

MEMS Microphone

■GENERAL DESCRIPTION

The **NJD3002-8** is a silicon-based MEMS microphone transducer.

The **NJD3002-8** has a high capacitance and a low stray capacitance. The frequency response curve is flat from 100Hz to 10kHz. This microphone operates in a wide operating temperature range.

It is suitable for surface-mount-applications in high temperature reflow process.

■PACKAGE OUTLINE



Chip

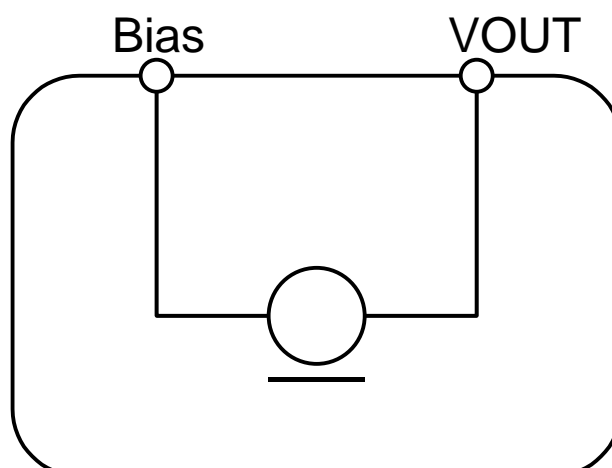
■APPLICATIONS

- Microphone module

■FEATURES

- Operating Voltage 11.5V typ.
- Static Capacitance 1.2pF typ.
- Operating temperature -40°C to 85°C
- Package Chip

■BLOCK DIAGRAM



NJD3002-8

■ ABSOLUTE MAXIMUM RATING

(Ta=25°C)

PARAMETER	SYMBOL	RATING	UNIT
Operating temperature	Topr	-40 to +85	°C
Storage temperature	Tstg	-40 to +125	°C

■ RECOMMENDED OPERATING CONDITIONS

(Ta =25°C unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Operating Voltage	V+		10.5	11.5	12.5	V

■ ELECTRICAL CHARACTERISTICS

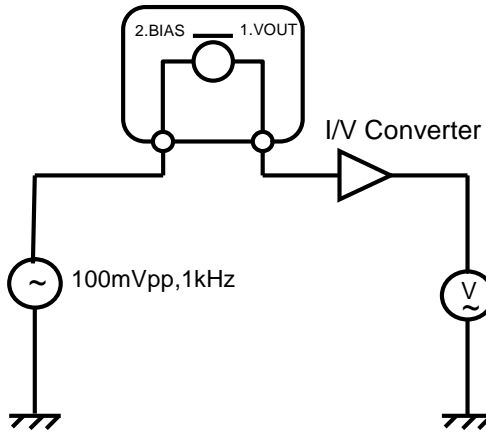
(Ta=25°C, V =11.5V unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Static Capacitance	C _{SC}	V=0V, f=1kHz	0.95	1.20	1.45	pF
Capacitance at Bias Voltage	C _{bv}	f=1kHz	1.10	1.45	1.80	pF
Parasitic Capacitance	C _{pc}		-	0.1	-	pF

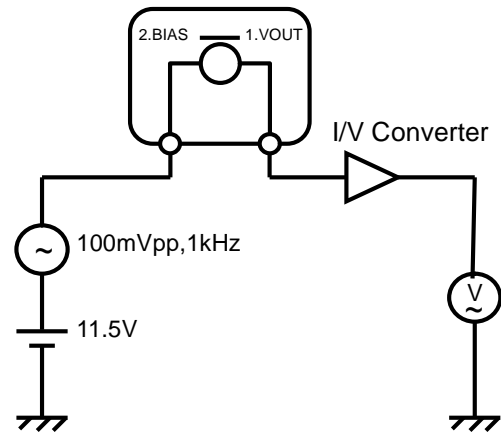
Static capacitance and Capacitance at Bias Voltage include parasitic capacitance.

