

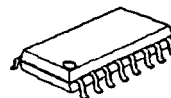
DOLBY B-TYPE NOISE REDUCTION PROCESSOR

GENERAL DESCRIPTION

The NJM2185A is a stereo Dolby B-type Noise Reduction processor for decoding operation.

The features of low operating voltage and low operating current are suitable for portable audio equipment, such as headphone stereo and others.

PACKAGE OUTLINE


NJM2185AM

NJM2185AV

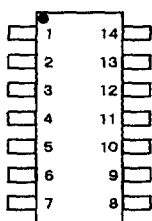
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This device is available only to licensees of Dolby Lab. Licensing and application information may be obtained from Dolby Lab.

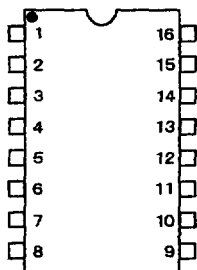
FEATURES

- Low Operating Voltage : +1.8V to +3.5V
- Low Operating Current : 1.2mA typ.
- Dolby Level : 31.6mVrms (-30dBv)
- 2 channels
- Few external parts
- Internal NR ON/OFF switch
- Bipolar Technology
- Package Outline : DMP16, SSOP14

PIN CONFIGURATION


NJM2185AV

- | | |
|---------------------|----------------------|
| 1. GND | 8. DETA |
| 2. I _{REF} | 9. DCA |
| 3. V _{REF} | 10. OUTA |
| 4. INB | 11. INA |
| 5. OUTB | 12. V _{EXT} |
| 6. DCB | 13. SW |
| 7. DETB | 14. V ⁺ |


NJM2185AM

- | | |
|---------------------|----------------------|
| 1. GND | 9. N. C. |
| 2. I _{REF} | 10. DETA |
| 3. V _{REF} | 11. DCA |
| 4. INB | 12. OUTA |
| 5. OUTB | 13. INA |
| 6. DCB | 14. V _{EXT} |
| 7. DETB | 15. SW |
| 8. N. C. | 16. V ⁺ |

■ ABSOLUTE MAXIMUM RATINGS (Ta=25°C)

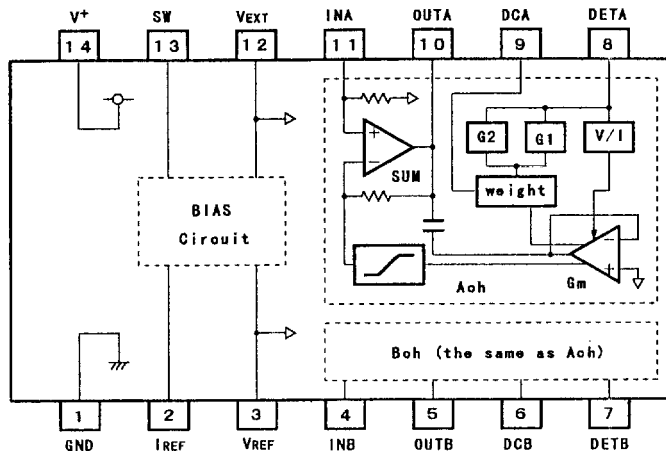
PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	V ⁺	5.0	V
Power Dissipation	P _D	300	mW
Operating Temperature Range	T _{OPR}	-20~+75	°C
Storage Temperature Range	T _{STG}	-40~+125	°C

■ ELECTRICAL CHARACTERISTICS (Ta=25°C, V+=3V, 0dB Reference is 31.6mVrms/1kHz, unless otherwise specified)

