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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°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:		2N6451		2N6452			
Static Electrical Characteristics		**Min**	**Max**	**Min**	**Max**	**Unit**	**Test Conditions**
Gate Source Breakdown Voltage	$V_{(BR)GSS}$	– 20		– 25		V	I_G = – 1 μA, V_{DS} = ØV
Gate Reverse Current	I_{GSS}		– 0.1			nA	V_{GS} = – 10V, V_{DS} = ØV
					– 0.5	nA	V_{GS} = – 15V, V_{DS} = ØV
			– 0.2			μA	V_{GS} = – 10V, V_{DS} = ØV, T_A = 125°C
					– 1	μA	V_{GS} = – 15V, V_{DS} = ØV, T_A = 125°C
Gate Source Cutoff Voltage	$V_{GS(OFF)}$	– 0.5	– 3.5	– 0.5	– 3.5	V	V_{DS} = 10V, I_D = 0.5 nA
Drain Saturation Current (Pulsed)	I_{DSS}	5	20	5	20	mA	V_{DS} = 10V, V_{GS} = ØV
Dynamic Electrical Characteristics							
Common Source Forward Transmittance	$\lvert Y_{fs} \rvert$	15	30	15	30	mS	V_{DS} = 10V, I_D = 5 mA, f = 1 kHz
						mS	V_{DS} = 10V, I_D = 15 mA, f = 1 kHz
Common Source Output Conductance	$\lvert Y_{os} \rvert$		50		50	μS	V_{DS} = 10V, I_D = 5 mA, f = 1 kHz
						μS	V_{DS} = 10V, I_D = 15 mA, f = 1 kHz
Common Source Input Capacitance	C_{iss}		25		25	pF	V_{DS} = 10V, I_D = 5 mA, f = 1 kHz
						pF	V_{DS} = 10V, I_D = 15 mA, f = 1 kHz
Common Source Reverse Transfer Capacitance	C_{rss}		5		5	pF	V_{DS} = 10V, I_D = 5 mA, f = 1 kHz
						pF	V_{DS} = 10V, I_D = 15 mA, f = 1 kHz
Equivalent Short Circuit Input Noise Voltage	e_N		5		10	nV/√Hz	V_{DS} = 10V, I_D = 5 mA, f = 10 kHz
			3		8	nV/√Hz	V_{DS} = 10V, I_D = 5 mA, f = 1 kHz
Noise Figure	NF		1.5		2.5	dB	V_{DS} = 10V, I_D = 5 mA, R_G = 10 kΩ, f = 10 Hz