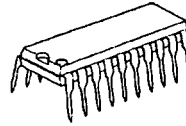


SOUND ENHANCEMENT AUDIO PROCESSOR

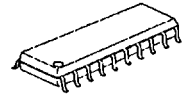
■ GENERAL DESCRIPTION

The NJM2152 is a sound enhancement audio processor which regenerate high definitive and nearly real clearness sound. It includes BBE ON/OFF switch and three-grade boost switches in high band. (High Band:5.0/8.0/11.0dB)
It is suitable for audio items such as TV, AV receiver, CD radio-cassette, speaker system, car audio, and others.

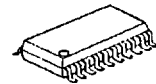
■ PACKAGE OUTLINE



NJM2152D



NJM2152M

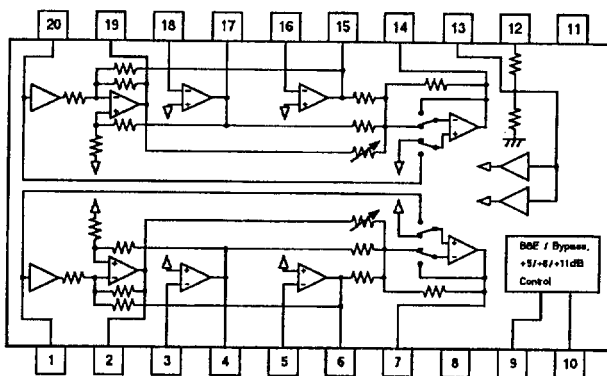


NJM2152V

■ FEATURES

- Operating Voltage (4.5~13V)
- Low Operating Current (8mA typ.)
- Low Output Noise (-97dBv typ.)
- Bypass Gain (0dB typ.)
- BBE ON/OFF Switch
- Independent High Boost three-grade Switch (High Band:5.0/8.0/11.0dB)
- Fixed Low Boost Level (4.0dB)
- Bipolar Technology
- Package Outline DIP20, DMP20, SSOP20

■ BLOCK DIAGRAM

 NJM2152D, NJM2152M, NJM2152V
(Top View)


■ PIN CONFIGURATION

1. INPUT
2. HPF
3. CR1
4. BPF
5. CR2
6. LPF
7. OUTPUT
8. NC
9. SW1
10. SW2
11. GND
12. V⁺
13. V_{REF}
14. OUTPUT
15. LPF
16. CR2
17. BPF
18. CR1
19. HPF
20. INPUT


■ ABSOLUTE MAXIMUM RATINGS (Ta=25°C)

PARAMETER	SYMBOL	RATING	UNIT
Supply Voltage	V ⁺	15	V
Power Dissipation	P _D	(DIP20) 700 (DMP20) 350 (SSOP20) 300	mW
Operating Temperature Range	T _{OPR}	-40 to +85	°C
Storage Temperature Range	T _{STG}	-40 to +125	°C

■ ELECTRICAL CHARACTERISTICS (Ta=25°C, V⁺=9V)

