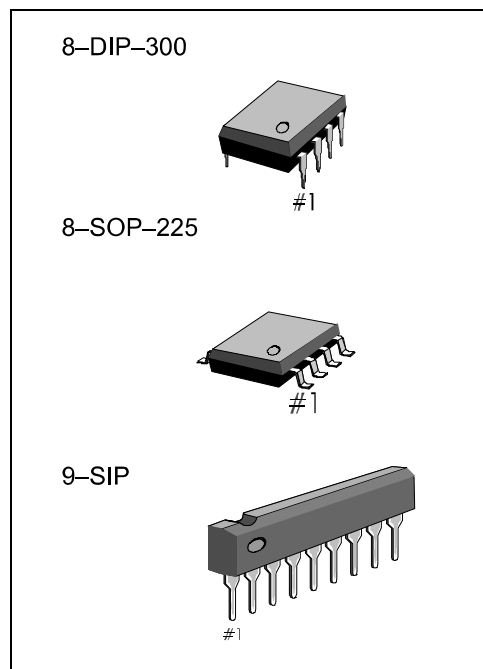


**INTRODUCTION**

The KA386B/BD/BS is a power amplifier designed for use in low voltage consumer applications. The gain is internally set to 20 to keep the external part count low, but the addition of an external resistor and Capacitor between Pin 1 and 8 will increase the gain to any value up to 200.

**FEATURES**

- Battery operation
- Minimum external parts
- Wide supply voltage range:  
4V ~ 12V (KA386B)  
4V ~ 9V (KA386BS/D)
- Low quiescent current drain (4mA)
- Voltage gains: 20 ~ 200dB
- Ground referenced Input
- Self-centering output quiescent voltage
- Low distortion
- 3 different of package types  
KA386B (8 DIP), KA386BS (9 SIP), KA386BD (8 SOP)



**ORDERING INFORMATION**

Device	Package	Operating Temperature
KA386B	8-DIP-300	-20°C~ + 70°C
KA386BS	9-SIP	
KA386BD	8-SOP-225	

**BLOCK DIAGRAM**

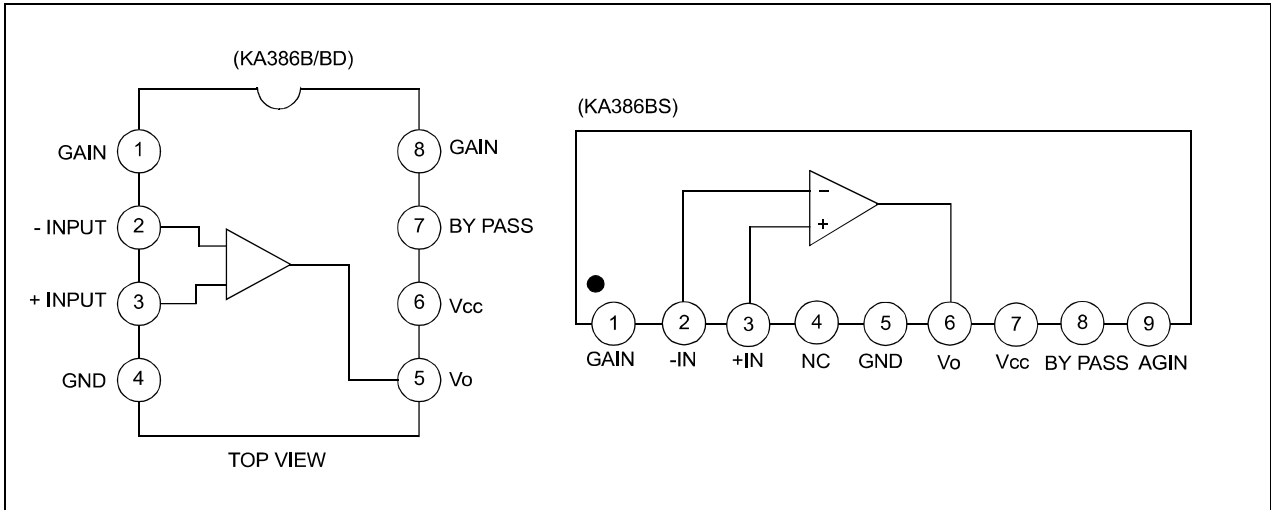


Figure 1.

