

HC Series



Chebyshev

Frequency Range from 100 Hz to 7 GHz

Application-Specific Designs

SERIES NUMBER	NUMBER OF POLES	INSERTION LOSS AT 5.0 x f _{-3dBc} dB MAXIMUM	ATTENUATION dBc MINIMUM	STOPBAND FREQUENCY
FREQUENCY -3dBc - 100 Hz to 7 GHz - specify any f within that range				
HC3	3	0.50	-40	0.25 x f _{-3dBc}
HC5	5	0.50	-50	0.40 x f _{-3dBc}
HC7	7	0.50	-60	0.50 x f _{-3dBc}
HC9	9	0.50	-50	0.62 x f _{-3dBc}
HC11	11	0.50	-60	0.71 x f _{-3dBc}
HC13	13	0.50	-60	0.75 x f _{-3dBc}
HC15	15	0.50	-60	0.77 x f _{-3dBc}
NEW HC17	17	0.50	-60	0.78 x f _{-3dBc}

Note: TTE's products are made in the USA. Application-specific designs are made to order. Typical delivery is 2 weeks. Expedited lead time of 3-5 days is available on many products.

For RoHS compliant, add "R" to part number. Example: HC11R-50M-50-65A

TTE designates a component RoHS-compliant by adding "R" (RoHS) within the part number.

These RoHS components meet the ≤ 0.10% lead requirement and they are compatible with 260°C soldering processes.

NOTES:

- Operating Temperature Range: 0°C to +70°C
- Number of Poles: 3, 5, 7, 9, 11, 13, 15 or 17
- VSWR: 1.5:1 Typical
- Input Power: 20 mW
- Case Type: Refer to **Case Selection Guide**
- Case Options: PCB, SMT, BNC or SMA
- Normalized Response: Refer to **Graphs**
- Product Info: Refer to **HC Series**

TERMINATIONS:

50Ω	100 MHz - 500 MHz
50Ω or 75Ω	300 kHz - 100MHz
1kΩ - 50Ω	10 kHz - 300 kHz
10 kΩ - 1 kΩ	100 Hz - 10 kHz

STOPBAND FREQUENCY CALCULATIONS:

Using part number HC11-50M-50-65A, we know, that the filter is an 11 pole Chebyshev highpass filter. Scroll down to series number HC11. Moving to the right we find the stopband specification listed as -60dBc minimum at 0.71 x f_{-3dBc}. Thus, the -60dBc frequency is at 35.5 MHz (0.71 x 50 MHz).

PART NUMBER DERIVATION:

HC 11	*(T)	** (R)	-50M	-50	-65A
1	2	3	4	5	6 7

- 1) Series, HC
- 2) Number of poles, 11
- *3) The "T" option specifies a filter with low THD for ADC/DAC testing. When selected the minimum THD is >-80dBc, -96dBc typical. Testing requires a bandpass filter.
- **4) "R" RoHS compliant. Allow for longer lead time.
- 5) f_{-3dBc}
- 6) Terminations
- 7) Case selection from the case selection guide. "T" option cases are larger than standard.