

2N6453, 2N6454

N-Channel Silicon Junction Field-Effect Transistor

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

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

	2N6453	2N6454
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

		2N6453		2N6454		Process NJ132L		
		Min	Max	Min	Max	Unit	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			μA	$V_{GS} = -10\text{V}$, $V_{DS} = 0\text{V}$	$T_A = 125^\circ\text{C}$
					-1	μA	$V_{GS} = -15\text{V}$, $V_{DS} = 0\text{V}$	$T_A = 125^\circ\text{C}$
Gate Source Cutoff Voltage	$V_{GS(OFF)}$	-0.75	-5	-0.75	-5	V	$V_{DS} = 10\text{V}$, $I_D = 0.5 \text{ nA}$	
Drain Saturation Current (Pulsed)	I_{DSS}	15	50	15	50	mA	$V_{DS} = 10\text{V}$, $V_{GS} = 0\text{V}$	

Dynamic Electrical Characteristics

Common Source Forward Transmittance	$ Y_{fs} $					mS	$V_{DS} = 10\text{V}$, $I_D = 5 \text{ mA}$	$f = 1 \text{ kHz}$
		20	40	20	40	mS	$V_{DS} = 10\text{V}$, $I_D = 15 \text{ mA}$	$f = 1 \text{ kHz}$
Common Source Output Conductance	$ Y_{os} $					μS	$V_{DS} = 10\text{V}$, $I_D = 5 \text{ mA}$	$f = 1 \text{ kHz}$
			100		100	μS	$V_{DS} = 10\text{V}$, $I_D = 15 \text{ mA}$	$f = 1 \text{ kHz}$
Common Source Input Capacitance	C_{iss}					pF	$V_{DS} = 10\text{V}$, $I_D = 5 \text{ mA}$	$f = 1 \text{ kHz}$
			25		25	pF	$V_{DS} = 10\text{V}$, $I_D = 15 \text{ mA}$	$f = 1 \text{ kHz}$
Common Source Reverse Transfer Capacitance	C_{rss}					pF	$V_{DS} = 10\text{V}$, $I_D = 5 \text{ mA}$	$f = 1 \text{ kHz}$
			5		5	pF	$V_{DS} = 10\text{V}$, $I_D = 15 \text{ mA}$	$f = 1 \text{ kHz}$
Equivalent Short Circuit Input Noise Voltage	\hat{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



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