



ELECTRONICS, INC.

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## NTE1370 Integrated Circuit Audio Power Amplifier, 5.8W, for Car Radio

### Features:

- Output Power:  
 $P_{OUT} = 5.8W$  (Typ) at  $V_{CC} = 13.2V$ ,  $R_L = 4\Omega$ , THD = 10%  
 $P_{OUT} = 9.2W$  (Typ) at  $V_{CC} = 13.2V$ ,  $R_L = 2\Omega$ , THD = 10%
- Maximum Output Power:  
 $P_{OM} = 9.5W$  (Typ) at  $V_{CC} = 13.2V$ ,  $R_L = 4\Omega$
- Low Distortion:  
THD = 0.15% at  $P_{OUT} = 1W$ ,  $G_V = 55dB$   
THD = 0.07% at  $P_{OUT} = 1W$ ,  $G_V = 44dB$
- Wide Operating Supply Voltage Range:  $V_{CC} = 9$  to 18V
- Minimum Working Voltage: 9V
- Excessive Supply Voltage Protection Circuit
- Current Limiting for Short Circuit Protection
- Thermal Shut-Down Circuit

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

Operating Supply Voltage, $V_{CC}$	18V
Quiescent Supply Voltage, $V_{CCQ}$	25V
Output Current (Peak), $I_{O(peak)}$	4.5A
Power Dissipation, $P_D$	7.5W
Operating Temperature Range, $T_{opr}$	$-20^\circ$ to $+75^\circ C$
Storage Temperature Range, $T_{stg}$	$-55^\circ$ to $+150^\circ C$

### Electrical Characteristics: ( $V_{CC} = 12.5V$ , $R_L = 4\Omega$ , $R_g = 600\Omega$ , $R_f = 8\Omega$ , $f = 1kHz$ , $T_A = +25^\circ C$ unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Quiescent Current	$I_{CCQ}$	$V_{CC} = 12.5V$	–	–	60	mA
		$V_{CC} = 18V$	–	–	80	
Output Power	$P_{OUT}$	$V_{CC} = 12.5V$ , THD = 10%	4.5	5	–	W
		$V_{CC} = 13.2V$ , THD = 10%	–	5.8	–	
		$V_{CC} = 13.2V$ , $R_L = 2\Omega$ , THD = 10%	–	9.2	–	
		THD = 10%				

**Electrical Characteristics (Cont'd):** ( $V_{CC} = 12.5V$ ,  $R_L = 4\Omega$ ,  $R_g = 600\Omega$ ,  $R_f = 8\Omega$ ,  $f = 1kHz$ ,  $T_A = +25^\circ C$  unless otherwise specified)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Maximum Output Power	$P_{OM}$	$V_{CC} = 13.2V$	–	9.5	–	W
Total Harmonic Distortion	THD	$P_{OUT} = 1W$	–	0.15	1.0	%
		$P_{OUT} = 100mW$	–	0.2	1.0	
		$P_{OUT} = 1W, R_L = 2\Omega$	–	0.25	1.0	
Voltage Gain	$G_V$	$V_{IN} = 2.45mV_{rms}$	52	55	58	dB
Input Resistance	$R_{IN}$	$V_{OUT} = 2V_{rms}$	30	40	–	k $\Omega$
Output Noise Voltage	$V_{NO}$	$R_g = 10k\Omega, BW = 50 \sim 20kHz$	–	–	3.5	mV

**Pin Connection Diagram**  
(Front View)

