OSCILENT CORPORATION

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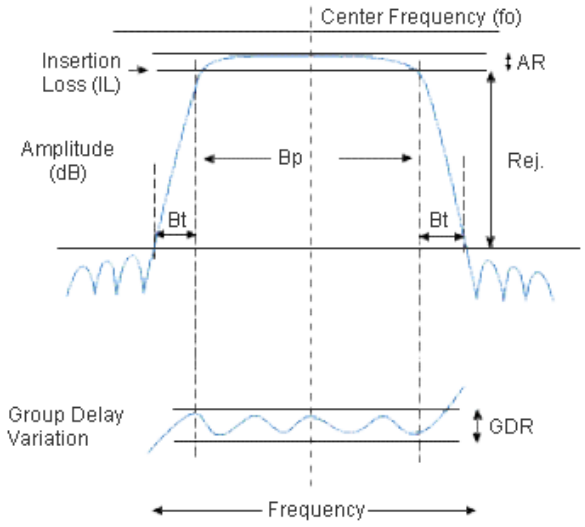
Build a Custom SAW Filter Worksheet

Instructions: Complete this worksheet with known information and return it by Fax or by Email.
Fax: (949) 252-0599 Email: sales@oscilent.com. For assistance, please call (949) 252-0522.



1. Fo _____
2. Bp _____
3. AR _____
4. GDR _____
5. Bt _____
6. Rej. _____
7. IL _____
8. Package _____

\- Other Info

Definitions

1. Center Frequency (Fo)

2. Passband Width (Bp)
Simply stated, the Passband Width will pass a signal occupying a specific frequency band, and reject others falling outside the band. From a SAW Filter design perspective, the first parameter to consider is the Fractional Bandwidth (Bp/Fo) because of the influence on the substrate material to be used in the design. The substrate material influences many parameters, most importantly the Temperature Stability specifications.

3. Amplitude Ripple over Passband Width (AR)
The Amplitude Ripple is a measure (dB) of the variation, or differential value, of attenuation in the passband of a filter, typically a SAW Filter will be specified as having a Typical and Maximum allowable value.

4. Group Delay Variation over Passband Width (GDR)
From a mathematical perspective measured in time, the Group Delay of a SAW Filter is the first differential value of time for phase frequency of phase changing (variation) in pass band. Otherwise, we can reference the Group Delay as the slope of the Phase vs. Frequency Curve. In simple terms, the Group Delay represents the time it takes for the signal to pass through the SAW Filter.

5. Transition Bandwidth (Bt)
Otherwise referred to as Skirts, the area between the Stop Band and the Passband found on both sides of the Passband.

6. Rejection (REJ.)
All ranges of the SAW Filter not including the Passband. The Rejection can also be referred to as the Rejection Range, or Stop Band. We can refer to this as the range in which the Relative Attenuation is larger than the specified Rejection side. With proper material selection and design, Rejection of 50dB, or greater, is possible within a wide selection of fractional bandwidths and shape factors.

7. Insertion Loss (IL)
Advances in SAW Filter design techniques routinely allow for a design incorporating a specification of under 10dB Insertion Loss, however, the minimum attainable Insertion Loss is generally influenced by the Fractional Bandwidth and the influences of this ratio on the applicable substrate material. The Insertion Loss value will generally increase when approaching the fractional bandwidth limit of a substrate material. For instance, a Fractional Bandwidth value of 8% will generally produce lower Insertion Loss than a Fractional Bandwidth value of 30% using the same substrate material.

8. Package
Factors affecting the size of the package used in SAW Filter design include parameters associated with Center Frequency, Bandwidth, and Shape Factor, among other minor considerations. For instance, lower Frequencies require larger substrate, thereby increasing the size of the packages available to the designer. Consequently, an equally important challenge of package size reduction is always considered by Oscilent Design Engineers in an attempt to meet the desired parameters in the smallest package possible. In selecting a package, we recommend stating general preferences. Without this input, Oscilent will design using the most cost effective approach balancing parameter requirements with cost and manufacturability.

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