MHz RANGE CRYSTAL UNIT

FA - 128

- Nominal frequency range : 16 MHz to 54 MHz
- External dimensions : 2.0 × 1.6 × 0.5 mm
- Overtone order : Fundamental
- Applications : Mobile phone, Bluetooth, W-LAN ISM band radio, Clock for MPU

Pb Free

RoHS Compliant

Product Number (please contact us)
Q22FA1280xxxx18

Actual size

Specifications (characteristics)

Item	Symbol	Specifications		Conditions / Remarks
		For RF Reference	For Clock	
Nominal frequency range	f_nom	16.000 MHz to 54.000 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 (+105 °C)		Please contact us about +85 °C < T_use
Level of drive	DL	100 µW Max.	200 µW Max.	Recommended: 1 to 100 µW
Frequency tolerance (standard)	f_tol	$\pm 10 \times 10^{-6}$ *1	$\pm 30 \times 10^{-6}$	+25 °C, please contact us for requirements not listed in this specification.
Frequency versus temperature characteristics. (standard)	f_tem	$\pm 10 \times 10^{-6}$ *1	$\pm 30 \times 10^{-6}$	-20 °C to +75 °C, please contact us for requirements not listed in this specification.
Load capacitance	C_L	6 pF to ∞		Please specify.
Motional resistance (ESR)	R_1	As per table below		-20 °C to +75 °C
Frequency aging	f_age	$\pm 1 \times 10^{-6}$ / year Max.	$\pm 5 \times 10^{-6}$ / year Max.	+25 °C, First year

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

Motional resistance (ESR)

Frequency	Motional resistance
16.0 MHz ≤ f_nom < 18.0 MHz	200 Ω Max.
18.0 MHz ≤ f_nom < 20.0 MHz	150 Ω Max.
20.0 MHz ≤ f_nom < 24.0 MHz	100 Ω Max.
24.0 MHz ≤ f_nom < 26.0 MHz	80 Ω Max.
26.0 MHz ≤ f_nom ≤ 54.0 MHz	60 Ω Max.

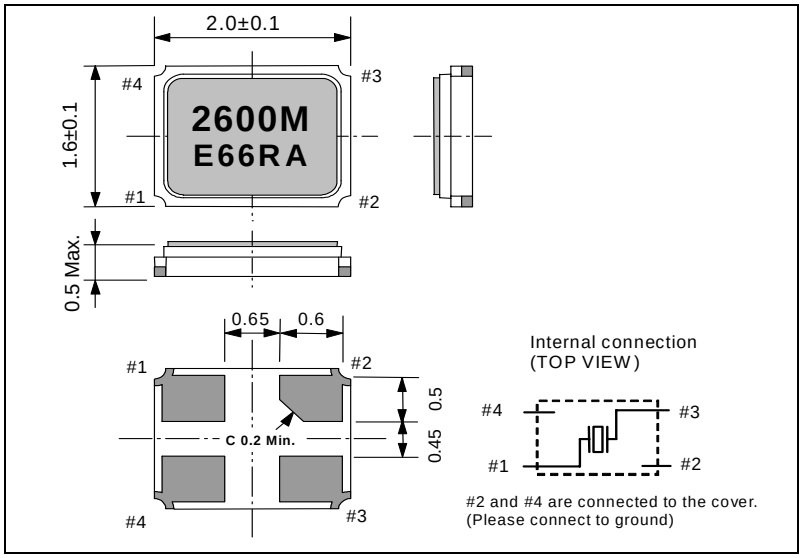
Product name (Standard form)

FA-128 ① 24.000000MHz ② 12.0 ③ +10.0-10.0 ④

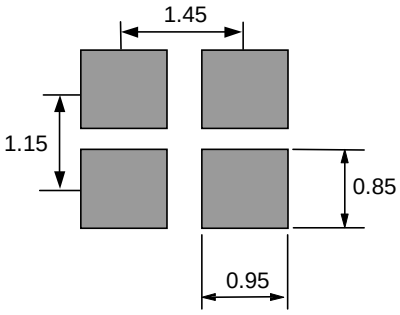
①Model ②Frequency ③Load capacitance(pF) ④Frequency tolerance(× 10^{-6}, +25 °C)

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)



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	►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).

