

Dimensions (mm)

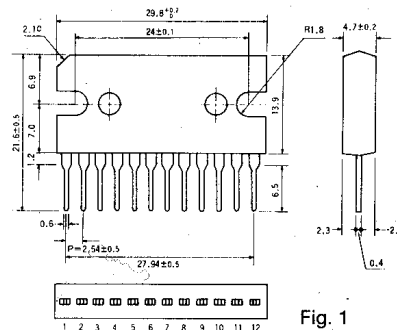


Fig. 1

The BA536 is a monolithic integrated circuit consisting of a dual OTL power amplifier developed for use as a low frequency power amplifier for such equipment as radio cassette tape recorders, home radios and multiplex-audio TV sets. When operated at 12V, the BA536 delivers a high 4.5W into each of two channels with 4Ω loads. Ripple rejection ratio is designed to be a typically high 55dB. Also, the gain variations between channels are small. This device is recommended for operation with supply voltages in the range 7 ~ 16V.

- 14. Symmetrical pin arrangement for easy PC board layout

Applications

1. Stereo radio cassette tape recorders
2. Compact stereo cassette tape recorders
3. Audio-multiplex TVs and multiplex adaptors
4. Home radios

Block Diagram

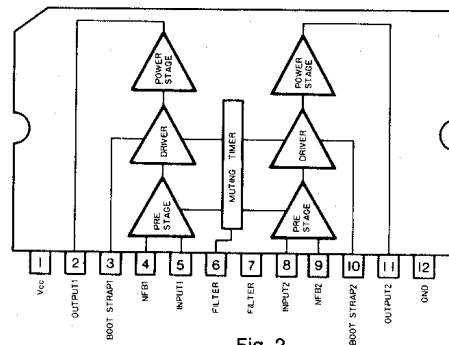


Fig. 2

Circuit Diagram

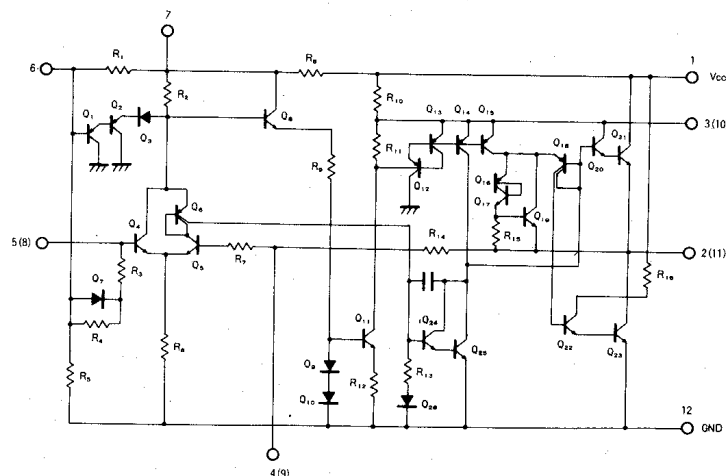


Fig. 3

Features

1. Two high output power amplifiers in a single package.
 4.5W each channel (12V/4Ω loads)
 5.5W each channel (12V/3Ω loads)
2. Compact 12-pin SIP package
3. Low thermal resistance package (3°C/W) facilitates thermal design.
4. High ripple rejection ratio (typically 55dB)
5. Low distortion (THD = 1.5%, P_O = 0.5W)
6. Good voltage gain channel balance
7. Low crosstalk level (typically 57dB)
8. Low pop noise level upon application of power
9. Wide supply voltage range. Starting voltage, 5V.
10. Built-in high-frequency compensation capacitor provides enhanced high-frequency stability and reduces the number of externally connected components required.
11. Built-in high-frequency capacitor in the output circuit provides enhanced high-frequency stability.
12. The ripple filter terminal (pin 6) serves as the muting pin as well.
13. BTL connection operation is possible.

Absolute Maximum Ratings ($T_a = 25^\circ\text{C}$)

Parameter	Symbol	Limits	Unit
Supply voltage	V_{CC}	18	V
Power dissipation	P_d	18*	mW
Operating temperature	T_{opr}	-20~+75	$^\circ\text{C}$
Storage temperature	T_{stg}	-30~+125	$^\circ\text{C}$
Junction temperature	T_j	150	$^\circ\text{C}$

* Metallic base temperature 75°C

Electrical Characteristics ($T_a = 25^\circ\text{C}$, $V_{CC} = 12\text{V}$, $R_L = 4\Omega$, $R_{NF} = 120\Omega$)

Parameter	Symbol	Min	Typ	Max	Unit	Conditions	Test circuit
Quiescent current	I_Q	20	40	70	mA	$V_{IN} = 0$	Fig. 27
Closed-loop voltage gain	G_{VC}	42	45	48	dB	$f = 1\text{kHz}$, $V_{IN} = -45\text{dBm}$	Fig. 27
Rated output power	P_{OUT}	3.7	4.5	—	W	$f = 1\text{kHz}$, THD = 10%	Fig. 27
Total harmonic distortion	THD	—	0.3	1.5	%	$f = 1\text{kHz}$, $P_O = 0.5\text{W}$	Fig. 27
Output noise voltage	V_{NO}	—	0.7	3.5	mVrms	$R_g = 10\text{k}\Omega$	Fig. 27
Input resistance	R_{IN}	—	100	—	$\text{k}\Omega$	$f = 1\text{kHz}$, $V_{IN} = 5\text{mV}$	Fig. 27

