



LM386 Low Voltage Audio Power Amplifier

1 Features

- Battery Operation
- Minimum External Parts
- Wide Supply Voltage Range: 4 V–12 V or 5 V–18 V
- Low Quiescent Current Drain: 4 mA
- Voltage Gains from 20 to 200
- Ground-Referenced Input
- Self-Centering Output Quiescent Voltage
- Low Distortion: 0.2% ($A_V = 20$, $V_S = 6$ V, $R_L = 8\ \Omega$, $P_O = 125$ mW, $f = 1$ kHz)
- Available in 8-Pin MSOP Package

2 Applications

- AM-FM Radio Amplifiers
- Portable Tape Player Amplifiers
- Intercoms
- TV Sound Systems
- Line Drivers
- Ultrasonic Drivers
- Small Servo Drivers
- Power Converters

3 Description

The LM386M-1 and LM386MX-1 are power amplifiers designed for use in low voltage consumer applications. The gain is internally set to 20 to keep external part count low, but the addition of an external resistor and capacitor between pins 1 and 8 will increase the gain to any value from 20 to 200.

The inputs are ground referenced while the output automatically biases to one-half the supply voltage. The quiescent power drain is only 24 mW when operating from a 6-V supply, making the LM386M-1 and LM386MX-1 ideal for battery operation.

Device Information⁽¹⁾

PART NUMBER	PACKAGE	BODY SIZE (NOM)
LM386N-1	PDIP (8)	9.60 mm × 6.35 mm
LM386N-3	PDIP (8)	9.60 mm × 6.35 mm
LM386N-4	PDIP (8)	9.60 mm × 6.35 mm
LM386M-1	SOIC (8)	4.90 mm × 3.90 mm
LM386MX-1	SOIC (8)	4.90 mm × 3.90 mm
LM386MMX-1	VSSOP (8)	3.00 mm × 3.00 mm

(1) For all available packages, see the orderable addendum at the end of the data sheet.

Schematic

