



SRS 3D SURROUND AUDIO PROCESSOR

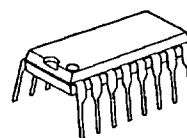
GENERAL DESCRIPTION

The NJM2179 is a SRS 3D surround audio processor regenerating the 3D surround sound by two speakers.

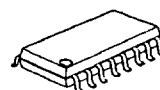
It regenerates 3D surround sound from only stereo input.

The features of wide operating voltage range, wide dynamic range, low output noise are suitable for any audio applications.

PACKAGE OUTLINE



NJM2179M

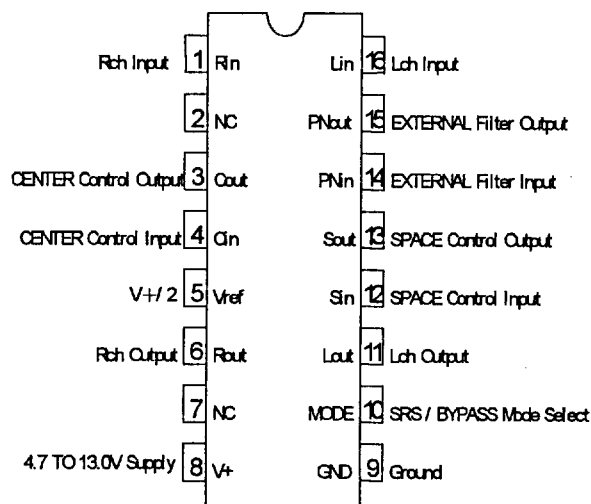


NJM2179D

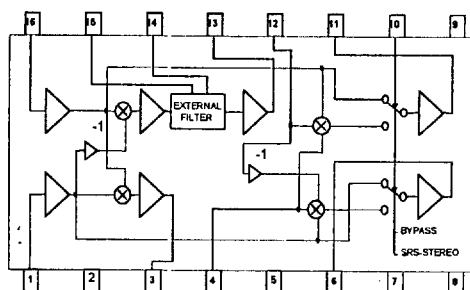
FEATURES

- Operating Voltage (4.7~13V)
- Low Supply Current (3D-STEREO MODE 7mA typ.)
- Wide Dynamic Range (>110dB)
- Low Output Noise (-90dBu typ.)
- BYPASS Gain (-3dB typ.)
- BYPASS FUNCTION(Through)
- SPACE and CENTER control system
- Internal Mode Control Switch(2bit)
- Bipolar Technology
- Package Outline DIP16, DMP16

PIN CONFIGURATION



BLOCK DIAGRAM



■ABSOLUTE MAXIMUM RATING (Ta=25°C)

PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	V ⁺	15	V
Power Dissipation	P _D	(DMP16) 350 (DIP16) 700	mW
Operating Temperature Range	T _{opr}	-20 to +75	°C
Storage Temperature Range	T _{stg}	-40 to +125	°C

■ELECTRICAL CHARACTERISTICS (V⁺=12V, T_a=25°C)

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Operating Voltage	V ⁺		4.7	12.0	13.0	V
Operating Current	I _{cc}	No Signal BYPASS	—	5.5	8.8	mA
		No Signal 3D-STEREO	—	7.0	10.0	
Reference Voltage	V _{REF}	V ⁺ /2	5.5	V ⁺ /2	6.5	V
Maximum Input voltage	V _{INMAX}	Vin=Lch f=1kHz Vout=Lch at THD=3% BYPASS	8.0	10.0	—	dBu
		Vin=Lch f=125Hz Vout=Rch at THD=3% SPACE VR Max CENTER VR Min 3D-STEREO	2.8	4.8	—	
Channel Valance	CH _{BAL}	Vin=0dBu f=1kHz SPACE VR Min CENTER VR Min Lch→Rch Rch→Lch 3D-STEREO	-1.0	0.0	1.0	dB
Output Noise	V _{NOISE}	Vin=GND DIN-AUDIO 3D-STEREO	—	22.0	60.0	μV
Total Harmonic Distortion	THD	Vin=-10dBu Lch f=1kHz SPACE VR Max CENTER VR Min 3D-STEREO	—	0.10	—	%
Bypass Gain	G _{BYPASS}	Vin=0dBu f=1kHz BYPASS	-5.0	-3.0	-1.0	dB
Feed Through Gain	G _{THROUGH}	Vin=0dBu f=1kHz SPACE VR Min CENTER VR Min L, Rch→L or Rch 3D-STEREO	-15.3	-13.3	-11.3	dB
L+R Gain	G _{L+R}	Vin=0dBu f=1kHz SPACE VR Min CENTER VR Max Lch→Rch 3D-STEREO	-10.5	-8.5	-6.5	dB
L-R Gain	G _{L-R}	Vin=0dBu f=125Hz SPACE VR Max CENTER VR Min Lch→Rch 3D-STEREO	7.0	9.0	11.0	dB



PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
MODE Select Control Voltage	V_{MODE}	V_{in} =HIGH LEVEL	2.0	—	V^+	V
		V_{in} =LOW LEVEL	0.0	—	0.7	

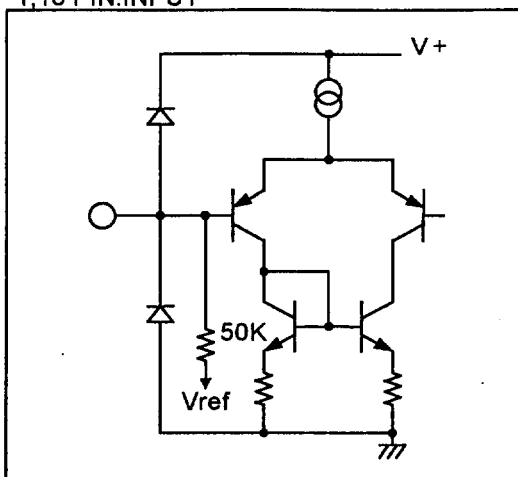
■ MODE Select Function

MODE	MODE1	MODE2
BYPASS	—	L
3D-STEREO	H	H

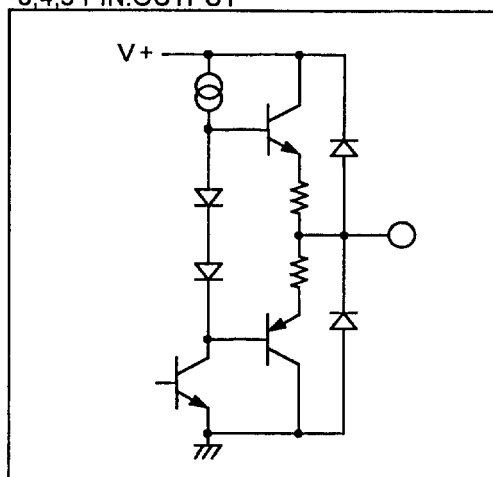


■ PIN FUNCTION

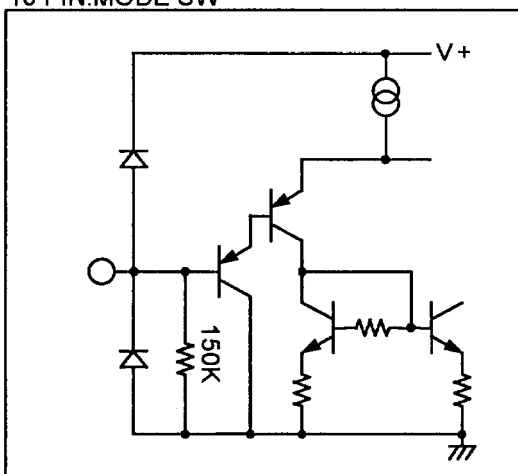
1,16 PIN:INPUT



3,4,5 PIN:OUTPUT

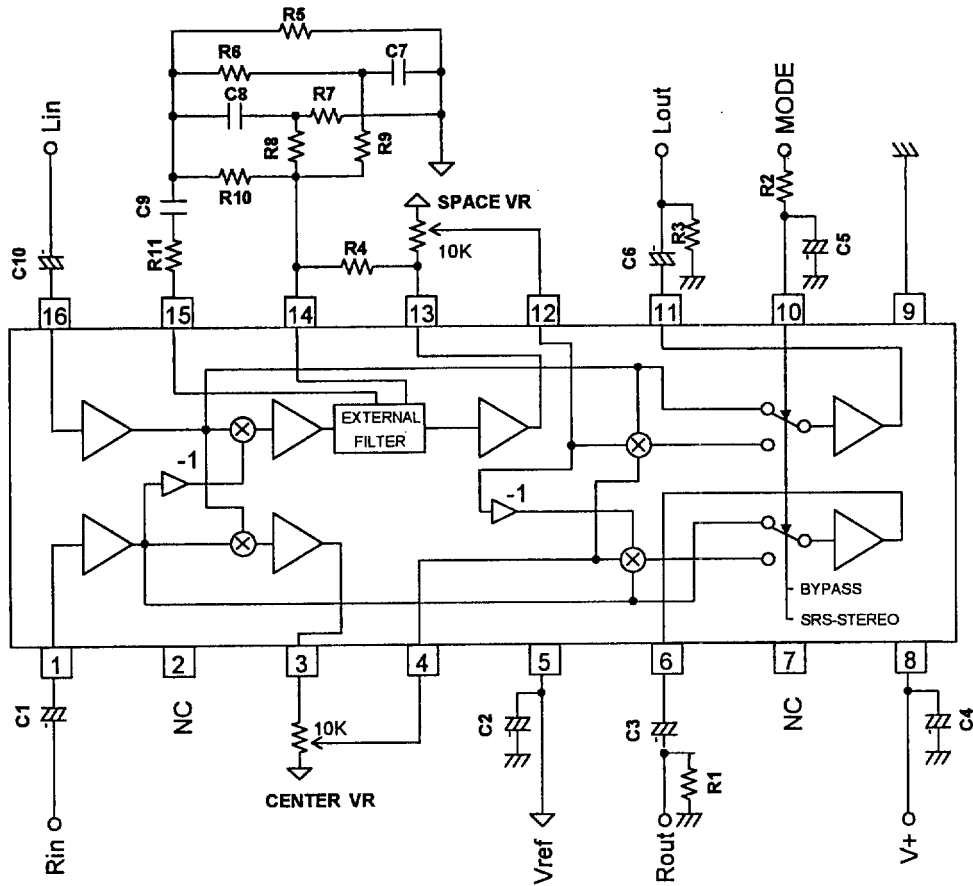


10 PIN:MODE SW





APPLICATION CIRCUIT

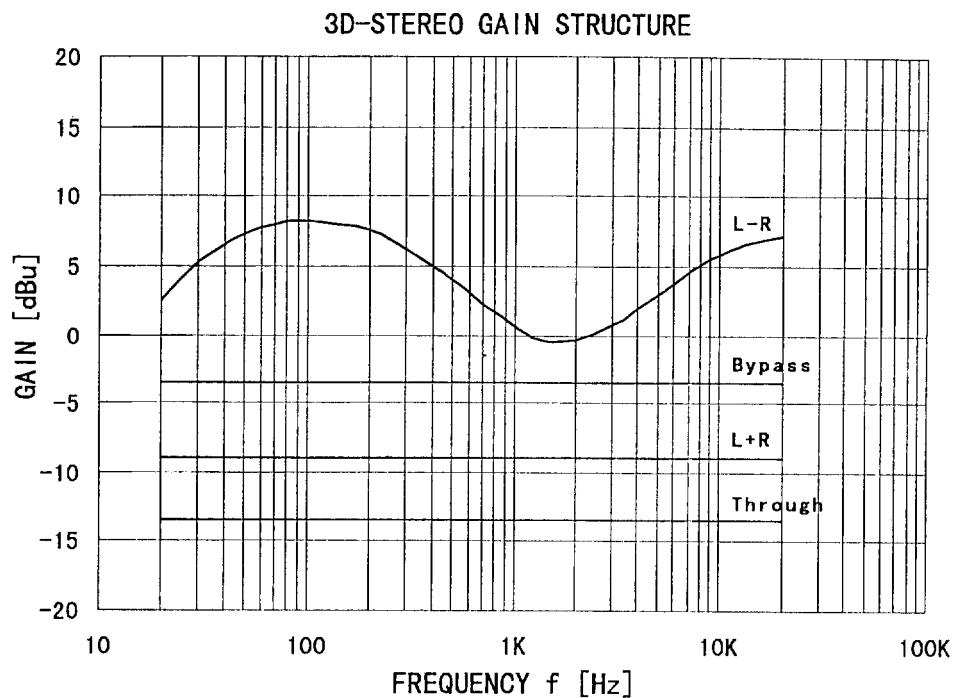


PARTS LIST

Parts No.	Value	Tolerance	Parts No.	Value	Tolerance
C1, C2, C3, C5	10 μ F		R1, R2, R3	10k Ω	$\pm 5\%$
C6, C10	10 μ F		R4	62k Ω	$\pm 5\%$
C4	100 μ F		R5	4.3k Ω	$\pm 5\%$
C7, C9	0.47 μ F	$\pm 5\%$	R6	1.5k Ω	$\pm 5\%$
C8	4700pF	$\pm 5\%$	R7	3.9k Ω	$\pm 5\%$
			R8	47k Ω	$\pm 5\%$
			R9	33k Ω	$\pm 5\%$
			R10	110k Ω	$\pm 5\%$
			R11	1k Ω	$\pm 5\%$



■ TYPICAL CHARACTERISTICS



**■ NOTE**

The Sound Retrieval System (SRS) technology incorporated in the NJM2179 is owned by SRS Labs, a US Corporation. The SRS technology is protected under U.S. Patent No. 4,866,774; 4,748,669; and 4,841,572 with numerous additional issued and pending foreign patents. The trademarks "SRS", "the SRS symbol" and "Sound Retrieval System" are registered in the U.S. and selected foreign countries.

In order to purchase and implement the NJM2179, all customers must enter into a license agreement directly with SRS Labs for the payment of royalties and to ensure proper trademark usage. Neither the purchase of the NJM2179, nor the corresponding sale of audio enhancement equipment conveys the right to commercialized recordings made with the Sound Retrieval System.

For further information, please contact:

SRS Labs, Inc. • 2909 Daimler Street • Santa Ana, CA 92705 USA

Tel 714-442-1070 Fax 714-852-1099 <http://www.srslabs.com>