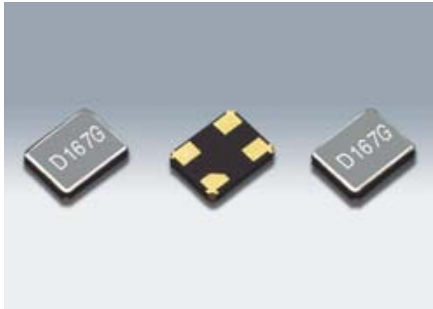


# SMD Crystal Resonators / MHz Band Crystal Resonators

## DSX221S



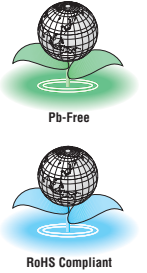
Actual size

### ■ Features

- 2520 size miniature and lightweight SMD crystal resonator with a low profile of 0.5mm.
- High precision and high reliability (Frequency aging specification of  $\pm 1\text{ppm}/1\text{ year}$  or  $\pm 3\text{ppm}/5\text{ year}$  are available for cell phone or wireless communications systems etc.)
- Offers a wide frequency range from a comparatively low 12MHz up to 60MHz.

### ■ Applications

- Telecommunications products like short-range wireless modules and other small devices such as DVC, DSC, PDA, PC.

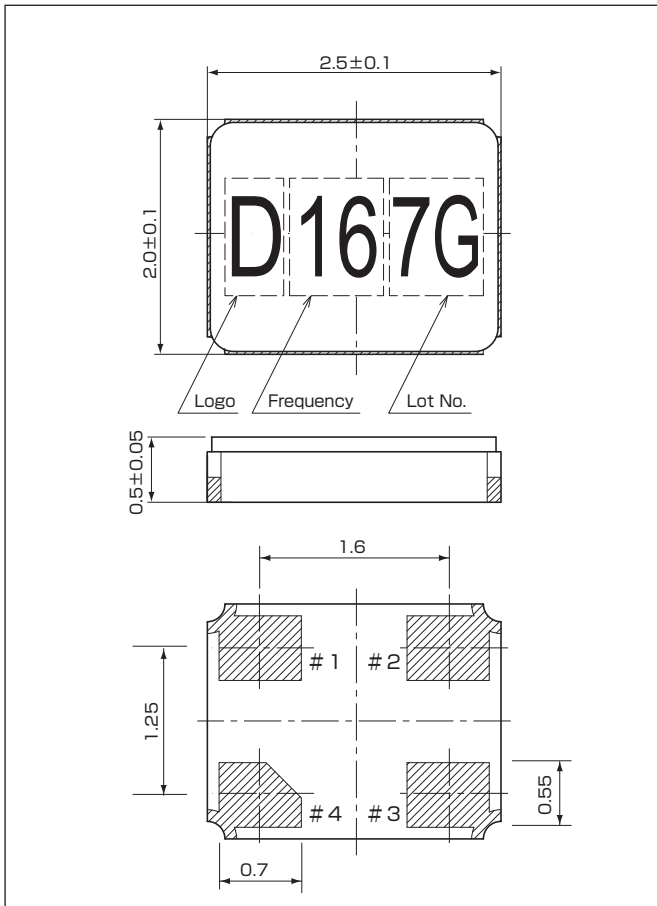


### ■ Standard Specification

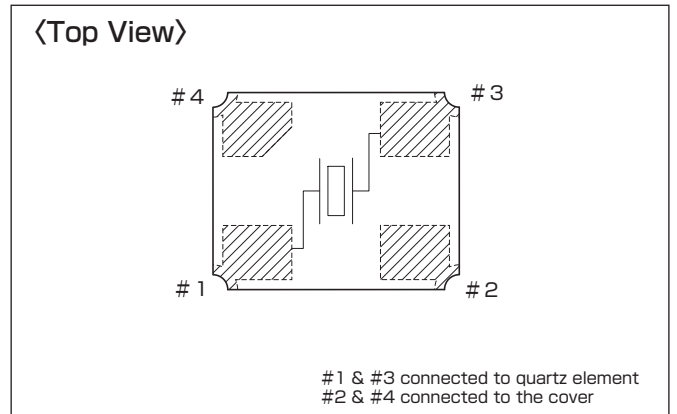
Item	Type	DSX221S				
Frequency Range		12~13MHz	13~16MHz	16~20MHz	20~30MHz	30~60MHz
Overtone Order		Fundamental				
Load Capacitance		Series, 8pF, 10pF, 12pF				
Drive Level		10 $\mu$ W(200 $\mu$ W max.)				
Frequency Tolerance		$\pm 10 \times 10^{-6}$ , $\pm 20 \times 10^{-6}$ , $\pm 30 \times 10^{-6}$ , $\pm 50 \times 10^{-6}$ (at 25°C)				
Series Resistance		200 $\Omega$ max.	100 $\Omega$ max.	80 $\Omega$ max.	60 $\Omega$ max.	40 $\Omega$ max.
Frequency Characteristics over Temperature		$\pm 8 \times 10^{-6}$ , $\pm 20 \times 10^{-6}$ , $\pm 30 \times 10^{-6}$ , $\pm 50 \times 10^{-6}$ / -10~+60°C(Ref. to 25°C)				
		$\pm 12 \times 10^{-6}$ , $\pm 20 \times 10^{-6}$ , $\pm 30 \times 10^{-6}$ , $\pm 50 \times 10^{-6}$ / -20~+70°C(Ref. to 25°C)				
		$\pm 15 \times 10^{-6}$ , $\pm 20 \times 10^{-6}$ , $\pm 30 \times 10^{-6}$ , $\pm 50 \times 10^{-6}$ / -30~+85°C(Ref. to 25°C)				
Storage Temperature Range		-40~+85°C				
Packing Unit		3000pcs./reel( $\phi$ 180)				

Consult our sales representative for other specifications.

### ■ Dimensions[mm]



### ■ Internal Connections



### ■ Recommended Land Pattern

[mm]

