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**National  
Semiconductor**

捷多邦, 专业PCB打样工厂, 24小时加

Active Filters

052809

## AF101 High Band Splitter Filter

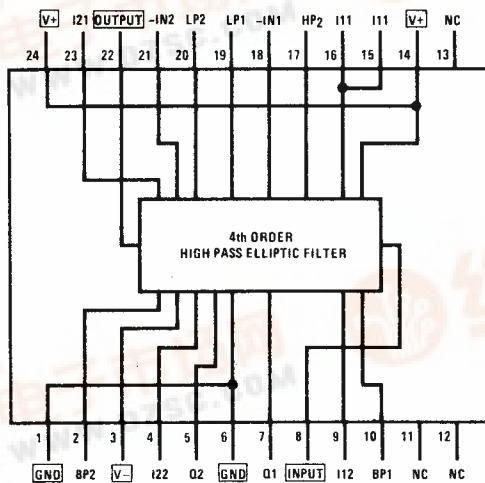
### General Description

The AF101 is a fourth order high pass elliptic filter designed to pass frequencies above 1200 Hz. This filter is used to separate the high band of frequencies from the low band in a Dual Tone Multi Frequency (DTMF) Touch Tone® receiver. The unit is fully tuned and requires no external components — only power supply, input, and output connections.

### Features

- Fully tuned
- High input impedance
- Low output impedance
- Wide power supply range  $\pm 5V$  to  $\pm 18V$

### Connection Diagram



Ceramic Dual-In-Line Package HY24A  
AF101CJ

Note: Only those pin functions marked with a  $\square$  need be connected for normal operation. All other pins are internal connections or test points; DO NOT USE.



## Absolute Maximum Ratings

Supply Voltage	±18V
Power Dissipation	1W
Input Voltage	±36V
Output Short Circuit Duration	Infinite
Lead Temperature (soldering, 10 sec.)	300°C
Operating Temperature Range	0°C to +70°C
Storage Temperature Range	-25°C to +100°C

## Electrical Characteristics $V_S \pm 12V$ to $\pm 15V$ , $T_A = 0^\circ C$ to $70^\circ C$ , unless otherwise specified.

PARAMETER	SYMBOL	CONDITIONS	MIN	TYP	MAX	UNITS
Cutoff Frequency	$f_c$			1190	1209	Hz
Passband Ripple	$A_{MAX}$	1190 to 1660 Hz	-0.5	0	0.5	dB
Stopband Edge	$f_s$		941	955		Hz
Stopband Attenuation	$A_{MIN}$		25	28		dB
Gain	$A_O$	at 1336 Hz	-0.5	0	+0.5	dB
Group Delay	$gd$				2	ms
Input Impedance	$Z_{IN}$		30k	32k		$\Omega$
Output Impedance	$Z_O$			< 1	5	$\Omega$
Operating Supply Voltage	$V_S$		±5		±18	V
Power Supply Current	$I_S$	$V_S = \pm 15V$		5	9	mA

## Typical Performance Characteristics