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FA-128 32.0000MF20X-K3 FA-128 48.0000MF20X-K0 FA-128 24.0000MF10Z-W3 FA-128 25.0000MF10Z-AC FA-128 25.0000MF20X-K0 FA-128 26.0000MF10Z-AC3 FA-128 26.0000MF10Z-W FA-128 26.0000MF10Z-W3 FA-128 31.2500MF20X-K0 FA-128 32.0000MD30Z-C3 FA-128 32.0000MF10Z-W3 FA-128 40.0000MB30Z-AJ3 FA-128 40.0000MF10Z-K3 FA-128 40.0000MF20X-K0 FA-128 48.0000MB30Z-AJ3 FA-128 48.0000MD20X-B FA-128 48.0000MF20X-K FA-128 32.0000MF09Z-AC3 FA-128 26.0000MF10Z-E3 FA-128 32.0000MF10Z-AJ3 FA-128 16.0000MF20X-AJ FA-128 16.0000MF20X-AJ3 FA-128 25.0000MD20X-E3 FA-128 16.0000MF20X-AJ0 FA-128 25.0000MF10Z-AC3 FA-128 30.0000MF20X-AC FA-128 32.0000MF10Z-AJ5 FA-128 32.0000MF20X-K FA-128 25.0000MF10Z-K FA-128 25.0000MF10Z-K3 FA-128 32.0000MA20Z-K FA-128 32.0000MF10Z-AJ0 FA-128 24.0000MB-W FA-128 24.0000MB-W0 FA-128 24.0000MA25V-AJ FA-128 16.0000MF10Z-W FA-128 16.0000MF10Z-K FA-128 24.0000MD30X-K FA-128 24.0000MF10Z-W0 FA-128 27.1200MD30Z-K FA-128 27.1200MF10Z-K0 FA-128 24.0000MF10Z-K FA-128 24.0000MF10Z-W5 FA-128 27.1200MD30Y-E FA-128 27.1200MF10Z-K FA-128 27.1200MF10Z-K3 FA-128 32.0000MF20X-K5 FA-128 26.0000MF10Z-AC FA-128 27.1200MD30Z-K5 FA-128 27.1200MF20X-K3 FA-128 32.0000MF10Z-AG FA-128 32.0000MF10Z-K5 FA-128 32.0000MF20X-K0 FA-128 27.1200ME15X-AJ3 FA-128 38.4000MF10Z-K FA-128 25.0000MF20X-K FA-128 25.0000MF20X-W3 FA-128 32.0000MF20X-W FA-128 24.0000MD30Z-C FA-128 32.0000MF20X-AJ FA-128 32.0000MF20X-AJ3 FA-128 32.0000MF20X-AJ5 FA-128 38.4000MF10Z-K3 FA-128 24.0000MF10Z-AC FA-128 25.0000MD30X-C FA-128 38.4000MF10Z-K0 FA-128 48.0000MF20X-K3 FA-128 16.0000MF10Z-AC3 FA-128 27.1200ME15P-AJ0 FA-128 27.1200ME15R-AJ FA-128 32.0000MF10Z-W FA-128 32.0000MF10Z-AJ FA-128 24.0000ME20X-K FA-128 24.0000ME20X-K5 FA-128 26.0000MF10P-K5 FA-128 26.0000MF20X-K3 FA-128 27.1200ME15X-AJ0 FA-128 40.0000MF10Z-AJ FA-128 50.0000MF10Z-AG3 FA-128 35.3280MF15X-AG3 FA-128 19.2000MF10Z-W0 FA-128 24.0000MD30X-K0 FA-128 27.1200MD30Z-K0 FA-128 25.0000MD30Z-K3 FA-128 26.0000MF10Z-W5 FA-128 26.0000MF20X-K FA-128 27.0000MF10Z-AC FA-128 37.4000MF10Z-C5 FA-128 38.4000MF12CC-AG0 FA-128 26.0000MF10Z-K FA-128 27.0000MF18X-AJ FA-128 40.0000MF20X-K FA-128 48.000000M-70689N22R3 FA-128 24.0000MF10Z-AJ3 FA-128 25.0000MD30Z-AJ