

**FQ20107-1**      Cavity filter, Q circuit, high Q, one 7" cavity, 108-138 MHz

Also referred as: FQ20107\*1

- Aluminum cylinder with brass and copper coaxial inner conductor
- Silver plating and chromate conversion coating limit corrosion and enhance performance
- Temperature compensated for extremely low frequency drift

These filters employ the Sinclair-developed Q-circuit design. The operation of the Q-circuit is such that it inverts the characteristics of a standard notch filter, and uses the narrow resonance notch to create the circuit passband while allowing the lower Q elements, such as the loop and its reactance adjustment, to produce the relatively broad isolation notch. In this manner, optimum use of the cavity components is realized, resulting in close pass/reject spacing, low insertion loss, and broad isolation notch. The filters can be tuned for either high or low pass condition, with minimum frequency separations.

The Q-circuit filter combines the features of a bandpass and reject filter. This can be particularly useful when a close frequency might interfere with the desired frequency. For this reason, both the pass and reject frequencies and required insertion loss must be specified when ordering Q-circuit filters. The insertion loss, pass-to-reject frequency spacing and notch depth are all field adjustable.

The FQ series Q-circuit filters are designed to:

- Suppress sideband noise of a single co-located transmitter on a closely-spaced receiver.
- Protect a closely-spaced receiver from front-end overload by the carrier of co-located transmitter.
- Suppress IM generation in one transmitter by protecting it further from an incoming carrier of a closely-spaced co-located transmitter.
- Generally, "Protect One from One" at close frequency spacings.



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#### Electrical Specifications

Frequency Range	MHz	108 to 138
Input VSWR (max)		1.5:1
Impedance	Ω	50
Average Power Input (max)	W	350
Input Connectors		N-Female
Output Connectors		N-Female

#### Mechanical Specifications

Width	mm (in)	178 (7)
Depth	mm (in)	178 (7)
Length/ Height	mm (in)	1111 (43.75)
Finish		chromate conversion
Weight	kg (lbs)	6.81 (15)
Actual shipping weight	kg (lbs)	9.08 (20)
Shipping dimensions	mm (in)	1168x229x229 (46x9x9)

#### Environmental Specifications

Temperature range	°C (°F)	-40 to +60 (-40 to +140)
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