

P-channel MOS Field Effect Transistor for Impedance Converter of Microphone

■ GENERAL DESCRIPTION

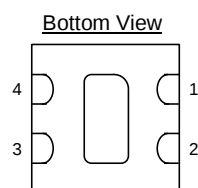
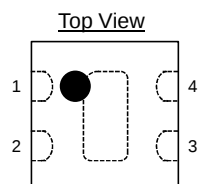
The **NJD2201** is a P-channel MOSFET for Impedance converter of microphone.

The **NJD2201** is the most suitable for the ECM especially which requires high SNR.

■ FEATURES

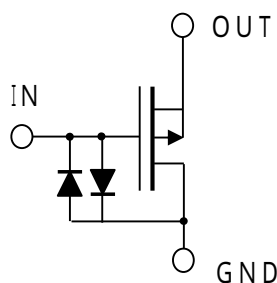
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|---------------------------|---------------------------------|
| • Supply Voltage | +1.0 to +10V at $R_L=15k\Omega$ |
| • Low Consumption Current | 85 μ A typ. |
| • Voltage Gain | -4dB typ. at $C_{IN}=3pF$ |
| • Low Output Noise | -115dBV typ. |
| • THD | 0.1% typ. |
| • Package Outline | DFN4-E1 (ESON4-E1) |

■ PACKAGE OUTLINE



NJD2201KE1

■ BLOCK DIAGRAM



■ PIN CONFIGURATION

1. GND
2. OUT
3. (NC)
4. IN

■ ABSOLUTE MAXIMUM RATING (Ta=25°C)

PARAMETER	SYMBOL	RATING	UNIT
Input Voltage (IN-GND)	V_{IN}	-0.8 to +0.8	V
Input Current (IN-GND)	I_{IN}	0.5	mA
Output Voltage (OUT-GND)	V_{OUT}	-0.5 to +6	V
Output Current (OUT-GND)	I_{OUT}	17	mA
Power Dissipation	P_D	370 ^{*1)}	mW
Operating Temperature Range	T_{opr}	-40 to +105	°C
Storage Temperature Range	T_{stg}	-40 to +150	°C

^{*1)} EIA/JEDEC STANDARD Test board (101.5x114.5x1.6mm, 2layer, FR-4) mounting. The PAD connecting to GND in the center part on the back

■ RECOMMENDED OPERATING VOLTAGE RANGE (Ta=25°C unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Supply Voltage Range	V_{DD}	$R_L=15k\Omega$	1	2	10	V

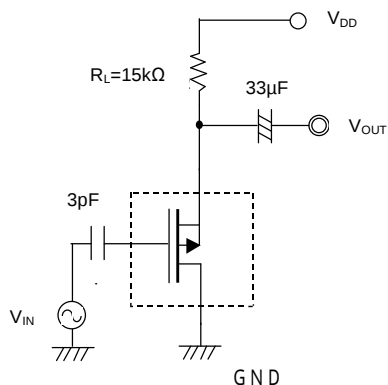
■ ELECTRICAL CHARACTERISTICS

(Ta=25°C, $V_{DD}=2V$, $C_{IN}=3pF$, $R_L=15k\Omega$, $f=1kHz$, $V_{IN}=10mV_{rms}$ unless otherwise specified)