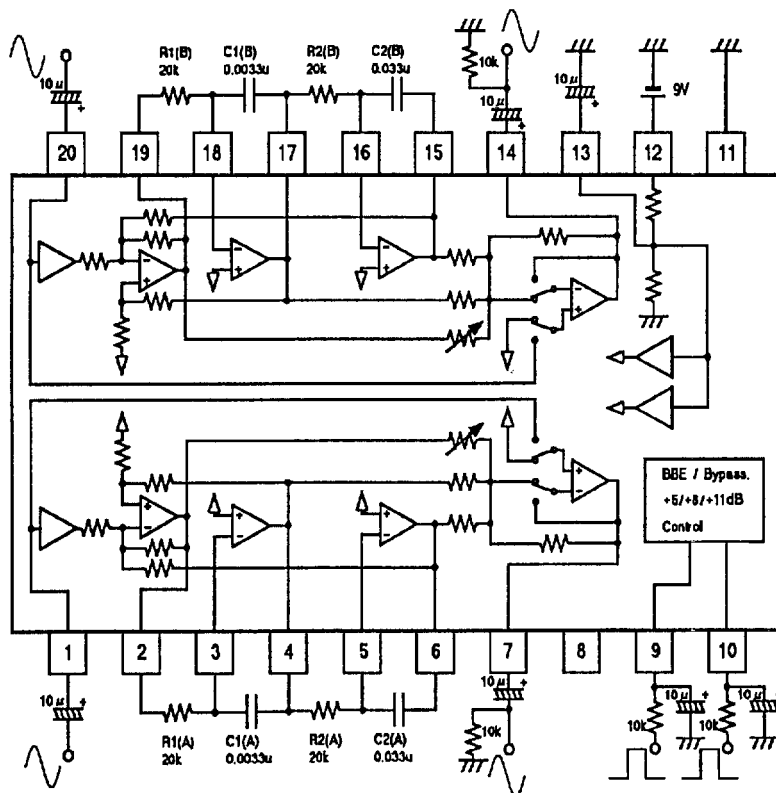
PARAMETER	SYMBOL	TEST CONDITION	FUNCTION		MIN.	TYP.	MAX.	UNIT
			BBE	Boost level				
Operating Voltage	V ⁺				4.5	—	13.0	V
Supply Current	I _{CC}	No Signal			—	8	12	mA
Reference Voltage	V _{REF}				4.0	4.5	5.0	V
SW Control Voltage Threshold	V _{THH}				2.0	—	V ⁺	V
	V _{THL}				0	—	0.5	V
Boost Level	Boost1	f=20Hz	ON		3.0	4.0	5.0	dB
	Boost2	f=1kHz	ON	Low	-1.3	-0.3	0.7	dB
	Boost3	f=20kHz	ON	Low	4.0	5.0	6.0	dB
	Boost4	f=20kHz	ON	Mid	7.0	8.0	9.0	dB
	Boost5	f=20kHz	ON	High	10.0	11.0	12.0	dB
Bypass Gain	G _{BYP}	f=1kHz	BYPASS		-1	0	1	dB
Channel Balance	BAL	f=1kHz	BYPASS		-1	0	1	dB
Channel Separation	CS	f=1kHz	ON		65	90	—	dB
Maximum Input Voltage	V _{INMAX1}	f=1kHz, R _L =10kΩ, THD=10%	BYPASS		2.8	3.3	—	V _{rms}
	V _{INMAX2}	f=1kHz, R _L =10kΩ, THD=1%	BYPASS		2.3	2.6	—	V _{rms}
Total Harmonic Distortion	THD	f=1kHz, V _{IN} =0.1V _{rms}	ON	Low	—	0.05	0.11	%
Output Noise	V _{NO1}	V _{IN} =GND, A-Weighting	BYPASS		—	-115	-90	dBV
	V _{NO2}	V _{IN} =GND, A-Weighting	ON	High	—	-97	-87	dBV

■ SWITCH FUNCTION

FUNCTION	SW2	SW1
Bypass	0	0
5dB	0	1
8dB	1	0
11dB	1	1


■ PIN FUNCTION

PIN NO.	SYMBOL	FUNCTION
1, 20	INPUT	Signal Input
2, 19	HPF	Filter Output
3, 16	CR1	Filter
4, 17	BPF	Filter Output
5, 16	CR2	Filter
6, 15	LPF	Filter Output
7, 14	OUTPUT	Signal Output
8	NC	None Connection
9	SW1	Boost Level Control
10	SW2	Boost Level Control
11	GND	GND
12	V ⁺	Power Supply
13	V _{REF}	Reference Voltage Output

■ APPLICATION CIRCUIT




NJM2152



■ NOTE

The NJM2152 is manufactured by New Japan Radio Co., Ltd under license from BBE Sound Inc. BBE is a registered trade mark of BBE Sound Inc. A license from BBE Sound Inc. is required before the NJM2152 can be purchased from New Japan Radio Co., Ltd.

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