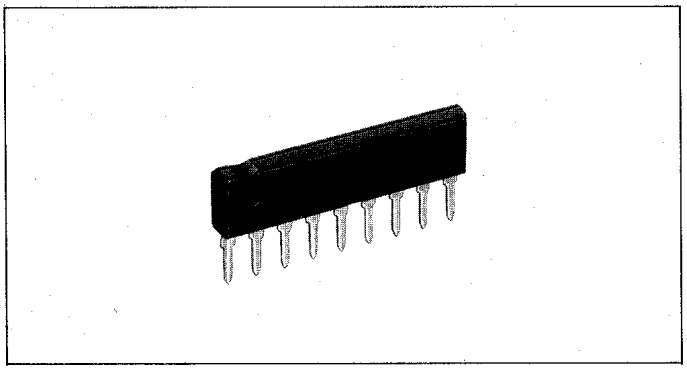
6V/800mW Power Amplifier

BA527



Dimensions (mm)

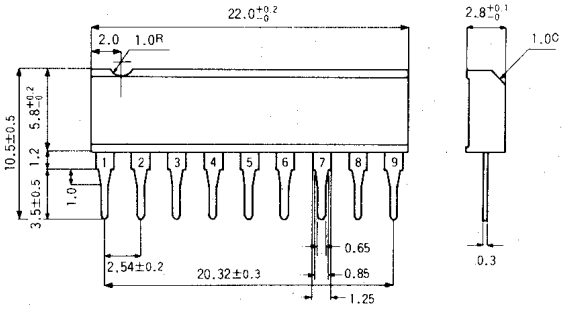


Fig. 1

The BA527 is a monolithic integrated circuit consisting of an audio power amplifier designed for use in portable radios and cassette tape recorders.
An output power of 800mW (THD = 10%) is deliverable to a load of 4Ω when operated at 6V. Pop noise has been virtually eliminated, and this device is suitable for use in high-quality compact audio equipment such as tape recorders or tape recorder/radio combinations.

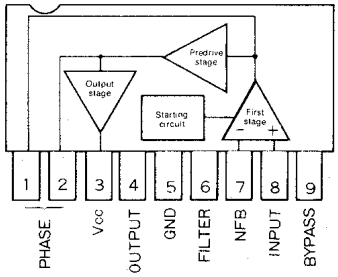
Features

1. The rated output power of 800mW (THD = 10%) is deliverable to a 4Ω load when operated at 6V, and a maximum output power of 1200mW is achieveable (see Fig. 4).
2. This device is pin-compatible with the ROHM BA516 (BA546) and BA526, thus enhancing its versatility.
3. The compact 9-pin SIP package does not require heatsinking and is thus both compact and easy-to-assemble.
4. In addition to high ripple rejection (55dB), pop noise has been virtually eliminated in this high-performance IC (see Figs. 5 & 11).
5. Excellent low-voltage operation (starting voltage 2.8V)

Applications

1. Compact radio cassette recorders
2. Portable cassette recorders

Block Diagram



Circuit Diagram

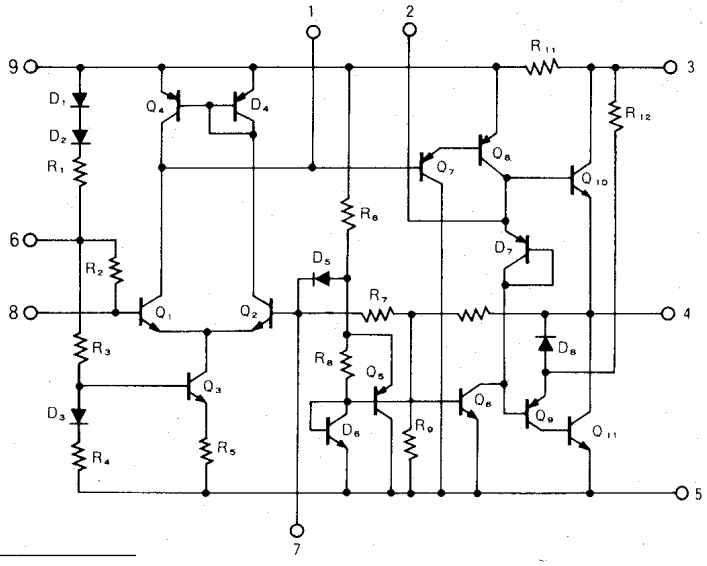


Fig. 3

Absolute Maximum Ratings (T_a = 25°C)

Parameter	Symbol	Limits	Unit
Supply voltage	V_{CC}	9	V
Power dissipation	P_d	800	mW
Operating temperature	T_{opr}	−25~+16	°C
Storage temperature	T_{stg}	−55~+125	°C

Electrical Characteristics (T_a = 25°C, V_{CC} = 6V, R_L = 4Ω, f = 1kHz, R_{NF} = 220Ω)