PARAMETER	SYMBOL	NR	f (Hz)	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Supply Voltage Range	V _{OPR1}	ON	-		1.8	-	3.5	V
	V _{OPR2}	OFF	-		1.6	-	3.5	V
Supply Current	I _{OO1}	ON	-	No signal	-	1.2	1.5	mA
	I _{OO2}	OFF	-	No signal	-	1.2	1.5	mA
Reference Voltage	V _{REF}	-	-		-	0.90	-	V
Control Voltage	V _{CON}	ON	-	13pin voltage	0.00	-	0.30	V
	V _{COFF}	OFF	-	13pin voltage	0.90	-	V ⁺	V
Voltage Gain	G _V	OFF	1k		-1.0	0.0	+1.0	dB
Decode Response	DEC1	ON	1k	V _{OUT} =-20dBd	2.7	4.2	5.7	dB
	DEC2	ON	3k	V _{OUT} =-30dBd	7.3	8.8	10.3	dB
	DEC3	ON	5k	V _{OUT} =-40dBd	8.8	10.3	11.8	dB
Signal Handling	SH	ON	1k	V ⁺ =1.8V, THD=1%	12.0	14.0	-	dB
Signal to Noise Ratio	S/N1	ON	-	R _g =5.6kΩ	63.0	71.5	-	dB
	S/N2	OFF	-	CCIR/ARM	70.0	82.0	-	dB
Total Harmonic Distortion	THD1	ON	1k	V _{OUT} =0dBd	-	0.08	-	%
	THD2	OFF	1k	V _{OUT} =0dBd	-	0.05	0.20	%

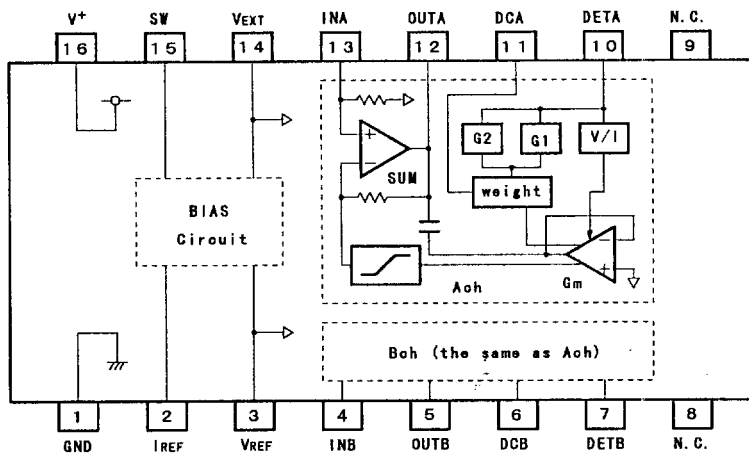


■ BLOCK DIAGRAM and PIN CONFIGURATION (NJM2185AV)



■ BLOCK DIAGRAM and PIN CONFIGURATION (NJM2185AM)

NOTE: The pin 8 and 9 are N.C.



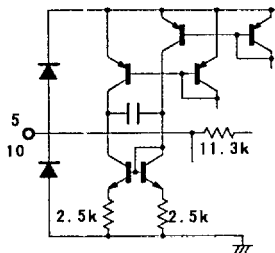
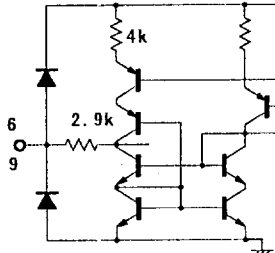
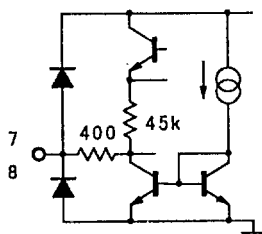
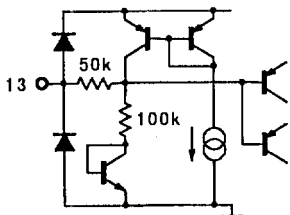
■ PIN FUNCTION (The Pin number of SSOP14 is indicated.)

PIN	SYMBOL	TERMINAL EXPLANATION	EQUIVALENT CIRCUIT
1	GND	Ground	
14	V ⁺	Power Supply	
2	I _{REF}	Current Reference (0.04V)	
3	V _{REF}	Voltage Reference (0.90V)	
4 11	INB INA	Play Back Input (0.90V = V _{EXT})	
12	V _{EXT}	External Voltage Reference Input (0.09V, join to V _{REF})	

NOTE: () → DC Voltage



■ PIN FUNCTION

PIN	SYMBOL	TERMINAL EXPLANATION	EQUIVALENT CIRCUIT
5 10	OUTB OUTA	Play Back Output ($0.90V = V_{EXT}$)	
6 9	DCB DCA	Weighting Filter ($0.90V = V_{REF}$)	
7 8	DET B DET A	Detector Output ($0.60V$)	
13	SW	Mode Control Input ($1.00V$)	

NOTE: () → DC Voltage