J310

N-Channel Silicon Junction Field-Effect Transistor

- Mixer
- Oscillator
- VHF/UHF Amplifier

Absolute maximum ratings at T_A = 25°C

Reverse Gate Source Voltage	– 25 V
Reverse Gate Drain Voltage	– 25 V
Continuous Forward Gate Current	10 mA
Continuous Device Power Dissipation	360 mW

At 25°C free air temperature:		J310			Process NJ72		
Static Electrical Characteristics		**Min**	**Typ**	**Max**	**Unit**	**Test Conditions**	
Gate Source Breakdown Voltage	$V_{(BR)GSS}$	– 25			V	I_G = – 1 µA, V_{DS} = ØV	
Gate Reverse Current	I_{GSS}			– 1	nA	V_{GS} = – 15V, V_{DS} = ØV	
				– 1	µA	V_{GS} = – 15V, V_{DS} = ØV	T_A = + 125°C
Gate Source Cutoff Voltage	$V_{GS(OFF)}$	– 2		– 6.5	V	V_{DS} = 10V, I_D = 1 nA	
Gate Source Forward Voltage	$V_{GS(F)}$			1	V	V_{DS} = ØV, I_G = 1 mA	
Drain Saturation Current (Pulsed)	I_{DSS}	24		60	mA	V_{DS} = 10V, V_{GS} = ØV	
Dynamic Electrical Characteristics							
Common Source Forward Transconductance	g_{fs}	8000	17000		µS	V_{DS} = 10V, I_D = 10 mA	f = 1 kHz
Common Source Output Conductance	g_{os}			250	µS	V_{DS} = 10V, I_D = 10 mA	f = 1 kHz
Common Gate Forward Transconductance	g_{fg}		1200		µS	V_{DS} = 10V, I_D = 10 mA	f = 1 kHz
Common Gate Output Transconductance	g_{og}		150		µS	V_{DS} = 10V, I_D = 10 mA	f = 1 kHz
Gate Drain Capacitance	C_{dg}		1.8	2.5	pF	V_{DS} = ØV, V_{GS} = – 10V	f = 1 MHz
Gate Source Capacitance	C_{gs}		4	5	pF	V_{DS} = ØV, V_{GS} = – 10V	f = 1 MHz
Equivalent Short Circuit Input Noise Voltage	$\bar{e}_N$		10		nV/√Hz	V_{DS} = 10V, I_D = 10 mA	f = 100 Hz
Common Source Forward Transconductance	Re (Y_{fs})		12		µS	V_{DS} = 10V, I_D = 10 mA	f = 105 MHz
Common Gate Input Conductance	Re (Y_{ig})		14		µS	V_{DS} = 10V, I_D = 10 mA	f = 105 MHz
Common Source Input Conductance	Re (Y_{is})		0.4		µS	V_{DS} = 10V, I_D = 10 mA	f = 105 MHz
Common Source Output Conductance	Re (g_{os})		0.15		µS	V_{DS} = 10V, I_D = 10 mA	f = 105 MHz
Common Gate Power Gain at Noise Match	G_{pg}		16		dB	V_{DS} = 10V, I_D = 10 mA	f = 105 MHz
			11		dB	V_{DS} = 10V, I_D = 10 mA	f = 450 MHz
Noise Figure	NF		1.5		dB	V_{DS} = 15V, I_D = 10 mA	f = 105 MHz
			2.7		dB	V_{DS} = 15V, I_D = 10 mA	f = 450 MHz

TO-226AA Package
Dimensions in Inches (mm)

Pin Configuration
1 Drain, 2 Source, 3 Gate

Surface Mount
SMPJ310

InterFET Corporation
1000 N. Shiloh Road, Garland, TX 75042
(972) 487-1287 FAX (972) 276-3375
www.interfet.com