MHz RANGE CRYSTAL UNIT

Built-in thermistor

FA-128S

Pb Free

RoHS Compliant

Product Number (please contact us)
FA-128S : X1E000361xxxx17

- Nominal frequency range : 38.4 MHz
- External dimensions : 2.0 × 1.6 × 0.9 mm
- Overtone order : Fundamental
- Applications : Mobile phone, Bluetooth, W-LAN
  ISM band radio, Clock for MPU
  GPS, Smart phone
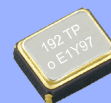
Actual size

■ Specifications (characteristics)

Item	Symbol	Specifications	Conditions / Remarks
Nominal frequency range	f_nom	38.4 MHz	Fundamental Please contact us about available frequencies.
Storage temperature range	T_stg	-40 °C to +125 °C	Storage as single product.
Operating temperature range	T_use	-40 °C to +85 °C	
Level of drive	DL	100 μW Max.	Recommended: 1 to 100 μW
Frequency tolerance	f_tol	$\pm 10 \times 10^{-6}$ *1	Please contact us about reference temperature. Please contact us for inquiries.
Frequency versus temperature characteristics	f_tem	$\pm 12 \times 10^{-6}$ *1	-30 °C to +85 °C Please contact us for inquiries.
Load capacitance	C_L	6 pF to ∞	Please specify.
Motional resistance (ESR)	R_1	60 Ω Max.	-30 °C to +85 °C
Frequency aging	f_age	$\pm 1 \times 10^{-6}$ / year Max.	+25 °C, First year
Thermistor resistance	—	Please contact us about specifications.	
Thermistor B constant	—		

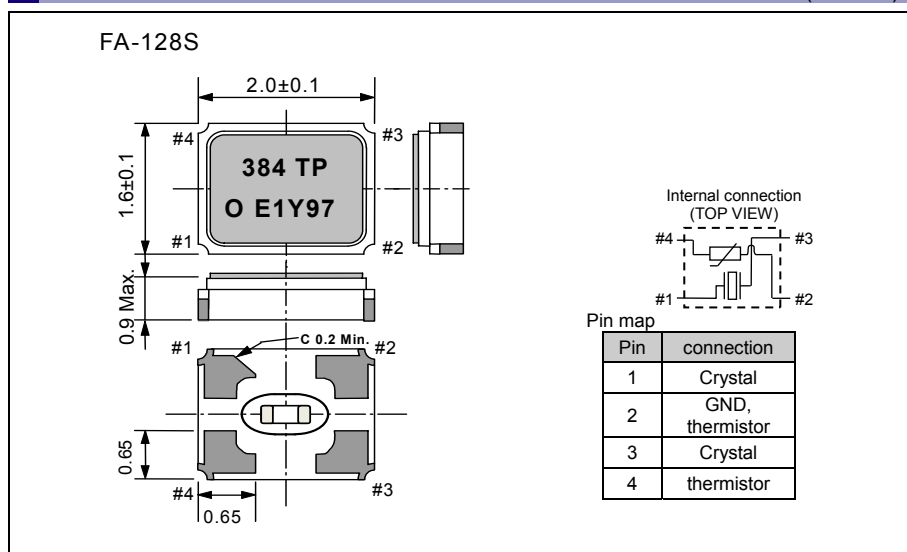*1 Please contact us for available frequency tolerances as they are dependent upon the nominal frequency.

Product name
(Standard form)
<u>FA-128S</u>   <u>38.400000MHz</u>   <u>7.0</u>   <u>+10.0-10.0</u>
    ①   ②   ③   ④
①Model   ②Frequency   ③Load capacitance(pF)   ④Frequency tolerance(× 10^{-6}, +25 °C)
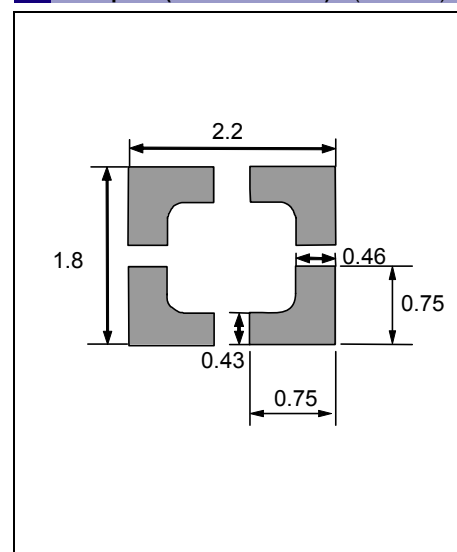In addition to the above mentioned specification item, please specify frequency temperature characteristics
and operating temperature range in case of inquiry.

■ External dimensions (Unit:mm)

FA-128S

2.0±0.1

#4   #3
384 TP
O E1Y97
#1   #2

1.6±0.1

0.9 Max.

C 0.2 Min.

#1   #2

0.65

#4   #3

0.65

Internal connection (TOP VIEW)

#4 ⌐ #3
#1 ⌐ #2

Pin map

Pin	connection
1	Crystal
2	GND, thermistor
3	Crystal
4	thermistor

■ Footprint (Recommended) (Unit:mm)

2.2

1.8

0.46

0.75

0.43

0.75

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	►Pb free.

RoHS Compliant	►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.)

For Automotive	►Designed for automotive applications such as Car Multimedia, Body Electronics, Remote Keyless Entry etc.
Automotive Safety	►Designed for automotive applications related to driving safety (Engine Control Unit, Air Bag, ESC etc).

Notice

- This material is subject to change without notice.
- Any part of this material may not be reproduced or duplicated in any form or any means without the written permission of Seiko Epson.
- The information about applied data, circuitry, software, usage, etc. written in this material is intended for reference only. Seiko Epson does not assume any liability for the occurrence of customer damage or infringing on any patent or copyright of a third party. This material does not authorize the licensing for any patent or intellectual copyrights.
- When exporting the products or technology described in this material, you should comply with the applicable export control laws and regulations and follow the procedures required by such laws and regulations.
- You are requested not to use the products (and any technical information furnished, if any) for the development and/or manufacture of weapon of mass destruction or for other military purposes. You are also requested that you would not make the products available to any third party who may use the products for such prohibited purposes.
- These products are intended for general use in electronic equipment. When using them in specific applications that require extremely high reliability, such as the applications stated below, you must obtain permission from Seiko Epson in advance.
  / 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.

- All brands or product names mentioned herein are trademarks and/or registered trademarks of their respective.

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

[Epson](#):
  [FA-128S 19.2000MF12Y-AG0](#) [FA-128S 38.4000MF10Y-AG3](#) [FA-128S 38.4000MF10Y-K0](#) [FA-128S 38.4000MF12Y-AG0](#) [FA-128S 38.4000MF12Y-AG3](#) [FA-128S 19.2000MF12Y-AG](#) [FA-128S 19.2000MF12Y-VK](#) [FA-128S 38.4000MF10Y-K5](#)