



## MHZ RANGE CRYSTAL UNIT

## FA-20H

Product Number  
Q24FA20H0xxx18

- Nominal frequency range : 12 MHz to 54 MHz
- External dimensions : 2.5× 2.0×0.55 mm
- Overtone order : Fundamental
- Applications : Mobile phone, Bluetooth, W-LAN  
ISM band radio, Clock for MPU



## Specifications (characteristics)

Item	Symbol	Specifications		Conditions / Remarks
		For RF Reference	For Clock	
Nominal frequency range	f <sub>nom</sub>	12.000 MHz to 54.000 MHz		Fundamental Please contact us about available frequencies.
Storage temperature range	T <sub>stg</sub>	-40 °C to +125 °C		Storage as single product.
Operating temperature range	T <sub>use</sub>	-40 °C to +85 °C (+105 °C)		Please contact us about +85 °C < T <sub>use</sub>
Level of drive	DL	100 μW Max.	200 μW Max.	Recommended: 1 μW to 100 μW
Frequency tolerance	f <sub>tol</sub>	±10 × 10 <sup>-6</sup>	±30 × 10 <sup>-6</sup>	+25 °C Please contact us for inquiries.
Frequency versus temperature characteristics	f <sub>tem</sub>	±10 × 10 <sup>-6</sup>	±30 × 10 <sup>-6</sup>	-20 °C to +75 °C Please contact us for inquiries.
Load capacitance	CL	6 pF to ∞		Please specify.
Motional resistance (ESR)	R1	As per table below		-20 °C to +75 °C
Frequency aging	f <sub>age</sub>	±1 × 10 <sup>-6</sup> to ±3 × 10 <sup>-6</sup> / year Max. *1		+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
12.0 MHz ≤ f <sub>nom</sub> < 16.0 MHz	150 Ω Max.
16.0 MHz ≤ f <sub>nom</sub> ≤ 25.0 MHz	80 Ω Max.
25.0 MHz < f <sub>nom</sub> ≤ 30.0 MHz	60 Ω Max.
30.0 MHz < f <sub>nom</sub> ≤ 35.0 MHz	50 Ω Max.
35.0 MHz < f <sub>nom</sub> ≤ 54.0 MHz	40 Ω Max.

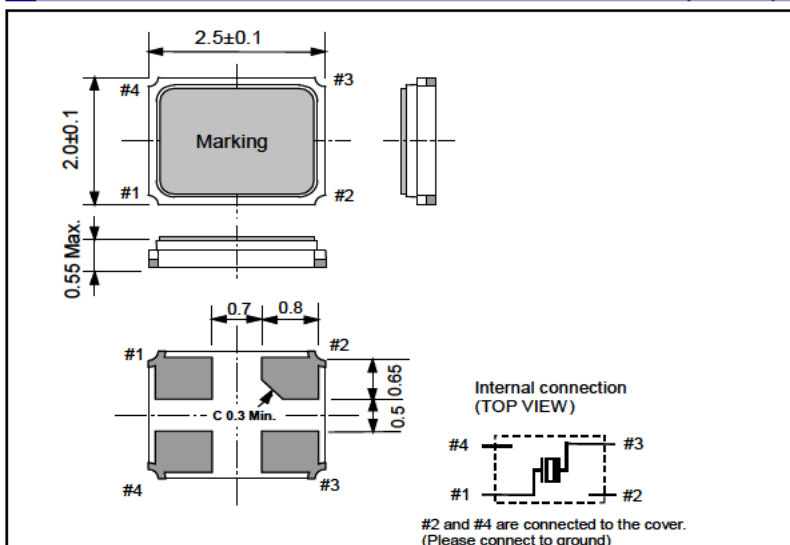
Product name FA-20H 24.000000MHz 12.0 +10.0-10.0  
(Standard form) ① ② ③ ④

①Model ②Frequency ③Load capacitance(pF) ④Frequency tolerance(× 10<sup>-6</sup>, +25 °C)

In addition to the above mentioned specification item, please specify frequency temperature characteristics and operating temperature range in case of inquiry.

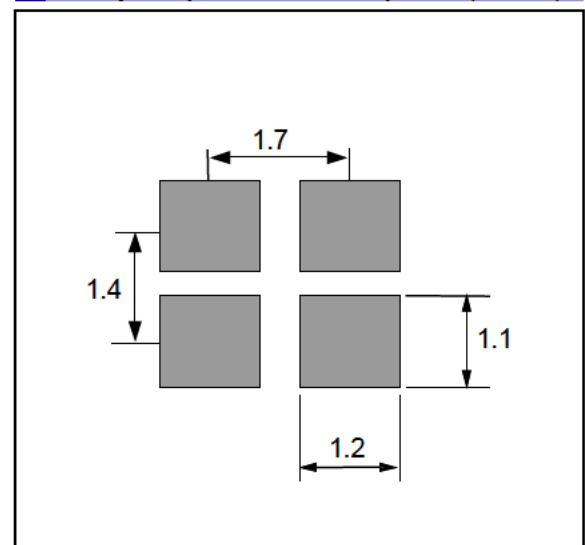
## External dimensions

(Unit:mm)



## Footprint (Recommended)

(Unit:mm)



# Mouser Electronics

Authorized Distributor

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## Epson:

[FA-20H 16.0000MF12Z-AC3](#) [FA-20H 24.0000MF15Y-W3](#) [FA-20H 24.0000MF20X-K3](#) [FA-20H 25.0000MD30V-C0](#)  
[FA-20H 25.0000MD30Y-C](#) [FA-20H 25.0000MD30Y-C3](#) [FA-20H 25.0000MF20X-K0](#) [FA-20H 25.0000MF20X-K3](#) [FA-20H 12.0000MB30Z-W](#) [FA-20H 16.0000MF12V-AJ3](#) [FA-20H 16.0000MF12Z-AC0](#) [FA-20H 24.0000MA14R-K](#) [FA-20H 24.0000MB50U-G](#) [FA-20H 24.0000MF15Y-W](#) [FA-20H 25.0000MD30V-C](#) [FA-20H 25.0000MD30Y-C5](#) [FA-20H 25.0000MD30Z-C](#) [FA-20H 26.0000MF10Z-AC3](#) [FA-20H 26.0000MF12V-W](#) [FA-20H 26.5626MA20X-K0](#) [FA-20H 27.1200MA10V-C3](#) [FA-20H 30.0000MF20X-W0](#) [FA-20H 38.4000MF10Z-AS3](#) [FA-20H 40.0000MF15Z-AC3](#) [FA-20H 26.0000ML81Z-AC3](#) [FA-20H 20.0000ML81Z-AC3](#) [FA-20H 32.0000MF12Y-W3](#) [FA-20H 40.0000MF10Z-K3](#) [FA-20H 32.0000MF20X-K3](#) [FA-20HS 19.2000MF12Y-AG3](#) [FA-20H16.0000MF20X-B](#) [FA-20H16.0000MF20X-B0](#) [FA-20H 12.0000MD30Z-K](#) [FA-20H 12.0000MF30X-K5](#) [FA-20H 16.0000MF10Z-AC3](#) [FA-20H 16.0000MF10Z-K](#) [FA-20H 26.0000MF10Z-AC](#) [FA-20H 32.0000MF10Z-AJ3](#) [FA-20H 27.0000MF20X-K3](#) [FA-20H 30.0000MF10V-K](#) [FA-20H 32.0000MF10Z-AJ5](#) [FA-20H 32.0000MF10Z-W](#) [FA-20H 28.63636MD50X-C](#) [FA-20H 32.0000MF10Z-K](#) [FA-20H 32.0000MF20X-K0](#) [FA-20H 16.0000MF10Z-AC0](#) [FA-20H 24.0000MD30X-C0](#) [FA-20H 25.0000MF10V-W](#) [FA-20H 28.63636MF50Y-C](#) [FA-20H 32.0000MF10P-W5](#) [FA-20H 32.0000MF20X-K5](#) [FA-20H 40.0000MF15Z-AC](#) [FA-20H 12.0000MD30Z-K3](#) [FA-20H 16.0000MF30X-K0](#) [FA-20H 40.0000MF20X-K](#) [FA-20H 16.0000MF10Z-K0](#) [FA-20H 16.0000MF20X-AJ0](#) [FA-20H 25.0000MD30X-B](#) [FA-20H 26.0000MF20X-K0](#) [FA-20H 27.0000MF19X-W5](#) [FA-20H 16.0000MF10Z-AJ](#) [FA-20H 16.0000MF10Z-AJ3](#) [FA-20H 16.0000MF20X-B](#) [FA-20H 26.0000MF20X-K3](#) [FA-20H 28.63636MA20X-AB0](#) [FA-20H 38.4000MF10Z-K5](#) [FA-20H 32.0000MF10Z-W5](#) [FA-20H 32.0000MF12Y-W](#) [FA-20H 32.0000MF12Y-W5](#) [FA-20H 40.0000MF10Z-AJ](#) [FA-20H 40.0000MF10Z-K](#) [FA-20H 12.00M-A0AANNUA5RG3](#) [FA-20H 16.0000MF12Z-AC5](#) [FA-20H 16.3840MA22X-C](#) [FA-20H 24.0000MF15Y-W0](#) [FA-20H 24.0000MF20X-K](#) [FA-20H 24.0000MF20X-K0](#) [FA-20H 26.0000MF13P-GG5](#) [FA-20H 16.0000MF12Z-AC](#) [FA-20H 16.0000MF12Z-AC7](#) [FA-20H 25.0000MF10Z-C](#) [FA-20H 26.0000MF10Z-AJ5](#) [FA-20H 27.0000MF10V-AC3](#) [FA-20H 32.0000MF13Y-W](#) [FA-20H 26.0000MF20X-K](#) [FA-20H 27.0000MF20X-K](#) [FA-20H 12.0000MD30V-K5](#) [FA-20H 27.0000MF10V-AC](#) [FA-20H 32.0000MF20X-K](#) [FA-20H 12.0000MD30V-K](#) [FA-20H 40.0000MF20X-AC3](#) [FA-20H 48.0000MB30V-AG](#) [FA-20H 16.0000MF10Z-AC](#) [FA-20H 16.0000MF20X-AJ3](#) [FA-20H 25.0000MD30V-W](#) [FA-20H 25.0000MF20X-K](#) [FA-20H 19.2000MF12Y-AG3](#) [FA-20H 25.0000MD30Y-C0](#) [FA-20H 26.0000MF10V-K](#) [FA-20H 26.0000ML81Z-AC0](#)