TEST CIRCUIT

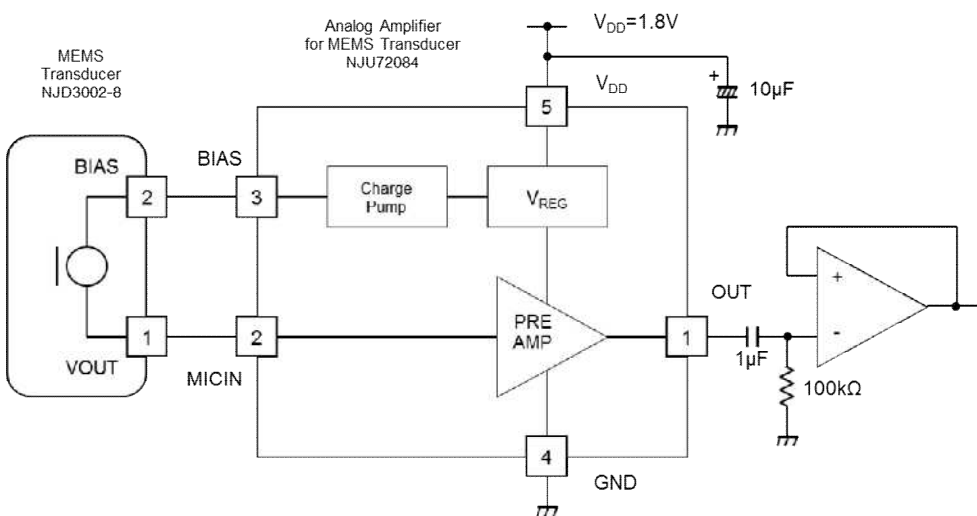
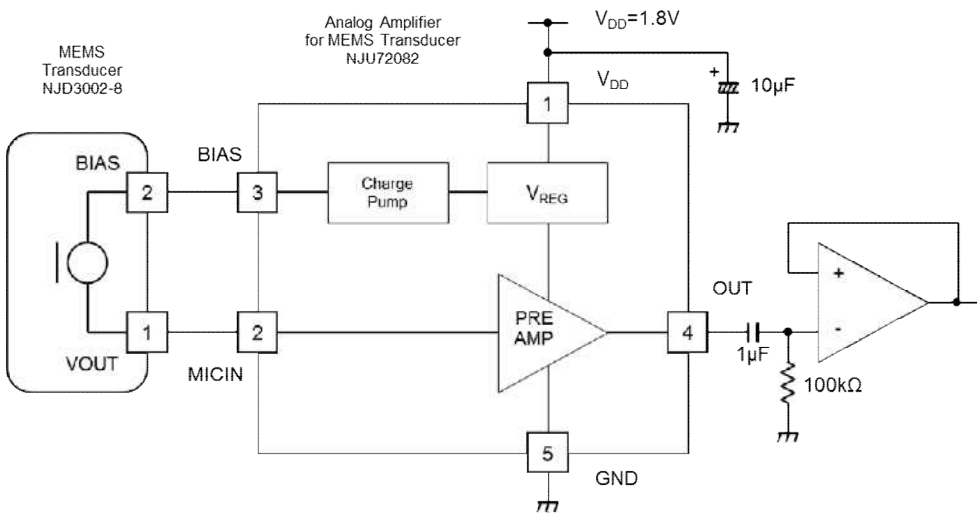
(1) CSC (C_0V)



(2) Cbv (C_11.5V)



APPLICATION CIRCUIT



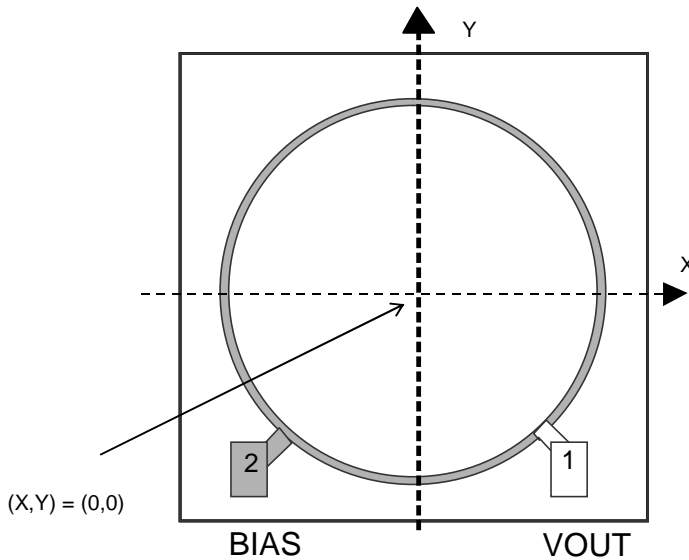
NJD3002-8

■CHIP OUTLINE

◆CHIP SIZE : 1.3 mm x 1.3 mm

◆CHIP THICKNESS: 420 μm

◆PAD DIMENSION:



Top view

PIN NO.	SYMBOL	FUNCTION	X	UNIT	Y	UNIT
1	VOUT	Voltage output	+465	μm	-440	μm
2	BIAS	Bias	-465	μm	-440	μm

◆PAD SIZE (Flat area)

70 μm x 70 μm VOUT
90 μm x 120 μm BIAS

■APPLICATION NOTES

MEMS Transducer may malfunction, if exposed to condensed moisture conditions.

Consider the effect of temperature and humidity at housing design, because stress change derives from die-bond resin and PCB-substrate may cause sensitivity variation of MEMS transducer.

[CAUTION]

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