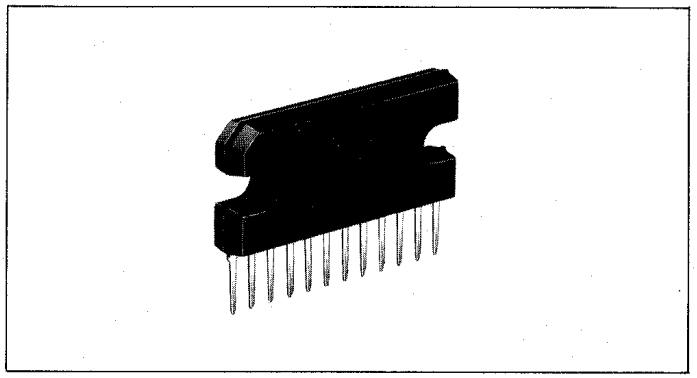
BA536



Dimensions (mm)

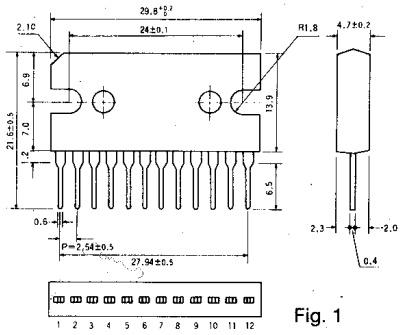


Fig. 1

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 cassete tape recorders, home radios and multiplex-audio TV sets.
When operated at l2V, 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.

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.
14. Symetrical 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

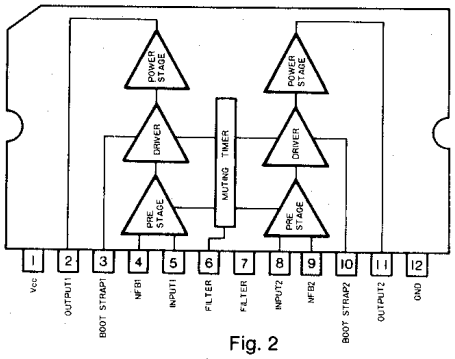


Fig. 2

Circuit Diagram

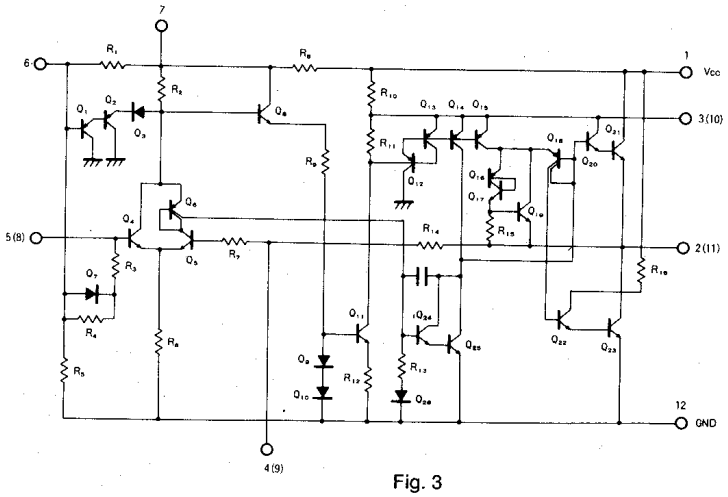


Fig. 3

Absolute Maximum Ratings (T_a = 25° C)

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

* Metallic base temperature 75°C

Electrical Characteristics (T_a = 25° C, V_{CC} = 12V, R_L = 4Ω, R_{NF} = 120Ω)

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 = 1kHz, V_{IN} = −45dBm	Fig. 27
Rated output power	P_{OUT}	3.7	4.5	—	W	f = 1kHz, THD = 10%	Fig. 27
Total harmonic distortion	THD	—	0.3	1.5	%	f = 1kHz, P_O = 0.5W	Fig. 27
Output noise voltage	V_{NO}	—	0.7	3.5	mVrms	R_g = 10kΩ	Fig. 27
Input resistance	R_{IN}	—	100	—	kΩ	f = 1kHz, V_{IN} = 5mV	Fig. 27

