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## NTE1616 Integrated Circuit TV Sound IF Amp/Detector, Driver

**Description:**

The NTE1616 is a TV sound integrated circuit in a 14-Lead DIP type package that can be operated with no adjustment, using ceramic filters externally. This device contains a DC controlled attenuator, which has wide effective area and gentle characteristic in the changing, so it is convenient especially for a remote controlled set.

**Features:**

- Gentle Changing DC Controlled Attenuator is Convenient for Remote Controlled Sets.
- Operation with Ceramic Filters makes TV Sound Circuit No Adjustment Completely
- SRPP Output Circuit can be Driven Directly
- Muting Works Quickly
- Low Distortion Demodulation

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

Power Supply Voltage,  $V_{CC}$  ..... 0 to 15V  
 Voltage (Pin13, Pin14),  $V_{13}, V_{14}$  ..... 0 to 15V  
 Output Current (Pin2),  $I_2$  ..... 0 to 20mA  
 Power Dissipation ( $T_A = 75^\circ\text{C}$ ),  $P_D$  ..... 350mW  
 Operating Temperature Range,  $T_{opr}$  .....  $-20^\circ$  to  $+75^\circ\text{C}$   
 Storage Temperature Range,  $T_{stg}$  .....  $-40^\circ$  to  $+125^\circ\text{C}$

**Electrical Characteristics:** ( $V_{CC} = 12\text{V}$ ,  $T_A = +25^\circ\text{C} \pm 3^\circ\text{C}$   $f = 4.5\text{mHz}$ ,  $\Delta f = \pm 25\text{kHz}$ ,  $f_M = 400\text{Hz}$ , AM MOD = 30% unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Total Supply Current	$I_{CC}$	$V_{CC} = 12\text{V}$ Zero Carrier	15	20	25	mA
IF Limiting Voltage	$V_{i(lim)}$	-3dB point	-	200	400	$\mu\text{V}_{rms}$
Detector Output Voltage	$V_{O AF}$	$V_i = 10\text{mV}_{rms}$	450	600	750	$\text{mV}_{rms}$
Detector Output Distortion	$THD_{DET}$	$V_i = 10\text{mV}_{rms}$	-	0.4	1.0	%
AM Rejection	AMR	$V_i \geq 3\text{mV}_{rms}$	-44	-55	-	dB
DC VR Maximum Attenuation	$ATT_{VR}$	$f_{in} = 400\text{Hz}$ , $V_i = 600\text{mV}_{rms}$	70	80	-	dB
DC VR Distortion	$THD_{VR}$	$f_{in} = 400\text{Hz}$ , $V_i = 600\text{mV}_{rms}$ $V_8$	-	0.4	1.0	%

**Electrical Characteristics (Cont'd):** ( $V_{CC} = 12V$ ,  $T_A = +25^{\circ}C \pm 3^{\circ}C$   $f = 4.5mHz$ ,  $\Delta f = \pm 25kHz$ ,  $f_M = 400Hz$ , AM MOD = 30% unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
AF Voltage Gain	$G_{VAF}$	$f_{in} = 400Hz$ , $V_i = 100mV_{rms}$ , $R_3 = 1k\Omega$	11.5	15.0	–	dB
IF Input Resistance	$R_{in}$		–	1.5	–	$k\Omega$
IF Input Capacitance	$C_{in}$		–	2.0	–	pF
Pin4 Input Resistance	$R_{in4}$		–	20	–	$k\Omega$
Pin4 Input Capacitance	$C_{in4}$		–	2.9	–	pF

**Pin Connection Diagram**

