



# P-CHANNEL MOS FIELD EFFECT TRANSISTOR

### DESCRIPTION

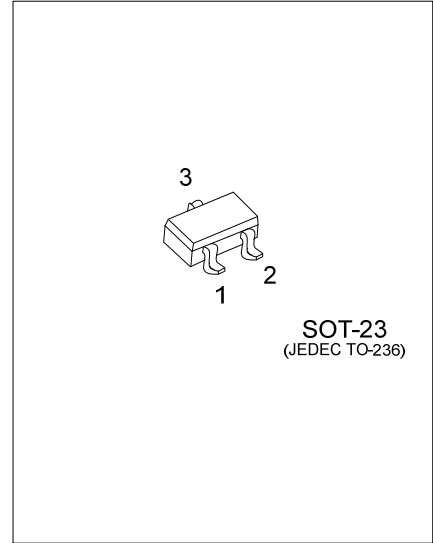
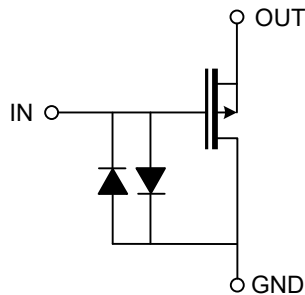
The UTC **UJD2201** is a P-channel MOSFET for Impedance converter of microphone.

The UTC **UJD2201** is the most suitable for the ECM especially which requires high SNR.

### FEATURES

- \* Supply Voltage: +1.0 to +10V at  $R_L=15K\Omega$
- \* Low Consumption Current: 85 $\mu$ A typ.
- \* Voltage Gain: -4dB typ. at  $C_{IN}=3pF$
- \* Low Output Noise: -115dBV typ.
- \* Total Harmonic Distortion: 0.1% typ.

### EQUIVALENT CIRCUIT



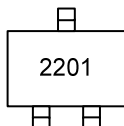
### ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
UJD2201L-AE3-R	UJD2201G-AE3-R	SOT-23	G	O	I	Tape Reel

Note: Pin Assignment: D: Drain S: Source G: Gate

<p>UJD2201G-AE3-R</p> <p>(1) Packing Type</p> <p>(2) Package Type</p> <p>(3) Green Package</p>	<p>(1) R: Tape Reel</p> <p>(2) AE3: SOT-23</p> <p>(3) G: Halogen Free and Lead Free, L: Lead Free</p>
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### MARKING



■ ABSOLUTE MAXIMUM RATINGS (T<sub>A</sub>=25°C, unless otherwise specified)

PARAMETER	SYMBOL	RATINGS	UNIT
Input Voltage (IN-GND)	V <sub>IN</sub>	-0.8 ~ +0.8	V
Input Current (GND-IN)	I <sub>IN</sub>	0.5	mA
Output Voltage (IN-GND)	V <sub>OUT</sub>	-0.5 ~ +6	V
Output Current (GND-IN)	I <sub>OUT</sub>	17	mA
Allowable Power Dissipation	P <sub>D</sub>	100	mW
Operating Temperature	T <sub>OPR</sub>	-40 ~ +105	°C
Storage Temperature Range	T <sub>STG</sub>	-40 ~ +125	°C

Note: Absolute maximum ratings are those values beyond which the device could be permanently damaged. Absolute maximum ratings are stress ratings only and functional device operation is not implied.

■ RECOMMENDED OPERATING CONDITIONS

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Supply Voltage	V <sub>DD</sub>	R <sub>L</sub> =15kΩ	1	2	10	V

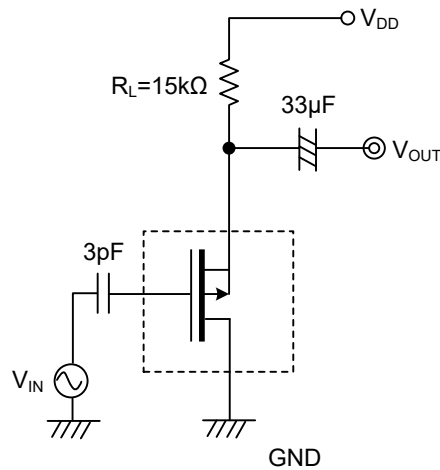
■ ELECTRICAL CHARACTERISTICS

(V<sub>DD</sub>=2V, C<sub>IN</sub>=3pF, R<sub>L</sub>=15kΩ, f=1kHz, V<sub>IN</sub>=10mV, T<sub>A</sub>=25°C, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Consumption Current	I <sub>DD</sub>	V <sub>IN</sub> =0V, C <sub>IN</sub> =none	60	85	105	μA
Input Capacitance	C <sub>ISS</sub>	f=1MHz, C <sub>IN</sub> =none		1.5		pF
Voltage Gain	G <sub>V</sub>		-5.5	-4.0		dB
Reduced Voltage Characteristics	ΔG <sub>V(V)</sub>	V <sub>DD</sub> =2 ~ 1.5V		0.3		dB
Frequency Characteristics	ΔG <sub>V(f)</sub>	f=1kHz to 110Hz		0.05		dB
Output Noise Voltage	N <sub>V</sub>	V <sub>IN</sub> =0Vrms, A-weight		-115		dB
Total Harmonic Distortion	THD	V <sub>OUT</sub> =30mVrms		0.1		%

## ■ TEST CIRCUITS

Voltage Gain  
Reduced Voltage Characteristics  
Frequency Characteristics  
Output Noise Voltage  
Total Harmonic Distortion



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