

## J304, J305

## N-Channel Silicon Junction Field-Effect Transistor

- Mixers
- Oscillators
- VHF/UHF Amplifiers

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

Reverse Gate Source & Reverse Gate Drain Voltage	- 30 V
Continuous Forward Gate Current	10 mA
Continuous Device Power Dissipation	360 mW
Power Derating	3.27 mW/°C

## At 25°C free air temperature:

## Static Electrical Characteristics

		J304			J305			Process NJ26	
		Min	Typ	Max	Min	Typ	Max	Unit	Test Conditions
Gate Source Breakdown Voltage	$V_{(BR)GSS}$	- 30			- 30			V	$I_G = -1\mu\text{A}, V_{DS} = 0\text{V}$
Gate Reverse Current	$I_{GSS}$			- 100			- 100	$\mu\text{A}$	$V_{GS} = -20\text{V}, V_{DS} = 0\text{V}$
Gate Source Cutoff Voltage	$V_{GS(OFF)}$	- 2		- 6	- 0.5		- 3	V	$V_{DS} = 15\text{V}, I_D = 1\text{nA}$
Drain Saturation Current (Pulsed)	$I_{DSS}$	5		15	1		8	mA	$V_{DS} = 15\text{V}, V_{GS} = 0\text{V}$

## Dynamic Electrical Characteristics

		J304		J305		Unit	Test Conditions	
		4500	7500	3000	3000			
Common Source Forward Transconductance	$g_{fs}$					$\mu\text{S}$	$V_{DS} = 15\text{V}, V_{GS} = 0\text{V}$	f = 1 kHz
					3000	$\mu\text{S}$	$V_{DS} = 15\text{V}, V_{GS} = 0\text{V}$	f = 100 MHz
		4200				$\mu\text{S}$	$V_{DS} = 15\text{V}, V_{GS} = 0\text{V}$	f = 400 MHz
Common Source Output Conductance	$g_{os}$		50		50	$\mu\text{S}$	$V_{DS} = 15\text{V}, V_{GS} = 0\text{V}$	f = 1 kHz
Common Source Input Capacitance	$C_{iss}$		3		3	$\text{pF}$	$V_{DS} = 15\text{V}, V_{GS} = 0\text{V}$	f = 1 MHz
Common Source Reverse Transfer Capacitance	$C_{rss}$		0.85		0.85	$\text{pF}$	$V_{DS} = 15\text{V}, V_{GS} = 0\text{V}$	f = 1 MHz
Common Source Output Capacitance	$C_{oss}$		1		1	$\text{pF}$	$V_{DS} = 15\text{V}, V_{GS} = 0\text{V}$	f = 1 MHz
Common Source Output Conductance	$g_{os}$		60		60	$\mu\text{S}$	$V_{DS} = 15\text{V}, V_{GS} = 0\text{V}$	f = 100 MHz
			80			$\mu\text{S}$	$V_{DS} = 15\text{V}, V_{GS} = 0\text{V}$	f = 400 MHz
Common Source Output Susceptance	$b_{os}$		800		800	$\mu\text{S}$	$V_{DS} = 15\text{V}, V_{GS} = 0\text{V}$	f = 100 MHz
			3600			$\mu\text{S}$	$V_{DS} = 15\text{V}, V_{GS} = 0\text{V}$	f = 400 MHz
Common Source Input Conductance	$g_{is}$		80		80	$\mu\text{S}$	$V_{DS} = 15\text{V}, V_{GS} = 0\text{V}$	f = 100 MHz
			800			$\mu\text{S}$	$V_{DS} = 15\text{V}, V_{GS} = 0\text{V}$	f = 400 MHz
Common Source Input Susceptance	$b_{is}$		2000		2000	$\mu\text{S}$	$V_{DS} = 15\text{V}, V_{GS} = 0\text{V}$	f = 100 MHz
			7500			$\mu\text{S}$	$V_{DS} = 15\text{V}, V_{GS} = 0\text{V}$	f = 400 MHz
Common Source Power Gain	$G_{ps}$		20			dB	$V_{DS} = 15\text{V}, I_D = 5\text{mA}$	f = 100 MHz
			11			dB	$V_{DS} = 15\text{V}, I_D = 5\text{mA}$	f = 400 MHz
Noise Figure	NF		1.7			dB	$V_{DS} = 15\text{V}, I_D = 5\text{mA}$	f = 100 MHz
			3.8			dB	$R_G = 1\Omega$	f = 400 MHz

## TO-226AA Package

Dimensions in Inches (mm)

## Pin Configuration

1 Drain, 2 Source, 3 Gate

## Surface Mount

SMPJ304, SMPJ305



1000 N. Shiloh Road, Garland, TX 75042  
(972) 487-1287 FAX (972) 276-3375

[www.interfet.com](http://www.interfet.com)