

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° to $+75^\circ\text{C}$
Storage Temperature Range, T_{stg}	-40° 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: ($T_A = +25^\circ\text{C}$, $V_{CC} = 13\text{V}$, $f = 1\text{MHz}$, $f_{mod} = 400\text{Hz}$, $MOD = 30\%$, $R_L = 10\text{k}\Omega$ 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/ μV
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	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	mV_{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	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	dB	
Image Rejection Ratio	$f = 1\text{MHz}$, $v_o = 20\text{mV}$, $f + 2\text{IF}$	80	dB	
Selectivity	$f = 1\text{MHz}$, $\Delta f = \pm 10\text{kHz}$	31	dB	
AM Whistle Rejection	$v_i = 74\text{dB}\mu\text{V}$	$2^{\text{nd}}\text{IF} = 900\text{kHz}$	45	dB
		$3^{\text{rd}}\text{IF} = 1350\text{kHz}$	50	dB

Pin Connection Diagram

