

2N6550

N-Channel Silicon Junction Field-Effect Transistor

• Low-Noise, High Gain Amplifier

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

Reverse Gate Source & Reverse Gate Drain Voltage	- 20 V
Continuous Forward Gate Current	50 mA
Continuous Device Power Dissipation	400 mW
Power Derating	2.3 mW/ $^\circ\text{C}$
Junction Temperature (Operating & Storage)	- 65 $^\circ\text{C}$ to +200 $^\circ\text{C}$

At 25 $^\circ\text{C}$ free air temperature:

Static Electrical Characteristics

		2N6550			Unit	Process NJ450L	
		Min	Typ	Max		Test Conditions	
Gate Source Breakdown Voltage	$V_{(BR)GSS}$	- 20			V	$I_G = 10\ \mu\text{A}, V_{DS} = \emptyset\text{V}$	
Gate Leakage Current	I_{GSS}			- 3	nA	$V_{GS} = - 10\text{V}, V_{DS} = \emptyset\text{V}$	
				- 0.1	μA	$V_{GS} = - 10\text{V}, V_{DS} = \emptyset\text{V}$ $T_A = 85^\circ\text{C}$	
Zero Gate Voltage Drain Current (Pulsed)	I_{DSS}	10	100	250	mA	$V_{DS} = 10\text{V}, V_{GS} = \emptyset\text{V}$	
Gate Source Cutoff Voltage	$V_{GS(OFF)}$	- 0.3		- 3	V	$V_{DS} = 10\text{V}, I_D = 0.1\ \text{mA}$	

Dynamic Electrical Characteristics

Transconductance	g_{fs}	25		150	mS	$V_{DS} = 10\text{V}, I_D = 10\ \text{mA}$	$f = 1\ \text{kHz}$
Common Source Output Conductance	$ Y_{os} $			150	μS	$V_{DS} = 10\text{V}, I_D = 10\ \text{mA}$	$f = 1\ \text{kHz}$
Common Source Input Capacitance	C_{iss}		30	35	pF	$V_{DS} = 10\text{V}, I_D = 10\ \text{mA}$	$f = 140\ \text{kHz}$
Common Source Reverse Transfer Capacitance	C_{rss}		10	20	pF	$V_{DS} = 10\text{V}, V_{GS} = \emptyset\text{V}$	$f = 140\ \text{kHz}$
Equivalent Short Circuit Input Noise Voltage	\bar{e}_N		1.4	2	nV/ $\sqrt{\text{Hz}}$	$V_{DS} = 5\text{V}, I_D = 10\ \text{mA}$	$f = 1\ \text{kHz}$
			6	10	nV/ $\sqrt{\text{Hz}}$	$V_{DS} = 5\text{V}, I_D = 10\ \text{mA}$	$f = 10\ \text{Hz}$
	\bar{e}_N Total		0.4	0.6	μVrms	$V_{DS} = 5\text{V}, I_D = 10\ \text{mA}$	$f = 10\ \text{kHz}$ to 20 kHz
Equivalent Open Circuit Input Noise Current	\bar{i}_N		0.1		pA/ $\sqrt{\text{Hz}}$	$R_S < 100\ \text{K}\Omega$	$f = 1\ \text{kHz}$

TO-46 Package

Dimensions in Inches (mm)

Pin Configuration

1 Drain, 2 Source, 3 Gate & Case

