

## 2N6451, 2N6452

### N-Channel Silicon Junction Field-Effect Transistor

- Audio Amplifiers
- Low-Noise, High Gain Amplifiers
- Low-Noise Preamplifiers

#### Absolute maximum ratings at $T_A = 25^\circ\text{C}$

	2N6451	2N6452
Reverse Gate Source Voltage	-20 V	-25 V
Reverse Gate Drain Voltage	-20 V	-25 V
Continuous Forward Gate Current	10 mA	10 mA
Continuous Device Power Dissipation	360 mW	360 mW
Power Derating	2.88 mW/°C	2.88 mW/°C

At 25°C free air temperature:

#### Static Electrical Characteristics

		2N6451		2N6452		Unit	Process NJ132L	
		Min	Max	Min	Max		Test Conditions	
Gate Source Breakdown Voltage	$V_{(BR)GSS}$	-20		-25		V	$I_G = -1 \mu\text{A}, V_{DS} = 0\text{V}$	
Gate Reverse Current	$I_{GSS}$		-0.1			nA	$V_{GS} = -10\text{V}, V_{DS} = 0\text{V}$	
				-0.5		nA	$V_{GS} = -15\text{V}, V_{DS} = 0\text{V}$	
			-0.2			$\mu\text{A}$	$V_{GS} = -10\text{V}, V_{DS} = 0\text{V}$	$T_A = 125^\circ\text{C}$
				-1		$\mu\text{A}$	$V_{GS} = -15\text{V}, V_{DS} = 0\text{V}$	$T_A = 125^\circ\text{C}$
Gate Source Cutoff Voltage	$V_{GS(OFF)}$	-0.5	-3.5	-0.5	-3.5	V	$V_{DS} = 10\text{V}, I_D = 0.5 \text{ nA}$	
Drain Saturation Current (Pulsed)	$I_{DSS}$	5	20	5	20	mA	$V_{DS} = 10\text{V}, V_{GS} = 0\text{V}$	

#### Dynamic Electrical Characteristics

Common Source Forward Transmittance	$ Y_{fs} $	15	30	15	30	mS	$V_{DS} = 10\text{V}, I_D = 5 \text{ mA}$	$f = 1 \text{ kHz}$
						mS	$V_{DS} = 10\text{V}, I_D = 15 \text{ mA}$	$f = 1 \text{ kHz}$
Common Source Output Conductance	$ Y_{os} $		50		50	$\mu\text{S}$	$V_{DS} = 10\text{V}, I_D = 5 \text{ mA}$	$f = 1 \text{ kHz}$
						$\mu\text{S}$	$V_{DS} = 10\text{V}, I_D = 15 \text{ mA}$	$f = 1 \text{ kHz}$
Common Source Input Capacitance	$C_{iss}$		25		25	pF	$V_{DS} = 10\text{V}, I_D = 5 \text{ mA}$	$f = 1 \text{ kHz}$
						pF	$V_{DS} = 10\text{V}, I_D = 15 \text{ mA}$	$f = 1 \text{ kHz}$
Common Source Reverse Transfer Capacitance	$C_{rss}$		5		5	pF	$V_{DS} = 10\text{V}, I_D = 5 \text{ mA}$	$f = 1 \text{ kHz}$
						pF	$V_{DS} = 10\text{V}, I_D = 15 \text{ mA}$	$f = 1 \text{ kHz}$
Equivalent Short Circuit Input Noise Voltage	$\bar{e}_N$		5		10	nV/ $\sqrt{\text{Hz}}$	$V_{DS} = 10\text{V}, I_D = 5 \text{ mA}$	$f = 10 \text{ kHz}$
			3		8	nV/ $\sqrt{\text{Hz}}$	$V_{DS} = 10\text{V}, I_D = 5 \text{ mA}$	$f = 1 \text{ kHz}$
Noise Figure	NF		1.5		2.5	dB	$V_{DS} = 10\text{V}, I_D = 5 \text{ mA}$ $R_G = 10 \text{ k}\Omega$	$f = 10 \text{ Hz}$

#### TO-72 Package

Dimensions in Inches (mm)

#### Pin Configuration

1 Source, 2 Drain, 3 Gate, 4 Case

[www.interfet.com](http://www.interfet.com)


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