

J230, J231

N-Channel Silicon Junction Field-Effect Transistor

• Audio Amplifiers

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

Reverse Gate Source & Reverse Gate Drain Voltage	– 40 V
Continuous Forward Gate Current	50 mA
Continuous Device Power Dissipation	360 mW
Power Derating	3.27 mW/°C

At 25°C free air temperature:
Static Electrical Characteristics

		J230			J231			Process NJ16	
		Min	Typ	Max	Min	Typ	Max	Unit	Test Conditions
Gate Source Breakdown Voltage	$V_{(BR)GSS}$	– 40			– 40			V	$I_G = -1\mu\text{A}$, $V_{DS} = \emptyset\text{V}$
Gate Reverse Current	I_{GSS}			– 250			– 250	pA	$V_{GS} = -30\text{V}$, $V_{DS} = \emptyset\text{V}$
Gate Operating Current	I_G		– 2			– 2		pA	$V_{DS} = 20\text{V}$, $I_D = \emptyset\text{V}$
Gate Source Cutoff Voltage	$V_{GS(OFF)}$	– 0.5		– 3	– 1.5		– 5	V	$V_{DS} = 20\text{V}$, $I_D = 1\mu\text{A}$
Drain Saturation Current (Pulsed)	I_{DSS}	0.7		3	2		6	mA	$V_{DS} = 20\text{V}$, $V_{GS} = \emptyset\text{V}$

Dynamic Electrical Characteristics

Common Source Forward Transconductance	g_{fs}	1000		3500	1500		4000	μS	$V_{DS} = 20\text{V}$, $V_{GS} = \emptyset\text{V}$	$f = 1\text{ kHz}$
Common Source Output Conductance	g_{OS}		1.5			3		μS	$V_{DS} = 20\text{V}$, $V_{GS} = \emptyset\text{V}$	$f = 1\text{ kHz}$
Common Source Input Capacitance	C_{iss}		4			4		pF	$V_{DS} = 20\text{V}$, $V_{GS} = \emptyset\text{V}$	$f = 1\text{ MHz}$
Common Source Reverse Transfer Capacitance	C_{rss}		1			1		pF	$V_{DS} = 20\text{V}$, $V_{GS} = \emptyset\text{V}$	$f = 1\text{ MHz}$
Equivalent Short Circuit Input Noise Voltage	$\bar{e}_N$		8	30		8	30	nV/√Hz	$V_{DS} = 10\text{V}$, $V_{GS} = \emptyset\text{V}$	$f = 10\text{ Hz}$
			2			2		nV/√Hz	$V_{DS} = 10\text{V}$, $V_{GS} = \emptyset\text{V}$	$f = 1\text{ kHz}$

TO-226AA Package

Dimensions in Inches (mm)

Pin Configuration

1 Drain, 2 Source, 3 Gate

Surface Mount

SMPJ230, SMPJ231



InterFET Corporation

1000 N. Shiloh Road, Garland, TX 75042

(972) 487-1287 FAX (972) 276-3375

www.interfet.com