

IFN146

Dual N-Channel Silicon Junction Field-Effect Transistor

- Low-Noise Audio Amplifier
- Equivalent to Japanese 2SK146

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

Reverse Gate Source & Reverse Gate Drain Voltage	– 40 V
Continuous Forward Gate Current	10 mA
Continuous Device Power Dissipation	375 mW
Power Derating	3 mW/°C
Storage Temperature Range	– 65°C to 200°C

At 25°C free air temperature:

Static Electrical Characteristics

		IFN146			Process NJ450		
		Min	Typ	Max	Unit	Test Conditions	
Gate Source Breakdown Voltage	$V_{(BR)GSS}$	– 40			V	$I_G = -1\ \mu\text{A}$, $V_{DS} = 0\text{V}$	
Gate Reverse Current	I_{GSS}			– 1	nA	$V_{GS} = -30\text{V}$, $V_{DS} = 0\text{V}$	
				– 1	μA	$V_{GS} = -30\text{V}$, $V_{DS} = 0\text{V}$	$T_A = 150^\circ\text{C}$
Gate Source Cutoff Voltage	$V_{GS(OFF)}$	– 0.3		– 1.2	V	$V_{DS} = 10\text{V}$, $I_D = 1\ \mu\text{A}$	
Drain Saturation Current (Pulsed)	I_{DSS}			30	mA	$V_{DS} = 10\text{V}$, $V_{GS} = 0\text{V}$	

Dynamic Electrical Characteristics

Common Source Forward Transconductance	g_{fs}	30	40		mS	$V_{DS} = 10\text{V}$, $V_{GS} = 0\text{V}$ $I_{DSS} = 5\text{mA}$	$f = 1\text{kHz}$
Common Source Input Capacitance	C_{iss}			75	pF	$V_{DS} = 10\text{V}$, $V_{GS} = 0\text{V}$	$f = 1\text{kHz}$
Common Source Reverse Transfer Capacitance	C_{rss}			15	pF	$V_{DS} = 10\text{V}$, $I_D = 0\text{A}$	$f = 1\text{kHz}$
Noise Figure	NF		1		dB	$V_{DS} = 10\text{V}$, $I_D = 5\text{mA}$ $R_G = 100\Omega$	$f = 1\text{kHz}$
Differential Gate Source Voltage	$ V_{GS1} - V_{GS2} $			20	mV	$V_{DS} = 10\text{V}$, $I_D = 5\text{mA}$	

TO-71 Package

Dimensions in Inches (mm)

Pin Configuration

1 Source, 2 Gate, 3 Drain,
5 Source, 6 Gate, 7 Drain