HEADPHONE AMPLIFIER for CD-ROM

■ GENERAL DESCRIPTION

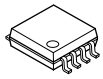
The **NJM2768B** is a headphone amplifier designed for CD-ROM.

It includes 0dB closed loop gain and mute circuit, requires few external component.

The **NJM2768B** realizes very low turn-noise at mute mode.

It is suitable for CD-ROM, and other general audio headphone amplifier application.

■ PACKAGE OUTLINE



NJM2768BM
(DMP8)

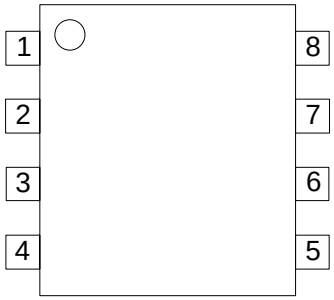
NJM2768BRB1
MSOP8(TVSP8)

■ FEATURES

- Operating Voltage 2.8 to 5.5V
- Operating Current 2mA typ. at V^+=5V
- Fixed Gain 0dB typ.
- Stereo Headphone Output
- Internal Mute Circuit
- Bipolar Technology
- Package Outline DMP8
  MSOP8(TVSP8)*

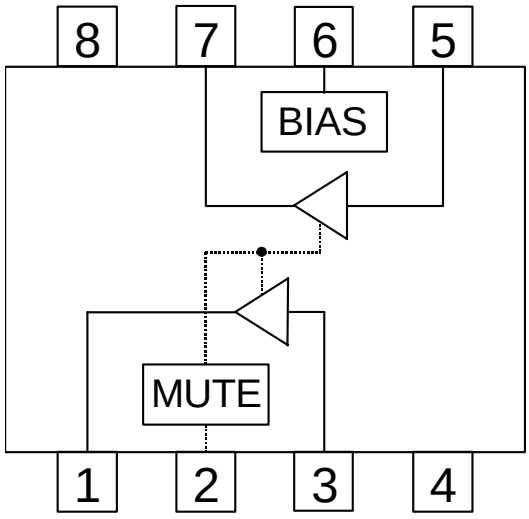
*MEET JEDEC MO-187-DA / THIN TYPE

■ PIN CONFIGURATION



PIN FUNCTION
1.OUT1
2.MUTE
3.IN1
4.GND
5.IN2
6.BIAS
7.OUT2
8.V^+

■ BLOCK DIAGRAM



■ ABSOLUTE MAXIMUM RATINGS (Ta=25°C)

PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	V^+	+7	V
Power Dissipation	P_D	(DMP8) 375 750 (note) (MSOP8(TVSP8))320	mW
Operating Temperature Range	Topr	-40 to +85	°C
Storage Temperature Range	Tstg	-50 to +150	°C

