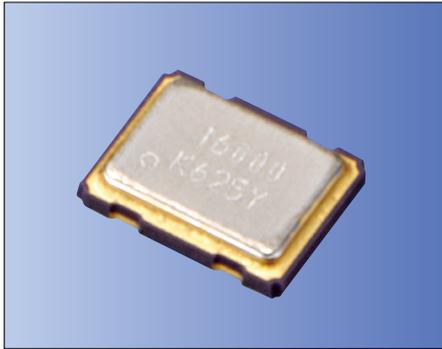




## 3.2 × 2.5mm for Automotive



### How to Order

**CX3225SA 25000 D0 G S S HH**  
 ① ② ③④ ⑤ ⑥ ⑦ ⑧

- ① Series (Type and Size)
- ② Frequency (8,000 to 54,000kHz)
- ③④ Load Capacitance (Unit:pF) Ex.: D1:8.1pF

③ Integer part		④ After the decimal point	
D	8	0	.0
E	9	1	.1
F	10	2	.2
G	11	3	.3
H	12	4	.4
Z	Special suffix	5	.5
		6	.6
		7	.7
		8	.8
		9	.9

Packaging  
(Tape & Reel 3000 pcs./ reel)

### ⑤ Frequency Tolerance

F	±10×10 <sup>-6</sup>
G	±15×10 <sup>-6</sup>
H	±20×10 <sup>-6</sup>
J	±25×10 <sup>-6</sup>
K	±30×10 <sup>-6</sup>
M	±40×10 <sup>-6</sup>
P	±50×10 <sup>-6</sup>
W	All Over
Z	Special suffix



### Features

- Crystal unit for automotive electronics
- Improved solderability
- Improved mounting stability with 4 terminals
- Improved anti-noise performance with GND terminal
- Ceramic package • Miniature and low profile
- Improved rust prevention performance
- Reflow compatible
- Highly reliable solder junction (3000 heat cycles – 40 to +125° C)

### Applications

- Automotive (ECU, High-Speed Automotive Network, TPMS)

### ⑥ Operating Temp. Range ⑦ Frequency Temp. Stability

\*Frequency of 12,000 kHz or higher is supported. Please contact us for frequencies between 8,000 and 10,000 kHz

⑥	⑦	J	L	N	Q	R	S	T
		±15ppm	±20ppm	±25ppm	±30ppm	±40ppm	±50ppm	±100ppm
L	-30 to 85°C	✓	✓	✓	✓	✓	✓	✓
P	-40 to 85°C				✓	✓	✓	✓
R	-40 to 105°C					✓	✓	✓
S	-40 to 125°C						✓	✓
T	-40 to 150°C							✓

⑧ Individual Specification (STD Specification is “HH” .)

### Specifications

Item	Symbol	Specification	Unit	Remarks
Frequency Range	f <sub>nom</sub>	8000 to 54000	kHz	Please contact us for other frequency range.
Overtone Order	OT	Fundamental	—	
Load Capacitance	CL	8	pF	Please contact us for other CL requirements.
Frequency Tolerance	f <sub>tol</sub>	±15	×10 <sup>-6</sup>	25° C ± 3° C
Motional Series Resistance	R1	Table 1	ohm	
Drive Level	DL	10μW(200μW max.)	μ W	
Operating Temp. Range	T <sub>use</sub>	- 40 to +150	° C	
Storage Temp. Range	T <sub>stg</sub>	- 40 to +150	° C	
Frequency Temp. Characteristics	f <sub>tem</sub>	± 150	× 10 <sup>-6</sup>	Freq. deviation from the value at 25° C
Shunt capacitance	C0	3.0max.	pF	

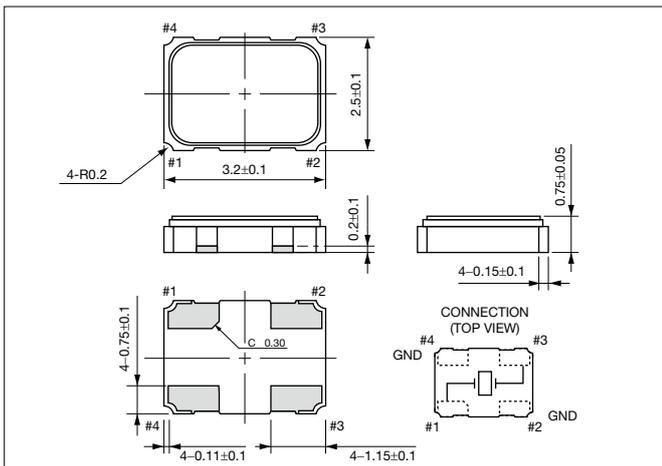
◆Table 1  
Motional Series Resistance ESR (C1)

Frequency (MHz)	ESR (Ohm)
8 ≤ F < 9.8	500
9.8 ≤ F < 12	200
12 ≤ F < 16	120
16 ≤ F < 20	60
20 ≤ F ≤ 54	50

Please contact us for other specifications.

### Dimensions

(Unit: mm)



### Recommended Land Pattern

(Unit: mm)

