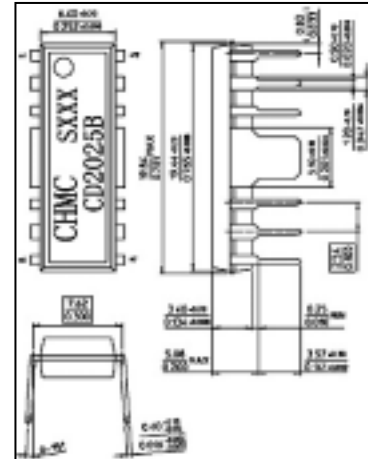# Silicore

2.3W DUAL AUDION POWER AMP   CD2025B

DESCRIPTION

The CD2025B is a monolithic integrated circuit consisting of a 2-channel power amplifier. It is suitable for stereo and bridge amplifier application of radio cassette tape recorder.
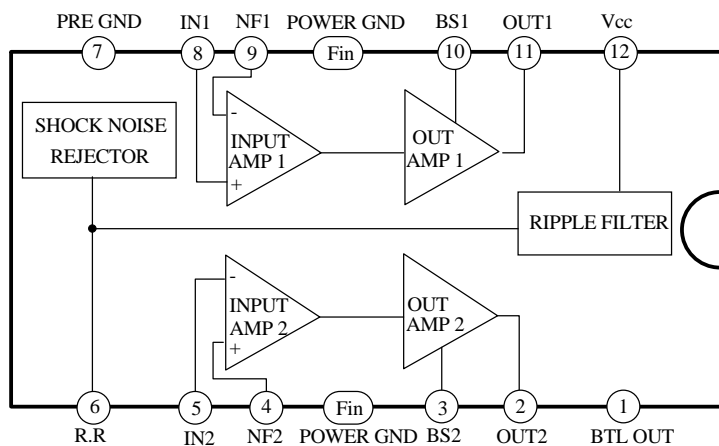
Outline Drawing

FEATURES

● High output power

Stereo: Po=2.3W (Typ) at Vcc=9V, R$_L$=4Ω

Bridge: Po=4.7W (Typ) at Vcc=9V, R$_L$=8Ω

● Low switching distortion at high frequency.

● Small shock noise at the time of power on/off due to a built-in muting circuit

● Good ripple rejection due to a built-in ripple filter.

● Good channel separation.

● Soft tone at the time of output saturation.

● Closed loop voltage gain fixed 45dB (Bridge: 51dB) but availability with external resistor added.

● Minimum number of external parts required.

● Easy to design radiator fin.

BLOCK DIAGRAM AND PIN CONNECTION

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ABSOLUTE MAXIMUM RATINGS (Ta=25°C)

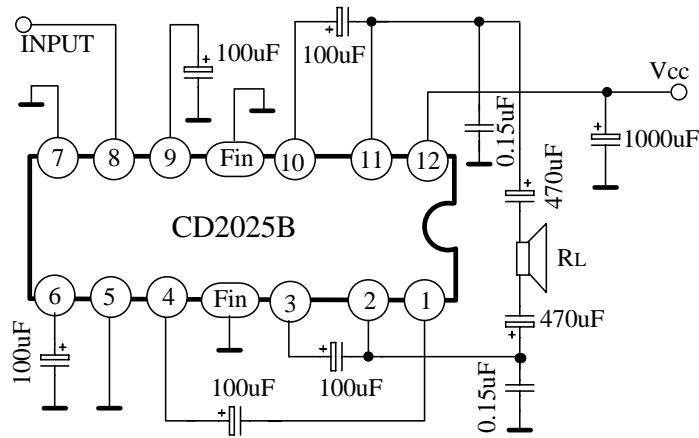| Characteristic	Symbol	Value	Unit
Supply Voltage	Vcc	15	V
Power Dissipation	P_D	4*	W
Operating Temperature	Topr	-20~70	°C
Storage Temperature	Tstg	-40~150	°C

*Fin is soldering on the PCB

ELECTRICAL CHARACTERISTICS

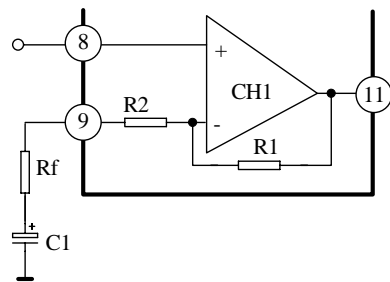(unless otherwise specified: Ta=25°C, Vcc=9V; Rg=600Ω,f=1kHz)

Characteristics	Test conditions		Symbol	Min.	Typ.	Max.	Unit
Operating Supply Voltage			Vcc		9	11	V
Quiescent circuit current	Vi=0V, Stereo		I_{CCQ}		40	55	mA
Closed loop Voltage Gain	Stereo	Vi=-45dBm	Gvc	43	45	47	dB
	Bridge			49	51	53	dB
Channel Balance	Stereo		CB	-1	0	+1	dB
Output Power	Stereo	THD=10%, $R_L=4Ω$	Po	1.7	2.3		W
		THD=10%, $R_L=8Ω$			1.3		
	Bridge	THD=10%, $R_L=8Ω$			4.7		
Total Harmonic Distortion	Stereo	Po=250mW $R_L=4Ω$	THD		0.3	1.5	%
	Bridge				0.5		
Input Resistance			Ri	21	30		kΩ
Ripple Rejection Ratio	Stereo, Rg=0Ω, Vi=150mW f=100Hz		RR	40	46		dB
Output Noise Voltage	Stereo Rg=0Ω		V_{NO}		0.3	1.0	mV
	Stereo Rg=10kΩ				0.5	2.0	
Cross Talk	Stereo Rg=10kΩ Vo=0dBm		CT	40	55		dB

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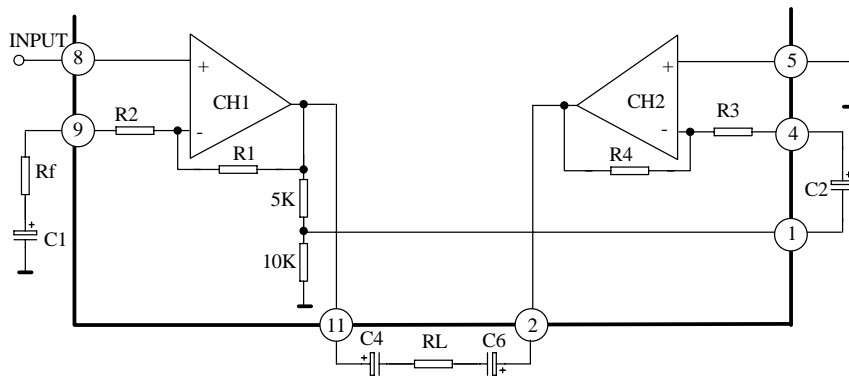
BRIDGE AMPLIFIER TEST AND APPLICATION CIRCUIT

APPLICATION INFORMATION

1. Stereo application

(1) Fixed Voltage gain

(Pin 9 connected to GND directly)

$Gv=20 \log(R1/R2)$

(2) Variable voltage gain

(Rf and C, Connected with pin 9)

$Gv=20 \log (R1/(R2+Rf)$

2.Bridge application

(1) Fixed voltage gain (pin 9 connected to GND directly)

$Gv=20\log (R1/R2)$

(2)Variable voltage gain Rf and C1 connected with pin 9

$Gv=20 \log (R1/(R2+Rf))$