

# MFC8010

## AUDIO POWER AMPLIFIER

### Advance Information

#### 1-WATT AUDIO POWER AMPLIFIER

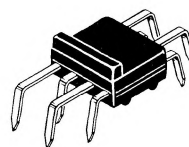
... designed to provide the complete audio system in television, radio and phonograph equipment.

- One Watt Continuous Sine Wave Power at +55°C
- High Gain – 10 mV (Max) for 1 Watt \*
- Extremely Low Distortion – 1% @ 1 Watt (Typ) \*
- Economical 8-Lead Plastic Package
- Short-Circuit Proof (Short Term)
- No Special Heat-Sinking Required

\*Circuit Dependent.

#### 1-WATT AUDIO POWER AMPLIFIER

Silicon Monolithic  
Functional Circuit

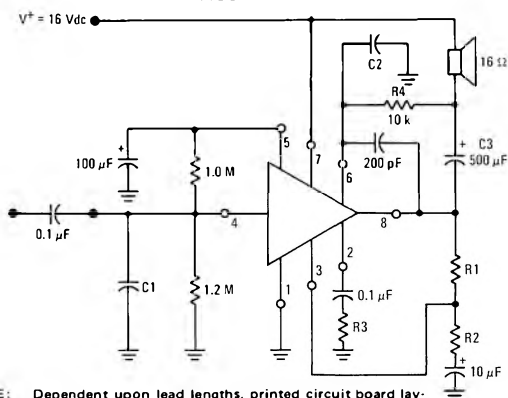


CASE 644A  
PLASTIC PACKAGE

#### MAXIMUM RATINGS ( $T_A = 25^\circ\text{C}$ unless otherwise noted)

Rating	Symbol	Value	Unit
Power Supply Voltage	$V^+$	22	Vdc
Power Dissipation @ $T_A = 25^\circ\text{C}$ (Package Limitation) Derate above $T_A = 25^\circ\text{C}$	$P_D$	1.2	Watt
	$1/\theta_{JA}$	10	mW/ $^\circ\text{C}$
Operating Temperature Range	$T_A$	-10 to +55	$^\circ\text{C}$

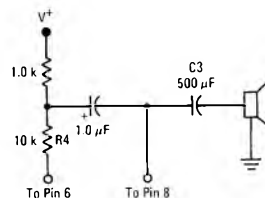
FIGURE 1 – TYPICAL 1-WATT AUDIO POWER AMPLIFIER CIRCUIT



NOTE: Dependent upon lead lengths, printed circuit board layout and output loading, a stabilization network consisting of a 0.1  $\mu\text{F}$  capacitor in series with a 10 ohm resistor may be required from pin 8 to ground.

Sensitivity For 1 Watt mV	C1 pF	C2 pF	R1 k ohms	R2 ohms	R3 ohms
400	0	0	10	1.0 k	82
10	100	100	51	100	2.2 k

Alternate connection to permit connecting speaker to ground instead of to  $V^+$ :



ELECTRICAL CHARACTERISTICS ( $T_A = 25^{\circ}\text{C}$  unless otherwise noted)

