

Crystals in ceramic SMD packages

General application

Telecommunications, measuring devices, medical devices

Features

Small size ceramic package designed for SMD, KX7 is hermetically sealed by seam welding, KX5 is hermetically sealed by seam welding or by glas-frit welding (non-magnetic)

Assembly, taping

Crystals in ceramic SMD packages can be delivered in tapes wound on reels, suitable for automatic assembly.



Typical specifications

Type	Ceramic SMD package			
Case	KX7	KX5	KX7, KX5	KX7, KX5
Overtone	1.	1.	3.	5.
Frequency range	8-40 MHz	10-40 MHz	25-130 MHz	75-160 MHz
Freq. adjustment tolerance at 25°C	$\pm 10, \pm 15, \pm 20, \pm 50, \pm 100 \times 10^{-6}$			
Frequency stability	see table 1			
Equivalent series resistance	see table 2			
Aging	$\pm 1, \pm 2, \pm 3$ ppm/year			
Storage temperature range	-40 ... +90 °C			
Load capacitance	series resonance, $C_L = 10 \dots 40$ pF			
Shunt capacitance	7 pF max.			
Drive level	100 μ W			

Differences from standard values and other parameters can be consulted.

Frequency stability in temperature ranges (table 1)

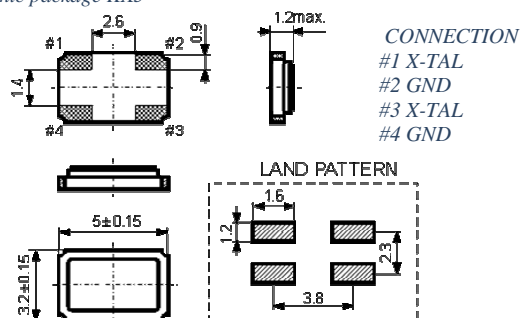
Temperature range [°C]		Frequency stability [ppm]							
		± 5	± 7.5	± 10	± 15	± 20	± 30	± 50	± 100
-10 ... +60	A	✓	✓	✓	✓	✓	✓	✓	✓
-20 ... +60	B		✓	✓	✓	✓	✓	✓	✓
0 ... +70	C		✓	✓	✓	✓	✓	✓	✓
-10 ... +70	D		✓	✓	✓	✓	✓	✓	✓
-20 ... +70	E			✓	✓	✓	✓	✓	✓
-30 ... +60	F			✓	✓	✓	✓	✓	✓
-20 ... +85	G				✓	✓	✓	✓	✓
-30 ... +70	H				✓	✓	✓	✓	✓
-30 ... +85	I					✓	✓	✓	✓
-40 ... +85	J						✓	✓	✓
-40 ... +90	K							✓	✓
-40 ... +105	L								✓

Equivalent series resistance (ESR_{max}) (table 2)

Frequency [MHz]	Overtone	KX7	KX5
8 ... 10	1.	70 Ω	-
10 ... 15	1.	60 Ω	60 Ω
15 ... 22	1.	50 Ω	60 Ω
22 ... 30	1.	40 Ω	50 Ω
30 ... 40	1.	30 Ω	40 Ω
25 ... 30	3.	50 Ω	50 Ω
30 ... 50	3.	50 Ω	50 Ω
50 ... 80	3.	60 Ω	80 Ω
75 ... 160	5.	80 Ω	80 Ω

Outline dimensions [mm]

SMD ceramic package KX5



SMD ceramic package KX7