Electrical Characteristic Curves

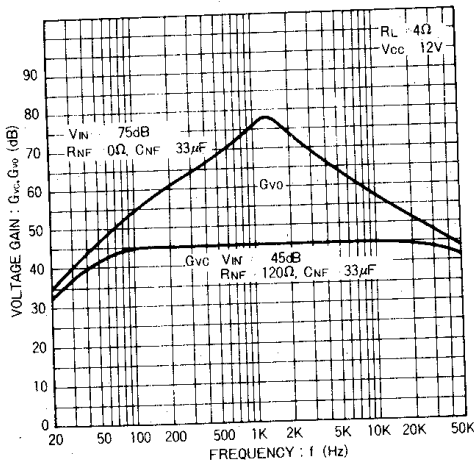


Fig. 4 Voltage gain vs. frequency

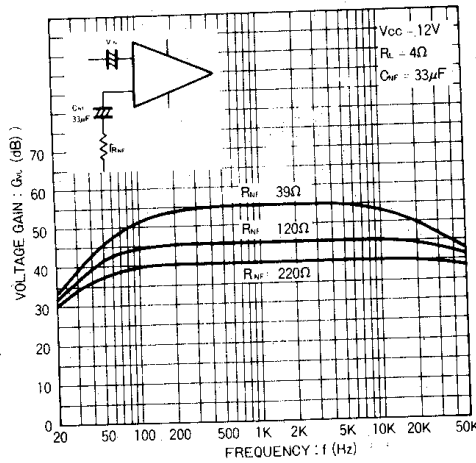


Fig. 5 Voltage gain vs. frequency

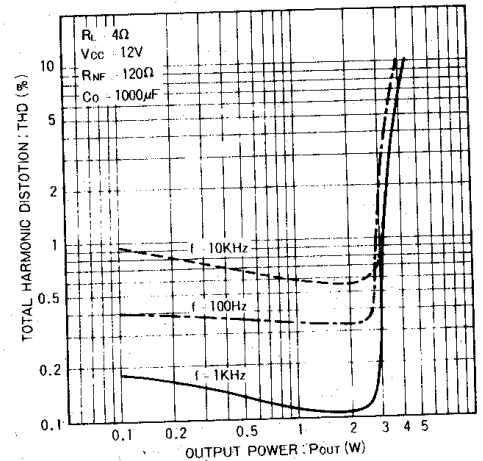


Fig. 6 Total harmonic distortion vs. output power

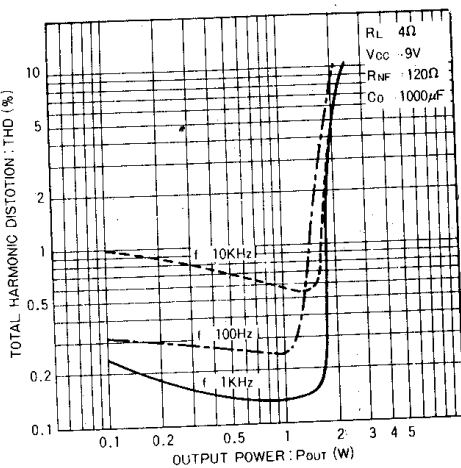


Fig. 7 Total harmonic distortion vs. output power

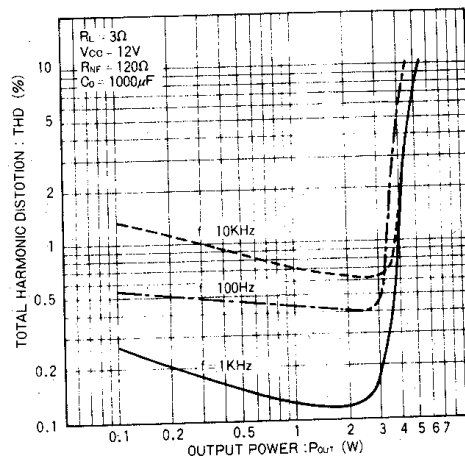


Fig. 8 Total harmonic distortion vs. output power

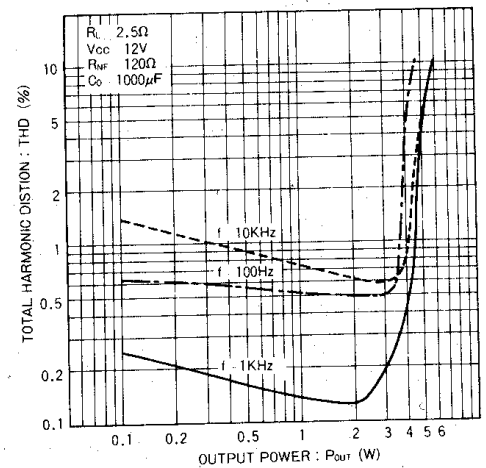


Fig. 9 Total harmonic distortion vs. output power