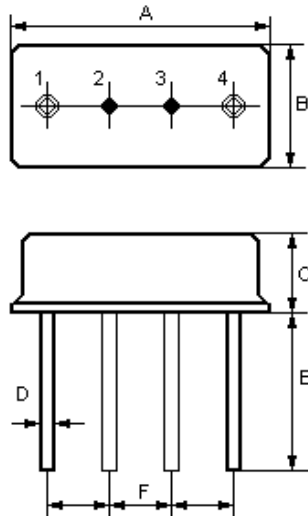


This specification covers the characteristics and specifications of SAW filters for parts ACTF139/139.0/F11, ACTF147/147.0/F11, ACTF155/155.0F11, ACTF163/163.0/F11, ACTF171/ 171.0/F11 and ACTF280/280.0/F11 which are designed for use in pager applications.

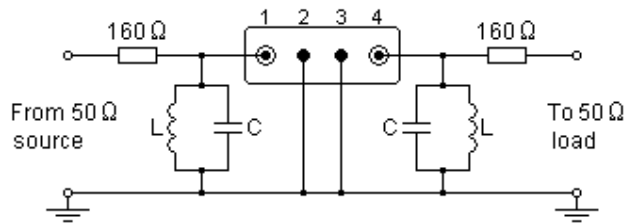
### 1.Package Dimension (F-11)



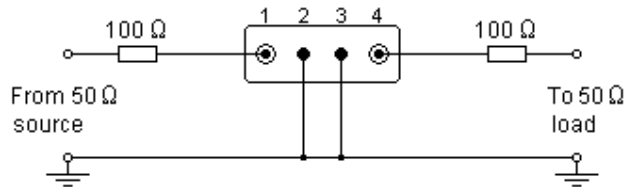
Pin	Configuration
1	Terminal 1
4	Terminal 2
2/3	Case Ground

Dimensions	Data (unit: mm)
A	11.0±0.3
B	4.5±0.3
C	3.1±0.1
D	0.45±0.2
E	6.0±0.5
F	2.54±0.2

### 2.Test Circuits



**F139**  
**F147**  
**F155**  
**F163**  
**F171**



**F280**

In keeping with our ongoing policy of product evolution and improvement, the above specification is subject to change without notice.

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### 3.Performance

#### 3-1.Maximum Ratings

Rating	Value
DC Voltage $V_{DC}$	+15 V Max.
AC Voltage $V_{PP}$	10V50Hz/60Hz
Operation temperature	-4 °C to +85 °C
Storage temperature	-45 °C to +85 °C
RF Power Dissipation	0 dBm

#### 3-2.Electrical characteristics

Operating temperature Range: -10 °C to +50 °C

Part number	F139	F147	F155	F163	F171	Unit
<b>Nominal centre frequency</b>	139.0	147.0	155.0	163.0	171.0	MHz
<b>Insertion Loss</b>						
$f_c$ .100.0MHz to $f_c$ .46.8MHz	50 min.	50 min.	50 min.	50 min.	50 min.	dB
$f_c$ .46.8MHz to $f_c$ -38.8MHz	50 min.	50 min.	50 min.	50 min.	50 min.	dB
$f_c \pm 4.0$ MHz	6.5 max.	6.5 max.	6.5 max.	6.5 max.	6.5 max.	dB
$f_c + 38.8$ MHz to $2.5 \times f_c$	42 min.	42 min.	42 min.	42 min.	42 min.	dB
<b>Input/Output Impedance</b>	210// -13.3	210// -12.1	210// -12.3	210// -11.0	210// -10.9	$\Omega$ //pF

Part number	F280	Unit
<b>Centre Frequency</b>	281.0	MHz
<b>Insertion Loss</b> 277.9MHz .... 284.1MHz	4.5 max.	dB
<b>Amplitude ripple</b> 277.9MHz .... 284.1MHz	1.5 max.	dB
<b>Attenuation</b> $f_c$ -100.0MHz .... $f_c$ -39.5MHz	48 max.	dB
$f_c$ -39.5MHz .... $f_c$ -100.0MHz	40 max.	dB
<b>Input/Output Impedance</b>	150	$\Omega$