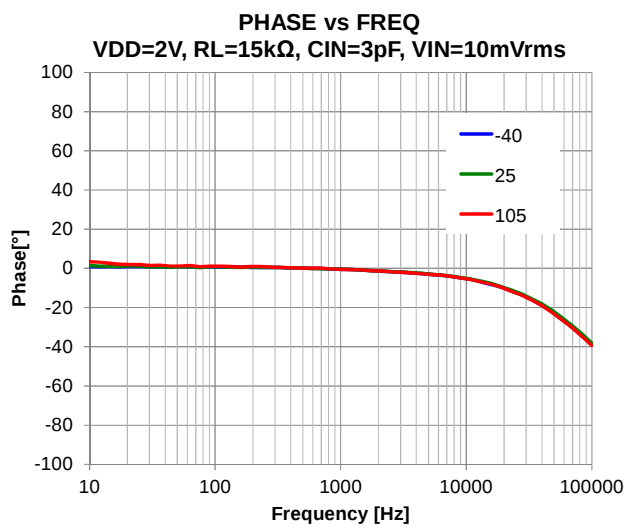
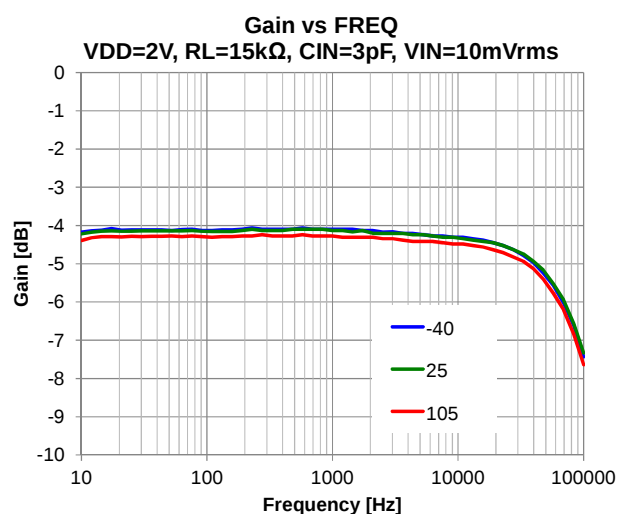
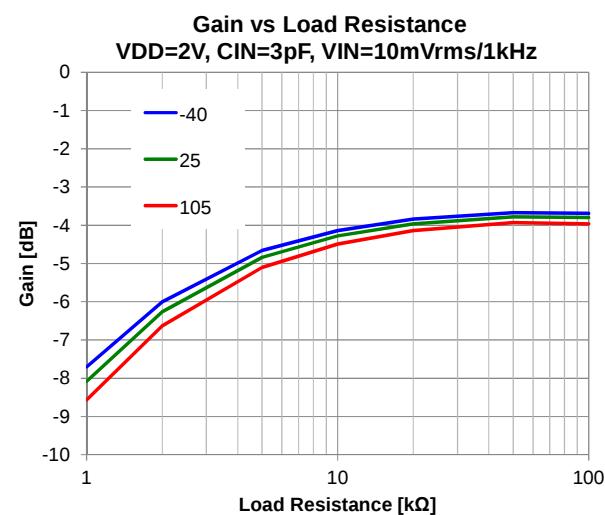
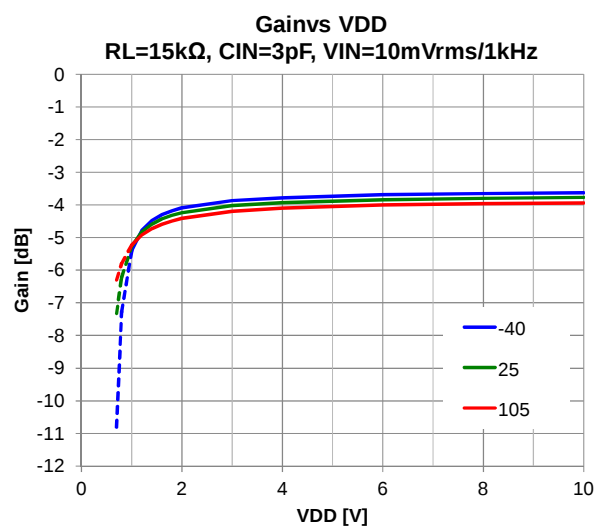
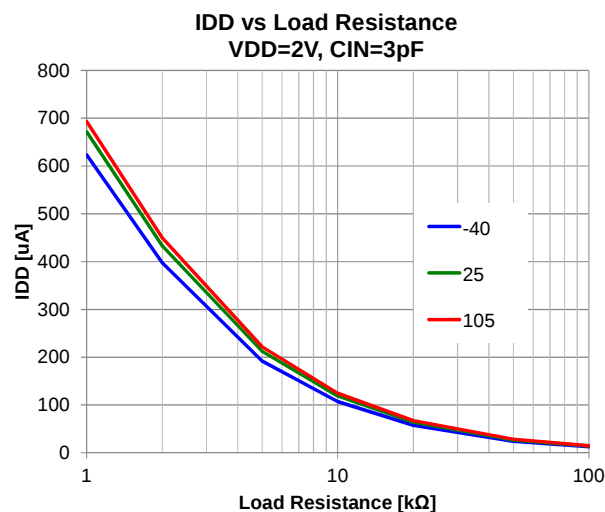
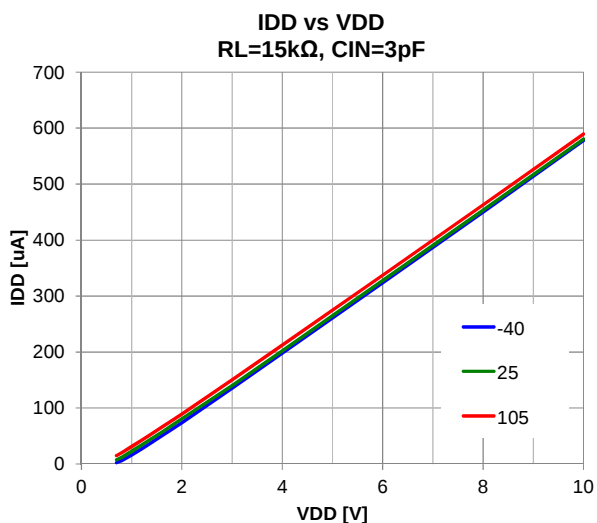
PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Consumption Current	I_{DD}	$V_{IN}=0V$, $C_{IN}=none$	60	85	105	μA
Input Capacitance	C_{iss}	$f=1MHz$, $C_{IN}=none$	-	1.5	-	pF
Voltage Gain	G_v		-5.5	-4.0	-	dB
Reduced Voltage Characteristics	ΔG_v	$V_{DD}=2$ to $1.5V$	-	0.3	-	dB
Frequency Characteristics	$\Delta G_v f$	$f=1kHz$ to $110Hz$	-	0.05	-	dB
Output Noise Voltage	N_v	$V_{IN}=0V_{rms}$, A-weight	-	-115	-	dBV
Total Harmonic Distortion	THD	$V_{OUT}=30mV_{rms}$	-	0.1	-	%