(note) At on PC board

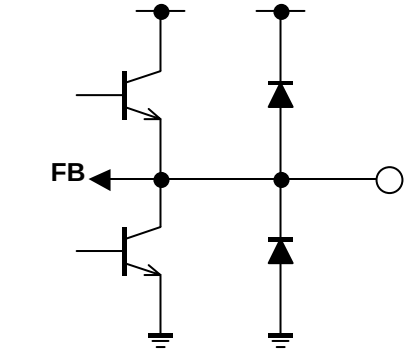
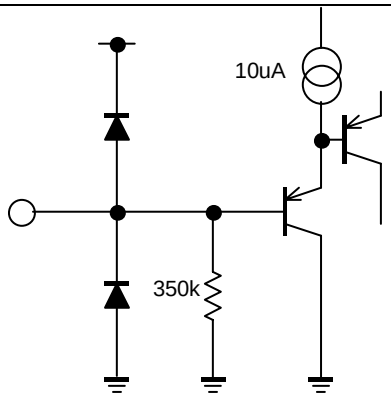
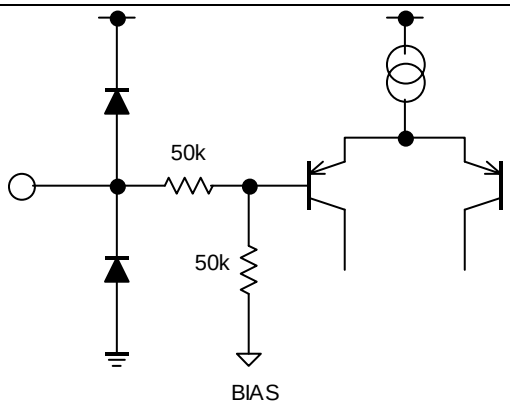
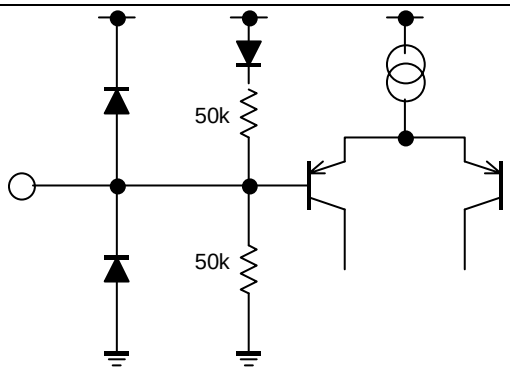
■ ELECTRICAL CHARACTERISTICS (V^+=5.0V,Vin=0dBV,f=1kHz,R_L=32Ω,Ta=25°C unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN.	TYP.	MAX.	UNIT
Operating Voltage	V^+		2.8	5.0	5.5	V
Operating Current	I_{CC}	No Signal	-	2.0	4.0	mA
Reference Voltage	Vref	No Signal	-	2.1	-	V
Closed Loop Gain	G_V		-1	0	1	dB
Channel Balance	ΔG_V		-0.5	0	+0.5	dB
Output Power	P_O1	R_L=32Ω, THD=0.1%	30	50	-	mW
	P_O2	R_L=16Ω, THD=0.1%	40	100	-	mW
Total Harmonic Distortion	THD		-	0.02	0.1	%
Output Noise Voltage	Vno	Rg=0Ω, A-Weighted	-	-104 (6.3)	-94 (20)	dBV (μVrms)
Mute Attenuation	ATT	Vo/Vin	-	-80	-70	dB
Channel Separation	CS		90	110	-	dB
Ripple Rejection Ratio	RR	Vripple=-20dBV, Rg=0Ω	-	70	-	dB
Input Voltage H-level	V_{IH}		2.0	-	V^+	V
Input Voltage L-level	V_{IL}		0.0	-	0.3	V

