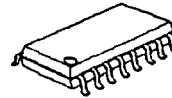


**DOLBY B-TYPE NOISE REDUCTION PROCESSOR**
**■ GENERAL DESCRIPTION**

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**

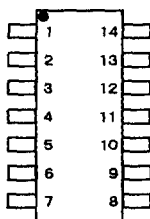
**NJM2185AV**

(NOTE) Dolby and the double-D symbol are trademarks of Dolby Laboratories Licensing Corporation. San Francisco, CA94103-4813, USA.

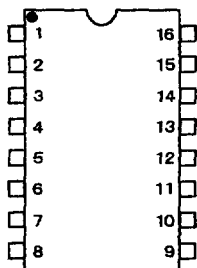
This device is available only to licensees of Dolby Lab. Licensing and application information may be obtained from Dolby Lab.

**■ 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 <sub>REF</sub> | 9. DCA               |
| 3. V <sub>REF</sub> | 10. OUTA             |
| 4. INB              | 11. INA              |
| 5. OUTB             | 12. V <sub>EXT</sub> |
| 6. DCB              | 13. SW               |
| 7. DETB             | 14. V <sup>+</sup>   |


**NJM2185AM**

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

## ■ ABSOLUTE MAXIMUM RATINGS (Ta=25°C)

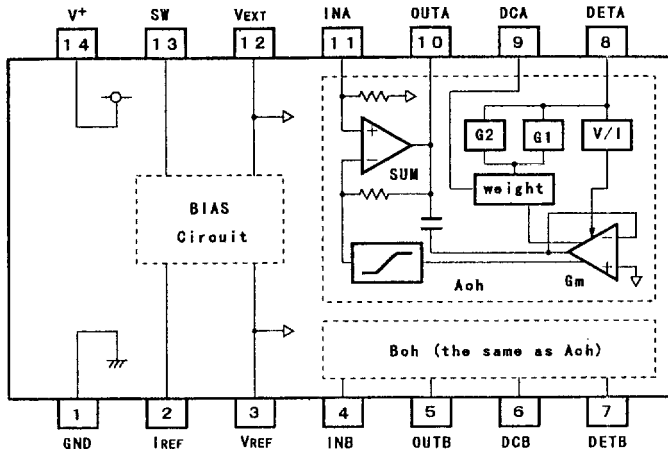
PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	V <sup>+</sup>	5.0	V
Power Dissipation	P <sub>D</sub>	300	mW
Operating Temperature Range	T <sub>OPR</sub>	-20~+75	°C
Storage Temperature Range	T <sub>STR</sub>	-40~+125	°C

## ■ 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 <sub>OPR1</sub>	ON	-		1.8	-	3.5	V
	V <sub>OPR2</sub>	OFF	-		1.6	-	3.5	V
Supply Current	I <sub>OO1</sub>	ON	-	No signal	-	1.2	1.5	mA
	I <sub>OO2</sub>	OFF	-	No signal	-	1.2	1.5	mA
Reference Voltage	V <sub>REF</sub>	-	-		-	0.90	-	V
Control Voltage	V <sub>CON</sub>	ON	-	13pin voltage	0.00	-	0.30	V
	V <sub>COFF</sub>	OFF	-	13pin voltage	0.90	-	V <sup>+</sup>	V
Voltage Gain	G <sub>V</sub>	OFF	1k		-1.0	0.0	+1.0	dB
Decode Response	DEC1	ON	1k	V <sub>OUT</sub> =-20dBd	2.7	4.2	5.7	dB
	DEC2	ON	3k	V <sub>OUT</sub> =-30dBd	7.3	8.8	10.3	dB
	DEC3	ON	5k	V <sub>OUT</sub> =-40dBd	8.8	10.3	11.8	dB
Signal Handling	SH	ON	1k	V <sup>+</sup> =1.8V, THD=1%	12.0	14.0	-	dB
Signal to Noise Ratio	S/N1	ON	-	R <sub>g</sub> =5.6kΩ	63.0	71.5	-	dB
	S/N2	OFF	-	CCIR/ARM	70.0	82.0	-	dB
Total Harmonic Distortion	THD1	ON	1k	V <sub>OUT</sub> =0dBd	-	0.08	-	%
	THD2	OFF	1k	V <sub>OUT</sub> =0dBd	-	0.05	0.20	%

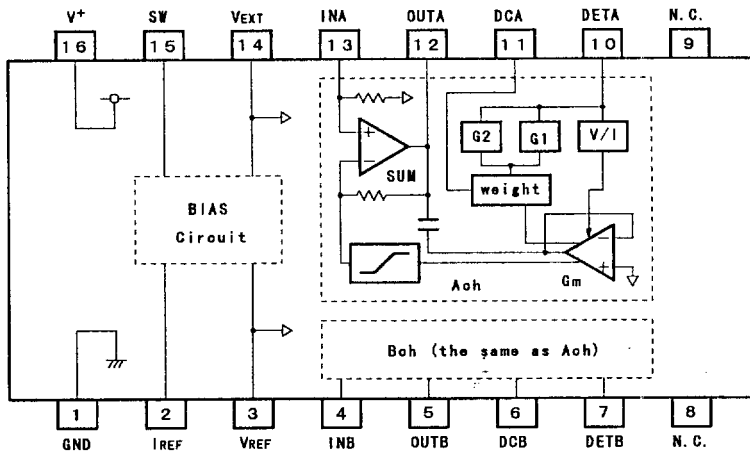


■ BLOCK DIAGRAM and PIN CONFIGURATION (NJM2185AV)



■ 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 <sup>+</sup>	Power Supply	
2	I <sub>REF</sub>	Current Reference (0.04V)	
3	V <sub>REF</sub>	Voltage Reference (0.90V)	
4 11	INB INA	Play Back Input (0.90V = V <sub>EXT</sub> )	
12	V <sub>EXT</sub>	External Voltage Reference Input (0.09V, join to V <sub>REF</sub> )	

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	DETB DETA	Detector Output ( $0.60V$ )	
13	SW	Mode Control Input ( $1.00V$ )	

NOTE: ( ) → DC Voltage