■ TEST CIRCUIT

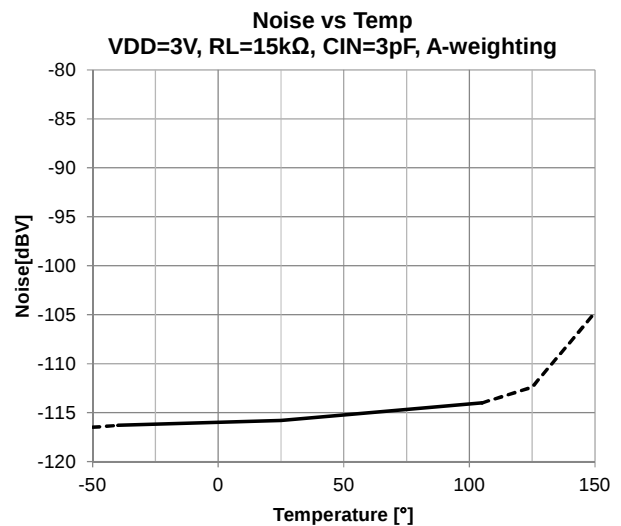
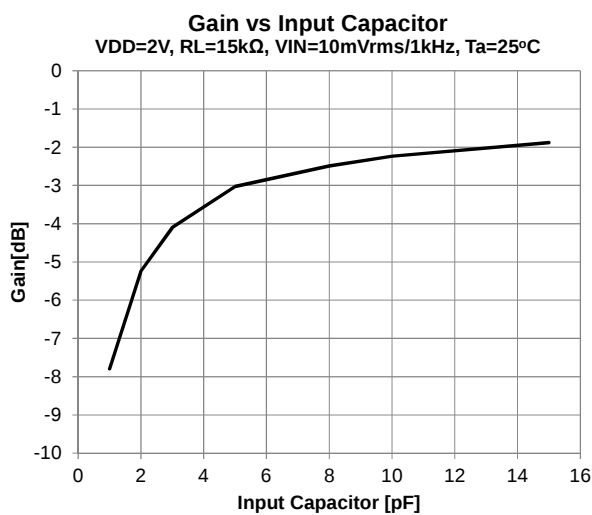
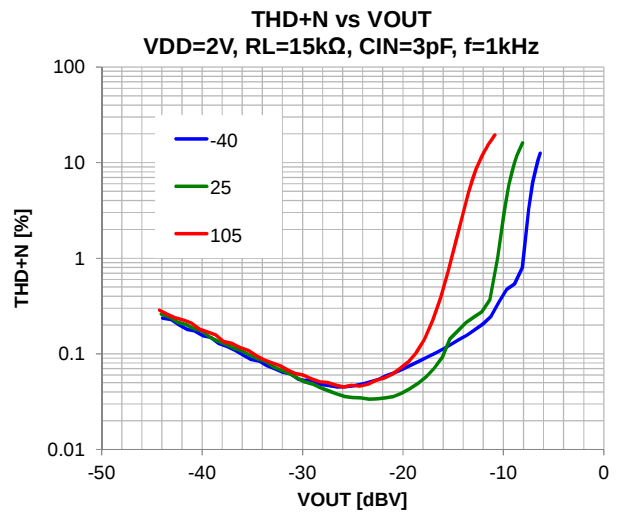
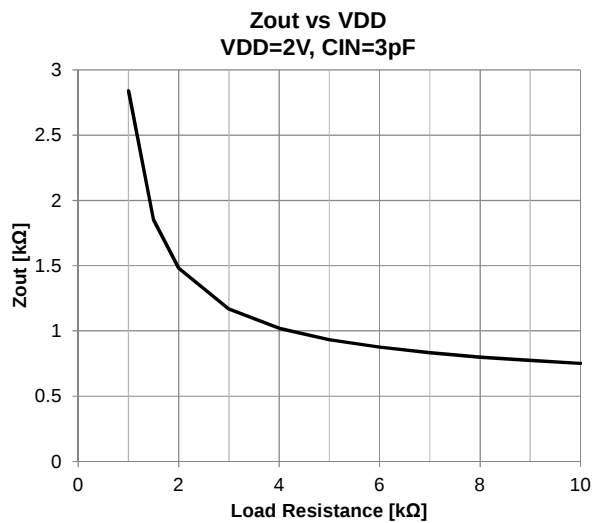
- ◆ Voltage Gain, Reduced Voltage Characteristics, Frequency Characteristics, Output Noise Voltage, Total Harmonic Distortion



