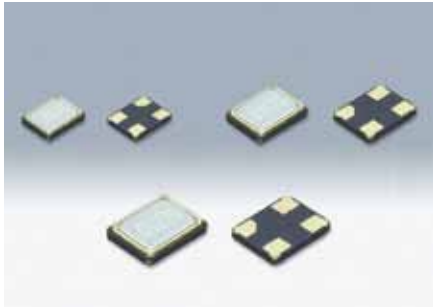


# SMD Crystal Resonators / MHz Band Crystal Resonators

## DSX211SH/DSX221SH/DSX321SH



Actual size DSX211SH □ DSX221SH □  
DSX321SH □

### ■ Features

- Miniature and lightweight SMD crystal resonator  
DSX211SH : 2016 size 0.45mm high  
DSX221SH : 2520 size 0.45mm high  
DSX321SH : 3225 size 0.65mm high
- Excellent heat resistance, High precision and high reliability
- Offers a wide frequency range  
DSX211SH : 24MHz ~ 50MHz  
DSX221SH : 16MHz ~ 54MHz  
DSX321SH : 12MHz ~ 50MHz
- AEC-Q200 Compliant (DSX221SH, DSX321SH)



### ■ Applications

- Telecommunications products, short-range wireless modules and other small devices such as DVC, DSC, PDA, PC.
- Automotive applications such as multimedia device (AEC-Q200 Compliant).

### ■ Standard Specification

Item	Type	DSX211SH		DSX221SH			DSX321SH		
Frequency Range		24 ~ 30MHz	30 ~ 50MHz	16 ~ 24MHz	24 ~ 30MHz	30 ~ 54MHz	12 ~ 20MHz	20 ~ 28MHz	28 ~ 50MHz
Overtone Order		Fundamental							
Load Capacitance		Series, 8pF, 10pF, 12pF							
Drive Level		10μW (100μW max.)			10μW (200μW 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		100 Ωmax.	80 Ωmax.	150 Ωmax.	100 Ωmax.	60 Ωmax.	80 Ωmax.	60 Ωmax.	50 Ωmax.
Frequency Characteristics over Temperature		$\pm 8 \times 10^{-6}, \pm 20 \times 10^{-6}, \pm 30 \times 10^{-6}, \pm 50 \times 10^{-6} / -10 \sim +60^\circ\text{C}$ (Ref. to 25°C) $\pm 12 \times 10^{-6}, \pm 20 \times 10^{-6}, \pm 30 \times 10^{-6}, \pm 50 \times 10^{-6} / -20 \sim +70^\circ\text{C}$ (Ref. to 25°C) $\pm 15 \times 10^{-6}, \pm 20 \times 10^{-6}, \pm 30 \times 10^{-6}, \pm 50 \times 10^{-6} / -30 \sim +85^\circ\text{C}$ (Ref. to 25°C)							
Storage Temperature Range		-40 ~ 85°C							
Packing Unit		3000pcs./reel(φ180)							

Consult our sales representative for other specifications.

### ■ DSX211SH

■ Dimensions [mm]

■ Internal Connections (Top View)

■ Recommended Land Pattern [mm] (Top View)

### ■ DSX221SH

■ Dimensions [mm]

■ Internal Connections (Top View)

■ Recommended Land Pattern [mm] (Top View)

### ■ DSX321SH

■ Dimensions [mm]

■ Internal Connections (Top View)

■ Recommended Land Pattern [mm] (Top View)