



# CRYSTAL OSCILLATOR (SPXO)

## OUTPUT : LV-PECL

# SG-770/SG-771 series

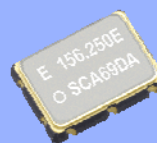
- Frequency range : 50 MHz to 230 MHz
- Supply voltage : 2.5 V Typ. / 3.3 V Typ.
- Output : Differential LV-PECL
- External dimensions: 7.0 × 5.0 × 1.6 mm
- Features : Fundamental mode oscillator with HFF-XTAL
- Function : Standby ( $\overline{ST}$ ) ...SG-770 series  
Output enable (OE) ...SG-771 series



Product Number (please contact us)

SG-770: X1G0023x1xxxx00

SG-771: X1G00282xxxxx00



Actual size



## Specifications (characteristics)

Item	Symbol	Specifications			Conditions / Remarks
		SG-770SDD	SG-770SCD	SG-771PCD	
Output frequency range	f <sub>o</sub>	50.000 MHz to 230.000 MHz		80.000 MHz to 175.000 MHz	Please contact us about available frequencies.
Supply voltage	V <sub>cc</sub>	2.5 V ±0.125 V	3.3 V ±0.165 V	3.3 V ±0.165 V	
Storage temperature	T <sub>stg</sub>	-55 °C to +125 °C			Storage as single product.
Operating temperature	T <sub>use</sub>	As per below table			
Frequency tolerance	f <sub>tol</sub>	±50 × 10 <sup>-6</sup> Max.		As per below table	
Current consumption	I <sub>cc</sub>	90 mA Max.		70 mA Max.	50Ω
Symmetry	SYM	45 % to 55 %		40 % to 60 %	at outputs crossing point
Output voltage	V <sub>OH</sub>	V <sub>cc</sub> -1.1 V Min.			
	V <sub>OL</sub>	V <sub>cc</sub> -1.5 V Max.			
Output load condition (ECL)	L <sub>ECL</sub>	LV-PECL			
Input voltage	V <sub>IH</sub>	70 % V <sub>cc</sub> Min.			ST terminal or OE terminal
	V <sub>IL</sub>	30 % V <sub>cc</sub> Max.			
Rise time / Fall time	t <sub>r</sub> / t <sub>f</sub>	1 ns Max.			20 % to 80 % (V <sub>OH</sub> -V <sub>OL</sub> )
Start-up time	t <sub>str</sub>	10 ms Max. *1			Time at minimum supply voltage to be 0 s
Frequency aging	f <sub>aging</sub>	±5 × 10 <sup>-6</sup> / year Max.		This is included in frequency tolerance specification.	+25 °C, V <sub>cc</sub> =2.5 V or 3.3 V, First year.

\*1 Rise time (0 V to 2.13 V or 3.15 V) of  $V_{CC} > 150 \mu s$ Product Name  
(Standard form)

SG-770 S D D - 156.250000 - Q

① ②③ ④ ⑤

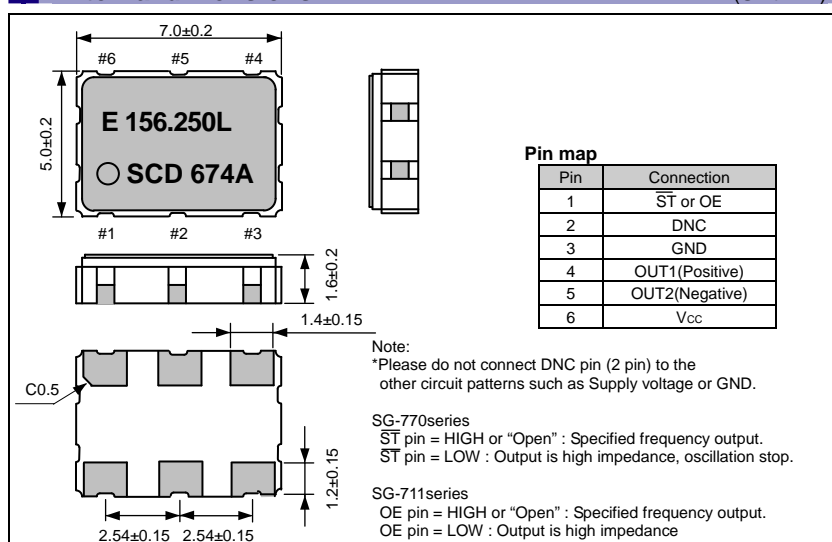
①Model ②Function (P: Output enable, S:Standby) ③Supply voltage

④Frequency(MHz) ⑤Frequency tolerance/ Operating temperature

③Supply voltage		⑤SG-770 series	Frequency tolerance	Operating temperature	⑤SG-771series	Frequency tolerance	Operating temperature	Frequency aging
D	2.5 V Typ.							
C	3.3 V Typ.							
		L	$\pm 50 \times 10^{-6}$	-40 °C to +85 °C	A	$\pm 30 \times 10^{-6}$	-40 °C to +85 °C	10 years
		B		-20 °C to +70 °C	B	$\pm 35 \times 10^{-6}$	-40 °C to +85 °C	20 years
		P		-10 °C to +70 °C	C	$\pm 20 \times 10^{-6}$	-10 °C to +70 °C	10 years
		Q		0 °C to +70 °C	D	$\pm 25 \times 10^{-6}$	-10 °C to +70 °C	20 years

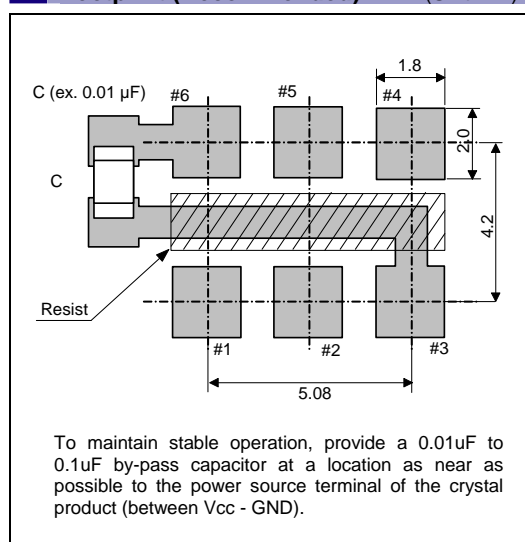
## External dimensions

(Unit:mm)



## Footprint (Recommended)

(Unit:mm)



## 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.





## WORKING FOR HIGH QUALITY

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 ISO/TS 16949 certification that is requested strongly by major automotive manufacturers as standard.

ISO/TS16949 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.
	► 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.
	► Designed for automotive applications related to driving safety (Engine Control Unit, Air Bag, ESC etc ).

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