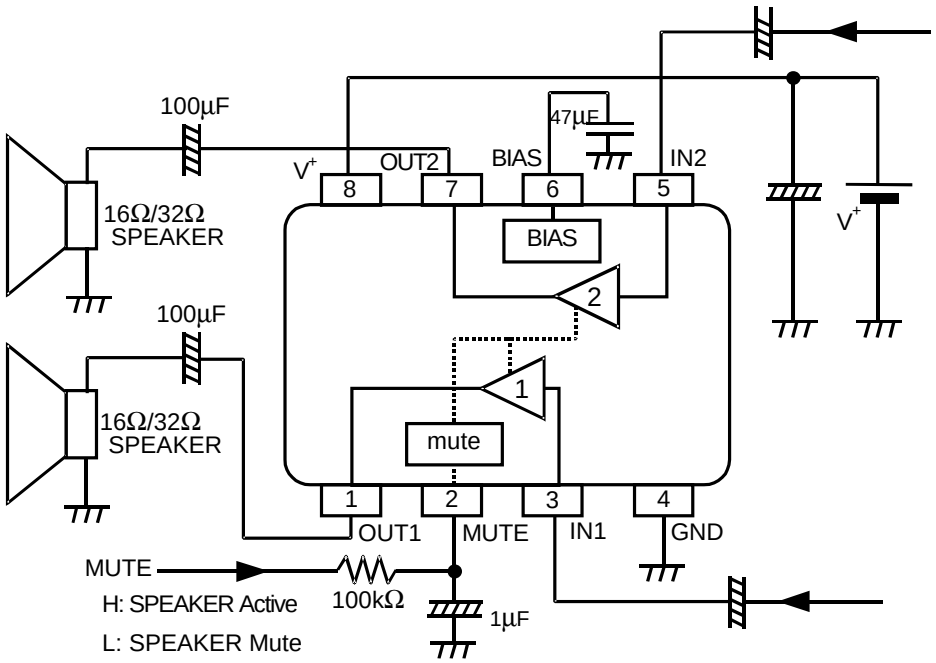
■ CONTROL PIN INFORMATION

PARAMETER	CONTROL SIGNAL	OPERATING CONDITION
MUTE ON	L	NON-SIGNAL
MUTE OFF	H	OUTPUT SIGNAL

■ **TERMINAL DESCRIPTION**

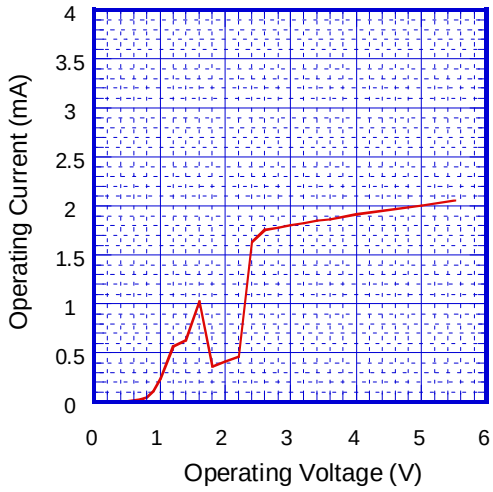
PIN NO.	SYMBOL	FUNCTION	EQUIVALENT CIRCUIT	TERMINAL VOLTAGE
1 7	OUT1 OUT2	OUTPUT1 OUTPUT2		$(V^+-1V_{BE})/2$
2	MUTE	MUTE CONTROL		-
3 5	IN1 IN2	INPUT1 INPUT2		$(V^+-1V_{BE})/2$
6	BIAS	REFERENCE VOLTAGE STABILIIZED CAPACITOR CONNECT TERMINAL		$(V^+-1V_{BE})/2$

■ TYPICAL APPLICATION

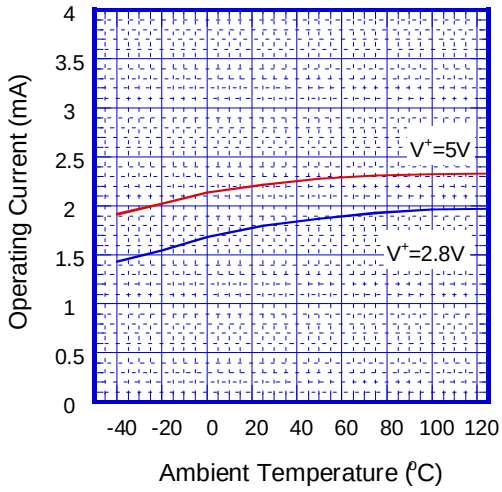


■ TYPICAL CHARACTERISTICS

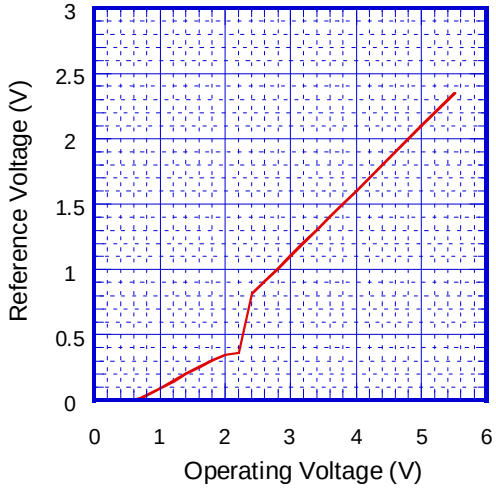
Oprating Current vs. Operating Voltage
(MUTE=V+)



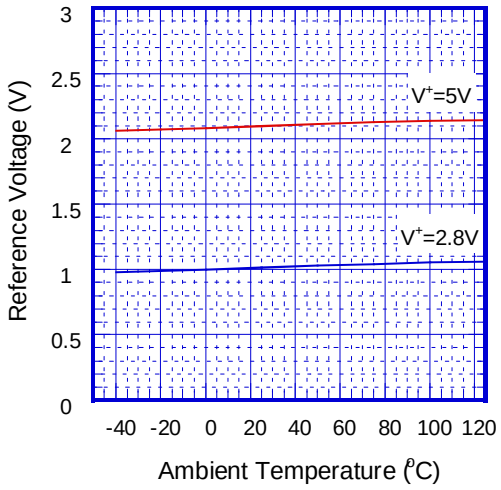
Operating Current vs. Ambient Temperature



