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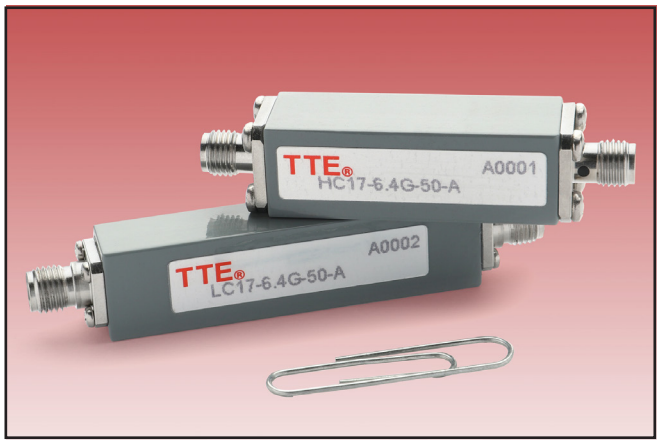

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TTE Filters Introduces Two New Series for High Frequency Testing Applications

LC17 & HC17 Filters Offer 'Brick Wall' Performance to 7GHz for Semiconductor and IC Testing

Gowanda, N.Y. (USA) - TTE Filters, a US-based manufacturer of high-reliability RF filters and microwave filters for demanding communication and signal processing applications, introduces two new filter series for high frequency testing applications. The new filters – LC17 and HC17 – provide brick wall characteristics and performance to 7GHz making them ideal for Audio-Digital-Conversion and Digital-Audio-Conversion (ADC/DAC) test set ups. Such signal conditioning testing is especially important for semiconductor chips and integrated circuits where testing frequencies continue to trend higher and higher (now in the GHz range). Relevant markets include commercial, industrial, medical, military/defense and test & measurement.

These new filters will be featured at the 2021 International Microwave Symposium being held in Atlanta on June 8-10. Please stop by TTE booth #1129 to learn more. TTE is an affiliate of Gowanda Components Group.

TTE's new filters leverage the steep roll-off response of Chebyshev topology in 17th order lowpass (LC) and highpass (HC) designs to address the testing industry's need for filters that can operate at GHz frequencies – much higher than traditional brick wall anti-aliasing elliptical function filters which are typically limited to less than 500MHz. These new LC17 and HC17 filters, while not true brick wall filters, are designed in a way that their steep roll-offs closely resemble brick wall filters. Moreover, since TTE's new filters are based on Chebyshev topology they have a slight ripple in the passband and no ripple in the stopband, unlike elliptical designs which have ripple in both the passband and stopband. Thus TTE's filters provide desirable stopband performance at high frequency with limited passband ripple.

The passband to stopband ratio for the LC17 filter is -50dBc at 1.19 f_o and -60dBc at 1.27 f_o. That ratio for the HC17 filter is -50dBc at 0.84 f_o and -60dBc at 0.78 f_o. The frequency range for both filters is 1MHz to 7GHz. Standard or custom cases are available. The table below provides an overview of both series.

Overview of TTE's "Brick Wall" Filters

Characteristic	LC17 Filter Series	HC17 Filter Series
Description	Chebyshev Lowpass Filter	Chebyshev Highpass Filter
Frequency Range	1MHz to 7GHz	1MHz to 7GHz
Passband to Stopband	-50dBc at 1.19 f_o -60dBc at 1.27 f_o	-50dBc at 0.84 f_o -60dBc at 0.78 f_o
Performance Comparison	"Brick Wall" performance similar to Anti-aliasing Elliptical Function Filter	"Brick Wall" performance similar to Anti-aliasing Elliptical Function Filter
Cases Available	Standard or Custom	Standard or Custom

A Summary Datasheet for TTE's LC and HC series (both combined into one PDF) provides additional information about the new LC17 and HC17 filters. Complete technical information is available at the company's website at, respectively, the Lowpass Chebyshev (LC) page and the Highpass Chebyshev (HC) page.

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Please note that TTE offers low Total Harmonic Distortion (THD) versions of its filters – including the LC17T and HC17T – to improve ADC/DAC testing by reducing the harmonics inherently present in signal generators. To request a filter with low THD please specify the "T" option when ordering. When specified, the "T" option refers to a filter designed for optimum THD: -80dBc minimum, -96dBc typical and greater than -115dBc in some instances. Refer to TTE's Low THD Filters table for more information.

A technical discussion about brick wall filters – and the LC17 and HC17 series – was recently issued by TTE (an affiliate of GCG) via the company's Technical Tip entitled "The Need for High Frequency Brick Wall Filters".

For technical assistance, part pricing, application-specific variations or other information please contact TTE at +1-716-532-2234 or sales@tte.com.

Helpful Links:

- **Summary Datasheet**
  - Datasheets for LC & HC (in one PDF): http://tte.com/wp-content/uploads/Summary_Datasheet_LC_HC.pdf
- **LC17 Series** (a member of the Lowpass Chebyshev series)
  - Product Information: http://tte.com/products/passive-filters/lowpass-filters/chebyshev/
  - Datasheet: http://tte.com/wp-content/uploads/TTE_LC_Datasheet_RevB.pdf
- **HC17 Series** (a member of the Highpass Chebyshev series)
  - Product Information: http://tte.com/products/passive-filters/highpass-filters/chebyshev/
  - Datasheet: http://tte.com/wp-content/uploads/TTE_HC_Datasheet_RevB.pdf
- **Low THD Filters**
  - Summary Table: http://tte.com/search-for-low-thd-filters/
- **Brick Wall Technical Tip** - "*The Need for High Frequency Brick Wall Filters*"
  - https://www.gowandacomponentsgroup.com/wp-content/uploads/2020/12/Technical-Tip-Q4-2020.pdf

Note: if datasheet links do not work correctly (due to updating of PDF files) please use the Product Information links to navigate to current PDFs.

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