

**MHz RANGE CRYSTAL UNIT**  
**MINIATURE SIZE LOW PROFILE SMD**



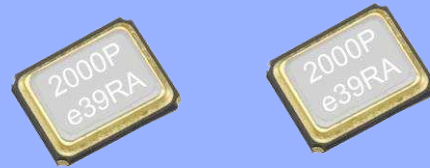
**NEW**



Product Number (please contact us)  
X1E000341xxxx00

**FA - 238A**

- Nominal frequency range : 12 MHz to 60 MHz
- External dimensions : 3.2× 2.5×0.7 mm
- Overtone order : Fundamental
- Applications : Car accessories,  
Body Control, Car Multimedia



Actual size



**Specifications (characteristics)**

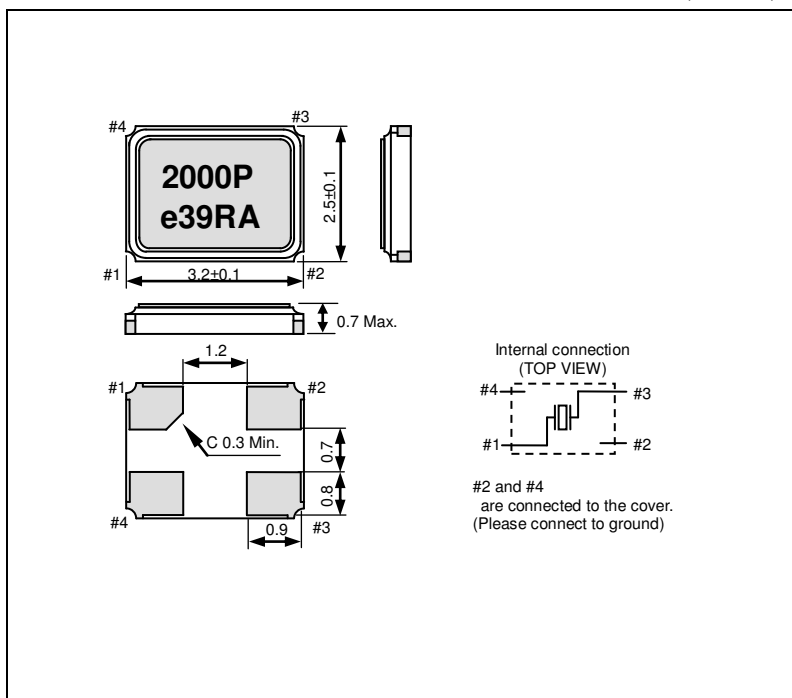
Item	Symbol	Specifications	Conditions / Remarks
		For Automotive	
Nominal frequency range	f_nom	12.000 MHz to 60.000 MHz	Fundamental Please contact us about available frequencies.
Storage temperature range	T_stg	-40 °C to +125 °C	Storage as single product.
Operating temperature range	T_use	-40 °C to +125 °C	
Level of drive	DL	200 μW Max.	Recommended: 1 μW to 100 μW
Frequency tolerance	f_tol	±15 × 10 <sup>-6</sup> to ±50 × 10 <sup>-6</sup>	+25 °C Please contact us for requirements not listed in this specifications.
Frequency versus temperature characteristics	f_tem	±30 × 10 <sup>-6</sup> / -40 °C to +85 °C ±50 × 10 <sup>-6</sup> / -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 μW
Frequency aging	f_age	±5 × 10 <sup>-6</sup> / year Max.	+25 °C, First year

**Motional resistance (ESR)**

Frequency	Motional resistance
12.0 MHz ≤ f_nom ≤ 13.0 MHz	120 Ω Max.
13.0 MHz < f_nom < 20.0 MHz	80 Ω Max.
20.0 MHz ≤ f_nom < 25.0 MHz	60 Ω Max.
25.0 MHz ≤ f_nom ≤ 60.0 MHz	50 Ω Max.

**External dimensions**

(Unit:mm)



**Footprint (Recommended)**

(Unit:mm)

