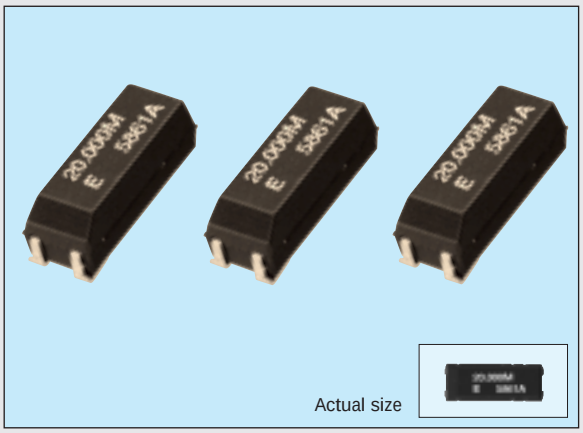
SMD HIGH-FREQUENCY CRYSTAL UNIT

MA-505/506

Products number

Q22MA505xxxxx00
Q22MA506xxxxx00

- High-density mounting-type SMD.
- Excellent heat-resistance and environment capability.
- Capable of covering a wide range of frequency range from 4.0 MHz to 64 MHz.



Specifications (characteristics)

Item		Symbol	Specifications	Remarks
Nominal frequency range		f	4.000 MHz to 29.999 MHz ∗1	Fundamental mode
			30.000 MHz to 64.000 MHz ∗2	3rd overtone mode
Temperature range	Storage temperature	T_{STG}	-55 °C to +125 °C	Stored as bare product after unpacking
	Operating temperature	T_{OPR}	-20 °C to +70 °C	Please contact us on availability of -40 °C to +85 °C
Drive level	Maximum drive level	GL	2 mW Max.	Only crystal oscillation is guaranteed
	Recommended drive level	DL	10 µW to 100 µW	
Frequency tolerance (standard)		Δf/f	±50 x 10^{-6}	Ta=+25 °C±3 °C, DL=100 µW
Frequency temperature characteristics (standard)			Under 5.5 MHz: ±50 x 10^{-6}	-20 °C to +70 °C, DL=100 µW
			Over 5.5 MHz: ±30 x 10^{-6}	
Load capacitance		C_L	Fundamental: 10 pF to ∞. Over tone: 5 pF to ∞	Please specify
Series resistance		R_1	As per below table	-20 °C to +70 °C, DL=100 µW
Shunt capacitance		C_0	5 pF Max.	
Insulation resistance		IR	500 MΩ Min.	
Aging		fa	±5 x 10^{-6}/year Max.	Ta=+25 °C±3 °C, first year
Shock resistance		S. R.	±10 x 10^{-6} Max.	Three drops on a hard board from 750 mm or excitation test with 29400 m/s² x 0.3 ms x 1/2 sine wave x 3 directions

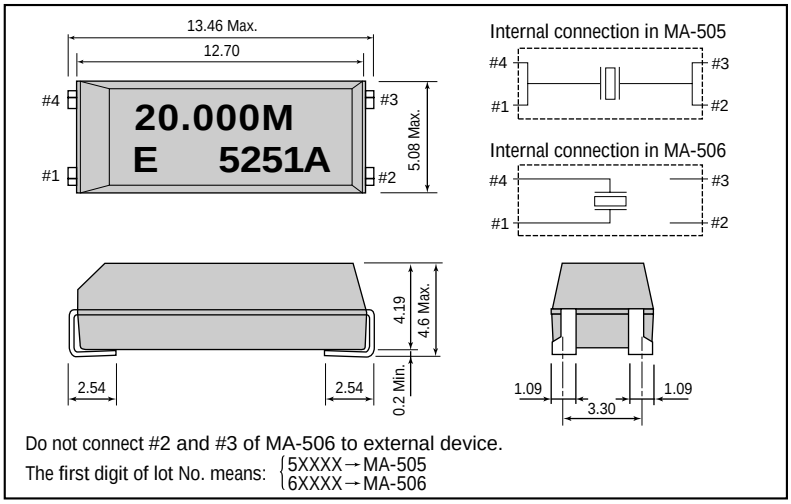
∗1 8.0 MHz < f < 8.2 MHz: Unavailable.
4.0 MHz ≦ f < 5.5MHz : See "Available frequencies from 4.0 MHz to less than 5.5 MHz" on page 22.
∗2 26.000 MHz ≤ f < 30,000 MHz : please contact us for inguiries for 3rd cvertone mode.

Series resistance

Frequency (MHz)	4.0 ≤ f < 5.5	5.5 ≤ f < 6.0	6.0 ≤ f < 10.0	10.0 ≤ f < 12.0	12.0 ≤ f < 16.0	16.0 ≤ f < 30.0	26.0 ≤ f ≤ 36.0	36.0 < f ≤ 64.0
Series resistance (Ω)	150 Ω Max.	100 Ω Max.	80 Ω Max.	60 Ω Max.	50 Ω Max.	40 Ω Max.	100 Ω Max.	80 Ω Max.
Oscillation mode	Fundamental mode						3rd overtone mode	

External dimensions

(Unit: mm)



Recommended soldering pattern

(Unit: mm)

