

MONOLITHIC CRYSTAL FILTERS

Theory & Terms

NOMINAL FREQUENCY

The Nominal Frequency of a filter is the centre frequency (F_0) or carrier frequency (F_0) in SSB filters.

PASS BANDWIDTH

Stated in kHz, the Pass Bandwidth refers to the frequency bands where attenuation is equal to or lower than the specified attenuation (in dB)

STOP BANDWIDTH

In kHz, the Stop Bandwidth is where attenuations are equal to or larger than the specified figures (dB)

INSERTION LOSS

Insertion Loss is the loss (dB) defined by the logarithmic ratio of power transmitted to load before and after insertion of the filter.

RIPPLE

Ripple is the difference (dB) between maximum and minimum attenuation in the passband.

Characteristics of Crystal Filters



Attenuation guaranteed (dB) at the specified frequency range.

SPURIOUS

Spurious refers to the attenuation (dB) caused by extraordinary response in the stopband.

GROUP DELAY DISTORTION

The difference between maximum and minimum group delay with the passband is referred to as Group Delay Distortion.

TERMINATING IMPEDANCE

Refers to either of the impedances presented to the filter by the source or by the load and describes the resistive portion (R_i) and the parallel capacitive portion (C_i) including stray capacitance.



Information Required for Ordering Custom Filters

Type of Filter		
Holder Type		
Nominal Frequency	MHz	
Number of Poles		
Passband Characteristics	dB	±kHz
Stopband Characteristics	dB	±kHz
Ripple	dB max.	
Insertion Loss	dB max.	
Guaranteed Attenuation	dB	±kHz (fo)
Terminating Impedance	Ohms//	pF
Test Fixture (Test Circuit)		
Operating Temp. Range	°C, to	°C