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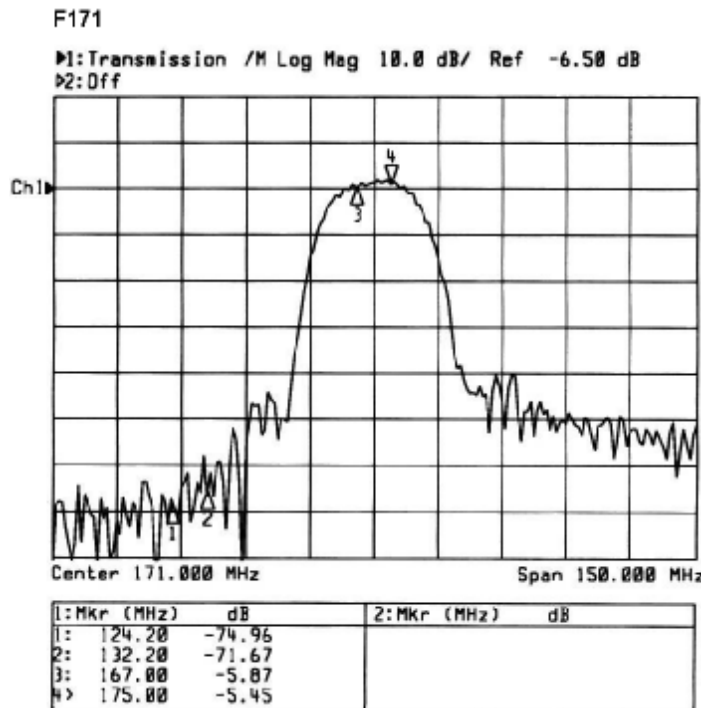
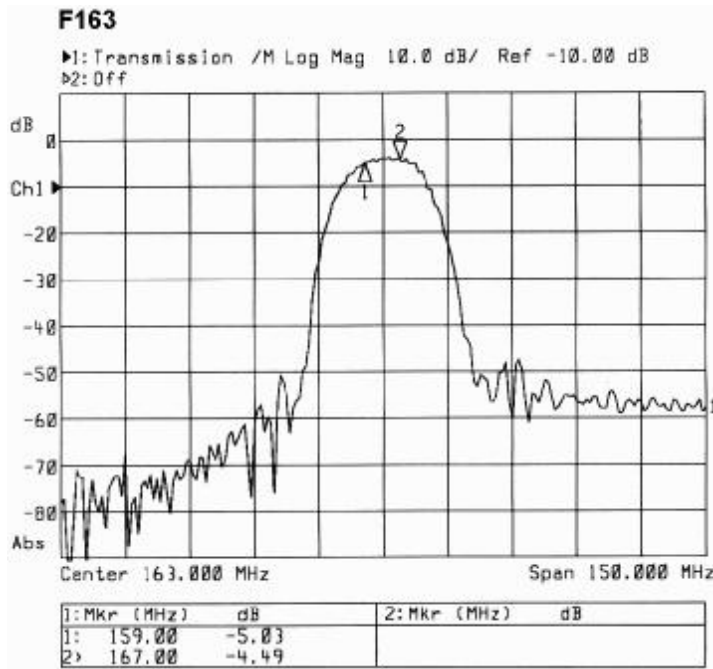
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Date : March 2010

#### 4. Typical Frequency Response



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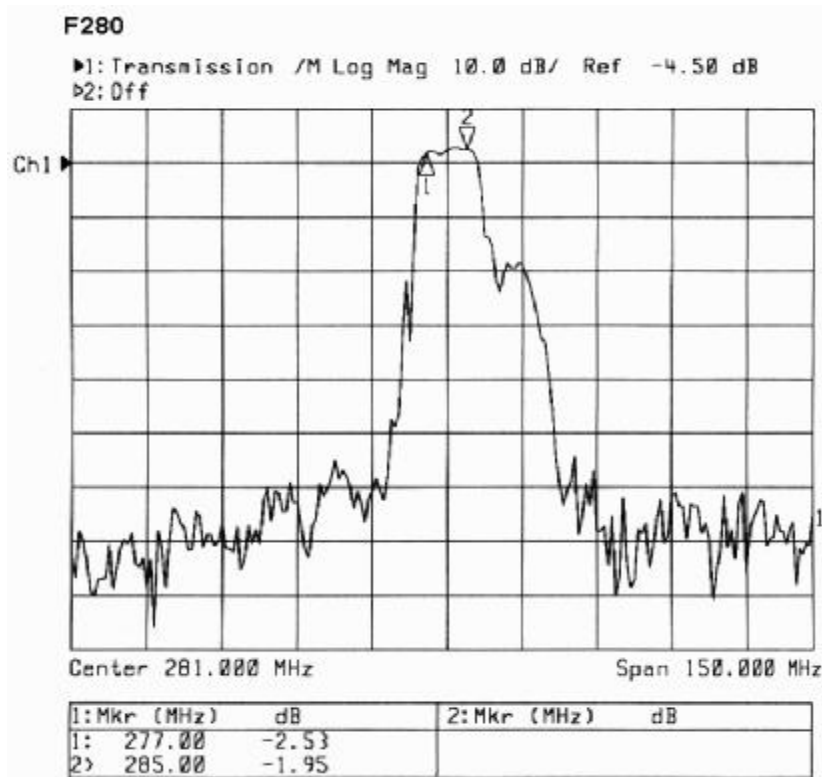
Issue : 1.1 C1

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

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  $\Omega$  test system with VSWR  $\leq 1.2:1$ . The test fixture L and C are adjusted for minimum insertion loss at the filter centre 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.

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