

IF4501

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	10 mA
Continuous Device Power Dissipation	300 mW
Power Derating	2.4 mW/°C
Storage Temperature Range	– 65°C to 200°C

At 25°C free air temperature:

Static Electrical Characteristics

		IF4501		Process NJ450L		
		Min	Max	Unit	Test Conditions	
Gate Source Breakdown Voltage	$V_{(BR)GSS}$	– 20		V	$I_G = -1\ \mu\text{A}$, $V_{DS} = \emptyset\text{V}$	
Gate Reverse Current	I_{GSS}		– 0.1	nA	$V_{GS} = -10\text{V}$, $V_{DS} = \emptyset\text{V}$	
Gate Source Cutoff Voltage	$V_{GS(OFF)}$	– 0.35	– 1.5	V	$V_{DS} = 10\text{V}$, $I_D = 0.5\ \text{nA}$	
Drain Saturation Current (Pulsed)	I_{DSS}	5		mA	$V_{DS} = 10\text{V}$, $V_{GS} = \emptyset\text{V}$	

Dynamic Electrical Characteristics

Common Source Forward Transconductance	g_{fs}	15		mS	$V_{DS} = 15\text{V}$, $I_D = 5\ \text{mA}$	$f = 1\ \text{kHz}$
Common Source Input Capacitance	C_{iss}		35	pF	$V_{DS} = 15\text{V}$, $I_D = 5\ \text{mA}$	$f = 1\ \text{MHz}$
Common Source Reverse Transfer Capacitance	C_{rss}		9	pF	$V_{DS} = 15\text{V}$, $I_D = 5\ \text{mA}$	$f = 1\ \text{MHz}$

Typ

Equivalent Short Circuit Input Noise Voltage	$\bar{e}_N$	1.5		nV/ $\sqrt{\text{Hz}}$	$V_{DG} = 12\text{V}$, $I_D = 5\ \text{mA}$	$f = 1\ \text{kHz}$
--	-------------	-----	--	------------------------	--	---------------------

TO-72 Package

Dimensions in Inches (mm)

Pin Configuration

1 Source, 2 Drain, 3 Gate, 4 Case

