TCXO
MINIATURE SIZE LOW PROFILE

TCO - 5860 series

- Frequency range : 10 MHz to 40 MHz
- Supply voltage : 2.8 V Typ.
- Frequency / temperature coefficient : $\pm 2 \times 10^{-6}$ Max.
- External dimensions : 3.2 × 2.5 × 0.9 t mm Typ.
- Applications : Cellular phone (WiMAX, CDMA, WCDMA)
- Features : Low current consumption

Pb Free RoHS Compliant

Product Number (Please contact us)
X1G0014xxxxxx00

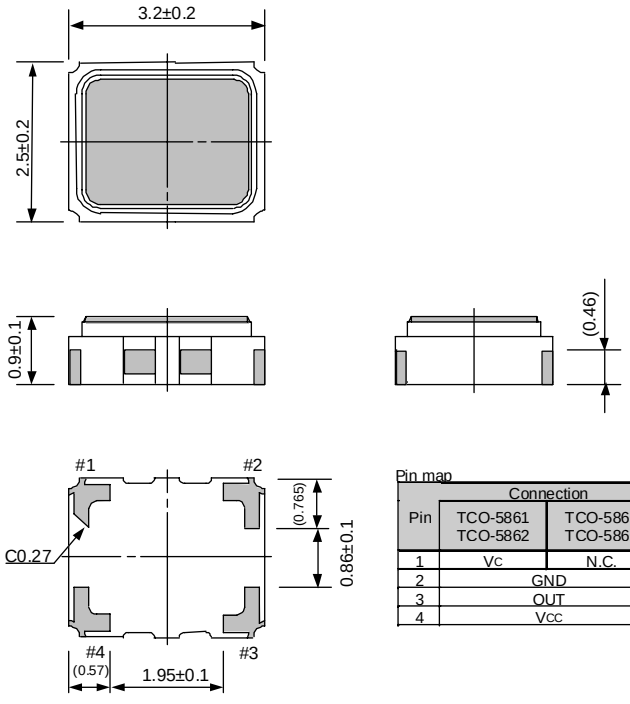
Actual size

Specifications (characteristics)

Item	Symbol	VC-TCXO		TCXO		Remarks
		TCO-5861	TCO-5862	TCO-5867	TCO-5869	
Output frequency range	fo	16 MHz to 40 MHz	10 MHz to 20 MHz		16 MHz to 40 MHz	
		16 MHz, 20 MHz , 38.4 MHz , 40 MHz				Standard frequency
Supply voltage	Vcc	2.8 V ±0.14 V				Supply voltage range : 2.3 V to 3.6 V
Storage temperature range	T_stg	-40 °C to +85 °C				Store as bare product after unpacking
Operating temperature range	T_use	-30 °C to +85 °C				
Frequency tolerance	f_tol	$\pm 2.0 \times 10^{-6}$ Max.				After reflow (Vc=1.4 V, +25 °C)
Frequency/temperature characteristics	fo-Tc	$\pm 2.0 \times 10^{-6}$ Max.				-30 ℃ to +85 ℃
Frequency/load coefficient	fo-Load	$\pm 0.2 \times 10^{-6}$ Max.				10 kΩ // 10 pF ± 10 %
Frequency/voltage coefficient	fo-Vcc	$\pm 0.2 \times 10^{-6}$ Max.				Vcc=2.8 V ±0.14 V
Frequency aging	f_age	$\pm 1.0 \times 10^{-6}$ Max.				+25 °C, First year
Current consumption	Icc	2.0 mA Max.				
Input resistance	Rin	500 kΩ Min.		—		
Frequency control range	f_cont	$\pm 5.0 \times 10^{-6}$ to $\pm 12.0 \times 10^{-6}$		—		Vc=1.4 V ±1.0 V
Frequency change polarity	—	Positive polarity		—		
Symmetry	SYM	40 % to 60 %				GND level (DC cut)
Output voltage	Vpp	0.8 V Min.				Peak to peak
Output load condition	Load_R	10 kΩ				DC cut capacitor = 0.01 µF
	Load_C	10 pF				

* Note : Please contact us for inquiries about specifications other than the above.

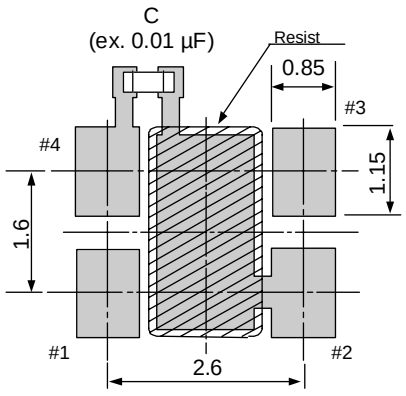
External dimensions (Unit:mm)



Pin map

Pin	Connection: TCO-5861 TCO-5862	Connection: TCO-5867 TCO-5869
1	Vc	N.C.
2	GND	
3	OUT	
4	Vcc	

Footprint (Recommended) (Unit:mm)



“QMEMS” 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.
A Quartz MEMS is any high added value quartz device that exploits the characteristics of quartz crystal material but that is produced using MEMS (micro-electro-mechanical system) processing technology.
Market needs are advancing faster than previously imagined toward smaller, more stable crystal products, but we will stay ahead of the curve by rolling out products that exceed market speed and quality requirements. We want to further accelerate the 3D strategy by QMEMS.

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.

QMEMS

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.

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.

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.

WORKING FOR HIGH QUALITY

In order provide high quality and reliable products and services than meet customer needs,
Epson Toyocom made early efforts towards obtaining ISO9000 series certification and has acquired ISO9001 for all business establishments in Japan and abroad. We have also acquired ISO/TS 16949 certification that is requested strongly by major automotive manufacturers as standard.

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.

►Explanation of the mark that are using it for the catalog

Pb Free	**►Pb free.** **►Complies with EU RoHS directive.**
RoHS Compliant	**►Pb free terminal designed. Contains Pb in products exempted by RoHS directive.** **(Contains Pb in sealing glass, high melting temperature type solder or other.)** **►Complies with EU RoHS directive.**
For Automotive	**►The products have been designed for high reliability applications such as Automotive.**

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  / Space equipment (artificial satellites, rockets, etc.) / Transportation vehicles and related (automobiles, aircraft, trains, vessels, etc.)
  / 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.
- In this new crystal master for Epson Toyocom, product codes and markings will remain as previously identified prior to the merger.
  Due to the on-going strategy of gradual unification of part numbers, please review product codes and markings, as they will change during the course of the coming months.

  We apologize for the inconvenience, but we will eventually have a unified part numbering system for Epson Toyocom that will be user friendly.