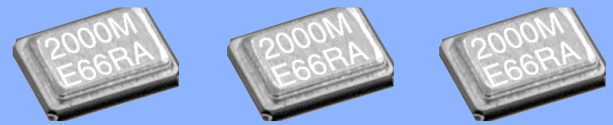


**MHz RANGE CRYSTAL UNIT  
MINIATURE SIZE LOW PROFILE SMD**

**FA - 238V / 238**

- Frequency range : 12 MHz to 50 MHz
- Thickness : 0.6 mm Typ.
- Overtone order : Fundamental
- Applications : Small communications devices
  - Lead(Pb)-free : Lead free completely



Actual size

FA-238V/ 238



**Specifications (characteristics)**

Item	Symbol	Specifications		Remarks
		FA-238V	FA-238	
Nominal frequency range	f	12.000 MHz to 15.999 MHz	16.000 MHz to 50.000 MHz	Fundamental For the out of standard specifications, please contact us for inquiries.
Temperature Range	Storage temperature T <sub>stg</sub>	-40 °C to +125 °C		Stored as bare product after unpacking
	Operating temperature T <sub>use</sub>	-40 °C to +85 °C		Specified equivalent series must be satisfied
Level of drive	DL	10 μW to 100 μW		
Frequency tolerance	f <sub>tol</sub>	±50 × 10 <sup>-6</sup> (standard), (±15 × 10 <sup>-6</sup> to ±50 × 10 <sup>-6</sup> is available)		+25 °C For the out of standard specifications, please contact us for inquiries.
Frequency versus temperature characteristics	f <sub>tem</sub>	±30 × 10 <sup>-6</sup>		-20 °C to +70 °C For the out of standard specifications, please contact us for inquiries.
Load capacitance	CL	7 pF to ∞ (standard:10 pF)		For the out of standard specifications, please contact us for inquiries.
Motional resistance (ESR)	R <sub>1</sub>	As per below table		-40 °C to +85 °C, DL = 100 μW
Frequency aging	f <sub>age</sub>	±5 × 10 <sup>-6</sup> / year Max.		+25 °C, First year

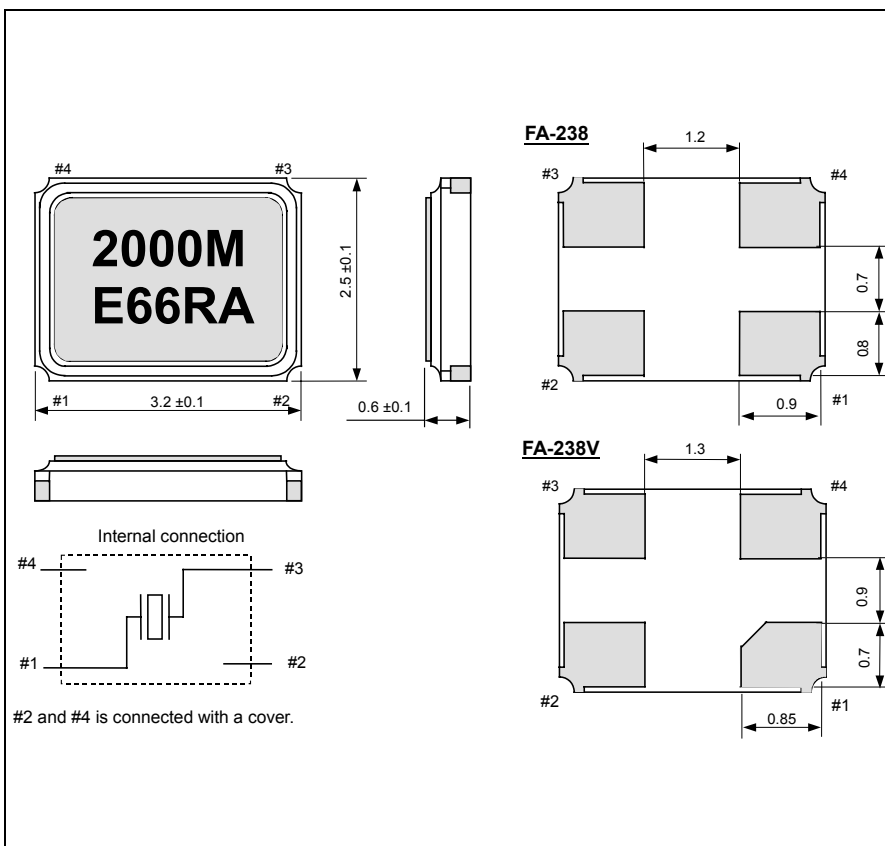
\*1 For over 40MHz, only the standard specification applies.

**Motional resistance (ESR)**

Frequency	Motional resistance
12.0 MHz ≤ f ≤ 13.0 MHz	100 Ω Max.
13.0 MHz < f < 20.0 MHz	80 Ω Max.
20.0 MHz ≤ f < 25.0 MHz	60 Ω Max.
25.0 MHz ≤ f < 30.0 MHz	50 Ω Max.
30.0 MHz ≤ f ≤ 50.0 MHz	40 Ω Max.

**External dimensions**

(Unit:mm)



**Footprint (Recommended)**

(Unit:mm)

