted products manufactured in Japanese and overseas plants.

Epson Toyocom has acquired QS-9000 certification, which is of a higher level. Also, TS 16949 certification, which is also of a higher level, has been acquired.

QS-9000 is an enhanced standard for quality assurance systems formulated by leading U.S. automobile manufacturers based on the international ISO 9000 series.

ISO/TS 16949 is a global standard based on QS-9000, a severe standard corresponding to the requirements from the automobile industry.

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/ Medical instruments to sustain life / Submarine transmitters / Power stations and related / Fire work equipment and security equipment  
/ traffic control equipment / and others requiring equivalent reliability.
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We apologize for the inconvenience, but we will eventually have a unified part numbering system for Epson Toyocom that will be user friendly.