J304, J305

N-Channel Silicon Junction Field-Effect Transistor

- Mixers
- Oscillators
- VHF/UHF Amplifiers

Absolute maximum ratings at T_A = 25°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 = – 1µA, V_{DS} = ØV	
Gate Reverse Current	I_{GSS}			– 100			– 100	pA	V_{GS} = – 20V, V_{DS} = ØV	
Gate Source Cutoff Voltage	$V_{GS(OFF)}$	– 2		– 6	– 0.5		– 3	V	V_{DS} = 15V, I_D = 1 nA	
Drain Saturation Current (Pulsed)	I_{DSS}	5		15	1		8	mA	V_{DS} = 15V, V_{GS} = ØV	
Dynamic Electrical Characteristics										
Common Source Forward Transconductance	g_{fs}	4500		7500	3000			µS	V_{DS} = 15V, V_{GS} = ØV	f = 1 kHz
						3000		µS	V_{DS} = 15V, V_{GS} = ØV	f = 100 MHz
			4200					µS	V_{DS} = 15V, V_{GS} = ØV	f = 400 MHz
Common Source Output Conductance	g_{os}			50			50	µS	V_{DS} = 15V, V_{GS} = ØV	f = 1 kHz
Common Source Input Capacitance	C_{iss}		3			3		pF	V_{DS} = 15V, V_{GS} = ØV	f = 1 MHz
Common Source Reverse Transfer Capacitance	C_{rss}		0.85			0.85		pF	V_{DS} = 15V, V_{GS} = ØV	f = 1 MHz
Common Source Output Capacitance	C_{oss}		1			1		pF	V_{DS} = 15V, V_{GS} = ØV	f = 1 MHz
Common Source Output Conductance	g_{os}		60			60		µS	V_{DS} = 15V, V_{GS} = ØV	f = 100 MHz
			80					µS	V_{DS} = 15V, V_{GS} = ØV	f = 400 MHz
Common Source Output Susceptance	b_{os}		800			800		µS	V_{DS} = 15V, V_{GS} = ØV	f = 100 MHz
			3600					µS	V_{DS} = 15V, V_{GS} = ØV	f = 400 MHz
Common Source Input Conductance	g_{is}		80			80		µS	V_{DS} = 15V, V_{GS} = ØV	f = 100 MHz
			800					µS	V_{DS} = 15V, V_{GS} = ØV	f = 400 MHz
Common Source Input Susceptance	b_{is}		2000			2000		µS	V_{DS} = 15V, V_{GS} = ØV	f = 100 MHz
			7500					µS	V_{DS} = 15V, V_{GS} = ØV	f = 400 MHz
Common Source Power Gain	G_{ps}		20					dB	V_{DS} = 15V, I_D = 5 mA	f = 100 MHz
			11					dB	V_{DS} = 15V, I_D = 5 mA	f = 400 MHz
Noise Figure	NF		1.7					dB	V_{DS} = 15V, I_D = 5 mA R_G = 1 Ω	f = 100 MHz
			3.8					dB		f = 400 MHz

TO-226AA Package
Dimensions in Inches (mm)

Pin Configuration
1 Drain, 2 Source, 3 Gate

Surface Mount
SMPJ304, SMPJ305

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