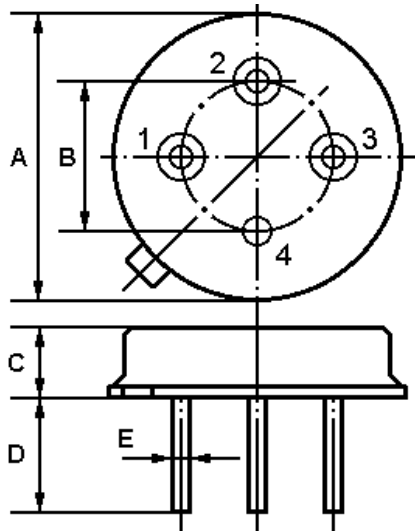


The ACTF480-4/479.5/TO39 is a two channel IF filter for DSB receivers with constant group delay.

### 1.Package Dimension (TO-39)

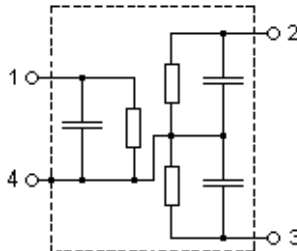


### 2.

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

Dimensions	Data (Unit: mm)
A	9.35±0.10
B	5.08±0.10
C	3.40±0.10
D	3.00±0.20
E	4-Φ0.45±0.20

### 3.Equivalent LC Model



### 4.Performance

#### 4-1.Maximum Ratings

Rating	Value	Units
AC Voltage Between Any Two Pins	$V_{PP}$	5 V
DC Voltage Between Any Two Pins	$V_{DC}$	0 V
Storage temperature range	$T_{stg}$	-40 to +85 °C
Operable temperature range	$T_A$	-25 to +85 °C

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

**ISO9001: 2000 Registered - Registration number 6830/2**

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#### 4-2.Electronic Characteristics

Reference temperature:  $T_A = 25\text{ }^\circ\text{C}$   
 Terminating source impedance:  $Z_S = 50\ \Omega$   
 Terminating load impedance:  $Z_L = 50\ \Omega$   
 Group delay aperture: 0.25MHz

#### Characteristics of Channel 1

Characteristic		Min.	Typ.	Max.	Units
<b>Centre Frequency</b>	$f_c$	478.50	479.50	480.50	MHz
<b>Insertion attenuation</b> (Reference level for the following data)	479.50 MHz $\alpha$	--	21.8	24.0	dB
<b>Pass bandwidth</b>	$\alpha_{rel} \leq 3\text{dB}$ $B_{3\text{dB}}$	--	15.0	--	MHz
<b>Relative attenuation</b>	$\alpha_{rel}$	--	3.1	5.0	dB
	472.00 MHz	--	3.0	5.0	dB
	487.00 MHz	--	3.0	5.0	dB
Lower sidelobe	430.00 ... 458.00 MHz	34.0	45.0	--	dB
Upper sidelobe	501.00 ... 530.00 MHz	34.0	44.0	--	dB
<b>Reflected wave signal suppression</b> 0.15s ... 2.0 $\mu$ s after main pulse		40.0	46.0	--	dB
<b>Amplitude ripple (p-p)</b>	475.00 ... 484.00 MHz $\Delta \alpha$	--	0.6	1.2	dB
<b>Group delay ripple (p-p)</b>	472.00 ... 487.00 MHz $\Delta t$	--	10	15	ns
<b>Temperature coefficient of frequency</b>	$TC_f$	--	-86	--	ppm/K

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## Characteristics of Channel 2

