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NTE1495 Integrated Circuit AM RF Mixer, IF Amplifier

Description:

The NTE1495 is a monolithic integrated circuit in a 15-Lead Staggered SIP type package. This device is suitable for use as an AM tuner in automotive radio receivers, specifically where compact mounting is required and contains an RF amplifier, mixer, IF amplifier, and two types of AGC circuits.

Features:

- High Sensitivity
- Excellent Two-Signal Selectivity Characteristics which Permits Receiving any Weak Signal Without Interference from the Next Strongest Signal
- Wide AGC Range Provided by Two AGC Circuits (Delay Type) Employed in the IF and RF Stages, in Addition to the Ability to Withstand Large Input and to the Yield of High S/N Ratio

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

Supply Voltage, V_{CC} 16V
Input Voltage, V_i $7V_{P-P}$
Power Dissipation ($T_A = +75^\circ\text{C}$), P_D 310mW
Operating Temperature Range, T_{opr} -20° to $+75^\circ\text{C}$
Storage Temperature Range, T_{stg} -40° to $+125^\circ\text{C}$

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

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Operating Supply Voltage	V_{CC}		9	13	16	V
Operating Ambient Temperature	T_A		-20	-	+75	$^\circ\text{C}$

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
Circuit Current	I_{CC}	At No Signal	18	26	34	mA
Maximum Sensitivity	MS	Input level (v_i) at which detector output v_o gets 20mV_{rms}	-	10	17	$\text{dB}\mu\text{V}$
Signal-to-Noise Ratio	S/N	$v_i = 24\text{dB}\mu\text{V}$	15	20	-	dB
Detector Output	v_o	$v_i = 74\text{dB}\mu\text{V}$	40	60	90	mV_{rms}
Total Tarmonic Distortion	THD	$v_i = 126\text{dB}\mu\text{V}$	-	0.4	3.0	%

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

Parameter	Test Conditions	Value	Unit
Maximum Sensitivity	Input voltage at which detector output voltage is 20mV_{rms}	10	$\text{dB}\mu\text{V}$
Usable Sensitivity	Input voltage at which S/N Ratio is 20dB	24	$\text{dB}\mu\text{V}$
Detector Output	Resistors connected to Pin5 are $47\text{k}\Omega$ and $33\text{k}\Omega$, $v_i = 74\text{dB}\mu\text{V}$	60	mV_{rms}
Detector Distortion	$v_i = 74\text{dB}\mu\text{V}$	0.4	%
Signal-to-Noise Ratio	$v_i = 74\text{dB}\mu\text{V}$	50	dB
Overload Distortion	$v_i = 126\text{dB}\mu\text{V}$	0.4	%
IF Rejection	$f = 1\text{MHz}$, $v_o = 20\text{mV}_{\text{rms}}$, $\text{IF} = 450\text{kHz}$	67	dB
Image Rejection	$f = 1\text{MHz}$, $v_o = 20\text{mV}_{\text{rms}}$, $f + 2 \text{ IF}$	80	dB
Selectivity	$f = 1\text{MHz}$, $\Delta f = \pm 10\text{kHz}$	31	dB
Tweet	$v_i = 74\text{dB}\mu\text{V}$ 2 IF = 900kHz	45	dB
	3 IF = 1350kHz	50	dB

Pin Connection Diagram
(Front View)



