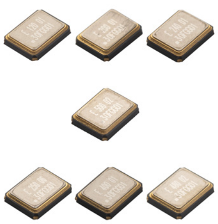
Eaton's quartz crystal resonators

Precision timing quartz solutions for miniaturized electronic applications



Eaton's quartz crystal resonators products are a range of surface-mount crystals suitable for use as time or frequency references in circuits for a broad range of electronic devices.

Product description

Eaton's quartz crystal products (E5X, E3X, E3XA, E2X, E9X, E9XA) are a range of surface-mount crystals suitable for use as time or frequency references in circuits for a broad range of electronic devices. Eaton's quartz crystals are notable for their exceptional piezoelectric properties and compact sizes, making them highly suitable for applications where miniaturization is crucial. Each product offers distinct features and customization in terms of nominal frequency, frequency stability, and tolerance. Eaton's quartz crystal resonators are RoHS compliant and designed to perform reliably in high-temperature applications, meeting lead-free soldering requirements.

Additionally, the E3XA and E9XA products are AEC-Q200, extending their suitability to automotive and high reliability applications.

Features and benefits

- Wide frequency range
  - E5X: 8 MHz to 48 MHz
  - E3X: 12 MHz to 54 MHz
  - E3XA: 12 MHz to 48 MHz
  - E2X: 16 MHz to 54 MHz
  - E9X: 16 MHz to 60 MHz
  - E9XA: 16 MHz to 50 MHz
- Wide operating range
  - E2X/E3X/E5X/E9X: -40 °C to +85 °C
  - E3XA/E9XA: -40 °C to +125 °C
- Compact profile, suitable for miniaturized or space-constrained electronic applications
- Suitable for use with lead-free soldering and high-temperature reflow processes
- Customizable options offer a variety of choices in nominal frequency, frequency stability, and tolerance to suit diverse application needs
- Lead-free and RoHS compliant
- AEC-Q200 options to meet industry standards for automotive and high-reliability electronic applications

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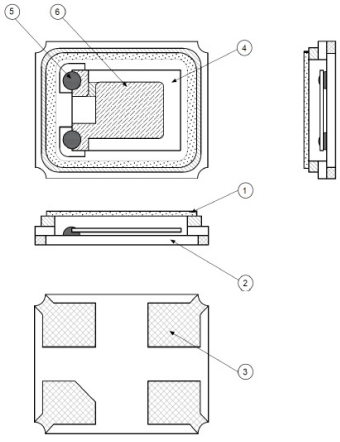
Product specifications

Product number	Size code	Product category	Frequency range	Load capacitance	Frequency tolerance	Frequency stability	Temperature range
E5X	5 = 5032 metric, 2012 imperial	X = crystal	8 MHz - 48 MHz	8, 10, 12 pF or specify	1 = ±10 ppm 7 = ±15 ppm 2 = ±20 ppm 4 = ±30 ppm 5 = ±50 ppm	G = ±15 ppm X = ±20 ppm Z = ±50 ppm	-40 °C to +85 °C
E3X	3 = 3225 metric, 1210 imperial	X = crystal	12 MHz - 54 MHz	8, 10, 12 pF or specify	1 = ±10 ppm 7 = ±15 ppm 2 = ±20 ppm 4 = ±30 ppm 5 = ±50 ppm	G = ±15 ppm X = ±20 ppm Z = ±50 ppm	-40 °C to +85 °C
E3XA (automotive grade)	3 = 3225 metric, 1210 imperial	X = crystal	12 MHz - 48 MHz	8, 10, 12 pF or specify	1 = ±10 ppm 7 = ±15 ppm 2 = ±20 ppm 4 = ±30 ppm 5 = ±50 ppm	Z = ±50 ppm Q = ±100 ppm	-40 °C to +125 °C
E2X	2 = 2520 metric, 1008 imperial	X = crystal	16 MHz - 54 MHz	8, 10, 12 pF or specify	1 = ±10 ppm 7 = ±15 ppm 2 = ±20 ppm 4 = ±30 ppm 5 = ±50 ppm	G = ±15 ppm X = ±20 ppm Z = ±50 ppm	-40 °C to +85 °C
E9X	9 = 2016 metric, 0806 imperial	X = crystal	16 MHz - 60 MHz	8, 10, 12 pF or specify	1 = ±10 ppm 7 = ±15 ppm 2 = ±20 ppm 4 = ±30 ppm 5 = ±50 ppm	G = ±15 ppm X = ±20 ppm Z = ±50 ppm	-40 °C to +85 °C
E9XA (automotive grade)	9 = 2016 metric, 0806 imperial	X = crystal	16 MHz - 50 MHz	8, 10, 12 pF or specify	1 = ±10 ppm 7 = ±15 ppm 2 = ±20 ppm 4 = ±30 ppm 5 = ±50 ppm	Z = ±50 ppm Q = ±100 ppm	-40 °C to +125 °C

Construction



Item number	Component	Description
1	Cap (lid)	Kovar (Fe-Ni-Co)
2	Base (package)	Almina Ceramic (Al_2O_3)
3	Pad (package)	Ni + Au
4	Crystal blank	SiO_2
5	Conductive adhesive	Ag
6	Electrode	Cr+Au (automotive grade)

See data sheets for complete product details.

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Printed in USA
Publication No. ELX1418 BU-ELX22298
April 2024

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