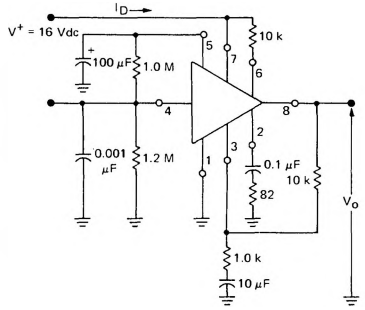
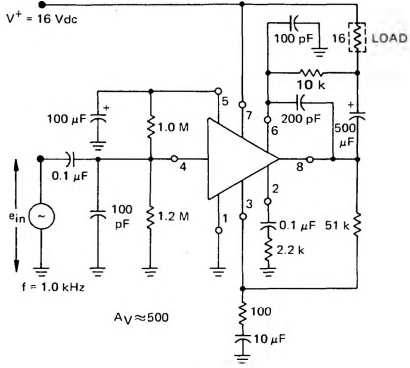
Circuit	Characteristic	Symbol	Min	Typ	Max	Unit
	Quiescent Output Voltage	$V_O$	7.0	8.0	9.0	Vdc
	Quiescent Drain Current	$I_D$	—	10	18	mAdc
	Sensitivity, Input Voltage ( $e_{in}$ adjusted for $v_{out} = 4.0 \text{ V(rms)}$ @ 1.0 kHz, Power Output = 1.0 Watt)	$e_{in}$	—	—	10	mV
	Total Harmonic Distortion ( $v_{out} = 4.0 \text{ Vrms}$ @ 1.0 kHz, Power Output = 1.0 Watt) ( $v_{in}$ adjusted for $v_{out} = 2.8 \text{ V(rms)}$ @ 1.0 kHz, Power Output = 500 mW)	THD	—	1.5	5.0	%
	Output Noise ( $e_{in} = 0$ )	$e_{n(out)}$	—	5.0	—	mV

FIGURE 2 – CIRCUIT SCHEMATIC

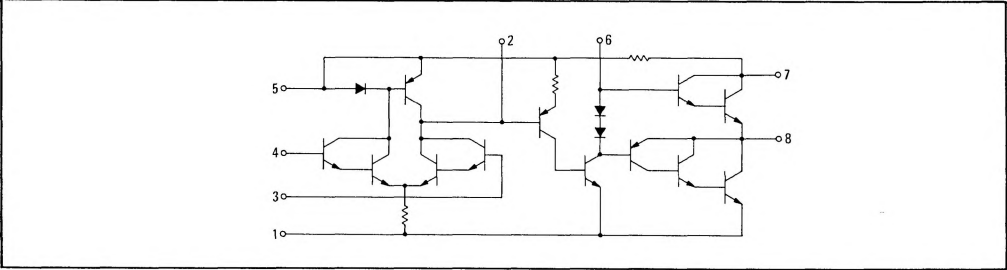


FIGURE 3 – DISTORTION

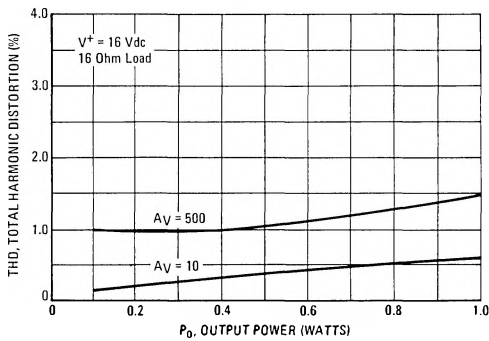


FIGURE 4 – DISTORTION

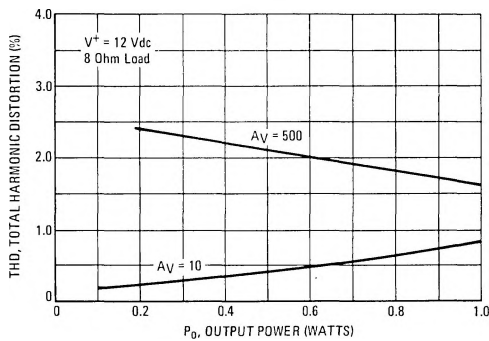


FIGURE 5 – EFFICIENCY

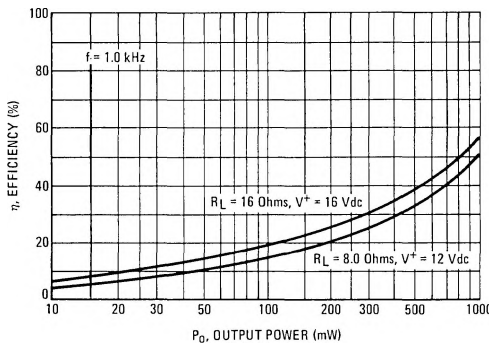


FIGURE 6 – POWER OUTPUT

