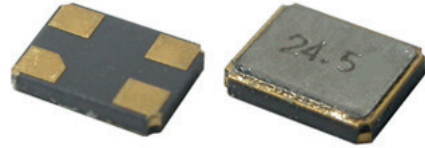


# X25 CERAMIC SURFACE-MOUNT CRYSTAL

## FEATURES

- Ultra Small SMD package
- Tight Stability available
- Automotive Temperature Range
- Applications: Bluetooth, Wireless applications, Modems, IoT, ...

2.5 x 2.0 x 0.60 mm



Item	Symbol	Specification
Frequency Range	Fo	12 MHz ~ 80 MHz
Operation Mode		Fundamental
Operating temperature Range	To	-20° to +70°C (see options)
Frequency Tolerance at 25°C	$\Delta f/F$	$\pm 50$ ppm max. (see options)
Temperature Stability	$\Delta f/F$	$\pm 50$ ppm max. (see options)
Load Capacitance (CL)	CL	series or 6 pF to 50 pF (see options)
Equivalent Series Resistance	ESR	See Table 1
Shunt Capacitance (Co)	Co	3pF Max
Insulation Resistance	Ri	500 M $\Omega$ min. (at 100Vdc)
Drive Level	DL	10 $\mu$ W typical, 100 $\mu$ W max.
Aging	$\Delta f/F$	$\pm 2$ ppm max (at 25°C, first year)
Packing Unit		3000pcs / reel
Soldering Condition		260°C, 10 sec x2 max
		<b>Customer specifications on request</b>

## TABLE 1: Standard ESR

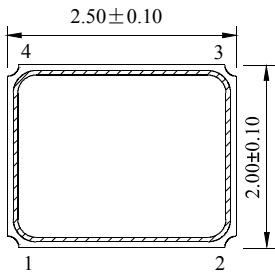
Frequency (MHz)	ESR ( $\Omega$ ) max.
12.0 - 15.99	110
16.0 - 19.9	90
20.0 - 29.9	70
30.0 - 80.0	50

## OPTIONS & ORDERING INFORMATION

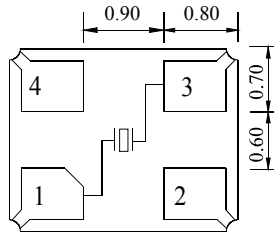
X25-	.....	.....	.....	.....	..... MHz	- .....	
	Freq. Tolerance	Freq. Stability	Operating Temp.	Load Capacitance	Mode	Frequency in MHz	ESR if other than STD
	10 = $\pm 10$ ppm	05 = $\pm 5$ ppm	D = -10° / +60°C	Please specify CL in pF or S for Series	F = Fundamental	Please specify the frequency in MHz	Specify a value in $\Omega$
	15 = $\pm 15$ ppm	10 = $\pm 10$ ppm	E = 0° / +70°C				
	20 = $\pm 20$ ppm	15 = $\pm 15$ ppm	F = -20° / +70°C				
	25 = $\pm 25$ ppm	20 = $\pm 20$ ppm	G = -30° / +75°C				
	30 = $\pm 30$ ppm	25 = $\pm 25$ ppm	H = -30° / +85°C				
	50 = $\pm 50$ ppm	30 = $\pm 30$ ppm	K = -40° / +85°C				
		50 = $\pm 50$ ppm	L = -40° / +105°C				
			M = -40° / +125°C				

\* Note : Not all combinations are possible, please consult us.

## OUTLINE DIMENSIONS



Top View



Recommended Solder Pattern