Parameter	Symbol	Min	Typ	Max	Unit	Conditions	Test circuit
Quiescent current	I_Q	—	16	25	mA	V_{IN} = 0V	Fig. 16
Closed-loop voltage gain	G_{VC}	43	46	49	dB	R_{NF} = 220Ω, V_O = 0.45V	Fig. 16
Maximum output power	P_{OM}	900	1300	—	mW		Fig. 16
Rated output power	P_{OUT}	700	800	—	mW	THD = 10%, 1kHz	Fig. 16
Output noise voltage	V_{NO}	—	0.2	0.7	mVrms	R_g = 0Ω	Fig. 16
Total harmonic distortion	THD	—	0.45	1.8	%	P_O = 50mW, 1kHz	Fig. 16
Input resistance	R_{IN}	—	47	—	kΩ	1kHz, P_O = 50mW	Fig. 16
Ripple rejection ratio	RR	45	55	—	dB	R_g = 0Ω, f = 100Hz	Fig. 16

Electrical Characteristic Curves

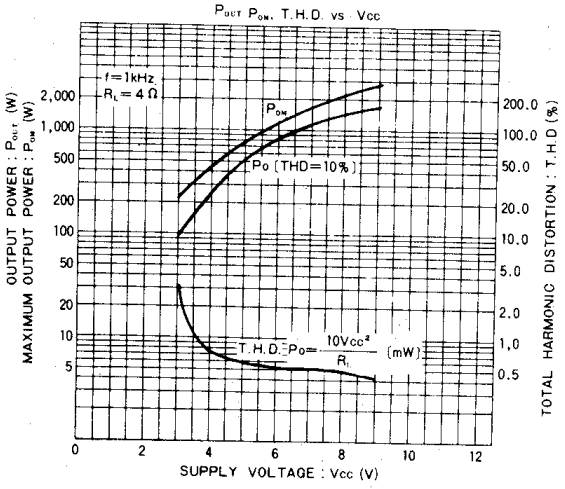


Fig. 4 Output power and total harmonic distortion vs. supply voltage

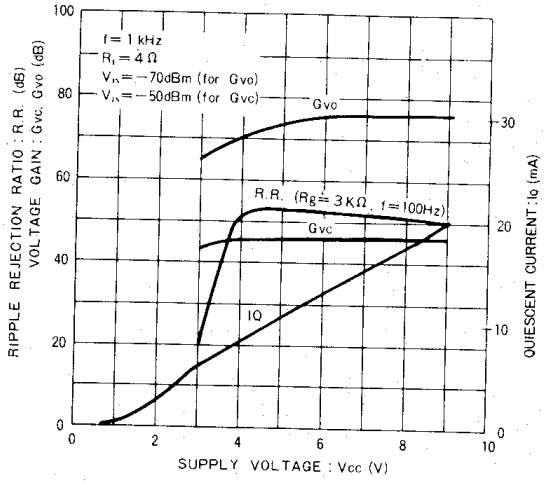


Fig. 5 Quiescent current, voltage gain, and ripple rejection ratio vs. supply voltage

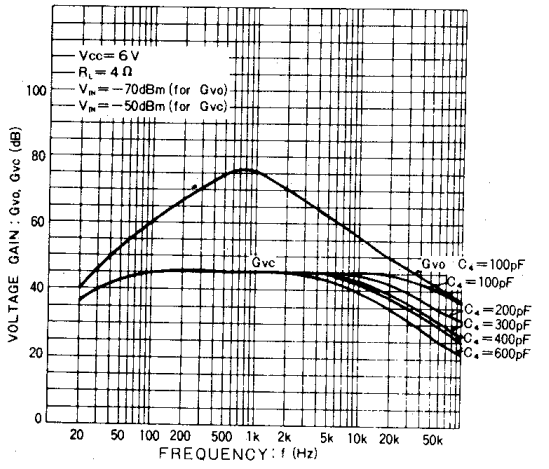


Fig. 6 Voltage gain vs. frequency

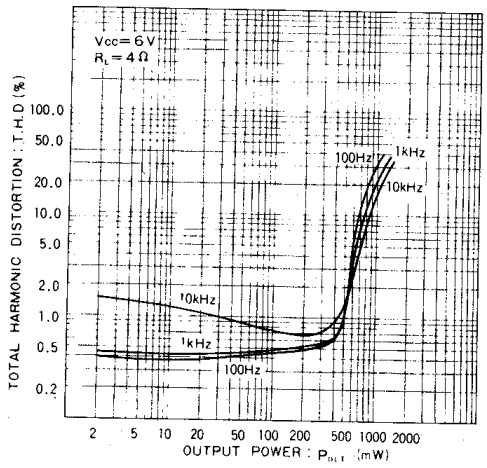


Fig. 7 Total harmonic distortion vs. output power (4Ω load)