

## NTE1491 Integrated Circuit AM RF/IF Amp

**Description:**

The NTE1491 is an integrated circuit in a 14-Lead DIP type package designed for AM/FM receivers.

**Features:**

- Low External Parts
- IF, RF, AGC, in One Single Package
- Dual AGC Amps

**Absolute Maximum Ratings:** ( $T_A = +25^\circ\text{C}$  unless otherwise specified)

Supply Voltage,  $V_{CC}$  ..... 18V  
 Signal Input Voltage,  $V_i$  .....  $7V_{p-p}$   
 Total Power Dissipation ( $T_A = +75^\circ\text{C}$ ),  $P_D$  ..... 350mW  
 Operating Temperature Range,  $T_{opt}$  .....  $-20^\circ$  to  $+75^\circ\text{C}$   
 Storage Temperature Range,  $T_{stg}$  .....  $-40^\circ$  to  $+125^\circ\text{C}$

**Recommended Operating Condition:** ( $T_A = +25^\circ\text{C}$  unless otherwise specified)

Parameter	Symbol	Min	Typ	Max	Unit
Supply Voltage	$V_{CC}$	9	13	16	V

**Electrical Characteristics:** ( $T_A = +25^\circ\text{C}$ ,  $V_{CC} = 13\text{V}$ ,  $f = 1\text{MHz}$ ,  $f_{mod} = 400\text{Hz}$ ,  $\text{MOD} = 30\%$ ,  $R_L = 10\text{k}\Omega$  unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Idle Current	$I_{CC}$		18	26	34	mA
Maximum Sensitivity	MS	$v_o = 20\text{mV}_{rms}$	–	10	17	dB/ $\mu\text{V}$
Signal Noise	S/N	$v_i = 74\text{dB}\mu\text{V}$	48	55	–	dB
Detector Voltage Out	$v_o$	$v_i = 74\text{dB}\mu\text{V}$	40	60	90	$\text{mV}_{rms}$
Total Harmonic Distortion	THD	$v_i = 126\text{dB}\mu\text{V}$	–	0.4	3	%

**Tuner Performance:** ( $T_A = +25^\circ\text{C}$ ,  $V_{CC} = 13\text{V}$ ,  $f = 1\text{MHz}$ ,  $f_{\text{mod.}} = 400\text{Hz}$ ,  $\text{MOD} = 30\%$ ,  $R_L = 10\text{k}\Omega$  unless otherwise specified)

Characteristics	Test Conditions	Typ	Unit	
Maximum Sensitivity	$v_o = 20\text{mV}_{\text{rms}}$	10	$\text{dB}\mu\text{V}$	
Usable Sensitivity ( $v_i$ )	$\text{S/N} = 20\text{dB}$	24	$\text{dB}\mu\text{V}$	
Distortion Output Voltage	$v_i = 74\text{dB}\mu\text{V}$	60	$\text{mV}_{\text{rms}}$	
Harmonic Distortion	$v_i = 74\text{dB}\mu\text{V}$	0.4	%	
S/N Ratio	$v_i = 74\text{dB}\mu\text{V}$	55	$\text{dB}$	
Total Harmonic Distortion	$v_i = 126\text{dB}$	0.4	%	
IF Rejection Ratio	$f = 1\text{MHz}$ , $v_o = 20\text{mV}$ , $\text{IF} = 450\text{kHz}$	67	$\text{dB}$	
Image Rejection Ratio	$f = 1\text{MHz}$ , $v_o = 20\text{mV}$ , $f + 2\text{IF}$	80	$\text{dB}$	
Selectivity	$f = 1\text{MHz}$ , $\Delta f = \pm 10\text{kHz}$	31	$\text{dB}$	
AM Whistle Rejection	$v_i = 74\text{dB}\mu\text{V}$	$2^{\text{nd}}\text{IF} = 900\text{kHz}$	45	$\text{dB}$
		$3^{\text{rd}}\text{IF} = 1350\text{kHz}$	50	$\text{dB}$

**Pin Connection Diagram**

