TEA2025

STEREO AUDIO AMPLIFIER

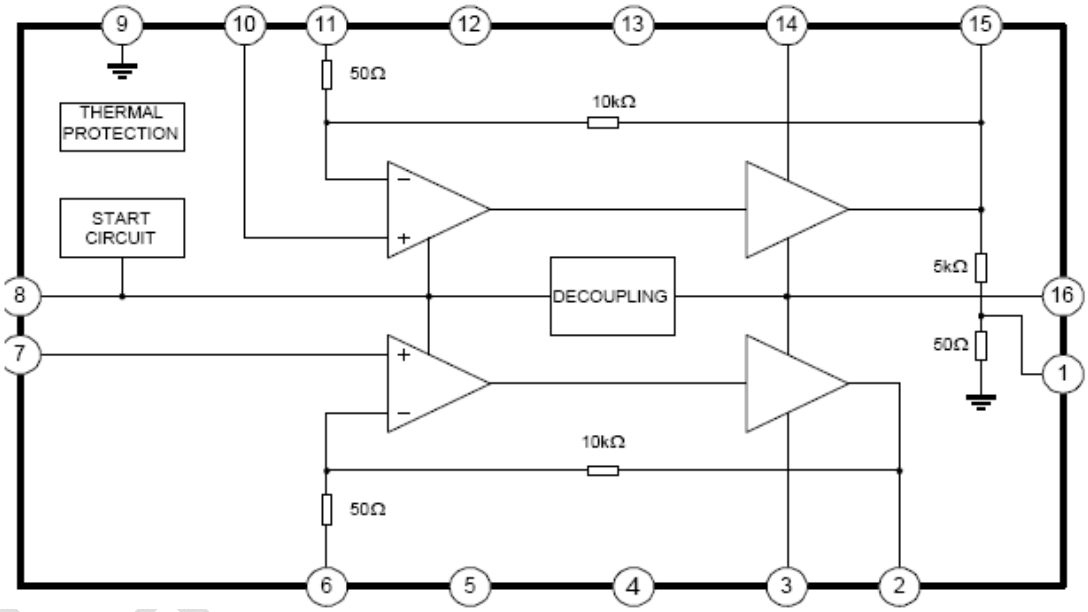
Description

The TEA2025 is a monolithic integrated audio amplifier in a 16-pin plastic dual in line package. It is designed for portable cassette players and radios. The IC features monolithic silicon chip.

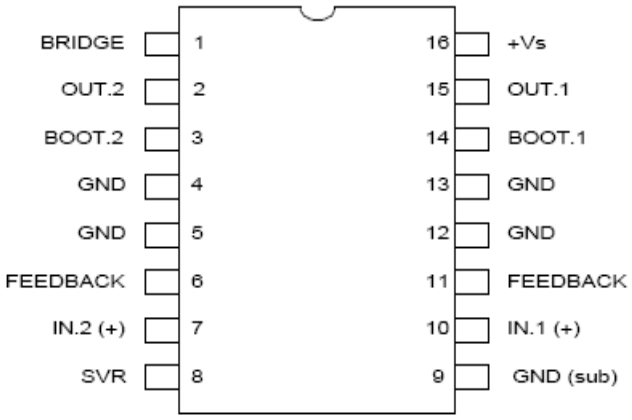
Features

- Working Voltage down to 3V.
- Few External components.
- High Channel isolation.
- Voltage gain up to 45dB(Adjustable. with external resistor).
- Soft clipping.
- Internal Thermal protection.

Functional Diagram



Pin Configurations



Absolute Maximum Ratings

PARAMETER	SYMBOL	VALUE	UNIT
Supply Voltage	V_S	15	V
Output Peak Current	I_O	1.5	A
Junction Temperature	Tj	150	℃
Storage Temperature	Tstg	-40 ~ +150	℃

Electrical Characteristics (Ta=25℃,VCC=9V,Stereo,Unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Supply Voltage	V_S		3		12	V
Quiescent Current	I_Q			40	50	mA
Quiescent output voltage	V_O			4.5		V
Voltage gain	A_V	Stereo	43	45	47	dB
		Bridge	49	51	53	
Voltage gain difference	ΔA_V				±1	dB
Input impedance	R_i			30		kΩ
Output Power	P_O	f=1kHz;d=10% Stereo per channel V_{CC}=9V;R_L=4Ω R_L=8Ω	1.7	2.3 1.3		W
		V_{CC}=6V;R_L=4Ω RL=8Ω	0.7	1 0.6		
		V_{CC}=3V;R_L=4Ω		0.1		
		Bridge V_{CC}=9V;R_L=8Ω		4.7		
		V_{CC}=6V;R_L=4Ω		2.8		
Distortion	d	V_{CC}=9V;R_L=4Ω f=1kHz;P_O=250mW Stereo		0.3	1.5	%
		Bridge		0.5		
Supply voltage Rejection	SVR	R_G=0;A_V=45dB Vripple=150mVRMS Fripple=100Hz	40	46		dB
Input noise Voltage	Vn	A_V=200 Bandwidth: 20Hz to 20kHz R_G=0 R_G=10kΩ		1.5 3	3 6	μV
Cross-Talk	C.T.	R_G=10kΩ; f=1kHz;R_L=4Ω P_O=1W	40	55		dB

