ELECTRONICS, INC.
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NTE704
Integrated Circuit
TV Sound, IF Amp

Features & Applications:

- Exceptionally High Gain: Power Gain at 4.5Hz – 75dB typ.
- Excellent Limiting Characteristics: Input Limiting Voltage (Knee) = 300μV at 4.5MHz
- Excellent AM Rejection: > 50dB at 4.5MHz
- High Audio–Voltage Recovery: 20mV Typ at 4.5MHz, 25kHz Deviation
- Wide Frequency Capability: 100kHz to > 20MHz
- Comprehensive Circuit Functions:
  - IF Amplifier
  - AM and Noise Limiter
  - FM Detector
  - Audio PreAmplifier

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

Maximum Input–Signal Voltage (Between Pin1 and Pin2) . . . . . ±3V
Maximum Device Dissipation 300mW
Recommended Minimum DC Supply Voltage (V_{CC}) 5.5V
Operating Temperature Range, T_{opr} . . . . . –55° to +125°C
Storage Temperature Range, T_{stg} . . . . . –65° to +150°C

Electrical Characteristics: (T_A = +25°C unless otherwise specifid)

Parameter	Symbol	Test Conditions		Min	Typ	Max	Unit
Total Device Dissipation	P_T	Note 1	V_{CC} = 6V	73	90	110	mW
			V_{CC} = 7.5V	106	120	150	mW
			V_{CC} = 10V	165	190	230	mW
Voltage Gain	A	f = 1Mc/s, Note 2	V_{CC} = 6V	60	66	–	dB
			V_{CC} = 7.5V	65	70	–	dB
			V_{CC} = 10V	65	71	–	dB
		V_{CC} = 7.5V, Note 2	f = 4.5Mc/s	60	67	–	dB
			f = 10.7Mc/s	55	60	–	dB

Note 1. Total current drain may be determined by dividing P_T by V_{CC}.

Note 2. Recommended minimum DC supply voltage (V_{CC}) is 5.5V. Nominal load current flowing into Pin5 is 1.5mA at 7.5V.

Electrical Characteristics (Cont'd): (T_A = +25°C unless otherwise specifid)

Parameter	Symbol	Test Conditions		Min	Typ	Max	Unit
Parallel Input Resistance	R_{IN}	f = 4.5Mc/s, V_{CC} = 7.5V		–	3	–	kΩ
Parallel Input Capacitance	C_{IN}			–	7	–	pF
Parallel Output Resistance	R_{OUT}	f = 4.5Mc/s, V_{CC} = 7.5V		–	31.5	–	kΩ
Parallel Output Capacitance	C_{OUT}			–	4.2	–	pF
Noise Figure	NF	f = 4.5Mc/s, V_{CC} = 7.5V		–	8.7	–	dB
Input Limiting Voltage (Knee)	$V_{i(lim)}$	f = 4.5Mc/s, V_{CC} = 7.5V		–	300	400	µV
Recovered AF	$V_{o(af)}$	f = 4.5Mc/s	V_{CC} = 6V	–	155	–	mV
			V_{CC} = 7.5V	135	188	–	mV
			V_{CC} = 10V	–	220	–	mV
Amplitude Modulation Rejection	AMR	f = 4.5Mc/s, V_{CC} = 7.5V		–	50	–	dB
Discriminator Output Resistance	R_O(dics)	f = 4.5Mc/s, V_{CC} = 7.5V		–	60	–	Ω
Total Harmonic Distortion	THD	f = 4.5Mc/s, V_{CC} = 7.5V		–	1.8	–	%

Pin Connection Diagram
(Top View)