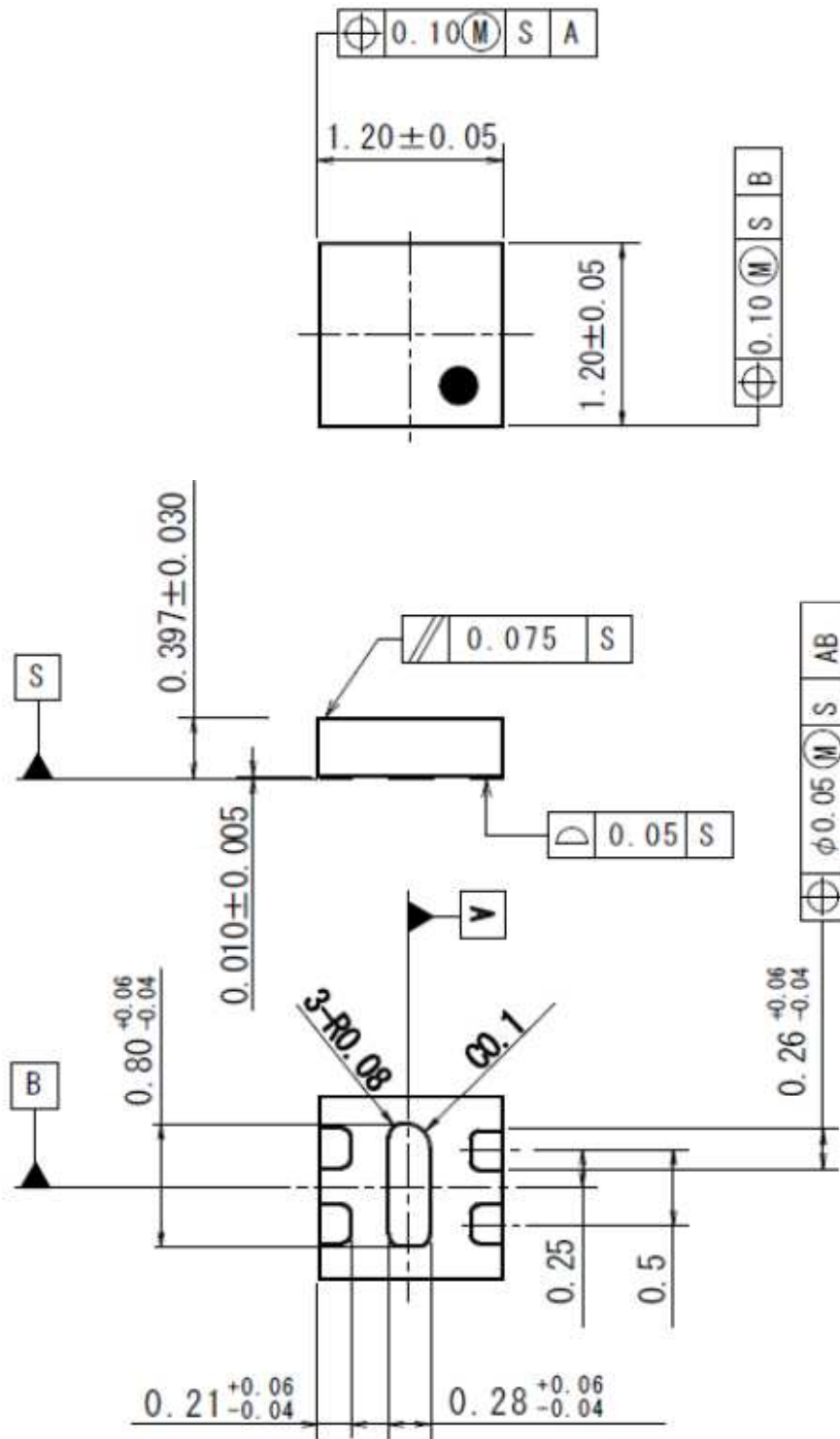
■ TYPICAL CHARACTERISTICS



■ TYPICAL CHARACTERISTICS



■ PACKAGE DIMENSIONS



[CAUTION]

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