

MHz RANGE CRYSTAL UNIT



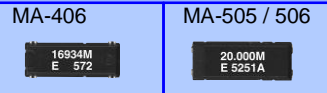
Product Number (please contact us)
 MA-406 : Q22MA4062xxxx00
 MA-505 : Q22MA5052xxxx00
 MA-506 : Q22MA5062xxxx00

MA-406
 MA-505 / MA-506

- Frequency range : 4 MHz to 64 MHz
- Thickness : 11.7 × 4.8 × 3.7 mm ...MA-406
 13.46 × 5.08 × 4.6 mm ...MA-505 / 506
- Overtone order : Fundamental
 3rd overtone (30 MHz to 64 MHz)
- Applications : For Clock of integrated circuit



Actual size



Specifications (characteristics)

| Item | Symbol | Specifications | Conditions / Remarks |
|---|----------------|--|---|
| Nominal frequency range | f_nom | 4.000 MHz to 29.999 MHz | Fundamental *1 |
| | | 30.000 MHz to 64.000 MHz | 3rd overtone *2 |
| Storage temperature | T_stg | -55 °C to +125 °C | Storage as single product. |
| Operating temperature | T_use | -20 °C to +70 °C | Please contact us on availability of -40 °C to +85 °C |
| Level of drive | DL | 10 μW to 100 μW | |
| Frequency tolerance (standard) | f_tol | ±50 × 10 ⁻⁶ | +25 °C |
| Frequency versus temperature characteristics (standard) | f_tem | Under 5.5 MHz : ±50 × 10 ⁻⁶ | -20 °C to +70 °C |
| | | Over 5.5 MHz : ±30 × 10 ⁻⁶ | Please contact us for requirements not listed in this specifications. |
| Load capacitance | CL | Fundamental: 10 pF to ∞ | Please specify |
| | | Overtone: 5 pF to ∞ | |
| Motional resistance (ESR) | R ₁ | As per table below | -20 °C to +70 °C, DL=100 μW |
| Shunt capacitance | C ₀ | 5 pF Max. | |
| Frequency aging | f_age | ±5 × 10 ⁻⁶ / year Max. | +25 °C, First year |

*1 4.0 MHz ≤ f_nom < 5.5 MHz : See "Available frequencies from 4.0 MHz to less than 5.5 MHz". 8.0 MHz < f_nom < 8.2 MHz: Unavailable.
 *2 26.000 MHz ≤ f_nom < 30.000 MHz : please contact us for inquiries for 3rd overtone mode.

Available frequencies from 4.0 MHz to less than 5.5 MHz (MHz)

| | | | | | | | | |
|-------|-------|-------|-------|----------|----------|-------|-------|--------|
| 4.000 | 4.032 | 4.096 | 4.190 | 4.194304 | 4.433619 | 4.500 | 4.800 | 4.9152 |
|-------|-------|-------|-------|----------|----------|-------|-------|--------|

Motional resistance (ESR)

| Frequency (MHz) | 4 ≤ f_nom < 5.5 | 5.5 ≤ f_nom < 6 | 6 ≤ f_nom < 10 | 10 ≤ f_nom < 12 | 12 ≤ f_nom < 16 | 16 ≤ f_nom < 30 | 30 ≤ f_nom ≤ 36 | 36 < f_nom ≤ 64 |
|---------------------|-----------------|-----------------|----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Motional resistance | 150 Ω Max. | 100 Ω Max. | 80 Ω Max. | 60 Ω Max. | 50 Ω Max. | 40 Ω Max. | 100 Ω Max. | 80 Ω Max. |
| Overtone order | Fundamental | | | | | | 3rd overtone | |

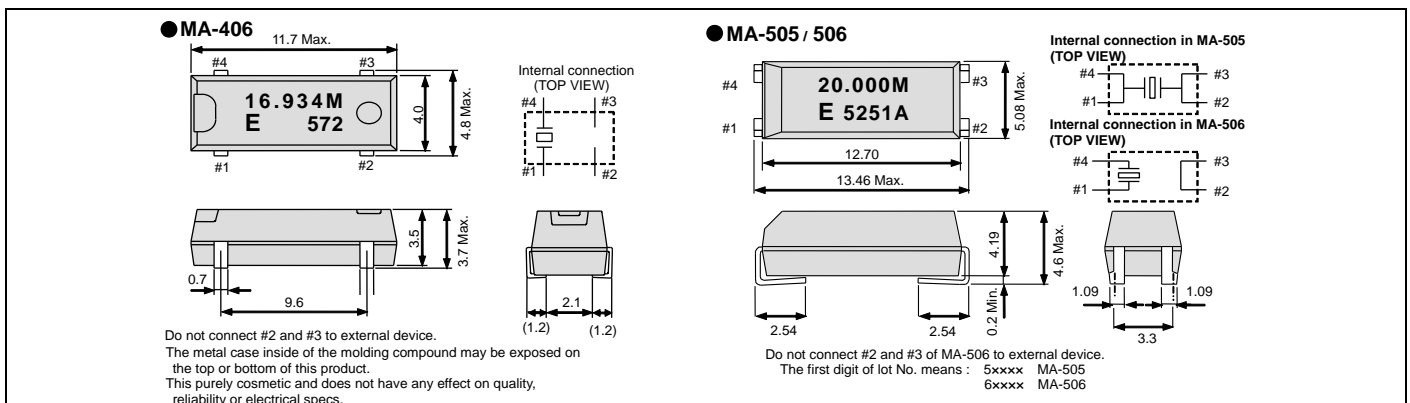
Product name MA-406 24.000000MHz 12.0 +10.0-10.0
 (Standard form) ① ② ③ ④

①Model ②Frequency ③Load capacitance(pF) ④Frequency tolerance(x 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)