Characteristic		Min.	Typ.	Max.	Units
<b>Centre Frequency</b>	$f_c$	478.50	479.50	480.50	MHz
<b>Insertion attenuation</b> (Reference level for the following data)	479.50 MHz $\alpha$	--	22.0	24.0	dB
<b>Pass bandwidth</b>	$\alpha_{rel} \leq 3\text{dB}$ $B_{3\text{dB}}$	--	27.0	--	MHz
<b>Relative attenuation</b>	$\alpha_{rel}$	--	3.1	5.0	dB
	466.00 MHz	--	2.7	5.0	dB
	493.00 MHz	--	2.7	5.0	dB
Lower sidelobe	430.00 ... 456.00 MHz	34.0	41.5	--	dB
Upper sidelobe	503.00 ... 530.00 MHz	34.0	41.5	--	dB
<b>Reflected wave signal suppression</b> 0.15 $\mu\text{s}$ ... 3.0 $\mu\text{s}$ after main pulse		40.0	44.0	--	dB
<b>Amplitude ripple (p-p)</b>	475.00 ... 484.00 MHz $\Delta \alpha$	--	0.6	1.2	dB
<b>Group delay ripple (p-p)</b>	466.00 ... 493.00 MHz $\Delta t$	--	8	15	ns
<b>Temperature coefficient of frequency</b>	$TC_f$	--	-86	--	ppm/K

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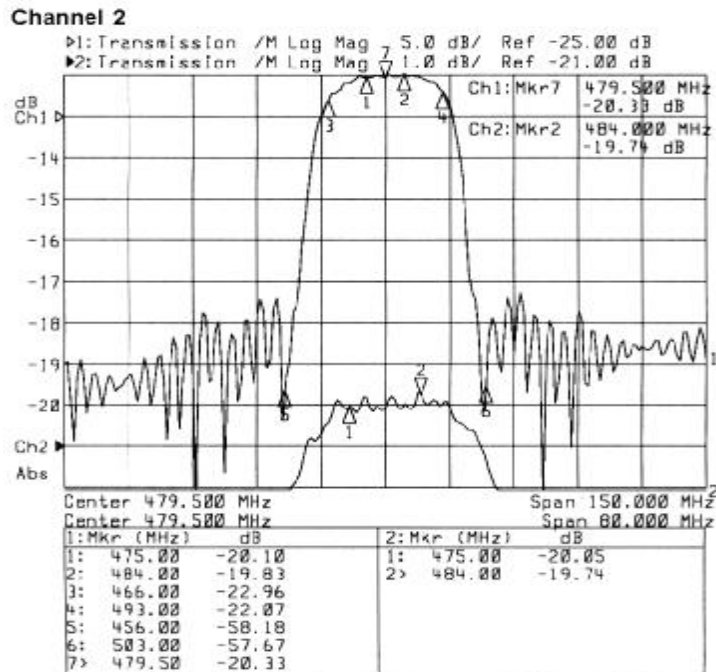
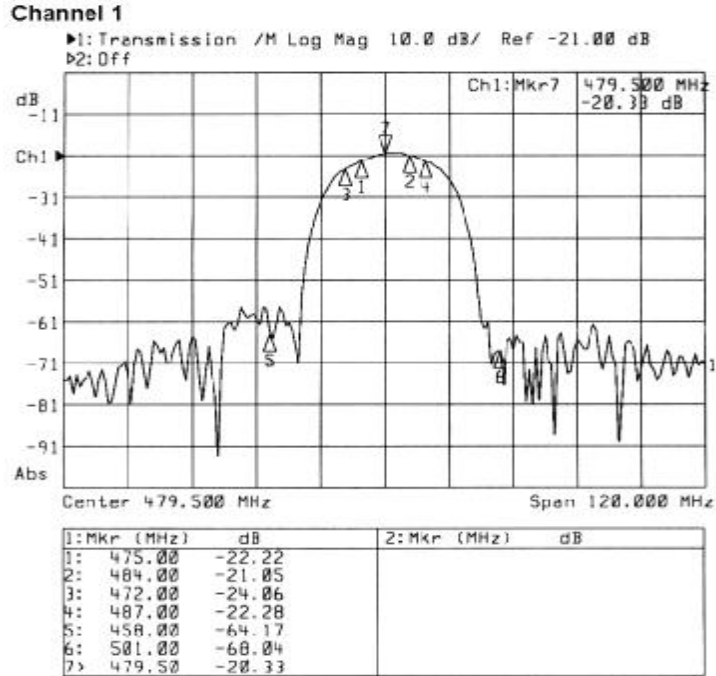
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## 5. Typical Frequency Response



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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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