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Mini-Circuits Introduces New Generation of Miniaturized Ceramic Resonator Filters

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Content

Mini-Circuits has announced a major update to its ceramic resonator filter portfolio, introducing a new generation of miniaturized bandpass filters engineered to deliver high-performance filtering in substantially smaller packages.

The new CBP2 Series builds on Mini-Circuits' established ceramic resonator filter designs while reducing package size by approximately 45% to 60% compared with corresponding existing catalog models. The redesigned filters also improve key RF performance parameters, including insertion loss, close-in rejection, out-of-band attenuation, and selectivity.

As RF systems become increasingly compact and complex, engineers face growing pressure to reduce component size while maintaining the signal integrity and interference rejection required by demanding applications. Mini-Circuits developed a new series to address both requirements, enabling designers to conserve valuable PCB and system space without sacrificing filter performance.

Advances in filter design, tuning, and manufacturing technology allow the new designs to use available package volume more efficiently while improving energy transfer through the filter. The result is lower passband signal loss and tighter control of filter characteristics. Enhanced manufacturing processes and production controls also improve unit-to-unit consistency.

The first products in the new family cover applications from approximately 1.3 to 2.6 GHz.

The **CBP2-2250CC+**, covering a 2000 to 2500 MHz passband, offers a typical insertion loss of 1.2 dB and a typical return loss of 16 dB. Measuring only $0.6 \times 0.5 \times 0.12$ in., it replaces the CBP-2250A+, which measures $1.04 \times 0.55 \times 0.185$ in. Applications include defense and military systems, aviation, and test and measurement.

The **CBP2-2400CC+** covers 2200 to 2600 MHz with a typical insertion loss of 1.1 dB and a typical return loss of 16 dB. Its $0.6 \times 0.5 \times 0.12$ in. package provides a significantly smaller alternative to the existing CBP-2400A+ for applications such as test and measurement, Bluetooth, and LAN systems.

For applications requiring high rejection, the **CBP2-1350CR+** covers 1300 to 1400 MHz and provides a typical insertion loss of 1.2 dB with 55 dB typical rejection. The new $0.39 \times 0.47 \times 0.11$ in. package is dramatically smaller than the $0.75 \times 0.75 \times 0.21$ in. package of the CBP-1350C+. Target applications include aeronautical radio navigation and defense systems.

Additional models include the **CBP2-1630CS+**, covering 1500 to 1760 MHz with 1.2 dB typical

insertion loss and 50 dB typical rejection, and the **CBP2-1820CS+**, covering 1680 to 1960 MHz with 1.3 dB typical insertion loss and 50 dB typical rejection. Both models measure just $0.58 \times 0.45 \times 0.12$ in., compared with $1.05 \times 0.875 \times 0.24$ in. for the corresponding previous-generation designs.

The initial products in the CBP2 series are available in the Mini-Circuits catalog, with additional models scheduled for release during Q3 and Q4 2026. The current released products are available here: <https://lp.minicircuits.com/miniature-ceramic-resonator-filters>.

The new ceramic resonator filter family expands Mini-Circuits' ability to support RF system designers seeking to reduce system size while maintaining the low loss, high rejection, and sharp selectivity required in modern communications, aerospace and defense, and test applications.

Supporting Links:

<https://lp.minicircuits.com/miniature-ceramic-resonator-filters>

Tags:

Mobile Communications, Passive Components, RF

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About Us:

Heading : About Mini-Circuits

Mini-Circuits makes the building blocks that shape the wireless world. From communications networks and critical national security systems to life-saving diagnostic imaging, quantum computing and more, we support the world's most innovative companies in building a faster, smarter, more connected future with the power of RF, microwave and millimeter wave technology. Headquartered in Brooklyn, New York with design, manufacturing and sales locations around the world, we're a diverse, rapid-growth corporation that hasn't outgrown what it means to treat our team members, customers, suppliers and partners like family. 20,000+ customers prefer Mini-Circuits for the demanding quality standards, design and manufacturing capabilities, sales and applications support, and supply chain stability that have earned the industry's trust since 1968.