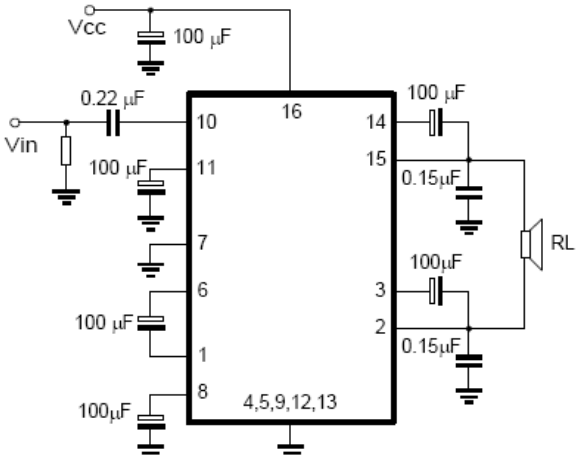
Thermal Resistance

Rth(j-c):Junction to case thermal resistance 15℃/W

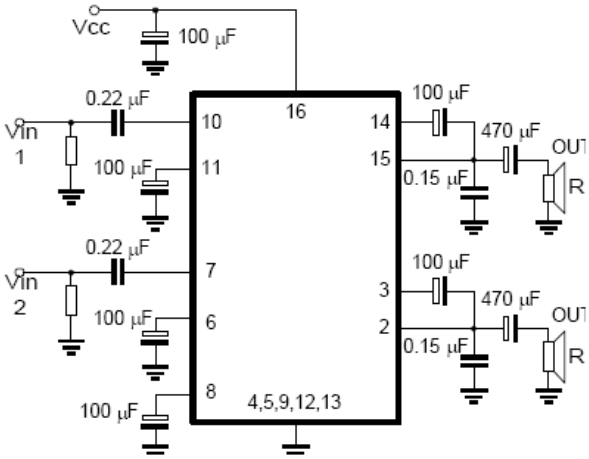
Rth(j-a):Junction to ambient thermal resistance 60℃/W

Application Circuit

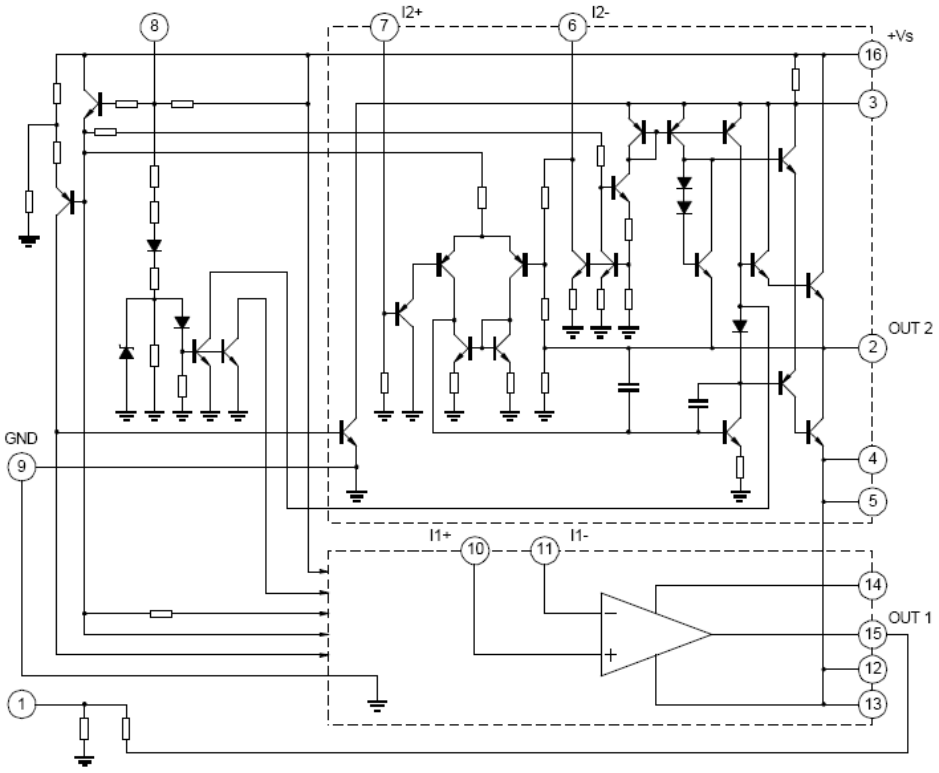
Bridge Application:



Stereo Application:

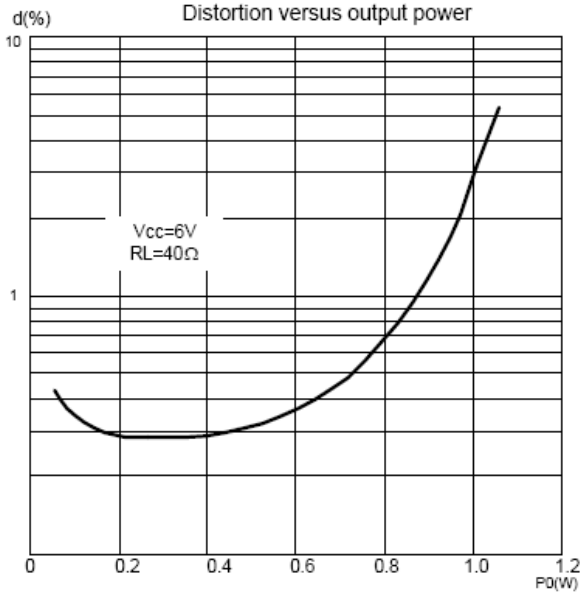


Schematic Diagram

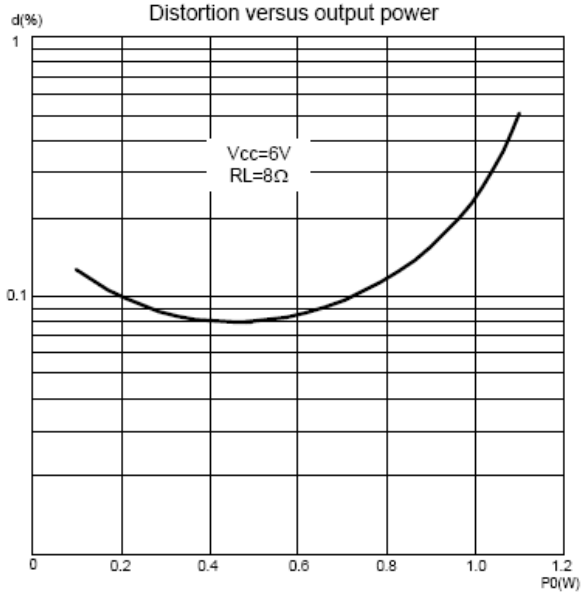


Typical Performance Characteristics

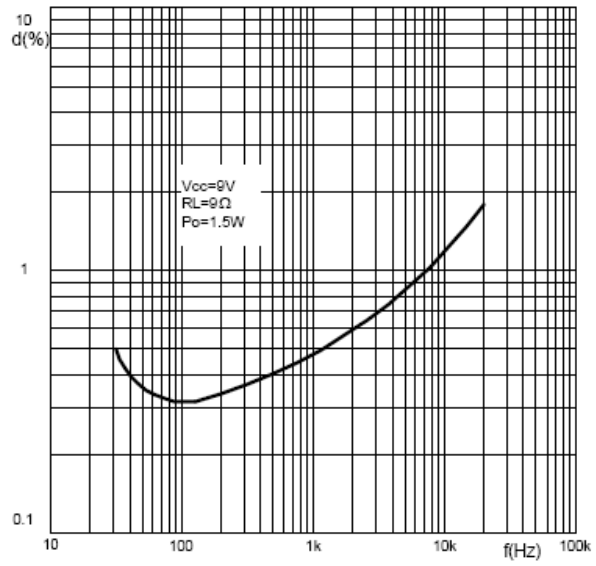
Distortion versus output power



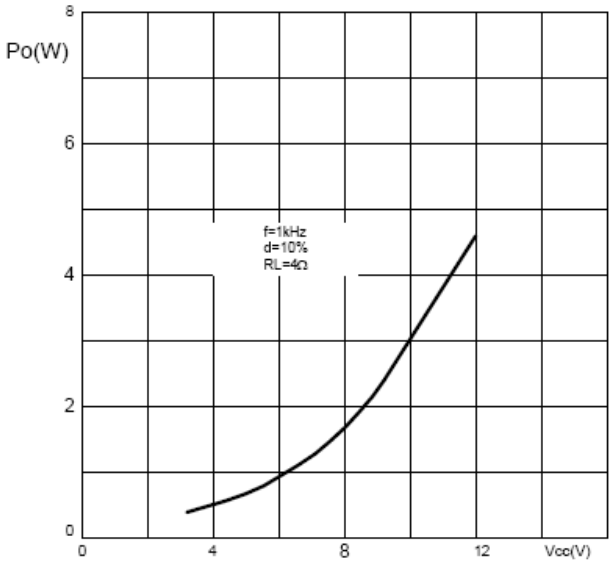
Distortion versus output power



Distortion versus output Frequency



Output power/versus supply voltage



Package Description

DIP16 PACKAGE OUTLINE DIMENSIONS