



MHz RANGE CRYSTAL UNIT
For Automotive



Product Number
X1E000341xxxx00

FA-238A

- Nominal frequency range : 12 MHz to 50.0 MHz
- External dimensions : 3.2× 2.5×0.7 mm
- Overtone order : Fundamental
- Applications : Car audio, ECU clock, Clock, Car navigation system, Meter, Remote keyless entry
- Conforms to AEC-Q200



Specifications (characteristics)

Item	Symbol	Specifications	Conditions / Remarks
		For Automotive	
Nominal frequency range	f_nom	12.000 MHz to 50.000 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 +125 °C	
Level of drive	DL	200 μ W Max.	Recommended: 1 μ W to 100 μ W
Frequency tolerance	f_tol	$\pm 15 \times 10^{-6}$ to $\pm 50 \times 10^{-6}$	+25 °C Please contact us for requirements not listed in this specifications.
Frequency versus temperature characteristics	f_tem	$\pm 30 \times 10^{-6}$ / -40 °C to +85 °C $\pm 50 \times 10^{-6}$ / -40 °C to +125 °C	Please contact us for requirements not listed in this specifications.
Load capacitance	CL	7 pF to ∞	Please specify.
Motional resistance (ESR)	R1	As per table below	-40 °C to +125 °C, DL=100 μ W
Frequency aging	f_age	$\pm 5 \times 10^{-6}$ / year Max.	+25 °C, First year

Motional resistance (ESR)

Frequency	Motional resistance
12.0 MHz \leq f_nom \leq 13.0 MHz	120 Ω Max.
13.0 MHz $<$ f_nom $<$ 20.0 MHz	80 Ω Max.
20.0 MHz \leq f_nom $<$ 25.0 MHz	60 Ω Max.
25.0 MHz \leq f_nom \leq 50.0 MHz	50 Ω Max.

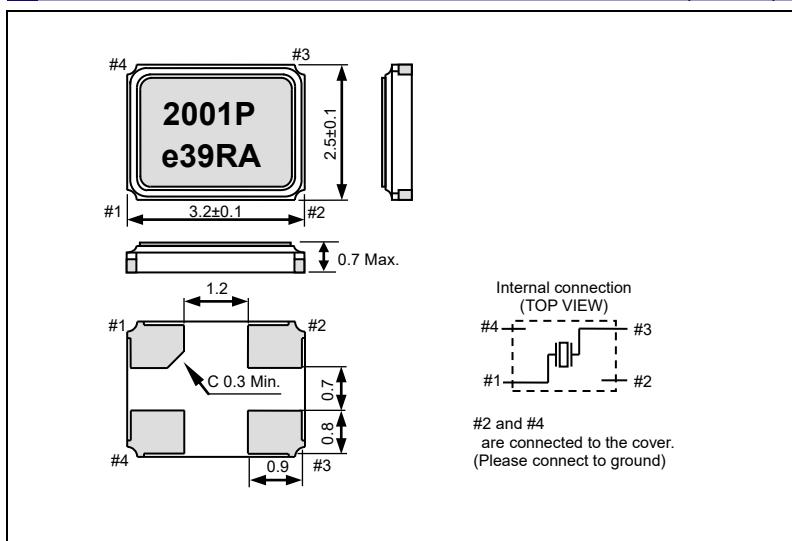
Product name FA-238A 28.636360MHz 18.0 +15.0-15.0
(Standard form) ① ② ③ ④

①Model ②Frequency ③Load capacitance(pF) ④Frequency tolerance($\times 10^{-6}$, +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)