Electrical Characteristic Curves

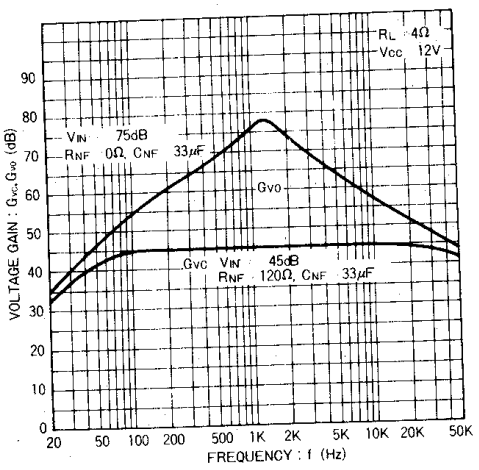


Fig. 4 Voltage gain vs. frequency

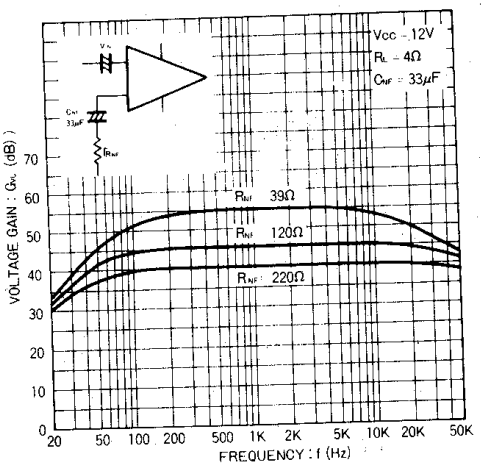


Fig. 5 Voltage gain vs. frequency

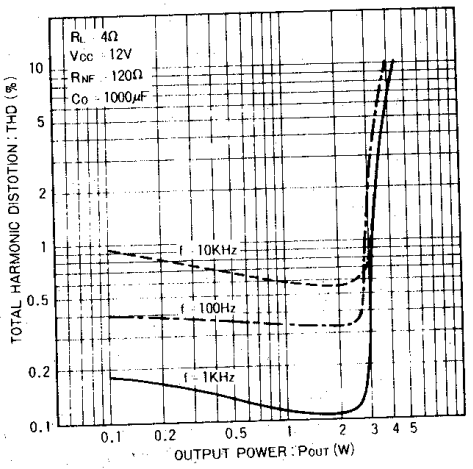


Fig. 6 Total harmonic distortion vs. output power

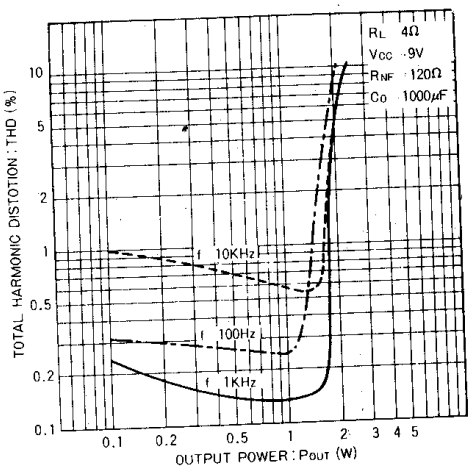


Fig. 7 Total harmonic distortion vs. output power

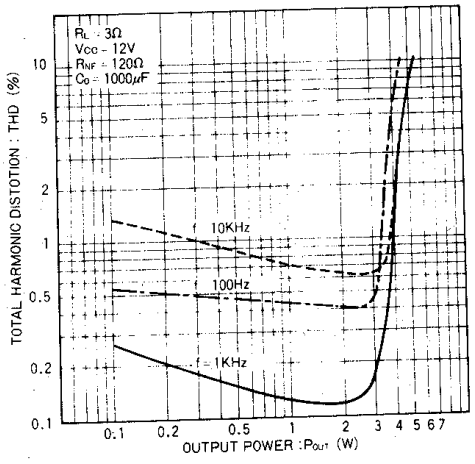


Fig. 8 Total harmonic distortion vs. output power

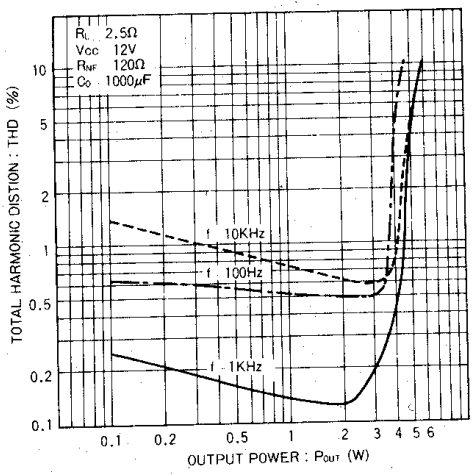


Fig. 9 Total harmonic distortion vs. output power