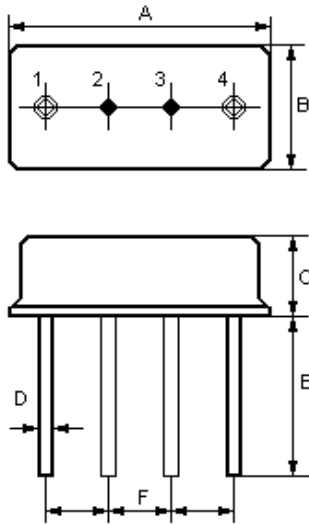


The **NDF110N** is a low-loss, compact, and economical surface-acoustic-wave (SAW) filter in a low-profile metal **F-11** case with center frequency 110.592 MHz.

**1. Package Dimension (F-11)**



Pin	Configuration
1	Input / Output
4	Output / Input
2/3	Case Ground

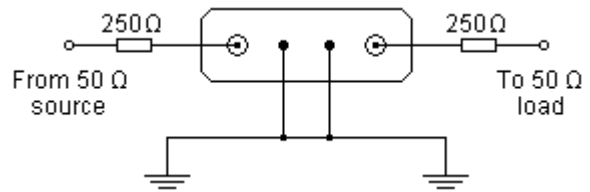
Dimensions	Data (unit: mm)
A	11.0±0.3
B	4.5±0.3
C	3.2±0.3
D	0.45±0.1
E	5.0±0.5
F	2.54±0.2

**2. Marking**

**NDF110N**

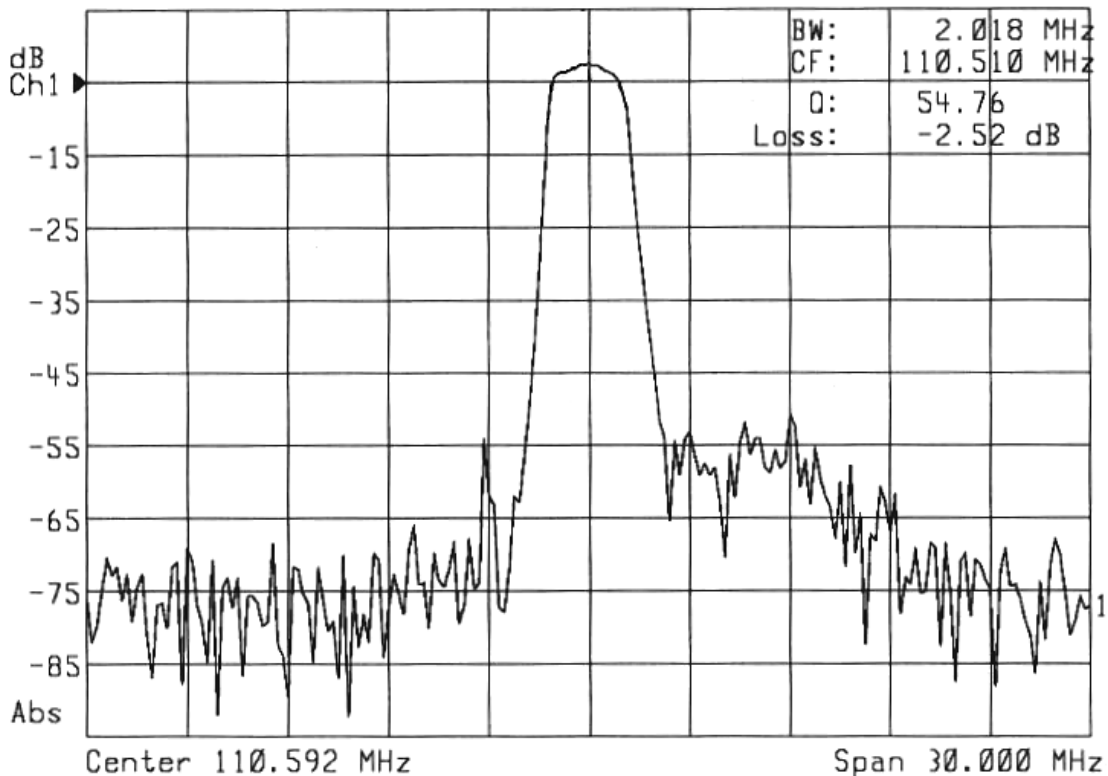
Color: Black or Blue

**3. Test Circuit**



**4. Typical Frequency Response**

▶1: Transmission /M Log Mag 10.0 dB/ Ref -5.00 dB  
 ▶2: Off



**5. Performance**
**5-1. Maximum Ratings**

Rating		Value
RF Power Dissipation	$P$	0 dBm
DC Voltage	$V_{DC}$	10 V
AC Voltage	$V_{PP}$	10V 50Hz/60Hz
Storage Temperature Range	$T_{stg}$	-40 to +85 °C
Operating Temperature Range	$T_A$	-20 to +60 °C

**5-2. Electronic Characteristics**

Characteristic		Minimum	Typical	Maximum	Unit
Nominal Center Frequency	$f_C$	--	110.592	--	MHz
User Signal Band	$BW$	--	$f_C \pm 576$	--	kHz
Insertion Loss	$IL$	--	3.5	4.5	dB
Relative Attenuation (relative to $IL$ )	$\alpha_{rel}$				
1) $f_C - 5.0$ MHz		50	62	--	dB
2) $f_C - 3.5$ MHz		45	60	--	
3) $f_C \pm 2.0$ MHz		30	40	--	
4) $f_C + 3.5$ MHz		40	52	--	
5) $f_C + 5.0$ MHz		40	52	--	
Input / Output Impedance (Nominal)		300Ω // 1.2μH			

**ⓘ CAUTION: Electrostatic Sensitive Device. Observe precautions for handling!**

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1. The frequency  $f_C$  is defined as the midpoint between the 3dB frequencies.
2. Unless noted otherwise, all measurements are made with the filter installed in the specified test fixture that is connected to a 50 Ω test system with  $VSWR \leq 1.2:1$ . The test fixture L and C are adjusted for minimum insertion loss at the filter center frequency,  $f_C$ . Note that insertion loss, bandwidth, and passband shape are dependent on the impedance matching component values and quality.
3. Unless noted otherwise, specifications apply over the entire specified operating temperature range.
4. The specifications of this device are based on the test circuit shown above and subject to change or obsolescence without notice.
5. All equipment designs utilizing this product must be approved by the appropriate government agency prior to manufacture or sale.
6. Our liability is only assumed for the Surface Acoustic Wave (SAW) component(s) per se, not for applications, processes and circuits implemented within components or assemblies.
7. For questions on technology, prices and delivery please contact our sales offices or e-mail [winnsky@winnsky.com](mailto:winnsky@winnsky.com)