**ABSOLUTE MAXIMUM RATINGS (Ta = 25°C)**

Characteristic		Symbol	Value	Unit
Supply Voltage		$V_{CC}$	15	V
Power Dissipation	KA386B	$P_D$	660	mW
	KA386BS		500	
	KA386BD		300	
Input Voltage		$V_I$	$\pm 0.4$	V
Operating Temperature		$T_{OPR}$	-20~+70	°C
Storage Temperature		$T_{STG}$	-40 ~ + 125	°C

**ELECTRICAL CHARACTERISTICS**

( $T_a = 25^\circ\text{C}$ ,  $V_{CC} = 6\text{V}$ ,  $R_L = 8\Omega$ ,  $f = 1\text{kHz}$ , unless otherwise specified)

Characteristic	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Quiescent Circuit Current	$I_{CCQ}$	$V_I = 0$	–	4	8	mA
Output Power	$P_O$	$V_{CC} = 6\text{V}$ , THD = 10% $V_{CC} = 9\text{V}$ , THD = 10%	250 500	325 200	–	mW mW
Voltage Gain	$G_V$	Pins 1 and 8 Open 10F from Pin 1 to 8	–	26 46	–	dB
Bandwidth	BW	Pins 1 and 8 Open 10 $\mu\text{F}$ from Pin 1 to 8	–	300 60	–	kHz
Total Harmonic Distortion (D-Type)	THD	$P_O = 125\text{mW}$ , Pins 1 and 8 Open	–	0.2	–	%
Input Resistance	$R_I$	–	–	50	–	k $\Omega$
Input Bias Current	$I_{BIAS}$	Pins 1 and 8 Open	–	250	–	nA

**APPLICATION CIRCUIT**

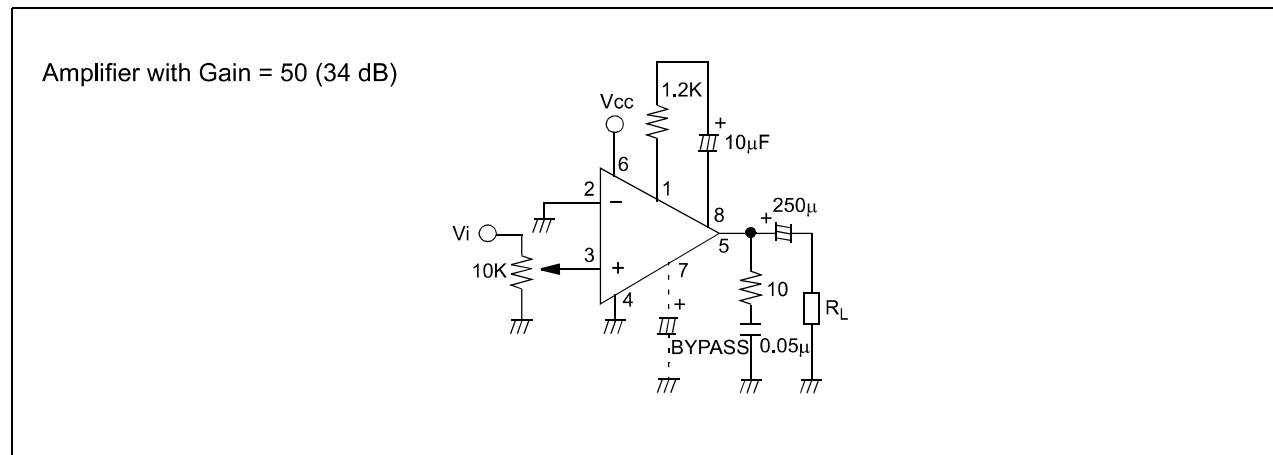


Figure 2.

NOTES