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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 Yeild of High S/N Ratio

Absolute Maximum Ratings: (T_A = +25°C unless otherwise specified)

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

Recommended Operating Conditions: (T_A = +25°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	°C

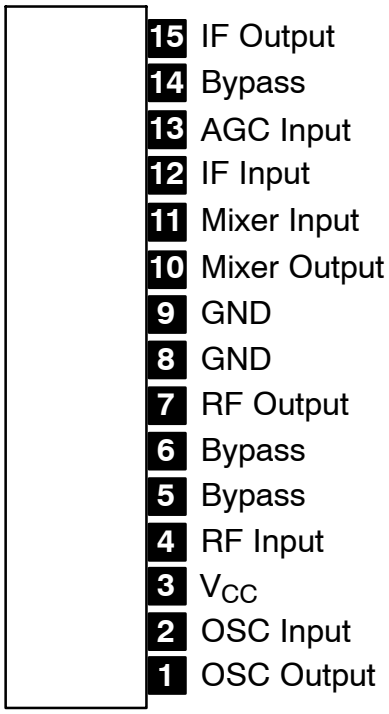
Electrical Characteristics: (T_A = +25°C, V_{CC} = 13V, f = 1MHz, f_{mod} = 400Hz, MOD = 30%, R_L = 10kΩ unless otherwise specified)

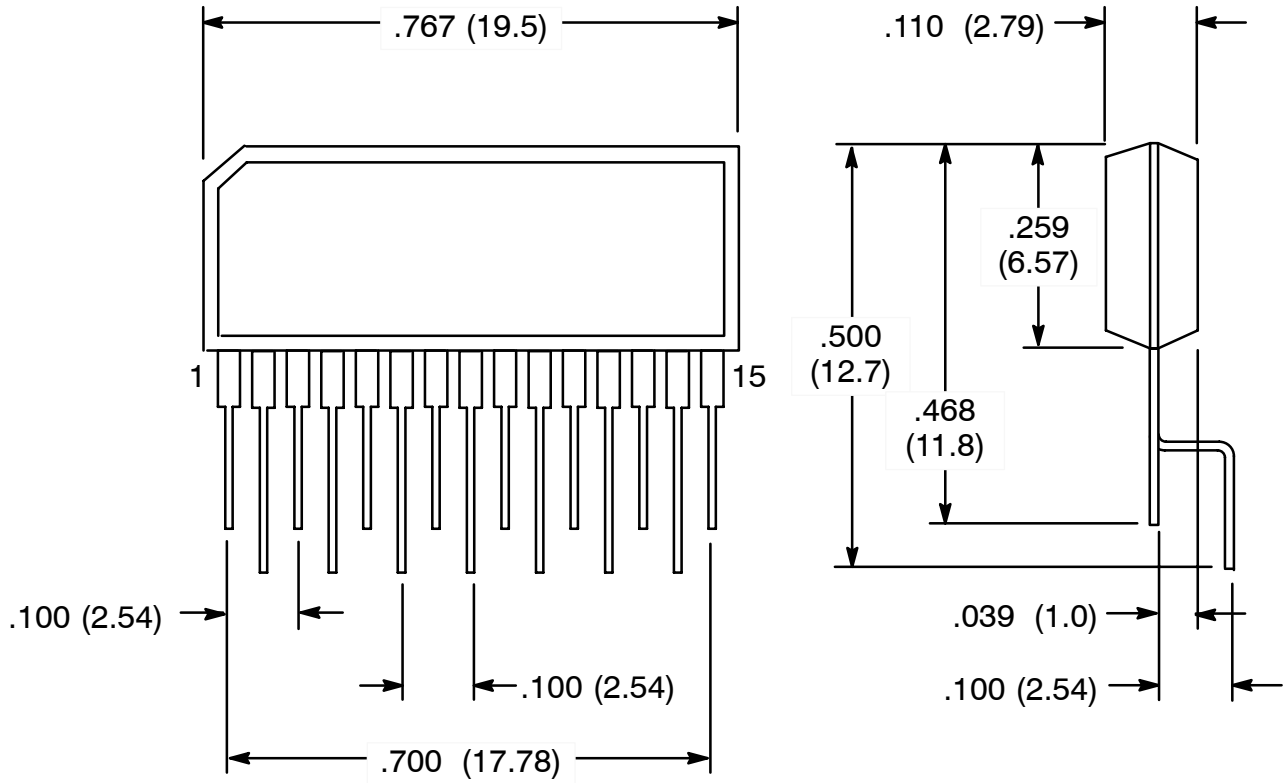
Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Circuit Current	I_{CC}	At No Signal	18	26	34	mA
Maximum Sensitivity	MS	Input level (υ_i) at which detector output υ_o gets $20mV_{rms}$	–	10	17	dBμV
Signal–to–Noise Ratio	S/N	υ_i = 24dBμV	15	20	–	dB
Detector Output	υ_O	υ_i = 74dBμV	40	60	90	mV_{rms}
Total Tarmonic Distortion	THD	υ_i = 126dBμV	–	0.4	3.0	%

Tuner Performance Characteristics: (T_A = +25°C, V_{CC} = 13V, f = 1MHz, f_{mod} = 400Hz, MOD = 30%, R_L = 10kΩ unless otherwise specified)

Parameter	Test Conditions		Value	Unit
Maximum Sensitivity	Input voltage at which detector output voltage is 20mV_{rms}		10	dBμV
Usable Sensitivity	Input voltage at which S/N Ratio is 20dB		24	dBμV
Detector Output	Resistors connected to Pin5 are 47kΩ and 33kΩ, υ_i = 74dBμV		60	mV_{rms}
Detector Distortion	υ_i = 74dBμV		0.4	%
Signal−to−Noise Ratio	υ_i = 74dBμV		50	dB
Overload Distortion	υ_i = 126dBμV		0.4	%
IF Rejection	f = 1MHz, υ_o = 20mV_{rms}, IF = 450kHz		67	dB
Image Rejection	f = 1MHz, υ_o = 20mV_{rms}, f + 2 IF		80	dB
Selectivity	f = 1MHz, Δf = ±10kHz		31	dB
Tweet	υ_i = 74dBμV	2 IF = 900kHz	45	dB
		3 IF = 1350kHz	50	dB

Pin Connection Diagram
(Front View)




.767 (19.5)
.110 (2.79)
.259
(6.57)
.500
(12.7)
.468
(11.8)
1
15
.100 (2.54)
.039 (1.0)
.100 (2.54)
.100 (2.54)
.700 (17.78)