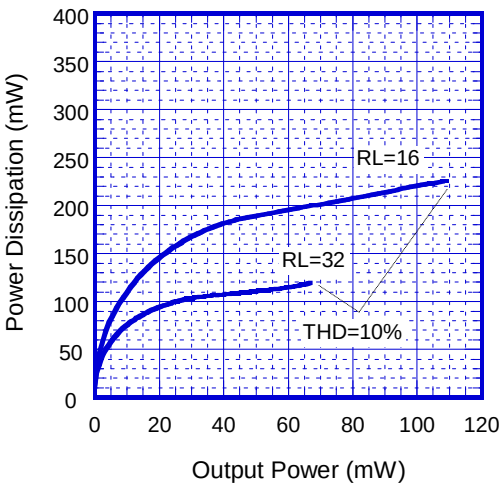
Reference Voltage vs. Operating Voltage



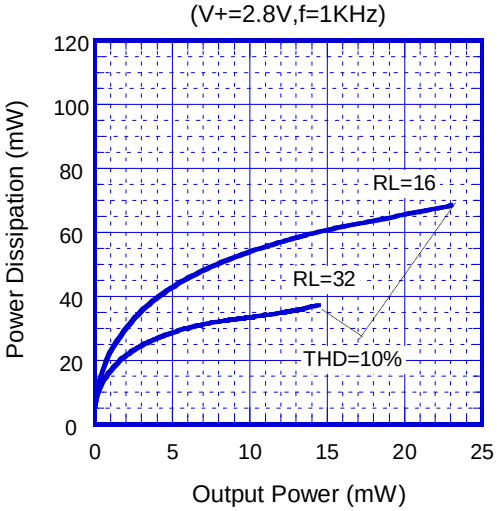
Reference Voltage vs. Ambient Temperature



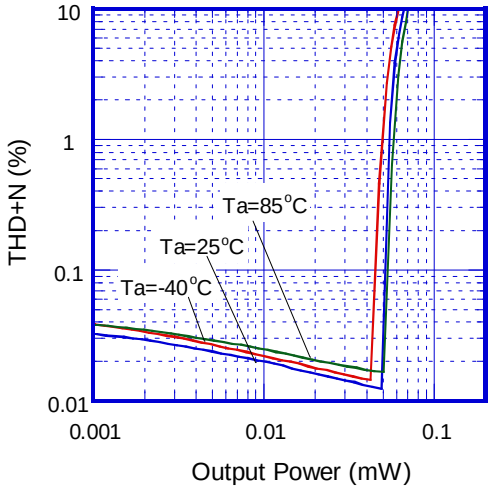
Power Dissipation vs. Output Power
(V+=5V,f=1KHz)



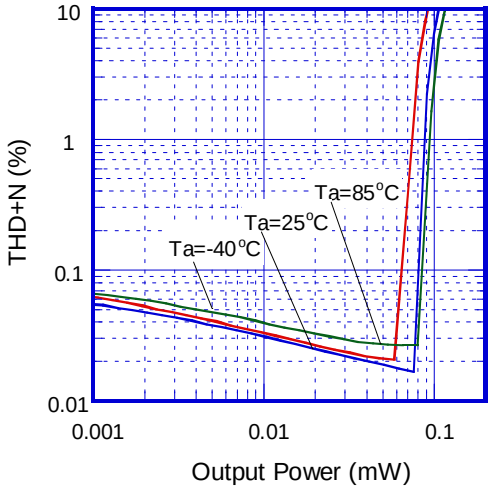
Power Dissipation vs. Output Power
(V+=2.8V,f=1KHz)



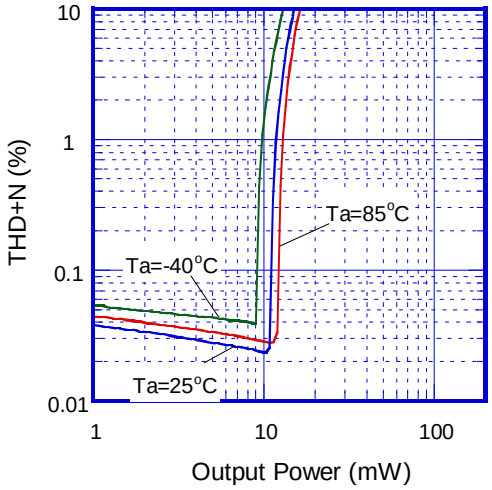
THD+N vs. Output Power
(V+=5V,f=1KHz,RL=32Ω)



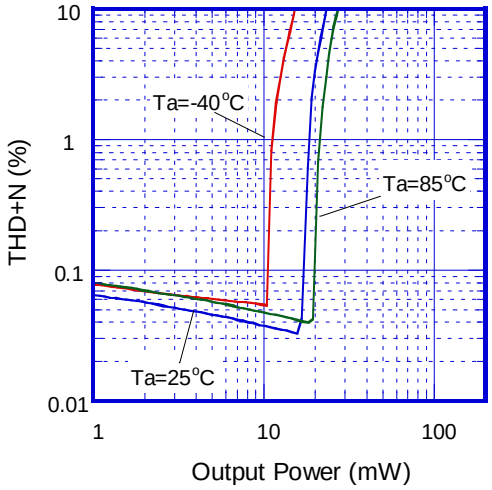
THD+N vs. Output Power
(V+=5V,f=1KHz,RL=16Ω)



