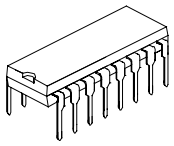
TEA2025B (12V) LINEAR INTEGRATED CIRCUIT

STEREO AUDIO AMPLIFIER

DESCRIPTION

The TEA2025B is a monolithic integrated audio amplifier in a 16-pin plastic dual in line package. It is designed for portable cassette players and radios.

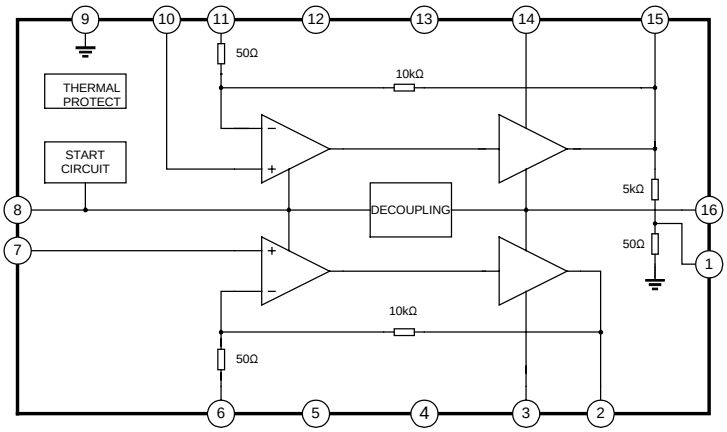


DIP-16

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

BLOCK DIAGRAM



ABSOLUTE MAXIMUM RATINGS

Characteristic	Symbol	Value	Unit
Supply Voltage	V_S	12	V
Output Peak Current	I_O	1.5	A
Junction Temperature	Tj	150	℃
Storage Temperature	Tstg	-40～+150	℃

ELECTRICAL CHARACTERISTICS

(Tamb=25℃,V_{CC}=9V,Stereo,Unless otherwise specified)

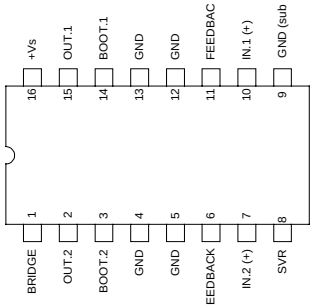
Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Supply Voltage	V_S		3	—	12	V
Quiescent Current	I_Q		—	40	50	mA
Quiescent output voltage	V_O		—	4.5	—	V
Voltage gain	A_V	Stereo	43	45	47	dB
		Bridge	49	51	53	
Voltage gain difference	ΔA_V		—	—	±1	dB
Input impedance	Ri		—	30	—	kΩ
Output Power	P_O	f=1kHz;d=10% Stereo per channel V_{CC}=9V;R_L=4Ω	1.7	2.3	—	W
		R_L=8Ω	—	1.3	—	
		V_{CC}=6V;R_L=4Ω	0.7	1	—	
		R_L=8Ω	—	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	-	1.5	3	μV
		R_G=10kΩ	-	3	6	
Cross-Talk	C.T.	R_G=10kΩ; f=1kHz;R_L=4Ω P_O=1W	40	55	-	dB

THERMAL RESISTANCE

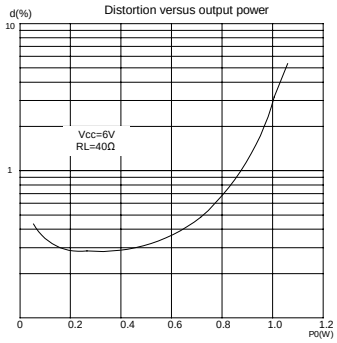
Rth(j-c):Junction to case thermal resistance 15℃ /W

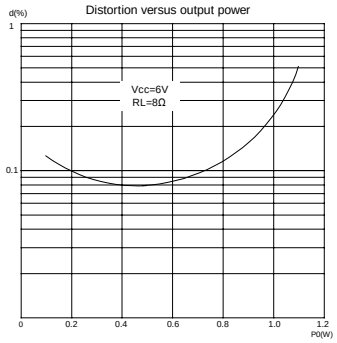
Rth(j-a):Junction to ambient thermal resistance 60℃ /w

