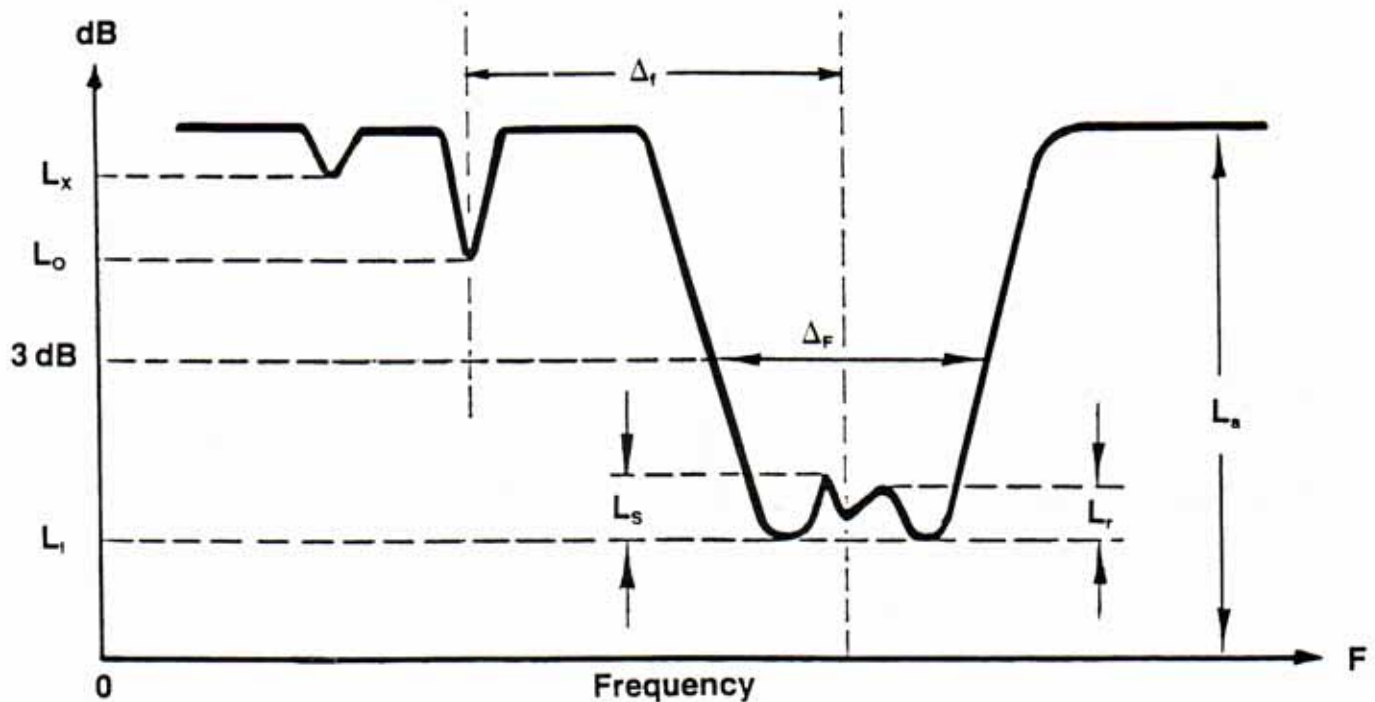


DEFINITION OF YIG FILTER PASSBAND PARAMETERS



L_i = Insertion Loss
 L_o = Off-Resonance Spurious Mode 210
 L_s = Passband Spurious
 L_r = Passband Ripple

L_a = Off-Resonance Isolation
 Δ_F = 3 dB Bandwidth
 L_x = Off-Resonance Other Spurious Response
 Δ_r = 210 Spurious Mode Separation

Off-Resonance Isolation (L_a). The off-band rejection measured at the insertion loss of the filter at the frequency-of-interest a number of bandwidths away from the main passband response. This measurement is referenced in dB from the top of the main passband to the frequency being measured.

Limiting Level. YIG and GaYIG filters exhibit two types of RF power limiting levels. The first is low-level limiting at approximately -8 dBm to -25 dBm and occurs below 3.4 GHz. The second occurs above 3.4 GHz at a power limiting level of -25 dBm.

Selectivity. The rate at which the insertion loss varies along the slope edges of the passband, normally specified at the 3 dB point (ΔF). The slope change per stage (one YIG sphere) is 6 dB octave. Therefore, a two-stage (two YIG spheres) YIG filter will have 12 dB octave slope and a four-stage (four YIG spheres) YIG filter will exhibit 24 dB octave.

Coil Resistance at $+25^\circ\text{C}$. The YIG filter tuning coil DC resistance measured at room temperature.

Coil Inductance at $+25^\circ\text{C}$. The total tuning coil inductance of the YIG filter measured at room temperature.

Sensitivity. The frequency range divided by that incremental differential current required to tune this frequency range yields the sensitivity in MHz per mA.

Deviation from Linear. The maximum deviation of the actual YIG filter resonant frequency versus coil current

from the best fit straight line drawn through the curve which is obtained when turning over the entire specified frequency range.

Hysteresis. When the YIG filter is tuned across the operating frequency in both directions, the frequency measured at the center of the band each time it appears to be different. That frequency change is termed as the hysteresis of the YIG filter.

Frequency Deviation of Temperature Range 0°C to 60°C . The YIG filter passband response will drift either plus or minus from the set frequency with environmental external temperature changes. The magnitude of the filter's frequency drift is dependent on the magnitude of the external temperature changes.

Time Constant (Switching Speed). The delay between the application of a fast current pulse to the YIG filter tuning coil and the output response of the frequency of the filter.

Resistance at $+25^\circ\text{C}$. The DC resistance of the heater measured at room temperature.

Power. The maximum DC power required to operate efficiently the YIG heater at extreme environmental cold temperature.

Current Maximum at $+25^\circ\text{C}$ (Surge). The instantaneous maximum current the heater will draw at the time it is turned on.

Current Maximum at $+25^\circ\text{C}$ (Steady-State). The maximum current the YIG heater will draw when the unit is exposed to the extreme cold temperatures.