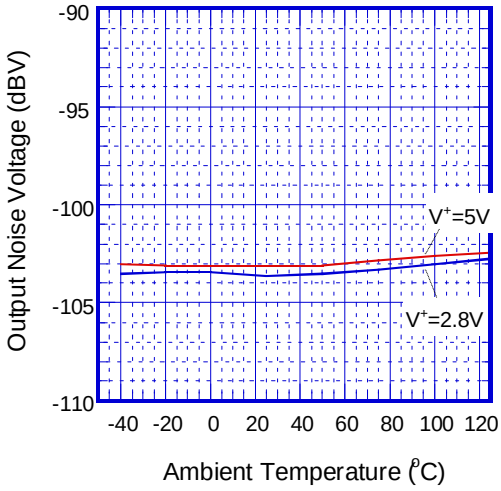
THD+N vs. Output Power
(V+=2.8V,f=1KHz,RL=32Ω)



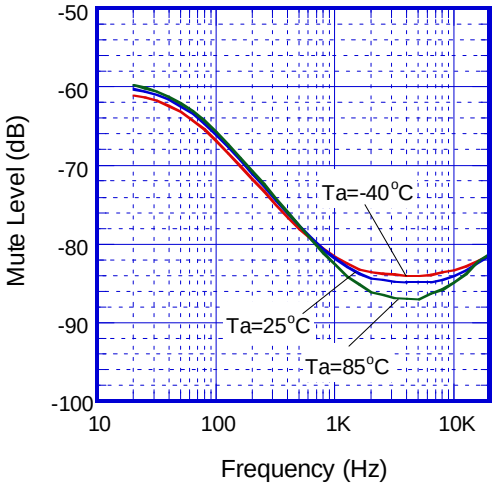
THD+N vs. Output Power
(V+=2.8V,f=1KHz,RL=16Ω)



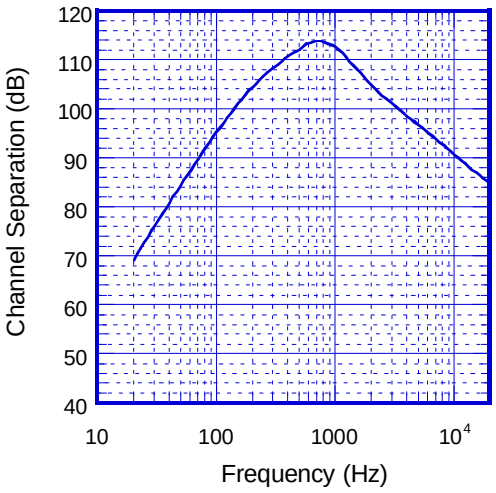
Output Noise Voltage vs. Ambient Temperature
(RL=32Ω,A-Weigthed)



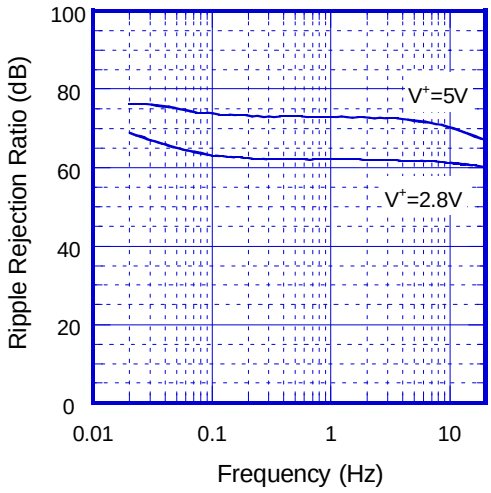
Mute Level vs. Frequency
(V+=5V,Vin=-6dBV,RL=32Ω)



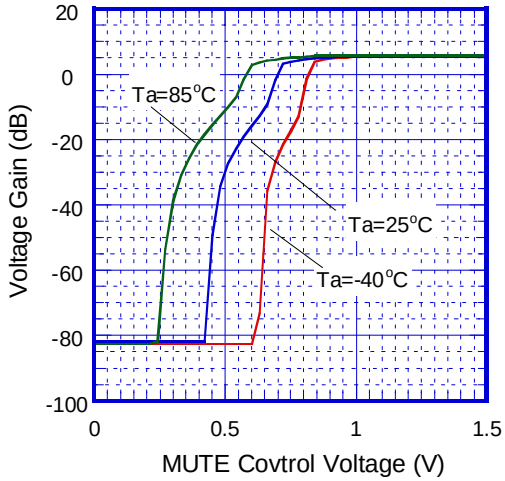
Channel Separation vs. Frequency
(V+=5V,f=1KHz,RL=32Ω)



Ripple Rejection Ratio vs. Frequency
(Vripple=-20dBV,RL=32Ω)



Voltage Gain vs Mute Control Voltage
(V+=5V,f=1KHz,Vin=-6dBV)



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