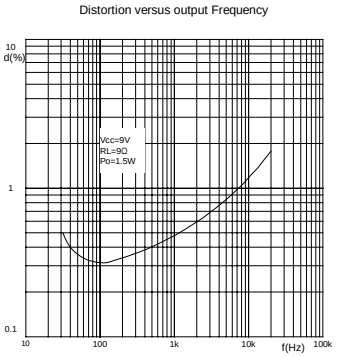
PIN CONNECTION

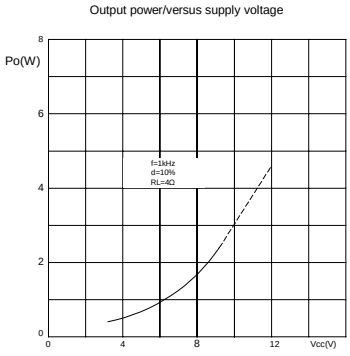


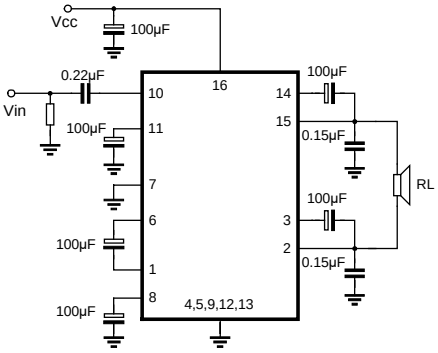
TYPICAL PERFORMANCE CHARACTERISTICS

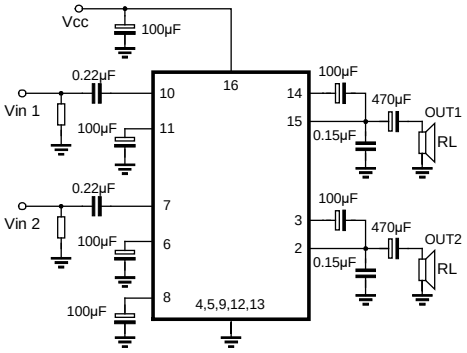


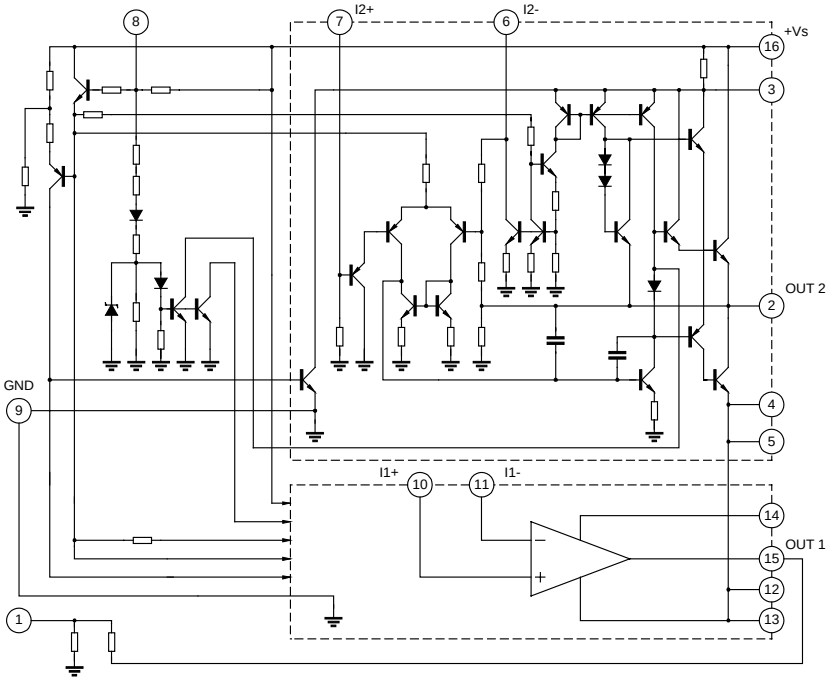







Vcc
100µF
0.22µF
Vin
100µF
16
10
11
7
6
1
8
4,5,9,12,13
14
15
3
2
100µF
0.15µF
100µF
0.15µF
RL
100µF


Vcc
100µF
0.22µF
Vin 1
100µF
0.22µF
Vin 2
100µF
100µF
16
10
11
7
6
8
4,5,9,12,13
14
15
3
2
100µF
0.15µF
470µF
OUT1
RL
100µF
0.15µF
470µF
OUT2
RL


8
7
I2+
6
I2-
+Vs
16
3
OUT 2
2
GND
9
4
5
I1+
10
11
I1-
14
OUT 1
15
12
13
1